

# STRUCTURAL SHAPES



# STRUCTURAL SHAPES

## Leading the New Era on Structural Shapes with Pioneer Sprints.

We, NIPPON STEEL, since the dawn of the Japanese steel industry, when we started producing Japan's first railroad rails in 1901, and through the nation's reconstruction period after World War II, have been the sole producer of rails and sheet piles in Japan and have contributed to the development of the Japanese economy. Based on our technological advantages and credibility, which were built-up during this process, we pioneered the production and sale of Japan's first rolled wide flanges and, with our half a century of technological innovation, have been responding to a wide variety of customers needs both in Japan and across the globe.

We have also produced and marketed: structural H-shapes with incremental depth and width of 50mm pitch (NSHYPER BEAM™, 1989); structural H-shapes with fire-resistance (NSFR™ steel, 1990); and other innovative products that span the history of construction in Japan. Working together with end users, we have also endeavored to spread the use of steel structures in building construction and promoted the use of structural H-shapes as well as developed key technologies in design, fabrication and construction fields.

Not resting on our laurels gained through history and experience, we have determined to lead the new era with pioneer spirits and express the hope that NIPPON STEEL's structural H-shapes will continue to enjoy your company's patronage.

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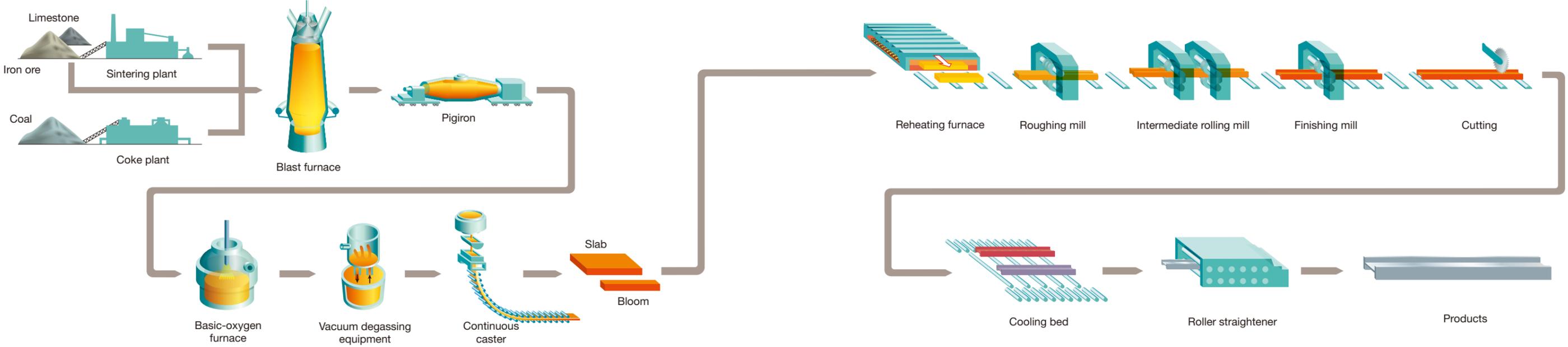
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# Conventional Technology: Universal Rolling

## From Raw Materials to Products



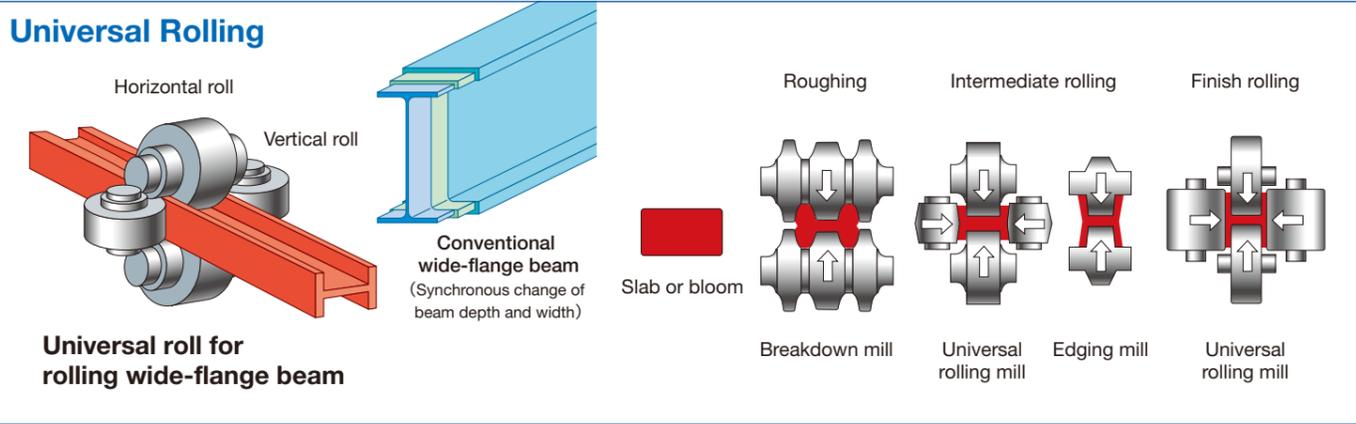
Blast furnace



Basic-oxygen furnace



Continuous caster



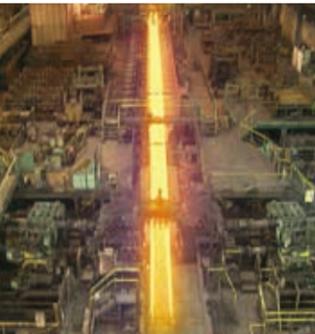
Reheating furnace



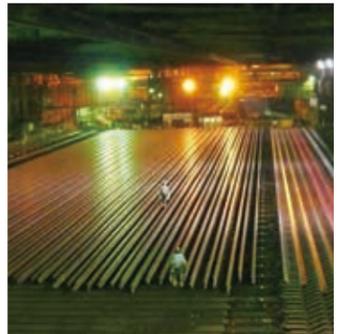
Roughing mill



Roughing mill



Finishing mill



Cooling bed



Roller straightener



Camber inspection



Automatic warehouse



# Innovative Technology: NSHYPER BEAM™

## Features of NSHYPER BEAM™

### Depth and Width with 50mm Incremental Unit

- Increased depth and width by 50mm (app. 2 inch) pitch

### Rolled H-shapes to be replaced Built-up H-shapes

- Advantages on saving labor force and fabrication term as well as higher quality due to elimination of welding operations

### Uniform Depth and Width within a Same Size Series

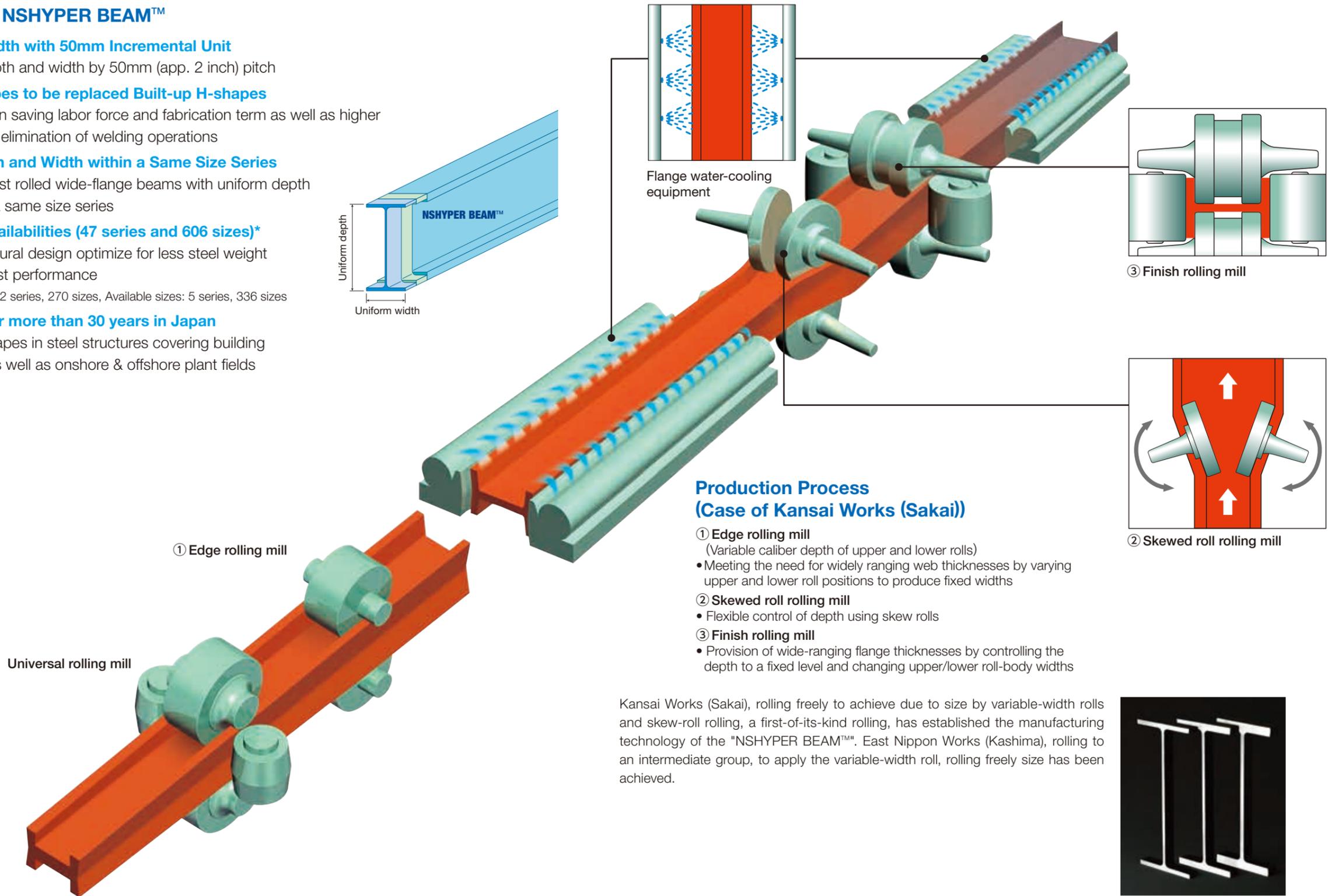
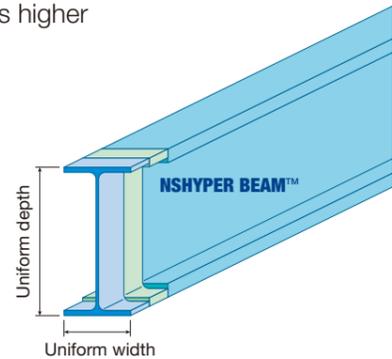
- The world's first rolled wide-flange beams with uniform depth and width in a same size series

### Wider Size Availabilities (47 series and 606 sizes)\*

- Helping structural design optimize for less steel weight and better cost performance
- \* Regular sizes: 42 series, 270 sizes, Available sizes: 5 series, 336 sizes

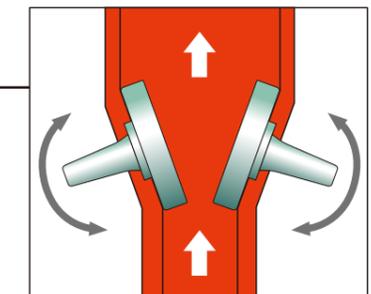
### Experience for more than 30 years in Japan

- Popular H-shapes in steel structures covering building and factory as well as onshore & offshore plant fields



## Production Process (Case of Kansai Works (Sakai))

- ① Edge rolling mill  
(Variable caliber depth of upper and lower rolls)
  - Meeting the need for widely ranging web thicknesses by varying upper and lower roll positions to produce fixed widths
- ② Skewed roll rolling mill
  - Flexible control of depth using skew rolls
- ③ Finish rolling mill
  - Provision of wide-ranging flange thicknesses by controlling the depth to a fixed level and changing upper/lower roll-body widths



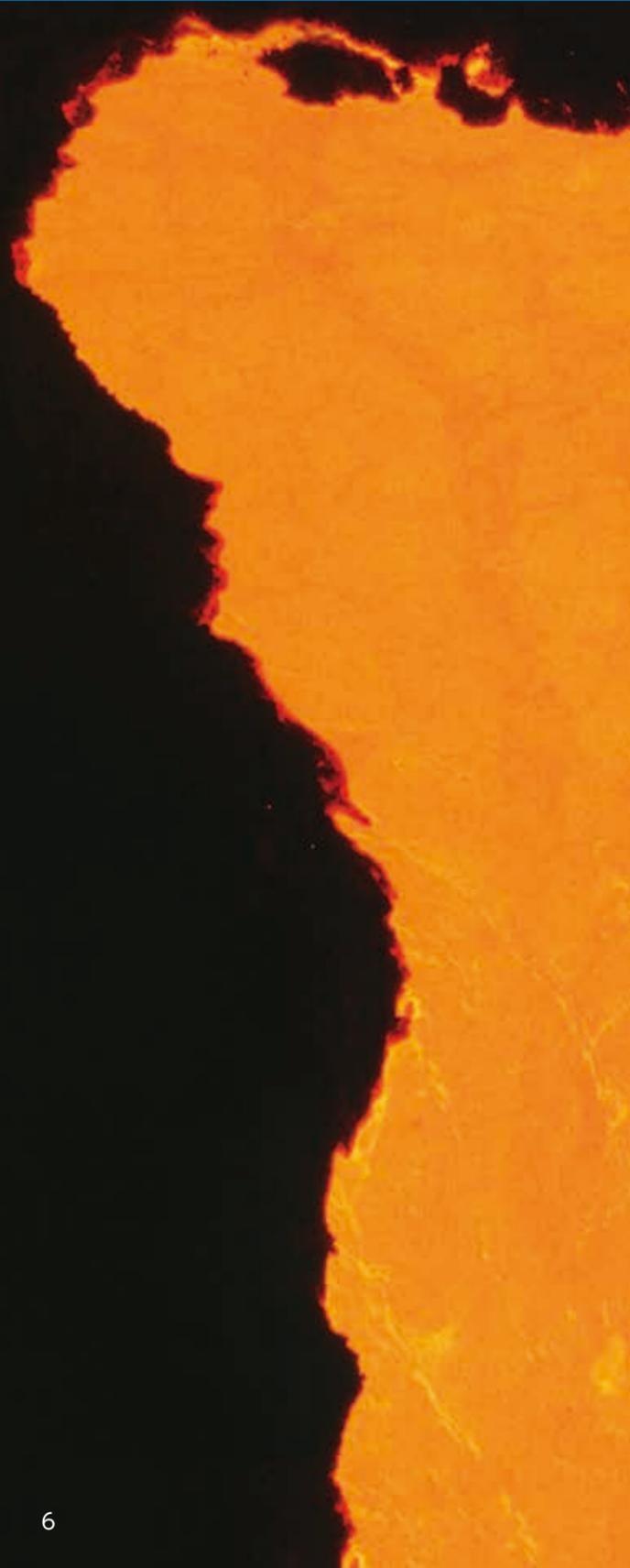
② Skewed roll rolling mill

Kansai Works (Sakai), rolling freely to achieve due to size by variable-width rolls and skew-roll rolling, a first-of-its-kind rolling, has established the manufacturing technology of the "NSHYPER BEAM™". East Nippon Works (Kashima), rolling to an intermediate group, to apply the variable-width roll, rolling freely size has been achieved.



# Steel Grades

## Chemical Composition & Mechanical Properties



### ASTM A36

#### Chemical Requirements

Elements	Max. content in %
Carbon	0.26
Manganese	*1
Silicon	0.40 *1
Phosphorus	0.04
Sulfur	0.05

\*1 Flange thickness over 3in. ;min. 0.15% to 0.4%, Mn 0.85-1.35%

#### Tensile Requirements

Tensile strength, min ksi [Mpa]	58-80 [400-550] *1
Yield point,	36 [250]
Elongation in 8 in. [200mm] , min, %	20
Elongation in 2 in. [50mm] , min, %	21 *1

\*1 For wide flange shapes with flange thickness over 3in. The 80 ksi maximum tensile strength dose not apply and a min.elongation in 2 in. [50 mm] of 19% applies.

### ASTM A572 Gr.50

#### Chemical Requirements

Elements	Max. content in %
Carbon	0.23
Manganese	1.35 *1
Silicon	0.40 *2
Vanadium	*1
Columbium	*1
Phosphorus	0.04
Sulfur	0.05
other elements	*1

\*1 See specific limitations in the standard.  
\*2 Flange thickness over 3in. ;min. 0.15% to 0.4%

#### Tensile Requirements

Tensile strength, min ksi [Mpa]	65 [450] *1
Yield point,	50 [345]
Elongation in 8 in. [200mm] , min, %	18
Elongation in 2 in. [50mm] , min, %	21 *1

\*1 For wide flange shapes over 426lbs ,elongation in 2 in. [50 mm] of 19% minimum applies.

### ASTM A992

#### Chemical Requirements

Elements	Max. content in %
Carbon	0.23
Manganese	1.60 *1
Silicon	0.40
Vanadium	0.15 *1
Columbium	0.05 *1
Phosphorus	0.035
Sulfur	0.045
Copper	0.60
Nickel	0.45
Chromium	0.35
Molybdenum	0.15

\*1 See specific limitations in the standard.

#### Tensile Requirements

Tensile strength, min ksi [Mpa]	65 [450]
Yield point,	50 to 65 [345 to 450] *1
Yield to tensile ratio, max	0.85 *1
Elongation in 8 in. [200mm] , min, %	18
Elongation in 2 in. [50mm] , min, %	21

\*1 See specific limitations in the standard.

#### Supplementary Requirments

##### Charpy V Notch Impact Tests

20ft-lbf [27J] at 70°F [21°C]

Steel Grades

Chemical Composition & Mechanical Properties

EN10025-2

Chemical Compositions

(Max content in %)

Designation	C Nominal Thickness (mm)			Si	Mn	P *2	S *2	N *2	Cu*2	Other Elements *2	CEV Nominal Thickness (mm)		
	≤ 16	16 < ≤ 40	40 < *2								≤ 30	30 < ≤ 40	40 < ≤ 150
	S235JR	0.17	0.17								0.20	—	1.40
S235J0	0.17	0.17	0.17	—	1.40	0.030	0.030	0.012	0.55	—	0.35	0.35	0.38
S235J2	0.17	0.17	0.17	—	1.40	0.025	0.025	—	0.55	—	0.35	0.35	0.38
S275JR	0.21	0.21	0.22	—	1.50	0.035	0.035	0.012	0.55	—	0.40	0.40	0.42
S275J0	0.18	0.18	0.18	—	1.50	0.030	0.030	0.012	0.55	—	0.40	0.40	0.42
S275J2	0.18	0.18	0.18	—	1.50	0.025	0.025	—	0.55	—	0.40	0.40	0.42
S355JR	0.24	0.24	0.24	0.55	1.60	0.035	0.035	0.012	0.55	—	0.45	0.47	0.47
S355J0	0.20	0.20 *1	0.22	0.55	1.60	0.030	0.030	0.012	0.55	—	0.45	0.47	0.47
S355J2	0.20	0.20 *1	0.22	0.55	1.60	0.025	0.025	—	0.55	—	0.45	0.47	0.47
S355K2	0.20	0.20 *1	0.22	0.55	1.60	0.025	0.025	—	0.55	—	0.45	0.47	0.47

\*1 For nominal thickness > 30 mm : C = 0.22% max..

\*2 See specific limitation in the standard.

Mechanical Properties

Designation	Minimum Yield Strength (MPa)						Tensile Strength (MPa)			Impact Test		Minimum Elongation (%) L <sub>0</sub> = 5.65√S <sub>0</sub>			
	Nominal Thickness (mm)						Nominal Thickness (mm)			Temperature °C	Minimum Energy (J)	Nominal Thickness (mm)			
	≤ 16	16 < ≤ 40	40 < ≤ 63	63 < ≤ 80	80 < ≤ 100	100 < ≤ 150	< 3	3 ≤ ≤ 100	100 < ≤ 150			3 ≤ ≤ 40	40 < ≤ 63	63 < ≤ 100	100 < ≤ 150
S235JR	235	225	215	215	215	195	360/510	360/510	350/500	20	27	26	25	24	22
S235J0	235	225	215	215	215	195	360/510	360/510	350/500	0	27	26	25	24	22
S235J2	235	225	215	215	215	195	360/510	360/510	350/500	-20	27	26	25	24	22
S275JR	275	265	255	245	235	225	430/580	410/560	400/540	20	27	23	22	21	19
S275J0	275	265	255	245	235	225	430/580	410/560	400/540	0	27	23	22	21	19
S275J2	275	265	255	245	235	225	430/580	410/560	400/540	-20	27	23	22	21	19
S355JR	355	345	335	325	315	295	510/680	470/630	450/600	20	27	22	21	20	18
S355J0	355	345	335	325	315	295	510/680	470/630	450/600	0	27	22	21	20	18
S355J2	355	345	335	325	315	295	510/680	470/630	450/600	-20	27	22	21	20	18
S355K2	355	345	335	325	315	295	510/680	470/630	450/600	-20	40 *3	20	19	18	18

\*3 See specific limitation in the standard.

EN10025-4

Chemical Compositions

(Max content in %)

Designation	C	Si	Mn	P *2	S *2	N	Cu *2	Other Elements *2	CEV Nominal Thickness (mm)			
									≤ 16	16 < ≤ 40	40 < ≤ 63	63 < ≤ 120
									S460M	0.16 *1	0.60	1.70

\*1 \*2 See specific limitation in the standard.

Mechanical Properties

Designation	Minimum Yield Strength (MPa)						Tensile Strength (MPa)					Impact Test		Minimum Elongation (%) L <sub>0</sub> = 5.65√S <sub>0</sub>
	Nominal Thickness (mm)						Nominal Thickness (mm)					Temperature °C	Minimum Energy (J)	
	≤ 16	16 < ≤ 40	40 < ≤ 63	63 < ≤ 80	80 < ≤ 100	100 < ≤ 120	40 <	40 < ≤ 63	63 < ≤ 80	80 < ≤ 100	100 < ≤ 120			
S460M	460	440	430	410	400	385	540/720	530/710	510/690	500/680	490/660	20 0 -10 -20	55 47 43 40 *1	17

\*1 This value corresponds with 27J at -30°C (see Eurocode 3)

EN10225

Chemical Compositions

(Max content in %)

Designation	C	Si	Mn	P	S	N	Cu	Other Elements *2	Cr+Mo +Ni+Cu	Nb+V	Nb+V+Ti

\*1 \*2 See specific limitation in the standard.

Mechanical Properties

Designation	Minimum Yield Strength (MPa)			Tensile Strength (MPa)	Yield to Tensile Ratio, Max	Impact Test		Minimum Elongation (%) L <sub>0</sub> = 5.65√S <sub>0</sub>
	Nominal Thickness (mm)					Temperature °C	Minimum Energy (J)	
	≤ 16	16 < ≤ 40	40 < ≤ 63					
S355G11+M	355	345	335	460/620	0.87	-40 *1	50	22

\*1 For up to and including 25 mm thickness, test at -20°C.

# Steel Grades

## Chemical Composition & Mechanical Properties

### JIS G 3101, 3106, 3136

#### Chemical Compositions (Max content in %)

Designation	C Nominal Thickness (mm)		Si	Mn	P	S
	6 ≤ ≤ 50	50 < ≤ 100				
SS400	—	—	—	—	0.050	0.050
SM400A	0.23	0.25	—	2.5 x C	0.035	0.035
SM400B	0.20	0.22	0.35	0.60/1.50	0.035	0.035
SM490A	0.20	0.22	0.55	1.65	0.035	0.035
SM490B	0.18	0.20	0.55	1.65	0.035	0.035
SN400A	0.24	0.24	—	—	0.050	0.050
SN400B	0.20	0.22	0.35	0.60/1.50	0.030	0.015
SN490B	0.18	0.20	0.55	1.65	0.030	0.015
SM490YA	0.20	0.20	0.55	1.65	0.035	0.035
SM490YB	0.20	0.20	0.55	1.65	0.035	0.035

#### Mechanical Properties

Designation	Minimum Yield Strength (MPa)						Tensile Strength (MPa)	Yield to Tensile Ratio, Max (%)					Impact Test		Minimum Elongation (%) *		
	Nominal Thickness (mm)							Nominal Thickness (mm)					Temperature °C	Minimum Energy (J)	Nominal Thickness (mm)		
	6 ≤ < 12	12 ≤ < 16	16	16 < ≤ 40	40 < ≤ 75	75 < ≤ 100	≤ 100	6 ≤ < 12	12 ≤ < 16	16	16 < ≤ 40	40 < ≤ 100			5 < ≤ 16	16 < ≤ 40	40 <
SS400	245	245	245	235	215	215	400/510	—	—	—	—	—	—	—	17	21	23
SM400A	245	245	245	235	215	215	400/510	—	—	—	—	—	—	—	18	22	24
SM400B	245	245	245	235	215	215	400/510	—	—	—	—	—	0	27	18	22	24
SM490A	325	325	325	315	295	295	490/610	—	—	—	—	—	—	—	17	21	23
SM490B	325	325	325	315	295	295	490/610	—	—	—	—	—	0	27	17	21	23
SN400A	235	235	235	235	215	215	400/510	—	—	—	—	—	—	—	17	21	23
SN400B	235	235/355	235/355	235/355	215/335	215/335	400/510	—	80	80	80	80	0	27	18	22	24
SN490B	325	325/445	325/445	325/445	295/415	295/415	490/610	—	80	80	80	80	0	27	17	21	23
SM490YA	365	365	365	355	335	325	490/610	—	—	—	—	—	—	—	15	19	21
SM490YB	365	365	365	355	335	325	490/610	—	—	—	—	—	0	27	15	19	21

\* Refer to the standard

### CSA G40.21-04

#### Chemical Compositions (Max content in %)

Designation	C	Si *	Mn*	P	S	Grain Refining Elements*
300W	0.22	0.40	0.50/1.50	0.04	0.05	0.10
350W	0.23	0.40	0.50/1.50	0.04	0.05	0.10

\* See specific limitation in the standard

#### Mechanical Properties

Designation	Minimum Yield Strength (MPa)	Tensile Strength (MPa)	Elongation (%) *	
			200 mm	50 mm
300W	300	450/620	20	23
350W	350	450/650	19	22

\* Refer to standard

### GB/T 1591

#### Chemical Compositions (Max content in %)

Designation	C	Si	Mn	P	S	Nb	V	Ti	Cr	Ni	Cu	N	Mo	Al
Q345 A	0.20	0.50	1.70	0.035	0.035	0.07	0.15	0.20	0.30	0.50	0.30	0.012	0.10	—
Q345 B	0.20	0.50	1.70	0.035	0.035	0.07	0.15	0.20	0.30	0.50	0.30	0.012	0.10	—
Q345 C	0.20	0.50	1.70	0.030	0.030	0.07	0.15	0.20	0.30	0.50	0.30	0.012	0.10	≥ 0.015
Q345 D	0.18	0.50	1.70	0.030	0.025	0.07	0.15	0.20	0.30	0.50	0.30	0.012	0.10	≥ 0.015

#### Mechanical Properties

Designation	Minimum Yield Strength (MPa)						Tensile Strength (MPa)					Impact Test		Minimum Elongation (%)			
	Nominal Thickness (mm)						Nominal Thickness (mm)					Temperature °C	Minimum Energy (J)	Nominal Thickness (mm)			
	≤ 16	16 < ≤ 40	40 < ≤ 63	63 < ≤ 80	80 < ≤ 100	100 < ≤ 150	≤ 40	40 < ≤ 63	63 < ≤ 80	80 < ≤ 100	100 < ≤ 150			12 mm ~ 150 mm	≤ 40	40 < ≤ 63	63 < ≤ 100
Q345 A	345	335	325	315	305	285	470/630	470/630	470/630	470/630	450/600	—	—	20	19	19	18
Q345 B	345	335	325	315	305	285	470/630	470/630	470/630	470/630	450/600	20	34	20	19	19	18
Q345 C	345	335	325	315	305	285	470/630	470/630	470/630	470/630	450/600	0	34	21	20	20	19
Q345 D	345	335	325	315	305	285	470/630	470/630	470/630	470/630	450/600	-20	34	21	20	20	19

Steel Grades

Low Temperature Properties

Example of Order Specification

I . NIPPON STEEL Availability

-20°C > 27J, -40°C > 27J, etc up to 40mm

II . Example of CVN Requirement at Low Temperature

Order	Grade		CVN Requirement	Low Temperature
A	ASTM	A572 Gr.50	> 40J	-20°C
B	JIS	SM490YB	> 34J	-20°C
C	EN	S355K2	> 40J	-20°C
D	EN + ASTM	S355J0 + A992	> 27J	0°C



# Product Availability

## ASTM [Imperial & Metric Unit]

Nominal Size [Imperial Unit] ☆ [(Metric Unit)]		Mass per Foot [lbs/ft] (Mass per Meter [kg/m])																
W40 (x 16) (1016 x 406)	x	199 (296)	215 (320)	249 (371)	277 (412)	297 (442)	324 (482)	362 (539)	372 (554)	397 (591)	431 (641)	503 (749)	593 (883)					
W40 (x 12) (1016 x 305)	x	149 (222)	167 (249)	183 (272)	211 (314)	235 (350)	264 (393)	278 (414)	294 (438)	327 (487)	331 (493)	392 (583)						
W36 (x 16.5) (914 x 419)	x	231 (344)	247 (368)	262 (390)	282 (420)	302 (449)	330 (491)	361 (537)	395 (588)	441 (656)	487 (725)	529 (787)	652 (970)					
W36 (x 12) (914 x 305)	x	135 (201)	150 (223)	160 (238)	170 (253)	182 (271)	194 (289)	210 (313)	232 (345)	256 (381)	286*1 (425)	318*1 (474)	350*1 (521)	387*1 (576)				
W33 (x 15.75) (838 x 400)	x	201 (299)	221 (329)	241 (359)														
W33 (x 11.5) (838 x 292)	x	118 (176)	130 (194)	141 (210)	152 (226)	169 (252)												
W30 (x 15) (762 x 381)	x	173 (258)	191 (284)	211 (314)	235 (350)													
W30 (x 10.5) (762 x 267)	x	90 (134)	99 (147)	108 (161)	116 (173)	124 (185)	132 (196)	148 (220)										
W27 (x 14) (686 x 356)	x	146 (217)	161 (240)	178 (265)	194 (289)	217 (323)												
W27 (x 10) (686 x 254)	x	84 (125)	94 (140)	102 (152)	114 (170)	129 (192)												
W24 (x 12.75) (610 x 324)	x	104 (155)	117 (174)	131 (195)	146 (217)	162 (241)	176 (262)	192 (286)										
W24 (x 9) (610 x 229)	x	68 (101)	76 (113)	84 (125)	94 (140)	103 (153)												
W24 (x 7) (610 x 178)	x	55 (82)	62 (92)															
W21 (x 12.25) (533 x 312)	x	101 (150)	111 (165)	122 (182)	132 (196)	147 (219)	166 (247)	182 (271)										
W21 (x 8.25) (533 x 210)	x	48 (71)	55 (82)	62 (92)	68 (101)	73 (109)	83 (124)	93 (138)										
W21 (x 6.5) (533 x 165)	x	44 (65)	50 (74)	57 (85)														
W18 (x 11) (457 x 279)	x	76 (113)	86 (128)	97 (144)	106 (158)	119 (177)	143 (213)	158 (235)	175 (260)	192 (286)								
W18 (x 7.5) (457 x 191)	x	50 (74)	55 (82)															
W18 (x 6) (457 x 152)	x	40 (60)	46 (68)															
W16 (x 10.25) (406 x 260)	x	67 (100)	77 (115)															
W16 (x 7) (406 x 178)	x	40 (60)	45 (67)	50 (74)	57 (85)													
W16 (x 5.5) (406 x 140)	x	26 (39)	31 (46)															
W14 (x 16) (356 x 406)	x	145 (216)	159 (237)	176 (262)	193 (287)	211 (314)	233 (347)	257 (383)	283 (421)	311 (463)	342 (509)	370 (551)	398 (592)	426 (634)	455 (677)	500 (744)	550 (819)	605 (900)
W14 (x 14.5) (356 x 368)	x	90 (134)	99 (147)	109 (162)	120 (179)	132 (196)												
W14 (x 6.75) (356 x 171)	x	30 (45)	34 (51)	38 (57)														
W14 (x 5) (356 x 127)	x	22 (33)	26 (39)															
W12 (x 12) (305 x 305)	x	65 (97)	72 (107)	79 (118)	87 (130)	96 (143)	106 (158)	120 (179)	136 (202)	152 (226)	170 (253)	190 (283)	210 (313)	230 (342)	252 (375)	279 (415)	305 (454)	336 (500)
W12 (x 8) (305 x 203)	x	40 (60)	45 (67)	50 (74)														
W10 (x 10) (254 x 254)	x	49 (73)	54 (80)	60 (89)	68 (101)													
W10 (x 8) (254 x 203)	x	33 (49)	39 (58)	45 (67)														
W10 (x 5.75) (254 x 146)	x	22 (33)	26 (39)	30 (45)														
W8 (x 8) (203 x 203)	x	31 (46)	35 (52)	40 (60)	48 (71)	58 (86)	67 (100)											
W8 (x 6.5) (203 x 165)	x	24 (36)	28 (42)															
W8 (x 5.25) (203 x 133)	x	18 (27)	21 (31)															
W6 (x 6) (152 x 152)	x	15 (22)	20 (30)	25 (37)														
HP14 (HP356)	x	73 (109)	89 (132)	102 (152)	117 (174)													
HP12 (HP305)	x	53 (79)	63 (94)	74 (110)	84 (125)													

Please contact us in advance to order these underlined sizes.  
☆: Values in metric unit are exact conversions of ones in imperial unit.  
\*1: Dimensions based on NIPPON STEEL's standard

## BS [Metric Unit]

Nominal Size		Mass per Meter [kg/m]											
+ UB 1016 x 305	x	222	249	272	314	349	393	415	437	487	494	584	
UB 914 x 419	x	343	388										
UB 914 x 305	x	201	224	253	289								
UB 838 x 292	x	176	194	226									
UB 762 x 267	x	134	147	173	197								
UB 686 x 254	x	125	140	152	170								
UB 610 x 305	x	149	179	238									
UB 610 x 229	x	101	113	125	140								
UB 533 x 210	x	82	92	101	109	122							
UB 457 x 191	x	67	74	82									
UB 457 x 152	x	52	60	67	74	82							
UB 406 x 178	x	60	67	74									
UB 406 x 140	x	39	46										
UB 356 x 171	x	45	51	57	67								
UB 356 x 127	x	33	39										
UB 305 x 165	x	40	46	54									
UB 254 x 146	x	31	37	43									
UB 203 x 133	x	25	30										
UB 203 x 102	x	23											
UC 356 x 406	x	235	287	340	393	467	551	634					
UC 356 x 368	x	129	153	177	202								
UC 305 x 305	x	97	118	137	158	198	240	283					
UC 254 x 254	x	73	89	107									
UC 203 x 203	x	46	52	60	71	86							
UC 152 x 152	x	23	30	37									
UBP 356 x 368	x	<u>109</u>	<u>133</u>	<u>152</u>	<u>174</u>								
UBP 305 x 305	x	79	88	95	110	126	149	186	223				

Please contact us in advance to order these underlined sizes.

+ : These sections are in addition to the range of BS4 sections.

Product Availability

HE & IPE [Metric Unit]

Section						
HE 1000	HE 1000 AA	HE 1000 A	HE 1000 B	HE 1000 M		
900	<u>HE 900 AA</u> *1	<u>HE 900 A</u> *1	<u>HE 900 B</u> *1	<u>HE 900 M</u> *1		
800	<u>HE 800 AA</u> *1	<u>HE 800 A</u> *1	<u>HE 800 B</u> *1	<u>HE 800 M</u> *1		
700	<u>HE 700 AA</u> *1	<u>HE 700 A</u> *1	<u>HE 700 B</u> *1	<u>HE 700 M</u> *1		
650	<u>HE 650 AA</u> *1	<u>HE 650 A</u> *1	<u>HE 650 B</u> *1	<u>HE 650 M</u> *1		
600	<u>HE 600 AA</u> *1	<u>HE 600 A</u> *1	<u>HE 600 B</u> *1	<u>HE 600 M</u> *1		
550	<u>HE 550 AA</u> *1	<u>HE 550 A</u> *1	<u>HE 550 B</u> *1	<u>HE 550 M</u> *1		
500	<u>HE 500 AA</u> *1	<u>HE 500 A</u> *1	<u>HE 500 B</u> *1	<u>HE 500 M</u> *1		
450	<u>HE 450 AA</u> *1	<u>HE 450 A</u> *1	<u>HE 450 B</u> *1	<u>HE 450 M</u> *1		
400	<u>HE 400 AA</u> *1	<u>HE 400 A</u> *1	<u>HE 400 B</u> *1	<u>HE 400 M</u> *1		
IPE 750	<u>IPE 750 x 134</u> *2	<u>IPE 750 x 147</u> *2	<u>IPE 750 x 173</u> *2	<u>IPE 750 x 196</u> *2		
600	<u>IPE 600</u> *2					
550	<u>IPE 550</u> *2					
500	<u>IPE 500</u> *2					
450	<u>IPE 450</u> *2					
400	<u>IPE 400</u> *2					
200	<u>IPE 200</u> *2					
1000 x 400	<u>1000 x 400 x 321</u> *3	<u>1000 x 400 x 371</u> *3	<u>1000 x 400 x 411</u> *3	<u>1000 x 400 x 442</u> *3	<u>1000 x 400 x 483</u> *3	<u>1000 x 400 x 539</u> *3
	<u>1000 x 400 x 554</u> *3	<u>1000 x 400 x 591</u> *3	<u>1000 x 400 x 642</u> *3	<u>1000 x 400 x 748</u> *3	<u>1000 x 400 x 883</u> *3	
1000 x 300	<u>1000 x 300 x 222</u> *3	<u>1000 x 300 x 249</u> *3	<u>1000 x 300 x 393</u> *3	<u>1000 x 300 x 415</u> *3	<u>1000 x 300 x 437</u> *3	<u>1000 x 300 x 494</u> *3
	<u>1000 x 300 x 584</u> *3					
900 x 400	<u>900 x 400 x 341</u> *3	<u>900 x 400 x 363</u> *3	<u>900 x 400 x 385</u> *3			
900 x 300	<u>900 x 300 x 194</u> *3	<u>900 x 300 x 387</u> *3	<u>900 x 300 x 462</u> *3			
800 x 300	<u>800 x 300 x 168</u> *3					
750 x 250	<u>750 x 250 x 137</u> *3	<u>750 x 250 x 147</u> *3	<u>750 x 250 x 174</u> *3	<u>750 x 250 x 197</u> *3		
650 x 300	<u>650 x 300 x 135</u> *3					
600 x 300	<u>600 x 300 x 125</u> *3					
600 x 200	<u>600 x 200 x 105</u> *3	<u>600 x 200 x 152</u> *3				
550 x 300	<u>550 x 300 x 116</u> *3					
550 x 200	<u>550 x 200 x 89</u> *3	<u>550 x 200 x 120</u> *3				
500 x 300	<u>500 x 300 x 104</u> *3					
500 x 200	<u>500 x 200 x 78</u> *3	<u>500 x 200 x 105</u> *3				
450 x 300	<u>450 x 300 x 96</u> *3					
450 x 200	<u>450 x 200 x 65</u> *3	<u>450 x 200 x 91</u> *3				
400 x 300	<u>400 x 300 x 89</u> *3					
400 x 200	<u>400 x 200 x 56</u> *3	<u>400 x 200 x 74</u> *3				
200 x 100	<u>200 x 100 x 17</u> *3	<u>200 x 100 x 18</u> *3	<u>200 x 100 x 25</u> *3			

Please contact us in advance to order these underlined sizes  
 \*1: Dimensions of HE except for root radius referred to former standard EU 53-62  
 \*2: Dimensions of IPE except for root radius referred to former standard EU 19-57  
 \*3: Dimensions based on NIPPON STEEL's standard  
 Root radius referred to dimension and properties on page 41-42

JIS [Metric Unit]

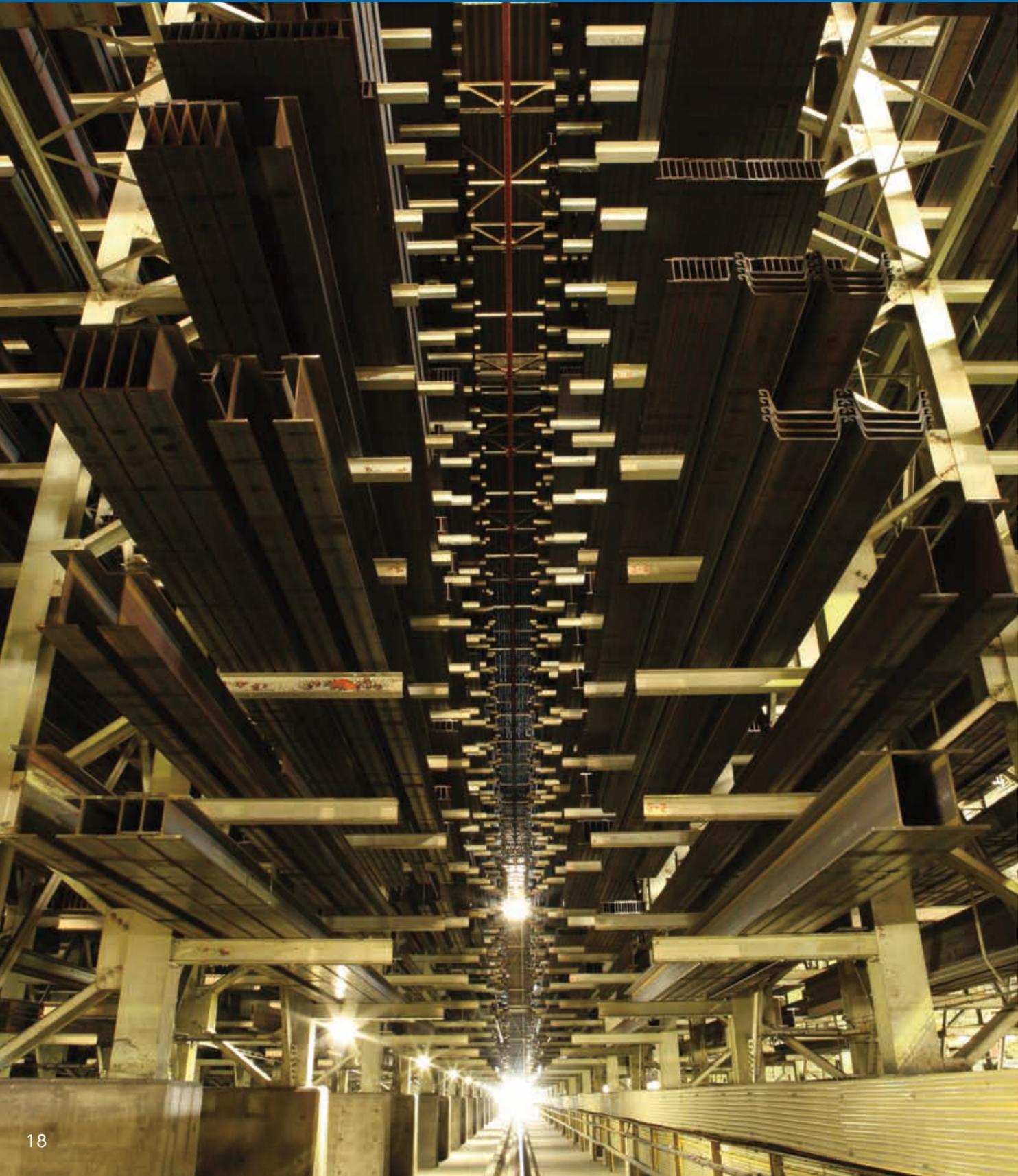
Nominal Size					
900 x 300	210 (H890 x 299 x 15 x 23)	240 (H900 x 300 x 16 x 28)	283 (H912 x 302 x 18 x 34)	304 (H918 x 303 x 19 x 37)	
800 x 300	188 (H792 x 300 x 14 x 22)	207 (H800 x 300 x 14 x 26)			
700 x 300	163 (H692 x 300 x 13 x 20)	182 (H700 x 300 x 13 x 24)			
600 x 300	133 (H582 x 300 x 12 x 17)	147 (H588 x 300 x 12 x 20)	170 (H594 x 302 x 14 x 23)		
600 x 200	92.5 (H596 x 199 x 10 x 15)	103 (H600 x 200 x 11 x 17)	118 (H606 x 201 x 12 x 20)		
500 x 300	111 (H482 x 300 x 11 x 15)	125 (H488 x 300 x 11 x 18)			
500 x 200	77.9 (H496 x 199 x 9 x 14)	88.2 (H500 x 200 x 10 x 16)			
450 x 300	121 (H440 x 300 x 11 x 18)				
450 x 200	65.1 (H446 x 199 x 8 x 12)	74.9 (H450 x 200 x 9 x 14)			
400 x 400	172 (H400 x 400 x 13 x 21)	232 (H414 x 405 x 18 x 28)	283 (H428 x 407 x 20 x 35)	415 (H458 x 417 x 30 x 50)	605 (H498 x 432 x 45 x 70)
400 x 300	105 (H390 x 300 x 10 x 16)				
400 x 200	56.1 (H396 x 199 x 7 x 11)	65.4 (H400 x 200 x 8 x 13)			
350 x 350	135 (H350 x 350 x 12 x 19)				
350 x 250	78.1 (H340 x 250 x 9 x 14)				
350 x 175	41.2 (H346 x 174 x 6 x 9)	49.4 (H350 x 175 x 7 x 11)			
300 x 300	83.5 (H294 x 302 x 12 x 12)	93 (H300 x 300 x 10 x 15)			
300 x 200	55.8 (H294 x 200 x 8 x 12)				
300 x 150	32 (H298 x 149 x 5.5 x 8)	36.7 (H300 x 150 x 6.5 x 9)			
250 x 250	71.8 (H250 x 250 x 9 x 14)				
250 x 175	43.6 (H244 x 175 x 7 x 11)				
250 x 125	25.1 (H248 x 124 x 5 x 8)	29 (H250 x 125 x 6 x 9)			
200 x 200	49.9 (H200 x 200 x 8 x 12)	56.2 (H200 x 204 x 12 x 12)			
200 x 150	29.9 (H194 x 150 x 6 x 9)				
200 x 100	17.8 (H198 x 99 x 4.5 x 7)	20.9 (H200 x 100 x 5.5 x 8)			
175 x 175	40.4 (H175 x 175 x 7.5 x 11)				
175 x 100	18 (H175 x 90 x 5 x 8)				
150 x 150	31.1 (H150 x 150 x 7 x 10)				
150 x 100	20.7 (H148 x 100 x 6 x 9)				
150 x 75	14 (H150 x 75 x 5 x 7)				
125 x 125	23.6 (H125 x 125 x 6.5 x 9)				
100 x 100	16.9 (H100 x 100 x 6 x 8)				

Please contact us in advance to other sizes than the above-mentioned, described in the JIS G 3192 dated 2000 or before.

• The following sizes are our original sizes conforming to the "Highly Ductile Member" by increasing the flange thickness.

Nominal Size	
400 x 400	<u>225</u> (H414 x 403 x 16 x 28)
350 x 350	<u>174</u> (H362 x 352 x 14 x 25)
300 x 300	<u>126</u> (H312 x 302 x 12 x 21)
250 x 250	<u>91.5</u> (H258 x 252 x 11 x 18)
200 x 200	<u>57.8</u> (H204 x 201 x 9 x 14)
150 x 150	<u>34.7</u> (H152 x 151 x 8 x 11)

Please contact us in advance to order these underlined sizes.



HC400 [Metric Unit]

Section					
508	508 x 432 x 45 x 75	508 x 437 x 50 x 75	508 x 442 x 55 x 75	508 x 447 x 60 x 75	508 x 452 x 65 x 75
	508 x 457 x 70 x 75	508 x 462 x 75 x 75			
498	498 x 427 x 40 x 70	498 x 432 x 45 x 70	498 x 437 x 50 x 70	498 x 442 x 55 x 70	498 x 447 x 60 x 70
	498 x 452 x 65 x 70	498 x 457 x 70 x 70			
488	488 x 422 x 35 x 65	488 x 427 x 40 x 65	488 x 432 x 45 x 65	488 x 437 x 50 x 65	488 x 442 x 55 x 65
	488 x 447 x 60 x 65	488 x 452 x 65 x 65			
478	478 x 417 x 30 x 60	478 x 422 x 35 x 60	478 x 427 x 40 x 60	478 x 432 x 45 x 60	478 x 437 x 50 x 60
	478 x 442 x 55 x 60	478 x 447 x 60 x 60			
468	468 x 417 x 30 x 55	468 x 422 x 35 x 55	468 x 427 x 40 x 55	468 x 432 x 45 x 55	468 x 437 x 50 x 55
	468 x 442 x 55 x 55				
458	458 x 412 x 25 x 50	458 x 417 x 30 x 50	458 x 422 x 35 x 50	458 x 427 x 40 x 50	458 x 432 x 45 x 50
	458 x 437 x 50 x 50	458 x 442 x 55 x 50			
448	448 x 412 x 25 x 45	448 x 417 x 30 x 45	448 x 422 x 35 x 45	448 x 427 x 40 x 45	448 x 432 x 45 x 45
	448 x 437 x 50 x 45				
438	438 x 407 x 20 x 40	438 x 412 x 25 x 40	438 x 417 x 30 x 40	438 x 422 x 35 x 40	438 x 427 x 40 x 40
	438 x 432 x 45 x 40				
428	428 x 407 x 20 x 35	428 x 412 x 25 x 35	428 x 417 x 30 x 35	428 x 422 x 35 x 35	428 x 427 x 40 x 35
	428 x 432 x 45 x 35				
418	418 x 402 x 15 x 30	418 x 407 x 20 x 30	418 x 412 x 25 x 30	418 x 417 x 30 x 30	418 x 422 x 35 x 30
	418 x 427 x 40 x 30				
408	408 x 417 x 30 x 25	408 x 422 x 35 x 25			
398	398 x 412 x 25 x 20	398 x 417 x 30 x 20			

Please contact us in advance to order all sizes.





# Rolling Tolerances

# Worldwide Capability

- ASTM A6
- EN10034
- JIS G 3192

## Certificate

- Bearing Piles: Grade S450J0 Steel Bearing Piles in Hong Kong
- CE Mark  
Factory Production Control Certificate (FPC) based on Construction Products Regulation -CPR 305/2011/EU
- FPC based on BC1: 2012, Singapore
- IS (Indian Standards)
- ISO9001
- JIS (Japanese Industrial Standards)
- MS (Malaysian Standards; SIRIM Certification)

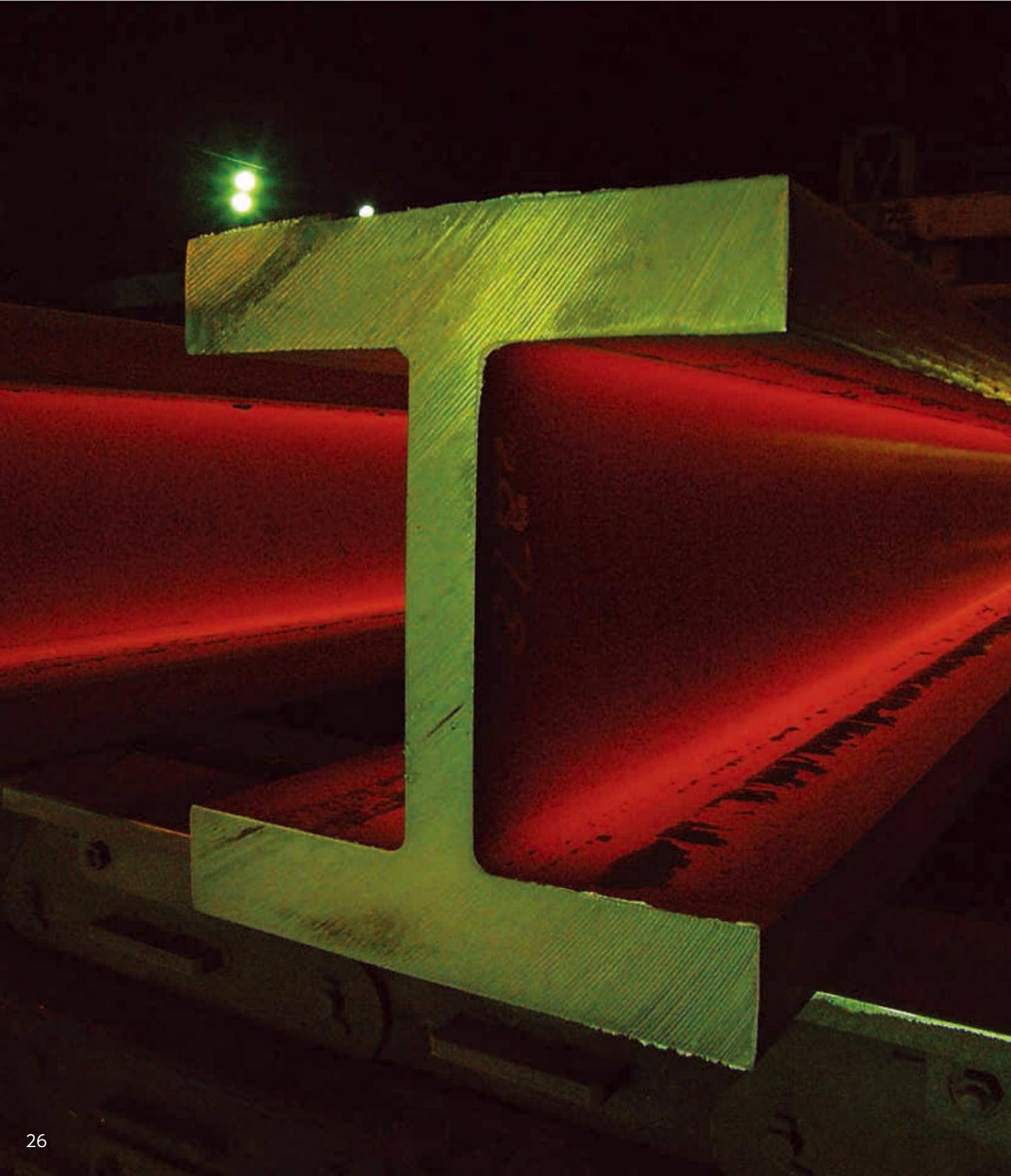
### Classification Society Standards

- ABS (American Bureau of Shipping, USA)
- BV (Bureau Veritas, France)
- CR (CR Classification Society , Taiwan)
- DNV GL (Det Norske Veritas, Germanischer Lloyd, Norway Germany)
- KR (Korean Resister of Shipping, Korea)
- LR (Lloyd's Register of Shipping, United Kingdom)
- NK (Nippon Kaiji Kyokai, Japan)

				Section Profile							
				ASTM	BS	HE IPE	JIS	HC400	NSHYPER BEAM™		
				Product Availability	Page 14	Page 15	Page 16	Page 17	Page 19	Page 20-23	
Dimensions and Properties				Page 27-36	Page 37-39	Page 40-42	Page 43-44	Page 45-47	Page 48-103		
Steel Grade	ASTM	A36		Page 6-7	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>		<i>e</i>	
		A572 Gr50			<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	
		A992			<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	
	EN	EN10025-2	S235	JR	Page 8-9	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>
				J0		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>
			J2*	<i>e</i>		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	
			S275	JR		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>
				J0		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>
			J2*	<i>e</i>		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	
	S355	JR	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>			
		J0	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>			
	J2*	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>				
	K2*	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>				
	EN10025-4	S460M	Please contact us in advance to order these combinations								
	EN10225	S355G11+M	Please contact us in advance to order these combinations								
JIS	JIS G 3101	SS400		Page 10	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	
		SM400A	<i>e</i>		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>		
			<i>e</i>		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>		
	<i>e</i>		<i>e</i>		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>			
	SM400B	<i>e</i>	<i>e</i>		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>			
		<i>e</i>	<i>e</i>		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>			
		<i>e</i>	<i>e</i>		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>			
	SM490A	<i>e</i>	<i>e</i>		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>			
		<i>e</i>	<i>e</i>		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>			
<i>e</i>		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					
SM490B	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					
	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					
	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					
SM490YA	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					
	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					
	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					
SM490YB	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					
	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					
	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					
JIS G 3136	SN400A		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					
	SN400B		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					
	SN490B		<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>					

"e" stands for "experience" by NIPPON STEEL in the past projects.  
 □ : Available combinations  
 \* Please contact us in advance to order "J2, K2" grade with flange greater than 40mm thick.

# Dimensions and Properties



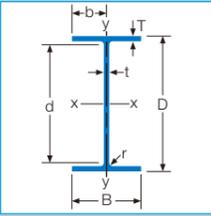
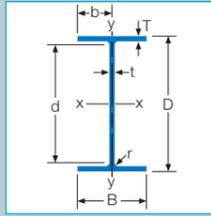
## ASTM [Imperial Unit]

Nominal Size [Imperial Unit]	Mass per Foot [lbs/ft]
W40 (x 16) x	199 215 249 277 297 324 <u>362</u> <u>372</u> <u>397</u> <u>431</u> <u>503</u> <u>593</u>
W40 (x 12) x	149 167 183 211 235 264 278 294 327 331 <u>392</u>
W36 (x 16.5) x	231 247 262 282 302 330 <u>361</u> <u>395</u> <u>441</u> <u>487</u> <u>529</u> <u>652</u>
W36 (x 12) x	135 150 160 170 182 194 210 232 256 286*1 318*1 350*1 387*1
W33 (x 15.75) x	201 221 241
W33 (x 11.5) x	118 130 141 152 169
W30 (x 15) x	<u>173</u> <u>191</u> <u>211</u> <u>235</u>
W30 (x 10.5) x	90 99 108 116 124 132 148
W27 (x 14) x	146 161 178 194 217
W27 (x 10) x	84 94 102 114 129
W24 (x 12.75) x	104 117 131 146 162 176 192
W24 (x 9) x	68 76 84 94 103
W24 (x 7) x	55 62
W21 (x 12.25) x	101 111 122 132 147 166 182
W21 (x 8.25) x	48 55 62 68 73 83 93
W21 (x 6.5) x	44 50 57
W18 (x 11) x	76 86 97 106 119 143 158 175 192
W18 (x 7.5) x	50 55
W18 (x 6) x	40 46
W16 (x 10.25) x	67 77
W16 (x 7) x	40 45 50 57
W16 (x 5.5) x	26 31
W14 (x 16) x	145 159 176 193 211 233 257 283 311 342 370 398 426 455
	500 550 605 665 730
W14 (x 14.5) x	90 99 109 120 132
W14 (x 6.75) x	30 34 38
W14 (x 5) x	22 26
W12 (x 12) x	65 72 79 87 96 106 120 136 152 170 190 <u>210</u> <u>230</u> <u>252</u>
	<u>279</u> <u>305</u> <u>336</u>
W12 (x 8) x	<u>40</u> <u>45</u> <u>50</u>
W10 (x 10) x	49 54 60 68
W10 (x 8) x	<u>33</u> <u>39</u> <u>45</u>
W10 (x 5.75) x	<u>22</u> <u>26</u> <u>30</u>
W8 (x 8) x	31 35 40 48 58 67
W8 (x 6.5) x	<u>24</u> <u>28</u>
W8 (x 5.25) x	<u>18</u> <u>21</u>
W6 (x 6) x	15 20 25
HP14 x	<u>73</u> <u>89</u> <u>102</u> <u>117</u>
HP12 x	53 63 74 84

Please contact us in advance to order these underlined sizes.  
 \*1: Dimensions of based on NIPPON STEEL's standard

ASTM [Imperial Unit]

Dimensions and Properties



ASTM [Imperial Unit]

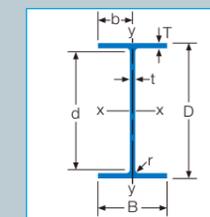
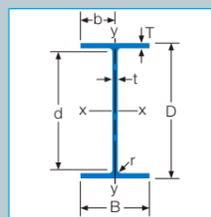
Nominal Size	Mass per Foot lbs	Depth of Section D inch	Width of Section B inch	Thickness		Root Radius r inch	Area of Section A inch <sup>2</sup>	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus			
				Web t inch	Flange T inch			Axis x-x I <sub>x</sub> inch <sup>4</sup>	Axis y-y I <sub>y</sub> inch <sup>4</sup>	Axis x-x r <sub>x</sub> inch	Axis y-y r <sub>y</sub> inch	Axis x-x Z <sub>x</sub> inch <sup>3</sup>	Axis y-y Z <sub>y</sub> inch <sup>3</sup>	Axis x-x Z <sub>x</sub> inch <sup>3</sup>	Axis y-y Z <sub>y</sub> inch <sup>3</sup>		
																Web t inch	Flange T inch
W40 x 16 x	593 *	593	42.99	16.690	1.790	3.230	1.181	174.4	50,400	2,520	17.0	3.80	2,340	302	2,760	481	
	503 *	503	42.05	16.415	1.535	2.755	1.181	147.8	41,600	2,040	16.8	3.72	1,980	249	2,310	394	
	431 *	431	41.26	16.220	1.340	2.360	1.181	126.7	34,800	1,690	16.6	3.65	1,690	208	1,960	328	
	397 *	397	40.95	16.120	1.220	2.200	1.181	117.0	32,000	1,540	16.5	3.63	1,560	191	1,800	300	
	372 *	372	40.63	16.065	1.160	2.045	1.181	109.4	29,600	1,420	16.4	3.60	1,460	177	1,680	277	
	362 *	362	40.55	16.020	1.120	2.010	1.181	107.0	28,900	1,380	16.4	3.59	1,420	173	1,640	270	
	324	324	40.16	15.910	1.000	1.810	1.181	95.3	25,600	1,220	16.4	3.58	1,280	153	1,460	239	
	297	297	39.84	15.825	0.930	1.650	1.181	87.4	23,200	1,090	16.3	3.54	1,170	138	1,330	215	
	277	277	39.69	15.830	0.830	1.575	1.181	81.3	21,900	1,040	16.4	3.58	1,100	132	1,250	204	
	249	249	39.38	15.750	0.750	1.420	1.181	73.3	19,600	926	16.3	3.56	993	118	1,120	182	
	215	215	38.98	15.750	0.650	1.220	1.181	63.3	16,700	796	16.3	3.55	859	101	964	156	
	199	199	38.67	15.750	0.650	1.065	1.181	58.4	14,900	695	16.0	3.45	770	88.2	869	137	
	W40 x 12 x	392 *	392	41.57	12.360	1.415	2.520	1.181	115.3	29,900	803	16.1	2.64	1,440	130	1,710	212
		331	331	40.79	12.165	1.220	2.125	1.181	97.5	24,700	644	15.9	2.57	1,210	106	1,430	172
327		327	40.79	12.130	1.180	2.130	1.181	95.9	24,500	640	16.0	2.58	1,200	105	1,410	170	
294		294	40.39	12.010	1.060	1.930	1.181	86.2	21,900	562	15.9	2.55	1,080	93.5	1,270	150	
278		278	40.16	11.970	1.025	1.810	1.181	81.9	20,500	521	15.8	2.52	1,020	87.1	1,190	140	
264		264	40.00	11.930	0.960	1.730	1.181	77.6	19,400	493	15.8	2.52	971	82.6	1,130	132	
235		235	39.69	11.890	0.830	1.575	1.181	68.9	17,400	444	15.9	2.54	875	74.6	1,010	118	
211		211	39.37	11.810	0.750	1.415	1.181	62.0	15,500	390	15.8	2.51	786	66.1	906	105	
183		183	38.98	11.810	0.650	1.200	1.181	53.7	13,200	331	15.7	2.48	675	56.0	774	88.3	
167		167	38.59	11.810	0.650	1.025	1.181	49.1	11,600	283	15.4	2.40	600	47.9	693	76.0	
149		149	38.20	11.810	0.630	0.830	1.181	43.8	9,800	229	15.0	2.29	513	38.8	598	62.2	
W36 x 16.5 x		652 *	652	41.05	17.575	1.970	3.540	0.945	191.7	50,500	3,230	16.2	4.10	2,460	367	2,910	581
		529 *	529	39.79	17.220	1.610	2.910	0.945	155.6	39,600	2,490	16.0	4.00	1,990	289	2,330	454
		487 *	487	39.33	17.105	1.500	2.680	0.945	143.2	36,000	2,250	15.8	3.96	1,830	263	2,130	412
	441 *	441	38.85	16.965	1.360	2.440	0.945	129.7	32,100	1,990	15.7	3.92	1,650	235	1,910	368	
	395 *	395	38.37	16.830	1.220	2.200	0.945	116.2	28,500	1,750	15.6	3.88	1,480	208	1,700	325	
	361	361	37.99	16.730	1.120	2.010	0.945	106.1	25,700	1,570	15.6	3.85	1,350	188	1,550	293	
	330	330	37.67	16.630	1.020	1.850	0.945	97.0	23,300	1,420	15.5	3.83	1,240	171	1,410	265	
	302	302	37.33	16.655	0.945	1.680	0.945	88.8	21,100	1,300	15.4	3.82	1,130	156	1,280	241	
	282	282	37.11	16.595	0.885	1.570	0.945	82.9	19,600	1,200	15.4	3.80	1,050	144	1,190	223	
	262	262	36.85	16.550	0.840	1.440	0.945	77.0	17,900	1,090	15.3	3.76	972	132	1,100	204	
	247	247	36.67	16.510	0.800	1.350	0.945	72.5	16,700	1,010	15.2	3.74	913	123	1,030	190	
	231	231	36.49	16.470	0.760	1.260	0.945	68.0	15,600	940	15.1	3.72	854	114	963	176	
	W36 x 12 x	387 * <sup>1</sup>	387	39.09	12.677	1.421	2.559	0.945	113.6	26,500	878	15.3	2.78	1,360	138.0	1,610	223
		350 * <sup>1</sup>	350	38.62	12.559	1.299	2.319	0.945	102.9	23,700	772	15.2	2.74	1,230	123.0	1,450	198
318 * <sup>1</sup>		318	38.23	12.441	1.181	2.130	0.945	93.6	21,400	689	15.1	2.71	1,120	111.0	1,310	177	
286 * <sup>1</sup>		286	37.83	12.323	1.059	1.929	0.945	84.0	19,000	605	15.0	2.68	1,000	98.3	1,170	157	
256		256	37.43	12.215	0.960	1.730	0.945	75.4	16,800	528	14.9	2.65	899	86.5	1,040	137	
232		232	37.12	12.120	0.870	1.570	0.945	68.1	15,100	468	14.9	2.62	813	77.2	940	122	
210		210	36.69	12.180	0.830	1.360	0.945	61.8	13,300	412	14.7	2.58	723	67.6	838	107	
194		194	36.49	12.115	0.765	1.260	0.945	57.0	12,200	375	14.6	2.56	668	61.9	771	97.9	
182		182	36.33	12.075	0.725	1.180	0.945	53.6	11,400	348	14.6	2.55	627	57.6	723	90.9	
170		170	36.17	12.030	0.680	1.100	0.945	50.0	10,600	320	14.5	2.53	585	53.3	673	83.9	
160		160	36.01	12.000	0.650	1.020	0.945	47.0	9,830	295	14.5	2.50	546	49.1	629	77.4	
150		150	35.85	11.975	0.625	0.940	0.945	44.2	9,120	270	14.4	2.47	509	45.1	586	71.1	
135		135	35.55	11.950	0.600	0.790	0.945	39.7	7,880	226	14.1	2.38	443	37.7	514	59.9	
W33 x 15.75 x		241	241	34.18	15.860	0.830	1.400	0.709	70.9	14,200	933	14.1	3.63	830	118	939	182
	221	221	33.93	15.805	0.775	1.275	0.709	65.0	12,800	840	14.1	3.60	757	106	856	164	
	201	201	33.68	15.745	0.715	1.150	0.709	59.1	11,500	749	14.0	3.56	685	95.2	772	147	
	169	169	33.82	11.500	0.670	1.220	0.709	49.5	9,290	310	13.7	2.50	549	53.9	629	84.4	
W33 x 11.5 x	152	152	33.49	11.565	0.635	1.055	0.709	44.7	8,160	273	13.5	2.47	487	47.2	559	73.9	
	141	141	33.30	11.535	0.605	0.960	0.709	41.6	7,450	246	13.4	2.43	448	42.7	514	66.9	
	130	130	33.09	11.510	0.580	0.855	0.709	38.3	6,710	218	13.2	2.39	406	37.9	467	59.5	
	118	118	32.86	11.480	0.550	0.740	0.709	34.7	5,900	187	13.0	2.32	359	32.6	415	51.3	

Nominal Size	Mass per Foot lbs	Depth of Section D inch	Width of Section B inch	Thickness		Root Radius r inch	Area of Section A inch <sup>2</sup>	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus			
				Web t inch	Flange T inch			Axis x-x I <sub>x</sub> inch <sup>4</sup>	Axis y-y I <sub>y</sub> inch <sup>4</sup>	Axis x-x r <sub>x</sub> inch	Axis y-y r <sub>y</sub> inch	Axis x-x Z <sub>x</sub> inch <sup>3</sup>	Axis y-y Z <sub>y</sub> inch <sup>3</sup>	Axis x-x Z <sub>x</sub> inch <sup>3</sup>	Axis y-y Z <sub>y</sub> inch <sup>3</sup>		
																Web t inch	Flange T inch
W30 x 15 x	235 *	235	31.30	15.055	0.830	1.500	0.709	69.0	11,700	855	13.0	3.52	747	114	845	175	
	211 *	211	30.94	15.105	0.775	1.315	0.709	62.0	10,300	757	12.9	3.49	664	100	750	155	
	191 *	191	30.68	15.040	0.710	1.185	0.709	56.1	9,180	673	12.8	3.46	599	89.5	674	138	
	173 *	173	30.44	14.985	0.655	1.065	0.709	50.8	8,210	598	12.7	3.43	540	79.8	606	123	
W30 x 10.5 x	148	148	30.67	10.480	0.650	1.180	0.709	43.5	6,690	227	12.4	2.29	436	43.3	501	68.0	
	132	132	30.31	10.545	0.615	1.000	0.709	38.9	5,780	196	12.2	2.25	381	37.2	438	58.5	
	124	124	30.17	10.515	0.585	0.930	0.709	36.5	5,370	181	12.1	2.23	356	34.4	409	54.0	
	116	116	30.01	10.495	0.565	0.850	0.709	34.2	4,950	164	12.0	2.19	330	31.3	379	49.3	
	108	108	29.83	10.475	0.545	0.760	0.709	31.7	4,480	146	11.9	2.15	300	27.9	347	44.0	
	99	99	29.65	10.450	0.520	0.670	0.709	29.1	4,010	128	11.7	2.10	270	24.5	313	38.7	
	90	90	29.53	10.400	0.470	0.610	0.709	26.4	3,630	115	11.7	2.08	246	22.1	284	34.7	
	W27 x 14 x	217	217	28.43	14.115	0.830	1.500	0.709	63.8	8,890	704	11.8	3.32	625	99.8	710	154
		194	194	28.11	14.035	0.750	1.340	0.709	57.0	7,840	618	11.7	3.29	558	88.1	630	136
		178	178	27.81	14.085	0.725	1.190	0.709	52.3	7,000	555	11.6	3.26	504	78.8	569	122
161		161	27.59	14.020	0.660	1.080	0.709	47.4	6,								





Dimensions and Properties



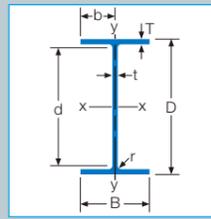
ASTM [Metric Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Area of Section A cm <sup>2</sup>	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		
				Web t mm	Flange T mm			Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	
W30 x 15 x	235 *	349.7	795.0	382.4	21.08	38.10	18.0	445.2	486,000	35,600	33.1	8.94	12,200	1,860	13,800	2,870
	211 *	314.0	785.9	383.7	19.69	33.40	18.0	400.0	428,000	31,500	32.7	8.87	10,900	1,640	12,300	2,530
	191 *	284.2	779.3	382.0	18.03	30.10	18.0	361.9	382,000	28,000	32.5	8.80	9,810	1,470	11,000	2,260
	173 *	257.5	773.2	380.6	16.64	27.05	18.0	327.7	342,000	24,900	32.3	8.71	8,840	1,310	9,930	2,010
W30 x 10.5 x	148	220.2	779.0	266.2	16.51	29.97	18.0	280.6	279,000	9,450	31.5	5.80	7,150	710	8,210	1,110
	132	196.4	769.9	267.8	15.62	25.40	18.0	251.0	241,000	8,160	31.0	5.70	6,250	609	7,180	958
	124	184.5	766.3	267.1	14.86	23.62	18.0	235.5	224,000	7,520	30.8	5.65	5,840	563	6,710	885
	116	172.6	762.3	266.6	14.35	21.59	18.0	220.6	206,000	6,840	30.5	5.57	5,400	513	6,220	807
	108	160.7	757.7	266.1	13.84	19.30	18.0	204.5	186,000	6,080	30.2	5.45	4,920	457	5,680	721
	99	147.3	753.1	265.4	13.21	17.02	18.0	187.7	167,000	5,320	29.8	5.32	4,430	401	5,130	634
	90	133.9	750.1	264.2	11.94	15.49	18.0	170.3	151,000	4,770	29.8	5.29	4,020	361	4,650	569
	217	322.9	722.1	358.5	21.08	38.10	18.0	411.6	370,000	29,300	30.0	8.44	10,200	1,640	11,600	2,520
	194	288.7	714.0	356.5	19.05	34.04	18.0	367.7	326,000	25,700	29.8	8.37	9,140	1,440	10,300	2,230
	178	264.9	706.4	357.8	18.42	30.23	18.0	337.4	292,000	23,100	29.4	8.28	8,250	1,290	9,320	1,990
161	239.6	700.8	356.1	16.76	27.43	18.0	305.8	262,000	20,700	29.3	8.22	7,480	1,160	8,420	1,790	
146	217.3	695.5	354.7	15.37	24.77	18.0	276.8	235,000	18,400	29.1	8.16	6,760	1,040	7,580	1,600	
W27 x 14 x	129	192.0	701.8	254.3	15.49	27.94	18.0	243.9	199,000	7,680	28.6	5.61	5,670	604	6,490	945
	114	169.7	693.2	255.8	14.48	23.62	18.0	216.1	171,000	6,610	28.1	5.53	4,930	517	5,640	810
	102	151.8	688.1	254.4	13.08	21.08	18.0	193.5	152,000	5,800	28.0	5.47	4,400	456	5,030	713
	94	139.9	683.8	253.7	12.45	18.92	18.0	178.7	137,000	5,170	27.7	5.38	4,010	407	4,580	637
84	125.0	678.4	253.0	11.68	16.26	18.0	160.0	119,000	4,400	27.3	5.24	3,520	348	4,030	545	
W24 x 12.75 x	192	285.7	646.9	328.9	20.57	37.08	13.0	363.2	260,000	22,000	26.8	7.79	8,050	1,340	9,170	2,070
	176	261.9	641.1	327.4	19.05	34.04	13.0	333.5	237,000	19,900	26.6	7.73	7,380	1,220	8,370	1,880
	162	241.1	635.0	329.1	17.91	30.99	13.0	307.7	215,000	18,400	26.5	7.74	6,780	1,120	7,670	1,730
	146	217.3	628.4	327.7	16.51	27.69	13.0	277.4	191,000	16,300	26.2	7.65	6,070	992	6,850	1,530
	131	194.9	621.8	326.5	15.37	24.38	13.0	248.4	167,000	14,200	26.0	7.55	5,380	868	6,060	1,340
	117	174.1	616.2	325.1	13.97	21.59	13.0	221.9	147,000	12,400	25.8	7.47	4,780	762	5,360	1,170
	104	154.8	611.1	323.9	12.70	19.05	13.0	197.4	129,000	10,800	25.6	7.39	4,230	667	4,740	1,020
W24 x 9 x	103	153.3	623.1	228.6	13.97	24.89	12.7	195.5	125,000	4,970	25.3	5.04	4,010	435	4,590	680
	94	139.9	617.5	230.3	13.08	22.23	12.7	178.7	112,000	4,530	25.1	5.04	3,640	394	4,160	615
	84	125.0	612.1	229.1	11.94	19.56	12.7	159.4	98,500	3,930	24.9	4.97	3,220	343	3,670	535
	76	113.1	607.6	228.3	11.18	17.27	12.7	144.5	87,400	3,440	24.6	4.88	2,880	301	3,280	469
W24 x 7 x	68	101.2	602.7	227.7	10.54	14.86	12.7	129.7	76,100	2,930	24.2	4.75	2,530	257	2,890	402
	62	92.27	603.0	178.8	10.92	14.99	13.0	117.4	64,600	1,440	23.5	3.50	2,140	161	2,510	258
	55	81.85	598.7	177.9	10.03	12.83	13.0	104.5	56,100	1,210	23.2	3.40	1,870	136	2,200	219
	W21 x 12.25 x	182	270.8	577.1	317.5	21.08	37.59	13.0	346.5	197,000	20,100	23.9	7.62	6,830	1,270	7,800
166		247.0	571.0	315.5	19.05	34.54	13.0	315.5	178,000	18,100	23.8	7.58	6,230	1,150	7,080	1,770
147		218.8	560.3	317.8	18.29	29.21	13.0	278.7	151,000	15,600	23.3	7.49	5,400	985	6,120	1,520
132		196.4	554.5	316.0	16.51	26.29	13.0	250.3	134,000	13,800	23.2	7.44	4,840	876	5,460	1,350
122		181.6	550.7	314.7	15.24	24.38	13.0	231.6	123,000	12,700	23.1	7.40	4,480	806	5,030	1,240
111		165.2	546.4	313.4	13.97	22.23	13.0	211.0	111,000	11,400	23.0	7.36	4,080	729	4,570	1,120
101		150.3	542.5	312.2	12.70	20.32	13.0	192.3	101,000	10,300	22.9	7.32	3,720	661	4,150	1,010
W21 x 8.25 x	93	138.4	549.1	213.9	14.73	23.62	13.0	176.1	86,200	3,870	22.1	4.69	3,140	362	3,620	569
	83	123.5	544.3	212.2	13.08	21.21	13.0	156.8	76,300	3,390	22.1	4.65	2,800	319	3,210	500
	73	108.6	539.5	210.7	11.56	18.80	13.0	138.7	66,800	2,940	21.9	4.60	2,480	279	2,830	435
	68	101.2	536.7	210.1	10.92	17.40	13.0	129.0	61,700	2,690	21.9	4.57	2,300	257	2,620	400
	62	92.27	533.1	209.3	10.16	15.62	13.0	118.1	55,400	2,390	21.7	4.50	2,080	229	2,370	356
	55	81.85	528.3	208.8	9.53	13.26	13.0	104.5	47,600	2,020	21.4	4.39	1,800	193	2,060	301
W21 x 6.5 x	48	71.43	523.7	206.8	8.89	10.92	13.0	91.0	40,000	1,610	21.0	4.21	1,530	156	1,750	244
	57	84.83	534.9	166.5	10.29	16.51	13.0	107.7	48,700	1,280	21.3	3.44	1,820	153	2,110	243
	50	74.41	529.1	165.9	9.65	13.59	13.0	94.8	41,000	1,040	20.8	3.31	1,550	125	1,810	200
	44	65.48	524.8	165.1	8.89	11.43	13.0	83.9	35,100	861	20.5	3.20	1,340	104	1,560	167

Please contact us in advance to order these sizes with "\*" mark.

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Area of Section A cm <sup>2</sup>	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		
				Web t mm	Flange T mm			Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	
W18 x 11 x	192	285.7	516.9	291.0	24.38	44.45	13.0	363.9	161,000	18,300	21.1	7.09	6,240	1,260	7,260	1,950
	175	260.4	509.0	288.9	22.61	40.39	13.0	331.0	144,000	16,300	20.9	7.01	5,650	1,130	6,540	1,740
	158	235.1	500.9	287.0	20.57	36.58	13.0	298.7	127,000	14,400	20.7	6.95	5,090	1,010	5,850	1,550
	143	212.8	495.0	285.0	18.54	33.53	13.0	271.6	115,000	13,000	20.5	6.91	4,630	909	5,290	1,400
	119	177.1	481.8	286.1	16.64	26.92	13.0	226.5	91,300	10,500	20.1	6.82	3,790	736	4,300	1,130
	106	157.7	475.7	284.5	14.99	23.88	13.0	200.6	79,800	9,180	19.9	6.76	3,360	645	3,790	992
	97	144.4	472.2	283.1	13.59	22.10	13.0	183.9	72,900	8,370	19.9	6.75	3,090	591	3,470	907
	86	128.0	467.1	281.7	12.19	19.56	13.0	163.2	63,800	7,290	19.8	6.68	2,730	518	3,050	793
	76	113.1	462.5	280.3	10.80	17.27	13.0	143.9	55,700	6,340	19.7	6.64	2,410	453	2,680	692
	55	81.85	460.0	191.3	9.91	16.00	13.0	104.5	37,300	1,870	18.9	4.23	1,620	196	1,840	304
W18 x 7.5 x	50	74.41	456.9	190.4	9.02	14.48	13.0	94.8	33,500	1,670	18.8	4.19	1,470	175	1,660	272
	46	68.46	458.7	153.9	9.14	15.37	13.0	87.1	29,900	938	18.5	3.28	1,300	122	1,500	192
W18 x 6 x	40	59.53	454.7	152.8	8.00	13.34	13.0	76.1	25,700	795	18.4	3.23	1,130	104	1,300	163
	W16 x 10.25 x	77	114.6	419.6	261.5	11.56	19.30	13.0	145.8	46,300	5,760	17.8	6.28	2,210	440	2,470
W16 x 7 x	67	99.71	414.8	260.0	10.03	16.89	13.0	127.1	39,900	4,950	17.7	6.24	1,920	381	2,140	582
	57	84.83	417.3	180.8	10.92	18.16	13.0	108.4	31,700	1,800	17.1	4.07	1,520	199	1,730	310
	50	74.41	413.0	179.6	9.65	16.00	13.0	94.8	27,600	1,550	17.1	4.04	1,340			

## Dimensions and Properties



### ASTM [Metric Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Area of Section A cm <sup>2</sup>	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		
				Web t mm	Flange T mm			Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	
W12 x 12 x	336 *	500.0	427.2	340.0	45.09	75.06	15.2	637.4	169,000	49,400	16.3	8.80	7,910	2,910	9,880	4,480
	305 *	453.9	414.5	336.2	41.28	68.71	15.2	578.1	148,000	43,700	16.0	8.69	7,120	2,600	8,810	4,010
	279 *	415.2	402.6	333.8	38.86	62.74	15.2	528.4	130,000	39,000	15.7	8.59	6,440	2,340	7,890	3,600
	252 *	375.0	391.4	330.3	35.43	57.15	15.2	478.1	113,000	34,400	15.4	8.49	5,780	2,090	7,020	3,210
	230 *	342.3	382.3	327.5	32.64	52.58	15.2	436.8	101,000	30,900	15.2	8.41	5,260	1,890	6,330	2,900
	210 *	312.5	373.6	324.9	29.97	48.26	15.2	398.7	89,300	27,600	15.0	8.33	4,780	1,700	5,700	2,610
	190	282.8	365.3	321.8	26.92	44.07	15.2	360.0	78,700	24,500	14.8	8.25	4,310	1,520	5,100	2,340
	170	253.0	356.4	319.3	24.38	39.62	15.2	322.6	68,500	21,500	14.6	8.17	3,840	1,350	4,500	2,060
	152	226.2	348.2	317.0	22.10	35.56	15.2	288.4	59,600	18,900	14.4	8.10	3,420	1,190	3,980	1,820
	136	202.4	340.6	315.0	20.07	31.75	15.2	257.4	51,800	16,600	14.2	8.02	3,040	1,050	3,500	1,610
	120	178.6	333.2	312.9	18.03	28.07	15.2	227.7	44,600	14,400	14.0	7.94	2,680	917	3,050	1,400
	106	157.7	327.4	310.4	15.49	25.15	15.2	201.3	38,800	12,500	13.9	7.89	2,370	808	2,680	1,230
	96	142.9	322.8	308.9	13.97	22.86	15.2	181.9	34,700	11,200	13.8	7.86	2,150	727	2,410	1,110
	87	129.5	318.3	308.0	13.08	20.57	15.2	165.2	30,800	10,000	13.7	7.79	1,940	651	2,160	990
	79	117.6	314.5	306.8	11.94	18.67	15.2	149.7	27,600	8,990	13.6	7.75	1,750	586	1,950	891
	72	107.1	311.2	305.8	10.92	17.02	15.2	136.1	24,800	8,120	13.5	7.72	1,600	531	1,770	806
	65	96.73	307.8	304.8	9.91	15.37	15.2	123.2	22,200	7,260	13.4	7.67	1,440	476	1,590	722
W10 x 10 x	68	101.2	264.2	257.3	11.94	19.56	10.2	129.0	16,300	5,560	11.2	6.56	1,240	432	1,390	656
	60	89.29	259.6	256.0	10.67	17.27	10.2	113.5	14,100	4,830	11.2	6.52	1,090	378	1,220	573
	54	80.36	256.3	254.8	9.40	15.62	10.2	101.9	12,500	4,310	11.1	6.50	979	338	1,090	513
	49	72.92	253.5	254.0	8.64	14.22	10.2	92.9	11,300	3,890	11.0	6.47	890	306	984	464
W8 x 8 x	67	99.71	228.6	210.3	14.48	23.75	10.2	127.1	11,300	3,690	9.43	5.39	990	351	1,150	536
	58	86.31	222.3	208.8	12.95	20.57	10.2	110.3	9,480	3,120	9.27	5.32	853	299	980	457
	48	71.43	215.9	206.0	10.16	17.40	10.2	91.0	7,650	2,540	9.17	5.28	709	246	803	374
	40	59.53	209.6	205.0	9.14	14.22	10.2	75.5	6,090	2,040	8.99	5.20	582	199	652	303
	35	52.09	206.2	203.7	7.87	12.57	10.2	66.5	5,270	1,770	8.91	5.16	511	174	569	264
	31	46.13	203.2	203.1	7.24	11.05	10.2	58.9	4,570	1,540	8.81	5.12	450	152	498	231
W8 x 6.5 x	28 *	41.67	204.7	166.0	7.24	11.81	10.2	53.2	4,080	901	8.76	4.11	399	109	445	166
	24 *	35.72	201.4	165.0	6.22	10.16	10.2	45.7	3,450	761	8.69	4.08	342	92.3	380	140
W8 x 5.25 x	21 *	31.25	210.3	133.9	6.35	10.16	7.6	39.7	3,130	407	8.88	3.20	298	60.8	334	93.2
	18 *	26.79	206.8	133.4	5.84	8.38	7.6	33.9	2,580	332	8.72	3.13	249	49.7	279	76.4
W6 x 6 x	25	37.20	162.1	154.4	8.13	11.56	7.6	47.4	2,230	710	6.86	3.87	275	92.0	311	140
	20	29.76	157.5	152.9	6.60	9.27	7.6	37.9	1,730	553	6.76	3.82	220	72.3	245	110
	15	22.32	152.1	152.1	5.84	6.60	7.6	28.6	1,220	388	6.53	3.68	160	51.0	178	77.9
HP14 x	117 *	174.1	360.9	378.1	20.45	20.45	15.2	221.9	50,900	18,400	15.1	9.12	2,820	976	3,190	1,500
	102 *	151.8	355.9	375.5	17.91	17.91	15.2	193.5	43,800	15,800	15.0	9.04	2,460	843	2,760	1,290
	89 *	132.4	351.3	373.3	15.62	15.62	15.2	168.4	37,600	13,600	14.9	8.97	2,140	726	2,390	1,110
	73 *	108.6	345.7	370.5	12.83	12.83	15.2	138.1	30,300	10,900	14.8	8.88	1,750	587	1,940	895
HP12 x	84	125.0	311.9	312.3	17.40	17.40	15.2	158.7	27,000	8,850	13.1	7.47	1,730	567	1,960	872
	74	110.1	308.1	310.3	15.37	15.49	15.2	140.6	23,700	7,720	13.0	7.41	1,540	498	1,730	764
	63	93.75	303.3	308.0	13.08	13.08	15.2	118.7	19,700	6,380	12.9	7.33	1,300	414	1,450	634
	53	78.87	299.2	305.9	11.05	11.05	15.2	100.0	16,400	5,280	12.8	7.27	1,090	345	1,210	527

Please contact us in advance to order these sizes with "\*" mark.

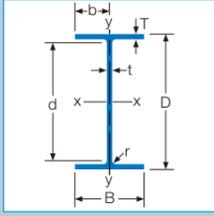
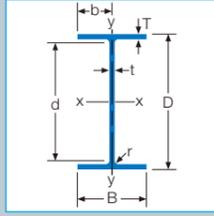
### BS [Metric Unit]

Nominal Size		Mass per Meter [kg/m]												
+ UB 1016 x 305	x	222	249	272	314	349	393	415	437	487	494	<u>584</u>		
UB 914 x 419	x	343	388											
UB 914 x 305	x	201	224	253	289									
UB 838 x 292	x	176	194	226										
UB 762 x 267	x	134	147	173	197									
UB 686 x 254	x	125	140	152	170									
UB 610 x 305	x	149	179	238										
UB 610 x 229	x	101	113	125	140									
UB 533 x 210	x	82	92	101	109	122								
UB 457 x 191	x	67	74	82										
UB 457 x 152	x	52	60	67	74	82								
UB 406 x 178	x	60	67	74										
UB 406 x 140	x	39	46											
UB 356 x 171	x	45	51	57	67									
UB 356 x 127	x	33	39											
UB 305 x 165	x	40	46	54										
UB 254 x 146	x	31	37	43										
UB 203 x 133	x	25	30											
UB 203 x 102	x	23												
UC 356 x 406	x	235	287	340	393	467	551	634						
UC 356 x 368	x	129	153	177	202									
UC 305 x 305	x	97	118	137	158	198	240	283						
UC 254 x 254	x	73	89	107										
UC 203 x 203	x	46	52	60	71	86								
UC 152 x 152	x	23	30	37										
UBP 356 x 368	x	<u>109</u>	<u>133</u>	<u>152</u>	<u>174</u>									
UBP 305 x 305	x	79	88	95	110	126	149	186	223					

Please contact us in advance to order these underlined sizes.

+ : These sections are in addition to the range of BS4 sections.

**Dimensions and Properties**



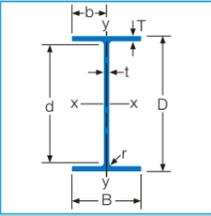
**BS [Metric Unit]**

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Area of Section A cm <sup>2</sup>	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		
				Web t mm	Flange T mm			Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>	
				+UB 1016 x 305 x	584 * 494 487 437 415 393 349 314 272 249 222			583.4 492.6 486.7 437.0 413.7 392.7 349.4 314.3 272.3 248.7 222.0	1,055.9 1,036.1 1,036.3 1,026.1 1,020.1 1,015.9 1,008.1 999.9 990.1 980.1 970.3	313.9 309.0 308.5 305.4 304.0 303.0 302.0 300.0 300.0 300.0 300.0	35.9 31.0 30.0 26.9 26.0 24.4 21.1 19.1 16.5 16.5 16.0	64.0 54.0 54.1 49.0 46.0 43.9 40.0 35.9 31.0 26.0 21.1	30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0	742.6 629.2 620.0 556.7 528.7 500.2 445.2 400.4 346.9 316.9 282.8	1,240,000 1,030,000 1,020,000 910,000 853,000 808,000 723,000 644,000 554,000 481,000 408,000	33,400 26,800 26,700 23,400 21,700 20,500 18,500 16,200 14,000 11,800 9,550
UB 914 x 419 x	388 343	388.0 343.3	921.0 418.5	420.5 19.4	21.4 32.0	24.1 21.4	494.2 437.3	720,000 626,000	45,400 39,200	38.2 37.8	9.59 9.46	15,600 13,700	2,160 1,550	17,700 15,500	3,340 2,890	
UB 914 x 305 x	289 253 224 201	289.1 253.4 224.2 200.9	926.6 918.4 910.4 903.0	307.7 305.5 304.1 303.3	19.5 17.3 15.9 15.1	32.0 27.9 23.9 20.2	19.1 19.1 19.1 19.1	368.3 322.8 285.6 255.9	504,000 436,000 376,000 325,000	15,600 13,300 11,200 9,420	37.0 36.8 36.3 35.7	6.51 6.42 6.27 6.07	10,900 9,500 8,270 7,200	1,010 871 739 621	12,600 10,900 9,530 8,350	1,600 1,370 1,160 982
UB 838 x 292 x	226 194 176	226.5 193.8 175.9	850.9 840.7 834.9	293.8 292.4 291.7	16.1 14.7 14.0	26.8 21.7 18.8	17.8 17.8 17.8	288.6 246.8 224.0	340,000 279,000 246,000	11,400 9,070 7,800	34.3 33.6 33.1	6.27 6.06 5.90	7,980 6,640 5,890	773 620 535	9,150 7,640 6,810	1,210 974 842
UB 762 x 267 x	197 173 147 134	196.8 173.0 146.9 133.9	769.8 762.2 754.0 750.0	268.0 266.7 265.2 264.4	15.6 14.3 12.8 12.0	25.4 21.6 17.5 15.5	16.5 16.5 16.5 16.5	250.6 220.4 187.2 170.6	240,000 205,000 169,000 151,000	8,170 6,850 5,460 4,790	30.9 30.5 30.0 29.7	5.71 5.58 5.40 5.30	6,230 5,390 4,470 4,020	610 514 411 362	7,170 6,200 5,160 4,640	959 807 647 570
UB 686 x 254 x	170 152 140 125	170.2 152.4 140.1 125.2	692.9 687.5 683.5 677.9	255.8 254.5 253.7 253.0	14.5 13.2 12.4 11.7	23.7 21.0 19.0 16.2	15.2 15.2 15.2 15.2	216.8 194.1 178.4 159.5	170,000 150,000 136,000 118,000	6,630 5,780 5,180 4,380	28.0 27.8 27.6 27.2	5.53 5.46 5.39 5.24	4,920 4,370 3,990 3,480	518 455 409 346	5,630 5,000 4,560 3,990	811 710 638 542
UB 610 x 305 x	238 179 149	238.1 179.0 149.2	635.8 620.2 612.4	311.4 307.1 304.8	18.4 14.1 11.8	31.4 23.6 19.7	16.5 16.5 16.5	303.3 228.1 190.0	209,000 153,000 126,000	15,800 11,400 9,310	26.3 25.9 25.7	7.23 7.07 7.00	6,590 4,930 4,110	1,020 743 611	7,490 5,550 4,590	1,570 1,140 937
UB 610 x 229 x	140 125 113 101	139.9 125.1 113.0 101.2	617.2 612.2 607.6 602.6	230.2 229.0 228.2 227.6	13.1 11.9 11.1 10.5	22.1 19.6 17.3 14.8	12.7 12.7 12.7 12.7	178.2 159.3 143.9 128.9	112,000 98,600 87,300 75,800	4,510 3,930 3,430 2,910	25.0 24.9 24.6 24.2	5.03 4.97 4.88 4.75	3,620 3,220 2,870 2,520	391 343 301 256	4,140 3,680 3,280 2,880	611 535 469 400
UB 533 x 210 x	122 109 101 92 82	122.0 109.0 101.0 92.1 82.2	544.5 539.5 536.7 533.1 528.3	211.9 210.8 210.0 209.3 208.8	12.7 11.6 10.8 10.1 9.6	21.3 18.8 17.4 15.6 13.2	12.7 12.7 12.7 12.7 12.7	155.4 138.9 128.7 117.4 104.7	76,000 66,800 61,500 55,200 47,500	3,390 2,940 2,690 2,390 2,010	22.1 21.9 21.9 21.7 21.3	4.67 4.60 4.57 4.51 4.38	2,790 2,480 2,290 2,070 1,800	320 279 256 228 192	3,200 2,830 2,610 2,360 2,060	500 436 399 356 300
UB 457 x 191 x	82 74 67	82.0 74.3 67.1	460.0 457.0 453.4	191.3 190.4 189.9	9.9 9.0 8.5	16.0 14.5 12.7	10.2 10.2 10.2	104.5 94.63 85.51	37,100 33,300 29,400	1,870 1,670 1,450	18.8 18.8 18.5	4.23 4.20 4.12	1,610 1,460 1,300	196 176 153	1,830 1,650 1,470	304 272 237
UB 457 x 152 x	82 74 67 60 52	82.1 74.2 67.2 60.1 52.3	465.8 462.0 458.0 454.6 449.8	155.3 154.4 153.8 152.9 152.4	10.5 9.6 9.0 8.1 7.6	18.9 17.0 15.0 13.3 10.9	10.2 10.2 10.2 10.2 10.2	104.5 94.48 85.55 76.23 66.64	36,600 32,700 28,900 25,500 21,400	1,180 1,050 913 795 645	18.7 18.6 18.4 18.3 17.9	3.37 3.33 3.27 3.23 3.11	1,570 1,410 1,260 1,120 950	153 136 119 104 84.6	1,810 1,630 1,450 1,290 1,100	240 213 187 163 133
UB 406 x 178 x	74 67 60	74.2 67.1 60.1	412.8 409.4 406.4	179.5 178.8 177.9	9.5 8.8 7.9	16.0 14.3 12.8	10.2 10.2 10.2	94.51 85.54 76.52	27,300 24,300 21,600	1,550 1,360 1,200	17.0 16.9 16.8	4.04 3.99 3.97	1,320 1,190 1,060	172 153 135	1,500 1,350 1,200	267 237 209
UB 406 x 140 x	46 39	46.0 39.0	403.2 398.0	142.2 141.8	6.8 6.4	11.2 10.2	10.2 10.2	58.64 49.65	15,700 12,500	538 410	16.4 15.9	3.03 2.87	778 629	75.7 57.8	888 724	118 90.8
UB 356 x 171 x	67 57 51 45	67.1 57.0 51.0 45.0	363.4 358.0 355.0 351.4	173.2 172.2 171.5 171.1	9.1 8.1 7.4 7.0	15.7 13.0 11.5 9.7	10.2 10.2 10.2 10.2	85.49 72.56 64.91 57.33	19,500 16,000 14,100 12,100	1,360 1,110 968 811	15.1 14.9 14.8 14.5	3.99 3.91 3.86 3.76	1,070 896 796 687	157 129 113 94.8	1,210 1,010 896 775	243 199 174 147

Please contact us in advance to order these sizes with "\*" mark.  
+: These sections are in addition to the range of BS4 sections.

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Area of Section A cm <sup>2</sup>	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		
				Web t mm	Flange T mm			Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>	
				UB 356 x 127 x	39 33			39.1 33.1	353.4 349.0	126.0 125.4	6.6 6.0	10.7 8.5	10.2 10.2	49.77 42.13	10,200 8,250	358 280
UB 305 x 165 x	54 46 40	54.0 46.1 40.3	310.4 306.6 303.4	166.9 165.7 165.0	7.9 6.7 6.0	13.7 11.8 10.2	8.9 8.9 51.32	68.77 9,900 8,500	1,060 896 764	13.0 13.0 12.9	3.93 3.90 3.86	754 646 560	127 108 92.6	846 720 623	196 166 142	
UB 254 x 146 x	43 37 31	43.0 37.0 31.1	259.6 256.0 251.4	147.3 146.4 146.1	7.2 6.3 6.0	12.7 10.9 8.6	7.6 7.6 39.68	54.77 47.17 4,410	6,540 5,540 4,410	677 571 448	10.9 10.8 10.5	3.52 3.48 3.36	504 433 351	92.0 78.0 61.3	566 483 393	141 119 94.1
UB 203 x 133 x	30 25	30.0 25.1	206.8 203.2	133.9 133.2	6.4 5.7	9.6 7.8	7.6 7.6	38.21 31.97	2,900 2,340	385 308	8.71 8.56	3.17 3.10	280 230	57.5 46.2	314 258	88.2 70.9
UB 203 x 102 x	23	23.1	203.2	101.8	5.4	9.3	7.6	29.40	2,100	164	8.46	2.36	207	32.2	234	49.8
UC 356 x 406 x	634 551 467 393 340 287 235	633.9 551.0 467.0 393.0 340.9 287.1 235.1	474.6 455.6 436.6 419.0 406.4 393.6 381.0	424.0 418.5 412.2 407.0 403.0 399.0 394.8	47.6 42.1 35.8 30.6 26.6 22.6 18.4	77.0 67.5 58.0 49.2 42.9 36.5 30.2	15.2 15.2 15.2 15.2 15.2 15.2 15.2	807.5 701.9 594.9 500.6 433.0 365.7 299.4	275,000 227,000 183,000 147,000 123,000 99,900 79,100	98,100 82,700 67,800 55,400 46,900 38,700 31,000	18.4 18.0 17.5 17.1 16.8 16.5 16.3	11.0 10.9 10.7 10.5 10.4 10.3 10.2	11,600 9,960 8,380 7,000 6,030 5,070 4,150	4,630 3,950 3,290 2,720 2,330 1,940 1,570	14,200 12,100 10,000 8,220 7,000 5,810 4,690	7,110 6,060 5,030 4,150 3,540 2,950 2,380
UC 356 x 368 x	202 177 153 129	201.9 177.0 152.9 129.0	374.6 368.2 362.0 355.6	374.7 372.6 370.5 368.6	16.5 14.4 12.3 10.4	27.0 23.8 20.7 17.5	15.2 15.2 15.2 15.2	257.2 225.5 194.8 164.3	66,300 57,100 48,600 40,200	23,700 20,500 17,600 14,600	16.1 15.9 15.8 15.6	9.60 9.54 9.49 9.43	3,540 3,100 2,680 2,260	1,260 1,100 948 793	3,970 3,460 2,960 2,480	1,920 1,670 1,430 1,200
UC 305 x 305 x	283 240 198 158 137 118 97	282.9 240.0 198.1 158.1 136.9 117.9 96.9	365.3 352.5 339.9 327.1 320.5 314.5 307.9	322.2 318.4 314.5 311.2 309.2 307.4 305.3	26.8 23.0 19.1 15.8 13.8 12.0 9.9	44.1 37.7 31.4 25.0 21.7 18.7 15.4	15.2 15.2 15.2 15.2 15.2 15.2 15.2	360.4 305.8 252.4 201.4 174.4 150.2 123.4	78,900 64,200 50,900 38,700 32,800 27,700 22,200	24,600 20,300 16,300 12,600 10,700 9,060 7,310	14.8 14.5 14.2 13.9 13.7 13.6 13.4	8.27 8.15 8.04 7.90 7.83 7.77 7.69	4,320 3,640 3,000 2,370 2,050 1,760 1,450	1,530 1,280 1,040 808 692 589 479	5,110 4,250 3,440 2,680 2,300 1,960 1,590	2,340 1,950 1,580 1,230 1,050 895 726
UC 254 x 254 x	107 89 73	107.1 88.9 73.1	266.7 260.3 254.1	258.8 256.3 254.6	12.8 10.3 8.6	20.5 17.3 14.2	12.7 12.7 12.7	136.4 113.3 93.10	17,500 14,300 11,400	5,930 4,860 3,910	11.3 11.2 11.1	6.59 6.55 6.48	1,310 1,100 898	458 379 307	1,480 1,22	

Dimensions and Properties



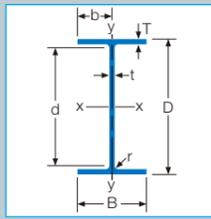
HE & IPE [Metric Unit]

Section						
HE 1000	HE 1000 AA	HE 1000 A	HE 1000 B	HE 1000 M		
900	<i>HE 900 AA</i> *1	<i>HE 900 A</i> *1	<i>HE 900 B</i> *1	<i>HE 900 M</i> *1		
800	<i>HE 800 AA</i> *1	<i>HE 800 A</i> *1	<i>HE 800 B</i> *1	<i>HE 800 M</i> *1		
700	<i>HE 700 AA</i> *1	<i>HE 700 A</i> *1	<i>HE 700 B</i> *1	<i>HE 700 M</i> *1		
650	<i>HE 650 AA</i> *1	<i>HE 650 A</i> *1	<i>HE 650 B</i> *1	<i>HE 650 M</i> *1		
600	<i>HE 600 AA</i> *1	<i>HE 600 A</i> *1	<i>HE 600 B</i> *1	<i>HE 600 M</i> *1		
550	<i>HE 550 AA</i> *1	<i>HE 550 A</i> *1	<i>HE 550 B</i> *1	<i>HE 550 M</i> *1		
500	<i>HE 500 AA</i> *1	<i>HE 500 A</i> *1	<i>HE 500 B</i> *1	<i>HE 500 M</i> *1		
450	<i>HE 450 AA</i> *1	<i>HE 450 A</i> *1	<i>HE 450 B</i> *1	<i>HE 450 M</i> *1		
400	<i>HE 400 AA</i> *1	<i>HE 400 A</i> *1	<i>HE 400 B</i> *1	<i>HE 400 M</i> *1		
IPE 750	<i>IPE 750 x 134</i> *2	<i>IPE 750 x 147</i> *2	<i>IPE 750 x 173</i> *2	<i>IPE 750 x 196</i> *2		
600	<i>IPE 600</i> *2					
550	<i>IPE 550</i> *2					
500	<i>IPE 500</i> *2					
450	<i>IPE 450</i> *2					
400	<i>IPE 400</i> *2					
200	<i>IPE 200</i> *2					
1000 x 400	<i>1000 x 400 x 321</i> *3	<i>1000 x 400 x 371</i> *3	<i>1000 x 400 x 411</i> *3	<i>1000 x 400 x 442</i> *3	<i>1000 x 400 x 483</i> *3	<i>1000 x 400 x 539</i> *3
	<i>1000 x 400 x 554</i> *3	<i>1000 x 400 x 591</i> *3	<i>1000 x 400 x 642</i> *3	<i>1000 x 400 x 748</i> *3	<i>1000 x 400 x 883</i> *3	
1000 x 300	<i>1000 x 300 x 222</i> *3	<i>1000 x 300 x 249</i> *3	<i>1000 x 300 x 393</i> *3	<i>1000 x 300 x 415</i> *3	<i>1000 x 300 x 437</i> *3	<i>1000 x 300 x 494</i> *3
	<i>1000 x 300 x 584</i> *3					
900 x 400	<i>900 x 400 x 341</i> *3	<i>900 x 400 x 363</i> *3	<i>900 x 400 x 385</i> *3			
900 x 300	<i>900 x 300 x 194</i> *3	<i>900 x 300 x 387</i> *3	<i>900 x 300 x 462</i> *3			
800 x 300	<i>800 x 300 x 168</i> *3					
750 x 250	<i>750 x 250 x 137</i> *3	<i>750 x 250 x 147</i> *3	<i>750 x 250 x 174</i> *3	<i>750 x 250 x 197</i> *3		
650 x 300	<i>650 x 300 x 135</i> *3					
600 x 300	<i>600 x 300 x 125</i> *3					
600 x 200	<i>600 x 200 x 105</i> *3	<i>600 x 200 x 152</i> *3				
550 x 300	<i>550 x 300 x 116</i> *3					
550 x 200	<i>550 x 200 x 89</i> *3	<i>550 x 200 x 120</i> *3				
500 x 300	<i>500 x 300 x 104</i> *3					
500 x 200	<i>500 x 200 x 78</i> *3	<i>500 x 200 x 105</i> *3				
450 x 300	<i>450 x 300 x 96</i> *3					
450 x 200	<i>450 x 200 x 65</i> *3	<i>450 x 200 x 91</i> *3				
400 x 300	<i>400 x 300 x 89</i> *3					
400 x 200	<i>400 x 200 x 56</i> *3	<i>400 x 200 x 74</i> *3				
200 x 100	<i>200 x 100 x 17</i> *3	<i>200 x 100 x 18</i> *3	<i>200 x 100 x 25</i> *3			

Please contact us in advance to order these underlined sizes  
 \*1: Dimensions of HE except for root radius referred to former standard EU 53-62  
 \*2: Dimensions of IPE except for root radius referred to former standard EU 19-57  
 \*3: Dimensions based on NIPPON STEEL's standard  
 Root radius referred to dimension and properties on page 41-42

Nominal Size	Mass per Meter	Depth of section	Width of section	Thickness		Root Radius	Area of Section	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus			
				Web t mm	Flange T mm			Axis x-x Ix cm <sup>4</sup>	Axis y-y Iy cm <sup>4</sup>	Axis x-x rx cm	Axis y-y ry cm	Axis x-x Zx cm <sup>3</sup>	Axis y-y Zy cm <sup>3</sup>	Axis x-x Sx cm <sup>3</sup>	Axis y-y Sy cm <sup>3</sup>		
HE 1000	HE 1000 M	349	1,008	302	21.0	40.0	30.0	444.2	722,000	18,500	40.3	6.45	14,300	1,220	16,600	1,940	
	HE 1000 B	314	1,000	300	19.0	36.0	30.0	400.0	645,000	16,300	40.1	6.38	12,900	1,090	14,900	1,720	
	HE 1000 A	272	990	300	16.5	31.0	30.0	346.8	554,000	14,000	40.0	6.35	11,200	934	12,800	1,470	
	HE 1000 AA	222	970	300	16.0	21.0	30.0	282.2	406,000	9,500	38.0	5.80	8,380	633	9,780	1,020	
HE 900	HE 900 M	*1 *	329	910	302	21.0	40.0	18.0	418.7	562,000	18,400	36.6	6.64	12,400	1,220	14,200	1,920
	HE 900 B	*1 *	288	900	300	18.5	35.0	18.0	366.3	486,000	15,800	36.4	6.57	10,800	1,050	12,400	1,650
	HE 900 A	*1 *	248	890	300	16.0	30.0	18.0	315.6	414,000	13,500	36.2	6.55	9,300	902	10,600	1,410
	HE 900 AA	*1 *	194	870	300	15.0	20.0	18.0	247.3	293,000	9,030	34.4	6.04	6,730	602	7,800	950
HE 800	HE 800 M	*1 *	313	814	303	21.0	40.0	18.0	399.3	436,000	18,600	33.1	6.83	10,700	1,230	12,300	1,920
	HE 800 B	*1 *	258	800	300	17.5	33.0	18.0	329.2	353,000	14,900	32.7	6.72	8,820	993	10,100	1,540
	HE 800 A	*1 *	220	790	300	15.0	28.0	18.0	280.9	297,000	12,600	32.5	6.70	7,520	842	8,520	1,300
	HE 800 AA	*1 *	168	770	300	14.0	18.0	18.0	213.5	203,000	8,120	30.8	6.17	5,260	541	6,050	849
HE 700	HE 700 M	*1 *	298	716	304	21.0	40.0	18.0	379.5	326,000	18,800	29.3	7.04	9,100	1,240	10,400	1,920
	HE 700 B	*1 *	238	700	300	17.0	32.0	18.0	302.9	254,000	14,400	28.9	6.90	7,240	962	8,220	1,490
	HE 700 A	*1 *	202	690	300	14.5	27.0	18.0	257.0	212,000	12,200	28.7	6.88	6,140	811	6,920	1,250
	HE 700 AA	*1 *	147	670	300	13.0	17.0	18.0	187.5	139,000	7,670	27.3	6.39	4,160	511	4,730	795
HE 650	HE 650 M	*1 *	291	668	305	21.0	40.0	18.0	370.3	279,000	19,000	27.4	7.16	8,350	1,240	9,560	1,930
	HE 650 B	*1 *	222	650	300	16.0	31.0	18.0	282.9	208,000	14,000	27.1	7.03	6,390	932	7,220	1,440
	HE 650 A	*1 *	187	640	300	13.5	26.0	18.0	238.2	172,000	11,700	26.9	7.01	5,390	781	6,040	1,200
	HE 650 AA	*1 *	135	620	300	12.5	16.0	18.0	172.3	111,000	7,210	25.4	6.47	3,580	481	4,060	746
HE 600	HE 600 M	*1 *	282	620	305	21.0	40.0	13.0	358.9	234,000	19,000	25.5	7.27	7,550	1,240	8,650	1,920
	HE 600 B	*1 *	208	600	300	15.5	30.0	13.0	265.2	168,000	13,500	25.2	7.14	5,590	901	6,300	1,380
	HE 600 A	*1 *	174	590	300	13.0	25.0	13.0	221.7	138,000	11,300	24.9	7.13	4,670	751	5,220	1,150
	HE 600 AA	*1 *	125	571	300	12.0	15.5	13.0	159.3	88,500	6,980	23.6	6.62	3,100	466	3,500	718
HE 550	HE 550 M	*1 *	274	572	306	21.0	40.0	13.0	349.6	195,000	19,100	23.6	7.40	6,830	1,250	7,820	1,930
	HE 550 B	*1 *	196	550	300	15.0	29.0	13.0	249.3	134,000	13,100	23.2	7.24	4,870	871	5,480	1,330
	HE 550 A	*1 *	162	540	300	12.5	24.0	13.0	207.0	109,000	10,800	23.0	7.23	4,040	721	4,510	1,100
	HE 550 AA	*1 *	116	522	300	11.5	15.0	13.0	148.0	70,100	6,760	21.8	6.76	2,690	450	3,010	693
HE 500	HE 500 M	*1 *	266	524	306	21.0	40.0	13.0	339.5	160,000	19,100	21.7	7.51	6,100	1,250	6,990	1,920
	HE 500 B	*1 *	184	500	300	14.5	28.0	13.0	233.8	105,000	12,600	21.2	7.34	4,200	841	4,710	1,280
	HE 500 A	*1 *	151	490	300	12.0	23.0	13.0	192.7	84,800	10,400	21.0	7.33	3,460	691	3,850	1,050
	HE 500 AA	*1 *	104	472	300	10.5	14.0	13.0	132.1	52,400	6,310	19.9	6.91	2,220	420	2,470	643
HE 450	HE 450 M	*1 *	260	478	307	21.0	40.0	13.0	330.6	130,000	19,300	19.8	7.64	5,430	1,260	6,240	1,930
	HE 450 B	*1 *	167	450	300	14.0	26.0	13.0	213.2	78,100	11,700	19.1	7.41	3,470	781	3,890	1,190
	HE 450 A	*1 *	136	440	300	11.5	21.0	13.0	173.2	61,900	9,460	18.9	7.39	2,820	630	3,120	959
	HE 450 AA	*1 *	96	425	300	10.0	13.5	13.0	122.3	40,100	6,080	18.1	7.05	1,890	405	2,090	619
HE 400	HE 400 M	*1 *	252	432	307	21.0	40.0	12.0	320.8	103,000	19,300	17.9	7.76	4,750	1,260	5,490	1,930
	HE 400 B	*1 *	151	400	300	13.5	24.0	12.0	192.8	56,200	10,800	17.1	7.49	2,810	721	3,150	1,100
	HE 400 A	*1 *	121	390	300	11.0	19.0	12.0	154.0	43,600	8,550	16.8	7.45	2,240	570	2,480	867
	HE 400 AA	*1 *	88	378	300	9.5	13.0	12.0	112.7	29,800	5,850	16.3	7.21	1,580	390	1,740	594
IPE750	IPE 750 x 196	*2 *	197	770	268	15.6	25.4	18.0	251.1	241,000	8,180	31.0	5.71	6,250	610	7,180	959
	IPE 750 x 173	*2 *	174	762	267	14.4	21.6	18.0	221.6	206,000	6,870	30.5	5.57	5,410	515	6,230	810
	IPE 750 x 147	*2 *	147	753	265	13.2	17.0	18.0	187.8	166,000	5,290	29.8	5.31	4,420	399	5,120	631
	IPE 750 x 134	*2 *	134	750	264	12.0	15.5	18.0	170.9	151,000	4,770	29.7	5.28	4,030	361	4,660	569
IPE 600	IPE 600	*2 *	120	600	220	12.0	19.0	13.0	152.5	89,400	3,380	24.2	4.71	2,980			

**Dimensions and Properties**



**HE & IPE [Metric Unit]**

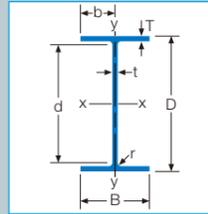
Nominal Size	Mass per Meter	Depth of section	Width of section	Thickness		Root Radius	Area of Section	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		
				Web	Flange			Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	
	kg/m	D mm	B mm	t mm	T mm	r mm	A cm <sup>2</sup>	I <sub>x</sub> cm <sup>4</sup>	I <sub>y</sub> cm <sup>4</sup>	r <sub>x</sub> cm	r <sub>y</sub> cm	Z <sub>x</sub> cm <sup>3</sup>	Z <sub>y</sub> cm <sup>3</sup>	S <sub>x</sub> cm <sup>3</sup>	S <sub>y</sub> cm <sup>3</sup>	
1000 x 400	1000 x 400 x 883 *	883	1,092	424	45.5	82.0	30.0	1,125.3	2,100,000	105,000	43.2	9.66	38,400	4,950	45,300	7,870
	1000 x 400 x 748 *	748	1,068	417	39.0	70.0	30.0	953.4	1,730,000	85,100	42.6	9.45	32,400	4,080	37,900	6,460
	1000 x 400 x 642 *	642	1,048	412	34.0	60.0	30.0	817.6	1,450,000	70,300	42.1	9.27	27,700	3,410	32,100	5,380
	1000 x 400 x 591 *	591	1,040	409	31.0	55.9	30.0	752.7	1,330,000	64,000	42.1	9.22	25,600	3,130	29,500	4,920
	1000 x 400 x 554 *	554	1,032	408	29.5	52.0	30.0	705.8	1,230,000	59,100	41.8	9.15	23,900	2,900	27,500	4,550
	1000 x 400 x 539 *	539	1,030	407	28.4	51.1	30.0	687.2	1,200,000	57,600	41.8	9.16	23,400	2,830	26,800	4,440
	1000 x 400 x 483 *	483	1,020	404	25.4	46.0	30.0	615.1	1,070,000	50,700	41.7	9.08	20,900	2,510	23,900	3,920
	1000 x 400 x 442 *	442	1,012	402	23.6	41.9	30.0	563.7	967,000	45,500	41.4	8.98	19,100	2,260	21,800	3,530
	1000 x 400 x 411 *	411	1,008	402	21.0	40.0	30.0	524.2	910,000	43,400	41.7	9.10	18,100	2,160	20,400	3,350
	1000 x 400 x 371 *	371	1,000	400	19.0	36.0	30.0	472.0	812,000	38,500	41.5	9.03	16,200	1,920	18,300	2,980
	1000 x 400 x 321 *	321	990	400	16.5	31.0	30.0	408.8	696,000	33,100	41.3	9.00	14,100	1,660	15,800	2,550
1000 x 300	1000 x 300 x 584 *	584	1,056	314	36.0	64.0	30.0	743.7	1,250,000	33,400	40.9	6.70	23,600	2,130	28,000	3,470
	1000 x 300 x 494 *	494	1,036	309	31.0	54.0	30.0	629.1	1,030,000	26,800	40.4	6.53	19,800	1,740	23,400	2,820
	1000 x 300 x 437 *	437	1,026	305	26.9	49.0	30.0	556.3	909,000	23,400	40.4	6.48	17,700	1,530	20,700	2,460
	1000 x 300 x 415 *	415	1,020	304	26.0	46.0	30.0	528.7	853,000	21,700	40.2	6.41	16,700	1,430	19,600	2,300
	1000 x 300 x 393 *	393	1,016	303	24.4	43.9	30.0	500.2	808,000	20,500	40.2	6.40	15,900	1,350	18,500	2,170
	1000 x 300 x 249 *	249	980	300	16.5	26.0	30.0	316.8	481,000	11,800	39.0	6.09	9,820	784	11,300	1,240
	1000 x 300 x 222 *	222	970	300	16.0	21.0	30.0	282.2	406,000	9,500	38.0	5.80	8,380	633	9,780	1,020
900 x 400	900 x 400 x 385 *	385	921	420	21.3	36.6	18.0	490.8	715,000	45,300	38.2	9.60	15,500	2,160	17,500	3,330
	900 x 400 x 363 *	363	916	419	20.3	34.3	18.0	462.2	667,000	42,100	38.0	9.55	14,600	2,010	16,400	3,100
	900 x 400 x 341 *	341	912	418	19.3	32.0	18.0	434.0	621,000	39,000	37.8	9.48	13,600	1,870	15,400	2,880
900 x 300	900 x 300 x 462 *	462	938	312	30.0	54.0	18.0	588.7	807,000	27,500	37.0	6.84	17,200	1,760	20,200	2,820
	900 x 300 x 387 *	387	922	307	25.0	46.0	18.0	492.7	666,000	22,300	36.8	6.73	14,500	1,450	16,800	2,300
	900 x 300 x 194 *	194	870	300	15.0	20.0	18.0	247.3	293,000	9,030	34.4	6.04	6,730	602	7,800	950
800 x 300	800 x 300 x 168 *	168	770	300	14.0	18.0	18.0	213.5	203,000	8,120	30.8	6.17	5,260	541	6,050	849
750 x 250	750 x 250 x 197 *	197	770	268	15.6	25.4	18.0	251.1	241,000	8,180	31.0	5.71	6,250	610	7,180	959
	750 x 250 x 174 *	174	762	267	14.4	21.6	18.0	221.6	206,000	6,870	30.5	5.57	5,410	515	6,230	810
	750 x 250 x 147 *	147	753	265	13.2	17.0	18.0	187.8	166,000	5,290	29.8	5.31	4,420	399	5,120	631
	750 x 250 x 137 *	137	753	263	11.5	17.0	18.0	174.9	160,000	5,170	30.3	5.44	4,260	393	4,880	614
650 x 300	650 x 300 x 135 *	135	620	300	12.5	16.0	18.0	172.3	111,000	7,210	25.4	6.47	3,580	481	4,060	746
600 x 300	600 x 300 x 125 *	125	571	300	12.0	15.5	13.0	159.3	88,500	6,980	23.6	6.62	3,100	466	3,500	718
600 x 200	600 x 200 x 152 *	152	610	224	15.0	24.0	13.0	193.3	116,000	4,510	24.5	4.83	3,790	403	4,380	635
	600 x 200 x 105 *	105	597	220	9.8	17.5	13.0	133.5	80,300	3,110	24.5	4.83	2,690	283	3,050	438
550 x 300	550 x 300 x 116 *	116	522	300	11.5	15.0	13.0	148.0	70,100	6,760	21.8	6.76	2,690	450	3,010	693
550 x 200	550 x 200 x 120 *	120	556	212	12.7	20.2	13.0	152.6	76,900	3,220	22.5	4.59	2,770	304	3,180	476
	550 x 200 x 89 *	89.3	547	210	9.0	15.7	13.0	113.8	57,800	2,430	22.5	4.62	2,110	231	2,390	358
500 x 300	500 x 300 x 104 *	104	472	300	10.5	14.0	13.0	132.1	52,400	6,310	19.9	6.91	2,220	420	2,470	643
500 x 200	500 x 200 x 105 *	105	506	202	12.0	19.0	13.0	134.4	56,600	2,620	20.5	4.41	2,240	259	2,560	406
	500 x 200 x 78 *	77.5	497	200	8.4	14.5	13.0	98.76	41,700	1,940	20.6	4.43	1,680	194	1,890	299
450 x 300	450 x 300 x 96 *	96.0	425	300	10.0	13.5	13.0	122.3	40,100	6,080	18.1	7.05	1,890	405	2,090	619
450 x 200	450 x 200 x 91 *	90.5	456	192	11.0	17.6	13.0	115.3	39,900	2,080	18.6	4.25	1,750	217	2,000	338
	450 x 200 x 65 *	65.3	447	190	7.6	13.1	13.0	83.21	28,800	1,500	18.6	4.25	1,290	158	1,450	244
400 x 300	400 x 300 x 89 *	88.5	378	300	9.5	13.0	12.0	112.7	29,800	5,850	16.3	7.21	1,580	390	1,740	594
400 x 200	400 x 200 x 74 *	73.7	404	182	9.7	15.5	12.0	93.84	25,900	1,560	16.6	4.08	1,280	172	1,460	266
	400 x 200 x 56 *	55.4	397	180	7.0	12.0	12.0	70.55	19,500	1,170	16.6	4.07	980	130	1,100	200
200 x 100	200 x 100 x 25 *	24.6	202	102	6.2	9.5	8.0	31.28	2,160	169	8.31	2.32	214	33.0	243	51.4
	200 x 100 x 18 *	17.9	197	100	4.5	7.0	8.0	22.78	1,540	117	8.22	2.27	156	23.4	176	36.1
	200 x 100 x 17 *	17.4	196	100	4.5	6.7	8.0	22.18	1,480	112	8.17	2.25	151	22.4	170	34.6

Please contact us in advance to order these sizes with "\*" mark.  
 \*1: Dimensions of HE except for root radius referred to former standard EU 53-62  
 \*2: Dimensions of IPE except for root radius referred to former standard EU 19-57  
 \*3: Dimensions of based on NIPPON STEEL's standard

**JIS [Metric Unit]**

Nominal Size					
900 x 300	210 (H890 x 299 x 15 x 23)	240 (H900 x 300 x 16 x 28)	283 (H912 x 302 x 18 x 34)	304 (H918 x 303 x 19 x 37)	
800 x 300	188 (H792 x 300 x 14 x 22)	207 (H800 x 300 x 14 x 26)	238 (H808 x 302 x 16 x 30)		
700 x 300	163 (H692 x 300 x 13 x 20)	182 (H700 x 300 x 13 x 24)			
600 x 300	133 (H582 x 300 x 12 x 17)	147 (H588 x 300 x 12 x 20)	170 (H594 x 302 x 14 x 23)		
600 x 200	92.5 (H596 x 199 x 10 x 15)	103 (H600 x 200 x 11 x 17)			
500 x 300	111 (H482 x 300 x 11 x 15)	125 (H488 x 300 x 11 x 18)			
500 x 200	77.9 (H496 x 199 x 9 x 14)	88.2 (H500 x 200 x 10 x 16)			
450 x 300	121 (H440 x 300 x 11 x 18)				
450 x 200	65.1 (H446 x 199 x 8 x 12)	74.9 (H450 x 200 x 9 x 14)			
400 x 400	172 (H400 x 400 x 13 x 21)	232 (H414 x 405 x 18 x 28)	283 (H428 x 407 x 20 x 35)	415 (H458 x 417 x 30 x 50)	605 (H498 x 432 x 45 x 70)
400 x 300	105 (H390 x 300 x 10 x 16)				
400 x 200	56.1 (H396 x 199 x 7 x 11)	65.4 (H400 x 200 x 8 x 13)			
350 x 350	135 (H350 x 350 x 12 x 19)				
350 x 250	78.1 (H340 x 250 x 9 x 14)				
350 x 175	41.2 (H346 x 174 x 6 x 9)	49.4 (H350 x 175 x 7 x 11)			
300 x 300	93 (H300 x 300 x 10 x 15)				
300 x 200	55.8 (H294 x 200 x 8 x 12)				
300 x 150	32 (H298 x 149 x 5.5 x 8)	36.7 (H300 x 150 x 6.5 x 9)			
250 x 250	71.8 (H250 x 250 x 9 x 14)				
250 x 175	63.6 (H244 x 175 x 7 x 11)				
250 x 125	25.1 (H248 x 124 x 5 x 8)	29 (H250 x 125 x 6 x 9)			
200 x 200	49.9 (H200 x 200 x 8 x 12)				
200 x 150	29.9 (H194 x 150 x 6 x 9)				
200 x 100	17.8 (H198 x 99 x 4.5 x 7)	20.9 (H200 x 100 x 5.5 x 8)			
175 x 175	40.4 (H175 x 175 x 7.5 x 11)				
175 x 90	18 (H175 x 90 x 5 x 8)				
150 x 150					

## Dimensions and Properties



### JIS [Metric Unit]

Nominal Size	Mass per Meter kg/m	Depth of Section D mm	Width of Section B mm	Thickness		Root Radius r mm	Area of Section A cm <sup>2</sup>	Second Moment of Area		Radius of Gyration		Elastic Modulus			
				Web t mm	Flange T mm			Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>		
900 x 300	x 304	H918 x 303 x 19 x 37	304	918	303	19	37	18	387.4	535,000	17,200	37.2	6.67	11,700	1,140
	x 283	H912 x 302 x 18 x 34	283	912	302	18	34	18	360.1	491,000	15,700	36.9	6.59	10,800	1,040
	x 240	H900 x 300 x 16 x 28	240	900	300	16	28	18	305.8	404,000	12,600	36.4	6.43	8,990	842
	x 210	H890 x 299 x 15 x 23	210	890	299	15	23	18	266.9	339,000	10,300	35.6	6.20	7,610	687
800 x 300	x 238	H808 x 302 x 16 x 30 *	238	808	302	16	30	18	303.7	334,000	13,800	33.2	6.74	8,270	914
	x 207	H800 x 300 x 14 x 26	207	800	300	14	26	18	263.5	286,000	11,700	33.0	6.67	7,160	781
	x 188	H792 x 300 x 14 x 22 *	188	792	300	14	22	18	239.5	248,000	9,920	32.2	6.44	6,270	661
700 x 300	x 182	H700 x 300 x 13 x 24	182	700	300	13	24	18	231.5	197,000	10,800	29.2	6.83	5,640	721
	x 163	H692 x 300 x 13 x 20 *	163	692	300	13	20	18	207.5	168,000	9,020	28.5	6.59	4,870	601
600 x 300	x 170	H594 x 302 x 14 x 23 *	170	594	302	14	23	13	217.1	134,000	10,600	24.8	6.98	4,500	700
	x 147	H588 x 300 x 12 x 20	147	588	300	12	20	13	187.2	114,000	9,010	24.7	6.94	3,890	601
	x 133	H582 x 300 x 12 x 17 *	133	582	300	12	17	13	169.2	98,900	7,660	24.2	6.73	3,400	511
600 x 200	x 103	H600 x 200 x 11 x 17	103	600	200	11	17	13	131.7	75,600	2,270	24.0	4.16	2,520	227
	x 92.5	H596 x 199 x 10 x 15 *	92.5	596	199	10	15	13	117.8	66,600	1,980	23.8	4.10	2,240	199
500 x 300	x 125	H488 x 300 x 11 x 18	125	488	300	11	18	13	159.2	68,900	8,110	20.8	7.14	2,820	540
	x 111	H482 x 300 x 11 x 15 *	111	482	300	11	15	13	141.2	58,300	6,760	20.3	6.92	2,420	450
500 x 200	x 88.2	H500 x 200 x 10 x 16	88.2	500	200	10	16	13	112.3	46,800	2,140	20.4	4.36	1,870	214
	x 78	H496 x 199 x 9 x 14 *	77.9	496	199	9	14	13	99.29	40,800	1,840	20.3	4.31	1,650	185
450 x 300	x 121	H440 x 300 x 11 x 18	121	440	300	11	18	13	153.9	54,700	8,110	18.9	7.26	2,490	540
450 x 200	x 75	H450 x 200 x 9 x 14	74.9	450	200	9	14	13	95.43	32,900	1,870	18.6	4.43	1,460	187
	x 65	H446 x 199 x 8 x 12 *	65.1	446	199	8	12	13	82.97	28,100	1,580	18.4	4.36	1,260	159
400 x 400	x 605	H498 x 432 x 45 x 70	605	498	432	45	70	22	770.1	298,000	94,400	19.7	11.1	12,000	4,370
	x 415	H458 x 417 x 30 x 50	415	458	417	30	50	22	528.6	187,000	60,500	18.8	10.7	8,170	2,900
	x 283	H428 x 407 x 20 x 35	283	428	407	20	35	22	360.7	119,000	39,400	18.2	10.4	5,570	1,930
	x 232	H414 x 405 x 18 x 28	232	414	405	18	28	22	295.4	92,800	31,000	17.7	10.2	4,480	1,530
	x 172	H400 x 400 x 13 x 21	172	400	400	13	21	22	218.7	66,600	22,400	17.5	10.1	3,330	1,120
400 x 300	x 105	H390 x 300 x 10 x 16	105	390	300	10	16	13	133.2	37,900	7,200	16.9	7.35	1,940	480
400 x 200	x 65	H400 x 200 x 8 x 13	65.4	400	200	8	13	13	83.37	23,500	1,740	16.8	4.56	1,170	174
	x 56	H396 x 199 x 7 x 11 *	56.1	396	199	7	11	13	71.41	19,800	1,450	16.6	4.50	999	145
350 x 350	x 135	H350 x 350 x 12 x 19	135	350	350	12	19	13	171.9	39,800	13,600	15.2	8.89	2,280	776
350 x 250	x 78	H340 x 250 x 9 x 14	78.1	340	250	9	14	13	99.53	21,200	3,650	14.6	6.05	1,250	292
350 x 175	x 49	H350 x 175 x 7 x 11	49.4	350	175	7	11	13	62.91	13,500	984	14.6	3.96	771	112
	x 41	H346 x 174 x 6 x 9 *	41.2	346	174	6	9	13	52.45	11,000	791	14.5	3.88	638	91.0
300 x 300	x 93	H300 x 300 x 10 x 15	93.0	300	300	10	15	13	118.5	20,200	6,750	13.1	7.55	1,350	450
300 x 200	x 56	H294 x 200 x 8 x 12	55.8	294	200	8	12	13	71.05	11,100	1,600	12.5	4.75	756	160
300 x 150	x 37	H300 x 150 x 6.5 x 9	36.7	300	150	6.5	9	13	46.78	7,210	508	12.4	3.29	481	67.7
	x 32	H298 x 149 x 5.5 x 8 *	32.0	298	149	5.5	8	13	40.80	6,320	442	12.4	3.29	424	59.3
250 x 250	x 72	H250 x 250 x 9 x 14	71.8	250	250	9	14	13	91.43	10,700	3,650	10.8	6.32	860	292
250 x 175	x 44	H244 x 175 x 7 x 11	43.6	244	175	7	11	13	55.49	6,040	984	10.4	4.21	495	112
250 x 125	x 29	H250 x 125 x 6 x 9	29.0	250	125	6	9	8	36.97	3,960	294	10.4	2.82	317	47.0
	x 25	H248 x 124 x 5 x 8 *	25.1	248	124	5	8	8	31.99	3,450	255	10.4	2.82	278	41.1
200 x 200	x 50	H200 x 200 x 8 x 12	49.9	200	200	8	12	13	63.53	4,720	1,600	8.62	5.02	472	160
200 x 150	x 30	H194 x 150 x 6 x 9	29.9	194	150	6	9	8	38.11	2,630	507	8.30	3.65	271	67.6
200 x 100	x 21	H200 x 100 x 5.5 x 8	20.9	200	100	5.5	8	8	26.67	1,810	134	8.23	2.24	181	26.7
	x 18	H198 x 99 x 4.5 x 7 *	17.8	198	99	4.5	7	8	22.69	1,540	113	8.25	2.24	156	22.9
175 x 175	x 40	H175 x 175 x 7.5 x 11	40.4	175	175	7.5	11	13	51.43	2,900	984	7.50	4.37	331	112
175 x 90	x 18	H175 x 90 x 5 x 8 *	18.0	175	90	5	8	8	22.90	1,210	97.5	7.26	2.06	138	21.7
150 x 150	x 31	H150 x 150 x 7 x 10	31.1	150	150	7	10	8	39.65	1,620	563	6.40	3.77	216	75.1
150 x 100	x 21	H148 x 100 x 6 x 9 *	20.7	148	100	6	9	8	26.35	1,000	150	6.17	2.39	135	30.1
150 x 75	x 14	H150 x 75 x 5 x 7 *	14.0	150	75	5	7	8	17.85	666	49.5	6.11	1.66	88.8	13.2
125 x 125	x 24	H125 x 125 x 6.5 x 9	23.6	125	125	6.5	9	8	30.00	839	293	5.29	3.13	134	46.9
100 x 100	x 17	H100 x 100 x 6 x 8 *	16.9	100	100	6	8	8	21.59	378	134	4.18	2.49	75.6	26.7

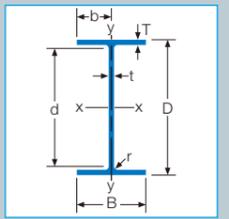
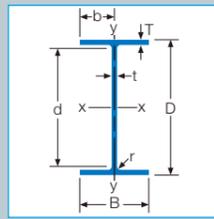
Please contact us in advance to order these sizes with "\*" mark.

### HC400 [Metric Unit]

Section	508	498	488	478	468	458	448	438	428	418	408	398
	508 x 432 x 45 x 75	508 x 437 x 50 x 75	508 x 442 x 55 x 75	508 x 447 x 60 x 75	508 x 452 x 65 x 75							
	508 x 457 x 70 x 75	508 x 462 x 75 x 75										
	498 x 427 x 40 x 70	498 x 432 x 45 x 70	498 x 437 x 50 x 70	498 x 442 x 55 x 70	498 x 447 x 60 x 70							
	498 x 452 x 65 x 70	498 x 457 x 70 x 70										
	488 x 422 x 35 x 65	488 x 427 x 40 x 65	488 x 432 x 45 x 65	488 x 437 x 50 x 65	488 x 442 x 55 x 65							
	488 x 447 x 60 x 65	488 x 452 x 65 x 65										
	478 x 417 x 30 x 60	478 x 422 x 35 x 60	478 x 427 x 40 x 60	478 x 432 x 45 x 60	478 x 437 x 50 x 60							
	478 x 442 x 55 x 60	478 x 447 x 60 x 60										
	468 x 417 x 30 x 55	468 x 422 x 35 x 55	468 x 427 x 40 x 55	468 x 432 x 45 x 55	468 x 437 x 50 x 55							
	468 x 442 x 55 x 55											
	458 x 412 x 25 x 50	458 x 417 x 30 x 50	458 x 422 x 35 x 50	458 x 427 x 40 x 50	458 x 432 x 45 x 50							
	458 x 437 x 50 x 50	458 x 442 x 55 x 50										
	448 x 412 x 25 x 45	448 x 417 x 30 x 45	448 x 422 x 35 x 45	448 x 427 x 40 x 45	448 x 432 x 45 x 45							
	448 x 437 x 50 x 45											
	438 x 407 x 20 x 40	438 x 412 x 25 x 40	438 x 417 x 30 x 40	438 x 422 x 35 x 40	438 x 427 x 40 x 40							
	438 x 432 x 45 x 40											
	428 x 407 x 20 x 35	428 x 412 x 25 x 35	428 x 417 x 30 x 35	428 x 422 x 35 x 35	428 x 427 x 40 x 35							
	428 x 432 x 45 x 35											
	418 x 402 x 15 x 30	418 x 407 x 20 x 30	418 x 412 x 25 x 30	418 x 417 x 30 x 30	418 x 422 x 35 x 30							
	418 x 427 x 40 x 30											
	408 x 417 x 30 x 25	408 x 422 x 35 x 25										
	398 x 412 x 25 x 20	398 x 417 x 30 x 20										

Please contact us in advance to order all sizes.

Dimensions and Properties



HC400 [Metric Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Area of Section A cm <sup>2</sup>	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		
				Web t mm	Flange T mm			Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>	
508	508 x 462 x 75 x 75	758	508	462	75.0	75.0	22.0	965.7	358,000	125,000	19.3	11.4	14,100	5,390	17,500	8,530
	508 x 457 x 70 x 75	738	508	457	70.0	75.0	22.0	940.3	353,000	120,000	19.4	11.3	13,900	5,270	17,200	8,290
	508 x 452 x 65 x 75	718	508	452	65.0	75.0	22.0	914.9	347,000	116,000	19.5	11.3	13,700	5,150	16,800	8,060
	508 x 447 x 60 x 75	698	508	447	60.0	75.0	22.0	889.5	342,000	112,000	19.6	11.2	13,400	5,030	16,500	7,830
	508 x 442 x 55 x 75	678	508	442	55.0	75.0	22.0	864.1	336,000	108,000	19.7	11.2	13,200	4,910	16,200	7,610
	508 x 437 x 50 x 75	658	508	437	50.0	75.0	22.0	838.7	331,000	105,000	19.9	11.2	13,000	4,790	15,900	7,400
	508 x 432 x 45 x 75	638	508	432	45.0	75.0	22.0	813.3	325,000	101,000	20.0	11.1	12,800	4,680	15,500	7,190
498	498 x 457 x 70 x 70	702	498	457	70.0	70.0	22.0	894.6	324,000	112,000	19.0	11.2	13,000	4,920	16,000	7,760
	498 x 452 x 65 x 70	683	498	452	65.0	70.0	22.0	869.7	318,000	109,000	19.1	11.2	12,800	4,810	15,700	7,540
	498 x 447 x 60 x 70	663	498	447	60.0	70.0	22.0	844.8	313,000	105,000	19.3	11.1	12,600	4,690	15,400	7,330
	498 x 442 x 55 x 70	644	498	442	55.0	70.0	22.0	819.9	308,000	101,000	19.4	11.1	12,400	4,580	15,100	7,120
	498 x 437 x 50 x 70	624	498	437	50.0	70.0	22.0	795.0	303,000	97,800	19.5	11.1	12,200	4,470	14,800	6,920
	498 x 432 x 45 x 70	604	498	432	45.0	70.0	22.0	770.1	298,000	94,400	19.7	11.1	12,000	4,370	14,500	6,720
	498 x 427 x 40 x 70	585	498	427	40.0	70.0	22.0	745.2	293,000	91,000	19.8	11.1	11,800	4,260	14,100	6,540
488	488 x 452 x 65 x 65	647	488	452	65.0	65.0	22.0	824.5	291,000	101,000	18.8	11.1	11,900	4,470	14,600	7,030
	488 x 447 x 60 x 65	628	488	447	60.0	65.0	22.0	800.1	286,000	97,500	18.9	11.0	11,700	4,360	14,300	6,830
	488 x 442 x 55 x 65	609	488	442	55.0	65.0	22.0	775.7	281,000	94,100	19.0	11.0	11,500	4,260	14,000	6,630
	488 x 437 x 50 x 65	590	488	437	50.0	65.0	22.0	751.3	277,000	90,800	19.2	11.0	11,300	4,160	13,700	6,440
	488 x 432 x 45 x 65	571	488	432	45.0	65.0	22.0	726.9	272,000	87,600	19.3	11.0	11,100	4,060	13,400	6,260
	488 x 427 x 40 x 65	551	488	427	40.0	65.0	22.0	702.5	267,000	84,600	19.5	11.0	10,900	3,960	13,100	6,080
	488 x 422 x 35 x 65	532	488	422	35.0	65.0	22.0	678.1	262,000	81,600	19.7	11.0	10,700	3,870	12,800	5,910
478	478 x 447 x 60 x 60	593	478	447	60.0	60.0	22.0	755.4	260,000	90,000	18.6	10.9	10,900	4,030	13,200	6,330
	478 x 442 x 55 x 60	574	478	442	55.0	60.0	22.0	731.5	256,000	86,900	18.7	10.9	10,700	3,930	12,900	6,150
	478 x 437 x 50 x 60	555	478	437	50.0	60.0	22.0	707.6	251,000	83,900	18.8	10.9	10,500	3,840	12,600	5,970
	478 x 432 x 45 x 60	537	478	432	45.0	60.0	22.0	683.7	246,000	80,900	19.0	10.9	10,300	3,750	12,300	5,790
	478 x 427 x 40 x 60	518	478	427	40.0	60.0	22.0	659.8	242,000	78,100	19.1	10.9	10,100	3,660	12,000	5,620
	478 x 422 x 35 x 60	499	478	422	35.0	60.0	22.0	635.9	237,000	75,300	19.3	10.9	9,930	3,570	11,800	5,460
	478 x 417 x 30 x 60	480	478	417	30.0	60.0	22.0	612.0	233,000	72,600	19.5	10.9	9,740	3,480	11,500	5,310
468	468 x 442 x 55 x 55	539	468	442	55.0	55.0	22.0	687.3	231,000	79,700	18.3	10.8	9,870	3,610	11,900	5,660
	468 x 437 x 50 x 55	521	468	437	50.0	55.0	22.0	663.9	227,000	76,900	18.5	10.8	9,680	3,520	11,600	5,490
	468 x 432 x 45 x 55	503	468	432	45.0	55.0	22.0	640.5	222,000	74,200	18.6	10.8	9,500	3,440	11,300	5,320
	468 x 427 x 40 x 55	484	468	427	40.0	55.0	22.0	617.1	218,000	71,600	18.8	10.8	9,320	3,350	11,000	5,170
	468 x 422 x 35 x 55	466	468	422	35.0	55.0	22.0	593.7	214,000	69,000	19.0	10.8	9,130	3,270	10,800	5,020
	468 x 417 x 30 x 55	448	468	417	30.0	55.0	22.0	570.3	209,000	66,600	19.2	10.8	8,950	3,190	10,500	4,870
	468 x 412 x 25 x 55	430	468	412	25.0	55.0	22.0	547.0	205,000	64,200	19.4	10.8	8,770	3,110	10,200	4,720
458	458 x 442 x 55 x 50	505	458	442	55.0	50.0	22.0	643.1	207,000	72,500	17.9	10.6	9,050	3,280	10,900	5,170
	458 x 437 x 50 x 50	487	458	437	50.0	50.0	22.0	620.2	203,000	70,000	18.1	10.6	8,870	3,200	10,600	5,010
	458 x 432 x 45 x 50	469	458	432	45.0	50.0	22.0	597.3	199,000	67,500	18.3	10.6	8,700	3,120	10,300	4,860
	458 x 427 x 40 x 50	451	458	427	40.0	50.0	22.0	574.4	195,000	65,100	18.4	10.6	8,520	3,050	10,100	4,710
	458 x 422 x 35 x 50	433	458	422	35.0	50.0	22.0	551.5	191,000	62,800	18.6	10.7	8,350	2,980	9,800	4,570
	458 x 417 x 30 x 50	415	458	417	30.0	50.0	22.0	528.6	187,000	60,500	18.8	10.7	8,170	2,900	9,540	4,440
	458 x 412 x 25 x 50	397	458	412	25.0	50.0	22.0	505.7	183,000	58,300	19.0	10.7	8,000	2,830	9,280	4,310

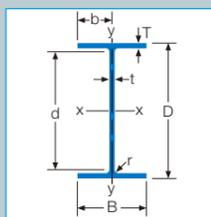
Please contact us and confirm minimum lot in advance to order all sizes.

HC400 [Metric Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Area of Section A cm <sup>2</sup>	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		
				Web t mm	Flange T mm			Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>	
448	448 x 437 x 50 x 45	453	448	437	50.0	45.0	22.0	576.5	181,000	63,000	17.7	10.5	8,070	2,880	9,600	4,530
	448 x 432 x 45 x 45	435	448	432	45.0	45.0	22.0	554.1	177,000	60,800	17.9	10.5	7,900	2,810	9,350	4,390
	448 x 427 x 40 x 45	417	448	427	40.0	45.0	22.0	531.7	173,000	58,600	18.1	10.5	7,730	2,750	9,100	4,260
	448 x 422 x 35 x 45	400	448	422	35.0	45.0	22.0	509.3	169,000	56,500	18.2	10.5	7,570	2,680	8,850	4,130
	448 x 417 x 30 x 45	382	448	417	30.0	45.0	22.0	486.9	166,000	54,500	18.5	10.6	7,400	2,610	8,600	4,000
	448 x 412 x 25 x 45	365	448	412	25.0	45.0	22.0	464.5	162,000	52,500	18.7	10.6	7,230	2,550	8,340	3,880
	448 x 407 x 20 x 45	348	448	407	20.0	45.0	22.0	442.1	158,000	50,500	18.9	10.6	7,060	2,490	8,080	3,760
438	438 x 432 x 45 x 40	401	438	432	45.0	40.0	22.0	510.9	156,000	54,100	17.5	10.3	7,110	2,500	8,390	3,930
	438 x 427 x 40 x 40	384	438	427	40.0	40.0	22.0	489.0	152,000	52,100	17.6	10.3	6,950	2,440	8,150	3,800
	438 x 422 x 35 x 40	367	438	422	35.0	40.0	22.0	467.1	149,000	50,300	17.8	10.4	6,790	2,380	7,910	3,680
	438 x 417 x 30 x 40	349	438	417	30.0	40.0	22.0	445.2	145,000	48,400	18.1	10.4	6,630	2,320	7,670	3,570
	438 x 412 x 25 x 40	332	438	412	25.0	40.0	22.0	423.3	142,000	46,700	18.3	10.5	6,470	2,270	7,430	3,460
	438 x 407 x 20 x 40	315	438	407	20.0	40.0	22.0	401.4	138,000	45,000	18.6	10.6	6,310	2,210	7,190	3,350
	438 x 402 x 15 x 40	298	438	402	15.0	40.0	22.0	379.5	134,000	43,300	18.8	10.6	6,150	2,150	6,950	3,240
428	428 x 432 x 45 x 35	367	428	432	45.0	35.0	22.0	467.7	136,000	47,300	17.0	10.1	6,330	2,190	7,460	3,460
	428 x 427 x 40 x 35	350	428	427	40.0	35.0	22.0	446.3	132,000	45,600	17.2	10.1	6,180	2,140	7,230	3,340
	428 x 422 x 35 x 35	334	428	422	35.0	35.0	22.0	424.9	129,000	44,000	17.4	10.2	6,030	2,080	7,000	3,240
	428 x 417 x 30 x 35	317	428	417	30.0	35.0	22.0	403.5	126,000	42,400	17.7	10.3	5,880	2,030	6,770	3,130
	428 x 412 x 25 x 35	300	428	412	25.0	35.0	22.0	382.1	122,000	40,900	17.9	10.3	5,720	1,980	6,540	3,030
	428 x 407 x 20 x 35	283	428	407	20.0	35.0	22.0	360.7	119,000	39,400	18.2	10.4	5,570	1,930	6,310	2,940
	428 x 402 x 15 x 35	266	428	402	15.0	35.0	22.0	339.3	116,000	37,900	18.4	10.4	5,420	1,880	6,080	2,840
418	418 x 427 x 40 x 30	317	418	427	40.0	30.0	22.0	403.6	113,000	39,100	16.7	9.85	5,410	1,830	6,320	2,890
	418 x 422 x 35 x 30	300	418	422	35.0	30.0	22.0	382.7	110,00							



Dimensions and Properties

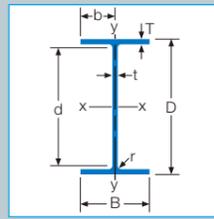


**MEGA NSHYPER BEAM™** [Imperial Unit]

Values listed on pp.50~75 in imperial unit are conversions of ones on pp.76~103

Nominal Size	Mass per Foot lb/ft	Depth of section D inch	Width of section B inch	Thickness		Root Radius r inch	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H inch <sup>6</sup>	Torsional Constant J inch <sup>4</sup>	Area of Section A inch <sup>2</sup>	Section Classification																
				Web t inch	Flange T inch		Axis x-x Ix inch <sup>4</sup>	Axis y-y Iy inch <sup>4</sup>	Axis x-x rx inch	Axis y-y ry inch	Axis x-x Zx inch <sup>3</sup>	Axis y-y Zy inch <sup>3</sup>	Axis x-x Sx inch <sup>3</sup>	Axis y-y Sy inch <sup>3</sup>						AISC360-16								BS EN 1993-1-1								
																				A36				A572 Gr50, A992				S275				S355				
																				Axial Compression		Pure Bending		Axial Compression		Pure Bending		Axial Compression		Pure Bending		Axial Compression		Pure Bending		
Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web																					
HY 48 x 20	HY48 x 20 x 345 *	345	47.2	19.7	0.866	1.57	1.18	39,100	2,010	19.6	4.45	1,660	204	1,860	314	0.885	32.5	1,050,000	64.4	101	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 20 x 325 *	325	47.2	19.7	0.866	1.42	1.18	36,200	1,800	19.5	4.35	1,530	183	1,730	284	0.879	35.7	948,000	50.6	95.5	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 20 x 305 *	305	47.2	19.7	0.866	1.26	1.18	33,300	1,600	19.3	4.23	1,410	163	1,600	253	0.871	39.3	848,000	39.4	89.5	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 20 x 285 *	285	47.2	19.7	0.866	1.10	1.18	30,300	1,400	19.0	4.10	1,280	143	1,470	223	0.862	43.3	748,000	30.5	83.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c2	c4	c2	c1
	HY48 x 20 x 307 *	307	47.2	19.7	0.748	1.42	1.18	35,300	1,800	19.8	4.47	1,500	183	1,670	282	0.888	36.2	947,000	46.5	90.2	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 20 x 287 *	287	47.2	19.7	0.748	1.26	1.18	32,400	1,600	19.6	4.36	1,370	163	1,540	251	0.881	40.2	848,000	35.3	84.3	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 20 x 266 *	266	47.2	19.7	0.748	1.10	1.18	29,400	1,400	19.4	4.23	1,240	143	1,410	221	0.872	44.9	747,000	26.5	78.3	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c2	c4	c2	c1
HY48 x 20 x 251 *	251	47.2	19.7	0.748	0.984	1.18	27,100	1,250	19.2	4.12	1,150	127	1,310	198	0.864	48.8	671,000	21.3	73.8	nS	nS	S	S	C	nC	C	C	c2	c4	c2	c1	c3	c4	c3	c1	
HY 48 x 18	HY48 x 18 x 324 *	324	47.2	17.7	0.866	1.57	1.18	35,900	1,460	19.4	3.92	1,520	165	1,720	256	0.881	32.8	763,000	59.3	95.2	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 18 x 306 *	306	47.2	17.7	0.866	1.42	1.18	33,300	1,320	19.2	3.83	1,410	149	1,600	232	0.874	35.9	691,000	46.8	89.9	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 18 x 288 *	288	47.2	17.7	0.866	1.26	1.18	30,600	1,170	19.0	3.72	1,300	132	1,490	207	0.866	39.5	619,000	36.7	84.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 18 x 306 *	306	47.2	17.7	0.748	1.57	1.18	35,000	1,460	19.7	4.03	1,480	165	1,660	254	0.890	33.1	762,000	55.1	90.0	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 18 x 288 *	288	47.2	17.7	0.748	1.42	1.18	32,400	1,320	19.6	3.94	1,370	149	1,550	229	0.884	36.5	691,000	42.7	84.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 18 x 270 *	270	47.2	17.7	0.748	1.26	1.18	29,800	1,170	19.4	3.84	1,260	132	1,430	205	0.876	40.5	618,000	32.7	79.3	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
HY48 x 18 x 252 *	252	47.2	17.7	0.748	1.10	1.18	27,100	1,020	19.1	3.72	1,150	116	1,310	180	0.867	45.1	545,000	24.8	73.9	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
HY 48 x 16	HY48 x 16 x 303 *	303	47.2	15.7	0.866	1.57	1.18	32,600	1,030	19.1	3.40	1,380	131	1,580	204	0.875	33.2	536,000	54.1	89.0	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 16 x 287 *	287	47.2	15.7	0.866	1.42	1.18	30,300	926	19.0	3.31	1,280	118	1,480	185	0.867	36.3	486,000	43.1	84.3	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 16 x 271 *	271	47.2	15.7	0.866	1.26	1.18	28,000	823	18.8	3.22	1,190	105	1,370	165	0.859	39.8	435,000	34.1	79.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 16 x 255 *	255	47.2	15.7	0.866	1.10	1.18	25,700	721	18.5	3.10	1,090	91.5	1,270	146	0.850	43.6	384,000	27.0	74.9	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 16 x 269 *	269	47.2	15.7	0.748	1.42	1.18	29,500	925	19.3	3.42	1,250	117	1,420	183	0.878	36.9	485,000	39.0	79.1	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 16 x 253 *	253	47.2	15.7	0.748	1.26	1.18	27,100	822	19.1	3.33	1,150	104	1,310	163	0.870	40.9	435,000	30.1	74.3	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 16 x 237 *	237	47.2	15.7	0.748	1.10	1.18	24,800	720	18.9	3.22	1,050	91.4	1,210	144	0.861	45.4	383,000	23.0	69.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 16 x 225 *	225	47.2	15.7	0.748	0.984	1.18	23,000	643	18.6	3.12	972	81.6	1,130	129	0.853	49.1	344,000	18.8	66.1	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 16 x 235 *	235	47.2	15.7	0.630	1.26	1.18	26,300	821	19.5	3.45	1,110	104	1,250	161	0.882	41.6	434,000	27.1	69.0	nS	nS	S	S	C	C	C	C	c1	c4	c1	c2	c1	c4	c1	c2
	HY48 x 16 x 219 *	219	47.2	15.7	0.630	1.10	1.18	23,900	719	19.3	3.34	1,010	91.3	1,150	142	0.873	46.8	383,000	20.0	64.3	nS	nS	S	S	C	C	C	C	c1	c4	c1	c2	c1	c4	c1	c3
HY48 x 16 x 207 *	207	47.2	15.7	0.630	0.984	1.18	22,100	642	19.1	3.25	934	81.5	1,070	127	0.865	51.3	344,000	15.9	60.7	nS	nS	S	S	C	C	C	C	c1	c4	c1	c2	c1	c4	c1	c3	
HY 48 x 14	HY48 x 14 x 282 *	282	47.2	13.8	0.866	1.57	1.18	29,400	690	18.8	2.89	1,240	100	1,440	159	0.867	33.6	360,000	49.0	82.8	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 14 x 268 *	268	47.2	13.8	0.866	1.42	1.18	27,400	621	18.7	2.81	1,160	90.1	1,350	144	0.860	36.7	326,000	39.4	78.7	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 14 x 254 *	254	47.2	13.8	0.866	1.26	1.18	25,400	552	18.4	2.72	1,080	80.2	1,260	129	0.851	40.1	292,000	31.5	74.7	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 14 x 250 *	250	47.2	13.8	0.748	1.42	1.18	26,600	620	19.0	2.91	1,120	90.0	1,290	142	0.870	37.5	326,000	35.3	73.5	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 14 x 236 *	236	47.2	13.8	0.748	1.26	1.18	24,500	551	18.8	2.82	1,040	80.0	1,200	127	0.862	41.4	292,000	27.5	69.4	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 14 x 222 *	222	47.2	13.8	0.748	1.10	1.18	22,500	483	18.6	2.72	951	70.1	1,110	112	0.853	45.8	257,000	21.3	65.3	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY48 x 14 x 218 *	218	47.2	13.8	0.630	1.26	1.18	23,600	551	19.2	2.93	1,000	79.9	1,140	125	0.874	42.2	291,000	24.4	64.1	nS	nS	S	S	C	C	C	C	c1	c4	c1	c2	c1	c4	c1	c2
	HY48 x 14 x 204 *	204	47.2	13.8	0.630	1.10	1.18	21,600	482	19.0	2.84	913	70.0	1,050	110	0.865	47.3	257,000	18.3	59.9	nS	nS	S	S	C	C	C	C	c1	c4	c1	c2	c1	c4	c1	c3
	HY48 x 14 x 193 *	193	47.2	13.8	0.630	0.																														

Dimensions and Properties

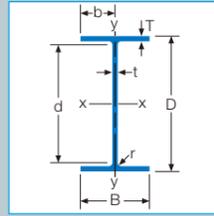


**MEGA NSHYPER BEAM™ [Imperial Unit]**

Values listed on pp.50~75 in imperial unit are conversions of ones on pp.76~103

Nominal Size	Mass per Foot lb/ft	Depth of section D inch	Width of section B inch	Thickness		Root Radius r inch	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H inch <sup>6</sup>	Torsional Constant J inch <sup>4</sup>	Area of Section A inch <sup>2</sup>	Section Classification																			
				Web t inch	Flange T inch		Axis x-x Ix inch <sup>4</sup>	Axis y-y Iy inch <sup>4</sup>	Axis x-x rx inch	Axis y-y ry inch	Axis x-x Zx inch <sup>3</sup>	Axis y-y Zy inch <sup>3</sup>	AISC360-16							BS EN 1993-1-1																			
													A36							A572 Gr50, A992		S275		S355															
				Axial Compression	Pure Bending		Axial Compression	Pure Bending	Axial Compression	Pure Bending	Axial Compression	Pure Bending	Flange	Web						Flange	Web	Flange	Web	Flange	Web														
				Flange	Web		Flange	Web	Flange	Web	Flange	Web	Flange	Web						Flange	Web	Flange	Web	Flange	Web														
HY 44 x 18	HY44 x 18 x 312 *	312	43.3	17.7	0.866	1.57	1.18	29,500	1,460	17.9	3.99	1,360	165	1,540	256	0.885	29.6	637,000	58.4	91.8	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 18 x 294 *	294	43.3	17.7	0.866	1.42	1.18	27,300	1,320	17.8	3.90	1,260	149	1,430	231	0.878	32.5	577,000	46.0	86.5	nS	nS	S	S	C	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY44 x 18 x 276 *	276	43.3	17.7	0.866	1.26	1.18	25,100	1,170	17.6	3.80	1,160	132	1,320	206	0.870	35.8	517,000	35.9	81.2	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 18 x 296 *	296	43.3	17.7	0.748	1.57	1.18	28,800	1,460	18.2	4.10	1,330	165	1,490	254	0.894	29.9	636,000	54.5	87.0	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 18 x 278 *	278	43.3	17.7	0.748	1.42	1.18	26,600	1,320	18.1	4.01	1,230	149	1,380	229	0.887	33.0	577,000	42.2	81.7	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 18 x 260 *	260	43.3	17.7	0.748	1.26	1.18	24,500	1,170	17.9	3.91	1,130	132	1,270	204	0.880	36.7	517,000	32.2	76.3	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 18 x 242 *	242	43.3	17.7	0.748	1.10	1.18	22,200	1,020	17.7	3.80	1,030	116	1,160	180	0.871	40.9	456,000	24.2	71.0	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
HY 44 x 16	HY44 x 16 x 291 *	291	43.3	15.7	0.866	1.57	1.18	26,800	1,030	17.7	3.47	1,240	131	1,410	204	0.879	30.0	448,000	53.3	85.6	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 16 x 275 *	275	43.3	15.7	0.866	1.42	1.18	24,900	925	17.5	3.38	1,150	118	1,310	184	0.872	32.8	406,000	42.3	80.9	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 16 x 259 *	259	43.3	15.7	0.866	1.26	1.18	22,900	823	17.3	3.29	1,060	105	1,220	165	0.864	36.0	364,000	33.3	76.2	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 16 x 243 *	243	43.3	15.7	0.866	1.10	1.18	21,000	720	17.1	3.17	968	91.5	1,120	145	0.855	39.6	321,000	26.1	71.5	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 16 x 259 *	259	43.3	15.7	0.748	1.42	1.18	24,200	925	17.8	3.49	1,120	117	1,270	182	0.882	33.4	406,000	38.5	76.1	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 16 x 243 *	243	43.3	15.7	0.748	1.26	1.18	22,300	822	17.7	3.39	1,030	104	1,170	163	0.874	37.0	363,000	29.6	71.4	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 16 x 227 *	227	43.3	15.7	0.748	1.10	1.18	20,300	720	17.4	3.29	937	91.4	1,070	143	0.865	41.2	320,000	22.5	66.7	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 16 x 215 *	215	43.3	15.7	0.748	0.984	1.18	18,800	643	17.3	3.19	868	81.6	1,000	129	0.858	44.6	288,000	18.2	63.1	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 16 x 227 *	227	43.3	15.7	0.630	1.26	1.18	21,600	821	18.0	3.51	997	104	1,120	161	0.886	37.6	363,000	26.7	66.6	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c2	
HY44 x 16 x 210 *	210	43.3	15.7	0.630	1.10	1.18	19,600	719	17.8	3.41	905	91.3	1,020	141	0.877	42.3	320,000	19.7	61.8	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c2		
HY44 x 16 x 198 *	198	43.3	15.7	0.630	0.984	1.18	18,100	642	17.6	3.32	835	81.5	950	127	0.870	46.4	287,000	15.5	58.2	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c2		
HY 44 x 14	HY44 x 14 x 270 *	270	43.3	13.8	0.866	1.57	1.18	24,000	690	17.4	2.95	1,110	100	1,280	158	0.872	30.3	300,000	48.2	79.4	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 14 x 256 *	256	43.3	13.8	0.866	1.42	1.18	22,400	621	17.2	2.87	1,030	90.1	1,200	143	0.865	33.2	272,000	38.5	75.3	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 14 x 242 *	242	43.3	13.8	0.866	1.26	1.18	20,700	552	17.1	2.78	958	80.2	1,110	128	0.857	36.3	244,000	30.6	71.2	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 14 x 240 *	240	43.3	13.8	0.748	1.42	1.18	21,800	620	17.6	2.96	1,000	90.0	1,150	141	0.875	33.8	272,000	34.7	70.5	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 14 x 226 *	226	43.3	13.8	0.748	1.26	1.18	20,100	551	17.4	2.88	927	80.0	1,070	126	0.867	37.4	244,000	26.9	66.4	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 14 x 212 *	212	43.3	13.8	0.748	1.10	1.18	18,400	483	17.2	2.78	848	70.1	981	111	0.858	41.5	215,000	20.7	62.3	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 14 x 210 *	210	43.3	13.8	0.630	1.26	1.18	19,400	551	17.7	2.99	896	79.9	1,020	124	0.879	38.1	243,000	24.1	61.6	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c2	
	HY44 x 14 x 196 *	196	43.3	13.8	0.630	1.10	1.18	17,700	482	17.5	2.90	816	70.0	931	109	0.870	42.8	215,000	18.0	57.5	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c2	
HY44 x 14 x 185 *	185	43.3	13.8	0.630	0.984	1.18	16,400	431	17.3	2.81	755	62.5	868	98.2	0.863	46.8	193,000	14.3	54.4	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c2		
HY 44 x 12	HY44 x 12 x 249 *	249	43.3	11.8	0.866	1.57	1.18	21,300	435	17.1	2.44	986	73.7	1,150	118	0.863	30.8	190,000	43.0	73.2	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 12 x 237 *	237	43.3	11.8	0.866	1.42	1.18	20,000	392	16.9	2.37	922	66.4	1,080	107	0.856	33.6	172,000	34.8	69.7	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 12 x 226 *	226	43.3	11.8	0.866	1.26	1.18	18,500	349	16.7	2.29	856	59.1	1,010	96.4	0.847	36.6	154,000	28.0	66.3	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 12 x 233 *	233	43.3	11.8	0.748	1.57	1.18	20,700	434	17.4	2.52	956	73.6	1,100	116	0.874	31.2	189,000	39.2	68.4	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 12 x 221 *	221	43.3	11.8	0.748	1.42	1.18	19,300	391	17.2	2.45	891	66.2	1,030	105	0.866	34.3	172,000	31.0	65.0	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 12 x 209 *	209	43.3	11.8	0.748	1.26	1.18	17,900	348	17.1	2.38	825	58.9	961	94.3	0.858	37.9	154,000	24.3	61.5	nS	nS	S	S	C	C	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY44 x 12 x 19																																						

Dimensions and Properties



NSHYPER BEAM™ [Imperial Unit]

Values listed on pp.50~75 in imperial unit are conversions of ones on pp.76~103

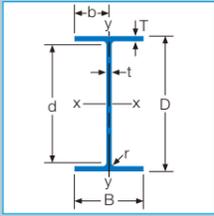
Table with columns: Nominal Size, Mass per Foot, Depth of section, Width of section, Thickness (Web, Flange), Root Radius, Second Moment of Area (Axis x-x, Axis y-y), Radius of Gyration (Axis x-x, Axis y-y), Elastic Modulus (Axis x-x, Axis y-y), Plastic Modulus (Axis x-x, Axis y-y), Buckling Parameter, Torsional Index, Warping Constant, Torsional Constant, Area of Section, and Section Classification (AISC360-16, BS EN 1993-1-1).

Please contact us in advance to order these sizes with "\*" mark.

[nS] non Slender [S] Slender [C] Compact [nC] not Compact [c1-4] Class1-4 [nc4] not Class4

NSHYPER BEAM™

**Dimensions and Properties**

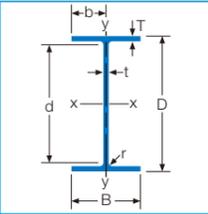


**NSHYPER BEAM™ [Imperial Unit]**

Values listed on pp.50-75 in imperial unit are conversions of ones on pp.76-103

Nominal Size	Mass per Foot lb/ft	Depth of section D inch	Width of section B inch	Thickness		Root Radius r inch	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H inch <sup>6</sup>	Torsional Constant J inch <sup>4</sup>	Area of Section A inch <sup>2</sup>	Section Classification																
				Web t inch	Flange T inch		Axis x-x Ix inch <sup>4</sup>	Axis y-y Iy inch <sup>4</sup>	Axis x-x rx inch	Axis y-y ry inch	Axis x-x Zx inch <sup>3</sup>	Axis y-y Zy inch <sup>3</sup>	AISC360-16							BS EN 1993-1-1																
							A36		A572 Gr50, A992				S275							S355																
							Axial Compression		Pure Bending		Axial Compression		Pure Bending							Axial Compression		Pure Bending		Axial Compression		Pure Bending										
				Flange	Web		Flange	Web	Flange	Web	Flange	Web	Flange	Web						Flange	Web	Flange	Web	Flange	Web	Flange	Web									
HY38 x 16	HY38 x 16 x 227 *	227	37.4	15.7	0.630	1.42	0.709	16,800	923	15.8	3.72	896	117	999	179	0.898	29.0	299,000	32.9	66.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 16 x 211 *	211	37.4	15.7	0.630	1.26	0.709	15,300	821	15.7	3.64	819	104	916	160	0.891	32.7	268,000	24.4	62.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 16 x 195 *	195	37.4	15.7	0.630	1.10	0.709	13,900	718	15.5	3.54	741	91.2	833	140	0.883	37.1	237,000	17.6	57.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 16 x 183 *	183	37.4	15.7	0.630	0.984	0.709	12,700	642	15.4	3.45	682	81.5	770	126	0.875	41.0	213,000	13.6	53.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 16 x 171 *	171	37.4	15.7	0.630	0.866	0.709	11,600	565	15.2	3.35	621	71.7	706	111	0.867	45.4	188,000	10.4	50.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c2	c1
HY38 x 14	HY38 x 14 x 250 *	250	37.4	13.8	0.866	1.57	0.709	17,000	689	15.2	3.06	907	100.0	1,040	156	0.879	26.2	221,000	43.9	73.5	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY38 x 14 x 236 *	236	37.4	13.8	0.866	1.42	0.709	15,800	620	15.1	2.99	843	90.0	969	141	0.872	28.9	201,000	34.6	69.4	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY38 x 14 x 222 *	222	37.4	13.8	0.866	1.26	0.709	14,500	551	14.9	2.90	777	80.0	898	126	0.864	31.8	180,000	27.1	65.4	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY38 x 14 x 209 *	209	37.4	13.8	0.866	1.10	0.709	13,300	483	14.7	2.81	711	70.1	827	112	0.854	35.0	159,000	21.1	61.3	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY38 x 14 x 236 *	236	37.4	13.8	0.748	1.57	0.709	16,600	688	15.4	3.15	886	99.9	1,000	155	0.889	26.5	221,000	40.7	69.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 14 x 222	222	37.4	13.8	0.748	1.42	0.709	15,400	619	15.3	3.08	821	89.9	934	140	0.882	29.3	201,000	31.5	65.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 14 x 208	208	37.4	13.8	0.748	1.26	0.709	14,100	551	15.2	3.00	755	79.9	862	125	0.874	32.7	180,000	24.0	61.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 14 x 194	194	37.4	13.8	0.748	1.10	0.709	12,900	482	15.0	2.90	688	70.0	791	110	0.865	36.5	159,000	18.1	57.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 14 x 184 *	184	37.4	13.8	0.748	0.984	0.709	11,900	431	14.8	2.82	636	62.5	736	98.6	0.857	39.7	143,000	14.6	54.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 14 x 194	194	37.4	13.8	0.630	1.26	0.709	13,700	550	15.5	3.10	733	79.9	826	123	0.886	33.2	180,000	21.7	57.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 14 x 180	180	37.4	13.8	0.630	1.10	0.709	12,400	482	15.3	3.01	665	69.9	754	108	0.877	37.6	159,000	15.8	53.0	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 14 x 170	170	37.4	13.8	0.630	0.984	0.709	11,500	430	15.2	2.94	613	62.4	699	97.2	0.869	41.4	143,000	12.4	49.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 14 x 159 *	159	37.4	13.8	0.630	0.866	0.709	10,500	379	15.0	2.84	561	54.9	644	86.0	0.860	45.7	126,000	9.56	46.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY38 x 12	HY38 x 12 x 229 *	229	37.4	11.8	0.866	1.57	0.709	15,000	434	14.9	2.54	800	73.6	928	117	0.871	26.7	139,000	38.8	67.3	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY38 x 12 x 217 *	217	37.4	11.8	0.866	1.42	0.709	14,000	391	14.8	2.48	746	66.2	868	106	0.863	29.3	127,000	30.9	63.9	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY38 x 12 x 206 *	206	37.4	11.8	0.866	1.26	0.709	12,900	348	14.6	2.40	691	58.9	809	94.7	0.855	32.2	114,000	24.4	60.4	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY38 x 12 x 194 *	194	37.4	11.8	0.866	1.10	0.709	11,900	305	14.4	2.31	634	51.6	748	83.7	0.845	35.3	100,000	19.3	57.0	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY38 x 12 x 215 *	215	37.4	11.8	0.748	1.57	0.709	14,600	434	15.2	2.62	779	73.5	893	115	0.881	27.0	139,000	35.6	63.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 12 x 203 *	203	37.4	11.8	0.748	1.42	0.709	13,500	391	15.1	2.56	724	66.1	833	104	0.874	29.9	126,000	27.8	59.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 12 x 192	192	37.4	11.8	0.748	1.26	0.709	12,500	347	14.9	2.48	668	58.8	773	93.0	0.866	33.2	113,000	21.4	56.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 12 x 180	180	37.4	11.8	0.748	1.10	0.709	11,400	304	14.7	2.40	611	51.5	712	82.0	0.856	36.9	100,000	16.3	52.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 12 x 171 *	171	37.4	11.8	0.748	0.984	0.709	10,600	272	14.5	2.33	568	46.0	666	73.8	0.848	40.0	90,100	13.3	50.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 12 x 178 *	178	37.4	11.8	0.630	1.26	0.709	12,100	347	15.2	2.58	646	58.7	737	91.5	0.878	33.8	113,000	19.1	52.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 12 x 166	166	37.4	11.8	0.630	1.10	0.709	11,000	304	15.0	2.50	588	51.4	675	80.6	0.868	38.2	100,000	14.1	48.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 12 x 157	157	37.4	11.8	0.630	0.984	0.709	10,200	271	14.9	2.43	544	45.9	629	72.4	0.860	42.0	89,900	11.1	46.0	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 12 x 148	148	37.4	11.8	0.630	0.866	0.709	9,350	239	14.7	2.35	500	40.4	582	64.2	0.851	46.1	79,700	8.71	43.4	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY38 x 10	HY38 x 10 x 194 *	194	37.4	9.84	0.748	1.57	0.709	12,600	252	14.9	2.10	673	51.1	782	81.3	0.870	27.7	80,700	30.5	57.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 10 x 184 *	184	37.4	9.84	0.748	1.42	0.709	11,700	227	14.7	2.04	628	46.0	733	73.7	0.863	30.6	73,300	24.0	54.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 10 x 175 *	175	37.4	9.84	0.748	1.26	0.709	10,900	202	14.6	1.98	582	41.0	683	66.1	0.854	33.8	65,800	18.8	51.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY38 x 10 x 165 *	165	37.4	9.84	0.748	1.10	0.709	10,000	177	14.4	1																									

Dimensions and Properties



NSHYPER BEAM™ [Imperial Unit]

Values listed on pp.50~75 in imperial unit are conversions of ones on pp.76~103

Nominal Size	Mass per Foot lb/ft	Depth of section D inch	Width of section B inch	Thickness		Root Radius r inch	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H inch <sup>6</sup>	Torsional Constant J inch <sup>4</sup>	Area of Section A inch <sup>2</sup>	Section Classification																	
				Web t inch	Flange T inch		Axis x-x I <sub>x</sub> inch <sup>4</sup>	Axis y-y I <sub>y</sub> inch <sup>4</sup>	Axis x-x r <sub>x</sub> inch	Axis y-y r <sub>y</sub> inch	Axis x-x Z <sub>x</sub> inch <sup>3</sup>	Axis y-y Z <sub>y</sub> inch <sup>3</sup>	Axis x-x S <sub>x</sub> inch <sup>3</sup>	Axis y-y S <sub>y</sub> inch <sup>3</sup>						AISC360-16								BS EN 1993-1-1									
																				A36				A572 Gr50, A992				S275				S355					
																				Axial Compression		Pure Bending		Axial Compression		Pure Bending		Axial Compression		Pure Bending		Axial Compression		Pure Bending			
Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web																						
HY36 x 14	HY36 x 14 x 244 *	244	35.4	13.8	0.866	1.57	0.709	15,000	689	14.4	3.10	846	99.9	967	156	0.882	24.6	197,000	43.5	71.8	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1	
	HY36 x 16	HY34 x 16 x 247	247	33.5	15.7	0.748	1.57	0.709	14,500	1,030	14.1	3.76	864	130	969	200	0.898	22.9	261,000	45.3	72.7	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1

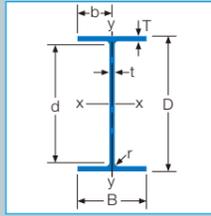
Please contact us in advance to order these sizes with "\*" mark.

[nS] non Slender [S] Slender [C] Compact [nC] not Compact [c1-4] Class1-4 [nc4] not Class4

NSHYPER BEAM™



Dimensions and Properties



N-SHYPER BEAM™ [Imperial Unit]

Values listed on pp.50~75 in imperial unit are conversions of ones on pp.76~103

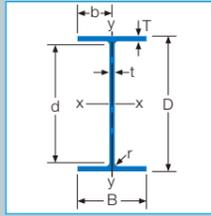
Table with columns for Nominal Size, Mass per Foot, Depth of section, Width of section, Thickness (Web, Flange), Root Radius, Second Moment of Area (Ix, Iy), Radius of Gyration (rx, ry), Elastic Modulus (Zx, Zy), Plastic Modulus (Sx, Sy), Buckling Parameter (u), Torsional Index (x), Warping Constant (H), Torsional Constant (J), Area of Section (A), and Section Classification (AISC360-16, BS EN 1993-1-1).

N-SHYPER BEAM™

Please contact us in advance to order these sizes with "\*" mark.

[nS] non Slender [S] Slender [C] Compact [nC] not Compact [c1-4] Class1-4 [nc4] not Class4

Dimensions and Properties

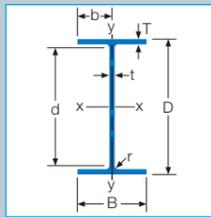


NSHYPER BEAM™ [Imperial Unit]

Values listed on pp.50~75 in imperial unit are conversions of ones on pp.76~103

Nominal Size	Mass per Foot lb/ft	Depth of section D inch	Width of section B inch	Thickness		Root Radius r inch	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H inch <sup>6</sup>	Torsional Constant J inch <sup>4</sup>	Area of Section A inch <sup>2</sup>	Section Classification																
				Web t inch	Flange T inch		Axis x-x Ix inch <sup>4</sup>	Axis y-y Iy inch <sup>4</sup>	Axis x-x rx inch	Axis y-y ry inch	Axis x-x Zx inch <sup>3</sup>	Axis y-y Zy inch <sup>3</sup>	AISC360-16							BS EN 1993-1-1																
													A36							A572 Gr50, A992		S275		S355												
				Axial Compression	Pure Bending		Axial Compression	Pure Bending	Axial Compression	Pure Bending	Axial Compression	Pure Bending																								
				Flange	Web		Flange	Web	Flange	Web	Flange	Web																								
HY30 x 12	HY30 x 12 x 173 *	173	29.5	11.8	0.630	1.42	0.709	7,690	390	12.3	2.77	521	66.0	588	102	0.897	22.8	77,000	24.8	50.7	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 12 x 161	161	29.5	11.8	0.630	1.26	0.709	7,060	347	12.2	2.71	478	58.7	541	90.8	0.889	25.6	69,200	18.5	47.2	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 12 x 149	149	29.5	11.8	0.630	1.10	0.709	6,410	303	12.1	2.64	434	51.4	493	79.8	0.881	29.0	61,300	13.4	43.7	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 12 x 140	140	29.5	11.8	0.630	0.984	0.709	5,920	271	12.0	2.57	401	45.9	457	71.6	0.873	32.0	55,200	10.4	41.0	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 12 x 131 *	131	29.5	11.8	0.630	0.866	0.709	5,410	239	11.9	2.49	367	40.4	421	63.4	0.865	35.4	49,000	8.05	38.4	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 12 x 141	141	29.5	11.8	0.551	1.10	0.709	6,280	303	12.3	2.70	425	51.3	479	79.2	0.890	29.3	61,200	12.5	41.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 12 x 132	132	29.5	11.8	0.551	0.984	0.709	5,780	271	12.2	2.64	391	45.8	442	70.9	0.882	32.6	55,100	9.55	38.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 12 x 123	123	29.5	11.8	0.551	0.866	0.709	5,270	238	12.1	2.57	357	40.4	406	62.7	0.874	36.4	48,900	7.18	36.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 12 x 114 *	114	29.5	11.8	0.551	0.748	0.709	4,750	206	11.9	2.48	322	34.9	369	54.5	0.864	40.8	42,600	5.34	33.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 12 x 125 *	125	29.5	11.8	0.472	0.984	0.709	5,640	271	12.4	2.72	382	45.8	427	70.4	0.892	32.9	55,100	8.86	36.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 12 x 116 *	116	29.5	11.8	0.472	0.866	0.709	5,130	238	12.3	2.65	347	40.3	390	62.1	0.884	37.1	48,900	6.50	34.0	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 12 x 107 *	107	29.5	11.8	0.472	0.748	0.709	4,610	206	12.1	2.56	312	34.8	353	53.9	0.875	42.2	42,600	4.67	31.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY30 x 10	HY30 x 10 x 154 *	154	29.5	9.84	0.630	1.42	0.709	6,590	226	12.1	2.24	446	45.9	510	71.5	0.889	23.3	44,600	21.0	45.1	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 10 x 144 *	144	29.5	9.84	0.630	1.26	0.709	6,070	201	12.0	2.18	411	40.8	471	63.9	0.881	26.1	40,100	15.8	42.2	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 10 x 134 *	134	29.5	9.84	0.630	1.10	0.709	5,530	176	11.9	2.11	375	35.7	432	56.3	0.872	29.5	35,500	11.7	39.3	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 10 x 126 *	126	29.5	9.84	0.630	0.984	0.709	5,130	157	11.7	2.06	347	31.9	402	50.6	0.864	32.5	32,000	9.19	37.2	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 10 x 119 *	119	29.5	9.84	0.630	0.866	0.709	4,710	138	11.6	1.99	319	28.1	372	44.9	0.855	35.8	28,400	7.20	35.0	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 10 x 137 *	137	29.5	9.84	0.551	1.26	0.709	5,940	201	12.2	2.24	402	40.8	457	63.3	0.890	26.3	40,100	14.9	40.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 10 x 127	127	29.5	9.84	0.551	1.10	0.709	5,400	176	12.1	2.17	366	35.7	417	55.7	0.881	29.9	35,500	10.8	37.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 10 x 119	119	29.5	9.84	0.551	0.984	0.709	4,990	157	11.9	2.12	338	31.9	387	50.0	0.873	33.2	32,000	8.30	35.0	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 10 x 112 *	112	29.5	9.84	0.551	0.866	0.709	4,570	138	11.8	2.05	310	28.1	357	44.3	0.864	36.9	28,400	6.33	32.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 10 x 104 *	104	29.5	9.84	0.551	0.748	0.709	4,140	119	11.6	1.97	281	24.3	326	38.5	0.854	41.2	24,700	4.79	30.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 10 x 112	112	29.5	9.84	0.472	0.984	0.709	4,850	157	12.2	2.19	329	31.8	372	49.4	0.884	33.6	31,900	7.61	32.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY30 x 10 x 104	104	29.5	9.84	0.472	0.866	0.709	4,430	138	12.0	2.12	300	28.0	342	43.7	0.875	37.8	28,300	5.65	30.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY30 x 10 x 97	96.6	29.5	9.84	0.472	0.748	0.709	4,000	119	11.9	2.05	271	24.2	311	38.0	0.865	42.7	24,700	4.13	28.4	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY28 x 16	HY28 x 16 x 226 *	226	27.6	15.7	0.866	1.42	0.709	8,790	924	11.5	3.73	638	117	721	181	0.886	20.1	158,000	36.2	66.5	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY28 x 16 x 210 *	210	27.6	15.7	0.866	1.26	0.709	8,070	822	11.4	3.65	585	104	663	161	0.879	22.3	142,000	27.6	61.8	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY28 x 16 x 194 *	194	27.6	15.7	0.866	1.10	0.709	7,320	719	11.3	3.55	531	91.3	604	142	0.871	24.9	126,000	20.7	57.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY28 x 16 x 216 *	216	27.6	15.7	0.748	1.42	0.709	8,640	924	11.7	3.81	627	117	703	179	0.894	20.3	158,000	33.9	63.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY28 x 16 x 200 *	200	27.6	15.7	0.748	1.26	0.709	7,910	821	11.6	3.74	574	104	644	160	0.888	22.7	142,000	25.3	58.8	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY28 x 16 x 184 *	184	27.6	15.7	0.748	1.10	0.709	7,160	719	11.5	3.64	520	91.3	585	140	0.880	25.6	126,000	18.5	54.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY28 x 16 x 206 *	206	27.6	15.7	0.630	1.42	0.709	8,490	923	11.8	3.90	616	117	685	178	0.903	20.3	158,000	32.1	60.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY28 x 16 x 190 *	190	27.6	15.7	0.630	1.26	0.709	7,760	821	11.8	3.83	563	104	626	159	0.897	22.9	142,000	23.5	55.9	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY28 x 16 x 174 *	174	27.6	15.7	0.630	1.10	0.709	7,000	718	11.7	3.75	508	91.2	566	139	0.890	26.1	126,000	16.8	51.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY28 x 16 x 162 *	162	27.6	15.7	0.630	0.984	0.709	6,420	641	11.6	3.67	466	81.4	520	125	0.884	29.0	113,000	12.8	47.6																

Dimensions and Properties



NSHYPER BEAM™ [Imperial Unit]

Values listed on pp.50~75 in imperial unit are conversions of ones on pp.76~103

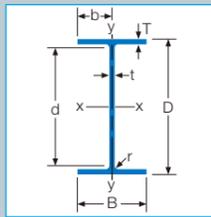
Nominal Size	Mass per Foot lb/ft	Depth of section D inch	Width of section B inch	Thickness		Root Radius r inch	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H inch <sup>6</sup>	Torsional Constant J inch <sup>4</sup>	Area of Section A inch <sup>2</sup>	Section Classification																		
				Web t inch	Flange T inch		Axis x-x Ix inch <sup>4</sup>	Axis y-y Iy inch <sup>4</sup>	Axis x-x rx inch	Axis y-y ry inch	Axis x-x Zx inch <sup>3</sup>	Axis y-y Zy inch <sup>3</sup>	Axis x-x Sx inch <sup>3</sup>	Axis y-y Sy inch <sup>3</sup>						AISC360-16				BS EN 1993-1-1														
																				A36		A572 Gr50, A992		S275		S355												
				Axial Compression	Pure Bending		Axial Compression	Pure Bending	Axial Compression	Pure Bending	Axial Compression	Pure Bending																										
				Flange	Web		Flange	Web	Flange	Web	Flange	Web																										
HY28 x 12	HY28 x 12 x 188 *	188	27.6	11.8	0.866	1.42	0.709	6,880	391	11.2	2.66	499	66.2	575	104	0.879	20.5	66,800	28.7	55.3	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1		
	HY28 x 12 x 94 *	94.4	27.6	11.8	0.472	0.630	0.709	3,490	173	11.2	2.50	253	29.3	288	45.6	0.867	44.6	31,400	3.24	27.7	nS	S	C	C	nS	S	nC	C	nc4	c4	c1	c1	nc4	c4	c2	c1		
	HY28 x 10	HY28 x 10 x 143 *	143	27.6	9.84	0.866	0.984	0.709	4,700	158	10.6	1.94	341	32.1	405	52.7	0.845	27.1	27,900	12.9	42.0	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
		HY28 x 10 x 75	75.4	27.6	9.84	0.354	0.630	0.709	2,860	100	11.4	2.13	207	20.4	234	31.5	0.878	47.4	18,200	2.29	22.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c2	nc4	c4	c1	c3	
		HY28 x 8	HY28 x 8 x 108 *	108	27.6	7.87	0.551	1.10	0.709	3,860	90.1	11.0	1.68	280	22.9	324	36.3	0.872	28.3	15,800	8.90	31.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
			HY28 x 8 x 59	58.9	27.6	7.87	0.354	0.472	0.709	2,000	38.6	10.7	1.49	145	9.80	169	15.6	0.846	59.2	7,080	1.16	17.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c2	nc4	c4	c1	c3

Please contact us in advance to order these sizes with "\*" mark.

[nS] non Slender [S] Slender [C] Compact [nC] not Compact [c1-4] Class1-4 [nc4] not Class4

NSHYPER BEAM™

Dimensions and Properties



NSHYPER BEAM™ [Imperial Unit]

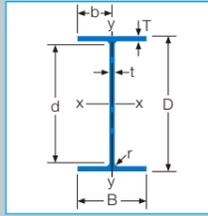
Values listed on pp.50~75 in imperial unit are conversions of ones on pp.76~103

Table with columns for Nominal Size, Mass per Foot, Depth of section, Width of section, Thickness (Web, Flange), Root Radius, Second Moment of Area, Radius of Gyration, Elastic Modulus, Plastic Modulus, Buckling Parameter, Torsional Index, Warping Constant, Torsional Constant, Area of Section, and Section Classification (AISC360-16, BS EN 1993-1-1).

Please contact us in advance to order these sizes with "\*" mark.

[nS] non Slender [S] Slender [C] Compact [nC] not Compact [c1-4] Class1-4 [nc4] not Class4

Dimensions and Properties

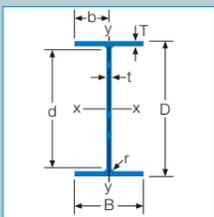


NSHYPER BEAM™ [Imperial Unit]

Values listed on pp.50~75 in imperial unit are conversions of ones on pp.76~103

Nominal Size	Mass per Foot lb/ft	Depth of section D inch	Width of section B inch	Thickness		Root Radius r inch	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H inch <sup>6</sup>	Torsional Constant J inch <sup>4</sup>	Area of Section A inch <sup>2</sup>	Section Classification																	
				Web t inch	Flange T inch		Axis x-x Ix inch <sup>4</sup>	Axis y-y Iy inch <sup>4</sup>	Axis x-x rx inch	Axis y-y ry inch	Axis x-x Zx inch <sup>3</sup>	Axis y-y Zy inch <sup>3</sup>	Axis x-x Sx inch <sup>3</sup>	Axis y-y Sy inch <sup>3</sup>						AISC360-16				BS EN 1993-1-1													
																				A36		A572 Gr50, A992		S275		S355		Axial Compression	Pure Bending								
				Flange	Web		Flange	Web	Flange	Web	Flange	Web	Flange	Web						Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web								
HY24 x 10	HY24 x 10 x 130	130	23.6	9.84	0.630	1.26	0.512	3,620	201	9.72	2.29	307	40.8	350	63.2	0.891	20.3	25,100	14.9	38.3	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY24 x 10 x 121	121	23.6	9.84	0.630	1.10	0.512	3,290	176	9.64	2.23	279	35.7	319	55.6	0.882	23.1	22,300	10.8	35.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY24 x 10 x 113 *	113	23.6	9.84	0.630	0.984	0.512	3,040	157	9.57	2.17	258	31.9	296	49.9	0.875	25.6	20,100	8.35	33.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY24 x 10 x 106 *	106	23.6	9.84	0.630	0.866	0.512	2,790	138	9.47	2.11	236	28.1	272	44.2	0.866	28.4	17,900	6.41	31.1	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY24 x 10 x 115 *	115	23.6	9.84	0.551	1.10	0.512	3,230	176	9.79	2.28	273	35.7	310	55.1	0.891	23.3	22,300	10.1	33.7	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1	
	HY24 x 10 x 107 *	107	23.6	9.84	0.551	0.984	0.512	2,980	157	9.71	2.23	252	31.9	286	49.4	0.884	26.0	20,100	7.65	31.5	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1	
	HY24 x 10 x 100 *	99.8	23.6	9.84	0.551	0.866	0.512	2,720	138	9.62	2.17	230	28.0	262	43.7	0.875	29.2	17,900	5.72	29.3	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1	
	HY24 x 10 x 92 *	92.4	23.6	9.84	0.551	0.748	0.512	2,450	119	9.50	2.10	208	24.2	238	38.0	0.865	32.8	15,600	4.23	27.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1	
	HY24 x 10 x 109	109	23.6	9.84	0.472	1.10	0.512	3,170	175	9.94	2.34	268	35.6	301	54.7	0.900	23.4	22,200	9.51	32.0	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY24 x 10 x 102	102	23.6	9.84	0.472	0.984	0.512	2,910	157	9.88	2.29	246	31.8	277	49.0	0.893	26.2	20,100	7.11	29.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY24 x 10 x 94	94.0	23.6	9.84	0.472	0.866	0.512	2,650	138	9.79	2.23	224	28.0	253	43.3	0.885	29.7	17,800	5.19	27.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY24 x 10 x 87	86.5	23.6	9.84	0.472	0.748	0.512	2,380	119	9.68	2.17	202	24.2	229	37.5	0.876	33.9	15,600	3.71	25.4	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY24 x 10 x 79 *	78.9	23.6	9.84	0.472	0.630	0.512	2,110	100	9.53	2.08	178	20.4	204	31.8	0.864	38.8	13,300	2.61	23.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY24 x 10 x 78	77.6	23.6	9.84	0.354	0.748	0.512	2,270	119	9.99	2.28	192	24.2	214	37.0	0.895	34.7	15,600	3.18	22.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c2	
	HY24 x 10 x 70	69.9	23.6	9.84	0.354	0.630	0.512	2,000	100	9.86	2.21	169	20.4	189	31.3	0.884	40.8	13,200	2.09	20.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c2	
HY24 x 8	HY24 x 8 x 100 *	100	23.6	7.87	0.551	1.10	0.512	2,680	90.0	9.55	1.75	227	22.9	261	35.9	0.881	24.0	11,400	8.31	29.4	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1	
	HY24 x 8 x 94 *	94.1	23.6	7.87	0.551	0.984	0.512	2,480	80.4	9.47	1.71	210	20.4	242	32.2	0.873	26.6	10,300	6.40	27.7	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1	
	HY24 x 8 x 88 *	88.2	23.6	7.87	0.551	0.866	0.512	2,270	70.8	9.37	1.65	193	18.0	224	28.6	0.864	29.7	9,170	4.87	25.9	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1	
	HY24 x 8 x 82 *	82.4	23.6	7.87	0.551	0.748	0.512	2,070	61.2	9.24	1.59	175	15.5	205	25.0	0.853	33.2	8,010	3.68	24.2	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1	
	HY24 x 8 x 94	94.3	23.6	7.87	0.472	1.10	0.512	2,610	89.9	9.72	1.80	221	22.8	252	35.4	0.891	24.1	11,400	7.75	27.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY24 x 8 x 88	88.3	23.6	7.87	0.472	0.984	0.512	2,410	80.3	9.64	1.76	204	20.4	233	31.8	0.883	27.0	10,300	5.86	26.0	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY24 x 8 x 82	82.4	23.6	7.87	0.472	0.866	0.512	2,210	70.7	9.55	1.71	187	18.0	214	28.2	0.875	30.4	9,150	4.34	24.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY24 x 8 x 76	76.4	23.6	7.87	0.472	0.748	0.512	1,990	61.1	9.42	1.65	169	15.5	195	24.5	0.865	34.5	7,990	3.16	22.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY24 x 8 x 71	70.5	23.6	7.87	0.472	0.630	0.512	1,780	51.5	9.27	1.58	151	13.1	176	20.9	0.853	39.2	6,800	2.28	20.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY24 x 8 x 74	73.6	23.6	7.87	0.354	0.866	0.512	2,100	70.6	9.86	1.81	178	17.9	200	27.6	0.894	30.7	9,140	3.80	21.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY24 x 8 x 68	67.5	23.6	7.87	0.354	0.748	0.512	1,890	61.0	9.75	1.75	160	15.5	181	23.9	0.885	35.6	7,970	2.63	19.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c2	
	HY24 x 8 x 62	61.5	23.6	7.87	0.354	0.630	0.512	1,670	51.4	9.61	1.69	141	13.0	161	20.3	0.873	41.7	6,790	1.76	18.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c2	
	HY24 x 8 x 53	53.4	23.6	7.87	0.354	0.472	0.512	1,370	38.5	9.34	1.57	116	9.79	134	15.4	0.853	52.1	5,160	0.993	15.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c2	
	HY22 x 12	HY22 x 12 x 143 *	143	21.7	11.8	0.630	1.26	0.512	3,490	346	9.11	2.87	322	58.7	363	89.9	0.897	18.0	36,000	17.3	42.0	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
		HY22 x 12 x 131	131	21.7	11.8	0.630	1.10	0.512	3,160	303	9.06	2.81	292	51.3	329	78.9	0.889	20.5	32,000	12.4	38.5	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
HY22 x 12 x 122		122	21.7	11.8	0.630	0.984	0.512	2,910	271	9.00	2.75	268	45.8	303	70.7	0.883	22.8	28,900	9.44	35.9	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY22 x 12 x 113 *		113	21.7	11.8	0.630	0.866	0.512	2,650	238	8.93	2.68	245	40.4	277	62.5	0.875	25.5	25,700	7.10	33.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY22 x 12 x 126 *		126	21.7	11.8	0.551	1.10	0.512	3,110	303	9.17	2.86	287	51.3	322	78.5	0.897	20.7	32,000	11.7	37.0	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY22 x 12 x 117 *		117	21.7	11.8	0.551	0.984	0.512	2,860	271	9.12	2.81	264	45.8	296	70.2	0.891	23.1	28,900	8.79	34.3	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1					

Dimensions and Properties



NSHYPER BEAM™ [Imperial Unit]

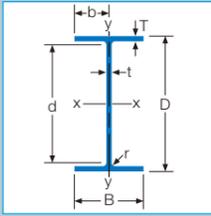
Values listed on pp.50~75 in imperial unit are conversions of ones on pp.76~103

Table with columns for Nominal Size, Mass per Foot, Depth of section, Width of section, Thickness (Web, Flange), Root Radius, Second Moment of Area (Ix, Iy), Radius of Gyration (rx, ry), Elastic Modulus (Zx, Zy), Plastic Modulus (Sx, Sy), Buckling Parameter (u), Torsional Index (x), Warping Constant (H), Torsional Constant (J), Area of Section (A), and Section Classification (AISC360-16, BS EN 1993-1-1).

Please contact us in advance to order these sizes with "\*" mark. [nS] non Slender [S] Slender [C] Compact [nC] not Compact [c1-c4] Class1-4 [nc4] not Class4

NSHYPER BEAM™

Dimensions and Properties



**NSHYPER BEAM™ [Imperial Unit]**

Values listed on pp.50~75 in imperial unit are conversions of ones on pp.76~103

Nominal Size	Mass per Foot lb/ft	Depth of section D inch	Width of section B inch	Thickness		Root Radius r inch	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H inch <sup>6</sup>	Torsional Constant J inch <sup>4</sup>	Area of Section A inch <sup>2</sup>	Section Classification																
				Web t inch	Flange T inch		Axis x-x I <sub>x</sub> inch <sup>4</sup>	Axis y-y I <sub>y</sub> inch <sup>4</sup>	Axis x-x r <sub>x</sub> inch	Axis y-y r <sub>y</sub> inch	Axis x-x Z <sub>x</sub> inch <sup>3</sup>	Axis y-y Z <sub>y</sub> inch <sup>3</sup>	Axis x-x S <sub>x</sub> inch <sup>3</sup>	Axis y-y S <sub>y</sub> inch <sup>3</sup>						AISC360-16						BS EN 1993-1-1										
																				A36			A572 Gr50, A992			S275			S355							
																				Axial Compression		Pure Bending	Axial Compression		Pure Bending	Axial Compression		Pure Bending	Axial Compression		Pure Bending					
																				Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web					
HY18 x 10	HY18 x 10 x 100	99.6	17.7	9.84	0.472	1.10	0.512	1,660	175	7.53	2.45	187	35.6	210	54.3	0.905	16.7	12,100	9.31	29.3	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY18 x 10 x 92	92.0	17.7	9.84	0.472	0.984	0.512	1,520	157	7.51	2.41	172	31.8	193	48.6	0.899	18.7	11,000	6.90	27.0	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY18 x 10 x 85	84.5	17.7	9.84	0.472	0.866	0.512	1,390	138	7.47	2.36	156	28.0	176	42.9	0.893	21.3	9,780	4.99	24.8	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY18 x 10 x 77 *	77.0	17.7	9.84	0.472	0.748	0.512	1,240	119	7.41	2.29	140	24.2	158	37.2	0.884	24.4	8,570	3.50	22.6	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY18 x 10 x 69 *	69.4	17.7	9.84	0.472	0.630	0.512	1,100	100	7.33	2.22	124	20.4	140	31.5	0.874	28.2	7,320	2.40	20.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY18 x 10 x 78	78.1	17.7	9.84	0.354	0.866	0.512	1,350	138	7.66	2.45	152	28.0	168	42.5	0.908	21.4	9,780	4.56	22.9	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY18 x 10 x 70	70.4	17.7	9.84	0.354	0.748	0.512	1,200	119	7.62	2.40	136	24.2	150	36.8	0.901	24.8	8,560	3.09	20.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY18 x 10 x 63	62.8	17.7	9.84	0.354	0.630	0.512	1,050	100	7.55	2.33	119	20.4	132	31.1	0.892	29.4	7,310	2.00	18.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY18 x 8	HY18 x 8 x 79 *	78.8	17.7	7.87	0.472	0.984	0.512	1,250	80.3	7.36	1.86	141	20.4	161	31.5	0.896	19.2	5,620	5.65	23.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY18 x 8 x 73 *	72.9	17.7	7.87	0.472	0.866	0.512	1,140	70.6	7.31	1.82	129	17.9	147	27.8	0.888	21.7	5,010	4.13	21.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY18 x 8 x 67 *	66.9	17.7	7.87	0.472	0.748	0.512	1,030	61.0	7.24	1.76	116	15.5	133	24.2	0.879	24.8	4,390	2.95	19.7	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY18 x 8 x 61 *	61.0	17.7	7.87	0.472	0.630	0.512	915	51.4	7.14	1.69	103	13.1	119	20.5	0.867	28.5	3,750	2.07	17.9	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY18 x 8 x 67	66.5	17.7	7.87	0.354	0.866	0.512	1,100	70.6	7.52	1.90	125	17.9	139	27.4	0.905	21.9	5,010	3.71	19.5	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY18 x 8 x 60	60.4	17.7	7.87	0.354	0.748	0.512	989	60.9	7.46	1.85	112	15.5	125	23.8	0.897	25.4	4,390	2.54	17.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY18 x 8 x 54	54.4	17.7	7.87	0.354	0.630	0.512	871	51.3	7.38	1.79	98.3	13.0	111	20.1	0.886	29.9	3,750	1.67	16.0	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY18 x 8 x 46 *	46.3	17.7	7.87	0.354	0.472	0.512	708	38.5	7.21	1.68	79.9	9.78	90.9	15.2	0.868	37.8	2,860	0.905	13.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY16 x 12	HY16 x 12 x 93 *	92.9	15.7	11.8	0.472	0.866	0.512	1,250	238	6.77	2.95	159	40.3	177	61.3	0.885	18.3	13,200	5.77	27.3	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY16 x 12 x 84 *	83.8	15.7	11.8	0.472	0.748	0.512	1,120	206	6.74	2.89	142	34.8	158	53.0	0.879	21.1	11,600	3.98	24.6	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY16 x 12 x 87 *	87.3	15.7	11.8	0.354	0.866	0.512	1,230	238	6.91	3.05	156	40.3	171	60.9	0.897	18.4	13,200	5.38	25.7	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY16 x 12 x 78 *	78.1	15.7	11.8	0.354	0.748	0.512	1,090	205	6.90	2.99	139	34.8	152	52.7	0.892	21.4	11,600	3.61	22.9	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
HY16 x 10	HY16 x 10 x 81 *	81.3	15.7	9.84	0.472	0.866	0.512	1,060	138	6.67	2.40	135	28.0	152	42.8	0.892	18.6	7,630	4.92	23.9	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY16 x 10 x 74 *	73.8	15.7	9.84	0.472	0.748	0.512	954	119	6.63	2.34	121	24.2	136	37.1	0.885	21.3	6,700	3.43	21.7	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY16 x 10 x 76 *	75.7	15.7	9.84	0.354	0.866	0.512	1,040	138	6.83	2.49	132	28.0	146	42.5	0.906	18.7	7,630	4.53	22.2	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY16 x 10 x 68 *	68.1	15.7	9.84	0.354	0.748	0.512	926	119	6.80	2.44	118	24.2	130	36.7	0.900	21.7	6,690	3.06	20.0	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
HY16 x 8	HY16 x 8 x 70 *	69.7	15.7	7.87	0.472	0.866	0.512	875	70.6	6.54	1.86	111	17.9	126	27.7	0.891	18.9	3,910	4.06	20.5	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY16 x 8 x 64 *	63.8	15.7	7.87	0.472	0.748	0.512	788	61.0	6.49	1.80	100	15.5	114	24.1	0.882	21.6	3,430	2.88	18.7	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY16 x 8 x 58 *	57.8	15.7	7.87	0.472	0.630	0.512	698	51.4	6.41	1.74	88.7	13.1	101	20.4	0.872	24.9	2,940	2.00	17.0	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY16 x 8 x 64 *	64.1	15.7	7.87	0.354	0.866	0.512	848	70.5	6.71	1.94	108	17.9	120	27.4	0.907	19.1	3,910	3.68	18.8	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY16 x 8 x 58 *	58.0	15.7	7.87	0.354	0.748	0.512	760	60.9	6.67	1.89	96.5	15.5	108	23.7	0.900	22.1	3,430	2.51	17.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY16 x 8 x 52 *	52.0	15.7	7.87	0.354	0.630	0.512	668	51.3	6.61	1.83	84.9	13.0	95.2	20.0	0.890	26.1	2,930	1.64	15.3	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
HY16 x 8 x 44 *	43.9	15.7	7.87	0.354	0.472	0.512	542	38.5	6.48	1.73	68.8	9.78	77.9	15.2	0.872	33.2	2,250	0.876	12.9	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	

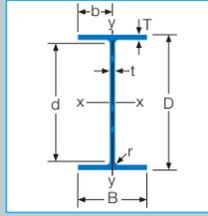
Please contact us in advance to order these sizes with "\*" mark.

[nS] non Slender [S] Slender [C] Compact [nC] not Compact [c1-4] Class1-4 [nc4] not Class4

NSHYPER BEAM™



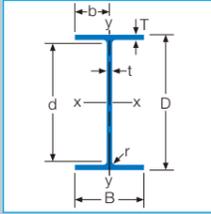
Dimensions and Properties



MEGA NSHYPER BEAM™ [Metric Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section A cm <sup>2</sup>	Section Classification																	
				Web t mm	Flange T mm		Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>						AISC360-16				BS EN 1993-1-1													
																				A36		A572 Gr50, A992		S275		S355											
				Axial Compression			Pure Bending		Axial Compression		Pure Bending		Axial Compression							Pure Bending		Axial Compression		Pure Bending													
				Flange	Web		Flange	Web	Flange	Web	Flange	Web	Flange	Web						Flange	Web	Flange	Web														
HY 1200 x 500	HY1200 x 500 x 22 x 40 *	513	1200	500	22	40	30	1,630,000	83,500	49.9	11.3	27,100	3,340	30,500	5,150	0.885	32.5	281	2,680	654.1	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 500 x 22 x 36 *	483	1200	500	22	36	30	1,510,000	75,100	49.5	11.0	25,100	3,010	28,400	4,650	0.879	35.7	254	2,110	615.9	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 500 x 22 x 32 *	453	1200	500	22	32	30	1,380,000	66,800	49.0	10.8	23,100	2,670	26,200	4,150	0.871	39.3	228	1,640	577.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 500 x 22 x 28 *	423	1200	500	22	28	30	1,260,000	58,500	48.3	10.4	21,000	2,340	24,000	3,650	0.862	43.3	201	1,270	539.4	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c2	c4	c2	c1	
	HY1200 x 500 x 19 x 36 *	457	1200	500	19	36	30	1,470,000	75,100	50.3	11.4	24,500	3,000	27,400	4,610	0.888	36.2	254	1,930	582.0	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 500 x 19 x 32 *	427	1200	500	19	32	30	1,350,000	66,800	49.8	11.1	22,500	2,670	25,300	4,120	0.881	40.2	228	1,470	543.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
HY 1200 x 450	HY1200 x 450 x 22 x 40 *	482	1200	450	22	40	30	1,490,000	60,900	49.3	10.0	24,900	2,710	28,200	4,200	0.881	32.8	205	2,470	614.1	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 450 x 22 x 36 *	455	1200	450	22	36	30	1,380,000	54,800	48.9	9.7	23,100	2,440	26,300	3,800	0.874	35.9	186	1,950	579.9	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 450 x 22 x 32 *	428	1200	450	22	32	30	1,280,000	48,700	48.4	9.5	21,300	2,170	24,400	3,390	0.866	39.5	166	1,530	545.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 450 x 19 x 40 *	456	1200	450	19	40	30	1,460,000	60,800	50.1	10.2	24,300	2,700	27,300	4,160	0.890	33.1	205	2,290	580.5	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 450 x 19 x 36 *	429	1200	450	19	36	30	1,350,000	54,800	49.7	10.0	22,500	2,430	25,300	3,760	0.884	36.5	185	1,780	546.0	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 450 x 19 x 32 *	402	1200	450	19	32	30	1,240,000	48,700	49.2	9.8	20,600	2,160	23,400	3,360	0.876	40.5	166	1,360	511.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
HY 1200 x 400	HY1200 x 400 x 22 x 40 *	451	1200	400	22	40	30	1,360,000	42,800	48.6	8.6	22,600	2,140	25,900	3,350	0.875	33.2	144	2,250	574.1	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 400 x 22 x 36 *	427	1200	400	22	36	30	1,260,000	38,500	48.2	8.4	21,000	1,930	24,200	3,030	0.867	36.3	130	1,790	543.9	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 400 x 22 x 32 *	403	1200	400	22	32	30	1,170,000	34,300	47.7	8.2	19,400	1,710	22,500	2,710	0.859	39.8	117	1,420	513.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 400 x 22 x 28 *	379	1200	400	22	28	30	1,070,000	30,000	47.0	7.9	17,800	1,500	20,800	2,390	0.850	43.6	103	1,120	483.4	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 400 x 19 x 36 *	400	1200	400	19	36	30	1,230,000	38,500	49.0	8.7	20,500	1,920	23,200	2,990	0.878	36.9	130	1,620	510.0	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 400 x 19 x 32 *	376	1200	400	19	32	30	1,130,000	34,200	48.5	8.5	18,800	1,710	21,500	2,680	0.870	40.9	117	1,250	479.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 400 x 19 x 28 *	353	1200	400	19	28	30	1,030,000	30,000	47.9	8.2	17,200	1,500	19,800	2,360	0.861	45.4	103	958	449.1	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 400 x 19 x 25 *	335	1200	400	19	25	30	956,000	26,800	47.4	7.9	15,900	1,340	18,500	2,120	0.853	49.1	92.3	781	426.2	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
	HY1200 x 400 x 16 x 32 *	350	1200	400	16	32	30	1,090,000	34,200	49.5	8.8	18,200	1,710	20,500	2,640	0.882	41.6	117	1,130	445.5	nS	nS	S	S	C	C	C	C	c1	c4	c1	c2	c1	c4	c1	c2	
	HY1200 x 400 x 16 x 28 *	326	1200	400	16	28	30	994,000	29,900	48.9	8.5	16,600	1,500	18,800	2,320	0.873	46.8	103	834	414.8	nS	nS	S	S	C	C	C	C	c1	c4	c1	c2	c1	c4	c1	c3	
	HY1200 x 400 x 16 x 25 *	308	1200	400	16	25	30	918,000	26,700	48.4	8.3	15,300	1,340	17,500	2,080	0.865	51.3	92.2	660	391.7	nS	nS	S	S	C	C	C	C	c1	c4	c1	c2	c1	c4	c1	c3	
	HY 1200 x 350	HY1200 x 350 x 22 x 40 *	419	1200	350	22	40	30	1,220,000	28,700	47.9	7.3	20,400	1,640	23,600	2,600	0.867	33.6	96.6	2,040	534.1	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
		HY1200 x 350 x 22 x 36 *	399	1200	350	22	36	30	1,140,000	25,900	47.4	7.1	19,000	1,480	22,100	2,360	0.860	36.7	87.6	1,640	507.9	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
		HY1200 x 350 x 22 x 32 *	378	1200	350	22	32	30	1,060,000	23,000	46.9	6.9	17,600	1,310	20,600	2,110	0.851	40.1	78.4	1,310	481.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
HY1200 x 350 x 19 x 36 *		372	1200	350	19	36	30	1,110,000	25,800	48.3	7.4	18,400	1,470	21,100	2,320	0.870	37.5	87.4	1,470	474.0	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
HY1200 x 350 x 19 x 32 *		351	1200	350	19	32	30	1,020,000	23,000	47.8	7.2	17,000	1,310	19,600	2,080	0.862	41.4	78.3	1,140	447.6	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
HY1200 x 350 x 19 x 28 *		331	1200	350	19	28	30	935,000	20,100	47.1	6.9	15,600	1,150	18,100	1,830	0.853	45.8	69.0	885	421.1	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1	
HY1200 x 350 x 16 x 32 *		325	1200	350	16	32	30	984,000	22,900	48.8	7.5	16,400	1,310	18,700	2,040	0.874	42.2	78.2	1,020	413.5	nS	nS	S	S	C	C	C	C	c1	c4	c1	c2	c1	c4	c1	c2	
HY1200 x 350 x 16 x 28 *		304	1200	350	16	28	30	898,000	20,100	48.2	7.2	15,000	1,150	17,200	1,800	0.865	47.3	68.9	761	386.8	nS	nS	S	S	C	C	C	C	c1	c4	c1	c2	c1	c4	c1	c3	
HY1200 x 350 x 16 x 25 *		288	1200	350	16	25	30	832,000	17,900	47.6	7.0	13,900	1,020	16,000	1,620	0.857	51.7	61.9	608	366.7	nS	nS	S	S	C	C	C	C	c1	c4	c1	c2	c1	c4	c1	c3	
HY 1200 x 300		HY1200 x 300 x 22 x 40 *	388	1200	300	22	40	30	1,090,000	18,100	46.9	6.1	18,100	1,210	21,200	1,950	0.857	34.2	61.0	1,830	494.1	nS	nS	S	S	C	C	C	C	c1	c4	c1	c1	c1	c4	c1	c1
	HY1200 x 300 x 22 x 36 *	370	1200	300	22	36	30	1,020,000	16,300	46.5	5.9	17,000	1,090	20,000	1,770	0.850	37.2	55.3	1,480																		

Dimensions and Properties



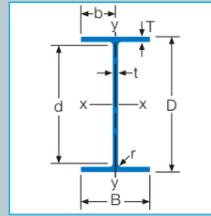
MEGA NSHYPER BEAM™ [Metric Unit]

Table with columns: Nominal Size, Mass per Meter, Depth of section, Width of section, Thickness (Web, Flange), Root Radius, Second Moment of Area (Axis x-x, Axis y-y), Radius of Gyration (Axis x-x, Axis y-y), Elastic Modulus (Axis x-x, Axis y-y), Plastic Modulus (Axis x-x, Axis y-y), Buckling Parameter (u), Torsional Index (x), Warping Constant (H), Torsional Constant (J), Area of Section (A), and Section Classification (AISC360-16, BS EN 1993-1-1).

Please contact us in advance to order these sizes with "\*" mark.

[nS] non Slender [S] Slender [C] Compact [InC] not Compact [c1-c4] Class 1-4 [InC4] not Class 4

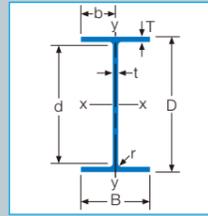
Dimensions and Properties



NSHYPER BEAM™ [50mm Incremental Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus Axis x-x Sx cm <sup>3</sup>	Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section A cm <sup>2</sup>	Section Classification																
				Web t mm	Flange T mm		Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>							AISC360-16				BS EN 1993-1-1												
																			A36		A572 Gr50, A992		S275		S355										
				Axial Compression	Pure Bending		Axial Compression	Pure Bending	Axial Compression	Pure Bending	Axial Compression	Pure Bending																							
Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web																				
HY 1000 x 400	HY1000 x 400 x 22 x 40 *	412	1000	400	22	40	18	886,000	42,800	41.1	9.02	17,700	2,140							nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 400 x 22 x 36 *	388	1000	400	22	36	18	822,000	38,500	40.7	8.82	16,400	1,920							nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 400 x 22 x 32 *	365	1000	400	22	32	18	756,000	34,200	40.3	8.58	15,100	1,710							nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 400 x 22 x 28 *	341	1000	400	22	28	18	690,000	30,000	39.8	8.30	13,800	1,500							nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 400 x 19 x 40	391	1000	400	19	40	18	867,000	42,700	41.7	9.27	17,300	2,140							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 400 x 19 x 36	367	1000	400	19	36	18	802,000	38,500	41.4	9.07	16,000	1,920							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 400 x 19 x 32	343	1000	400	19	32	18	736,000	34,200	41.0	8.85	14,700	1,710							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 400 x 19 x 28	319	1000	400	19	28	18	669,000	29,900	40.6	8.58	13,400	1,500							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 400 x 19 x 25	301	1000	400	19	25	18	617,000	26,700	40.1	8.35	12,300	1,340							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 400 x 16 x 32	321	1000	400	16	32	18	715,000	34,200	41.8	9.15	14,300	1,710							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 400 x 16 x 28	297	1000	400	16	28	18	647,000	29,900	41.4	8.90	12,900	1,500							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 400 x 16 x 25	279	1000	400	16	25	18	596,000	26,700	41.0	8.68	11,900	1,340							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY1000 x 400 x 16 x 22 *	260	1000	400	16	22	18	544,000	23,500	40.5	8.42	10,900	1,180							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c2	c1	
HY 1000 x 350	HY1000 x 350 x 22 x 40 *	381	1000	350	22	40	18	794,000	28,700	40.5	7.69	15,900	1,640							nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 350 x 22 x 36 *	360	1000	350	22	36	18	738,000	25,800	40.1	7.50	14,800	1,480							nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 350 x 22 x 32 *	340	1000	350	22	32	18	681,000	23,000	39.7	7.28	13,600	1,310							nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 350 x 22 x 28 *	319	1000	350	22	28	18	623,000	20,100	39.2	7.03	12,500	1,150							nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 350 x 19 x 40	359	1000	350	19	40	18	775,000	28,600	41.1	7.91	15,500	1,640							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 350 x 19 x 36	338	1000	350	19	36	18	718,000	25,800	40.8	7.73	14,400	1,470							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 350 x 19 x 32	318	1000	350	19	32	18	661,000	22,900	40.4	7.53	13,200	1,310							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 350 x 19 x 28	297	1000	350	19	28	18	602,000	20,100	39.9	7.28	12,000	1,150							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 350 x 19 x 25	281	1000	350	19	25	18	558,000	17,900	39.5	7.07	11,200	1,020							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 350 x 16 x 32	296	1000	350	16	32	18	640,000	22,900	41.2	7.80	12,800	1,310							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 350 x 16 x 28	275	1000	350	16	28	18	581,000	20,000	40.8	7.57	11,600	1,150							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 350 x 16 x 25	259	1000	350	16	25	18	536,000	17,900	40.3	7.37	10,700	1,020							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY1000 x 350 x 16 x 22	243	1000	350	16	22	18	491,000	15,800	39.8	7.13	9,820	900							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY 1000 x 300	HY1000 x 300 x 22 x 40 *	349	1000	300	22	40	18	702,000	18,100	39.7	6.37	14,000	1,210							nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1
HY1000 x 300 x 22 x 36 *		332	1000	300	22	36	18	654,000	16,300	39.3	6.21	13,100	1,090							nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY1000 x 300 x 22 x 32 *		315	1000	300	22	32	18	606,000	14,500	38.9	6.01	12,100	966							nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY1000 x 300 x 22 x 28 *		297	1000	300	22	28	18	557,000	12,700	38.4	5.79	11,100	846							nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY1000 x 300 x 19 x 40		328	1000	300	19	40	18	682,000	18,100	40.4	6.58	13,600	1,200							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY1000 x 300 x 19 x 36		310	1000	300	19	36	18	634,000	16,300	40.1	6.41	12,700	1,080							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY1000 x 300 x 19 x 32		292	1000	300	19	32	18	586,000	14,500	39.6	6.23	11,700	964							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY1000 x 300 x 19 x 28		275	1000	300	19	28	18	536,000	12,700	39.1	6.01	10,700	844							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY1000 x 300 x 19 x 25		262	1000	300	19	25	18	498,000	11,300	38.7	5.83	9,970	754							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY1000 x 300 x 16 x 32		270	1000	300	16	32	18	565,000	14,400	40.5	6.47	11,300	962							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY1000 x 300 x 16 x 28		253	1000	300	16	28	18	515,000	12,600	40.0	6.27	10,300	842							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY1000 x 300 x 16 x 25		239	1000	300	16	25	18	477,000	11,300	39.6	6.09	9,540	752							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY1000 x 300 x 16 x 22		226	1000	300	16	22	18	438,000	9,940	39.0	5.88	8,770	662							nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY 1000 x																																			

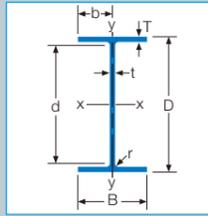
Dimensions and Properties



NSHYPER BEAM™ [50mm Incremental Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section A cm <sup>2</sup>	Section Classification																
				Web t mm	Flange T mm		Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>						AISC360-16				BS EN 1993-1-1												
																				A36		A572 Gr50, A992		S275		S355		Axial Compression	Pure Bending							
				Flange	Web		Flange	Web	Flange	Web	Flange	Web	Flange	Web						Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web							
HY 950 x 400	HY950 x 400 x 16 x 36 *	339	950	400	16	36	18	697,000	38,400	40.2	9.44	14,700	1,920	16,400	2,940	0.898	29.0	80.3	1,370	431.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 400 x 16 x 32 *	314	950	400	16	32	18	638,000	34,200	39.9	9.24	13,400	1,710	15,000	2,620	0.891	32.7	72.0	1,010	400.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 400 x 16 x 28 *	290	950	400	16	28	18	577,000	29,900	39.5	8.99	12,100	1,500	13,600	2,300	0.883	37.1	63.5	733	369.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 400 x 16 x 25 *	272	950	400	16	25	18	531,000	26,700	39.1	8.77	11,200	1,340	12,600	2,060	0.875	41.0	57.1	566	346.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 400 x 16 x 22 *	254	950	400	16	22	18	484,000	23,500	38.7	8.52	10,200	1,180	11,600	1,820	0.867	45.4	50.6	434	323.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c2	c1
HY 950 x 350	HY950 x 350 x 22 x 40 *	372	950	350	22	40	18	706,000	28,700	38.6	7.78	14,900	1,640	17,000	2,560	0.879	26.2	59.3	1,830	474.2	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY950 x 350 x 22 x 36 *	352	950	350	22	36	18	656,000	25,800	38.3	7.59	13,800	1,470	15,900	2,320	0.872	28.9	53.9	1,440	447.9	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY950 x 350 x 22 x 32 *	331	950	350	22	32	18	605,000	23,000	37.9	7.38	12,700	1,310	14,700	2,070	0.864	31.8	48.4	1,130	421.7	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY950 x 350 x 22 x 28 *	310	950	350	22	28	18	553,000	20,100	37.4	7.13	11,600	1,150	13,600	1,830	0.854	35.0	42.7	878	395.5	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY950 x 350 x 19 x 40 *	352	950	350	19	40	18	689,000	28,600	39.2	7.99	14,500	1,640	16,500	2,530	0.889	26.5	59.3	1,700	448.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 350 x 19 x 36	331	950	350	19	36	18	639,000	25,800	38.9	7.82	13,500	1,470	15,300	2,290	0.882	29.3	53.8	1,310	421.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 350 x 19 x 32	310	950	350	19	32	18	588,000	22,900	38.6	7.62	12,400	1,310	14,100	2,040	0.874	32.7	48.3	1,000	395.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 350 x 19 x 28	289	950	350	19	28	18	535,000	20,100	38.1	7.38	11,300	1,150	13,000	1,800	0.865	36.5	42.6	753	368.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 350 x 19 x 25 *	274	950	350	19	25	18	495,000	17,900	37.7	7.17	10,400	1,020	12,100	1,620	0.857	39.7	38.3	606	348.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 350 x 16 x 32	289	950	350	16	32	18	570,000	22,900	39.3	7.88	12,000	1,310	13,500	2,020	0.886	33.2	48.2	905	368.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 350 x 16 x 28	268	950	350	16	28	18	517,000	20,000	38.9	7.66	10,900	1,150	12,400	1,780	0.877	37.6	42.6	660	341.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 350 x 16 x 25	253	950	350	16	25	18	477,000	17,900	38.5	7.46	10,000	1,020	11,500	1,590	0.869	41.4	38.3	514	321.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY950 x 350 x 16 x 22 *	237	950	350	16	22	18	436,000	15,800	38.0	7.23	9,190	900	10,600	1,410	0.860	45.7	33.9	398	301.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY 950 x 300	HY950 x 300 x 22 x 40 *	341	950	300	22	40	18	623,000	18,100	37.9	6.45	13,100	1,210	15,200	1,910	0.871	26.7	37.4	1,610	434.2	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY950 x 300 x 22 x 36 *	323	950	300	22	36	18	581,000	16,300	37.5	6.29	12,200	1,090	14,200	1,730	0.863	29.3	34.0	1,280	411.9	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY950 x 300 x 22 x 32 *	306	950	300	22	32	18	538,000	14,500	37.1	6.10	11,300	966	13,300	1,550	0.855	32.2	30.5	1,020	389.7	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY950 x 300 x 22 x 28 *	288	950	300	22	28	18	494,000	12,700	36.7	5.88	10,400	846	12,300	1,370	0.845	35.3	27.0	805	367.5	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY950 x 300 x 19 x 40 *	320	950	300	19	40	18	607,000	18,100	38.6	6.65	12,800	1,200	14,600	1,880	0.881	27.0	37.4	1,480	408.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 300 x 19 x 36 *	303	950	300	19	36	18	564,000	16,300	38.2	6.49	11,900	1,080	13,700	1,700	0.874	29.9	33.9	1,160	385.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 300 x 19 x 32	285	950	300	19	32	18	520,000	14,500	37.8	6.31	11,000	964	12,700	1,520	0.866	33.2	30.5	890	363.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 300 x 19 x 28	267	950	300	19	28	18	476,000	12,700	37.4	6.10	10,000	844	11,700	1,340	0.856	36.9	26.9	680	340.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 300 x 19 x 25 *	254	950	300	19	25	18	442,000	11,300	36.9	5.91	9,300	754	10,900	1,210	0.848	40.0	24.2	554	323.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 300 x 16 x 32 *	264	950	300	16	32	18	503,000	14,400	38.7	6.55	10,600	962	12,100	1,500	0.878	33.8	30.4	795	336.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 300 x 16 x 28	246	950	300	16	28	18	458,000	12,600	38.2	6.35	9,640	842	11,100	1,320	0.868	38.2	26.9	586	313.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 300 x 16 x 25	233	950	300	16	25	18	424,000	11,300	37.8	6.17	8,920	752	10,300	1,190	0.860	42.0	24.1	462	296.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY950 x 300 x 16 x 22	220	950	300	16	22	18	389,000	9,940	37.3	5.96	8,190	662	9,530	1,050	0.851	46.1	21.4	363	279.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY 950 x 250	HY950 x 250 x 19 x 40 *	289	950	250	19	40	18	524,000	10,500	37.7	5.33	11,000	838	12,800	1,330	0.870	27.7	21.7	1,270	368.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 250 x 19 x 36 *	274	950	250	19	36	18	489,000	9,430	37.4	5.19	10,300	754	12,000	1,210	0.863	30.6	19.7	1,000	349.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY950 x 250 x 19 x 32 *	260	950	250	19	32	18	453,000	8,390	37.0	5.03	9,530	671	11,200	1,080	0.854	33.8	17.7	781	331.1	nS	S														

Dimensions and Properties



NSHYPER BEAM™ [50mm Incremental Unit]

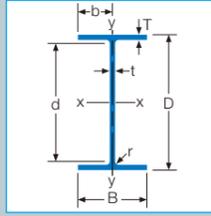
Table with columns: Nominal Size, Mass per Meter, Depth of section, Width of section, Thickness (Web, Flange), Root Radius, Second Moment of Area (Axis x-x, Axis y-y), Radius of Gyration (Axis x-x, Axis y-y), Elastic Modulus (Axis x-x, Axis y-y), Plastic Modulus (Axis x-x, Axis y-y), Buckling Parameter (u), Torsional Index (x), Warping Constant (H), Torsional Constant (J), Area of Section (A), and Section Classification (AISC360-16, BS EN 1993-1-1).

Please contact us in advance to order these sizes with "\*" mark.

[nS]non Slender [S]Slender [C]Compact [nC]not Compact [c1-c4]Class1-4 [nc4]not Class4

NSHYPER BEAM™

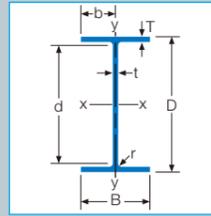
Dimensions and Properties



**NSHYPER BEAM™ [50mm Incremental Unit]**

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section A cm <sup>2</sup>	Section Classification																
				Web t mm	Flange T mm		Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>						AISC360-16				BS EN 1993-1-1												
																				A36		A572 Gr50, A992		S275				S355								
				Axial Compression			Pure Bending		Axial Compression		Pure Bending		Axial Compression							Pure Bending		Axial Compression		Pure Bending												
				Flange	Web		Flange	Web	Flange	Web	Flange	Web	Flange	Web						Flange	Web	Flange	Web													
HY 850 x 350	HY850 x 350 x 19 x 40	337	850	350	19	40	18	536,000	28,600	35.3	8.17	12,600	1,640	14,300	2,520	0.894	23.2	47.0	1,670	429.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY850 x 350 x 19 x 36	316	850	350	19	36	18	496,000	25,800	35.1	8.00	11,700	1,470	13,200	2,280	0.887	25.8	42.7	1,290	402.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY850 x 350 x 19 x 32	295	850	350	19	32	18	456,000	22,900	34.8	7.81	10,700	1,310	12,200	2,030	0.879	28.7	38.3	977	376.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY850 x 350 x 19 x 28	274	850	350	19	28	18	415,000	20,100	34.4	7.57	9,760	1,150	11,200	1,790	0.870	32.2	33.9	730	349.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c4	c1	nc4	c4	c1	c1
	HY850 x 350 x 16 x 36	298	850	350	16	36	18	485,000	25,800	35.7	8.24	11,400	1,470	12,800	2,260	0.898	25.9	42.7	1,200	379.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 350 x 16 x 32	277	850	350	16	32	18	444,000	22,900	35.5	8.06	10,400	1,310	11,700	2,010	0.891	29.1	38.3	891	352.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 350 x 16 x 28	256	850	350	16	28	18	402,000	20,000	35.1	7.84	9,460	1,150	10,700	1,770	0.882	33.0	33.9	646	325.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 350 x 16 x 25	240	850	350	16	25	18	370,000	17,900	34.8	7.65	8,720	1,020	9,890	1,590	0.875	36.5	30.5	500	305.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 350 x 14 x 28	243	850	350	14	28	18	394,000	20,000	35.6	8.04	9,270	1,140	10,400	1,760	0.891	33.3	33.8	604	309.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 350 x 14 x 25	227	850	350	14	25	18	362,000	17,900	35.3	7.86	8,520	1,020	9,570	1,570	0.883	37.1	30.4	459	289.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY 850 x 300	HY850 x 300 x 19 x 40 *	305	850	300	19	40	18	470,000	18,000	34.8	6.81	11,100	1,200	12,600	1,870	0.887	23.7	29.6	1,460	389.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY850 x 300 x 19 x 36 *	288	850	300	19	36	18	437,000	16,200	34.5	6.66	10,300	1,080	11,800	1,690	0.880	26.2	26.9	1,130	366.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY850 x 300 x 19 x 32 *	270	850	300	19	32	18	402,000	14,500	34.2	6.48	9,470	963	10,900	1,510	0.872	29.2	24.2	868	344.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY850 x 300 x 19 x 28 *	252	850	300	19	28	18	367,000	12,700	33.8	6.27	8,650	843	10,000	1,340	0.863	32.6	21.4	657	321.6	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 300 x 19 x 25 *	239	850	300	19	25	18	341,000	11,300	33.4	6.09	8,020	753	9,340	1,200	0.855	35.4	19.2	531	304.8	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 300 x 19 x 22 *	226	850	300	19	22	18	314,000	9,950	33.0	5.88	7,380	663	8,660	1,070	0.846	38.3	17.1	431	287.9	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 300 x 16 x 36 *	269	850	300	16	36	18	425,000	16,200	35.2	6.88	10,000	1,080	11,300	1,670	0.891	26.4	26.9	1,050	343.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 300 x 16 x 32 *	252	850	300	16	32	18	390,000	14,400	34.9	6.71	9,180	962	10,400	1,490	0.884	29.6	24.1	782	320.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 300 x 16 x 28 *	234	850	300	16	28	18	355,000	12,600	34.5	6.51	8,350	842	9,540	1,310	0.875	33.5	21.3	573	297.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 300 x 16 x 25 *	220	850	300	16	25	18	328,000	11,300	34.2	6.34	7,720	752	8,860	1,180	0.867	37.0	19.2	448	280.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 300 x 16 x 22 *	207	850	300	16	22	18	301,000	9,930	33.8	6.14	7,070	662	8,170	1,040	0.858	40.7	17.0	349	263.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 300 x 14 x 28 *	221	850	300	14	28	18	347,000	12,600	35.1	6.69	8,160	841	9,220	1,300	0.884	33.9	21.3	530	281.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 300 x 14 x 25 *	208	850	300	14	25	18	319,000	11,300	34.7	6.52	7,520	751	8,540	1,170	0.876	37.7	19.2	407	264.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY850 x 300 x 14 x 22 *	194	850	300	14	22	18	292,000	9,920	34.3	6.33	6,870	661	7,850	1,030	0.868	42.0	17.0	308	247.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY 850 x 250	HY850 x 250 x 19 x 40 *	274	850	250	19	40	18	405,000	10,500	34.0	5.48	9,520	837	11,000	1,320	0.877	24.3	17.2	1,250	349.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY850 x 250 x 19 x 36 *	260	850	250	19	36	18	377,000	9,420	33.8	5.34	8,870	754	10,300	1,200	0.870	26.8	15.6	978	330.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY850 x 250 x 19 x 32 *	245	850	250	19	32	18	349,000	8,380	33.4	5.18	8,210	671	9,590	1,070	0.861	29.7	14.0	758	312.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY850 x 250 x 19 x 28 *	230	850	250	19	28	18	320,000	7,340	33.0	5.00	7,530	587	8,860	950	0.852	33.0	12.4	584	293.6	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 250 x 19 x 25 *	220	850	250	19	25	18	298,000	6,560	32.6	4.84	7,020	525	8,310	857	0.844	35.7	11.2	479	279.8	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 250 x 19 x 22 *	209	850	250	19	22	18	276,000	5,780	32.2	4.66	6,490	462	7,750	764	0.835	38.4	9.91	395	265.9	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 250 x 16 x 32 *	226	850	250	16	32	18	337,000	8,360	34.2	5.38	7,920	669	9,120	1,050	0.874	30.3	14.0	673	288.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 250 x 16 x 28 *	212	850	250	16	28	18	308,000	7,320	33.8	5.21	7,240	586	8,390	929	0.864	34.2	12.4	500	269.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 250 x 16 x 25 *	201	850	250	16	25	18	285,000	6,540	33.4	5.06	6,720	523	7,830	836	0.856	37.5	11.1	396	255.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 250 x 16 x 22 *	190	850	250	16	22	18	263,000	5,760	33.0	4.88	6,180	461	7,260	742	0.847	41.2	9.87	313	241.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY850 x 250 x 14 x 28 *	199	85																																	

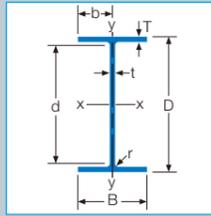
Dimensions and Properties



NSHYPER BEAM™ [50mm Incremental Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section A cm <sup>2</sup>	Section Classification																	
				Web t mm	Flange T mm		Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>						AISC360-16				BS EN 1993-1-1													
																				A36		A572 Gr50, A992		S275		S355											
				Axial Compression			Pure Bending		Axial Compression		Pure Bending		Axial Compression							Pure Bending		Axial Compression		Pure Bending													
				Flange	Web		Flange	Web	Flange	Web	Flange	Web	Flange	Web						Flange	Web	Flange	Web														
HY 800 x 350	HY800 x 350 x 16 x 36	291	800	350	16	36	18	423,000	25,800	33.8	8.33	10,600	1,470	11,800	2,250	0.900	24.1	37.6	1,190	371.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 350 x 16 x 32	270	800	350	16	32	18	387,000	22,900	33.5	8.15	9,680	1,310	10,900	2,010	0.893	27.1	33.8	884	344.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 350 x 16 x 28	249	800	350	16	28	18	351,000	20,000	33.2	7.94	8,770	1,150	9,880	1,770	0.884	30.8	29.9	639	317.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 350 x 16 x 25	234	800	350	16	25	18	323,000	17,900	32.9	7.75	8,070	1,020	9,130	1,580	0.877	34.1	26.9	494	297.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 350 x 14 x 32 *	259	800	350	14	32	18	381,000	22,900	34.0	8.33	9,520	1,310	10,600	2,000	0.901	27.2	33.7	843	329.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 350 x 14 x 28	238	800	350	14	28	18	344,000	20,000	33.7	8.13	8,600	1,140	9,610	1,750	0.893	31.1	29.8	599	302.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY 800 x 300	HY800 x 300 x 22 x 40 *	315	800	300	22	40	18	419,000	18,100	32.3	6.71	10,500	1,200	12,100	1,890	0.880	21.8	26.1	1,560	401.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY800 x 300 x 22 x 36 *	297	800	300	22	36	18	390,000	16,300	32.1	6.55	9,740	1,080	11,300	1,710	0.873	24.0	23.7	1,230	378.9	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY800 x 300 x 22 x 32 *	280	800	300	22	32	18	360,000	14,500	31.8	6.37	9,000	965	10,500	1,530	0.865	26.4	21.3	964	356.7	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY800 x 300 x 22 x 28 *	263	800	300	22	28	18	330,000	12,700	31.4	6.16	8,240	845	9,630	1,350	0.855	29.1	18.9	752	334.5	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY800 x 300 x 22 x 25 *	249	800	300	22	25	18	306,000	11,300	31.1	5.97	7,660	755	9,010	1,220	0.847	31.3	17.0	625	317.8	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY800 x 300 x 19 x 40 *	298	800	300	19	40	18	410,000	18,000	32.8	6.90	10,200	1,200	11,700	1,870	0.890	22.0	26.1	1,450	379.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY800 x 300 x 19 x 36 *	280	800	300	19	36	18	380,000	16,200	32.6	6.75	9,500	1,080	10,900	1,690	0.883	24.4	23.7	1,120	357.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY800 x 300 x 19 x 32 *	263	800	300	19	32	18	350,000	14,400	32.3	6.57	8,750	963	10,000	1,510	0.875	27.2	21.3	856	334.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY800 x 300 x 19 x 28 *	245	800	300	19	28	18	319,000	12,600	32.0	6.37	7,980	843	9,220	1,330	0.866	30.4	18.8	645	312.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY800 x 300 x 19 x 25 *	232	800	300	19	25	18	296,000	11,300	31.7	6.19	7,400	753	8,590	1,200	0.858	33.1	17.0	520	295.3	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY800 x 300 x 19 x 22 *	219	800	300	19	22	18	272,000	9,950	31.3	5.98	6,800	663	7,950	1,060	0.849	35.9	15.1	419	278.4	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
	HY800 x 300 x 16 x 36	263	800	300	16	36	18	370,000	16,200	33.2	6.96	9,260	1,080	10,500	1,670	0.894	24.6	23.7	1,040	335.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 300 x 16 x 32	245	800	300	16	32	18	340,000	14,400	33.0	6.79	8,500	962	9,640	1,490	0.887	27.6	21.3	775	312.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 300 x 16 x 28	227	800	300	16	28	18	309,000	12,600	32.7	6.60	7,730	842	8,800	1,310	0.878	31.3	18.8	566	289.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 300 x 16 x 25	214	800	300	16	25	18	285,000	11,300	32.3	6.43	7,130	752	8,170	1,180	0.870	34.5	16.9	442	272.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 300 x 16 x 22	201	800	300	16	22	18	261,000	9,930	32.0	6.23	6,530	662	7,520	1,040	0.861	38.1	15.0	342	255.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 300 x 14 x 32	234	800	300	14	32	18	333,000	14,400	33.5	6.96	8,340	961	9,370	1,480	0.895	27.7	21.3	734	297.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 300 x 14 x 28	216	800	300	14	28	18	302,000	12,600	33.2	6.78	7,560	841	8,520	1,300	0.887	31.6	18.8	526	274.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 300 x 14 x 25	202	800	300	14	25	18	278,000	11,300	32.9	6.61	6,960	751	7,880	1,160	0.879	35.1	16.9	402	257.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 300 x 14 x 22	189	800	300	14	22	18	254,000	9,920	32.5	6.42	6,350	661	7,240	1,030	0.871	39.2	15.0	303	240.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
	HY800 x 300 x 12 x 25 *	191	800	300	12	25	18	271,000	11,300	33.4	6.81	6,780	751	7,600	1,150	0.890	35.5	16.9	372	242.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c2	
	HY800 x 300 x 12 x 22 *	177	800	300	12	22	18	247,000	9,910	33.1	6.63	6,170	661	6,950	1,020	0.881	40.0	15.0	273	225.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c2	
	HY 800 x 250	HY800 x 250 x 19 x 40 *	267	800	250	19	40	18	352,000	10,500	32.2	5.55	8,790	837	10,200	1,320	0.881	22.6	15.1	1,230	339.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
		HY800 x 250 x 19 x 36 *	252	800	250	19	36	18	328,000	9,420	31.9	5.42	8,190	754	9,490	1,190	0.873	24.9	13.7	966	321.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
HY800 x 250 x 19 x 32 *		238	800	250	19	32	18	303,000	8,380	31.6	5.26	7,570	670	8,820	1,070	0.865	27.7	12.4	747	302.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY800 x 250 x 19 x 28 *		223	800	250	19	28	18	278,000	7,340	31.3	5.08	6,940	587	8,140	946	0.856	30.8	10.9	572	284.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY800 x 250 x 19 x 25 *		212	800	250	19	25	18	258,000	6,560	30.9	4.93	6,460	525	7,620	853	0.847	33.3	9.85	468	270.3	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY800 x 250 x 19 x 22 *		201	800	250	19	22	18	239,000	5,780	30.5	4.75	5,970	462	7,100	759	0.838	36.0	8.74	384	256.4	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY800 x 250 x 1																																					

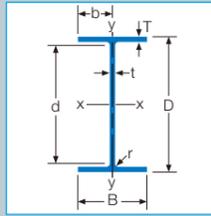
Dimensions and Properties



NSHYPER BEAM™ [50mm Incremental Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section A cm <sup>2</sup>	Section Classification																
				Web t mm	Flange T mm		Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>						AISC360-16				BS EN 1993-1-1												
																				A36		A572 Gr50, A992		S275		S355										
				Axial Compression			Pure Bending		Axial Compression		Pure Bending		Axial Compression							Pure Bending		Axial Compression		Pure Bending												
				Flange	Web		Flange	Web	Flange	Web	Flange	Web	Flange	Web						Flange	Web	Flange	Web	Flange	Web											
HY 750 x 300	HY750 x 300 x 16 x 36 *	257	750	300	16	36	18	320,000	16,200	31.3	7.04	8,540	1,080	9,640	1,670	0.897	22.8	20.7	1,030	327.3	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 300 x 16 x 32	239	750	300	16	32	18	294,000	14,400	31.1	6.88	7,840	962	8,870	1,490	0.889	25.6	18.6	768	304.5	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 300 x 16 x 28	221	750	300	16	28	18	267,000	12,600	30.8	6.69	7,120	842	8,090	1,310	0.881	29.0	16.5	559	281.8	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 300 x 16 x 25	208	750	300	16	25	18	246,000	11,300	30.5	6.53	6,570	752	7,490	1,170	0.873	32.0	14.8	435	264.8	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 300 x 16 x 22 *	194	750	300	16	22	18	225,000	9,930	30.2	6.33	6,010	662	6,900	1,040	0.865	35.4	13.2	335	247.7	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 300 x 14 x 28	210	750	300	14	28	18	261,000	12,600	31.2	6.86	6,970	841	7,850	1,300	0.890	29.3	16.4	521	267.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 300 x 14 x 25	197	750	300	14	25	18	241,000	11,300	31.0	6.70	6,410	751	7,250	1,160	0.882	32.6	14.8	398	250.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 300 x 14 x 22	183	750	300	14	22	18	219,000	9,920	30.6	6.52	5,850	661	6,650	1,030	0.874	36.4	13.1	299	233.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 300 x 14 x 19 *	170	750	300	14	19	18	198,000	8,570	30.2	6.29	5,280	571	6,040	893	0.864	40.8	11.4	222	216.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 300 x 12 x 25 *	186	750	300	12	25	18	235,000	11,300	31.5	6.90	6,260	751	7,000	1,150	0.892	32.9	14.8	369	236.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY750 x 300 x 12 x 22 *	172	750	300	12	22	18	214,000	9,910	31.2	6.72	5,690	661	6,400	1,020	0.884	37.1	13.1	271	219.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY750 x 300 x 12 x 19 *	159	750	300	12	19	18	192,000	8,560	30.8	6.51	5,120	571	5,790	883	0.875	42.2	11.4	195	202.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY 750 x 250	HY750 x 250 x 16 x 36 *	229	750	250	16	36	18	274,000	9,400	30.7	5.68	7,310	752	8,360	1,170	0.889	23.3	12.0	876	291.3	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 250 x 16 x 32 *	214	750	250	16	32	18	253,000	8,360	30.4	5.54	6,740	669	7,720	1,050	0.881	26.1	10.8	659	272.5	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 250 x 16 x 28 *	199	750	250	16	28	18	230,000	7,320	30.1	5.37	6,140	586	7,080	923	0.872	29.5	9.54	486	253.8	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 250 x 16 x 25 *	188	750	250	16	25	18	213,000	6,540	29.8	5.22	5,690	523	6,590	829	0.864	32.5	8.59	383	239.8	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 250 x 16 x 22 *	177	750	250	16	22	18	196,000	5,760	29.5	5.05	5,230	461	6,090	736	0.855	35.8	7.63	300	225.7	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 250 x 14 x 32 *	203	750	250	14	32	18	247,000	8,350	30.9	5.68	6,590	668	7,490	1,040	0.890	26.3	10.8	620	258.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 250 x 14 x 28	188	750	250	14	28	18	225,000	7,310	30.6	5.52	5,990	585	6,840	912	0.881	29.9	9.53	448	239.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 250 x 14 x 25	177	750	250	14	25	18	208,000	6,530	30.3	5.38	5,540	522	6,340	819	0.873	33.2	8.58	345	225.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 250 x 14 x 22 *	166	750	250	14	22	18	190,000	5,750	30.0	5.21	5,070	460	5,850	725	0.864	36.9	7.62	263	211.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY750 x 250 x 14 x 19 *	155	750	250	14	19	18	172,000	4,970	29.6	5.02	4,600	397	5,340	632	0.854	41.2	6.64	199	197.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY750 x 250 x 12 x 25	166	750	250	12	25	18	202,000	6,520	30.9	5.55	5,390	522	6,100	809	0.884	33.6	8.57	317	211.8	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY750 x 250 x 12 x 22	155	750	250	12	22	18	184,000	5,740	30.6	5.39	4,920	459	5,600	716	0.875	37.8	7.61	235	197.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY750 x 250 x 12 x 19	144	750	250	12	19	18	166,000	4,960	30.1	5.20	4,440	397	5,090	622	0.865	42.7	6.63	172	183.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY 700 x 400	HY700 x 400 x 22 x 36 *	337	700	400	22	36	18	366,000	38,500	29.2	9.47	10,500	1,920	11,800	2,960	0.886	20.1	42.4	1,510	428.9	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 400 x 22 x 32 *	313	700	400	22	32	18	336,000	34,200	29.0	9.26	9,590	1,710	10,900	2,640	0.879	22.3	38.1	1,150	398.7	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 400 x 22 x 28 *	289	700	400	22	28	18	305,000	29,900	28.8	9.01	8,710	1,500	9,900	2,320	0.871	24.9	33.8	863	368.5	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 400 x 19 x 36 *	322	700	400	19	36	18	360,000	38,400	29.6	9.68	10,300	1,920	11,500	2,940	0.894	20.3	42.4	1,410	410.1	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 400 x 19 x 32 *	298	700	400	19	32	18	329,000	34,200	29.5	9.49	9,410	1,710	10,600	2,620	0.888	22.7	38.1	1,050	379.6	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 400 x 19 x 28 *	274	700	400	19	28	18	298,000	29,900	29.2	9.26	8,520	1,500	9,880	2,300	0.880	25.6	33.8	769	349.1	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 400 x 16 x 36 *	307	700	400	16	36	18	353,000	38,400	30.1	9.91	10,100	1,920	11,200	2,920	0.903	20.3	42.4	1,340	391.3	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 400 x 16 x 32 *	283	700	400	16	32	18	323,000	34,200	29.9	9.73	9,220	1,710	10,300	2,600	0.897	22.9	38.1	980	360.5	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 400 x 16 x 28 *	259	700	400	16	28	18	291,000	29,900	29.7	9.52	8,330	1,490	9,270	2,280	0.890	26.1	33.7	699	329.8	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY																																			

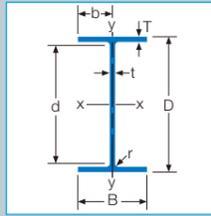
Dimensions and Properties



NSHYPER BEAM™ [50mm Incremental Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section A cm <sup>2</sup>	Section Classification																
				Web t mm	Flange T mm		Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>						AISC360-16				BS EN 1993-1-1												
																				A36		A572 Gr50, A992		S275		S355										
				Flange	Web		Flange	Web	Flange	Web	Flange	Web	Flange	Web						Flange	Web	Flange	Web	Flange	Web											
HY 700 x 300	HY700 x 300 x 22 x 36 *	280	700	300	22	36	18	286,000	16,300	28.3	6.75	8,180	1,080	9,430	1,700	0.879	20.5	17.9	1,200	356.9	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 22 x 32 *	263	700	300	22	32	18	264,000	14,500	28.1	6.57	7,550	964	8,720	1,520	0.871	22.7	16.1	929	334.7	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 22 x 28 *	245	700	300	22	28	18	242,000	12,700	27.8	6.37	6,900	844	8,010	1,340	0.862	25.1	14.3	716	312.5	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 22 x 25 *	232	700	300	22	25	18	224,000	11,300	27.5	6.18	6,400	754	7,480	1,210	0.854	27.1	12.9	590	295.8	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 19 x 36 *	265	700	300	19	36	18	280,000	16,200	28.8	6.93	8,010	1,080	9,130	1,680	0.889	20.8	17.9	1,100	338.1	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 19 x 32 *	248	700	300	19	32	18	258,000	14,400	28.6	6.76	7,370	963	8,420	1,500	0.881	23.3	16.1	833	315.6	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 19 x 28 *	230	700	300	19	28	18	235,000	12,600	28.3	6.57	6,710	843	7,700	1,320	0.872	26.1	14.3	623	293.1	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 19 x 25 *	217	700	300	19	25	18	217,000	11,300	28.0	6.39	6,210	753	7,160	1,190	0.865	28.5	12.9	497	276.3	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 16 x 36 *	251	700	300	16	36	18	274,000	16,200	29.3	7.13	7,830	1,080	8,830	1,660	0.899	21.0	17.9	1,020	319.3	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 16 x 32	233	700	300	16	32	18	251,000	14,400	29.1	6.97	7,180	962	8,120	1,480	0.892	23.6	16.1	761	296.5	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 16 x 28	215	700	300	16	28	18	228,000	12,600	28.9	6.79	6,520	842	7,390	1,300	0.884	26.8	14.3	552	273.8	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 16 x 25	202	700	300	16	25	18	210,000	11,300	28.6	6.63	6,010	752	6,840	1,170	0.876	29.6	12.8	428	256.8	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 16 x 22 *	188	700	300	16	22	18	192,000	9,930	28.3	6.43	5,490	662	6,290	1,040	0.868	32.8	11.4	328	239.7	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 14 x 32	223	700	300	14	32	18	247,000	14,400	29.5	7.13	7,060	961	7,920	1,470	0.900	23.7	16.1	724	283.8	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 14 x 28	205	700	300	14	28	18	224,000	12,600	29.3	6.95	6,390	841	7,180	1,290	0.892	27.0	14.2	517	260.9	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 14 x 25	191	700	300	14	25	18	206,000	11,300	29.1	6.80	5,880	751	6,630	1,160	0.885	30.1	12.8	393	243.8	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 14 x 22	178	700	300	14	22	18	188,000	9,920	28.8	6.62	5,360	661	6,070	1,030	0.877	33.7	11.4	294	226.6	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 14 x 19 *	164	700	300	14	19	18	169,000	8,570	28.4	6.40	4,830	571	5,510	891	0.867	37.8	9.93	218	209.5	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 12 x 28	195	700	300	12	28	18	219,000	12,600	29.7	7.13	6,270	841	6,980	1,290	0.902	27.1	14.2	489	248.1	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 300 x 12 x 25	181	700	300	12	25	18	201,000	11,300	29.5	6.99	5,750	751	6,420	1,150	0.895	30.3	12.8	366	230.8	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
HY700 x 300 x 12 x 22	168	700	300	12	22	18	183,000	9,910	29.3	6.81	5,230	661	5,860	1,020	0.887	34.3	11.4	268	213.5	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY700 x 300 x 12 x 19	154	700	300	12	19	18	164,000	8,560	28.9	6.61	4,690	571	5,290	882	0.878	39.0	9.93	192	196.2	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY700 x 300 x 12 x 16 *	140	700	300	12	16	18	145,000	7,210	28.5	6.35	4,150	481	4,710	747	0.867	44.6	8.44	135	178.9	nS	S	C	C	nS	S	nC	C	nc4	nc4	c1	c1	nc4	nc4	c2	c1	
HY 700 x 250	HY700 x 250 x 22 x 25 *	213	700	250	22	25	18	196,000	6,570	26.9	4.93	5,590	526	6,630	864	0.845	27.1	7.49	537	270.8	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 250 x 19 x 32 *	223	700	250	19	32	18	222,000	8,380	28.0	5.43	6,350	670	7,350	1,060	0.873	23.7	9.34	724	283.6	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 250 x 19 x 28 *	208	700	250	19	28	18	203,000	7,330	27.7	5.26	5,810	587	6,760	937	0.863	26.4	8.28	549	265.1	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 250 x 19 x 25 *	197	700	250	19	25	18	189,000	6,550	27.4	5.11	5,390	524	6,310	844	0.855	28.7	7.46	445	251.3	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 250 x 16 x 36 *	222	700	250	16	36	18	234,000	9,400	28.8	5.76	6,690	752	7,640	1,170	0.892	21.5	10.4	869	283.3	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 250 x 16 x 32 *	208	700	250	16	32	18	216,000	8,360	28.6	5.62	6,160	669	7,050	1,040	0.884	24.1	9.33	652	264.5	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 250 x 16 x 28	193	700	250	16	28	18	197,000	7,320	28.3	5.46	5,620	585	6,450	920	0.875	27.2	8.26	479	245.8	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 250 x 16 x 25 *	182	700	250	16	25	18	182,000	6,540	28.0	5.31	5,200	523	6,000	826	0.868	30.0	7.45	376	231.8	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 250 x 16 x 22 *	171	700	250	16	22	18	167,000	5,760	27.7	5.14	4,770	460	5,540	733	0.859	33.1	6.61	293	217.7	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 250 x 14 x 32 *	198	700	250	14	32	18	211,000	8,350	29.0	5.76	6,040	668	6,850	1,030	0.893	24.2	9.32	615	251.8	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 250 x 14 x 28	183	700	250	14	28	18	192,000	7,310	28.7	5.60	5,490	585	6,240	910	0.885	27.6	8.25	443	232.9	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY700 x 250 x 14 x 25	172	700	250	14	25	18	177,000	6,530	28.5	5.46	5,070	52																							

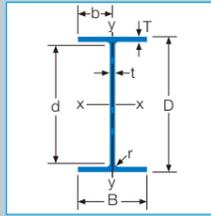
Dimensions and Properties



NSHYPER BEAM™ [50mm Incremental Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section A cm <sup>2</sup>	Section Classification																
				Web t mm	Flange T mm		Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>						AISC360-16				BS EN 1993-1-1												
																				A36		A572 Gr50, A992		S275		S355										
				Axial Compression			Pure Bending		Axial Compression		Pure Bending		Axial Compression							Pure Bending		Axial Compression		Pure Bending												
				Flange	Web		Flange	Web	Flange	Web	Flange	Web	Flange	Web						Flange	Web	Flange	Web													
HY 650 x 300	HY650 x 300 x 16 x 32	225	650	300	16	32	13	212,000	14,400	27.1	7.09	6,510	961	7,350	1,480	0.894	21.9	13.8	734	287.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY650 x 300 x 16 x 28	208	650	300	16	28	13	192,000	12,600	26.9	6.91	5,900	841	6,680	1,300	0.886	24.9	12.2	529	264.5	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY650 x 300 x 16 x 25	194	650	300	16	25	13	177,000	11,300	26.7	6.75	5,440	751	6,170	1,160	0.879	27.6	11.0	406	247.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY650 x 300 x 14 x 28	181	650	300	16	22	13	161,000	9,920	26.4	6.56	4,960	661	5,660	1,030	0.870	30.7	9.78	309	230.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY650 x 300 x 14 x 25 *	198	650	300	14	28	13	188,000	12,600	27.3	7.07	5,790	841	6,500	1,290	0.894	25.1	12.2	497	252.6	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 300 x 14 x 22 *	185	650	300	14	25	13	173,000	11,300	27.1	6.92	5,320	751	5,990	1,160	0.887	28.0	11.0	375	235.4	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 300 x 14 x 19 *	171	650	300	14	22	13	157,000	9,920	26.9	6.74	4,850	661	5,470	1,020	0.879	31.5	9.78	278	218.3	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 300 x 12 x 22	158	650	300	14	19	13	142,000	8,570	26.5	6.53	4,360	571	4,950	886	0.870	35.5	8.53	203	201.1	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 300 x 12 x 19	175	650	300	12	25	13	169,000	11,300	27.5	7.10	5,210	751	5,810	1,150	0.897	28.2	11.0	351	223.4	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY 650 x 250	HY650 x 300 x 12 x 22	162	650	300	12	22	13	154,000	9,910	27.3	6.93	4,730	661	5,290	1,010	0.889	32.0	9.77	255	206.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 300 x 12 x 19	148	650	300	12	19	13	138,000	8,560	27.0	6.73	4,240	571	4,760	878	0.880	36.6	8.52	180	188.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 300 x 12 x 16 *	135	650	300	12	16	13	121,000	7,210	26.6	6.48	3,740	481	4,230	744	0.869	42.0	7.25	125	171.6	nS	S	C	C	nS	S	nC	C	nc4	c4	c1	c1	nc4	c4	c3	c1
	HY650 x 250 x 16 x 32 *	200	650	250	16	32	13	181,000	8,360	26.6	5.72	5,570	668	6,360	1,040	0.887	22.3	7.98	625	255.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY650 x 250 x 16 x 28 *	186	650	250	16	28	13	165,000	7,310	26.4	5.56	5,070	585	5,810	915	0.879	25.4	7.07	455	236.5	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY650 x 250 x 16 x 25 *	175	650	250	16	25	13	152,000	6,530	26.2	5.42	4,680	523	5,390	821	0.871	28.0	6.38	354	222.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY650 x 250 x 16 x 22 *	164	650	250	16	22	13	139,000	5,750	25.9	5.25	4,290	460	4,970	728	0.862	31.0	5.67	274	208.4	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY650 x 250 x 14 x 28 *	176	650	250	14	28	13	161,000	7,310	26.8	5.70	4,960	585	5,630	906	0.888	25.6	7.07	424	224.6	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 250 x 14 x 25 *	165	650	250	14	25	13	149,000	6,530	26.6	5.57	4,570	522	5,210	812	0.880	28.6	6.37	323	210.4	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 250 x 14 x 22 *	154	650	250	14	22	13	136,000	5,740	26.3	5.41	4,180	460	4,780	719	0.871	32.0	5.66	243	196.3	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 250 x 14 x 19 *	143	650	250	14	19	13	123,000	4,960	26.0	5.22	3,770	397	4,350	625	0.861	35.9	4.94	181	182.1	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 250 x 12 x 28 *	167	650	250	12	28	13	158,000	7,300	27.2	5.86	4,850	584	5,460	898	0.897	25.7	7.06	399	212.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 250 x 12 x 25	156	650	250	12	25	13	145,000	6,520	27.0	5.73	4,460	522	5,030	804	0.890	28.8	6.37	299	198.4	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY650 x 250 x 12 x 22	145	650	250	12	22	13	132,000	5,740	26.8	5.58	4,060	459	4,600	711	0.882	32.6	5.66	219	184.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY650 x 250 x 12 x 19	133	650	250	12	19	13	119,000	4,960	26.4	5.40	3,660	397	4,160	617	0.872	37.1	4.94	157	169.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY650 x 250 x 12 x 16 *	122	650	250	12	16	13	105,000	4,180	26.0	5.18	3,240	334	3,730	524	0.860	42.4	4.20	111	155.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	
HY 650 x 200	HY650 x 200 x 14 x 28 *	154	650	200	14	28	13	134,000	3,750	26.1	4.37	4,130	375	4,760	591	0.876	26.4	3.63	350	196.6	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 200 x 14 x 25 *	146	650	200	14	25	13	124,000	3,350	25.9	4.25	3,820	335	4,430	531	0.868	29.3	3.27	271	185.4	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 200 x 14 x 22 *	137	650	200	14	22	13	114,000	2,950	25.6	4.11	3,510	295	4,090	471	0.859	32.6	2.91	207	174.3	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 200 x 14 x 19 *	128	650	200	14	19	13	104,000	2,550	25.2	3.95	3,190	255	3,750	411	0.849	36.3	2.54	158	163.1	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 200 x 12 x 28	145	650	200	12	28	13	131,000	3,740	26.6	4.50	4,020	374	4,580	583	0.887	26.5	3.62	326	184.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 200 x 12 x 25	136	650	200	12	25	13	121,000	3,340	26.4	4.39	3,710	334	4,250	523	0.879	29.7	3.26	247	173.4	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 200 x 12 x 22	127	650	200	12	22	13	110,000	2,940	26.1	4.26	3,400	294	3,910	463	0.870	33.4	2.90	184	162.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 200 x 12 x 19	118	650	200	12	19	13	99,900	2,540	25.7	4.11	3,070	254	3,570	403	0.860	37.8	2.53	134	150.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 200 x 12 x 16 *	110	650	200	12	16	13	89,300	2,140	25.3	3.92	2,750	214	3,220	344	0.848	42.9	2.15	97.7	139.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY650 x 200 x 9 x 22 *	113	650	200	9	22	13	105,000	2,940	27.0	4.52	3,220	294	3,630																						

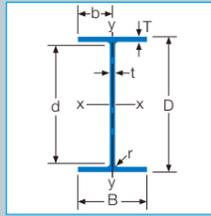
Dimensions and Properties



NSHYPER BEAM™ [50mm Incremental Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section A cm <sup>2</sup>	Section Classification																
				Web t mm	Flange T mm		Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>						AISC360-16				BS EN 1993-1-1												
																				A36		A572 Gr50, A992		S275		S355										
				Flange	Web		Flange	Web	Flange	Web	Flange	Web	Flange	Web						Flange	Web	Flange	Web	Flange	Web											
HY 600 x 250	HY600 x 250 x 16 x 32	194	600	250	16	32	13	151,000	8,350	24.7	5.81	5,020	668	5,730	1,040	0.891	20.3	6.74	618	247.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY600 x 250 x 16 x 28	179	600	250	16	28	13	137,000	7,310	24.5	5.66	4,570	585	5,230	911	0.882	23.1	5.98	449	228.5	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY600 x 250 x 16 x 25 *	168	600	250	16	25	13	127,000	6,530	24.3	5.52	4,220	522	4,840	818	0.875	25.6	5.40	348	214.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY600 x 250 x 16 x 22 *	157	600	250	16	22	13	116,000	5,750	24.1	5.36	3,860	460	4,460	725	0.866	28.4	4.80	267	200.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY600 x 250 x 14 x 28 *	171	600	250	14	28	13	134,000	7,310	24.9	5.79	4,480	584	5,080	903	0.891	23.3	5.98	419	217.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY600 x 250 x 14 x 25 *	160	600	250	14	25	13	124,000	6,520	24.7	5.66	4,130	522	4,690	810	0.884	26.0	5.39	319	203.4	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY600 x 250 x 14 x 22 *	149	600	250	14	22	13	113,000	5,740	24.4	5.51	3,770	459	4,300	716	0.875	29.2	4.80	238	189.3	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY600 x 250 x 14 x 19 *	137	600	250	14	19	13	102,000	4,960	24.1	5.32	3,400	397	3,910	623	0.865	32.8	4.19	176	175.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY600 x 250 x 12 x 28	162	600	250	12	28	13	132,000	7,300	25.2	5.94	4,390	584	4,930	896	0.900	23.4	5.97	396	206.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY600 x 250 x 12 x 25	151	600	250	12	25	13	121,000	6,520	25.1	5.82	4,040	522	4,540	802	0.893	26.2	5.39	296	192.4	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY600 x 250 x 12 x 22	140	600	250	12	22	13	110,000	5,740	24.9	5.68	3,670	459	4,150	709	0.885	29.7	4.79	216	178.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY600 x 250 x 12 x 19	129	600	250	12	19	13	99,100	4,960	24.6	5.50	3,300	397	3,750	615	0.876	33.9	4.18	154	163.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY600 x 250 x 12 x 16 *	117	600	250	12	16	13	87,700	4,180	24.2	5.28	2,920	334	3,340	522	0.864	38.8	3.56	108	149.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY600 x 250 x 9 x 19	115	600	250	9	19	13	94,600	4,950	25.4	5.80	3,150	396	3,510	606	0.895	34.7	4.18	132	147.0	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c2
HY600 x 250 x 9 x 16	104	600	250	9	16	13	83,100	4,170	25.0	5.61	2,770	334	3,100	513	0.884	40.8	3.56	86.9	132.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c2	
HY 600 x 200	HY600 x 200 x 14 x 28 *	149	600	200	14	28	13	112,000	3,750	24.3	4.45	3,720	375	4,280	588	0.881	24.0	3.07	346	189.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY600 x 200 x 14 x 25 *	140	600	200	14	25	13	103,000	3,350	24.0	4.33	3,440	335	3,970	528	0.873	26.6	2.77	266	178.4	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY600 x 200 x 14 x 22 *	131	600	200	14	22	13	94,700	2,950	23.8	4.20	3,160	295	3,670	469	0.864	29.7	2.46	203	167.3	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY600 x 200 x 14 x 19 *	123	600	200	14	19	13	86,000	2,550	23.5	4.04	2,870	255	3,350	409	0.853	33.2	2.15	153	156.1	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY600 x 200 x 12 x 28	140	600	200	12	28	13	109,000	3,740	24.7	4.58	3,630	374	4,130	581	0.891	24.1	3.06	323	178.7	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY600 x 200 x 12 x 25	131	600	200	12	25	13	100,000	3,340	24.5	4.47	3,350	334	3,820	521	0.883	27.0	2.76	244	167.4	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY600 x 200 x 12 x 22	123	600	200	12	22	13	91,800	2,940	24.2	4.34	3,060	294	3,510	461	0.875	30.4	2.46	181	156.2	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY600 x 200 x 12 x 19	114	600	200	12	19	13	83,000	2,540	23.9	4.19	2,770	254	3,200	402	0.865	34.5	2.15	132	144.9	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY600 x 200 x 12 x 16	105	600	200	12	16	13	74,100	2,140	23.5	4.00	2,470	214	2,880	342	0.853	39.2	1.83	94.8	133.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY600 x 200 x 9 x 22	110	600	200	9	22	13	87,500	2,940	25.0	4.59	2,920	294	3,280	452	0.894	30.7	2.45	158	139.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY600 x 200 x 9 x 19	100	600	200	9	19	13	78,600	2,540	24.8	4.45	2,620	254	2,960	392	0.885	35.6	2.14	109	128.0	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c2
	HY600 x 200 x 9 x 16	91.5	600	200	9	16	13	69,500	2,140	24.4	4.28	2,320	214	2,640	333	0.873	41.7	1.82	73.3	116.6	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c2
	HY600 x 200 x 9 x 12	79.5	600	200	9	12	13	57,000	1,600	23.7	3.98	1,900	160	2,200	253	0.853	52.1	1.39	41.3	101.3	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c2
	HY 550 x 300	HY550 x 300 x 16 x 32 *	213	550	300	16	32	13	145,000	14,400	23.1	7.29	5,280	961	5,950	1,470	0.897	18.0	9.67	721	271.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1
HY550 x 300 x 16 x 28		195	550	300	16	28	13	131,000	12,600	23.0	7.13	4,780	841	5,400	1,290	0.889	20.5	8.60	515	248.5	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
HY550 x 300 x 16 x 25		182	550	300	16	25	13	121,000	11,300	22.9	6.98	4,400	751	4,970	1,160	0.883	22.8	7.76	393	231.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
HY550 x 300 x 16 x 22 *		168	550	300	16	22	13	110,000	9,920	22.7	6.80	4,010	661	4,550	1,020	0.875	25.5	6.91	295	214.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
HY550 x 300 x 14 x 28 *		187	550	300	14	28	13	129,000	12,600	23.3	7.27	4,710	841	5,270	1,290	0.897	20.7	8.59	488	238.6	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
HY550 x 300 x 14 x 25 *		174	550	300	14	25	13	119,000	11,300	23.2	7.13	4,320	751	4,850	1,150	0.891	23.1	7.76	366	221.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
HY550 x 300 x 14 x 22 *		160	550	300	14	22	13	108,000	9,910	23.0	6.97	3,930	661	4,420	1,020	0.883	26.0	6.91	269	204.3	nS	nS	C	C	nS	n										

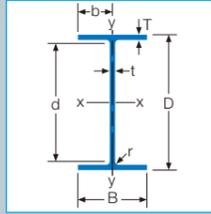
Dimensions and Properties



NSHYPER BEAM™ [50mm Incremental Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section A cm <sup>2</sup>	Section Classification																
				Web t mm	Flange T mm		Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>						AISC360-16				BS EN 1993-1-1												
																				A36		A572 Gr50, A992		S275		S355										
							Axial Compression	Pure Bending	Axial Compression	Pure Bending	Axial Compression	Pure Bending	Axial Compression	Pure Bending																						
				Flange	Web		Flange	Web	Flange	Web	Flange	Web	Flange	Web						Flange	Web	Flange	Web													
HY 550 x 200	HY550 x 200 x 14 x 25 *	135	550	200	14	25	13	84,400	3,350	22.2	4.42	3,070	335	3,540	526	0.877	24.0	2.31	262	171.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY550 x 200 x 14 x 22 *	126	550	200	14	22	13	77,400	2,950	22.0	4.29	2,810	295	3,260	466	0.869	26.9	2.05	198	160.3	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY550 x 200 x 14 x 19 *	117	550	200	14	19	13	70,200	2,550	21.7	4.13	2,550	255	2,970	407	0.858	30.1	1.80	149	149.1	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY550 x 200 x 12 x 25 *	127	550	200	12	25	13	82,300	3,340	22.6	4.55	2,990	334	3,410	519	0.888	24.3	2.30	241	161.4	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY550 x 200 x 12 x 22 *	118	550	200	12	22	13	75,200	2,940	22.4	4.43	2,740	294	3,130	460	0.879	27.5	2.05	178	150.2	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY550 x 200 x 12 x 19 *	109	550	200	12	19	13	67,900	2,540	22.1	4.28	2,470	254	2,840	400	0.869	31.2	1.79	129	138.9	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY550 x 200 x 12 x 16 *	100	550	200	12	16	13	60,500	2,140	21.8	4.10	2,200	214	2,550	340	0.858	35.6	1.53	91.9	127.6	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY550 x 200 x 9 x 22 *	106	550	200	9	22	13	72,000	2,940	23.1	4.66	2,620	294	2,940	451	0.898	27.7	2.05	157	135.0	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY550 x 200 x 9 x 19 *	96.9	550	200	9	19	13	64,600	2,540	22.9	4.53	2,350	254	2,640	391	0.889	32.1	1.79	108	123.5	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
HY550 x 200 x 9 x 16 *	88.0	550	200	9	16	13	57,000	2,140	22.6	4.37	2,070	214	2,350	332	0.878	37.7	1.52	72.1	112.1	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY550 x 200 x 9 x 12 *	76.0	550	200	9	12	13	46,600	1,600	22.0	4.07	1,700	160	1,950	252	0.858	47.3	1.16	40.1	96.79	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY 500 x 300	HY500 x 300 x 16 x 32	207	500	300	16	32	13	117,000	14,400	21.1	7.40	4,680	961	5,280	1,470	0.896	16.1	7.89	714	263.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 300 x 16 x 28	189	500	300	16	28	13	106,000	12,600	21.0	7.24	4,240	841	4,790	1,290	0.890	18.4	7.03	508	240.5	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 300 x 16 x 25 *	175	500	300	16	25	13	97,600	11,300	20.9	7.10	3,900	751	4,400	1,160	0.884	20.5	6.36	386	223.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 300 x 16 x 22 *	162	500	300	16	22	13	88,800	9,920	20.7	6.93	3,550	661	4,020	1,020	0.876	22.9	5.66	289	206.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 300 x 16 x 19 *	149	500	300	16	19	13	79,900	8,570	20.5	6.73	3,200	571	3,630	886	0.868	25.6	4.96	213	189.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 300 x 14 x 28 *	182	500	300	14	28	13	105,000	12,600	21.3	7.38	4,180	841	4,690	1,280	0.897	18.5	7.02	483	231.6	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 300 x 14 x 25 *	168	500	300	14	25	13	96,000	11,300	21.2	7.25	3,840	751	4,300	1,150	0.891	20.7	6.35	361	214.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 300 x 14 x 22 *	155	500	300	14	22	13	87,300	9,910	21.0	7.09	3,490	661	3,920	1,010	0.884	23.4	5.66	265	197.3	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 300 x 14 x 19 *	141	500	300	14	19	13	78,200	8,560	20.8	6.89	3,130	571	3,520	879	0.876	26.5	4.95	190	180.1	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 300 x 12 x 28 *	175	500	300	12	28	13	103,000	12,600	21.5	7.52	4,130	841	4,590	1,280	0.904	18.5	7.02	463	222.7	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 300 x 12 x 25	161	500	300	12	25	13	94,500	11,300	21.4	7.40	3,780	751	4,200	1,140	0.899	20.8	6.35	342	205.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 300 x 12 x 22	148	500	300	12	22	13	85,700	9,910	21.3	7.26	3,430	661	3,810	1,010	0.893	23.7	5.66	246	188.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 300 x 12 x 19	134	500	300	12	19	13	76,600	8,560	21.2	7.08	3,060	571	3,420	873	0.885	27.2	4.95	171	170.9	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
HY500 x 300 x 12 x 16 *	121	500	300	12	16	13	67,300	7,210	20.9	6.85	2,690	481	3,010	738	0.875	31.5	4.22	116	153.6	nS	nS	C	C	nS	S	nC	C	nc4	nc4	c1	c1	nc4	nc4	c3	c1	
HY500 x 300 x 9 x 19 *	123	500	300	9	19	13	74,100	8,550	21.7	7.38	2,960	570	3,260	865	0.900	27.6	4.95	153	157.0	nS	S	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY500 x 300 x 9 x 16 *	110	500	300	9	16	13	64,700	7,200	21.5	7.18	2,590	480	2,850	731	0.892	32.7	4.22	98.2	139.6	nS	S	C	C	nS	S	nC	C	nc4	nc4	c1	c1	nc4	nc4	c3	c1	
HY 500 x 250	HY500 x 250 x 14 x 28 *	160	500	250	14	28	13	89,000	7,300	20.9	5.99	3,560	584	4,030	898	0.896	18.8	4.07	410	203.6	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 250 x 14 x 25 *	149	500	250	14	25	13	81,900	6,520	20.8	5.87	3,280	522	3,710	805	0.889	21.0	3.68	309	189.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 250 x 14 x 22 *	138	500	250	14	22	13	74,700	5,740	20.6	5.72	2,990	459	3,390	711	0.882	23.7	3.28	229	175.3	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 250 x 14 x 19 *	126	500	250	14	19	13	67,200	4,960	20.4	5.55	2,690	397	3,060	618	0.872	26.8	2.87	167	161.1	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 250 x 12 x 28	153	500	250	12	28	13	87,500	7,300	21.2	6.12	3,500	584	3,930	892	0.905	18.9	4.07	390	194.7	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 250 x 12 x 25	142	500	250	12	25	13	80,400	6,520	21.1	6.01	3,220	521	3,610	799	0.898	21.2	3.68	290	180.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 250 x 12 x 22	130	500	250	12	22	13	73,100	5,740	21.0	5.88	2,920	459	3,290	705	0.891	24.0	3.28	210	166.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY500 x 250 x 12 x 19 *	119	500	250	12	19	13	65,600	4,960	20.																										

Dimensions and Properties



NSHYPER BEAM™ [50mm Incremental Unit]

Nominal Size	Mass per Meter kg/m	Depth of section D mm	Width of section B mm	Thickness		Root Radius r mm	Second Moment of Area		Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter u	Torsional Index x	Warping Constant H dm <sup>6</sup>	Torsional Constant J cm <sup>4</sup>	Area of Section A cm <sup>2</sup>	Section Classification																
				Web t mm	Flange T mm		Axis x-x I <sub>x</sub> cm <sup>4</sup>	Axis y-y I <sub>y</sub> cm <sup>4</sup>	Axis x-x r <sub>x</sub> cm	Axis y-y r <sub>y</sub> cm	Axis x-x Z <sub>x</sub> cm <sup>3</sup>	Axis y-y Z <sub>y</sub> cm <sup>3</sup>	Axis x-x S <sub>x</sub> cm <sup>3</sup>	Axis y-y S <sub>y</sub> cm <sup>3</sup>						AISC360-16				BS EN 1993-1-1												
																				A36		A572 Gr50, A992		S275		S355										
																				Axial Compression	Pure Bending	Axial Compression	Pure Bending	Axial Compression	Pure Bending	Axial Compression	Pure Bending									
Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web	Flange	Web																					
HY 450 x 250	HY450 x 250 x 12 x 28	148	450	250	12	28	13	69,100	7,300	19.1	6.22	3,070	584	3,450	890	0.905	16.7	3.25	387	188.7	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY450 x 250 x 12 x 25	137	450	250	12	25	13	63,500	6,520	19.1	6.11	2,820	521	3,160	797	0.899	18.7	2.94	287	174.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY450 x 250 x 12 x 22	126	450	250	12	22	13	57,700	5,740	19.0	5.98	2,560	459	2,880	703	0.893	21.3	2.63	208	160.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY450 x 250 x 12 x 19 *	115	450	250	12	19	13	51,700	4,960	18.8	5.83	2,300	396	2,590	610	0.884	24.4	2.30	146	145.9	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY450 x 250 x 12 x 16 *	103	450	250	12	16	13	45,600	4,170	18.6	5.63	2,030	334	2,290	516	0.874	28.2	1.97	99.8	131.6	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY450 x 250 x 9 x 22	116	450	250	9	22	13	56,000	5,730	19.5	6.22	2,490	459	2,750	697	0.908	21.4	2.63	190	148.0	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY 450 x 200	HY450 x 250 x 9 x 19	105	450	250	9	19	13	50,000	4,950	19.3	6.09	2,220	396	2,460	603	0.901	24.8	2.30	129	133.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY450 x 250 x 9 x 16	93.5	450	250	9	16	13	43,800	4,170	19.2	5.92	1,950	334	2,160	510	0.892	29.4	1.96	83.3	119.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY450 x 200 x 12 x 25 *	117	450	200	12	25	13	52,200	3,340	18.7	4.73	2,320	334	2,630	516	0.896	19.2	1.51	235	149.4	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY450 x 200 x 12 x 22 *	108	450	200	12	22	13	47,600	2,940	18.6	4.61	2,120	294	2,410	456	0.888	21.7	1.35	172	138.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY450 x 200 x 12 x 19 *	99.6	450	200	12	19	13	42,900	2,540	18.4	4.47	1,910	254	2,180	396	0.879	24.8	1.18	123	126.9	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY450 x 200 x 12 x 16 *	90.7	450	200	12	16	13	38,100	2,140	18.1	4.30	1,690	214	1,940	336	0.867	28.5	1.01	86.2	115.6	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY450 x 200 x 9 x 22	98.9	450	200	9	22	13	45,900	2,940	19.1	4.83	2,040	294	2,280	449	0.905	21.9	1.34	154	126.0	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY450 x 200 x 9 x 19	89.9	450	200	9	19	13	41,200	2,540	19.0	4.71	1,830	254	2,050	389	0.897	25.4	1.18	106	114.5	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
HY 400 x 300	HY450 x 200 x 9 x 16	80.9	450	200	9	16	13	36,200	2,140	18.8	4.55	1,610	214	1,810	330	0.886	29.9	1.01	69.6	103.1	nS	S	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1
	HY400 x 300 x 12 x 22 *	138	400	300	12	22	13	52,200	9,910	17.2	7.50	2,610	660	2,900	1,000	0.885	18.3	3.54	240	176.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY400 x 300 x 12 x 19 *	125	400	300	12	19	13	46,600	8,560	17.1	7.34	2,330	570	2,590	869	0.879	21.1	3.11	166	158.9	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY400 x 300 x 9 x 22 *	130	400	300	9	22	13	51,000	9,900	17.6	7.74	2,550	660	2,810	998	0.897	18.4	3.54	224	165.5	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
HY 400 x 250	HY400 x 300 x 9 x 19 *	116	400	300	9	19	13	45,400	8,550	17.5	7.60	2,270	570	2,490	863	0.892	21.4	3.10	150	148.0	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY400 x 250 x 12 x 22 *	121	400	250	12	22	13	44,300	5,740	17.0	6.10	2,210	459	2,480	702	0.892	18.6	2.05	205	154.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY400 x 250 x 12 x 19 *	110	400	250	12	19	13	39,700	4,950	16.8	5.95	1,990	396	2,230	608	0.885	21.3	1.80	143	139.9	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY400 x 250 x 9 x 22 *	113	400	250	9	22	13	43,200	5,730	17.3	6.32	2,160	459	2,390	696	0.906	18.7	2.05	189	143.5	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
HY 400 x 200	HY400 x 250 x 9 x 19 *	101	400	250	9	19	13	38,500	4,950	17.3	6.19	1,930	396	2,130	602	0.900	21.7	1.80	127	129.0	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY400 x 200 x 12 x 22 *	104	400	200	12	22	13	36,400	2,940	16.6	4.72	1,820	294	2,070	454	0.891	18.9	1.05	169	132.2	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY400 x 200 x 12 x 19 *	94.9	400	200	12	19	13	32,800	2,540	16.5	4.58	1,640	254	1,870	394	0.882	21.6	0.922	120	120.9	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY400 x 200 x 12 x 16 *	86.0	400	200	12	16	13	29,100	2,140	16.3	4.42	1,450	214	1,660	335	0.872	24.9	0.789	83.3	109.6	nS	nS	C	C	nS	nS	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1
	HY400 x 200 x 9 x 22 *	95.4	400	200	9	22	13	35,300	2,940	17.0	4.92	1,760	294	1,970	448	0.907	19.1	1.05	153	121.5	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
	HY400 x 200 x 9 x 19 *	86.4	400	200	9	19	13	31,600	2,540	17.0	4.80	1,580	254	1,770	388	0.900	22.1	0.920	105	110.0	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	c4	c1	c1
HY400 x 200 x 9 x 16 *	77.4	400	200	9	16	13	27,800	2,140	16.8	4.66	1,390	214	1,560	329	0.890	26.1	0.788	68.4	98.57	nS	nS	C	C	nS	S	C	C	nc4	nc4	c1	c1	nc4	nc4	c1	c1	
HY400 x 200 x 9 x 12 *	65.4	400	200	9	12	13	22,600	1,600	16.5	4.39	1,130	160	1,280	249	0.872	33.2	0.603	36.5	83.29	nS	nS	C	C	nS	S	C	C	nc4	c4	c1	c1	nc4	c4	c1	c1	

Please contact us in advance to order these sizes with "\*" mark.

[nS] non Slender [S] Slender [C] Compact [nC] not Compact [c1-4] Class1-4 [nc4] not Class4

# Worldwide Experience

Building



Building (Plunge in Column)



Building



Building



Infrastructure Development



Industrial Facilities



Energy Development

