STRUCTURAL SHAPES

ANN YAK SIONG HARDWARE SDN BHD
TEL: 603-3377 5597 FAX: 603-3377 5599 / 3377 5566

STRUCTURAL SHAPES

SPECIFICATIONS

ASTM	- ASTM A36 - ASTM A572 - ASTM A992
EN	- EN 10025-2004 (S275 JR, S355 JR & JO)
JIS	- JIS G3101 (SS400) - JIS G3106 (SM400A, B, C, SM490A, B, C, SM490YA, YB, SM520B, C) - JIS G3136 (SN400A, B, C, SN490B, C)

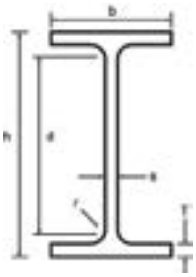
CORRESPONDING SPECIFICATIONS

TIS 1227 1996	JIS G3101 2004	JIS G3106 2004	JIS G3136 2005	EN 10025 2004	ASTM 2005	DIN 17100 1980
SS400 SS490 SS540	SS400 SS490 SS540				A36	St 50-2
SM400		SM400A SM400B SM400C	SN400A SN400B	S275JR S275JO	A572Gr.42	 St 37-2 RSt 37-2
SM490		SM490A SM490B SM490C SM490YA SM490YB	SN490B SN490C	 355JR 355JO	A572Gr.50	 St 52-3
SM520 SM570		SM520B SM520C SM570				

UNIVERSAL BEAMS

DIMENSIONS AND PROPERTIES

IN ACCORDANCE TO BS4 : PART 1 : 2005



Designation	Mass per metre	Depth of Section h	Width of Section b	Thickness Web s	Thickness Flange t	Root Radius r	Depth between fillets d	Ratios for Local Buckling		Second moment of Area	
								Flange b/2t	Web d/s	Axis x-x	Axis y-y
	kg/m	mm	mm	mm	mm	mm	mm			cm^4	cm^4
*** 1016 x 305 x 487**	487.0	1036.1	308.5	30.0	54.1	30.0	867.8	2.85	29.0	1020400	26720
*** 1016 x 305 x 438**	438.0	1025.9	305.4	26.9	49.0	30.0	868.0	3.12	32.3	908900	23440
*** 1016 x 305 x 393**	393.0	1016.0	303.0	24.4	43.9	30.0	868.2	3.45	35.7	806600	20490
*** 1016 x 305 x 349**	349.0	1008.1	302.0	21.1	40.0	30.0	868.0	3.78	41.2	722100	18460
*** 1016 x 305 x 314**	314.0	1000.0	300.0	19.1	35.9	30.0	868.2	4.18	45.6	643200	16230
*** 1016 x 305 x 272**	272.0	990.1	300.0	16.5	31.0	30.0	868.0	4.84	52.7	552900	14000
*** 1016 x 305 x 249**	249.0	980.2	300.0	16.5	26.0	30.0	868.0	5.77	52.7	480300	11750
*** 1016 x 305 x 222**	222.0	970.3	300.0	16.0	21.1	30.0	867.8	7.11	54.4	406900	9544
914 x 419 x 388	388.0	921.0	420.5	21.4	36.6	24.1	799.6	5.74	37.4	719600	45440
914 x 419 x 343	343.3	911.8	418.5	19.4	32.0	24.1	799.6	6.54	41.2	625800	39160
914 x 305 x 289	289.1	926.6	307.7	19.5	32.0	19.1	824.4	4.81	42.3	504200	15600
914 x 305 x 253	253.4	918.4	305.5	17.3	27.9	19.1	824.4	5.47	47.7	436300	13300
914 x 305 x 224	224.2	910.4	304.1	15.9	23.9	19.1	824.4	6.36	51.8	376400	11240
914 x 305 x 201	200.9	903.0	303.3	15.1	20.2	19.1	824.4	7.51	54.6	325300	9423
838 x 292 x 226	226.5	850.9	293.8	16.1	26.8	17.8	761.7	5.48	47.3	339700	11360
838 x 292 x 194	193.8	840.7	292.4	14.7	21.7	17.8	761.7	6.74	51.8	279200	9066
838 x 292 x 176	175.9	834.9	291.7	14.0	18.8	17.8	761.7	7.76	54.4	246000	7799
762 x 267 x 197	196.8	769.8	268.0	15.6	25.4	16.5	686.0	5.28	44.0	240000	8175
762 x 267 x 173	173.0	762.2	266.7	14.3	21.6	16.5	686.0	6.17	48.0	205300	6850
762 x 267 x 147	146.9	754.0	265.2	12.8	17.5	16.5	686.0	7.58	53.6	168500	5455
762 x 267 x 134	133.9	750.0	264.4	12.0	15.5	16.5	686.0	8.53	57.2	150700	4788
686 x 254 x 170	170.2	692.9	255.8	14.5	23.7	15.2	615.1	5.40	42.4	170300	6630
686 x 254 x 152	152.4	687.5	254.5	13.2	21.0	15.2	615.1	6.06	46.6	150400	5784
686 x 254 x 140	140.1	683.5	253.7	12.4	19.0	15.2	615.1	6.68	49.6	136300	5183
686 x 254 x 125	125.2	677.9	253.0	11.7	16.2	15.2	615.1	7.81	52.6	118000	4383
610 x 305 x 238	238.1	635.8	311.4	18.4	31.4	16.5	540.0	4.96	29.3	209500	15840
610 x 305 x 179	179.0	620.2	307.1	14.1	23.6	16.5	540.0	6.51	38.3	153000	11410
610 x 305 x 149	149.1	612.4	304.8	11.8	19.7	16.5	540.0	7.74	45.8	125900	9308
610 x 229 x 140	139.9	617.2	230.2	13.1	22.1	12.7	547.6	5.21	41.8	111800	4505
610 x 229 x 125	125.1	612.2	229.0	11.9	19.6	12.7	547.6	5.84	46.0	98610	3932
610 x 229 x 113	113.0	607.6	228.2	11.1	17.3	12.7	547.6	6.60	49.3	87320	3434
610 x 229 x 101	101.2	602.6	227.6	10.5	14.8	12.7	547.6	7.69	52.2	75780	2915
533 x 210 x 122	122.0	544.5	211.9	12.7	21.3	12.7	476.5	4.97	37.5	76040	3388
533 x 210 x 109	109.0	539.5	210.8	11.6	18.8	12.7	476.5	5.61	41.1	66820	2943
533 x 210 x 101	101.0	536.7	210.0	10.8	17.4	12.7	476.5	6.03	44.1	61520	2692
533 x 210 x 92	92.1	533.1	209.3	10.1	15.6	12.7	476.5	6.71	47.2	55230	2389
533 x 210 x 82	82.2	528.3	208.8	9.6	13.2	12.7	476.5	7.91	49.6	47540	2007
457 x 191 x 98	98.3	467.2	192.8	11.4	19.6	10.2	407.6	4.92	35.8	45730	2347
457 x 191 x 89	89.3	463.4	191.9	10.5	17.7	10.2	407.6	5.42	38.8	41020	2089
457 x 191 x 82	82.0	460.0	191.3	9.9	16.0	10.2	407.6	5.98	41.2	37050	1871
457 x 191 x 74	74.3	457.0	190.4	9.0	14.5	10.2	407.6	6.57	45.3	33320	1671
457 x 191 x 67	67.1	453.4	189.9	8.5	12.7	10.2	407.6	7.48	48.0	29380	1452

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UNIVERSAL BEAMS

DIMENSIONS AND PROPERTIES

IN ACCORDANCE TO BS4 : PART 1 : 2005

Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter	Torsional Index	Warping Constant	Torsional Constant	Area of Section	Mass per metre	Designation
Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	u	x	H	J			
cm	cm	cm^3	cm^3	cm^3	cm^3	u	x	dm^6	cm^4	cm^2	kg/m	
40.6	6.57	19700	1732	23180	2799	0.867	21.2	64.4	4276	619	487.0	*** 1016 x 305 x 487**
40.4	6.49	17720	1535	20740	2467	0.868	23.2	55.9	3166	556	438.0	*** 1016 x 305 x 438**
40.2	6.40	15880	1353	18520	2167	0.868	25.6	48.4	2314	500	393.0	*** 1016 x 305 x 393**
40.3	6.44	14330	1222	16570	1940	0.872	28.0	43.2	1706	445	349.0	*** 1016 x 305 x 349**
40.1	6.37	12860	1082	14830	1712	0.871	30.8	37.7	1253	400	314.0	*** 1016 x 305 x 314**
40.0	6.36	11170	934	12800	1469	0.872	35.1	32.2	826	346	272.0	*** 1016 x 305 x 272**
39.0	6.09	9799	784	11330	1244	0.861	40.1	26.8	575	316	249.0	*** 1016 x 305 x 249**
38.0	5.81	8387	636	9784	1019	0.849	46.0	21.5	384	282	222.0	*** 1016 x 305 x 222**
38.2	9.59	15630	2161	17670	3341	0.885	26.7	88.9	1734	494	388.0	**914 x 419 x 388**
37.8	9.46	13730	1871	15480	2890	0.883	30.1	75.8	1193	437	343.3	**914 x 419 x 343**
37.0	6.51	10880	1014	12570	1601	0.867	31.9	31.2	926	368	289.1	**914 x 305 x 289**
36.8	6.42	9501	871	10940	1371	0.866	36.2	26.4	626	323	253.4	**914 x 305 x 253**
36.3	6.27	8269	739	9535	1163	0.861	41.3	22.1	422	286	224.2	**914 x 305 x 224**
35.7	6.07	7204	621	8351	982	0.854	46.8	18.4	291	256	200.9	**914 x 305 x 201**
34.3	6.27	7985	773	9155	1212	0.87	35.0	19.3	514	289	226.5	**838 x 292 x 226**
33.6	6.06	6641	620	7640	974	0.862	41.6	15.2	306	247	193.8	**838 x 292 x 194**
33.1	5.90	5893	535	6806	842	0.856	46.5	13	221	224	175.9	**838 x 292 x 176**
30.9	5.71	6234	610	7176	959	0.869	33.2	11.3	404	251	196.8	**762 x 267 x 197**
30.5	5.58	5387	514	6198	807	0.864	38.1	9.39	267	220	173.0	**762 x 267 x 173**
30.0	5.40	4470	411	5156	647	0.858	45.2	7.40	159	187	146.9	**762 x 267 x 147**
29.7	5.30	4018	362	4644	570	0.854	49.8	6.46	119	171	133.9	**762 x 267 x 134**
28.0	5.53	4916	518	5631	811	0.872	31.8	7.42	308	217	170.2	**686 x 254 x 170**
27.8	5.46	4374	455	5000	710	0.871	35.5	6.42	220	194	152.4	**686 x 254 x 152**
27.6	5.39	3987	409	4558	638	0.868	38.7	5.72	169	178	140.1	**686 x 254 x 140**
27.2	5.24	3481	346	3994	542	0.862	43.9	4.80	116	159	125.2	**686 x 254 x 125**
26.3	7.23	6589	1017	7486	1574	0.886	21.3	14.5	875	303	238.1	**610 x 305 x 238**
25.9	7.07	4935	743	5547	1144	0.886	27.7	10.2	340	228	179.0	**610 x 305 x 179**
25.7	7.00	4111	611	4594	937	0.886	32.7	8.17	200	190	149.1	**610 x 305 x 149**
25.0	5.03	3622	391	4142	611	0.875	30.6	3.99	216	178	139.9	**610 x 229 x 140**
24.9	4.97	3221	343	3676	535	0.873	34.1	3.45	154	159	125.1	**610 x 229 x 125**
24.6	4.88	2874	301	3281	469	0.870	38.0	2.99	111	144	113.0	**610 x 229 x 113**
24.2	4.75	2515	256	2881	400	0.864	43.1	2.52	77	129	101.2	**610 x 229 x 101**
22.1	4.67	2793	320	3196	500	0.877	27.6	2.32	178	155	122.0	**533 x 210 x 122**
21.9	4.60	2477	279	2828	436	0.875	30.9	1.99	126	139	109.0	**533 x 210 x 109**
21.9	4.57	2292	256	2612	399	0.874	33.2	1.81	101	129	101.0	**533 x 210 x 101**
21.7	4.51	2072	228	2360	356	0.872	36.5	1.6	75.7	117	92.1	**533 x 210 x 92**
21.3	4.38	1800	192	2059	300	0.864	41.6	1.33	51.5	105	82.2	**533 x 210 x 82**
19.1	4.33	1957	243	2232	379	0.881	25.7	1.18	121	125	98.3	**457 x 191 x 98**
19.0	4.29	1770	218	2014	338	0.88	28.3	1.04	90.7	114	89.3	**457 x 191 x 89**
18.8	4.23	1611	196	1831	304	0.877	30.9	0.922	69.2	104	82.0	**457 x 191 x 82**
18.8	4.20	1458	176	1653	272	0.877	33.9	0.818	51.8	94.6	74.3	**457 x 191 x 74**
18.5	4.12	1296	153	1471	237	0.872	37.9	0.705	37.1	85.5	67.1	**457 x 191 x 67**

UNIVERSAL BEAMS

DIMENSIONS AND PROPERTIES

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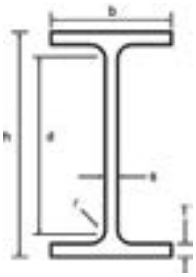

Designation	Mass per metre	Depth of Section	Width of Section	Thickness Web	Thickness Flange	Root Radius	Depth between fillets	Ratios for Local Buckling		Second moment of Area	
		h	b	s	t	r	d	Flange b/2t	Web d/s	Axis x-x	Axis y-y
	kg/m	mm	mm	mm	mm	mm	mm			cm^4	cm^4
457 x 152 x 82	82.1	465.8	155.3	10.5	18.9	10.2	407.6	4.11	38.8	36590	1185
457 x 152 x 74	74.2	462.0	154.4	9.6	17.0	10.2	407.6	4.54	42.5	32670	1047
457 x 152 x 67	67.2	458.0	153.8	9.0	15.0	10.2	407.6	5.13	45.3	28930	913
457 x 152 x 60	59.8	454.6	152.9	8.1	13.3	10.2	407.6	5.75	50.3	25500	795
457 x 152 x 52	52.3	449.8	152.4	7.6	10.9	10.2	407.6	6.99	53.6	21370	645
406 x 178 x 74	74.2	412.8	179.5	9.5	16.0	10.2	360.4	5.61	37.9	27310	1545
406 x 178 x 67	67.1	409.4	178.8	8.8	14.3	10.2	360.4	6.25	41.0	24330	1365
406 x 178 x 60	60.1	406.4	177.9	7.9	12.8	10.2	360.4	6.95	45.6	21600	1203
406 x 178 x 54	54.1	402.6	177.7	7.7	10.9	10.2	360.4	8.15	46.8	18720	1021
406 x 140 x 46	46.0	403.2	142.2	6.8	11.2	10.2	360.4	6.35	53.0	15690	538
406 x 140 x 39	39.0	398.0	141.8	6.4	8.6	10.2	360.4	8.24	56.3	12510	410
356 x 171 x 67	67.1	363.4	173.2	9.1	15.7	10.2	311.6	5.52	34.2	19460	1362
356 x 171 x 57	57.0	358.0	172.2	8.1	13.0	10.2	311.6	6.62	38.5	16040	1108
356 x 171 x 51	51.0	355.0	171.5	7.4	11.5	10.2	311.6	7.46	42.1	14140	968
356 x 171 x 45	45.0	351.4	171.1	7.0	9.7	10.2	311.6	8.82	44.5	12070	811
356 x 127 x 39	39.1	353.4	126.0	6.6	10.7	10.2	311.6	5.89	47.2	10170	358
356 x 127 x 33	33.1	349.0	125.4	6.0	8.5	10.2	311.6	7.38	51.9	8249	280
305 x 165 x 54	54.0	310.4	166.9	7.9	13.7	8.9	265.2	6.09	33.6	11700	1063
305 x 165 x 46	46.1	306.6	165.7	6.7	11.8	8.9	265.2	7.02	39.6	9899	896
305 x 165 x 40	40.3	303.4	165.0	6.0	10.2	8.9	265.2	8.09	44.2	8503	764
*** 305 x 127 x 48**	48.1	311.0	125.3	9.0	14.0	8.9	265.2	4.47	29.5	9575	461
*** 305 x 127 x 42**	41.9	307.2	124.3	8.0	12.1	8.9	265.2	5.14	33.2	8196	389
*** 305 x 127 x 37**	37.0	304.4	123.3	7.1	10.7	8.9	265.2	5.77	37.4	7171	336
305 x 102 x 33	32.8	312.7	102.4	6.6	10.8	7.6	275.9	4.74	41.8	6501	194
305 x 102 x 28	28.2	308.7	101.8	6.0	8.8	7.6	275.9	5.78	46.0	5366	155
305 x 102 x 25	24.8	305.1	101.6	5.8	7.0	7.6	275.9	7.26	47.6	4455	123
254 x 146 x 43	43.0	259.6	147.3	7.2	12.7	7.6	219.0	5.80	30.4	6544	677
254 x 146 x 37	37.0	256.0	146.4	6.3	10.9	7.6	219.0	6.72	34.8	5537	571
254 x 146 x 31	31.1	251.4	146.1	6.0	8.6	7.6	219.0	8.49	36.5	4413	448
254 x 102 x 28	28.3	260.4	102.2	6.3	10.0	7.6	225.2	5.11	35.7	4005	179
254 x 102 x 25	25.2	257.2	101.9	6.0	8.4	7.6	225.2	6.07	37.5	3415	149
254 x 102 x 22	22.0	254.0	101.6	5.7	6.8	7.6	225.2	7.47	39.5	2841	119
203 x 133 x 30	30.0	206.8	133.9	6.4	9.6	7.6	172.4	6.97	26.9	2896	385
203 x 133 x 25	25.1	203.2	133.2	5.7	7.8	7.6	172.4	8.54	30.2	2340	308
203 x 102 x 23	23.1	203.2	101.8	5.4	9.3	7.6	169.4	5.47	31.4	2105	164
*** 178 x 102 x 19**	19.0	177.8	101.2	4.8	7.9	7.6	146.8	6.41	30.6	1356	137
*** 152 x 89 x 16**	16.0	152.4	88.7	4.5	7.7	7.6	121.8	5.76	27.1	834	89.8
*** 127 x 76 x 13**	13.0	127.0	76.0	4.0	7.6	7.6	96.6	5.00	24.1	473	55.7

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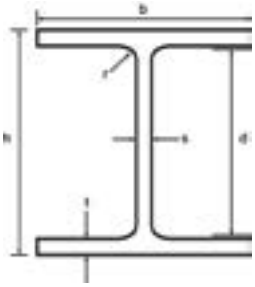
Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter	Torsional Index	Warping Constant	Torsional Constant	Area of Section	Mass per metre	Designation
Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	u	x	H	J			
cm	cm	cm^3	cm^3	cm^3	cm^3	u	x	dm^6	cm^4	cm^2	kg/m	
18.7	3.37	1571	153	1811	240	0.873	27.4	0.591	89.2	105	82.1	**457 x 152 x 82**
18.6	3.33	1414	136	1627	213	0.873	30.1	0.518	65.9	94.5	74.2	**457 x 152 x 74**
18.4	3.27	1263	119	1453	187	0.869	33.6	0.448	47.7	85.6	67.2	**457 x 152 x 67**
18.3	3.23	1122	104	1287	163	0.868	37.5	0.387	33.8	76.2	59.8	**457 x 152 x 60**
17.9	3.11	950	84.6	1096	133	0.859	43.9	0.311	21.4	66.6	52.3	**457 x 152 x 52**
17.0	4.04	1323	172	1501	267	0.882	27.6	0.608	62.8	94.5	74.2	**406 x 178 x 74**
16.9	3.99	1189	153	1346	237	0.880	30.5	0.533	46.1	85.5	67.1	**406 x 178 x 67**
16.8	3.97	1063	135	1199	209	0.880	33.8	0.466	33.3	76.5	60.1	**406 x 178 x 60**
16.5	3.85	930	115	1055	178	0.871	38.3	0.392	23.1	69.0	54.1	**406 x 178 x 54**
16.4	3.03	778	75.7	888	118	0.871	38.9	0.207	19.0	58.6	46	**406 x 140 x 46**
15.9	2.87	629	57.8	724	90.8	0.858	47.5	0.155	10.7	49.7	39	**406 x 140 x 39**
15.1	3.99	1071	157	1211	243	0.886	24.4	0.412	55.7	85.5	67.1	**356 x 171 x 67**
14.9	3.91	896	129	1010	199	0.882	28.8	0.330	33.4	72.6	57.0	**356 x 171 x 57**
14.8	3.86	796	113	896	174	0.881	32.1	0.286	23.8	64.9	51.0	**356 x 171 x 51**
14.5	3.76	687	94.8	775	147	0.874	36.8	0.237	15.8	57.3	45.0	**356 x 171 x 45**
14.3	2.68	576	56.8	659	89.1	0.871	35.2	0.105	15.1	49.8	39.1	**356 x 127 x 39**
14.0	2.58	473	44.7	543	70.3	0.863	42.2	0.0812	8.79	42.1	33.1	**356 x 127 x 33**
13.0	3.93	754	127	846	196	0.889	23.6	0.234	34.8	68.8	54.0	**305 x 165 x 54**
13.0	3.90	646	108	720	166	0.891	27.1	0.195	22.2	58.7	46.1	**305 x 165 x 46**
12.9	3.86	560	92.6	623	142	0.889	31.0	0.164	14.7	51.3	40.3	**305 x 165 x 40**
12.5	2.74	616	73.6	711	116	0.873	23.3	0.102	31.8	61.2	48.1	*** 305 x 127 x 48**
12.4	2.70	534	62.6	614	98.4	0.872	26.5	0.0846	21.1	53.4	41.9	*** 305 x 127 x 42**
12.3	2.67	471	54.5	539	85.4	0.872	29.7	0.0725	14.8	47.2	37.0	*** 305 x 127 x 37**
12.5	2.15	416	37.9	481	60.0	0.866	31.6	0.0442	12.2	41.8	32.8	**305 x 102 x 33**
12.2	2.08	348	30.5	403	48.5	0.859	37.4	0.0349	7.4	35.9	28.2	**305 x 102 x 28**
11.9	1.97	292	24.2	342	38.8	0.846	43.4	0.0273	4.77	31.6	24.8	**305 x 102 x 25**
10.9	3.52	504	92.0	566	141	0.891	21.2	0.1030	23.9	54.8	43.0	**254 x 146 x 43**
10.8	3.48	433	78.0	483	119	0.890	24.3	0.0857	15.3	47.2	37.0	**254 x 146 x 37**
10.5	3.36	351	61.3	393	94.1	0.880	29.6	0.0660	8.55	39.7	31.1	**254 x 146 x 31**
10.5	2.22	308	34.9	353	54.8	0.874	27.5	0.0280	9.57	36.1	28.3	**254 x 102 x 28**
10.3	2.15	266	29.2	306	46.0	0.866	31.5	0.0230	6.42	32.0	25.2	**254 x 102 x 25**
10.1	2.06	224	23.5	259	37.3	0.856	36.4	0.0182	4.15	28.0	22.0	**254 x 102 x 22**
8.71	3.17	280	57.5	314	88.2	0.881	21.5	0.0374	10.3	38.2	30.0	**203 x 133 x 30**
8.56	3.10	230	46.2	258	70.9	0.877	25.6	0.0294	5.96	32.0	25.1	**203 x 133 x 25**
8.46	2.36	207	32.2	234	49.8	0.888	22.5	0.0154	7.02	29.4	23.1	**203 x 102 x 23**
7.48	2.37	153	27.0	171	41.6	0.888	22.6	0.00987	4.41	24.3	19.0	*** 178 x 102 x 19**
6.41	2.10	109	20.2	123	31.2	0.890	19.6	0.00470	3.56	20.3	16.0	*** 152 x 89 x 16**
5.35	1.84	74.6	14.7	84.2	22.6	0.895	16.3	0.00199	2.85	16.5	13.0	*** 127 x 76 x 13**

UNIVERSAL COLUMNS

DIMENSIONS AND PROPERTIES

IN ACCORDANCE TO BS4 : PART 1 : 2005



Designation	Mass per metre	Depth of Section	Width of Section	Thickness Web	Thickness Flange	Root Radius	Depth between fillets	Ratios for Local Buckling		Second moment of Area	
		h	b	s	t	r	d	Flange b/2t	Web d/s	Axis x-x	Axis y-y
	kg/m	mm	mm	mm	mm	mm	mm			cm^4	cm^4
356 x 406 x 634	633.9	474.6	424.0	47.6	77.0	15.2	290.2	2.75	6.10	274800	98130
356 x 406 x 551	551.0	455.6	418.5	42.1	67.5	15.2	290.2	3.10	6.89	226900	82670
356 x 406 x 467	467.0	436.6	412.2	35.8	58.0	15.2	290.2	3.55	8.11	183000	67830
356 x 406 x 393	393.0	419.0	407.0	30.6	49.2	15.2	290.2	4.14	9.48	146600	55370
356 x 406 x 340	339.9	406.4	403.0	26.6	42.9	15.2	290.2	4.70	10.9	122500	46850
356 x 406 x 287	287.1	393.6	399.0	22.6	36.5	15.2	290.2	5.47	12.8	99880	38680
356 x 406 x 235	235.1	381.0	394.8	18.4	30.2	15.2	290.2	6.54	15.8	79080	30990
356 x 368 x 202	201.9	374.6	374.7	16.5	27.0	15.2	290.2	6.94	17.6	66260	23690
356 x 368 x 177	177.0	368.2	372.6	14.4	23.8	15.2	290.2	7.83	20.2	57120	20530
356 x 368 x 153	152.9	362.0	370.5	12.3	20.7	15.2	290.2	8.95	23.6	48590	17550
356 x 368 x 129	129.0	355.6	368.6	10.4	17.5	15.2	290.2	10.50	27.9	40250	14610
305 x 305 x 283	282.9	365.3	322.2	26.8	44.1	15.2	246.7	3.65	9.21	78870	24630
305 x 305 x 240	240.0	352.5	318.4	23.0	37.7	15.2	246.7	4.22	10.7	64200	20310
305 x 305 x 198	198.1	339.9	314.5	19.1	31.4	15.2	246.7	5.01	12.9	50900	16300
305 x 305 x 158	158.1	327.1	311.2	15.8	25.0	15.2	246.7	6.22	15.6	38750	12570
305 x 305 x 137	136.9	320.5	309.2	13.8	21.7	15.2	246.7	7.12	17.9	32810	10700
305 x 305 x 118	117.9	314.5	307.4	12.0	18.7	15.2	246.7	8.22	20.6	27670	9059
305 x 305 x 97	96.9	307.9	305.3	9.9	15.4	15.2	246.7	9.91	24.9	22250	7308
254 x 254 x 167	167.1	289.1	265.2	19.2	31.7	12.7	200.3	4.18	10.4	30000	9870
254 x 254 x 132	132.0	276.3	261.3	15.3	25.3	12.7	200.3	5.16	13.1	22530	7531
254 x 254 x 107	107.1	266.7	258.8	12.8	20.5	12.7	200.3	6.31	15.6	17510	5928
254 x 254 x 89	88.9	260.3	256.3	10.3	17.3	12.7	200.3	7.41	19.4	14270	4857
254 x 254 x 73	73.1	254.1	254.6	8.6	14.2	12.7	200.3	8.96	23.3	11410	3908
203 x 203 x 86	86.1	222.2	209.1	12.7	20.5	10.2	160.8	5.10	12.7	9449	3127
203 x 203 x 71	71.0	215.8	206.4	10.0	17.3	10.2	160.8	5.97	16.1	7618	2537
203 x 203 x 60	60.0	209.6	205.8	9.4	14.2	10.2	160.8	7.25	17.1	6125	2065
203 x 203 x 52	52.0	206.2	204.3	7.9	12.5	10.2	160.8	8.17	20.4	5259	1778
203 x 203 x 46	46.1	203.2	203.6	7.2	11.0	10.2	160.8	9.25	22.3	4568	1548
152 x 152 x 37	37.0	161.8	154.4	8.0	11.5	7.6	123.6	6.71	15.4	2210	706
152 x 152 x 30	30.0	157.6	152.9	6.5	9.4	7.6	123.6	8.13	19.0	1748	560
152 x 152 x 23	23.0	152.4	152.2	5.8	6.8	7.6	123.6	11.20	21.3	1250	400

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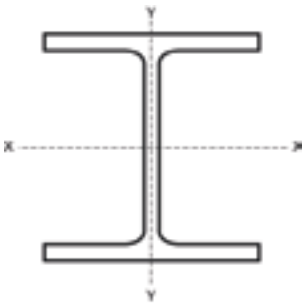
DIMENSIONS AND PROPERTIES

IN ACCORDANCE TO BS4 : PART 1 : 2005

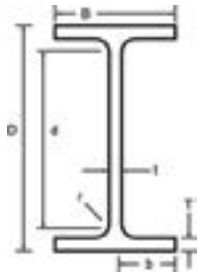


Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter	Torsional Index	Warping Constant	Torsional Constant	Area of Section	Mass per metre	Designation
Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	u	x	H	J			
cm	cm	cm^3	cm^3	cm^3	cm^3	u	x	dm^6	cm^4	cm^2	kg/m	
18.4	11.0	11580	4629	14240	7108	0.843	5.46	38.8	13720	808	633.9	**356 x 406 x 634**
18.0	10.9	9962	3951	12080	6058	0.841	6.05	31.1	9240	702	551.0	**356 x 406 x 551**
17.5	10.7	8383	3291	10000	5034	0.839	6.86	24.3	5809	595	467.0	**356 x 406 x 467**
17.1	10.5	6998	2721	8222	4154	0.837	7.86	18.9	3545	501	393.0	**356 x 406 x 393**
16.8	10.4	6031	2325	6999	3544	0.836	8.85	15.5	2343	433	339.9	**356 x 406 x 340**
16.5	10.3	5075	1939	5812	2949	0.835	10.2	12.3	1441	366	287.1	**356 x 406 x 287**
16.3	10.2	4151	1570	4687	2383	0.834	12.1	9.54	812	299	235.1	**356 x 406 x 235**
16.1	9.60	3538	1264	3972	1920	0.844	13.4	7.16	558	257	201.9	**356 x 368 x 202**
15.9	9.54	3103	1102	3455	1671	0.844	15.0	6.09	381	226	177.0	**356 x 368 x 177**
15.8	9.49	2684	948	2695	1435	0.844	17.0	5.11	251	195	152.9	**356 x 368 x 153**
15.6	9.43	2264	793	2479	1199	0.844	19.9	4.18	153	164	129.0	**356 x 368 x 129**
14.8	8.27	4318	1529	5105	2342	0.855	7.65	6.35	2034	360	282.9	**305 x 305 x 283**
14.5	8.15	3643	1276	4247	1951	0.854	8.74	5.03	1271	306	240.0	**305 x 305 x 240**
14.2	8.04	2995	1037	3440	1581	0.854	10.2	3.88	734	252	198.1	**305 x 305 x 198**
13.9	7.90	2369	808	2680	1230	0.851	12.5	2.87	378	201	158.1	**305 x 305 x 158**
13.7	7.83	2048	692	2297	1053	0.851	14.2	2.39	249	174	136.9	**305 x 305 x 137**
13.6	7.77	1760	589	1958	895	0.850	16.2	1.98	161	150	117.9	**305 x 305 x 118**
13.4	7.69	1445	479	1592	726	0.850	19.3	1.56	91.2	123	96.9	**305 x 305 x 97**
11.9	6.81	2075	744	2424	1137	0.851	8.49	1.63	626	213	167.1	**254 x 254 x 167**
11.6	6.69	1631	576	1869	878	0.850	10.3	1.19	319	168	132.0	**254 x 254 x 132**
11.3	6.59	1313	458	1484	697	0.848	12.4	0.898	172	136	107.1	**254 x 254 x 107**
11.2	6.55	1096	379	1224	575	0.850	14.5	0.717	102	113	88.9	**254 x 254 x 89**
11.1	6.48	898	307	992	465	0.849	17.3	0.562	57.6	93.1	73.1	**254 x 254 x 73**
9.28	5.34	850	299	977	456	0.850	10.2	0.318	137	110	86.1	**203 x 203 x 86**
9.18	5.30	706	246	799	374	0.853	11.9	0.250	80.2	90.4	71.0	**203 x 203 x 71**
8.96	5.20	584	201	656	305	0.846	14.1	0.197	47.2	76.4	60.0	**203 x 203 x 60**
8.91	5.18	510	174	567	264	0.848	15.8	0.167	31.8	66.3	52.0	**203 x 203 x 52**
8.82	5.13	450	152	497	231	0.847	17.7	0.143	22.2	58.7	46.1	**203 x 203 x 46**
6.85	3.87	273	91.5	309	140	0.848	13.3	0.0399	19.2	47.1	37.0	**152 x 152 x 37**
6.76	3.83	222	73.3	248	112	0.849	16.0	0.0308	10.5	38.3	30.0	**152 x 152 x 30**
6.54	3.70	164	52.6	182	80.2	0.840	20.7	0.0212	4.63	29.2	23.0	**152 x 152 x 23**

AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

IN ACCORDANCE TO ASTM A6 / A6M : 2003



Designation				Depth of Section D	Width of Section B	Thickness of Web t	Thickness of Flange T	Ratios for Local Buckling		Second Moment of Area	
Serial Size	Mass per Foot	Serial Size	Mass per Metre					Flange b/T	Web d/t	Axis X-X	Axis Y-Y
in	lb	mm	kg	mm	mm	mm	mm			cm^4	cm^4
*** W40 x 16**	593	1016 x 406	883.0	1092	424	45.5	82.0	4.66	10.6	2096420	104970
*** W40 x 16**	503		748.0	1068	417	39.0	70.0	5.35	12.4	1731940	85110
*** W40 x 16**	431		642.0	1048	412	34.0	60.0	6.06	14.5	1450590	70280
*** W40 x 16**	397		591.0	1040	409	31.0	55.9	6.60	15.5	1331040	64010
*** W40 x 16**	362		539.0	1030	407	28.4	51.1	7.17	17.0	1202540	57630
*** W40 x 16**	324		483.0	1020	404	25.4	46.0	7.95	18.9	1067480	50710
*** W40 x 16**	297		443.0	1012	402	23.6	41.9	8.52	20.7	966510	45500
*** W40 x 16**	277		412.0	1008	402	21.1	40.0	9.53	21.7	909800	43410
*** W40 x 16**	249		371.0	1000	400	19.0	36.1	10.53	24.0	812100	38480
*** W40 x 16**	215		321.0	990	400	16.5	31.0	12.12	28.0	696400	33120
*** W40 x 16**	199		296.0	982	400	16.5	27.1	12.12	32.0	618700	28850
*** W40 x 12**	327	1016 x 305	487.0	1036.1	308.5	30.0	54.1	2.85	28.9	1021000	26730
*** W40 x 12**	294		438.0	1025.9	305.4	26.9	49.0	3.12	32.3	908900	23440
*** W40 x 12**	264		393.0	1016.0	303.0	24.4	43.9	3.45	35.7	806600	20490
*** W40 x 12**	235		349.0	1008.1	302.0	21.1	40.0	3.78	41.2	722100	18460
*** W40 x 12**	211		314.0	1000.0	300.0	19.1	35.9	4.18	45.6	643200	16230
*** W40 x 12**	183		272.0	990.1	300.0	16.5	31.0	4.84	52.7	552900	14000
*** W40 x 12**	167		249.0	980.2	300.0	16.5	26.0	5.77	52.7	480300	11750
*** W40 x 12**	149		222.0	970.3	300.0	16.0	21.1	7.11	54.4	406900	9544
W36 x 16½	359	914 x 419	534.0	950.0	425.0	28.4	51.1	4.16	28.2	1031300	65560
W36 x 16½	328		488.0	942.0	422.0	25.9	47.0	4.49	30.9	935500	59010
W36 x 16½	300		446.0	933.2	423.0	24.0	42.7	4.95	33.3	847300	53980
W36 x 16½	280		417.0	927.6	421.5	22.5	39.9	5.28	35.5	786100	49890
W36 x 16½	260		387.0	921.0	420.4	21.3	36.6	5.74	37.5	719000	45410
W36 x 16½	245		365.0	916.4	419.4	20.3	34.3	6.11	39.4	671800	42240
W36 x 16½	230		342.0	911.9	418.3	19.3	32.0	6.54	41.4	625200	39100
W36 x 12	318	914 x 305	474.0	970.8	315.7	29.9	54.1	2.92	27.6	884100	28570
W36 x 12	286		426.0	960.9	312.8	26.9	49.0	3.19	30.7	787600	25140
W36 x 12	256		381.0	950.7	310.3	24.4	43.9	3.53	33.8	696900	21970
W36 x 12	232		345.0	942.9	307.8	22.1	39.9	3.86	37.3	625200	19480
W36 x 12	210		313.0	931.9	309.4	21.1	34.5	4.48	39.1	548700	17110
W36 x 12	194		289.0	926.8	307.7	19.4	32.0	4.81	42.5	503900	15600
W36 x 12	182		271.0	922.8	306.7	18.4	30.0	5.11	44.8	471000	14480
W36 x 12	170		253.0	918.7	305.6	17.3	27.9	5.48	47.7	436700	13310
W36 x 12	160		238.0	914.7	304.8	16.5	25.9	5.88	50.0	406000	12260
W36 x 12	150		223.0	910.6	304.2	15.9	23.9	6.36	51.9	376700	11250
W36 x 12	135		201.0	903.0	303.5	15.2	20.1	7.55	54.3	324900	9395

** Limited Stock Availability*

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AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

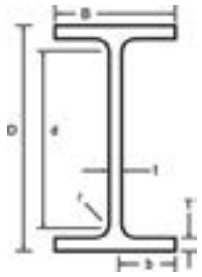
IN ACCORDANCE TO ASTM A6 / A6M : 2003

Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter	Torsional Index	Warping Constant	Torsional Constant	Area of Section	Designation	
Axis xx	Axis yy	Axis xx	Axis yy	Axis xx	Axis yy	u	x	H	J		Mass per foot	Serial Size
cm	cm	cm^3	cm^3	cm^3	cm^3			dm^6	cm^4	cm^2	lb	in
43.2	9.66	38396	4952	45265	7874	0.883	14.0	265.7	18750	1125	593	*** W40 x 16**
42.6	9.45	32433	4082	37881	6459	0.882	16.1	210.7	11670	953	503	*** W40 x 16**
42.1	9.27	27683	3412	32097	5379	0.882	18.5	170.7	7440	818	431	*** W40 x 16**
42.1	9.22	25597	3130	29530	4916	0.883	19.8	154.3	5927	753	397	*** W40 x 16**
41.8	9.16	23350	2832	26824	4436	0.883	21.5	137.6	4546	687	362	*** W40 x 16**
41.7	9.08	20931	2510	23923	3919	0.884	23.7	119.9	3311	615	324	*** W40 x 16**
41.4	8.98	19101	2264	21777	3529	0.882	25.8	106.7	2545	564	297	*** W40 x 16**
41.7	9.10	18050	2160	20440	3348	0.887	27.1	101.5	2134	524	277	*** W40 x 16**
41.5	9.03	16240	1924	18330	2976	0.887	29.9	89.4	1575	472	249	*** W40 x 16**
41.3	9.00	14070	1656	15800	2555	0.887	34.3	76.0	1021	409	215	*** W40 x 16**
40.5	8.75	12600	1443	14220	2235	0.878	38.0	65.9	762.6	377	199	*** W40 x 16**
40.6	6.57	19720	1733	23200	2800	0.867	21.1	64.4	4299	620	327	**W40 x 12**
40.4	6.49	17720	1535	20740	2467	0.868	23.2	55.9	3166	556	294	**W40 x 12**
40.2	6.40	15880	1353	18520	2167	0.868	25.6	48.4	2314	500	264	**W40 x 12**
40.3	6.44	14330	1222	16570	1940	0.872	28.0	43.2	1706	445	235	**W40 x 12**
40.1	6.37	12860	1082	14830	1712	0.871	30.8	37.7	1253	400	211	**W40 x 12**
40.0	6.36	11170	934	12800	1469	0.872	35.1	32.2	826	346	183	**W40 x 12**
39.0	6.09	9799	784	11330	1244	0.861	40.1	26.8	575	316	167	**W40 x 12**
38.0	5.81	8387	636	9784	1019	0.849	46.0	21.5	384	282	149	**W40 x 12**
38.9	9.82	21710	3085	24830	4796	0.887	19.7	132	4516	680	359	**W36 x 16½**
38.8	9.75	19860	2797	22620	4336	0.887	21.3	118	3499	621	328	**W36 x 16½**
38.6	9.73	18160	2552	20610	3951	0.887	23.3	107	2675	570	300	**W36 x 16½**
38.4	9.68	16950	2367	19180	3660	0.887	24.8	98.3	2191	532	280	**W36 x 16½**
38.2	9.59	15610	2160	17640	3338	0.885	26.7	88.8	1729	493	260	**W36 x 16½**
38.0	9.53	14660	2015	16550	3112	0.884	28.3	82.2	1442	465	245	**W36 x 16½**
37.9	9.47	13710	1869	15460	2886	0.883	30.2	75.7	1189	436	230	**W36 x 16½**
38.3	6.89	18210	1810	21350	2895	0.872	19.9	60	4091	603	318	**W36 x 12**
38.1	6.81	16390	1608	19120	2559	0.873	21.8	52.3	3027	542	286	**W36 x 12**
37.9	6.72	14660	1416	17030	2247	0.872	24.1	45.2	2199	486	256	**W36 x 12**
37.7	6.66	13260	1266	15340	2000	0.872	26.4	39.7	1648	440	232	**W36 x 12**
37.1	6.55	11780	1106	13640	1752	0.866	29.7	34.4	1163	399	210	**W36 x 12**
37.0	6.52	10870	1014	12550	1600	0.867	32.0	31.2	923	367	194	**W36 x 12**
36.9	6.47	10210	944	11770	1488	0.866	33.9	28.8	769	346	182	**W36 x 12**
36.8	6.42	9508	871	10950	1371	0.866	36.2	26.4	626	323	170	**W36 x 12**
36.6	6.36	8876	805	10220	1266	0.864	38.6	24.2	514	303	160	**W36 x 12**
36.3	6.27	8274	739	9539	1164	0.861	41.3	22.1	422	286	150	**W36 x 12**
35.6	6.05	7195	619	8349	979	0.853	46.9	18.3	291	256	135	**W36 x 12**

AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

IN ACCORDANCE TO ASTM A6 / A6M : 2003



Designation				Depth of Section D	Width of Section B	Thickness of Web t	Thickness of Flange T	Ratios for Local Buckling		Second Moment of Area	
Serial Size	Mass per Foot	Serial Size	Mass per Metre					Flange b/T	Web d/t	Axis X-X	Axis Y-Y
in	lb	mm	kg	mm	mm	mm	mm			cm^4	cm^4
*** W33 x 15¾**	387	838 x 400	577.0	913.0	411.0	32.0	57.9	3.55	23.8	1010700	67320
*** W33 x 15¾**	354		527.0	903.0	409.0	29.5	53.1	3.85	25.8	914000	60730
*** W33 x 15¾**	318		473.0	893.0	406.0	26.4	48.0	4.23	28.8	812100	53670
*** W33 x 15¾**	291		433.0	885.0	404.0	24.4	43.9	4.60	31.2	735200	48350
*** W33 x 15¾**	263		392.0	877.0	401.0	22.1	39.9	5.03	34.5	658600	42960
*** W33 x 15¾**	241		359.0	868.2	402.8	21.1	35.6	5.66	36.1	590600	38840
*** W33 x 15¾**	221		329.0	861.8	401.4	19.7	32.4	6.19	38.6	534900	34980
*** W33 x 15¾**	201		299.0	855.5	399.9	18.2	29.2	6.85	41.8	479900	31170
W33 x 11½	219	838 x 292	326.0	877.1	297.2	22.1	39.9	3.72	34.5	513500	17540
W33 x 11½	204		304.0	871.2	295.7	20.6	37.1	3.99	37.0	473000	16050
W33 x 11½	187		278.0	865.1	294.1	19.1	34.0	4.33	39.9	430400	14470
W33 x 11½	169		252.0	859.0	292.1	17.0	31.0	4.71	44.8	386500	12910
W33 x 11½	152		226.0	850.6	293.8	16.1	26.8	5.48	47.3	339400	11360
W33 x 11½	141		210.0	845.8	293.0	15.4	24.4	6.00	49.4	310500	10260
W33 x 11½	130		193.0	840.5	292.4	14.7	21.7	6.74	51.8	279000	9066
W33 x 11½	118		176.0	834.6	291.6	14.0	18.8	7.76	54.4	245800	7791
*** W30 x 15**	357	762 x 381	531.0	833.0	393.0	31.5	56.9	3.45	21.8	775300	57760
*** W30 x 15**	326		484.0	823.0	390.0	29.0	52.1	3.74	23.6	697400	51660
*** W30 x 15**	292		434.0	813.0	387.0	25.9	47.0	4.12	26.5	617500	45510
*** W30 x 15**	261		389.0	803.0	385.0	23.6	41.9	4.59	29.1	543800	39940
*** W30 x 15**	235		350.0	795.0	382.0	21.1	38.1	5.01	32.5	485500	35460
*** W30 x 15**	211		314.0	785.9	383.7	19.7	33.4	5.74	34.8	427100	31500
*** W30 x 15**	191		284.0	779.3	382.0	18.0	30.1	6.53	38.1	381600	28000
*** W30 x 15**	173		257.0	773.2	380.6	16.6	27.1	7.02	41.3	341600	24930
W30 x 10½	148	762 x 267	220.0	779.0	266.2	16.5	30.0	4.44	41.6	278200	9462
W30 x 10½	132		196.0	769.9	267.8	15.6	25.4	5.27	44.0	239900	8156
W30 x 10½	124		185.0	766.3	267.1	14.9	23.6	5.66	46.0	223000	7518
W30 x 10½	116		173.0	762.3	266.6	14.4	21.6	6.17	47.6	205600	6842
W30 x 10½	108		161.0	757.7	266.1	13.8	19.3	6.89	49.7	185800	6080
W30 x 10½	99		147.0	753.1	265.4	13.2	17.0	7.81	52.0	166100	5313
W30 x 10½	90		134.0	750.0	264.2	11.9	15.5	8.52	57.6	150300	4777
*** W27 x 14**	336	686 x 356	500.0	762.0	369.0	32.0	57.9	3.19	19.20	604800	48670
*** W27 x 14**	307		457.0	752.0	367.0	29.5	53.1	3.46	20.90	545100	43890
*** W27 x 14**	281		419.0	744.0	364.0	26.9	49.0	3.71	22.90	493900	39500
*** W27 x 14**	258		384.0	736.0	362.0	24.9	45.0	4.02	24.70	447400	35670
*** W27 x 14**	235		350.0	728.0	360.0	23.1	40.9	4.40	26.70	401900	31870
*** W27 x 14**	217		323.0	722.0	359.0	21.1	38.1	4.71	29.20	369600	29430
*** W27 x 14**	194		289.0	714.0	356.0	19.0	34.0	5.24	32.40	324800	25610
*** W27 x 14**	178		265.0	706.0	357.8	18.4	30.2	5.92	33.50	290600	23090
*** W27 x 14**	161		240.0	700.8	356.1	16.8	27.4	6.50	36.60	261100	20650
*** W27 x 14**	146		217.0	695.4	354.7	15.4	24.8	7.15	40.00	234500	18470

** Limited Stock Availability*

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AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

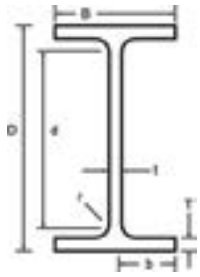
IN ACCORDANCE TO ASTM A6 / A6M : 2003

Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter	Torsional Index	Warping Constant	Torsional Constant	Area of Section	Designation	
Axis xx	Axis yy	Axis xx	Axis yy	Axis xx	Axis yy	u	x	H	J		Mass per foot	Serial Size
cm	cm	cm^3	cm^3	cm^3	cm^3			dm^6	cm^4	cm^2	lb	in
37.1	9.57	22140	3271	25540	5100	0.887	16.7	123	6126	734	387	*** W33 x 15¾**
36.9	9.51	20240	2970	23250	4620	0.887	18.1	110	4743	672	354	*** W33 x 15¾**
36.7	9.44	18190	2644	20770	4100	0.888	19.9	95.8	3484	603	318	*** W33 x 15¾**
36.5	9.36	16610	2394	18900	3706	0.887	21.6	85.5	2683	552	291	*** W33 x 15¾**
36.3	9.28	15020	2143	17010	3309	0.888	23.6	75.33	2009	499	263	*** W33 x 15¾**
35.9	9.21	13600	1929	15400	2981	0.884	26.1	67.3	1495	458	241	*** W33 x 15¾**
35.7	9.13	12410	1743	14020	2691	0.882	28.4	60.2	1147	420	221	*** W33 x 15¾**
35.5	9.04	11220	1559	12650	2404	0.881	31.2	53.2	856	381	201	*** W33 x 15¾**
35.1	6.49	11710	1180	13550	1864	0.874	24.4	30.70	1569	416	219	**W33 x 11½**
35.0	6.45	10860	1086	12530	1710	0.874	26.1	27.90	1265	386	204	**W33 x 11½**
34.8	6.38	9950	984	11450	1547	0.874	28.3	25.00	983	355	187	**W33 x 11½**
34.8	6.36	8999	884	10300	1383	0.875	30.9	22.10	735	319	169	**W33 x 11½**
34.3	6.27	7981	773	9150	1212	0.870	34.9	19.30	514	289	152	**W33 x 11½**
34.0	6.18	7341	700	8425	1098	0.867	37.8	17.30	405	268	141	**W33 x 11½**
33.6	6.06	6639	620	7638	974	0.862	41.6	15.20	306	247	130	**W33 x 11½**
33.1	5.90	5889	534	6803	841	0.856	46.4	13.00	221	224	118	**W33 x 11½**
33.9	9.24	18610	2939	21510	4577	0.888	15.4	87.00	5501	676	357	*** W30 x 15**
33.6	9.15	16950	2649	19490	4118	0.888	16.7	76.80	4229	617	326	*** W30 x 15**
33.4	9.08	15190	2352	17360	3644	0.889	18.3	66.80	3088	552	292	*** W30 x 15**
33.2	8.98	13540	2075	15410	3209	0.888	20.4	57.80	2216	495	261	*** W30 x 15**
33.0	8.93	12210	1856	13820	2863	0.889	22.2	50.80	1650	445	235	*** W30 x 15**
32.7	8.87	10870	1642	12270	2532	0.886	25.0	44.60	1161	400	211	*** W30 x 15**
32.5	8.80	9794	1466	11020	2257	0.885	27.5	39.30	858	362	191	*** W30 x 15**
32.3	8.72	8836	1310	9924	2015	0.884	30.3	34.70	637	328	173	*** W30 x 15**
31.5	5.81	7142	711	8197	1115	0.875	28.9	13.30	605	281	148	**W30 x 10½**
30.9	5.71	6232	609	7164	957	0.869	33.2	11.30	404	251	132	**W30 x 10½**
30.8	5.65	5821	563	6691	884	0.867	35.4	10.40	333	236	124	**W30 x 10½**
30.5	5.56	5394	513	6210	807	0.864	38.0	9.39	269	221	116	**W30 x 10½**
30.2	5.46	4903	457	5659	720	0.859	41.5	8.29	207	204	108	**W30 x 10½**
29.8	5.32	4412	400	5111	632	0.854	45.6	7.20	156	187	99	**W30 x 10½**
29.8	5.30	4008	362	4629	569	0.855	49.9	6.44	118	170	90	**W30 x 10½**
30.8	8.75	15870	2638	18450	4111	0.889	13.7	60.3	5373	636	336	*** W27 x 14**
30.6	8.68	14500	2392	16760	3720	0.889	14.8	53.6	4158	582	307	*** W27 x 14**
30.5	8.61	13280	2170	15270	3366	0.890	15.9	47.7	3241	532	281	*** W27 x 14**
30.3	8.54	12160	1971	13920	3052	0.889	17.2	42.6	2521	489	258	*** W27 x 14**
30.0	8.46	11040	1771	12590	2739	0.888	18.8	37.6	1913	446	235	*** W27 x 14**
30.0	8.45	10240	1640	11620	2530	0.890	20.1	34.4	1534	412	217	*** W27 x 14**
29.8	8.36	9098	1439	10280	2215	0.889	22.3	29.6	1094	367	194	*** W27 x 14**
29.4	8.28	8227	1291	9290	1990	0.885	24.7	26.4	811	337	178	*** W27 x 14**
29.2	8.22	7452	1160	8387	1785	0.884	27.0	23.4	609	306	161	*** W27 x 14**
29.1	8.16	6744	1041	7568	1601	0.884	29.6	20.8	456	277	146	*** W27 x 14**

AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

IN ACCORDANCE TO ASTM A6 / A6M : 2003



Designation				Depth of Section D	Width of Section B	Thickness of Web t	Thickness of Flange T	Ratios for Local Buckling		Second Moment of Area	
Serial Size	Mass per Foot	Serial Size	Mass per Metre					Flange b/T	Web d/t	Axis X-X	Axis Y-Y
in	lb	mm	kg	mm	mm	mm	mm			cm^4	cm^4
W27 x 10	221	686 x 254	329.0	739.9	264.8	25.9	47.0	2.82	23.80	359400	14640
W27 x 10	201		299.0	732.0	262.8	23.9	42.9	3.06	25.80	323800	13060
W27 x 10	182		271.0	723.9	260.2	21.6	39.1	3.33	28.50	289300	11540
W27 x 10	159		237.0	714.0	257.8	19.1	34.0	3.79	32.20	247800	9750
W27 x 10	143		213.0	707.9	255.8	17.0	31.0	4.13	36.20	222000	8677
W27 x 10	129		192.0	701.8	254.3	15.5	27.9	4.56	39.70	198000	7670
W27 x 10	114		170.0	693.2	255.8	14.5	23.6	5.42	42.50	170000	6602
W27 x 10	102		152.0	688.1	254.4	13.1	21.1	6.03	47.00	150900	5804
W27 x 10	94		140.0	683.8	253.7	12.4	18.9	6.71	49.60	135900	5156
W27 x 10	84		125.0	678.4	253.0	11.7	16.3	7.76	52.60	118700	4410
*** W24 x 12¾**	306	610 x 324	455.0	689.0	340.0	32.0	57.9	2.94	17.10	444500	38090
*** W24 x 12¾**	279		415.0	679.0	338.0	29.5	53.1	3.18	18.60	399700	34300
*** W24 x 12¾**	250		372.0	669.0	335.0	26.4	48.0	3.49	20.70	353200	30170
*** W24 x 12¾**	229		341.0	661.0	333.0	24.4	43.9	3.79	22.50	318200	27090
*** W24 x 12¾**	207		307.0	653.0	330.0	22.1	39.9	4.14	24.80	283600	23950
*** W24 x 12¾**	192		285.0	647.0	329.0	20.6	37.1	4.43	26.60	260700	22060
*** W24 x 12¾**	176		262.0	641.0	327.0	19.0	34.0	4.81	28.80	235900	19850
*** W24 x 12¾**	162		241.0	635.0	329.1	17.9	31.0	5.31	30.60	215400	18450
*** W24 x 12¾**	146		217.0	628.4	327.7	16.5	27.7	5.92	33.20	190900	16270
*** W24 x 12¾**	131		195.0	621.8	326.5	15.4	24.4	6.69	35.60	167500	14170
*** W24 x 12¾**	117		174.0	616.2	325.1	14.0	21.6	7.53	39.10	147300	12380
*** W24 x 12¾**	104		155.0	611.1	323.9	12.7	19.0	8.52	43.10	128900	10770
W24 x 9	198	610 x 229	295.0	667.0	240.5	25.9	47.0	2.56	21.1	259400	10980
W24 x 9	181		270.0	658.6	238.5	23.9	42.9	2.78	22.9	232800	9768
W24 x 9	163		243.0	651.0	235.9	21.6	39.1	3.02	25.3	207900	8606
W24 x 9	146		217.0	643.0	234.1	19.6	35.1	3.33	27.9	183900	7543
W24 x 9	128		191.0	635.0	231.5	17.0	30.9	3.75	32.2	158400	6415
W24 x 9	114		171.0	628.9	229.9	15.5	27.9	4.12	35.3	141400	5670
W24 x 9	103		153.0	623.1	228.6	14.0	24.9	4.59	39.1	125000	4972
W24 x 9	94		140.0	617.5	230.3	13.1	22.2	5.19	41.8	112300	4531
W24 x 9	84		125.0	612.1	229.1	11.9	19.6	5.84	46.0	98610	3937
W24 x 9	76		113.0	607.6	228.3	11.2	17.3	6.60	48.9	87510	3439
W24 x 9	68		101.0	602.7	227.7	10.5	14.9	7.64	52.1	76190	2938
W24 x 7	62	610 x 178	92.0	603.0	178.8	10.9	15.0	5.96	50.2	64580	1436
W24 x 7	55		82.0	598.7	177.9	10.0	12.8	6.95	54.8	55890	1207

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AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

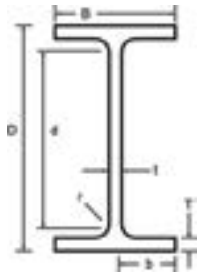
IN ACCORDANCE TO ASTM A6 / A6M : 2003

Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter	Torsional Index	Warping Constant	Torsional Constant	Area of Section	Designation	
Axis xx	Axis yy	Axis xx	Axis yy	Axis xx	Axis yy	u	x	H	J		Mass per foot	Serial Size
cm	cm	cm^3	cm^3	cm^3	cm^3			dm^6	cm^4	cm^2	lb	in
29.3	5.92	9715	1106	11390	1759	0.877	17.2	17.6	2186	418	221	**W27 x 10**
29.1	5.85	8847	994	10330	1577	0.877	18.6	15.5	1675	382	201	**W27 x 10**
29.0	5.78	7993	887	9282	1402	0.878	20.3	13.5	1260	354	182	**W27 x 10**
28.7	5.69	6940	756	8016	1191	0.877	23.0	11.3	840	301	159	**W27 x 10**
28.7	5.67	6272	678	7204	1063	0.878	25.2	9.94	627	270	143	**W27 x 10**
28.5	5.61	5644	603	6462	943	0.878	27.7	8.71	462	244	129	**W27 x 10**
28.0	5.52	4905	516	5618	808	0.872	31.9	7.40	305	216	114	**W27 x 10**
27.9	5.47	4386	456	5010	712	0.871	35.4	6.46	221	194	102	**W27 x 10**
27.6	5.38	3975	406	4545	635	0.868	38.9	5.70	167	178	94	**W27 x 10**
27.2	5.25	3499	349	4014	546	0.862	43.7	4.83	118	160	84	**W27 x 10**
27.7	8.11	12900	2241	15090	3496	0.889	12.3	37.9	4879	579	306	*** W24 x 123¼**
27.5	8.05	11770	2030	13690	3160	0.889	13.3	33.6	3774	529	279	*** W24 x 123¼**
27.3	7.98	10560	1801	12190	2795	0.890	14.5	29.1	2770	474	250	*** W24 x 123¼**
27.1	7.90	9629	1627	11060	2521	0.889	15.8	25.8	2130	434	229	*** W24 x 123¼**
26.9	7.82	8687	1452	9927	2244	0.890	17.2	22.5	1592	391	207	*** W24 x 123¼**
26.8	7.79	8058	1341	9173	2070	0.890	18.4	20.5	1283	363	192	*** W24 x 123¼**
26.6	7.72	7362	1214	8347	1871	0.890	19.9	18.3	990	333	176	*** W24 x 123¼**
26.4	7.74	6785	1121	7671	1726	0.888	21.6	16.8	770	308	162	*** W24 x 123¼**
26.2	7.66	6075	993	6846	1528	0.886	23.9	14.7	560	277	146	*** W24 x 123¼**
25.9	7.55	5387	868	6063	1336	0.883	26.8	12.6	396	249	131	*** W24 x 123¼**
25.8	7.47	4779	762	5364	1171	0.882	30.0	10.9	280	222	117	*** W24 x 123¼**
25.6	7.39	4220	665	4726	1021	0.880	33.7	9.44	195	197	104	*** W24 x 123¼**
26.3	5.41	7778	913	9173	1458	0.878	15.4	10.6	1952	376	198	**W24 x 9**
26.1	5.34	7069	819	8299	1304	0.877	16.7	9.26	1495	343	181	**W24 x 9**
25.9	5.27	6386	730	7455	1157	0.878	18.2	8.06	1123	310	163	**W24 x 9**
25.7	5.21	5718	644	6643	1019	0.877	20.0	6.97	819	278	146	**W24 x 9**
25.6	5.15	4990	554	5757	871	0.879	22.6	5.85	554	242	128	**W24 x 9**
25.4	5.09	4495	493	5167	773	0.878	24.8	5.12	411	218	114	**W24 x 9**
25.3	5.04	4012	435	4595	680	0.878	27.6	4.45	295	195	103	**W24 x 9**
25.1	5.04	3637	394	4159	615	0.875	30.5	4.01	219	179	94	**W24 x 9**
24.9	4.97	3222	344	3676	536	0.873	34.1	3.46	154	159	84	**W24 x 9**
24.6	4.88	2880	301	3290	470	0.869	37.9	3.00	112	145	76	**W24 x 9**
24.3	4.77	2528	258	2895	403	0.864	42.9	2.54	78.0	129	68	**W24 x 9**
23.4	3.50	2142	161	2511	258	0.848	42.8	1.24	71.0	117	62	**W24 x 7**
23.2	3.40	1867	136	2195	218	0.843	48.5	1.04	48.8	104	55	**W24 x 7**

AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

IN ACCORDANCE TO ASTM A6 / A6M : 2003



Designation				Depth of Section D	Width of Section B	Thickness of Web t	Thickness of Flange T	Ratios for Local Buckling		Second Moment of Area	
Serial Size	Mass per Foot	Serial Size	Mass per Metre					Flange b/T	Web d/t	Axis X-X	Axis Y-Y
in	lb	mm	kg	mm	mm	mm	mm			cm^4	cm^4
* W21 x 12¼	275	533 x 312	409.0	613.0	327.0	31.0	55.6	2.94	15.4	316900	32530
* W21 x 12¼	248		370.0	603.0	324.0	26.2	50.5	3.21	18.2	278900	28710
* W21 x 12¼	223		331.0	593.0	322.0	25.4	45.5	3.54	18.8	247700	25390
* W21 x 12¼	201		300.0	585.0	319.0	23.1	41.4	3.85	20.6	220700	22450
* W21 x 12¼	182		272.0	577.0	317.0	21.1	37.6	4.22	22.6	196700	20000
* W21 x 12¼	166		248.0	571.0	315.5	19.0	34.5	4.57	25.1	177700	18090
* W21 x 12¼	147		219.0	560.3	317.8	18.3	29.2	5.44	26.0	151100	15650
* W21 x 12¼	132		196.0	554.5	316.0	16.5	26.3	6.01	28.9	134300	13850
* W21 x 12¼	122		182.0	550.7	314.7	15.2	24.4	6.45	31.3	123300	12690
* W21 x 12¼	111		165.0	546.4	313.4	14.0	22.2	7.06	34.0	111300	11400
* W21 x 12¼	101		150.0	542.5	312.2	12.7	20.3	7.69	37.5	100700	10310
W21 x 8¼	93	533 x 210	138.0	549.1	213.9	14.7	23.6	4.53	32.4	86090	3864
W21 x 8¼	83		123.0	544.3	212.2	13.1	21.2	5.00	36.4	76240	3387
W21 x 8¼	73		109.0	539.5	210.7	11.6	18.8	5.60	41.1	66800	2939
W21 x 8¼	68		101.0	536.7	210.1	10.9	17.4	6.04	43.7	61650	2696
W21 x 8¼	62		92.0	533.1	209.3	10.2	15.6	6.71	46.7	55330	2389
W21 x 6½	57	533 x 165	85.0	534.9	166.5	10.3	16.5	5.05	46.3	48630	1275
W21 x 6½	50		74.0	529.1	165.9	9.7	13.6	6.10	49.1	41060	1040
W21 x 6½	44		66.0	524.8	165.1	8.9	11.4	7.24	53.6	35040	859
* W18 x 11	175	457 x 279	260	509.0	289.0	22.6	40.4	3.58	18.1	143700	16300
* W18 x 11	158		235	501.0	287.0	20.6	36.6	3.92	19.8	127300	14450
* W18 x 11	143		212.8	495.0	285.0	18.5	33.5	4.25	22.0	114400	12960
* W18 x 11	130		193.5	489.0	283.5	17.0	30.5	4.65	24.0	102500	11590
* W18 x 11	119		177.1	481.8	286.1	16.6	26.9	5.31	24.5	91040	10530
* W18 x 11	106		157.7	475.7	284.5	15.0	23.9	5.96	27.2	79600	9178
* W18 x 11	97		144.4	472.2	283.1	13.6	22.1	6.40	30.0	72710	8367
* W18 x 11	86		128	467.1	281.7	12.1	19.6	7.20	33.7	63520	7295
* W18 x 11	76		113.1	462.5	280.3	10.8	17.3	8.12	37.7	55460	6344
W18 x 7½	71	457 x 191	106.0	469.1	193.9	12.6	20.6	4.71	32.3	48830	2511
W18 x 7½	65		97.0	466.1	192.8	11.4	19.0	5.07	35.8	44490	2275
W18 x 7½	60		89.0	463.2	191.9	10.5	17.7	5.42	38.8	40970	2089
W18 x 7½	55		82.0	460.0	191.3	9.9	16.0	5.98	41.2	37050	1871
W18 x 7½	50		74.0	457.0	190.4	9.0	14.5	6.57	45.3	33320	1671
W18 x 7½	45		67.1	453.4	189.9	8.5	12.7	7.48	48.0	29380	1452
W18 x 7½	41		61.0	450.0	189.0	8.1	10.8	8.75	50.4	25380	1218
W18 x 6	46	457 x 152	68.0	458.7	153.9	9.1	15.4	5.00	44.8	29640	939
W18 x 6	40		60.0	454.7	152.8	8.0	13.3	5.74	51.0	25430	793
W18 x 6	35		52.0	449.6	152.4	7.6	10.8	7.06	53.6	21210	639
W16 x 10¼	100	406 x 260	148.8	431.0	264.8	14.9	25.0	5.29	24.3	61830	7754
W16 x 10¼	89		132.4	425.4	263.3	13.3	22.2	5.92	27.0	54060	6768
W16 x 10¼	77		114.6	419.6	261.5	11.6	19.3	6.77	31.2	46110	5758
W16 x 10¼	67		99.7	414.8	260.0	10.0	16.9	7.70	36.0	39730	4951

** Limited Stock Availability*

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AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

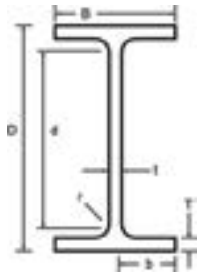
IN ACCORDANCE TO ASTM A6 / A6M : 2003

Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter	Torsional Index	Warping Constant	Torsional Constant	Area of Section	Designation	
Axis xx	Axis yy	Axis xx	Axis yy	Axis xx	Axis yy	u	x	H	J		Mass per foot	Serial Size
cm	cm	cm³	cm³	cm³	cm³			dm⁶	cm⁴	cm²	lb	in
24.7	7.91	10340	1990	12120	3096	0.890	11.2	25.3	4131	521	275	* W21 x 12¼
24.6	7.90	9250	1772	10720	2739	0.894	12.3	21.9	2996	460	248	* W21 x 12¼
24.2	7.76	8355	1577	9656	2442	0.890	13.4	19.0	2263	422	223	* W21 x 12¼
24.1	7.67	7547	1408	8670	2175	0.890	14.6	16.6	1700	382	201	* W21 x 12¼
23.9	7.61	6820	1262	7792	1947	0.890	15.9	14.6	1277	346	182	* W21 x 12¼
23.8	7.58	6226	1147	7071	1764	0.891	17.2	13.0	979	314	166	* W21 x 12¼
23.3	7.49	5395	985	6115	1518	0.884	19.8	11.0	642	279	147	* W21 x 12¼
23.2	7.44	4843	877	5463	1349	0.884	21.8	9.66	470	250	132	* W21 x 12¼
23.1	7.41	4478	807	5033	1239	0.885	23.4	8.79	374	231	122	* W21 x 12¼
23.0	7.35	4072	728	4563	1116	0.885	25.6	7.83	284	211	111	* W21 x 12¼
22.9	7.33	3712	660	4144	1011	0.885	27.8	7.03	216	192	101	* W21 x 12¼
22.1	4.68	3136	361	3613	568	0.873	25.0	2.67	250	176	93	W21 x 8¼
22.0	4.64	2801	319	3213	500	0.874	27.6	2.32	181	157	83	W21 x 8¼
21.9	4.60	2476	279	2827	435	0.875	30.9	1.99	126	139	73	W21 x 8¼
21.8	4.57	2297	257	2619	400	0.874	33.1	1.82	102	129	68	W21 x 8¼
21.7	4.50	2076	228	2366	356	0.871	36.4	1.60	76.3	118	62	W21 x 8¼
21.2	3.44	1818	153	2107	243	0.862	35.5	0.860	73.8	108	57	W21 x 6½
20.8	3.30	1552	125	1808	200	0.853	41.1	0.690	47.9	95.2	50	W21 x 6½
20.5	3.20	1336	104	1561	166	0.847	47.0	0.570	32.0	83.7	44	W21 x 6½
20.8	7.01	5646	1128	6525	1743	0.891	12.8	8.90	1423	331	175	* W18 x 11
20.6	6.95	5083	1007	5839	1554	0.890	14.0	7.80	1059	299	158	* W18 x 11
20.5	6.91	4624	910	5278	1400	0.891	15.2	6.90	800	271	143	* W18 x 11
20.4	6.86	4192	818	4761	1257	0.891	16.6	6.09	603	247	130	* W18 x 11
20.1	6.82	3779	736	4284	1132	0.885	18.4	5.44	442	226	119	* W18 x 11
19.9	6.76	3347	645	3775	991	0.884	20.5	4.68	311	201	106	* W18 x 11
19.9	6.74	3079	591	3457	906	0.886	22.1	4.24	244	184	97	* W18 x 11
19.7	6.69	2720	518	3039	792	0.886	24.8	3.65	170	163	86	* W18 x 11
19.6	6.64	2398	453	2669	692	0.885	27.9	3.14	118	144	76	* W18 x 11
19.0	4.32	2082	259	2387	405	0.877	24.4	1.26	146	135	71	W18 x 7½
19.0	4.30	1909	236	2179	368	0.879	26.4	1.14	113	123	65	W18 x 7½
19.0	4.29	1769	218	2013	338	0.880	28.2	1.04	90.7	114	60	W18 x 7½
18.8	4.23	1611	196	1831	304	0.877	30.9	0.92	69.2	104	55	W18 x 7½
18.8	4.20	1458	176	1653	272	0.877	33.9	0.82	51.8	94.6	50	W18 x 7½
18.5	4.12	1296	153	1471	237	0.872	37.9	0.71	37.1	85.5	45	W18 x 7½
18.2	3.99	1128	129	1286	201	0.865	42.6	0.60	26.0	76.0	41	W18 x 7½
18.4	3.28	1292	122	1486	192	0.870	32.8	0.460	50.9	87.2	46	W18 x 6
18.3	3.23	1119	104	1282	163	0.869	37.6	0.390	33.5	75.8	40	W18 x 6
17.9	3.10	944	83.9	1089	132	0.858	44.1	0.310	21.0	66.3	35	W18 x 6
18.0	6.39	2869	586	3246	899	0.887	17.7	3.20	322	190	100	W16 x 10¼
17.9	6.33	2541	514	2859	788	0.887	19.7	2.75	227	169	89	W16 x 10¼
17.8	6.28	2198	440	2457	673	0.887	22.4	2.31	149	146	77	W16 x 10¼
17.7	6.25	1915	381	2128	581	0.888	25.4	1.96	99.4	127	67	W16 x 10¼

AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

IN ACCORDANCE TO ASTM A6 / A6M : 2003



Designation				Depth of Section D	Width of Section B	Thickness of Web t	Thickness of Flange T	Ratios for Local Buckling		Second Moment of Area	
Serial Size	Mass per Foot	Serial Size	Mass per Metre					Flange b/T	Web d/t	Axis X-X	Axis Y-Y
in	lb	mm	kg	mm	mm	mm	mm			cm^4	cm^4
W16 x 7	57	406 x 178	85.0	417.3	180.8	10.9	18.2	4.97	33.1	31560	1797
W16 x 7	50		75.0	413.0	179.6	9.7	16.0	5.61	37.2	27440	1548
W16 x 7	45		67.0	409.7	178.7	8.8	14.4	6.20	41.0	24480	1372
W16 x 7	40		60.0	406.7	177.7	7.7	12.8	6.94	46.8	21520	1199
W16 x 7	36		53.0	402.8	177.4	7.5	10.9	8.14	48.1	18630	1016
W16 x 5½	31	406 x 140	46.13	403.4	140.3	7.0	11.1	6.32	51.5	15530	512
W16 x 5½	26		38.69	398.5	139.7	6.4	8.8	7.94	56.3	12600	401
*** W14 x 16**	730	356 x 406	1086.0	569.5	454.4	78.0	124.7	1.82	3.7	597000	196300
*** W14 x 16**	665		990.0	549.7	448.3	71.9	115.0	1.95	4.0	518500	173700
*** W14 x 16**	605		900.0	531.4	442.3	65.9	106.0	2.09	4.4	451400	153700
*** W14 x 16**	550		818.0	514.1	436.9	60.5	97.0	2.25	4.8	392300	135400
*** W14 x 16**	500		744.0	497.8	432.1	55.6	88.9	2.43	5.2	341900	120000
*** W14 x 16**	455		677.0	483.1	427.6	51.2	81.5	2.62	5.7	299400	106600
W14 x 16	426		634.0	474.2	424.1	47.6	77.1	2.75	6.1	274500	98320
W14 x 16	398		592.0	464.6	421.4	45.0	72.3	2.91	6.4	249900	90430
W14 x 16	370		551.0	455.2	418.4	42.0	67.6	3.09	6.9	226600	82730
W14 x 16	342		509.0	445.5	415.5	39.1	62.7	3.31	7.4	203800	75130
W14 x 16	311		463.0	434.8	412.2	35.8	57.4	3.59	8.1	180100	67130
W14 x 16	283		421.0	425.2	409.2	32.8	52.6	3.89	8.8	159800	60170
W14 x 16	257		382.0	416.1	406.3	29.8	48.0	4.23	9.7	141500	53730
W14 x 16	233		347.0	407.4	403.6	27.2	43.7	4.62	10.6	125100	47940
W14 x 16	219		326.0	403.1	402.0	25.5	41.2	4.88	11.4	116400	44660
W14 x 16	211		314.0	399.3	401.3	24.9	39.6	5.07	11.6	110500	42700
W14 x 16	193		287.0	393.2	399.0	22.6	36.6	5.45	12.8	99830	38780
W14 x 16	176		262.0	386.6	397.5	21.1	33.3	5.97	13.7	89100	34890
W14 x 16	159		237.0	380.4	395.4	18.9	30.2	6.55	15.3	79050	31140
W14 x 16	145		216.0	375.4	393.7	17.3	27.7	7.11	16.7	71270	28190
W14 x 14½	132	356 x 368	196.0	372.4	374.0	16.4	26.2	7.14	17.7	63800	22860
W14 x 14½	120		179.0	367.8	372.6	15.0	23.9	7.79	19.3	57330	20620
W14 x 14½	109		162.0	363.7	371.0	13.3	21.8	8.51	21.8	51460	18560
W14 x 14½	99		147.0	360.0	370.0	12.3	19.8	9.34	23.6	46300	16720
W14 x 14½	90		134.0	356.1	368.8	11.2	18.0	10.20	25.9	41530	15050
W14 x 10	82	356 x 254	122	363.5	257.3	12.9	21.7	5.92	22.5	36680	6175
W14 x 10	74		110.1	359.9	255.8	11.4	19.9	6.41	25.3	33120	5569
W14 x 10	68		101.2	356.6	254.8	10.5	18.3	6.97	27.5	30060	5048
W14 x 10	61		90.8	352.8	253.9	9.5	16.3	7.79	30.4	26540	4451
W14 x 8	53	356 x 203	78.9	353.6	204.7	9.4	16.7	6.13	30.8	22480	2391
W14 x 8	48		71.4	350.5	204.0	8.6	15.1	6.75	33.5	20170	2140
W14 x 8	43		64.0	347.0	203.1	7.8	13.4	7.58	37.4	17760	1874
W14 x 6¾	38	356 x 171	57.0	358.1	172.1	7.9	13.1	6.57	39.4	16070	1115
W14 x 6¾	34		51.0	355.1	171.3	7.2	11.6	7.38	43.3	14160	973
W14 x 6¾	30		44.8	351.5	170.9	6.9	9.8	8.72	45.1	12120	817

** Limited Stock Availability*

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AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

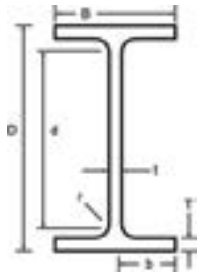
IN ACCORDANCE TO ASTM A6 / A6M : 2003

Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter	Torsional Index	Warping Constant	Torsional Constant	Area of Section	Designation	
Axis xx	Axis yy	Axis xx	Axis yy	Axis xx	Axis yy	u	x	H	J		Mass per foot	Serial Size
cm	cm	cm^3	cm^3	cm^3	cm^3			dm^6	cm^4	cm^2	lb	in
17.1	4.08	1513	199	1725	309	0.881	24.4	0.72	92.5	108	57	**W16 x 7**
17.0	4.03	1329	172	1510	268	0.880	27.5	0.61	63.6	95.3	50	**W16 x 7**
16.9	4.00	1195	154	1353	238	0.880	30.3	0.54	46.8	85.9	45	**W16 x 7**
16.9	3.98	1058	135	1192	208	0.881	33.9	0.47	32.7	75.7	40	**W16 x 7**
16.5	3.86	925	115	1047	177	0.873	38.5	0.39	22.6	68.1	36	**W16 x 7**
16..3	2.95	770	73	882	114	0.868	39.1	0.200	18.9	58.7	31	**W16 x 5½**
15.9	2.84	632	57.4	728	90.3	0.859	46.8	0.150	11.1	49.9	26	**W16 x 5½**
20.8	11.90	20970	8640	27230	13370	0.851	3.80	97.1	60230	1385	730	*** W14 x 16**
20.3	11.70	18870	7750	24280	11980	0.849	4.03	82.1	46960	1263	665	*** W14 x 16**
19.8	11.60	16990	6948	21660	10720	0.848	4.28	69.5	36470	1150	605	*** W14 x 16**
19.4	11.40	15260	6200	19260	9557	0.846	4.57	58.9	27860	1043	550	*** W14 x 16**
19.0	11.30	13740	5555	17160	8553	0.844	4.87	50.2	21380	948	500	*** W14 x 16**
18.6	11.10	12390	4985	15340	7666	0.843	5.21	43.0	16440	863	455	*** W14 x 16**
18.4	11.00	11580	4637	14230	7120	0.843	5.45	38.8	13770	808	426	**W14 x 16**
18.2	10.90	10760	4292	13140	6587	0.842	5.72	34.8	11370	755	398	**W14 x 16**
18.0	10.90	9950	3955	12070	6063	0.841	6.04	31.1	9264	702	370	**W14 x 16**
17.7	10.80	9147	3616	11010	5539	0.840	6.42	27.5	7387	648	342	**W14 x 16**
17.5	10.70	8282	3257	9877	4983	0.838	6.90	23.9	5654	590	311	**W14 x 16**
17.2	10.60	7519	2941	8891	4494	0.837	7.42	20.9	4342	537	283	**W14 x 16**
17.0	10.50	6802	2645	7973	4037	0.837	8.02	18.2	3288	487	257	**W14 x 16**
16.8	10.40	6143	2376	7142	3622	0.836	8.69	15.9	2480	442	233	**W14 x 16**
16.7	10.40	5777	2222	6681	3384	0.836	9.16	14.6	2073	415	219	**W14 x 16**
16.6	10.30	5535	2128	6385	3241	0.834	9.46	13.8	1852	400	211	**W14 x 16**
16.5	10.30	5078	1944	5817	2975	0.834	10.1	12.3	1451	366	193	**W14 x 16**
16.3	10.20	4610	1755	5248	2669	0.833	11.0	10.9	1104	334	176	**W14 x 16**
16.2	10.20	4156	1575	4697	2392	0.833	12.0	9.55	820	301	159	**W14 x 16**
16.1	10.10	3797	1432	4266	2173	0.832	13.0	8.52	633	275	145	**W14 x 16**
16.0	9.55	3426	1222	3843	1856	0.843	13.7	6.85	514	250	132	**W14 x 14½**
15.9	9.51	3117	1107	3478	1679	0.842	14.9	6.10	391	228	120	**W14 x 14½**
15.8	9.49	2830	1001	3137	1516	0.843	16.2	5.42	294	206	109	**W14 x 14½**
15.7	9.43	2572	904	2839	1369	0.843	17.7	4.84	223	188	99	**W14 x 14½**
15.6	9.39	2332	816	2562	1236	0.842	19.3	4.30	168	171	90	**W14 x 14½**
15.4	6.31	2018	480	2270	734	0.884	16.6	1.80	211	155	82	**W14 x 10**
15.3	6.29	1840	435	2058	665	0.886	18.0	1.61	161	141	74	**W14 x 10**
15.3	6.26	1686	396	1878	604	0.886	19.4	1.44	126	129	68	**W14 x 10**
15.2	6.21	1505	351	1668	534	0.886	21.5	1.26	90.3	115	61	**W14 x 10**
15.0	4.88	1271	234	1424	359	0.892	21.3	0.679	80.1	100	53	**W14 x 8**
14.9	4.84	1151	210	1285	322	0.891	23.3	0.601	60.4	91.2	48	**W14 x 8**
14.8	4.80	1024	185	1138	283	0.891	25.9	0.521	43.2	81.2	43	**W14 x 8**
14.9	3.93	898	130	1010	200	0.884	28.7	0.330	33.4	72.2	38	**W14 x 6¾**
14.8	3.88	798	114	895	175	0.883	32.0	0.290	23.8	64.5	34	**W14 x 6¾**
14.5	3.78	690	95.6	777	148	0.876	36.6	0.240	16.0	57.3	30	**W14 x 6¾**

AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

IN ACCORDANCE TO ASTM A6 / A6M : 2003



Designation				Depth of Section D	Width of Section B	Thickness of Web t	Thickness of Flange T	Ratios for Local Buckling		Second Moment of Area	
Serial Size	Mass per Foot	Serial Size	Mass per Metre					Flange b/T	Web d/t	Axis X-X	Axis Y-Y
in	lb	mm	kg	mm	mm	mm	mm			cm^4	cm^4
W14 x 5	26	356 x 127	39.0	353.3	127.6	6.5	10.7	5.96	47.9	10230	372
W14 x 5	22		32.9	349.0	127.0	5.8	8.5	7.47	53.7	8267	291
W12 x 12	336	305 x 305	500.0	427.2	340.0	45.1	75.1	2.26	5.50	169000	49420
W12 x 12	305		454.0	414.5	336.2	41.3	68.7	2.45	6.00	147600	43690
W12 x 12	279		415.0	402.6	333.8	38.9	62.7	2.66	6.30	129500	39010
W12 x 12	252		375.0	391.4	330.3	35.4	57.2	2.89	7.00	113200	34460
W12 x 12	230		342.0	382.3	327.5	32.6	52.6	3.11	7.60	100600	30880
W12 x 12	210		313.0	373.6	324.9	30.0	48.3	3.36	8.20	89320	27680
W12 x 12	190		283.0	365.3	321.8	26.9	44.1	3.65	9.20	78800	24540
W12 x 12	170		253.0	356.4	319.3	24.4	39.6	4.03	10.10	68470	21520
W12 x 12	152		226.0	348.2	317.0	22.1	35.6	4.45	11.20	59650	18930
W12 x 12	136		202.0	340.6	315.0	20.1	31.8	4.95	12.30	51850	16590
W12 x 12	120		179.0	333.2	312.9	18.0	28.1	5.57	13.70	44590	24360
W12 x 12	106		158.0	327.2	310.6	15.5	25.1	6.19	15.90	38760	12550
W12 x 12	96		143.0	322.8	308.9	14.0	22.9	6.74	17.60	34710	11260
W12 x 12	87		129.0	318.3	308.0	13.1	20.6	7.48	18.80	30850	10040
W12 x 12	79		117.0	314.5	306.8	11.9	18.7	8.20	20.70	27610	9006
W12 x 12	72		107.0	311.2	305.8	10.9	17.0	8.99	22.60	24820	8107
W12 x 12	65		97.0	307.8	304.8	9.9	15.4	9.90	24.90	22200	7272
W12 x 10	58	305 x 254	86.3	309.6	254.3	9.1	16.2	7.85	27.0	19740	4444
W12 x 10	53		78.9	306.3	253.9	8.8	14.6	8.70	28.2	17700	3986
W12 x 8	50	305 x 203	74.4	309.6	205.2	9.4	16.2	6.33	26.3	16350	2337
W12 x 8	45		67.0	306.3	204.3	8.5	14.6	7.00	29.0	14570	2078
W12 x 8	40		59.5	303.3	203.3	7.5	13.0	7.82	33.0	12840	1823
W12 x 6½	36	305 x 165	54.0	310.4	166.9	7.9	13.7	6.09	33.6	11700	1063
W12 x 6½	31		46.1	306.6	165.7	6.7	11.8	7.02	39.6	9899	896
W12 x 6½	27		40.3	303.4	165.0	6.0	10.2	8.09	44.2	8503	764
W12 x 4	22	305 x 102	32.7	312.7	102.4	6.6	10.8	4.74	41.8	6501	194
W12 x 4	19		28.3	308.9	101.7	6.0	8.9	5.71	46.0	5410	157
W12 x 4	16		23.8	304.5	101.3	5.6	6.7	7.56	49.3	4264	117
W12 x 4	14		20.8	302.5	100.8	5.1	5.7	8.83	54.3	3682	97.9
W10 x 10	112	254 x 254	167.0	289.0	264.5	19.2	31.8	4.16	10.4	29960	9823
W10 x 10	100		149.0	282.0	262.6	17.3	28.4	4.62	11.5	25900	8583
W10 x 10	88		131.0	275.3	260.7	15.4	25.1	5.19	13.0	22180	7421
W10 x 10	77		115.0	269.3	258.8	13.5	22.1	5.86	14.8	18970	6391
W10 x 10	68		101.0	264.2	257.3	11.9	19.6	6.56	16.8	16410	5569
W10 x 10	60		89.0	259.6	256.0	10.7	17.3	7.40	18.7	14200	4841
W10 x 10	54		80.0	256.3	254.8	9.4	15.6	8.17	21.2	12590	4303
W10 x 10	49		73.0	253.5	254.0	8.6	14.2	8.94	23.2	11320	3880

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AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

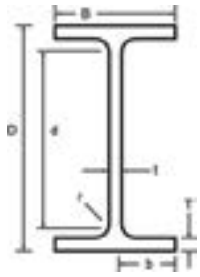
IN ACCORDANCE TO ASTM A6 / A6M : 2003

Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter	Torsional Index	Warping Constant	Torsional Constant	Area of Section	Designation	
Axis xx	Axis yy	Axis xx	Axis yy	Axis xx	Axis yy	u	x	H	J		Mass per foot	Serial Size
cm	cm	cm^3	cm^3	cm^3	cm^3			dm^6	cm^4	cm^2	lb	in
14.3	2.73	579	58.2	661	91.1	0.873	35.3	0.110	15.1	49.8	26	**W14 x 5**
14.1	2.64	474	45.8	542	71.8	0.866	42.5	0.080	8.59	41.7	22	**W14 x 5**
16.3	8.80	7913	2907	9882	4487	0.861	5.00	15.3	10110	638	336	**W12 x 12**
16.0	8.69	7122	2599	8807	4006	0.860	5.36	13.1	7719	578	305	**W12 x 12**
15.7	8.59	6435	2338	7888	3602	0.857	5.73	11.3	5946	528	279	**W12 x 12**
15.4	8.49	5783	2087	7020	3211	0.856	6.17	9.62	4495	478	252	**W12 x 12**
15.2	8.41	5261	1886	6332	2898	0.856	6.60	8.39	3490	437	230	**W12 x 12**
15.0	8.33	4781	1704	5707	2615	0.855	7.08	7.32	2700	399	210	**W12 x 12**
14.8	8.25	4314	1525	5101	2337	0.855	7.65	6.33	2034	360	190	**W12 x 12**
14.6	8.17	3843	1348	4501	2063	0.854	8.38	5.4	1478	323	170	**W12 x 12**
14.4	8.09	3426	1194	3978	1825	0.853	9.16	4.62	1077	289	152	**W12 x 12**
14.2	8.02	3045	1053	3506	1608	0.852	10.1	3.95	774	258	136	**W12 x 12**
14.0	7.94	2676	918	3055	1400	0.851	11.2	3.34	538	228	120	**W12 x 12**
13.9	7.90	2369	808	2679	1230	0.852	12.5	2.86	378	201	106	**W12 x 12**
13.8	7.86	2151	729	2417	1108	0.853	13.5	2.53	287	182	96	**W12 x 12**
13.7	7.80	1938	652	2167	991	0.851	14.8	2.22	213	165	87	**W12 x 12**
13.6	7.76	1756	587	1952	892	0.851	16.2	1.97	160	150	79	**W12 x 12**
13.5	7.72	1595	530	1766	805	0.850	17.6	1.75	122	136	72	**W12 x 12**
13.4	7.68	1443	477	1589	724	0.850	19.3	1.55	91.1	123	65	**W12 x 12**
13.4	6.36	1275	349	1411	531	0.878	18.7	0.956	86.5	110	58	**W12 x 10**
13.3	6.30	1156	314	1276	477	0.876	20.4	0.848	65.6	100	53	**W12 x 10**
13.2	4.97	1056	228	1183	349	0.889	18.8	0.503	73.5	94.5	50	**W12 x 8**
13.1	4.94	952	203	1060	311	0.889	20.6	0.442	54.6	85.2	45	**W12 x 8**
13.0	4.91	847	179	938	274	0.890	22.9	0.384	39.1	75.6	40	**W12 x 8**
13.0	3.93	754	127	846	196	0.889	23.6	0.234	34.8	68.8	36	**W12 x 6½**
13.0	3.90	646	108	720	166	0.891	27.1	0.195	22.2	58.7	31	**W12 x 6½**
12.9	3.86	560	92.6	623	142	0.889	31.0	0.164	14.7	51.3	27	**W12 x 6½**
12.5	2.15	416	37.9	481	60.0	0.866	31.6	0.040	12.2	41.8	22	**W12 x 4**
12.2	2.08	350	30.8	406	48.9	0.860	37.1	0.040	7.56	36.1	19	**W12 x 4**
11.8	1.96	280	23.0	328	36.9	0.846	45.1	0.030	4.25	30.4	16	**W12 x 4**
11.7	1.91	243	19.4	286	31.1	0.842	50.8	0.0216	2.93	26.8	14	**W12 x 4**
11.9	6.79	2073	743	2422	1135	0.852	8.46	1.62	630	213	112	**W10 x 10**
11.7	6.73	1837	654	2126	998	0.851	9.31	1.38	450	190	100	**W10 x 10**
11.5	6.67	1611	569	1847	868	0.85	10.4	1.16	312	167	88	**W10 x 10**
11.4	6.61	1409	494	1600	752	0.849	11.6	0.98	213	146	77	**W10 x 10**
11.3	6.57	1243	433	1399	658	0.849	12.9	0.83	149	129	68	**W10 x 10**
11.2	6.52	1094	378	1224	574	0.848	14.4	0.71	104	114	60	**W10 x 10**
11.1	6.49	983	338	1091	512	0.849	15.8	0.62	75.6	102	54	**W10 x 10**
11.0	6.46	893	306	987	463	0.849	17.2	0.56	57.5	92.9	49	**W10 x 10**

AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

IN ACCORDANCE TO ASTM A6 / A6M : 2003



Designation				Depth of Section D	Width of Section B	Thickness of Web t	Thickness of Flange T	Ratios for Local Buckling		Second Moment of Area	
Serial Size	Mass per Foot	Serial Size	Mass per Metre					Flange b/T	Web d/t	Axis X-X	Axis Y-Y
in	lb	mm	kg	mm	mm	mm	mm			cm^4	cm^4
W10 x 8	57	254 x 203	84.8	258.1	211.3	16.5	16.5	6.40	12.1	11930	2606
W10 x 8	45		67.0	256.5	203.7	8.9	15.7	6.49	22.5	10300	2214
W10 x 8	42		62.5	249.4	207.0	12.2	12.2	8.49	16.4	8430	1807
W10 x 8	39		58.0	252.0	202.8	8.0	13.4	7.57	25.0	8672	1865
W10 x 8	33		49.1	247.1	202.2	7.4	11.0	9.19	27.1	7071	1517
W10 x 5¾	30	254 x 146	44.8	265.9	147.6	7.6	13.0	5.72	29.6	7085	698
W10 x 5¾	26		38.5	262.4	146.6	6.6	11.2	6.60	34.1	6014	589
W10 x 5¾	22		32.7	258.3	146.1	6.1	9.1	7.99	36.9	4903	474
W10 x 5¾	16		24.0	253.0	145.0	5.0	6.4	11.33	44.8	3477	326
W10 x 4	19	254 x 102	28.4	260.1	102.1	6.4	10.0	5.11	35.1	4003	178
W10 x 4	17		25.3	256.8	101.9	6.1	8.4	6.07	36.9	3414	149
W10 x 4	15		22.3	253.7	101.6	5.8	6.9	7.36	38.7	2872	121
W10 x 4	12		17.9	250.7	100.6	4.8	5.3	9.44	46.5	2241	90.8
W8 x 8	67	203 x 203	100.0	228.6	210.3	14.5	23.7	4.44	11.1	11300	3679
W8 x 8	58		86.0	222.3	208.8	13.0	20.6	5.07	12.4	9493	3129
W8 x 8	48		71.0	215.9	206.0	10.2	17.4	5.92	15.8	7654	2537
W8 x 8	40		59.0	209.6	205.0	9.1	14.2	7.22	17.7	6088	2040
W8 x 8	35		52.0	206.2	203.7	7.9	12.6	8.08	20.3	5277	1776
W8 x 8	31		46.1	203.2	203.2	7.2	11.0	9.24	22.3	4560	1539
W8 x 5¼	21	203 x 133	31.3	210.3	133.9	6.4	10.2	6.56	27.3	3145	409
W8 x 5¼	18		26.6	206.8	133.4	5.8	8.4	7.94	30.1	2581	333
W8 x 5¼	14		21.0	203.0	133.0	5.0	6.4	10.39	34.8	1980	251
W8 x 4	16	203 x 102	23.1	203.2	101.8	5.4	9.3	5.47	31.4	2105	164
W8 x 4	15		22.3	206.0	102.0	6.2	8.0	6.38	28.1	1999	142
W8 x 4	13		19.4	202.9	101.6	5.8	6.5	7.84	29.9	1647	114
W8 x 4	10		14.9	200.4	100.1	4.3	5.2	9.61	40.4	1284	87.3
W6 x 6	25	152 x 152	37.1	162.1	154.4	8.1	11.6	6.66	15.3	2236	712
W6 x 6	20		29.8	157.5	152.9	6.6	9.3	8.22	18.7	1734	555
W6 x 6	15		22.5	152.1	152.1	5.8	6.6	11.5	21.3	1216	387
W6 x 4	16	152 x 102	23.8	159.5	102.4	6.6	10.2	5.02	19.2	1330	183
W6 x 4	12		17.9	153.2	101.6	5.8	7.1	7.14	21.6	918	125
W6 x 4	9		13.4	149.9	100.1	4.33	5.5	9.17	29.2	683	91.4
W5 x 5	19	127 x 127	28.3	130.8	127.8	6.9	10.9	5.86	13.7	1092	380
W5 x 5	16		23.8	127.3	127.0	6.1	9.1	6.95	15.4	892	312
W4 x 4	16.3	102 x 102	24.0	107.0	100.0	7.9	12.0	4.17	8.99	587	200
W4 x 4	13.8		21.0	102.0	102.0	8.0	9.4	5.43	8.90	456	167
W4 x 4	13		19.4	105.7	103.1	7.1	8.8	5.88	10.6	472	160

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AMERICA WIDE FLANGE SECTION

DIMENSIONS AND PROPERTIES

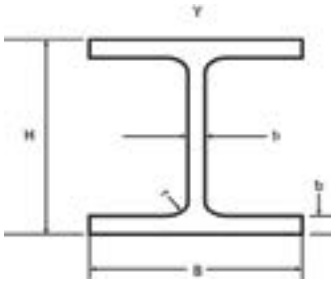
IN ACCORDANCE TO ASTM A6 / A6M : 2003

Radius of Gyration		Elastic Modulus		Plastic Modulus		Buckling Parameter	Torsional Index	Warping Constant	Torsional Constant	Area of Section	Designation	
Axis xx	Axis yy	Axis xx	Axis yy	Axis xx	Axis yy	u	x	H	J		Mass per foot	Serial Size
cm	cm	cm^3	cm^3	cm^3	cm^3			dm^6	cm^4	cm^2	lb	in
10.5	4.91	925	247	1067	385	0.849	13.6	0.380	109	108	57	**W10 x 8**
11.0	5.09	803	217	898	331	0.880	15.9	0.321	62.3	85.4	45	**W10 x 8**
10.3	4.77	676	175	768	271	0.851	17.9	0.254	44.5	79.3	42	**W10 x 8**
10.8	5.03	688	184	765	280	0.878	18.3	0.265	40.2	73.8	39	**W10 x 8**
10.6	4.93	572	150	634	229	0.873	21.5	0.211	24.0	62.5	33	**W10 x 8**
11.1	3.5	533	94.5	600	145	0.889	21.2	0.11	26.1	57.1	30	**W10 x 5¾**
11.1	3.46	458	80.3	513	123	0.888	24.3	0.09	16.8	49.2	26	**W10 x 5¾**
10.8	3.37	380	64.8	425	99.6	0.881	29.0	0.07	9.86	41.7	22	**W10 x 5¾**
10.6	3.23	275	44.9	308	69.0	0.874	38.2	0.05	4.16	31.1	16	**W10 x 5¾**
10.5	2.22	308	34.9	353	54.8	0.873	27.4	0.030	9.68	36.3	19	**W10 x 4**
10.3	2.15	266	29.2	306	46.1	0.865	31.3	0.020	6.52	32.3	17	**W10 x 4**
10.1	2.06	226	23.8	262	37.9	0.855	35.8	0.020	4.33	28.4	15	**W10 x 4**
9.91	1.99	179	18.0	207	28.6	0.851	44.0	0.0137	2.28	22.8	12	**W10 x 4**
9.40	5.39	988	350	1148	534	0.852	9.02	0.390	210	127	67	**W8 x 8**
9.30	5.32	854	300	982	457	0.850	10.2	0.320	140	110	58	**W8 x 8**
9.20	5.28	709	246	803	375	0.852	11.9	0.250	81.8	91.1	48	**W8 x 8**
9.00	5.20	581	199	651	303	0.848	14.1	0.200	46.5	75.6	40	**W8 x 8**
8.90	5.17	512	174	569	265	0.849	15.7	0.170	32.3	66.5	35	**W8 x 8**
8.80	5.12	449	151	497	230	0.847	17.7	0.140	22.1	58.6	31	**W8 x 8**
8.90	3.20	299	61.0	336	93.6	0.885	20.8	0.040	11.9	40.0	21	**W8 x 5¼**
8.70	3.13	250	49.9	279	76.6	0.880	24.5	0.030	7.14	33.9	18	**W8 x 5¼**
8.55	3.05	195	37.8	218	58.0	0.874	29.9	0.0243	3.74	27.1	14	**W8 x 5¼**
8.46	2.36	207	32.3	234	49.8	0.888	22.5	0.0154	7.02	29.4	16	**W8 x 4**
8.36	2.23	194	27.8	222	43.7	0.869	25.2	0.0139	5.68	28.6	15	**W8 x 4**
8.16	2.14	162	22.4	187	35.3	0.861	39.0	0.0110	3.63	24.8	13	**W8 x 4**
8.19	2.14	128	17.4	145	27.2	0.867	36.3	0.00832	1.78	19.1	10	**W8 x 4**
6.90	3.87	276	92.3	312	141	0.848	13.2	0.040	19.7	47.6	25	**W6 x 6**
6.80	3.81	220	72.5	246	110	0.848	16.1	0.030	10.3	38.1	20	**W6 x 6**
6.50	3.68	160	50.9	177	77.7	0.838	21.1	0.020	4.35	28.6	15	**W6 x 6**
6.61	2.45	167	35.7	190	55.2	0.882	15.4	0.0102	9.12	30.4	16	**W6 x 4**
6.33	2.33	120	24.5	136	38.0	0.869	20.4	0.00665	3.76	22.9	12	**W6 x 4**
6.29	2.30	91.1	18.3	102	28.1	0.873	26.2	0.00477	1.69	17.3	9	**W6 x 4**
5.52	3.25	167	59.4	190	90.6	0.845	11.2	0.0136	13.1	35.8	19	**W5 x 5**
5.42	3.21	140	49.2	158	75.0	0.842	13.0	0.0109	8.00	30.4	16	**W5 x 5**
4.36	2.55	110	40.1	129	61.5	0.844	8.13	0.00452	13.5	30.9	16.3	**W4 x 4**
4.18	2.53	89.4	32.7	104	50.4	0.827	9.61	0.00357	7.78	26.1	13.8	**W4 x 4**
4.38	2.55	89.4	31.1	103	47.8	0.836	10.9	0.00377	6.29	24.7	13	**W4 x 4**

METRIC SECTIONS

DIMENSIONS AND SECTIONAL PROPERTIES

Metric Series - JIS '94, '08



Nominal Size	Weight	Sectional Dimension					Sectional Area	Moment of Inertion	
		H	B	t_1	t	r		Ix	Iy
mm	kg/m	mm	mm	mm	mm	mm	cm^2	cm^4	cm^4
100 x 100	17.0	100	100	6	8	8	21.59	378	134
125 x 125	23.6	125	125	6.5	9	8	30.00	840	293
150 x 75	14.0	150	75	5	7	8	17.85	666	49.5
150 x 100	20.7	148	100	6	9	8	26.35	1000	150
150 x 150	31.1	150	150	7	10	8	39.65	1620	563
200 x 100	17.8 20.9	198 200	99 100	4.5 5.5	7 8	8 8	22.69 26.67	1540 1810	113 134
200 x 150	29.9	194	150	6	9	8	38.11	2630	507
200 x 200	49.9	200	200	8	12	13	63.53	4720	1600
250 x 125	25.1 29.0	248 250	124 125	5 6	8 9	8 8	31.99 36.97	3450 3960	255 294
250 x 175	43.6	244	175	7	11	13	55.49	6040	984
250 x 250	71.8	250	250	9	14	13	91.43	10700	3650
300 x 150	32.0 36.7	298 300	149 150	5.5 6.5	8 9	13 13	40.80 46.78	6320 7210	442 508
300 x 200	55.8	294	200	8	12	13	71.05	11100	1600
300 x 300	93.0	300	300	10	15	13	118.5	20200	6750
350 x 175	41.2 49.4	346 350	174 175	6 7	9 11	13 13	52.45 62.91	11000 13500	791 984
350 x 250	78.1	340	250	9	14	13	99.53	21200	3650
350 x 350	135	350	350	12	19	13	171.9	39800	13600
400 x 200	56.1 65.5	396 400	199 200	7 8	11 13	13 13	71.41 83.37	19800 23500	1450 1740
400 x 300	105	390	300	10	16	13	133.3	37900	7200
400 x 400	172 232 283 415 605	400 414 428 458 498	400 405 407 417 432	13 18 20 30 45	21 28 35 50 70	22 22 22 22 22	218.7 295.4 360.7 528.6 770.1	66600 92800 119000 187000 298000	22400 31000 39400 60500 94400

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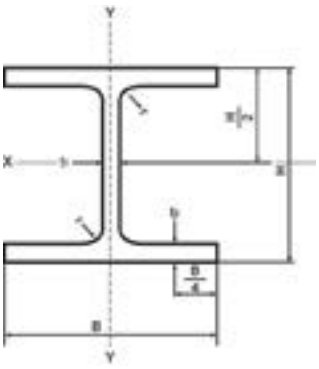
METRIC SECTIONS



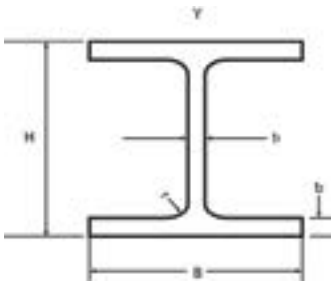
Dimension : JIS G 3192:1994 JIS G 3192:2008 JIS G 3136:2008
Dimensional Tolerance : JIS G 3192:1994 JIS G 3192:2008 JIS G 3136:2008
Surface Condition : JIS G 3192:1994 JIS G 3192:2008 JIS G 3136:2008

Radius of Gyration		Modulus of Section		Plastic Modulus		Warping Constant	Torsional Constant	Nominal Size
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
cm	cm	cm^3	cm^3	cm^3	cm^3	$cm^6,x10^3$	cm^4	mm
4.18	2.49	75.6	26.7	86.4	41.0	2.82	4.91	**100 x 100**
5.29	3.13	134	46.9	152	71.7	9.86	8.10	**125 x 125**
6.11	1.67	88.8	13.2	102	20.8	2.52	2.90	**150 x 75**
6.16	2.39	135	30.1	154	46.4	7.25	6.66	**150 x 100**
6.39	3.77	216	75.1	243	114	27.6	12.7	**150 x 150**
8.24 8.24	2.24 2.24	156 181	22.9 26.7	175 205	35.5 41.6	10.3 12.3	3.32 5.17	**200 x 100**
8.31	3.65	271	67.6	301	103	43.3	9.4	**200 x 150**
8.62	5.02	472	160	526	244	141	30.2	**200 x 200**
10.4 10.3	2.82 2.82	278 317	41.1 47.0	312 358	63.2 72.7	36.6 42.5	5.80 8.6	**250 x 125**
10.4	4.21	495	112	551	172	133	21.3	**250 x 175**
10.8	6.32	856	292	953	443	508	56.2	**250 x 250**
12.4 12.4	3.29 3.29	424 481	59.3 67.7	475 542	91.8 105	92.7 107	8.79 12.7	**300 x 150**
12.5	4.75	755	160	842	245	318	31.8	**300 x 200**
13.1	7.55	1350	450	1480	683	1370	82.9	**300 x 300**
14.5 14.6	3.88 3.96	636 771	91.0 113	713 864	140 173	224 282	13.3 22.5	**350 x 175**
14.6	6.06	1250	292	1380	445	969	58.4	**350 x 250**
15.2	8.89	2270	777	2520	1180	3720	187	**350 x 350**
16.7 16.8	4.51 4.57	1000 1180	146 174	1110 1310	223 267	535 649	25.1 39.7	**400 x 200**
16.9	7.35	1940	480	2140	730	2520	100	**400 x 300**
17.5 17.7 18.2 18.8 19.7	10.1 10.2 10.5 10.7 11.1	3330 4480 5560 8170 12000	1120 1530 1940 2900 4370	3670 5030 6310 9540 14500	1700 2330 2940 4440 6720	8040 11500 15200 25100 43100	304 721 1320 3930 11300	**400 x 400**

METRIC SECTIONS

DIMENSIONS AND SECTIONAL PROPERTIES

Metric Series - JIS '94, '08



Nominal Size	Weight	Sectional Dimension					Sectional Area	Moment of Inertion	
		H	B	t_1	t	r		Ix	Iy
mm	kg/m	mm	mm	mm	mm	mm	cm^2	cm^4	cm^4
450 x 200	65.1 74.9	446 450	199 200	8 9	12 14	13 13	82.97 95.43	28100 32900	1580 1870
450 x 300	121	440	300	11	18	13	153.9	54700	8110
500 x 200	77.9 88.2	496 500	199 200	9 10	14 16	13 13	99.29 112.3	40800 46800	1840 2140
500 x 300	111 125	482 488	300 300	11 11	15 18	13 13	141.2 159.2	58300 68900	6760 8110
600 x 200	92.5 103	596 600	199 200	10 11	15 17	13 13	117.8 131.7	66600 75600	1980 2270
600 x 300	133 147 170	582 588 594	300 300 302	12 12 14	17 20 23	13 13 13	169.2 187.2 217.1	99000 114000 134000	7660 9010 10600
700 x 300	163 182	692 700	300 300	13 13	20 24	18 18	207.5 231.5	168000 197000	9020 10800
800 x 300	188 207	792 800	300 300	14 14	22 26	18 18	239.5 263.5	248000 286000	9920 11700
900 x 300	210 240 283 304	890 900 912 918	299 300 302 303	15 16 18 19	23 28 34 37	18 18 18 18	266.9 305.8 360.1 387.4	339000 404000 491000 535000	10300 12600 15700 17200

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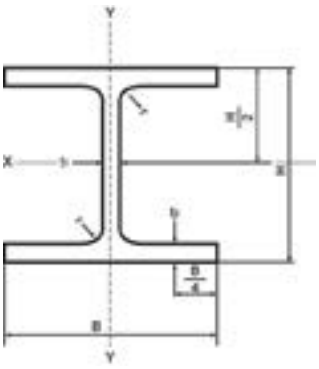
METRIC SECTIONS



Dimension : JIS G 3192:1994 JIS G 3192:2008 JIS G 3136:2008
Dimensional Tolerance : JIS G 3192:1994 JIS G 3192:2008 JIS G 3136:2008
Surface Condition : JIS G 3192:1994 JIS G 3192:2008 JIS G 3136:2008

Radius of Gyration		Modulus of Section		Plastic Modulus		Warping Constant	Torsional Constant	Nominal Size
ix	iy	Sx	Sy	Zx	Zy	Cw	J	
cm	cm	cm^3	cm^3	cm^3	cm^3	$cm^6,x10^3$	cm^4	mm
18.4 18.6	4.36 4.43	1260 1460	159 187	1420 1650	245 290	742 887	34.3 52.0	**450 x 200**
18.9	7.26	2490	541	2760	823	3610	142	**450 x 300**
20.3 20.4	4.30 4.37	1650 1870	185 214	1870 2130	288 333	1070 1250	52.9 76.4	**500 x 200**
20.3 20.8	6.92 7.14	2420 2820	451 541	2700 3130	690 825	3680 4470	96 144	**500 x 300**
23.8 24.0	4.10 4.15	2230 2520	199 227	2580 2900	312 358	1660 1930	70.0 98	**600 x 200**
24.2 24.7 24.8	6.73 6.94 6.99	3400 3880 4510	511 601 702	3820 4350 5060	786 921 1080	6110 7260 8610	139 200 306	**600 x 300**
28.5 29.2	6.59 6.83	4860 5630	601 720	5500 6340	931 1110	10200 12300	228 342	**700 x 300**
32.2 32.9	6.44 6.66	6260 7150	661 780	7140 8100	1030 1210	14700 17500	305 440	**800 x 300**
35.6 36.3 36.9 37.2	6.21 6.42 6.60 6.66	7620 8980 10770 11660	689 840 1040 1140	8750 10300 12300 13400	1080 1320 1620 1780	19300 24000 30100 33300	365 581 981 1240	**900 x 300**

H BEARING PILES

IN ACCORDANCE TO JIS A 5526

1. **SCOPE**

This Japanese Industrial Standard specifies the steel H piles, hereinafter referred to as the “piles”, used for the foundation of structure related to civil engineering works and architecture.

Sectional Dimension mm					Sectional Area A cm^2	Unit Mass W kg/m	Reference						
Nominal size	H x B	t_1	t_2	r			Geometrical Moment of Inertia I cm^4		Radius of Gyration of Area i cm		Section Modulus Z cm^3		Surface Area m^2/m
							Ix	Iy	ix	iy	Zx	Zy	
200 x 200	200 x 204	12	12	13	71.53	56.2	4980	1700	8.35	4.88	498	167	1.17
250 x 250	244 x 252	11	11	16	82.06	64.4	8790	2940	10.3	5.98	720	233	1.45
	250 x 255	14	14	16	104.7	82.2	11500	3880	10.5	6.09	919	304	1.46
300 x 300	294 x 302	12	12	18	107.7	84.5	16900	5520	12.5	7.16	1150	365	1.74
	300 x 300	10	15	18	119.8	94	20400	6750	13.1	7.51	1360	450	1.75
	300 x 305	15	15	18	134.8	106	21500	7100	12.6	7.26	1440	466	1.76
350 x 350	338 x 351	13	13	20	135.3	106	28200	9380	14.4	8.33	1670	534	2.02
	344 x 354	16	16	20	166.6	131	35300	11800	14.6	8.43	2050	669	2.04
	350 x 350	12	19	20	173.9	137	40300	13600	15.2	8.84	2300	776	2.04
	350 x 357	19	19	20	198.4	156	42800	14400	14.7	8.53	2450	809	2.06
400 x 400	388 x 402	15	15	22	178.5	140	49000	16300	16.6	9.54	2520	809	2.32
	394 x 405	18	18	22	214.4	168	59700	20000	16.7	9.65	3030	985	2.33
	400 x 400	13	21	22	218.7	172	66600	22400	17.5	10.1	3330	1120	2.34
	400 x 408	21	21	22	250.7	197	70900	23800	16.8	9.75	3540	1170	2.35
	414 x 405	18	28	22	295.4	232	92800	31000	17.7	10.2	4480	1530	2.38
	428 x 407	20	35	22	360.7	283	119000	39400	18.2	10.4	5570	1930	2.41
500 x 500	492 x 465	15	20	26	259.6	204	118000	33500	21.3	11.4	4800	1440	3.44
	502 x 465	15	25	26	306.1	240	147000	41900	21.9	11.7	5850	1800	3.59
	502 x 470	20	25	26	331.2	260	152000	43300	21.4	11.4	6060	1840	3.60

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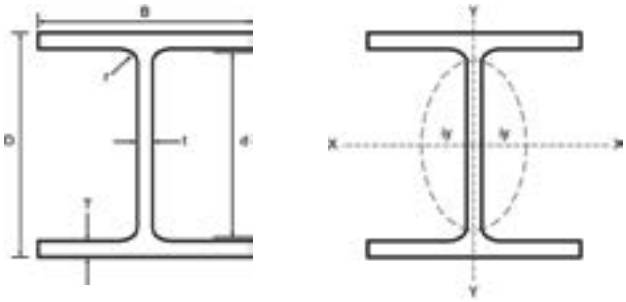
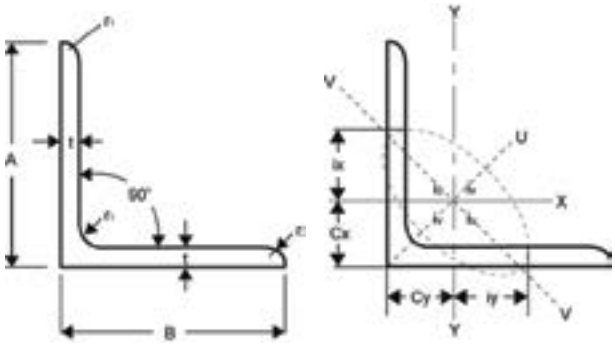
H BEARING PILES

IN ACCORDANCE TO BS4 : PART 1 : 2005



Sectional Dimension mm				Sectional Area A cm^2	Unit Mass W kg/m	Reference					
Nominal size	H x B	t	r			Geometrical Moment of Inertia I cm^4		Radius of Gyration of Area i cm		Section Modulus Z cm^3	
						Ix	Iy	ix	iy	Zx	Zy
203 x 203	200.0 x 205.4	9.5	10.2	57.0	45.0	4079	1539	8.46	4.90	408	133
	203.9 x 207.2	11.3	10.2	68.4	54.0	4987	1683	8.54	4.95	489	162
254 x 254	246.9 x 256.0	10.6	12.7	79.7	63.0	8775	2971	10.5	6.11	711	232
	249.9 x 257.5	12.1	12.7	91.0	71.0	10153	3451	10.6	6.10	813	268
	254.3 x 259.7	14.3	12.7	108.1	85.0	12264	4188	10.7	6.22	965	323
305 x 305	299.2 x 306.0	11.1	15.2	100.4	79.0	16400	5292	12.8	7.26	1096	346
	301.7 x 307.2	12.3	15.2	112.0	88.0	18402	5959	12.8	7.30	1220	388
	303.8 x 308.3	13.4	15.2	121.0	95.0	20111	6529	12.9	7.30	1324	424
	307.9 x 310.3	15.4	15.2	140.4	110.0	23580	7689	13.0	7.40	1532	496
	312.6 x 312.7	17.8	15.2	161.0	126.0	27526	9013	13.1	7.50	1763	577
	318.2 x 315.5	20.6	15.2	190.0	149.0	33040	10869	13.2	7.60	2075	689
	328.4 x 320.5	25.7	15.2	237.0	186.0	42625	14108	13.4	7.70	2597	881
	338.0 x 325.4	30.5	15.2	285.0	223.0	52817	17570	13.6	7.80	3126	1080
356 x 368	346.4 x 370.5	12.9	15.2	138.4	109.0	30515	10901	14.8	8.87	1762	588
	351.9 x 373.3	15.6	15.2	169.0	133.0	37840	13576	15.0	8.96	2150	727
	356.4 x 375.5	17.9	15.2	193.6	152.0	43916	15799	15.1	9.03	2464	841
	361.5 x 378.1	20.4	15.2	222.2	174.1	51134	18444	15.2	9.11	2829	976

EQUAL ANGLE



Size	Leg Length	Thick-ness	Corner Radius		Section-al Area	Weight	Centre of Gravity	Moment of Inertia			Radius of Gyration			Modulus of Section
	A-B	t	r_1	r_2			Cx-Cy	Jx-Jy	Max Ju	Min Jv	ix-iy	Max i_u	Min i_v	Zx-Zy
A x B x t	mm	mm	mm	mm	cm^2	kg/m	cm	cm^4	cm^4	cm^4	cm	cm	cm	cm^3
30 x 30 x 3	30	3	4	2	1.727	1.36	.85	1.42	2.26	.59	.91	1.14	.58	.66
30 x 30 x 5	30	5	4	3	2.746	2.16	.92	2.14	3.37	.91	.88	1.11	.57	1.03
35 x 35 x 3	35	3	4.5	2	2.036	1.60	.97	2.32	3.68	.96	1.07	1.34	.69	.92
35 x 35 x 5	35	5	4.5	3	3.255	2.56	1.04	3.53	5.85	1.47	1.04	1.31	.67	1.44
40 x 40 x 3	40	3	4.5	2	2.336	1.83	1.09	3.53	5.60	1.45	1.23	1.55	.79	1.21
40 x 40 x 5	40	5	4.5	3	3.755	2.95	1.17	5.42	8.59	2.25	1.20	1.51	.77	1.91
45 x 45 x 4	45	4	6.5	3	3.492	2.74	1.24	6.50	10.3	2.69	1.36	1.72	.88	2.00
45 x 45 x 6	45	6	6.5	4.5	5.044	3.96	1.32	9.00	14.2	3.75	1.34	1.68	.86	2.83
45 x 45 x 8	45	8	6.5	4.5	6.564	5.15	1.40	11.2	18.0	4.44	1.31	1.65	.82	3.61
50 x 50 x 4	50	4	6.5	3	3.892	3.06	1.37	9.06	14.4	3.74	1.53	1.92	.98	2.49
50 x 50 x 6	50	6	6.5	4.5	5.644	4.43	1.44	12.6	20.0	5.24	1.50	1.88	.96	3.55
50 x 50 x 8	50	8	6.5	4.5	7.364	5.78	1.52	16.1	25.4	6.78	1.48	1.86	.96	4.62
60 x 60 x 5	60	5	6.5	3	5.802	4.55	1.66	19.6	31.2	8.06	1.84	2.32	1.18	4.52
60 x 60 x 7	60	7	6.5	4.5	7.914	6.21	1.73	25.9	41.0	10.7	1.81	2.28	1.16	6.06
60 x 60 x 9	60	9	6.5	4.5	9.994	7.85	1.81	31.9	50.5	13.4	1.79	2.25	1.16	7.62
65 x 65 x 6	65	6	8.5	4	7.527	5.91	1.81	29.4	46.6	12.1	1.98	2.49	1.27	6.27
65 x 65 x 8	65	8	8.5	6	9.761	7.66	1.88	36.8	58.3	15.3	1.94	2.44	1.25	7.97
65 x 65 x 10	65	10	8.5	6	12.00	9.42	1.96	44.4	70.2	18.7	1.92	2.42	1.25	9.79
70 x 70 x 6	70	6	8.5	4	8.127	6.38	1.94	37.1	58.9	15.3	2.14	2.69	1.37	7.33
70 x 70 x 8	70	8	8.5	6	10.560	8.29	2.01	46.6	74.0	19.3	2.10	2.65	1.35	9.34
70 x 70 x 10	70	10	8.5	6	13.000	10.2	2.09	56.4	89.3	23.6	2.08	2.62	1.35	11.5
75 x 75 x 5	75	5	10	4.8	7.370	5.69	2.00	38.7	61.2	16.2	2.29	2.88	1.48	7.02
75 x 75 x 6	75	6	10	4.8	8.760	6.85	2.04	45.7	72.4	19.0	2.28	2.88	1.47	8.38
75 x 75 x 8	75	8	10	4.8	11.500	9.03	2.13	59.0	93.5	24.5	2.27	2.85	1.46	11.0
75 x 75 x 9	75	9	10	4.8	12.800	9.96	2.17	65.3	103.0	27.2	2.26	2.84	1.46	12.3
75 x 75 x 10	75	10	10	4.8	14.100	10.99	2.21	71.3	113.0	29.8	2.25	2.83	1.45	13.5
75 x 75 x 12	75	12	10	4.8	16.700	13.00	2.29	82.7	130.0	35.0	2.23	2.80	1.45	15.9

ANN YAK SIONG HARDWARE SDN BHD
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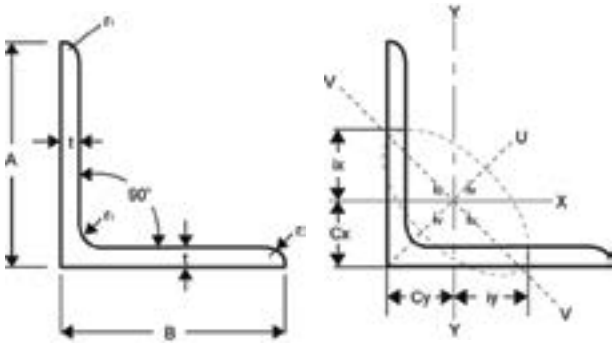
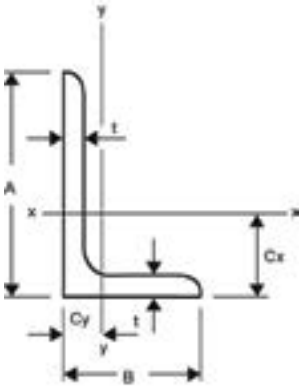
EQUAL ANGLE



Size	Leg Length	Thick-ness	Corner Radius		Section-al Area	Weight	Centre of Gravity	Moment of Inertia			Radius of Gyration			Modulus of Section
	A-B	t	r_1	r_2			Cx-Cy	Jx-Jy	Max Ju	Min Jv	ix-iy	Max i_u	Min i_v	Zx-Zy
A x B x t	mm	mm	mm	mm	cm^2	kg/m	cm	cm^4	cm^4	cm^4	cm	cm	cm	cm^3
80 x 80 x 6	80	6	8.5	4	9.327	7.32	2.19	56.4	89.6	23.2	2.46	3.10	1.58	9.7
80 x 80 x 9	80	9	8.5	6	13.59	10.7	2.30	79.2	126	32.7	2.41	3.04	1.55	13.9
80 x 80 x 12	80	12	8.5	6	17.76	13.9	2.41	101	160	42.2	2.38	3.00	1.54	18.1
90 x 90 x 7	90	7	10	5	12.22	9.59	2.46	93.0	148	28.3	2.76	3.48	1.77	14.2
90 x 90 x 10	90	10	10	7	17.00	13.3	2.58	125	199	51.6	2.71	3.42	1.74	19.5
90 x 90 x 13	90	13	10	7	21.71	17.0	2.69	156	248	65.3	2.68	3.38	1.73	24.8
100 x 100 x 7	100	7	10	5	13.62	10.7	2.71	129	205	53.1	3.08	3.88	1.97	17.7
100 x 100 x 8	100	8	10	5	15.47	12.1	2.75	146	234	58.7	3.07	3.89	1.95	20.1
100 x 100 x 10	100	10	10	7	19.00	14.9	2.83	175	278	71.9	3.03	3.83	1.95	24.4
100 x 100 x 13	100	13	10	7	24.31	19.1	2.94	220	348	91.0	3.00	3.78	1.93	31.1
120 x 120 x 8	120	8	13	4.8	18.80	14.7	3.24	259	411	107	3.71	4.67	2.38	29.5
120 x 120 x 10	120	10	13	4.8	23.30	18.2	3.32	316	502	130	3.69	4.64	2.37	36.4
120 x 120 x 12	120	12	13	4.8	27.60	21.6	3.41	371	588	153	3.66	4.62	2.36	43.1
120 x 120 x 15	120	15	13	4.8	34.00	26.6	3.52	448	710	186	3.63	4.57	2.34	52.8
130 x 130 x 9	130	9	12	6	22.74	17.9	3.53	366	583	150	4.01	5.06	2.57	38.7
130 x 130 x 12	130	12	12	8.5	29.76	23.4	3.64	467	743	192	3.96	5.00	2.54	49.9
130 x 130 x 15	130	15	12	8.5	36.75	28.8	3.76	568	902	234	3.93	4.95	2.53	61.5
150 x 150 x 11	150	11	14	7	32.00	25.1	4.10	684	1090	280	4.62	5.83	2.96	62.8
150 x 150 x 12	150	12	14	7	34.77	27.3	4.14	740	1176	304	4.61	5.82	2.96	68.2
150 x 150 x 15	150	15	14	10	42.74	33.6	4.24	888	1410	365	4.56	5.75	2.92	82.6
150 x 150 x 19	150	19	14	10	53.38	41.9	4.40	1090	1730	451	4.52	5.69	2.91	103
175 x 175 x 12	175	12	16	4.8	41.00	31.8	4.77	1208	1920	497	5.43	6.84	3.48	94.9
175 x 175 x 15	175	15	16	4.8	50.70	39.4	4.89	1474	2342	606	5.39	6.80	4.46	117
200 x 200 x 15	200	15	17	12	57.75	45.3	5.47	2180	3470	891	6.14	7.75	3.93	150
200 x 200 x 20	200	20	17	12	76.00	59.7	5.67	2820	4490	1160	6.09	7.68	3.90	197
200 x 200 x 25	200	25	17	12	93.75	73.6	5.87	3420	5420	1410	6.04	7.61	3.88	242
200 x 200 x 29	200	29	17	12	107.6	84.5	6.01	3870	6120	1610	5.99	7.54	3.87	276

UNEQUAL ANGLE



Section Size	Thick-ness t	Unit Wei-ght M	Leg Length		Corner Radius		Sec-tion Area A	Centre of Gravity		Moment of Inertia				Radius of Gyration				tan a	Modulus of Section	
			A	B	r^1	r^2		Cx	Cy	Ix	Iy	Max Iu	Min Iv	ix	iy	Max iu	Max iv		Zx	Zy
A x B x t	mm	kg/ m	mm	mm	mm	mm	cm^2	cm	cm	cm^4	cm^4	cm^4	cm^4	cm	cm	cm	cm		cm^3	cm^3
65 x 50 x 7	7.0	5.94	65	50	6.5	4.5	7.564	2.07	1.33	30.6	15.6	37.9	8.35	2.01	1.44	2.24	1.05	.571	6.90	4.25
75 x 50 x 6	6.0	5.67	75	50	8.5	4.0	7.227	2.43	1.20	40.4	14.4	46.4	8.33	2.36	1.41	2.53	1.07	.434	7.97	3.78
75 x 50 x 8	8.0	7.35	75	50	8.5	6.0	9.261	2.50	1.27	50.8	17.8	58.1	10.4	2.33	1.38	2.49	1.05	.427	10.2	4.77
75 x 50 x 10	10.0	9.03	75	50	8.5	6.0	11.50	2.58	1.35	61.4	21.4	70.0	12.7	2.31	1.36	2.47	1.05	.421	12.5	5.85
90 x 75 x 6	6.0	7.56	90	75	8.5	4.0	9.626	2.64	1.90	76.9	48.6	101	24.2	2.83	2.25	3.25	1.58	.681	12.1	8.68
90 x 75 x 9	9.0	11.0	90	75	8.5	6.0	14.04	2.75	2.01	109	68.1	143	34.1	2.78	2.20	3.19	1.56	.676	17.4	12.4
90 x 75 x 12	12.0	14.4	90	75	8.5	6.0	18.36	2.87	2.12	139	86.8	182	44.0	2.75	2.17	3.14	1.55	.672	22.6	16.1
100 x 65 x 7	7	8.77	100	65	10	5.0	11.17	3.23	1.52	112	37.6	128	22.0	3.17	1.84	3.39	1.40	.415	16.6	7.55
100 x 65 x 8	8	9.94	100	65	10	4.8	12.70	3.27	1.55	127	42.2	144	24.8	3.16	1.83	3.37	1.40	.414	18.9	8.54
100 x 65 x 9	9	11.00	100	65	10	7.0	14.04	3.31	1.52	138	45.6	157	26.8	3.14	1.80	3.34	1.38	.411	20.6	9.28
100 x 65 x 10	10	12.30	100	65	10	4.8	15.60	3.36	1.63	154	51.0	175	30.1	3.14	1.81	3.35	1.39	.410	23.2	10.5
100 x 65 x 12	12	14.40	100	65	10	7.0	18.36	3.43	1.7	177	58.1	200	34.7	3.11	1.78	3.30	1.37	.405	27.0	12.1
100 x 75 x 7	7	9.32	100	75	10	5.0	11.87	3.06	1.84	118	57.0	144	30.7	3.15	2.19	3.49	1.61	.548	17.0	10.1
100 x 75 x 8	8	10.60	100	75	10	4.8	13.50	3.10	1.87	133	64.1	163	34.6	3.14	2.18	3.47	1.60	.547	19.3	11.4
100 x 75 x 10	10	13.00	100	75	10	7.0	16.50	3.18	1.95	159	76.1	194	41.3	3.11	2.15	3.43	1.58	.543	23.3	13.7
100 x 75 x 12	12	15.40	100	75	10	4.8	19.70	3.27	2.03	189	90.2	230	49.5	3.10	2.14	3.42	1.59	.540	28.0	16.5
100 x 75 x 13	13	16.50	100	75	10	7.0	21.06	3.30	2.06	199	94.8	242	52.2	3.08	2.12	3.39	1.57	.538	29.7	17.4
100 x 80 x 7	7	9.59	100	80	10	5.0	12.22	2.98	2.00	120	68.6	154	35.3	3.14	2.37	3.55	1.70	.625	17.2	11.4
100 x 80 x 10	10	13.30	100	80	10	7.0	17.00	3.10	2.11	163	91.9	207	47.6	3.09	2.33	3.49	1.67	.621	23.6	15.6
100 x 80 x 13	13	17.00	100	80	10	7.0	21.71	3.22	2.23	204	115	258	60.1	3.06	2.30	3.45	1.66	.616	30.1	19.9
100 x 90 x 7	7	10.10	100	90	10	5.0	12.92	2.84	2.35	125	959	177	44.5	3.11	2.73	3.70	1.85	.799	17.5	14.5
100 x 90 x 10	10	14.10	100	90	10	7.0	18.00	2.96	2.46	169	129	238	60.1	3.07	2.68	3.64	1.83	.797	24.0	19.8
100 x 90 x 13	13	18.10	100	90	10	7.0	23.01	3.07	2.58	212	162	298	76.0	3.06	2.65	3.60	1.82	.794	30.6	25.2

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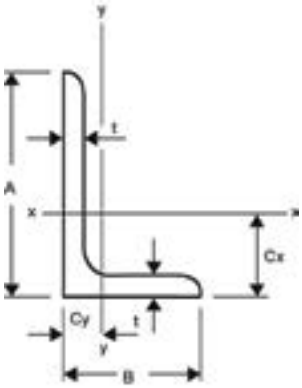
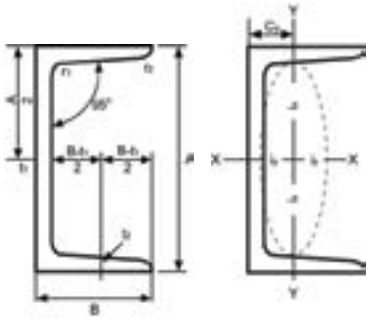
UNEQUAL ANGLE



Section Size	Thick-ness t	Unit Wei-ght M	Leg Length		Corner Radius		Sec-tion Area A	Centre of Gravity		Moment of Inertia				Radius of Gyration				tan a	Modulus of Section	
			A	B	r^1	r^2		Cx	Cy	Ix	Iy	Max Iu	Min Iv	ix	iy	Max iu	Max iv		Zx	Zy
A x B x t	mm	kg/ m	mm	mm	mm	mm	cm^2	cm	cm	cm^4	cm^4	cm^4	cm^4	cm	cm	cm	cm		cm^3	cm^3
125 x 75 x 6.5	6.5	9.98	125	75	11	4.8	12.70	4.06	1.61	204	56.1	228	34.3	4.01	2.10	4.23	1.64	.360	24.2	9.50
125 x 75 x 7	7	10.70	125	75	10	5.0	13.62	4.10	1.64	219	60.4	243	36.4	4.01	2.11	4.23	1.63	.362	26.1	10.3
125 x 75 x 8	8	12.20	125	75	11	4.8	15.50	4.14	1.68	247	67.6	274	40.9	4.00	2.09	4.20	1.63	.359	29.6	11.6
125 x 75 x 10	10	15.00	125	75	10	7.0	19.00	4.23	1.75	298	80.9	330	49.0	3.86	2.06	4.17	1.61	.357	36.1	14.1
125 x 75 x 12	12	17.80	125	75	11	4.8	22.70	4.31	1.84	354	95.5	391	58.5	3.95	2.05	4.15	1.61	.353	43.2	16.9
125 x 75 x 13	13	19.10	125	75	10	7.0	24.31	4.35	1.87	376	101	414	61.9	3.92	2.04	4.13	1.60	.352	46.1	17.9
150 x 75 x 7	7	12.10	150	75	12	5.0	15.46	5.17	1.50	364	63.1	386	40.5	4.85	2.02	5.00	1.62	.265	37.0	10.5
150 x 75 x 9	9	15.30	150	75	12	8.5	19.44	5.25	1.56	446	75.6	473	48.5	4.79	1.97	4.93	1.58	.260	45.8	12.7
150 x 75 x 10	10	17.00	150	75	11	4.8	21.60	5.32	1.61	501	85.8	532	55.3	4.81	1.99	4.96	1.60	.261	51.8	14.6
150 x 75 x 12	12	20.10	150	75	12	8.5	25.56	5.39	1.68	580	97.4	614	63.3	4.76	1.95	4.90	1.57	.257	60.3	16.7
150 x 75 x 15	15	24.80	150	75	11	4.8	31.60	5.53	1.81	713	120	754	78.8	4.75	1.94	4.88	1.58	.254	75.3	21.0
150 x 90 x 9	9	16.40	150	90	12	6.0	20.94	4.96	2.00	484	133	537	80.2	4.81	2.52	5.06	1.96	.362	48.2	19.0
150 x 90 x 10	10	18.20	150	90	12	4.8	23.20	5.00	2.04	533	146	591	88.3	4.80	2.51	5.05	1.95	.360	53.3	21.0
150 x 90 x 12	12	21.60	150	90	12	8.5	27.36	5.07	2.10	619	168	684	102	4.75	2.47	5.00	1.93	.357	62.3	24.3
150 x 90 x 15	15	26.60	150	90	12	8.5	33.75	5.20	2.22	753	202	831	124	4.72	2.45	4.99	1.92	.353	76.8	29.9
150 x 100 x 9	9	17.10	150	100	12	6.0	21.84	4.77	2.32	502	179	580	101	4.79	2.86	5.15	2.15	.441	49.0	23.3
150 x 100 x 12	12	22.40	150	100	12	8.5	28.56	4.88	2.41	642	229	738	133	4.74	2.83	5.08	2.15	.435	63.4	30.2
150 x 100 x 15	15	27.70	150	100	12	8.5	35.25	5.10	2.53	781	276	896	161	4.71	2.80	5.04	2.14	.432	78.2	37.0
200 x 100 x 10	10	23.00	200	100	15	4.8	29.20	6.93	2.01	1220	210	1290	135	6.46	2.68	6.65	2.15	.263	93.2	26.3
200 x 100 x 12	12	27.30	200	100	15	4.8	34.80	7.03	2.10	1440	247	1530	159	6.43	2.67	6.63	2.14	.262	111	31.3
200 x 100 x 15	15	33.70	200	100	15	4.8	43.00	7.16	2.22	1758	299	1863	194	6.40	2.64	6.58	2.13	.259	137	38.4
200 x 150 x 12	12	32.00	200	150	15	4.8	40.80	6.08	3.61	1652	803	2024	431	6.36	4.44	7.04	3.25	.552	119	70.5
200 x 150 x 15	15	39.60	200	150	15	4.8	50.50	6.21	3.73	2022	979	2475	527	6.33	4.40	7.00	3.23	.550	147	86.9
200 x 150 x 18	18	47.10	200	150	15	4.8	60.00	6.33	3.85	2376	1146	2902	618	6.29	4.37	6.95	3.21	.548	174	103

TAPERED CHANNELS

U CHANNELS



Merit Units

Section Size	Unit Weight	Section Depth	Flange Width	Web Thick-ness	Flange Thick-ness	Coner Radius		Section area	Centre of Gravity	Moment of Inertia		Radius of Gyration		Modulus of Section	
	M	A	B	t_1	t_2	r_1	r_2	A	C_y	I_x	I_y	i_x	i_y	Z_x	Z_y
A x B x t	kg/ m	mm	mm	mm	mm	mm	mm	cm^2	cm	cm^4	cm^4	cm	cm	cm^3	cm^3
75 x 40 x 5	6.92	75	40	5.0	7.0	8	4.0	8.818	1.27	75.9	12.4	2.93	1.19	20.2	4.54
100 x 50 x 5	9.36	100	50	5.0	7.5	8	4.0	11.92	1.55	189	26.9	3.98	1.50	37.8	7.82
125 x 65 x 6	13.4	125	65	6.0	8.0	8	4.0	17.11	1.94	425	65.5	4.99	1.96	68	14.4
150 x 75 x 6.5	18.6	150	75	6.5	10.0	10	5.0	23.71	2.31	864	122	6.04	2.27	115	23.6
150 x 75 x 9	24.0	150	75	9.0	12.5	15	7.5	30.49	2.31	1060	151	5.87	2.22	141	29.1
180 x 75 x 7	21.4	180	75	7.0	10.5	11	5.5	27.20	2.15	1380	137	7.13	2.24	154	25.5
180 x 90 x 7.5	27.1	180	90	7.5	12.5	13	6.5	34.57	2.85	1840	258	7.29	2.73	204	42.0
200 x 80 x 7.5	24.6	200	80	7.5	11.0	12	6.0	31.33	2.24	1950	177	7.89	2.38	195	30.8
200 x 90 x 8	30.3	200	90	8.0	13.5	14	7.0	38.65	2.77	2490	286	8.03	2.72	249	45.9
230 x 80 x 8	28.4	230	80	8.0	12.0	13	6.5	36.12	2.15	2900	200	8.96	2.35	252	34.2
230 x 90 x 8.5	33.1	230	90	8.5	13.5	15	7.5	42.14	2.58	3490	303	9.10	2.68	304	47.3
250 x 80 x 8	30.2	250	80	8.0	12.5	14	7.0	38.51	2.11	3630	210	9.71	2.33	291	35.7
250 x 90 x 9	34.6	250	90	9.0	13.0	14	7.0	44.07	2.42	4180	306	9.74	2.64	335	46.5
250 x 90 x 11	40.2	250	90	11.0	14.5	17	8.5	51.17	2.39	4690	342	9.47	2.58	375	51.7
280 x 100 x 9	38.8	280	100	9.0	13.0	14	7.0	49.37	2.64	5930	428	11.0	2.95	423	58.2
280 x 100 x 11.5	48.2	280	100	11.5	16.0	18	9.0	61.37	2.68	7150	515	10.8	2.90	510	70.4
300 x 90 x 9	38.1	300	90	9.0	12.0	14	7.0	48.57	2.23	6440	325	11.5	2.59	429	48.0
300 x 90 x 10	43.8	300	90	10.0	15.5	19	9.5	55.74	2.33	7400	373	11.5	2.59	494	56.0
380 x 100 x 10.5	54.5	380	100	10.5	16.0	18	9.0	69.38	2.41	14500	557	14.5	2.83	762	73.3
380 x 100 x 13	62.0	380	100	13.0	6.5	18	9.0	78.96	2.29	15600	584	14.1	2.72	822	75.8

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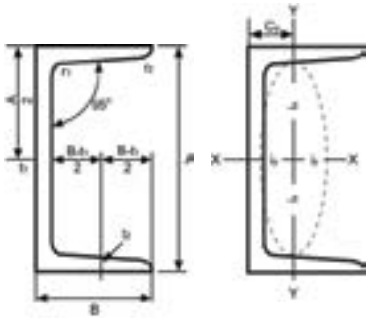
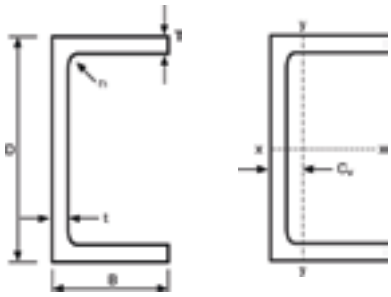
TAPERED CHANNELS



Imperial Units

Section Size	Unit Weight	Section Depth	Flange Width	Web Thick-ness	Flange Thick-ness	Coner Radius		Section area	Centre of Gravity	Moment of Inertia		Radius of Gyration		Modulus of Section	
	M	A	B	t_1	t_2	r_1	r_2	A	C_y	I_x	I_y	i_x	i_y	Z_x	Z_y
mm (in)	kg/ m	mm	mm	mm	mm	mm	mm	cm^2	cm	cm^4	cm^4	cm	cm	cm^3	cm^3
127 x 64 (5 x 2½)	14.9	127.00	63.5	9.2	6.4	10.7	2.4	18.98	1.94	482.5	67.23	5.04	1.88	75.99	15.25
152 x 76 (6 x 3)	17.88	152.40	76.2	9.0	6.4	12.2	2.4	22.77	2.21	851.5	113.8	6.12	2.24	111.8	21.05
152 x 89 (6 x 3½)	23.84	152.40	88.9	11.6	7.1	13.7	3.2	30.36	2.86	1166	215.1	6.20	2.66	153.0	35.70
178 x 76 (7 x 3)	20.84	177.80	76.2	10.3	6.6	12.2	3.2	26.54	2.20	1337	134.0	7.10	2.25	150.4	24.72
178 x 89 (7 x 3½)	26.81	177.80	88.9	12.3	7.6	13.7	3.2	34.15	2.76	1753	241.0	7.16	2.66	197.2	39.29
203 x 76 (8 x 3)	23.82	203.20	76.2	11.2	7.1	12.2	3.2	30.34	2.13	1950	151.3	8.02	2.23	192.0	27.59
203 x 89 (8 x 3½)	29.78	203.20	88.9	12.9	8.1	13.7	3.2	37.94	2.65	2491	264.4	8.10	2.64	245.2	42.34
229 x 76 (9 x 3)	26.06	228.60	76.2	11.2	7.6	12.2	3.2	33.20	2.00	2610	158.7	8.87	2.19	228.3	28.22
229 x 89 (9 x 3½)	32.76	228.60	88.9	13.3	8.6	13.7	3.2	41.73	2.53	3387	285.0	9.01	2.61	296.4	44.82
254 x 76 (10 x 3)	28.29	254.00	76.2	10.9	8.1	12.2	3.2	36.03	1.86	3367	162.6	9.67	2.12	265.1	28.21
254 x 89 (10 x 3½)	35.74	254.00	88.9	13.6	9.1	13.7	3.2	45.52	2.42	4448	302.4	9.88	2.58	350.2	46.70
305 x 89 (12 x 3½)	41.69	304.80	88.9	13.7	10.2	13.7	3.2	53.11	2.18	7061	325.4	11.5	2.48	463.3	48.49
305 x 102 (12 x 4)	46.18	304.80	101.6	14.8	10.2	15.2	4.8	58.83	2.66	8214	499.5	11.8	2.91	539.0	66.59
381 x 102 (15 x 4)	55.10	381.00	101.6	16.3	10.4	15.2	4.8	70.19	2.52	14894	579.7	14.60	2.87	781.8	75.86
432 x 102 (17 x 4)	65.54	431.80	101.6	16.8	12.2	15.2	4.8	83.49	2.32	21399	628.6	16.00	2.74	991.1	80.14

PARALLEL FLANGE CHANNELS



Designation		Thickness		Root Radius	Area of Section	Centre of Gravity	Second Moment Of Area		Radius of Gyratian		Elastic Modulus	
Size	Mass	Web	Flange									
D x B	Per Meter	t	T	r_1	A	C_y	Axis x-x	Axis y-y	Axis x-x	Axis y-y	Axis x-x	Axis y-y
	kg/ m	mm	mm	mm	cm^2	cm	cm^4	cm^4	cm	cm	cm^3	cm^3
100 x 50	10.2	5.0	8.5	9	13.0	1.73	208	32.3	4.00	1.58	41.5	9.89
125 x 65	14.8	5.5	9.5	12	18.8	2.25	483	80.0	5.07	2.06	77.3	18.8
150 x 75	17.9	5.5	10.0	12	22.8	2.58	861	131	6.15	2.40	115	26.6
150 x 90	23.9	6.5	12.0	12	30.4	3.30	1162	253	6.18	2.89	155	44.4
180 x 75	20.3	6.0	10.5	12	25.9	2.41	1370	146	7.27	2.38	152	28.8
180 x 90	26.1	6.5	12.5	12	33.2	3.17	1817	277	7.40	2.89	202	47.4
200 x 75	23.4	6.0	12.5	12	29.9	2.48	1963	170	8.11	2.39	196	33.8
200 x 90	29.7	7.0	14.0	12	37.9	3.12	2523	314	8.16	2.89	252	53.4
230 x 75	25.7	6.5	12.5	12	32.7	2.30	2748	181	9.17	2.35	239	34.8
230 x 90	32.2	7.5	14.0	12	41.0	2.92	3518	334	9.27	2.86	306	55.0
250 x 90	35.5	8.0	15.0	12	45.2	2.86	4510	364	9.99	2.84	361	59.3
260 x 75	27.6	7.0	12.0	12	35.1	2.10	3619	185	10.1	2.30	278	34.4
260 x 90	34.8	8.0	14.0	12	44.4	2.74	4728	353	10.3	2.82	364	56.3
300 x 90	41.4	9.0	15.5	12	52.7	2.60	7218	404	11.7	2.77	481	63.1
300 x 100	45.5	9.0	16.5	15	58.0	3.05	8229	568	11.9	3.13	549	81.7
380 x 100	54.0	9.5	17.5	15	68.7	2.79	15030	643	14.8	3.06	791	89.2
430 x 100	64.4	11.0	19.0	15	82.1	2.62	21940	722	16.3	2.97	1020	97.9

ANN YAK SIONG HARDWARE SDN BHD
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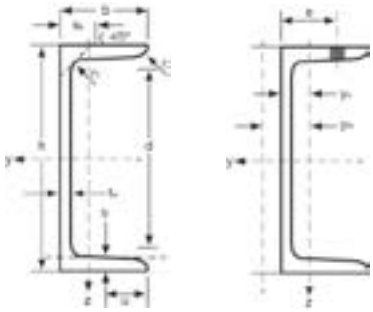
UPN



Designation		Dimensions							Values Statiques / Section Properties							
									axe fort y-y strong axis y-y starke Achse y-y				axe failble z-z weak axis z-z schwache Achse z-z			
			Flange Width	Web Thick-ness	Flange Thick-ness	Coner Radius		Section area	Moment of Inertia	Modulus of Section		Radius of Gyratian	Moment of Inertia	Modulus of Section		Radius of Gyratian
	G kg/ m	h mm	b mm	t_w mm	t_f mm	r_1 mm	r_2 mm	A mm^2	I_y mm^4	$W_{el.y}$ mm^3	$W_{pl.y}$ mm^3	i_y mm	I_z mm^4	$W_{el.z}$ mm^3	$W_{pl.z}$ mm^3	i_z mm
								x 10^2	x 10^4	x 10^3	x 10^3	x 10	x 10^4	x 10^3	x 10^3	x 10
UPN 80*	8.65	80	45	6	8	8	4	11.02	106	26.6	32.3	3.10	19.4	6.38	11.9	1.33
UPN 100*	10.6	100	50	6	8.5	8.5	4.5	13.50	206	41.2	49.0	3.91	29.3	8.49	16.2	1.47
UPN 120	13.4	120	55	7	9	9	4.5	17.00	364	60.7	72.6	4.62	43.2	11.1	21.2	1.59
UPN 140	16.0	140	60	7	10	10	5	20.40	605	86.4	103	5.45	62.7	14.8	28.3	1.75
UPN 160	18.8	160	65	7.5	10.5	10.5	5.5	24.00	925	116	138	6.21	85.3	18.3	35.2	1.89
UPN 180	22.0	180	70	8	11	11	5.5	28.00	1350	150	179	6.95	114	22.4	42.9	2.02
UPN 200	25.3	200	75	8.5	11.5	11.5	6	32.20	1910	191	228	7.70	148	27.0	51.8	2.14
UPN 220	29.4	220	80	9	12.5	12.5	6.5	37.40	2690	245	292	8.48	197	33.6	64.1	2.30
UPN 240	33.2	240	85	9.5	13	13	6.5	42.30	3600	300	358	9.22	248	39.6	75.7	2.42
UPN 260	37.9	260	90	10	14	14	7	48.30	4820	371	442	9.99	317	47.7	91.6	2.56
UPN 280	41.8	280	95	10	15	15	7.5	53.30	6280	448	532	10.9	399	57.2	109	2.74
UPN 300	46.2	300	100	10	16	16	8	58.80	8030	535	632	11.7	495	67.8	130	2.90
UPN 320*	59.5	320	100	14	17.5	17.5	8.75	75.80	10870	679	826	12.1	597	80.6	152	2.81
UPN 350	60.6	350	100	14	16	16	8	77.30	12840	734	918	12.9	570	75.0	143	2.72
UPN 380*	63.1	380	102	13.5	16	16	8	80.40	15760	829	1014	14.0	615	78.7	148	2.77
UPN 400*	71.8	400	110	14	18	18	9	91.50	20350	1020	1240	14.9	846	102	190	3.04