I. Database v15.0

AISC Shapes Database v15.0 is an update to Shapes Database v14.1. This version is consistent with shape properties and dimensions tabulated in the AISC *Steel Construction Manual,* 15th Edition, 1st Printing. The database contains some additional section properties that are not included in the *Manual* .

A. Table Instructions

Dimensions and properties for each shape are listed sequentially in a single row. The data in each column is as follows:

Column in Database[a]	Variable	Description[a]
	Type	Shape type: W, M, S, HP, C, MC, L, WT, MT, ST, 2L, HSS, PIPE
	EDI_ STD_ Nomenclature	The shape designation according to the AISC *Naming Convention for Structural Steel Products for Use in Electronic Data Interchange (EDI)* , June 25, 2001. This information is intended solely for the use of software developers to facilitate the electronic labeling of shape-specific data and electronic transfer of that data.
	AISC_ Manual_ Label	The shape designation as seen in the AISC *Steel Construction Manual* , 15th Edition. The exception to this is the designation for double angles. There is a separate listing (row) for each back-to-back spacing and configuration. Therefore, the shape designation reflects these two variables. The listings for double angles follow the convention specified in the AISC *Naming Convention for Structural Steel Products for Use in Electronic Data Interchange (EDI)* , June 25, 2001.
	T_F	Boolean variable. A true, T, value indicates that there is a special note for that shape (see below). A false, F, value indicates that there are no special notes for that shape. Special notes: W-shapes: a value of T for: t_f > 2 in. M-shapes: a value of T indicates that the shape has sloped flanges. WT-shapes: a value of T for: t_f > 2 in MT-shapes: a value of T indicates that the shape has sloped flanges.
	W	Nominal weight, lb/ft (kg/m)
	A	Cross-sectional area, in.^{2} (mm^2)
	d	Overall depth of member, or width of shorter leg for angles, or width of the outstanding legs of long legs back-to-back double angles, or the width of the back-to-back legs of short legs back-to-back double angles, in. (mm)
	d_{det}	Detailing value of member depth, in. (mm)
	Ht	Overall depth of square or rectangular HSS, in. (mm)
	h	Depth of the flat wall of square or rectangular HSS, in. (mm)
	OD	Outside diameter of round HSS or pipe, in. (mm)
	b_f	Flange width, in. (mm)
	b_{fdet}	Detailing value of flange width, in. (mm)
	B	Overall width of square or rectangular HSS, in. (mm)
	b	Width of the flat wall of square or rectangular HSS, or width of the longer leg for angles, or width of the back-to-back legs of long legs back-to-back double angles, or width of the outstanding legs of short legs back-to-back double angles, in. (mm)
	ID	Inside diameter of round HSS or pipe, in. (mm)
	t_w	Web thickness, in. (mm)
	t_{wdet}	Detailing value of web thickness, in. (mm)
	$t_{wdet}/2$	Detailing value of $t_w/2$, in. (mm)
	t_f	Flange thickness, in. (mm)
	t_{fdet}	Detailing value of flange thickness, in. (mm)
	t	Thickness of angle leg, in. (mm)
	t_{nom}	HSS and pipe nominal wall thickness, in. (mm)
	t_{des}	HSS and pipe design wall thickness, in. (mm)
	k_{des}	Design distance from outer face of flange to web toe of fillet, in. (mm)
	k_{det}	Detailing distance from outer face of flange to web toe of fillet, in. (mm)
	k_1	Detailing distance from center of web to flange toe of fillet, in. (mm)
	x	Horizontal distance from designated member edge, as defined in the AISC *Steel Construction Manual* , to member centroidal axis, in. (mm)
	y	Vertical distance from designated member edge, as defined in the AISC *Steel Construction Manual* , to member centroidal axis, in. (mm)
	e_o	Horizontal distance from designated member edge, as defined in the AISC *Steel Construction Manual* , to member shear center, in. (mm)
	x_p	Horizontal distance from designated member edge, as defined in the AISC *Steel Construction Manual* , to member plastic neutral axis, in. (mm)
	y_p	Vertical distance from designated member edge, as defined in the AISC *Steel Construction Manual* , to member plastic neutral axis, in. (mm)
	$b_f/2t_f$	Slenderness ratio

	b/t	Slenderness ratio for angles
	b/t_{des}	Slenderness ratio for square or rectangular HSS
	h/t_w	Slenderness ratio
	h/t_{des}	Slenderness ratio for square or rectangular HSS
	D/t	Slenderness ratio for round HSS and pipe, or tee shapes
	I_x	Moment of inertia about the x-axis, in.^{4} (mm^4 /10^6)
	Z_x	Plastic section modulus about the x-axis, in.^{3} (mm^3 /10^3)
	S_x	Elastic section modulus about the x-axis, in.^{3} (mm^3 /10^3)
	r_x	Radius of gyration about the x-axis, in. (mm)
	I_y	Moment of inertia about the y-axis, in.^{4} (mm^4 /10^6)
	Z_y	Plastic section modulus about the y-axis, in.^{3} (mm^3 /10^3)
	S_y	Elastic section modulus about the y-axis, in.^{3} (mm^3 /10^3)
	r_y	Radius of gyration about the y-axis (with no separation for double angles back-to-back), in. (mm)
	I_z	Moment of inertia about the z-axis, in.^{4} (mm^4 /10^6)
	r_z	Radius of gyration about the z-axis, in. (mm)
	S_z	Elastic section modulus about the z-axis, in.^{3} (mm^3 /10^3)
	J	Torsional moment of inertia, in.^{4} (mm^4 /10^3)
	C_w	Warping constant, in.^{6} (mm^6 /10^9)
	C	HSS torsional constant, in.^{3} (mm^3 /10^3)
	W_{no}	Normalized warping function, as used in Design Guide 9, in.^{2} (mm^2)
	S_{w1}	Warping statical moment at point 1 on cross section, as used in AISC Design Guide 9 and shown in Figures 1 and 2, in.^{4} (mm^4 /10^6)
	S_{w2}	Warping statical moment at point 2 on cross section, as used in AISC Design Guide 9 and shown in Figure 2, in.^{4} (mm^4 /10^6)
	S_{w3}	Warping statical moment at point 3 on cross section, as used in AISC Design Guide 9 and shown in Figure 2, in.^{4} (mm^4 /10^6)
	Q_f	Statical moment for a point in the flange directly above the vertical edge of the web, as used in AISC Design Guide 9, in.^{3} (mm^3 /10^3)
	Q_w	Statical moment for a point at mid-depth of the cross section, as used in AISC Design Guide 9, in.^{3} (mm^3 /10^3)
	r_o	Polar radius of gyration about the shear center, in. (mm)
	H	Flexural constant
	tan(α)	Tangent of the angle between the y-y and z-z axes for single angles, where α is shown in Figure 3
	I_w	Moment of inertia about the w-axis for single angles, in.^{4} (mm^4 /10^6)
	z_A	Distance from point A to center of gravity along z-axis, as shown in Figure 3, in. (mm)
	z_B	Distance from point B to center of gravity along z-axis, as shown in Figure 3, in. (mm)
	z_C	Distance from point C to center of gravity along z-axis, as shown in Figure 3, in. (mm)
	w_A	Distance from point A to center of gravity along w-axis, as shown in Figure 3, in. (mm)
	w_B	Distance from point B to center of gravity along w-axis, as shown in Figure 3, in. (mm)
	w_C	Distance from point C to center of gravity along w-axis, as shown in Figure 3, in. (mm)
	S_{wA}	Elastic section modulus about the w-axis at point A on cross section, as shown in Figure 3, in.^{3} (mm^3 /10^3)
	S_{wB}	Elastic section modulus about the w-axis at point B on cross section, as shown in Figure 3, in.^{3} (mm^3 /10^3)
	S_{wC}	Elastic section modulus about the w-axis at point C on cross section, as shown in Figure 3, in.^{3} (mm^3 /10^3)
	S_{zA}	Elastic section modulus about the z-axis at point A on cross section, as shown in Figure 3, in.^{3} (mm^3 /10^3)
	S_{zB}	Elastic section modulus about the z-axis at point B on cross section, as shown in Figure 3, in.^{3} (mm^3 /10^3)
	S_{zC}	Elastic section modulus about the z-axis at point C on cross section, as shown in Figure 3, in.^{3} (mm^3 /10^3)
	r_{ts}	Effective radius of gyration, in. (mm)
	h_o	Distance between the flange centroids, in. (mm)
	P_A	Shape perimeter minus one flange surface (or short leg surface for a single angle), as used in Design Guide 19, in. (mm)
	P_{A2}	Single angle shape perimeter minus long leg surface, as used in AISC Design Guide 19, in. (mm)
	P_B	Shape perimeter, as used in AISC Design Guide 19, in. (mm)
	P_C	Box perimeter minus one flange surface, as used in Design Guide 19, in. (mm)
	P_D	Box perimeter, as used in AISC Design Guide 19, in. (mm)
	T	Distance between web toes of fillets at top and bottom of web, in. (mm)
	WG_i	The workable gage for the inner fastener holes in the flange that provides for entering and tightening clearances and edge distance and spacing requirements. The actual size, combination, and orientation of fastener components should be compared with the geometry of the cross section to ensure compatibility. See AISC *Manual* Part 1 for additional information, in. (mm)
	WG_o	The bolt spacing between inner and outer fastener holes when the workable gage is compatible with four holes across the flange. See AISC *Manual* Part 1 for additional information, in. (mm)

[a] Values in parentheses "()" is for metric data.

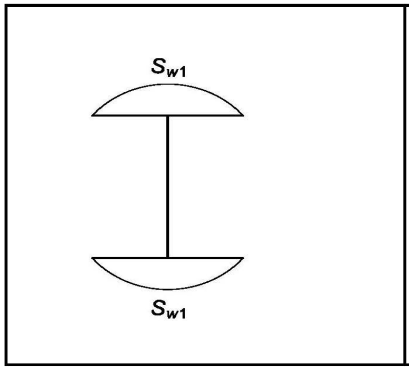


Fig. 1. Location of warping statical moment for W-, M-, S- and HP-shapes.

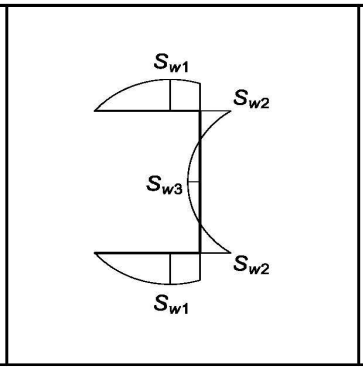


Fig. 2. Location of warping statical moment for C- and MC-shapes.

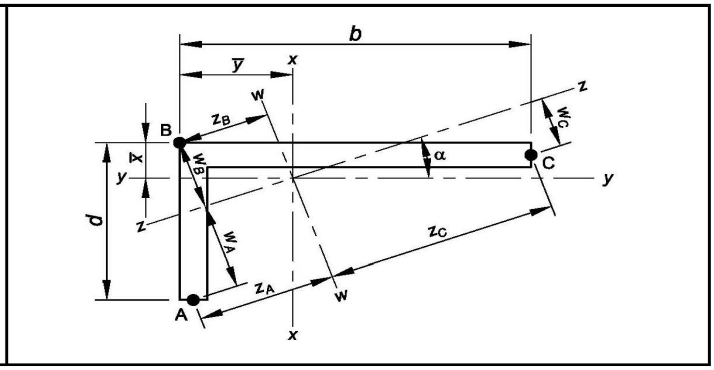


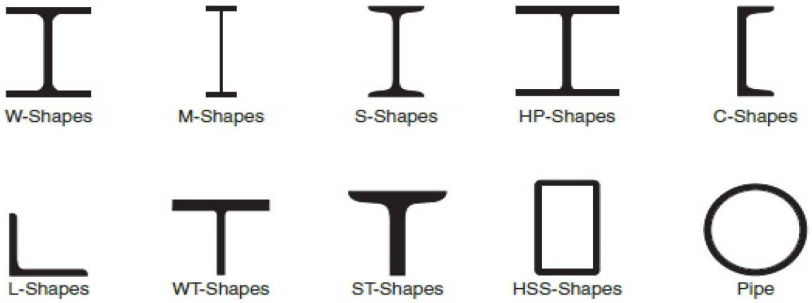
Fig. 3. Location of Point A, B and C for single angles.

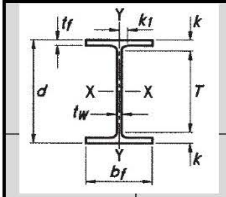
B. New Shapes in v15.0

Shape Type	Section Size
W	W40X655, W36X925, W36X853, W36X802,W36X723, W21X275, W21X248, W21X223, W14X873, W14X808
HP	HP12X89
L	L12X12X1-3/8, L12X12X1-1/4, L12X12X1-1/8, L12X12X1, L10X10X1-3/8, L10X10X1-1/4, L10X10X1-1/8, L10X10X1, L10X10X7/8, L10X10X3/4
WT	WT20X327.5, WT18X462.5, WT18X426.5, WT18X401, WT18X361.5, WT10.5X137.5, WT10.5X124, WT10.5X111.5, WT7X436.5, WT7X404
2L	2L12X12X1-3/8, 2L12X12X1-3/8X3/4, 2L12X12X1-3/8X1-1/2, 2L12X12X1-1/4, 2L12X12X1-1/4X3/4, 2L12X12X1-1/4X1-1/2, 2L12X12X1-1/8, 2L12X12X1-1/8X3/4, 2L12X12X1-1/8X1-1/2, 2L12X12X1, 2L12X12X1X3/4, 2L12X12X1X1-1/2, 2L10X10X1-3/8, 2L10X10X1-3/8X3/4, 2L10X10X1-3/8X1-1/2, 2L10X10X1-1/4, 2L10X10X1-1/4X3/4, 2L10X10X1-1/4X1-1/2, 2L10X10X1-1/8, 2L10X10X1-1/8X3/4, 2L10X10X1-1/8X1-1/2, 2L10X10X1, 2L10X10X1X3/4, 2L10X10X1X1-1/2, 2L10X10X7/8, 2L10X10X7/8X3/4, 2L10X10X7/8X1-1/2, 2L10X10X3/4, 2L10X10X3/4X3/4, 2L10X10X3/4X1-1/2
HSS	HSS24X12X3/4, HSS24X12X5/8, HSS24X12X1/2, HSS22X22X7/8, HSS22X22X3/4, HSS20X20X7/8, HSS20X20X3/4, HSS20X20X5/8, HSS20X20X1/2, HSS20X12X3/4, HSS18X18X7/8, HSS18X18X3/4, HSS18X18X5/8, HSS18X18X1/2, HSS16X16X7/8, HSS16X16X3/4, HSS16X12X3/4, HSS14X14X7/8, HSS14X14X3/4, HSS12X12X3/4, HSS10X10X3/4
Pipe	Pipe26STD, Pipe24STD, Pipe20STD, Pipe18STD, Pipe16STD, Pipe14STD, Pipe26XS, Pipe24XS, Pipe20XS, Pipe18XS, Pipe16XS, Pipe14XS, Pips12XXS, Pipe10XXS

The HP-shape is also an I-section and is used for bearing piles.

Shape	Designation
Wide flanged beams	W
Miscellaneous beams	M
Standard beams	S
Bearing piles	HP
Standard channels	C
Miscellaneous channels	MC
Angles	L
Tees cut from W-shapes	WT
Tees cut from M-shapes	MT
Tees cut from S-shapes	ST
Rectangular hollow structural sections	HSS
Square hollow structural sections	HSS
Round hollow structural sections	HSS
Pipe	Pipe





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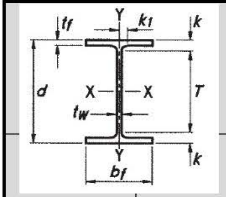
O.S

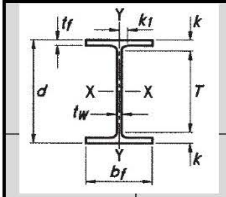
		Weight	Area	Depth	Flange		Web		Distance				Compact Section Critiria		Axis X-X				Axis Y-Y				Torsional Properties										
										k_1			$b_f/2t$																			
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b_f	t_f	t_w	$t_{w/2}$	k_{des}		T	WG_i	f	h/t_w	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	J	C_w	W_{no}	S_{w1}	Q_f	Q_w	r_{ts}	h_o	P_A	P_B	P_C	P_D
W44X335	W1100X499	499	63500	1120	404	45.0	26.2	13.1	65.0	44.5	965	140	4.50	38.0	12900	26500	23100	452	499	3870	2460	88.6	31100	144000	108000	491	4560	13200	108	1070	3350	3760	2640	3050
W44X290	W1100X433	433	55100	1110	401	40.1	22.0	11.0	59.9	41.3	965	140	5.02	45.0	11200	23100	20300	452	433	3360	2160	88.6	21200	124000	107000	433	4060	11500	107	1070	3330	3730	2620	3020
W44X262	W1100X390	390	49800	1100	401	36.1	19.9	10.0	55.9	41.3	965	140	5.57	49.6	10000	20800	18200	450	384	2980	1920	88.1	15500	109000	106000	386	3650	10300	106	1060	3330	3730	2590	3000
W44X230	W1100X343	343	43700	1090	401	31.0	18.0	9.0	51.1	39.7	965	140	6.45	54.8	8660	18000	15900	445	331	2570	1660	87.1	10400	92900	106000	330	3150	8960	105	1060	3300	3710	2590	3000
W40X655	W1000X976	975	125000	1110	429	89.9	50.0	25.0	120	55.6	864	191	2.39	17.3	23500	50500	42500	434	1190	8880	5570	98.0	245000	309000	109000	1050	8670	25100	120	1020	3350	3780	2640	3070
W40X593	W1000X883	883	112000	1090	424	82.0	45.5	22.8	112	54.0	864	191	2.58	19.1	21000	45200	38300	432	1050	7880	4950	96.5	185000	268000	107000	932	7850	22500	118	1010	3300	3730	2620	3050
W40X503	W1000X748	748	95500	1070	417	70.1	39.1	19.6	100	50.8	864	191	2.98	22.3	17300	38000	32400	427	849	6460	4080	94.5	115000	212000	104000	762	6600	18800	114	998	3280	3680	2570	2970
W40X431	W1000X642	642	81900	1050	411	59.9	34.0	17.0	89.9	47.6	864	191	3.44	25.5	14500	32100	27700	422	703	5370	3410	92.7	73700	171000	102000	629	5590	15900	112	988	3230	3630	2510	2920
W40X397	W1000X591	591	75500	1040	409	55.9	31.0	15.5	85.9	46.0	864	191	3.66	28.0	13300	29500	25600	422	641	4920	3130	92.5	59100	155000	101000	574	5210	14600	111	986	3200	3610	2490	2900
W40X372	W1000X554	554	71000	1030	409	52.1	29.5	14.8	82.0	46.0	864	191	3.93	29.5	12300	27500	23900	419	591	4540	2900	91.4	48300	142000	100000	533	4830	13600	110	980	3180	3580	2470	2870
W40X362	W1000X539	539	68400	1030	406	51.1	28.4	14.2	81.0	44.5	864	191	3.99	30.5	12000	26900	23300	419	574	4420	2830	91.4	45400	138000	99400	516	4740	13200	110	980	3180	3580	2470	2870
W40X324	W1000X483	483	61500	1020	404	46.0	25.4	12.7	75.9	42.9	864	191	4.40	34.2	10700	23900	21000	417	508	3920	2510	90.9	33000	120000	98700	458	4240	11800	108	975	3150	3560	2450	2840
W40X297	W1000X443	443	56300	1010	401	41.9	23.6	11.8	71.9	42.9	864	191	4.80	36.8	9660	21800	19200	414	454	3520	2260	89.9	25500	107000	97400	409	3830	10700	107	970	3120	3530	2420	2820
W40X277	W1000X412	412	52600	1010	401	40.1	21.1	10.6	70.1	41.3	864	191	5.03	41.2	9120	20500	18000	417	433	3340	2160	90.9	21400	102000	97400	391	3690	10100	108	968	3120	3530	2420	2820
W40X249	W1000X371	371	47400	1000	401	36.1	19.1	9.6	66.0	39.7	864	191	5.55	45.6	8160	18400	16300	414	385	2980	1930	90.2	15900	89700	96800	350	3330	9030	107	965	3100	3510	2400	2790
W40X215	W1000X321	321	41000	991	401	31.0	16.5	8.3	61.0	39.7	864	191	6.45	52.6	6950	15800	14100	411	334	2560	1660	89.9	10300	76300	96100	299	2870	7750	106	960	3100	3510	2380	2790
W40X199	W1000X296	296	37900	983	401	27.2	16.5	8.3	57.2	39.7	864	191	7.39	52.6	6200	14200	12600	406	289	2250	1450	87.6	7620	66100	96100	261	2510	7000	105	955	3070	3480	2370	2770
W40X392	W1000X584	584	74800	1060	315	64.0	36.1	18.1	94.0	49.2	864	191	2.45	24.1	12400	28000	23600	409	334	3470	2130	67.1	71600	82200	78100	394	4420	13900	83.8	993	2950	3250	2430	2740
W40X331	W1000X494	494	63000	1040	310	54.1	31.0	15.5	84.1	46.0	864	191	2.86	28.0	10300	23400	19800	404	268	2820	1740	65.3	43700	64700	76100	319	3700	11600	81.5	983	2900	3200	2380	2690
W40X327	W1000X486	486	61900	1040	307	54.1	30.0	15.0	84.1	46.0	864	191	2.85	29.0	10200	23100	19700	406	266	2790	1720	65.5	42900	64200	75500	314	3690	11400	81.5	983	2900	3200	2380	2690
W40X294	W1000X438	438	55600	1030	305	49.0	26.9	13.5	79.0	44.5	864	191	3.11	32.2	9120	20800	17700	404	234	2460	1530	64.8	31900	55900	74200	278	3330	10200	80.3	978	2870	3180	2360	2670
W40X278	W1000X415	415	53100	1020	305	46.0	26.2	13.1	75.9	44.5	864	191	3.31	33.3	8530	19500	16700	401	217	2290	1430	64.0	27100	51600	74200	259	3110	9620	79.5	975	2840	3150	2350	2640
W40X264	W1000X393	393	49900	1020	302	43.9	24.4	12.2	73.9	42.9	864	191	3.45	35.6	8070	18500	15900	401	205	2160	1350	64.0	23400	48600	73500	245	2980	9090	79.2	973	2840	3150	2330	2640
W40X235	W1000X350	350	44600	1010	302	40.1	21.1	10.6	70.1	41.3	864	191	3.77	41.2	7240	16600	14300	404	185	1930	1220	64.5	17200	43200	72900	221	2720	8110	79.0	968	2820	3120	2320	2620
W40X211	W1000X314	314	40100	1000	300	36.1	19.1	9.6	66.0	39.7	864	191	4.17	45.6	6450	14800	12900	401	162	1720	1080	63.8	12700	37900	72300	195	2430	7240	78.0	965	2790	3100	2300	2590
W40X183	W1000X272	272	34400	991	300	30.5	16.5	8.3	60.5	39.7	864	191	4.92	52.6	5490	12700	11100	399	138	1450	918	63.2	8030	31700	72300	164	2060	6160	77.2	960	2790	3100	2280	2590
W40X167	W1000X249	249	31800	980	300	26.2	16.5	8.3	56.1	39.7	864	191	5.76	52.6	4830	11400	9830	389	118	1250	785	61.0	5830	26800	71600	140	1750	5510	75.7	955	2770	3070	2260	2570
W40X149	W1000X222	222	28300	970	300	21.1	16.0	8.0	51.1	38.1	864	191	7.11	54.3	4080	9800	8410	381	95.3	1020	636	58.2	3900	21500	71000	112	1420	4720	73.4	950	2740	3050	2240	2540
W36X925	W920X1377	1380	175000	1090	472	115	76.7	38.4	134	58.7	822	191	2.05	10.8	30400	67700	55600	417	2060	14100	8700	108	595000	494000	115000	1570	11200	33800	135	980	3400	3890	2670	3150
W36X853	W920X1269	1270	162000	1090	462	115	64.0	32.0	134	52.4	822	191	2.01	12.9	29100	64200	53300	424	1910	13200	8280	109	516000	459000	113000	1510	11200	32000	133	980	3430	3890	2640	3100
W36X802	W920X1194	1190	152000	1080	457	109	60.5	30.3	128	50.8	822	191	2.10	13.7	27000	60000	49800	422	1750	12200	7670	107	437000	414000	111000	1390	10500	29800	131	973	3380	3840	2620	3070
W36X723	W920X1077	1080	137000	1060	452	99.1	55.1	27.6	118	47.6	822	191	2.28	15.0	23800	53600	44900	417	1540	10800	6820	106	327000	357000	109000	1220	9470	26700	129	963	3330	3780	2570	3020
W36X652	W920X970	970	124000	1040	447	89.9	50.0	25.0	114	55.6	797	191	2.48	16.3	21100	47700	40300	411	1340	9520	6010	104	247000	303000	106000	1070	8490	23800	126	955	3280	3730	2530	2970
W36X529	W920X787	787	101000	1010	437	73.9	40.9	20.5	98.0	50.8	797	191	2.96	19.9	16500	38200	32600	406	1040	7440	4740	102	136000	227000	103000	828	6870	19000	122	937	3230	3660	2460	2900
W36X487	W920X725	725	92300	998	434	68.1	38.1	19.1	92.2	47.6	797	191	3.19	21.4	15000	34900	30000	401	937	6750	4310	101	107000	202000	101000	749	6280	17400	120	930	3180	3610	2430	2870
W36X441	W920X656	656	83900	988	432	62.0	34.5	17.3	86.1	47.6	797	191	3.48	23.6	13400	31300	27000	399	828	6030	3850	99.6	80700	178000	99400	666	5690	15600	119	927	3150	3580	2410	2840
W36X395	W920X588	588	74800	975	427	55.9	31.0	15.5	80.0	46.0	797	191	3.83	26.3	11900	28000	24400	399	728	5330	3410	98.6	59100	154000	98100	587	5100	13900	117	919	3120	3560	2380	2790
W36X361	W920X537	537	68400	965	424	51.1	28.4	14.2	75.2	44.5	797	191	4.16	28.6	10700	25400	22100	396	653	4800	3080	97.8	45400	137000	96800	529	4620	12600	116	914	3100	3530	2350	2770
W36X330	W920X491	491	62500	958	422	47.0	25.9	13.0	71.1	44.5	797	191	4.49	31.4	9700	23100	20300	394	591	4340	2800	97.3	35100	122000	96100	479	4240	11400	115	912	3070	3510	2340	2770
W36X302	W920X449	449	57400	947	424	42.7	24.0	12.0	66.8	42.9	797	191	4.96	33.9	8780	21000	18500	391	541	3950	2560	97.0	26800	111000	95500	433	3850	10400	115	904	3070	3510	2320	2740
W36X282	W920X420	420	53500	942	422	39.9	22.5	11.3	64.0	41.3	797	191	5.29	36.2	8160	19500	17200	391	499	3650	2360	96.5	21900	102000	94800	400	3590	9680	114	902	3050	3480	2310	2720
W36X262	W920X390	390	49800	937	422	36.6	21.3	10.7	60.7	41.3	797	191	5.75	38.2	7450	18000	15900	389	454	3340	2160	95.5	17300	91800	94800	363	3280	8900	113	902	3050	3480	2300	2720
W36X247	W920X368	368	46800	932	419	34.3	20.3	10.2	58.4	41.3	797	191	6.11	40.1	6950	16900	15000	386	420	3110	2020	95.0	14400	84900	94200	338	3060	8340	112	899	3050	3450	2280	2690
W36X231	W920X344	344	44000	927	419	32.0	19.3	9.7	56.1	39.7	797	191	6.54	42.2	6490	15800	14000	384	391	2880	1870	94.2	11900	78400	93500	315	2870	7800	112	894	3050	3450	2270	2690
W36X256	W920X381	381	48600	951	310	43.9	24.4	12.2	63.0	42.9	800	140	3.53	33.8	6990	17000	14700	378	220	2250	1420	67.3	22000	45100	70300	240	2850	8460	82.3	907	2740	3050	2210	2520
W36X232	W920X345	345	43900	943	307	39.9	22.1	11.1	58.9	41.3	800	140	3.86	37.3	6240	15300	13300	376	195	2000	1270	66.5	16500	39700	69700	213	2570	7600	81.5	902	2740	3050	2190	2500
W36X210	W920X313	313	39900	932	310	34.5	21.1	10.6	53.6	41.3	800	140	4.48	39.1	5490	13700	11800	371	171	1750	1110	65.5	11700	34400	69700	186	2230	6750	80.8	897	2720	3020	2170	2480
W36X194	W920X289	289	36800	927	307	32.0	19.4	9.7	51.1	39.7	800	140	4.81	42.4	5040	12600	10900	371	156	1600	1010	65.0	9240	31200	69000	169	2060	6210	80.0	894	2720	3020	2160	2470
W36X182	W920X271	271	34600	922	307	30.0	18.4	9.2	49.0	39.7	800	140	5.12	44.8	4700	11800	10200	368	144	1490	944	64.8	7700	28700	68400	157	1930	5820	79.5	892	2690	3000	2150	2460
W36X170	W920X253	253	32300	919	305	27.9	17.3	8.7	47.0	39.7	800	140	5.47	47.7	4370	10900	9520	368	133	1370	872	64.3	6290	26500	67700	145	1790	5410	79.0	892	2690	3000	2140	2450
W36X160	W920X238	238	30300	914	305	25.9	16.5	8.3	45.0	39.7	800	140	5.88	49.9	4060	10200	8880	366	123	1270	805	63.5	5160	24200	67700	134	1660	5050	78.5	889	2670	2970	2130	2440
W36X150	W920X223	223	28600	912	305	23.9	15.9	8.0	42.9	38.1	800	140	6.37	51.9	3760	9520	8260	363	112	1160	739	62.7	4200	22100	67700	122	1530	4700	77.7	889	2670	2970	2130	2430
W36X135	W920X201	201	25700	904	305	20.1	15.2	7.6	39.1	38.1	800	140	7.56	54.1	3250	8340	7190	356	93.7	978	618	60.5	2910	18300	67100	102	1280	4110	75.9	884	2670	2970	2110	2420
W33X387	W840X576	576	73500	914	411	57.9	32.0	16.0	78.0	46.0	733	140	3.55	23.7	10100	25600	22100	371	674	5110	3280	95.8	61600	123000	88400	524	4700	12700	114	856	2970	3380	2240	2640
W33X354	W840X527	527	67100	904	409	53.1	29.5	14.8	73.2	46.0	733	140	3.85	25.7	9160	23300	20300	368	608	4620	2970	95.0	47900	110000	87100	470	4290	11600	113	851	2950	3350	2220	2620
W33X318	W840X473	473	60500	894	406	48.0	26.4	13.2	68.1	44.5	733	140	4.23	28.7	8120	20800	18200	368	537	4100	2640	94.2	35100	95900	85800	420	3850	10400	112	846	2920	3330	2190	2590
W33X291	W840X433	433	55200	884	404	43.9	24.4	12.2	64.0	42.9	733	140	4.60	31.0	7370	19000	16700	366	483	3700	2390	93.5	27100	85700	84500	376	3510	9390	110	841	2900	3300	2170	2570
W33X263	W840X392	392	49900	876	401	39.9	22.1	11.1	59.9	41.3	733	140	5.03	34.3	6620	17000	15100	363	433	3310	2150	93.0	20300	75500	83900	336	3160	8440	109	836	2870	3280	2150	2570
W33X241	W840X359	359	45900	869	404	35.6	21.1	10.6	55.6	41.3	733	140	5.66	35.9	5910	15400	13600	358	388	2980	1930	91.9	15100	67400	83900	302	2830	7650	109	833	2870	3280	2140	2540
W33X221	W840X329	329	42100	861	401	32.5	19.7	9.9	52.3	41.3	733	140	6.20	38.5	5370	14000	12400	358	350	2690	1740	91.2	11600	60200	83200	269	2560	6930	108	828	2840	3250	2120	2520
W33X201	W840X299	299	38100	856	399	29.2	18.2	9.1	49.3	39.7	733	140	6.85	41.7	4830	12700	11200	356	312	2410	1560	90.4	8660	53200	82600	240	2290	6260	107	828	2820	3230	2110	2510
W33X169	W840X251	251	31900	859	292	31.0	17.0	8.5	48.8	39.7	733	140	4.71	44.7	3870	10300	9000	348	129	1380	883	63.5	7370	22100	60500	137	1770	5100	77.0	828	2530	2820	2010	2300
W33X152	W840X226	226	29000	851	295	26.9	16.1	8.1	44.7	38.1	733	140	5.48	47.2	3400	9160	7980	343	114	1210	773	62.7	5160	19300	60700	120	1550	4560	76.5	823	2520	2820	2000	2290
W33X141	W840X210	210	26800	846	292	24.4	15.4	7.7	42.2	38.1	733	140	6.01	49.6	3100	8420	7340	340	102	1100	700	61.7	4040	17300	60000	107	1390	4150	75.7	820	2500	2790	1980	2280
W33X130	W840X193	193	24700	841	292	21.7	14.7	7.4	39.6	38.1	733	140	6.73	51.7	2790	7650	6650	335	90.7	975	621	60.7	3070	15200	59800	94.9	1230	3770	74.7	818	2500	2790	1970	2270



Palestine Technical University Kadoorie

O.S

		Weight	Area	Depth	Flange		Web		Distance				Compact Section Critiria		Axis X-X				Axis Y-Y				Torsional Properties										
										k_1			$b_f/2t$																			
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b_f	t_f	t_w	$t_{w/2}$	k_{des}		T	WG_i	f	h/t_w	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	J	C_w	W_{no}	S_{w1}	Q_f	Q_w	r_{ts}	h_o	P_A	P_B	P_C	P_D
W33X118	W840X176	176	22400	836	292	18.8	14.0	7.0	36.6	38.1	733	140	7.76	54.5	2460	6800	5880	330	77.8	841	534	58.9	2210	13000	59700	82.0	1070	3360	73.4	818	2480	2770	1960	2260
W30X391	W760X582	582	74200	843	396	62.0	34.5	17.3	82.0	47.6	654	140	3.19	19.7	8620	23800	20500	340	645	5080	3240	93.2	72000	98300	77400	475	4380	11800	111	782	2770	3180	2080	2480
W30X357	W760X531	531	67700	833	394	56.9	31.5	15.8	77.0	46.0	654	140	3.45	21.6	7780	21600	18700	338	579	4570	2930	92.5	55800	87000	76100	429	4000	10700	109	777	2740	3150	2060	2450
W30X326	W760X484	484	61900	823	391	52.1	29.0	14.5	72.1	44.5	654	140	3.75	23.4	6990	19500	17000	335	516	4130	2650	91.4	42900	77100	75500	384	3640	9720	108	772	2740	3120	2040	2430
W30X292	W760X434	434	55500	813	389	47.0	25.9	13.0	67.1	44.5	654	140	4.12	26.2	6200	17400	15200	335	458	3650	2360	90.9	31300	67100	74200	340	3260	8670	107	767	2720	3100	2010	2400
W30X261	W760X389	389	49700	803	386	41.9	23.6	11.8	62.0	42.9	654	140	4.59	28.7	5450	15500	13600	333	399	3210	2080	89.7	22500	57700	73500	297	2880	7690	106	762	2690	3070	1990	2380
W30X235	W760X350	350	44700	795	384	38.1	21.1	10.6	58.2	41.3	654	140	5.02	32.2	4870	13900	12300	330	356	2870	1870	89.2	16800	51000	72300	265	2610	6900	105	757	2670	3050	1970	2360
W30X211	W760X314	314	40200	785	384	33.5	19.7	9.9	53.3	41.3	654	140	5.74	34.5	4290	12300	10900	328	315	2540	1640	88.6	11800	44600	72300	231	2290	6100	104	752	2640	3020	1950	2340
W30X191	W760X284	284	36200	780	381	30.2	18.0	9.0	50.0	39.7	654	140	6.35	37.7	3830	11100	9830	325	280	2260	1470	87.9	8740	39200	71600	206	2050	5490	103	749	2640	3020	1940	2320
W30X173	W760X257	257	32800	772	381	27.2	16.6	8.3	47.0	39.7	654	140	7.04	40.8	3430	9950	8870	323	249	2020	1310	86.9	6490	34600	71000	184	1850	4930	102	744	2620	3000	1930	2310
W30X148	W760X220	220	28100	780	267	30.0	16.5	8.3	46.5	39.7	654	140	4.44	41.6	2780	8190	7140	315	94.5	1110	710	57.9	6040	13300	50000	99.9	1410	4060	70.4	749	2300	2570	1830	2090
W30X132	W760X196	196	25000	770	267	25.4	15.6	7.8	41.9	38.1	654	140	5.27	43.9	2400	7160	6230	310	81.6	957	610	57.2	4050	11300	49600	84.1	1190	3520	69.8	744	2270	2540	1810	2070
W30X124	W760X185	185	23500	767	267	23.6	14.9	7.5	40.1	38.1	654	140	5.65	46.2	2230	6690	5820	307	75.3	885	564	56.6	3330	10400	49500	78.3	1110	3310	69.3	744	2270	2540	1800	2070
W30X116	W760X173	173	22100	762	267	21.6	14.4	7.2	38.1	38.1	654	140	6.17	47.8	2050	6190	5390	305	68.3	806	513	55.6	2680	9370	49400	71.2	1010	3060	68.6	742	2270	2530	1790	2060
W30X108	W760X161	161	20500	757	267	19.3	13.8	6.9	35.8	38.1	654	140	6.89	49.6	1860	5670	4900	302	60.8	719	457	54.6	2080	8300	49200	63.3	900	2790	67.8	737	2260	2520	1780	2050
W30X99	W760X147	147	18700	754	267	17.0	13.2	6.6	33.5	38.1	654	140	7.80	51.9	1660	5110	4410	297	53.3	633	401	53.3	1570	7200	49200	55.8	795	2520	66.5	737	2250	2520	1780	2040
W30X90	W760X134	134	17000	749	264	15.5	11.9	6.0	32.0	36.5	654	140	8.52	57.5	1500	4640	4010	297	47.9	569	362	53.1	1180	6440	48500	49.5	716	2280	66.0	734	2240	2500	1760	2030
W27X539	W690X802	802	103000	826	389	89.9	50.0	25.0	110	46.0	584	140	2.15	12.1	10700	31000	25700	323	878	7160	4540	92.7	206000	119000	71600	624	5600	15500	112	737	2690	3070	2040	2430
W27X368	W690X548	548	70300	772	373	63.0	35.1	17.6	83.1	47.6	584	140	2.96	17.3	6740	20300	17400	310	545	4570	2930	88.4	70800	68500	66500	389	3790	10200	105	709	2540	2920	1920	2290
W27X336	W690X500	500	64000	762	371	57.9	32.0	16.0	78.0	46.0	584	140	3.19	18.9	6080	18500	15900	307	491	4130	2650	87.6	54500	60700	65200	350	3460	9230	104	704	2540	2920	1890	2270
W27X307	W690X457	457	58200	752	366	53.1	29.5	14.8	73.2	46.0	584	140	3.46	20.6	5450	16900	14500	305	437	3720	2390	86.6	42000	53400	63900	310	3110	8320	103	698	2500	2870	1870	2240
W27X281	W690X419	419	53600	744	366	49.0	26.9	13.5	69.1	44.5	584	140	3.72	22.5	4950	15300	13300	305	397	3380	2180	86.1	33100	47800	63500	285	2880	7640	102	696	2500	2870	1850	2220
W27X258	W690X384	384	49100	737	363	45.0	24.9	12.5	65.0	42.9	584	140	4.03	24.4	4500	14000	12200	302	358	3060	1970	85.3	25600	42700	62800	256	2620	6950	101	691	2480	2840	1840	2200
W27X235	W690X350	350	44800	729	361	40.9	23.1	11.6	61.0	42.9	584	140	4.41	26.2	4040	12700	11100	300	320	2750	1770	84.6	19600	37900	62100	229	2380	6290	99.6	688	2460	2820	1820	2180
W27X217	W690X323	323	41200	721	358	38.1	21.1	10.6	58.2	41.3	584	140	4.71	28.7	3710	11700	10300	300	293	2520	1640	84.3	15700	34400	61200	209	2200	5750	98.8	683	2440	2790	1800	2160
W27X194	W690X289	289	36800	714	356	34.0	19.1	9.6	54.1	39.7	584	140	5.24	31.8	3270	10300	9160	297	258	2230	1440	83.6	11300	29800	60500	183	1950	5110	97.8	681	2410	2770	1780	2140
W27X178	W690X265	265	33900	706	358	30.2	18.4	9.2	50.3	39.7	584	140	5.92	32.9	2920	9340	8280	295	231	2000	1290	82.6	8370	26400	60500	164	1740	4620	97.3	676	2410	2770	1770	2130
W27X161	W690X240	240	30700	701	356	27.4	16.8	8.4	47.5	39.7	584	140	6.49	36.1	2630	8440	7510	292	207	1790	1160	82.0	6290	23400	59900	146	1560	4160	96.3	673	2410	2770	1760	2110
W27X146	W690X217	217	27900	696	356	24.8	15.4	7.7	44.7	38.1	584	140	7.16	39.4	2360	7600	6780	292	184	1600	1040	81.3	4700	20700	59700	132	1410	3750	95.5	671	2390	2740	1750	2100
W27X129	W690X192	192	24400	701	254	27.9	15.5	7.8	43.2	38.1	584	140	4.55	39.7	1980	6470	5650	284	76.6	944	603	56.1	4620	8730	42800	75.8	1120	3200	67.6	673	2110	2360	1660	1910
W27X114	W690X170	170	21700	693	257	23.6	14.5	7.3	38.9	38.1	584	140	5.41	42.5	1700	5620	4900	279	66.2	808	516	55.4	3050	7410	43000	64.9	957	2790	67.3	671	2100	2360	1640	1900
W27X102	W690X152	152	19400	688	254	21.1	13.1	6.6	36.3	36.5	584	140	6.03	47.1	1510	5000	4380	279	57.9	711	456	54.6	2200	6440	42400	56.6	847	2470	66.5	668	2090	2340	1630	1880
W27X94	W690X140	140	17800	683	254	18.9	12.4	6.2	34.0	36.5	584	140	6.70	49.5	1360	4560	3980	277	51.6	636	406	53.8	1680	5720	42200	50.8	759	2250	65.8	665	2080	2330	1620	1870
W27X84	W690X125	125	15900	678	254	16.3	11.7	5.9	31.5	36.5	584	140	7.78	52.7	1190	4000	3490	272	44.1	544	347	52.6	1170	4810	42100	43.3	652	1980	64.5	663	2070	2320	1610	1860
W24X370	W610X551	551	70300	711	348	69.1	38.6	19.3	81.8	50.8	508	140	2.51	14.2	5580	18500	15700	282	483	4380	2790	83.1	83700	49900	55900	336	3420	9310	99.6	643	2370	2720	1770	2120
W24X335	W610X498	498	63400	699	343	63.0	35.1	17.6	75.7	47.6	508	140	2.73	15.6	4950	16700	14200	279	429	3900	2490	82.0	63300	43200	54500	294	3080	8290	98.0	635	2320	2670	1740	2080
W24X306	W610X455	455	57900	688	340	57.9	32.0	16.0	70.6	46.0	508	140	2.94	17.1	4450	15100	12900	277	383	3510	2250	81.3	48700	38100	53600	264	2820	7520	96.8	630	2300	2640	1720	2060
W24X279	W610X415	415	52800	678	338	53.1	29.5	14.8	65.8	46.0	508	140	3.18	18.6	4000	13700	11800	274	343	3160	2030	80.5	37700	33600	52800	237	2560	6820	95.5	625	2280	2620	1690	2030
W24X250	W610X372	372	47400	668	335	48.0	26.4	13.2	60.7	44.5	508	140	3.49	20.7	3530	12200	10600	272	301	2800	1800	79.8	27700	29000	52000	209	2290	6060	94.2	620	2260	2590	1670	2010
W24X229	W610X341	341	43400	660	333	43.9	24.4	12.2	56.6	42.9	508	140	3.79	22.5	3180	11100	9640	272	271	2520	1630	79.0	21400	25800	51300	187	2080	5510	93.2	617	2260	2590	1650	1990
W24X207	W610X307	307	39200	653	330	39.9	22.1	11.1	52.6	41.3	508	140	4.14	24.8	2840	9930	8700	269	241	2250	1460	78.2	15900	22600	50600	166	1880	4950	91.9	612	2240	2570	1640	1970
W24X192	W610X285	285	36500	648	330	37.1	20.6	10.3	49.8	41.3	508	140	4.43	26.6	2610	9160	8050	267	221	2060	1340	78.0	12800	20500	50400	154	1750	4590	91.4	610	2240	2570	1630	1960
W24X176	W610X262	262	33400	640	328	34.0	19.1	9.6	46.7	39.7	508	140	4.81	28.7	2360	8370	7370	267	199	1880	1220	77.2	9950	18400	49600	139	1590	4160	90.7	607	2200	2530	1610	1940
W24X162	W610X241	241	30800	635	330	31.0	17.9	9.0	43.7	39.7	508	140	5.31	30.6	2150	7670	6780	264	184	1720	1120	77.5	7700	16800	49900	127	1460	3820	90.7	605	2200	2530	1600	1930
W24X146	W610X217	217	27700	627	328	27.7	16.5	8.3	40.4	39.7	508	140	5.92	33.2	1910	6850	6080	262	163	1530	991	76.5	5580	14700	49100	112	1290	3390	89.7	599	2180	2510	1580	1910
W24X131	W610X195	195	24900	622	328	24.4	15.4	7.7	37.1	38.1	508	140	6.70	35.6	1670	6060	5390	259	142	1340	869	75.4	3950	12600	49000	97.8	1140	3020	88.6	597	2170	2500	1570	1900
W24X117	W610X174	174	22200	617	325	21.6	14.0	7.0	34.3	38.1	508	140	7.53	39.2	1470	5360	4770	257	124	1170	762	74.7	2800	11000	48400	84.9	1000	2670	87.9	597	2160	2480	1560	1880
W24X104	W610X155	155	19800	612	325	19.1	12.7	6.4	31.8	36.5	508	140	8.50	43.1	1290	4740	4230	257	108	1020	667	73.9	1960	9450	48200	74.5	883	2360	86.9	594	2150	2480	1550	1870
W24X103	W610X153	153	19500	622	229	24.9	14.0	7.0	37.6	38.1	508	140	4.59	39.2	1250	4590	4010	254	49.5	680	434	50.5	2940	4460	34100	48.7	798	2280	61.0	597	1880	2110	1470	1700
W24X94	W610X140	140	17900	617	230	22.2	13.1	6.6	35.1	36.5	508	140	5.18	41.9	1120	4160	3640	251	45.4	615	393	50.3	2190	4030	34300	43.7	718	2060	61.0	594	1880	2110	1470	1690
W24X84	W610X125	125	15900	612	229	19.6	11.9	6.0	32.3	36.5	508	140	5.86	45.9	986	3670	3210	249	39.3	534	342	49.5	1540	3440	33900	38.0	629	1820	60.2	592	1870	2100	1450	1680
W24X76	W610X113	113	14500	607	228	17.3	11.2	5.6	30.0	36.5	508	140	6.61	49.0	874	3280	2880	246	34.3	469	302	48.8	1120	2980	33700	33.2	554	1620	59.2	589	1850	2080	1440	1670
W24X68	W610X101	101	13000	602	228	14.9	10.5	5.3	27.7	36.5	508	140	7.66	52.0	762	2900	2520	243	29.3	401	257	47.5	778	2530	33400	28.3	474	1430	58.4	587	1840	2070	1430	1660
W24X62	W610X92	92.0	11700	602	179	15.0	10.9	5.5	27.7	27.0	527	88.9	5.97	50.1	645	2510	2150	234	14.4	257	161	35.1	712	1240	26300	17.6	369	1230	44.4	587	1700	1870	1380	1560
W24X55	W610X82	82.0	10500	599	178	12.8	10.0	5.0	25.7	25.4	527	88.9	6.94	54.6	562	2200	1870	231	12.1	218	136	34.0	491	1040	26100	14.9	316	1080	43.7	587	1690	1870	1380	1550
W21X275	W530X409	409	52800	612	328	55.6	31.0	15.5	85.6	46.0	438	140	2.95	14.2	3200	12300	10500	246	328	3130	2000	78.7	44500	25400	45600	208	2290	6050	93.5	556	2090	2420	1550	1880
W21X248	W530X369	369	47600	602	325	50.5	27.9	14.0	80.5	44.5	438	140	3.22	15.8	2840	11000	9440	244	291	2790	1790	78.2	33600	22100	44800	184	2070	5410	92.2	551	2070	2400	1530	1850
W21X223	W530X332	332	42900	594	323	45.5	25.4	12.7	75.4	42.9	438	140	3.55	17.5	2530	9850	8520	243	256	2460	1580	77.2	24800	19300	44300	162	1850	4840	90.7	549	2050	2380	1510	1830
W21X201	W530X300	300	38300	584	320	41.4	23.1	11.6	54.1	42.9	438	140	3.86	20.6	2210	8690	7550	241	226	2180	1410	76.7	17000	16600	43400	144	1670	4330	90.2	544	2060	2380	1490	1810
W21X182	W530X272	272	34600	577	318	37.6	21.1	10.6	50.3	41.3	438	140	4.22	22.6	1970	7800	6830	239	201	1950	1270	76.2	12800	14600	42800	128	1500	3880	89.2	538	2040	2360	1470	1790
W21X166	W530X248	248	31500	572	315	34.5	19.1	9.6	47.2	39.7	438	140	4.57	25.0	1780	7080	6230	238	181	1770	1150	75.9	9820	13000	42300	115	1370	3520	88.4	536	2030	2340	1460	1770
W21X147	W530X219	219	27900	561	318	29.2	18.3	9.2	41.9	39.7	438	140	5.44	26.1	1510	6110	5390	233	157	1520	985	74.9	6410	11000	42300	97.8	1160	3050	87.9	533	2020	2330	1440	1760
W21X132	W530X196	196	25000	554	315	26.4	16.5	8.3	39.1	39.7	438	140	6.01	28.9	1340	5460	4830	232	139	1350	877	74.4	4700	9670	41500	85.7	1030	2690	87.1	528	2000	2310	1420	1740
W21X122	W530X182	182	23200	551	315	24.4	15.2	7.6	37.1	38.1	438	140	6.45	31.3	1230	5030	4470	231	127	1240	806	74.2	3740	8780	41500	79.5	962	2510	86.4	526	1990	2310	1420	1730
W21X111	W530X165	165	21000	546	312	22.2	14.0	7.0	35.1	38.1	438	140	7.05	34.1	1110	4570	4080	230	114	1120	729	73.7	2840	7840	40900	71.2	869	2260	85.6	523	1980	2290	1400	1720



Palestine Technical University Kadoorie

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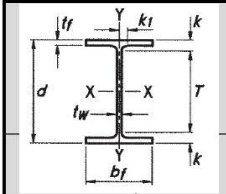
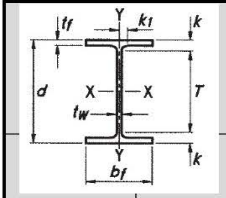
		Weight	Area	Depth	Flange		Web		Distance				Compact Section Critiria		Axis X-X				Axis Y-Y				Torsional Properties										
										k_1			$b_f/2t$																			
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b_f	t_f	t_w	$t_{w/2}$	k_{des}		T	WG_i	f	h/t_w	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	J	C_w	W_{no}	S_{w1}	Q_f	Q_w	r_{ts}	h_o	P_A	P_B	P_C	P_D
W21X101	W530X150	150	19200	544	312	20.3	12.7	6.4	33.0	36.5	438	140	7.68	37.5	1010	4150	3720	229	103	1010	660	73.4	2170	7040	40800	64.9	796	2060	85.1	523	1980	2290	1400	1710
W21X93	W530X138	138	17600	549	214	23.6	14.7	7.4	36.3	23.8	467	140	4.53	32.3	862	3620	3150	221	38.7	569	362	46.7	2510	2670	28100	35.5	618	1790	56.9	526	1690	1900	1310	1520
W21X83	W530X123	123	15700	544	212	21.2	13.1	6.6	34.0	22.2	467	140	5.00	36.4	762	3210	2800	220	33.9	500	320	46.5	1810	2320	27700	31.2	552	1590	56.1	523	1680	1890	1300	1510
W21X73	W530X109	109	13900	538	211	18.8	11.6	5.8	31.5	22.2	467	140	5.60	41.2	666	2820	2470	219	29.4	436	279	46.0	1260	1990	27400	27.1	487	1390	55.6	521	1660	1870	1290	1500
W21X68	W530X101	101	12900	536	210	17.4	10.9	5.5	30.2	22.2	467	140	6.04	43.6	616	2620	2290	218	26.9	400	257	45.7	1020	1820	27200	24.9	449	1290	55.1	518	1660	1870	1280	1490
W21X62	W530X92	92.0	11800	533	209	15.6	10.2	5.1	28.4	20.6	467	140	6.70	46.9	554	2360	2080	217	23.9	356	229	45.0	762	1600	27100	22.1	403	1170	54.6	518	1650	1860	1280	1490
W21X55	W530X82	82.0	10500	528	209	13.3	9.53	4.8	25.9	20.6	467	140	7.87	50.0	475	2060	1800	213	20.1	302	193	43.9	516	1340	26900	18.6	341	1010	53.6	515	1640	1850	1260	1470
W21X48	W530X72	72.0	9100	523	207	10.9	8.89	4.4	23.6	20.6	467	140	9.47	53.6	399	1750	1520	209	16.1	244	156	42.2	334	1060	26500	14.9	277	857	52.1	513	1630	1830	1250	1460
W21X57	W530X85	85.0	10800	536	167	16.5	10.3	5.2	29.2	20.6	467	88.9	5.04	46.3	487	2110	1820	212	12.7	243	153	34.3	737	857	21600	14.9	336	1040	42.7	521	1530	1700	1240	1400
W21X50	W530X74	74.0	9480	528	166	13.6	9.65	4.8	26.4	20.6	467	88.9	6.10	49.4	410	1800	1550	208	10.4	200	125	33.0	475	690	21400	12.0	274	883	41.7	516	1510	1680	1220	1390
W21X44	W530X66	66.0	8390	526	165	11.4	8.89	4.4	24.1	20.6	467	88.9	7.22	53.6	351	1560	1340	205	8.62	167	104	32.0	320	567	21200	10.0	229	767	40.6	516	1510	1670	1220	1380
W18X311	W460X464	464	59100	566	305	69.6	38.6	19.3	82.3	39.7	384	140	2.19	10.4	2900	12400	10200	221	331	3390	2160	74.9	73300	20500	37900	201	2290	6150	89.7	498	1950	2250	1440	1740
W18X283	W460X421	421	53700	556	302	63.5	35.6	17.8	76.2	38.1	384	140	2.38	11.3	2570	11100	9260	219	293	3030	1930	73.9	55800	17700	37200	179	2080	5560	88.1	493	1930	2230	1410	1720
W18X258	W460X384	384	49000	546	300	58.4	32.5	16.3	68.6	36.5	384	140	2.56	12.5	2290	10000	8420	217	261	2720	1750	73.2	42900	15500	36500	160	1900	5010	86.9	488	1910	2210	1390	1690
W18X234	W460X349	349	44300	536	297	53.6	29.5	14.8	63.8	34.9	384	140	2.76	13.8	2040	9000	7640	214	232	2440	1570	72.4	32800	13500	35800	143	1740	4520	85.6	483	1890	2180	1370	1670
W18X211	W460X315	315	40200	526	295	48.5	26.9	13.5	58.7	34.9	384	140	3.02	15.1	1800	8030	6870	212	205	2160	1400	71.6	24400	11700	35200	126	1550	4030	84.3	478	1860	2160	1350	1640
W18X192	W460X286	286	36300	518	292	44.5	24.4	12.2	54.6	33.3	384	140	3.27	16.7	1610	7240	6230	210	183	1950	1260	70.9	18600	10200	34600	112	1410	3640	83.3	475	1850	2140	1330	1620
W18X175	W460X260	260	33200	508	290	40.4	22.6	11.3	50.5	31.8	384	140	3.58	18.0	1440	6520	5640	208	163	1740	1130	70.1	14100	8940	33900	99.1	1260	3240	82.3	467	1820	2110	1310	1600
W18X158	W460X235	235	29900	500	287	36.6	20.6	10.3	46.7	31.8	384	140	3.92	19.8	1270	5830	5080	206	144	1550	1010	69.6	10500	7790	33300	87.4	1130	2900	81.3	465	1800	2090	1290	1570
W18X143	W460X213	213	27100	495	284	33.5	18.5	9.3	43.7	30.2	384	140	4.25	22.0	1140	5280	4620	205	129	1400	909	69.1	7990	6900	32800	78.3	1030	2620	80.5	462	1790	2070	1280	1560
W18X130	W460X193	193	24700	490	284	30.5	17.0	8.5	40.6	30.2	384	140	4.65	23.9	1020	4750	4200	204	116	1260	818	68.6	6040	6100	32700	70.8	937	2390	79.5	460	1780	2070	1260	1550
W18X119	W460X177	177	22600	483	287	26.9	16.6	8.3	37.1	30.2	384	140	5.31	24.5	912	4290	3790	201	105	1130	736	68.3	4410	5450	32700	63.3	829	2150	79.5	455	1780	2060	1250	1540
W18X106	W460X158	158	20100	475	284	23.9	15.0	7.5	34.0	28.6	384	140	5.96	27.2	795	3770	3340	199	91.6	991	646	67.6	3110	4670	32100	54.5	726	1870	78.7	452	1760	2040	1230	1520
W18X97	W460X144	144	18400	472	282	22.1	13.6	6.8	32.3	28.6	384	140	6.41	30.0	728	3460	3080	199	83.7	906	592	67.3	2440	4240	31700	49.5	667	1720	78.2	450	1740	2030	1230	1510
W18X86	W460X128	128	16300	467	282	19.6	12.2	6.1	29.7	27.0	384	140	7.20	33.4	637	3050	2720	197	72.8	793	518	66.8	1710	3650	31500	43.7	590	1510	77.5	447	1740	2020	1220	1500
W18X76	W460X113	113	14400	462	279	17.3	10.8	5.4	27.4	27.0	384	140	8.11	37.8	554	2670	2390	196	63.3	692	452	66.3	1180	3140	31100	37.5	516	1320	76.7	444	1720	2000	1200	1480
W18X71	W460X106	106	13500	470	194	20.6	12.6	6.3	30.7	22.2	394	88.9	4.71	32.4	487	2390	2080	191	25.1	405	259	43.2	1450	1260	21800	21.8	420	1190	52.1	450	1480	1670	1130	1330
W18X65	W460X97	97.0	12300	467	193	19.1	11.4	5.7	29.2	22.2	394	88.9	5.06	35.7	445	2180	1920	190	22.8	369	236	42.9	1140	1140	21600	19.9	387	1090	51.6	450	1470	1670	1130	1320
W18X60	W460X89	89.0	11400	462	192	17.7	10.5	5.3	27.9	20.6	394	88.9	5.44	38.7	410	2020	1770	190	20.9	338	218	42.7	903	1030	21400	18.1	356	993	51.3	444	1460	1650	1120	1310
W18X55	W460X82	82.0	10500	460	191	16.0	9.91	5.0	26.2	20.6	394	88.9	5.98	41.1	370	1840	1610	188	18.7	303	195	42.4	691	921	21200	16.2	321	906	50.8	444	1460	1650	1110	1300
W18X50	W460X74	74.0	9480	457	191	14.5	9.02	4.5	24.7	20.6	394	88.9	6.57	45.2	333	1660	1460	187	16.7	272	175	41.9	516	816	21100	14.5	290	818	50.3	442	1450	1640	1100	1300
W18X46	W460X68	68.0	8710	460	154	15.4	9.14	4.6	25.7	20.6	394	88.9	5.01	44.6	296	1490	1290	184	9.37	192	122	32.8	508	462	17100	10.1	247	736	40.1	444	1340	1500	1070	1230
W18X40	W460X60	60.0	7610	455	153	13.3	8.00	4.0	23.5	20.6	394	88.9	5.73	50.9	255	1280	1120	183	7.95	164	104	32.3	337	387	16800	8.62	213	633	39.6	442	1340	1490	1060	1210
W18X35	W460X52	52.0	6650	450	152	10.8	7.62	3.8	21.0	19.1	394	88.9	7.06	53.5	212	1090	944	179	6.37	132	83.9	31.0	211	306	16700	6.87	172	536	38.4	439	1320	1480	1050	1200
W16X100	W410X149	149	19000	432	264	25.0	14.9	7.5	35.3	28.6	337	140	5.29	24.3	620	3240	2870	180	77.4	900	585	63.8	3220	3200	26800	44.5	634	1610	74.2	406	1610	1870	1130	1390
W16X89	W410X132	132	16900	427	264	22.2	13.3	6.7	32.5	27.0	337	140	5.92	27.0	541	2870	2540	179	67.8	788	515	63.2	2270	2740	26700	39.2	564	1430	73.2	404	1600	1870	1120	1380
W16X77	W410X114	114	14600	419	262	19.3	11.6	5.8	29.5	27.0	337	140	6.77	31.2	462	2460	2200	178	57.4	674	441	62.7	1490	2310	26100	33.0	482	1220	72.4	399	1580	1840	1100	1360
W16X67	W410X100	100	12600	414	259	16.9	10.0	5.0	27.2	25.4	337	140	7.70	35.9	397	2130	1920	177	49.5	582	380	62.5	995	1960	25700	28.1	418	1050	71.6	396	1570	1830	1090	1350
W16X57	W410X85	85.0	10800	417	181	18.2	10.9	5.5	28.4	22.2	346	88.9	4.98	33.0	316	1720	1510	171	17.9	310	198	40.6	924	714	18000	14.8	308	852	48.8	399	1340	1520	1010	1190
W16X50	W410X75	75.0	9480	414	180	16.0	9.65	4.8	26.2	20.6	346	88.9	5.61	37.4	274	1510	1330	170	15.5	267	172	40.4	633	610	17900	12.8	270	747	48.0	399	1330	1510	1010	1190
W16X45	W410X67	67.0	8580	409	179	14.4	8.76	4.4	24.6	20.6	346	88.9	6.23	41.1	244	1350	1190	169	13.7	238	153	39.9	462	534	17600	11.3	241	665	47.5	394	1320	1500	996	1180
W16X40	W410X60	60.0	7610	406	178	12.8	7.75	3.9	23.0	20.6	346	88.9	6.93	46.5	216	1200	1060	168	12.0	208	135	39.9	330	465	17500	9.99	215	590	47.2	394	1310	1490	991	1170
W16X36	W410X53	53.0	6840	404	178	10.9	7.49	3.7	21.1	19.1	346	88.9	8.12	48.1	186	1050	926	165	10.2	177	115	38.6	227	392	17400	8.45	182	518	46.5	394	1310	1490	986	1160
W16X31	W410X46.1	46.1	5890	404	140	11.2	6.99	3.5	21.4	19.1	346	88.9	6.28	51.6	156	885	773	163	5.16	115	73.6	29.7	192	198	13800	5.41	147	436	36.1	394	1200	1340	947	1090
W16X26	W410X38.8	38.8	4950	399	140	8.76	6.35	3.2	19.0	19.1	346	88.9	7.97	56.8	125	724	629	159	3.99	89.8	57.2	28.4	109	152	13600	4.16	114	354	35.1	391	1190	1330	937	1080
W14X873	W360X1299	1300	166000	599	478	140	100	50.0	155	65.1	286	216	1.71	2.89	7530	33300	25100	213	2570	16700	10800	124	945000	136000	54800	916	6060	16600	153	460	2420	2900	1680	2150
W14X808	W360X1202	1200	154000	579	472	130	95.0	47.5	145	63.5	286	216	1.82	3.04	6620	30000	22800	208	2310	15200	9780	123	766000	117000	53000	816	5510	15000	151	450	2370	2840	1630	2100
W14X730	W360X1086	1090	139000	569	455	125	78.0	39.0	140	69.9	254	191	1.82	3.71	5950	27200	21000	208	1960	13400	8640	119	604000	97200	50500	716	5210	13600	144	444	2310	2770	1590	2050
W14X665	W360X990	990	126000	549	450	115	71.9	36.0	130	66.7	254	191	1.95	4.03	5160	24300	18800	203	1740	12000	7730	117	466000	81900	48800	629	4700	12100	141	434	2270	2720	1550	2000
W14X605	W360X900	900	115000	531	442	106	66.0	33.0	121	63.5	254	191	2.09	4.39	4500	21600	17000	198	1530	10700	6930	116	362000	69300	47000	549	4230	10800	138	424	2230	2670	1500	1950
W14X550	W360X818	818	105000	513	437	97.0	60.5	30.3	112	60.3	254	191	2.25	4.79	3930	19300	15300	194	1350	9550	6190	114	278000	58800	45400	483	3800	9590	136	417	2180	2620	1460	1900
W14X500	W360X744	744	94800	498	432	88.9	55.6	27.8	104	58.7	254	191	2.43	5.21	3420	17200	13700	190	1200	8550	5560	113	214000	50200	44100	425	3420	8550	134	409	2160	2590	1430	1860
W14X455	W360X677	677	86500	483	427	81.5	51.3	25.7	96.8	57.2	254	191	2.62	5.66	2990	15300	12400	186	1070	7670	4980	111	164000	43000	42800	372	3060	7640	131	401	2110	2540	1390	1820
W14X426	W360X634	634	80600	475	424	77.2	47.8	23.9	92.2	54.0	254	191	2.75	6.08	2750	14200	11600	184	982	7110	4640	110	138000	38700	42200	345	2880	7130	130	399	2100	2520	1370	1800
W14X398	W360X592	592	75500	465	422	72.4	45.0	22.5	87.4	54.0	254	191	2.92	6.44	2500	13100	10700	182	903	6590	4290	109	114000	34600	41400	316	2670	6570	128	394	2080	2500	1350	1770
W14X370	W360X551	551	70300	455	419	67.6	42.2	21.1	82.8	52.4	254	191	3.10	6.89	2260	12100	9950	180	828	6060	3950	108	92400	31200	40600	287	2460	6010	127	386	2060	2480	1330	1750
W14X342	W360X509	509	65200	445	417	62.7	39.1	19.6	78.0	50.8	254	191	3.31	7.41	2040	11000	9140	177	753	5540	3620	108	74100	27700	39700	260	2260	5490	126	381	2030	2450	1310	1720
W14X311	W360X463	463	59000	434	411	57.4	35.8	17.9	72.6	49.2	254	191	3.59	8.09	1800	9880	8290	175	670	4980	3260	107	56600	23900	38800	229	2030	4920	124	376	2010	2420	1280	1690
W14X283	W360X421	421	53700	424	409	52.6	32.8	16.4	67.8	47.6	254	191	3.89	8.84	1600	8880	7520	172	599	4490	2930	106	43300	20900	38000	204	1840	4410	122	371	1980	2390	1260	1670
W14X257	W360X382	382	48800	417	406	48.0	30.0	15.0	63.2	46.0	254	191	4.23	9.71	1420	7980	6800	170	537	4030	2640	105	32900	18200	37400	183	1670	3980	121	368	1970	2370	1240	1650
W14X233	W360X347	347	44200	406	404	43.7	27.2	13.6	58.9	44.5	254	191	4.62	10.7	1250	7140	6150	168	479	3620	2380	104	24800	15800	36600	161	1490	3540	119	363	1940	2350	1220	1620
W14X211	W360X314	314	40000	399	401	39.6	24.9	12.5	54.9	42.9	254	191	5.06	11.6	1110	6390	5540	166	429	3240	2130	103	18600	13800	36100	143	1340	3180	118	358	1930	2330	1200	1600
W14X193	W360X287	287	36600	394	399	36.6	22.6	11.3	51.8	42.9	254	191	5.45	12.8	999	5820	5080	165	388	2950	1950	103	14500	12300	35600	130	1230	2900	117	358	1910	2310	1190	1580
W14X176	W360X262	262	33400	386	399	33.3	21.1	10.6	48.5	41.3	254	191	5.97	13.7	891	5240	4600	163	349	2670	1750	102	11000	10900	35200	117	1110	2610	116	353	1900	2300	1170	1570
W14X159	W360X237	237	30100	381	396	30.2	18.9	9.5	45.5	39.7	254	191	6.54	15.3	791	4700	4160	162	311	2390	1580	102	8200	9560	34800	104	1000	2340	115	351	1890	2280	1160	1550



Palestine Technical University Kadoorie

O.S

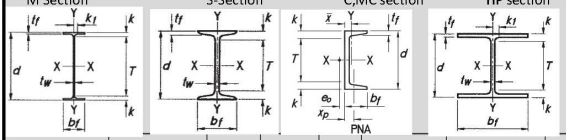
		Weight	Area	Depth	Flange		Web		Distance				Compact Section Critiria		Axis X-X				Axis Y-Y				Torsional Properties										
										k_1			$b_f/2t$																				
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b_f	t_f	t_w	$t_{w/2}$	k_{des}		T	WG_i	f	h/t_w	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	J	C_w	W_{no}	S_{w1}	Q_f	Q_w	r_{ts}	h_o	P_A	P_B	P_C	P_D
W14X145	W360X216	216	27500	376	394	27.7	17.3	8.7	42.9	39.7	254	191	7.11	16.8	712	4260	3800	161	282	2180	1430	101	6330	8510	34300	93.2	908	2110	114	348	1870	2270	1150	1540
W14X132	W360X196	196	25000	373	373	26.2	16.4	8.2	41.4	39.7	254	140	7.15	17.7	637	3830	3420	160	228	1850	1220	95.5	5120	6850	32400	79.1	811	1900	107	348	1810	2180	1120	1490
W14X120	W360X179	179	22800	368	373	23.9	15.0	7.5	39.1	38.1	254	140	7.80	19.3	574	3470	3110	158	206	1670	1110	95.0	3900	6100	32100	71.6	737	1720	107	345	1800	2170	1110	1480
W14X109	W360X162	162	20600	363	371	21.8	13.3	6.7	37.1	38.1	254	140	8.49	21.7	516	3150	2830	158	186	1520	1000	94.7	2960	5420	31700	64.1	667	1550	106	340	1790	2160	1100	1470
W14X99	W360X147	147	18800	361	371	19.8	12.3	6.2	35.1	36.5	254	140	9.34	23.5	462	2830	2570	157	167	1370	905	94.2	2240	4830	31600	57.9	605	1410	105	340	1780	2150	1090	1460
W14X90	W360X134	134	17100	356	368	18.0	11.2	5.6	33.3	36.5	254	140	10.2	25.9	416	2570	2340	156	151	1240	818	94.0	1690	4300	31100	51.6	544	1260	104	338	1770	2140	1080	1450
W14X82	W360X122	122	15500	363	257	21.7	13.0	6.5	36.8	27.0	276	140	5.92	22.4	367	2280	2020	154	61.6	734	480	63.0	2110	1800	21900	30.5	452	1120	72.4	340	1450	1700	983	1240
W14X74	W360X110	110	14100	361	257	19.9	11.4	5.7	35.1	27.0	276	140	6.41	25.4	331	2060	1840	153	55.8	664	436	63.0	1610	1610	21900	27.9	416	1020	71.9	340	1440	1700	978	1230
W14X68	W360X101	101	12900	356	254	18.3	10.5	5.3	33.3	27.0	276	140	6.97	27.5	301	1880	1690	153	50.4	605	397	62.5	1250	1440	21400	24.9	375	918	71.1	338	1430	1680	965	1220
W14X61	W360X91	91.0	11500	353	254	16.4	9.53	4.8	31.5	25.4	276	140	7.75	30.4	266	1670	1510	152	44.5	537	352	62.2	912	1260	21400	22.2	338	823	70.6	338	1420	1680	960	1210
W14X53	W360X79	79.0	10100	353	205	16.8	9.40	4.7	31.8	25.4	276	140	6.11	30.9	225	1430	1270	150	24.0	361	234	48.8	807	682	17200	14.8	275	696	56.4	335	1280	1480	912	1120
W14X48	W360X72	72.0	9100	351	204	15.1	8.64	4.3	30.2	25.4	276	140	6.75	33.6	201	1280	1150	149	21.4	321	210	48.5	604	602	17100	13.2	247	628	55.9	335	1270	1470	904	1110
W14X43	W360X64	64.0	8130	348	203	13.5	7.75	3.9	28.4	25.4	276	140	7.54	37.4	178	1140	1030	148	18.8	283	185	48.0	437	524	17000	11.6	220	557	55.4	335	1260	1470	899	1100
W14X38	W360X57.8	57.8	7230	358	172	13.1	7.87	3.9	23.2	20.6	295	88.9	6.57	39.6	160	1010	895	149	11.1	198	129	39.4	332	330	14800	8.32	185	497	46.2	345	1200	1370	889	1060
W14X34	W360X51	51.0	6450	356	171	11.6	7.24	3.6	21.7	19.1	295	88.9	7.41	43.1	142	895	796	148	9.70	174	113	38.9	237	287	14800	7.33	164	441	45.7	343	1190	1360	884	1050
W14X30	W360X44	44.0	5710	351	171	9.78	6.86	3.4	19.9	19.1	295	88.9	8.74	45.4	121	775	688	146	8.16	147	95.4	37.8	158	238	14600	6.08	137	379	45.0	340	1180	1350	871	1040
W14X26	W360X39	39.0	4960	353	128	10.7	6.48	3.2	20.8	19.1	295	69.9	5.98	48.1	102	659	578	144	3.71	90.8	58.2	27.4	149	109	11000	3.73	111	323	33.0	343	1060	1190	833	963
W14X22	W360X32.9	32.9	4190	348	127	8.51	5.84	2.9	18.7	19.1	295	69.9	7.46	53.3	82.8	544	475	141	2.91	71.9	45.9	26.4	86.6	84.3	10800	2.91	87.5	264	32.3	340	1050	1180	823	950
W12X336	W310X500	500	63800	427	340	75.2	45.2	22.6	90.2	42.9	232	140	2.26	5.47	1690	9880	7910	163	495	4490	2900	88.1	101000	15300	29900	191	1950	4930	105	351	1760	2100	1190	1530
W12X305	W310X454	454	57700	414	335	68.8	41.4	20.7	83.8	41.3	232	140	2.45	5.98	1480	8800	7130	160	437	4000	2610	86.9	77000	13100	28900	167	1750	4380	103	345	1720	2060	1160	1500
W12X279	W310X415	415	52800	404	333	62.7	38.9	19.5	78.0	41.3	232	140	2.66	6.35	1290	7880	6440	156	390	3610	2340	85.9	59500	11300	28400	148	1570	3930	102	340	1700	2030	1140	1470
W12X252	W310X375	375	47800	391	330	57.2	35.6	17.8	72.4	38.1	232	140	2.89	6.96	1130	7010	5780	154	345	3210	2080	84.8	45000	9610	27500	130	1410	3490	99.8	335	1680	2010	1110	1440
W12X230	W310X342	342	43700	384	328	52.6	32.8	16.4	67.8	38.1	232	140	3.11	7.56	1010	6330	5260	152	309	2900	1880	84.1	34900	8380	27100	117	1280	3160	98.3	330	1660	1990	1090	1420
W12X210	W310X313	313	39900	373	325	48.3	30.0	15.0	63.5	36.5	232	140	3.37	8.23	891	5700	4790	150	276	2610	1700	83.3	26900	7300	26500	104	1160	2830	96.8	325	1640	1960	1070	1400
W12X190	W310X283	283	36100	366	323	44.2	26.9	13.5	59.2	34.9	232	140	3.65	9.16	787	5100	4310	148	245	2340	1520	82.6	20300	6340	25900	92.4	1050	2560	95.8	323	1620	1940	1050	1380
W12X170	W310X253	253	32300	356	320	39.6	24.4	12.2	54.9	33.3	232	140	4.03	10.1	687	4510	3850	146	215	2060	1350	81.8	14800	5400	25300	80.3	926	2230	94.0	315	1600	1920	1030	1350
W12X152	W310X226	226	28800	348	318	35.6	22.1	11.1	50.8	31.8	232	140	4.46	11.2	595	3980	3420	144	189	1820	1190	81.0	10700	4620	24800	69.9	821	1980	93.0	312	1580	1890	1010	1330
W12X136	W310X202	202	25700	340	315	31.8	20.1	10.1	47.0	31.8	232	140	4.96	12.3	516	3510	3050	142	166	1610	1050	80.3	7700	3950	24300	60.8	723	1740	91.7	310	1560	1870	996	1310
W12X120	W310X179	179	22700	333	312	28.2	18.0	9.0	43.2	30.2	232	140	5.57	13.7	445	3050	2670	140	144	1400	918	79.5	5370	3330	23800	52.4	633	1510	90.4	305	1540	1850	978	1290
W12X106	W310X158	158	20100	328	310	25.1	15.5	7.8	40.4	28.6	232	140	6.17	15.9	388	2690	2380	139	125	1230	808	79.0	3800	2870	23400	45.8	560	1330	89.4	302	1530	1840	965	1280
W12X96	W310X143	143	18200	323	310	22.9	14.0	7.0	38.1	28.6	232	140	6.76	17.7	347	2410	2150	138	112	1110	728	78.5	2850	2530	23200	41.1	506	1200	88.6	300	1520	1830	955	1260
W12X87	W310X129	129	16500	318	307	20.6	13.1	6.6	35.8	27.0	232	140	7.48	18.9	308	2160	1930	137	100	990	651	78.0	2120	2220	22800	36.0	449	1060	87.9	297	1500	1810	942	1250
W12X79	W310X117	117	15000	315	307	18.7	11.9	6.0	33.8	27.0	232	140	8.22	20.7	276	1950	1750	136	89.9	890	587	77.5	1600	1970	22800	32.7	408	965	87.1	297	1500	1810	937	1240
W12X72	W310X107	107	13600	312	305	17.0	10.9	5.5	32.3	27.0	232	140	8.99	22.6	248	1770	1600	135	81.2	806	531	77.2	1220	1760	22500	29.2	369	872	86.6	295	1490	1800	930	1230
W12X65	W310X97	97.0	12300	307	305	15.4	9.91	5.0	30.5	25.4	232	140	9.92	24.9	222	1590	1440	134	72.4	723	477	76.7	907	1550	22300	26.1	331	778	85.9	292	1480	1790	919	1220
W12X58	W310X86	86.0	11000	310	254	16.3	9.14	4.6	31.5	23.8	235	140	7.82	27.0	198	1420	1280	134	44.5	533	351	63.8	874	959	18600	19.2	292	695	71.4	295	1340	1590	874	1130
W12X53	W310X79	79.0	10100	307	254	14.6	8.76	4.4	30.0	23.8	235	140	8.69	28.1	177	1280	1160	133	39.9	477	315	63.0	658	849	18600	17.2	262	628	70.9	292	1330	1590	869	1120
W12X50	W310X74	74.0	9420	310	205	16.3	9.40	4.7	29.0	23.8	235	140	6.31	26.8	163	1180	1050	132	23.4	349	228	49.8	712	505	15100	12.6	234	580	57.2	295	1190	1400	826	1030
W12X45	W310X67	67.0	8450	307	204	14.6	8.51	4.3	27.4	23.8	235	140	7.00	29.6	145	1050	946	131	20.8	311	203	49.5	524	443	15000	11.2	210	519	56.6	292	1190	1390	820	1020
W12X40	W310X60	60.0	7550	302	203	13.1	7.49	3.7	25.9	22.2	235	140	7.77	33.6	128	934	844	130	18.4	275	180	49.3	377	387	14700	9.78	185	456	56.1	290	1180	1380	808	1010
W12X35	W310X52	52.0	6650	318	167	13.2	7.62	3.8	20.8	19.1	257	88.9	6.31	36.2	119	839	747	133	10.2	188	122	39.1	308	236	12600	6.99	160	416	45.5	305	1100	1270	803	968
W12X30	W310X44.5	44.5	5670	312	166	11.2	6.60	3.3	18.8	19.1	257	88.9	7.41	41.8	99.1	706	633	132	8.45	157	102	38.6	190	193	12500	5.79	134	349	45.0	302	1090	1260	790	955
W12X26	W310X38.7	38.7	4940	310	165	9.65	5.84	2.9	17.3	19.1	257	88.9	8.54	47.2	84.9	610	547	131	7.20	134	87.5	38.4	125	163	12400	4.91	115	300	44.4	300	1090	1250	785	950
W12X22	W310X32.7	32.7	4180	312	102	10.8	6.60	3.3	18.4	15.9	264	57.2	4.74	41.8	64.9	480	416	125	1.94	60.0	37.9	21.5	122	44.0	7740	2.13	78.0	236	26.4	302	907	1010	726	831
W12X19	W310X28.3	28.3	3590	310	102	8.89	5.97	3.0	16.5	14.3	264	57.2	5.72	46.2	54.1	405	349	122	1.57	48.8	30.8	20.9	74.9	35.2	7680	1.74	64.1	200	25.9	302	902	1000	721	823
W12X16	W310X23.8	23.8	3040	305	101	6.73	5.59	2.8	14.4	14.3	264	57.2	7.53	49.4	42.9	329	280	119	1.17	37.0	23.1	19.6	42.9	26.0	7550	1.29	48.0	161	25.0	297	889	991	711	813
W12X14	W310X21	21.0	2680	302	101	5.72	5.08	2.5	13.3	14.3	264	57.2	8.82	54.3	36.9	285	244	117	0.982	31.1	19.5	19.1	29.3	21.6	7480	1.08	40.6	139	24.4	297	884	986	706	805
W10X112	W250X167	167	21200	290	264	31.8	19.2	9.6	44.5	25.4	191	140	4.17	10.4	298	2410	2060	118	98.2	1130	742	68.1	6290	1620	17000	35.7	501	1200	78.2	259	1310	1570	843	1110
W10X100	W250X149	149	18900	282	262	28.4	17.3	8.7	41.1	25.4	191	140	4.62	11.6	259	2130	1840	117	86.2	1000	655	67.3	4540	1380	16600	30.8	441	1050	77.2	254	1290	1550	826	1090
W10X88	W250X131	131	16800	274	262	25.1	15.4	7.7	37.8	23.8	191	140	5.18	13.0	222	1850	1610	115	74.5	870	570	66.8	3130	1160	16300	26.8	385	916	75.9	249	1280	1540	810	1070
W10X77	W250X115	115	14600	269	259	22.1	13.5	6.8	34.8	22.2	191	140	5.86	14.8	189	1600	1410	114	64.1	752	493	66.0	2130	975	16000	22.9	336	793	74.9	247	1270	1530	798	1060
W10X68	W250X101	101	12800	264	257	19.6	11.9	6.0	32.3	22.2	191	140	6.58	16.7	164	1400	1240	113	55.8	657	433	65.8	1480	832	15700	19.7	293	690	74.2	245	1250	1510	785	1040
W10X60	W250X89	89.0	11400	259	257	17.3	10.7	5.4	30.0	20.6	191	140	7.41	18.7	142	1220	1090	112	48.3	574	377	65.3	1030	709	15500	17.2	257	603	73.2	242	1240	1500	775	1030
W10X54	W250X80	80.0	10200	257	254	15.6	9.40	4.7	28.4	20.6	191	140	8.15	21.2	126	1090	983	111	42.9	513	338	65.0	758	623	15300	15.2	229	537	72.4	241	1230	1490	767	1020
W10X49	W250X73	73.0	9290	254	254	14.2	8.64	4.3	26.9	20.6	191	140	8.93	23.1	113	990	895	110	38.9	464	306	64.5	579	556	15200	13.7	210	488	72.1	240	1230	1490	762	1020
W10X45	W250X67	67.0	8580	257	204	15.7	8.89	4.4	28.4	20.6	191	140	6.47	22.5	103	900	805	110	22.2	333	218	51.1	629	322	12300	9.82	185	442	57.7	241	1080	1290	716	919
W10X39	W250X58	58.0	7420	252	203	13.5	8.00	4.0	26.2	20.6	191	140	7.53	25.0	87.0	767	690	108	18.7	282	185	50.3	406	266	12100	8.28	156	377	56.9	239	1070	1280	706	909
W10X33	W250X49.1	49.1	6260	247	202	11.0	7.37	3.7	23.7	19.1	191	140	9.15	27.1	71.2	636	574	106	15.2	229	151	49.3	243	212	11900	6.66	127	310	55.9	236	1060	1270	696	899
W10X30	W250X44.8	44.8	5700	267	148	13.0	7.62	3.8	20.6	17.5	210	69.9	5.70	29.5	70.8	600	531	111	6.95	145	94.2	34.8	259	111	9350	4.45	115	298	40.6	254	947	1090	681	828
W10X26	W250X38.5	38.5	4910	262	147	11.2	6.60	3.3	18.8	17.5	210	69.9	6.56	34.0	59.9	513	457	110	5.87	123	80.1	34.5	167	92.6	9160	3.76	98.0	252	40.1	250	935	1080	671	815
W10X22	W250X32.7	32.7	4190	259	146	9.14	6.10	3.1	16.8	15.9	210	69.9	7.99	36.9	49.1	426	380	108	4.75	100	65.1	33.8	99.5	73.8	9100	3.05	80.0	211	39.4	250	930	1080	665	810
W10X19	W250X28.4	28.4	3630	259	102	10.0	6.35	3.2	17.7	15.9	213	57.2	5.09	35.4	40.1	354	308	105	1.79	54.9	35.1	22.2	97.0	27.9	6350	1.63	59.8	174	26.9	249	800	902	620	721
W10X17	W250X25.3	25.3	3220	257	102	8.38	6.10	3.1	16.0	14.3	213	57.2	6.08	36.9	34.1	306	265	103	1.48	45.9	29.2	21.5	64.9	22.9	6320	1.35	49.8	150	26.4	248	792	894	615	716
W10X15	W250X22.3	22.3	2850	254	102	6.86	5.84	2.9	14.5	14.3	213	57.2	7.41	38.5	28.7	262	226	100	1.20	37.7	23.8	20.6	43.3	18.3	6280	1.09	40.6	128	25.7	247	787	889	610	711
W10X12	W250X17.9	17.9	2280	251	101	5.33	4.83	2.4	13.0	14.3	213	57.2	9.43	46.6	22.4	206	179	99.1	0.907	28.5	18.0	19.9	22.8	13.7	6170	0.828	31.3	101	25.0	245	780	881	602	704



Palestine Technical University Kadoorie

O.S

		Weight	Area	Depth	Flange		Web		Distance				Compact Section Critiria		Axis X-X				Axis Y-Y				Torsional Properties										
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b_f	t_f	t_w	$t_{w/2}$	k_{des}	k_1	T	WG_i	$b_f/2t_f$	h/t_w	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	J	C_w	W_{no}	S_{w1}	Q_f	Q_w	r_{ts}	h_o	P_A	P_B	P_C	P_D
W8X67	W200X100	100	12700	229	210	23.7	14.5	7.3	33.8	23.8	146	140	4.43	11.1	113	1150	990	94.5	36.9	536	351	53.8	2100	387	10800	13.4	238	570	61.7	205	1040	1250	668	879
W8X58	W200X86	86.0	11000	222	209	20.6	13.0	6.5	30.5	22.2	146	140	5.07	12.4	94.9	980	852	92.7	31.3	457	300	53.3	1390	317	10500	11.3	203	487	60.7	202	1030	1240	653	861
W8X48	W200X71	71.0	9100	216	206	17.4	10.2	5.1	27.4	20.6	146	140	5.92	15.9	76.6	803	708	91.7	25.3	375	246	52.8	816	250	10200	9.16	169	397	59.7	199	1010	1220	638	843
W8X40	W200X59	59.0	7550	210	205	14.2	9.14	4.6	24.2	20.6	146	140	7.21	17.6	60.8	652	582	89.7	20.4	303	200	51.8	466	195	10000	7.28	136	323	58.7	195	998	1200	625	828
W8X35	W200X52	52.0	6650	206	204	12.6	7.87	3.9	22.6	20.6	146	140	8.10	20.5	52.9	569	511	89.2	17.7	264	174	51.6	320	166	9870	6.33	119	280	57.9	194	991	1190	617	820
W8X31	W200X46.1	46.1	5890	203	203	11.0	7.24	3.6	21.1	19.1	146	140	9.19	22.3	45.8	498	451	88.1	15.4	231	152	51.3	223	142	9740	5.49	104	246	57.4	192	986	1190	610	813
W8X28	W200X41.7	41.7	5320	205	166	11.8	7.24	3.6	21.8	15.9	156	102	7.03	22.3	40.8	446	398	87.6	9.03	166	109	41.1	224	83.8	8000	3.93	90.5	220	46.7	193	876	1040	577	742
W8X24	W200X35.9	35.9	4570	201	165	10.2	6.22	3.1	20.2	14.3	156	102	8.12	25.9	34.4	379	342	86.9	7.62	140	92.3	40.9	144	69.6	7870	3.31	77.2	185	46.0	191	869	1030	569	734
W8X21	W200X31.3	31.3	3970	210	134	10.2	6.35	3.2	17.8	14.3	165	69.9	6.59	27.5	31.3	334	298	88.6	4.07	93.2	60.8	32.0	117	40.8	6710	2.28	64.9	166	37.1	200	795	930	554	688
W8X18	W200X26.6	26.6	3390	207	133	8.38	5.84	2.9	16.0	14.3	165	69.9	7.95	29.9	25.8	279	249	87.1	3.32	76.4	49.8	31.2	71.6	32.8	6650	1.85	52.9	137	36.3	198	787	922	546	681
W8X15	W200X22.5	22.5	2860	206	102	8.00	6.22	3.1	15.6	14.3	165	57.2	6.37	28.1	20.0	223	193	83.6	1.42	43.8	27.9	22.3	57.0	13.9	5040	1.03	37.9	109	26.9	198	693	795	513	615
W8X13	W200X19.3	19.3	2480	203	102	6.48	5.84	2.9	14.1	14.3	165	57.2	7.84	29.9	16.5	187	162	81.5	1.14	35.2	22.5	21.4	36.3	11.0	4990	0.820	30.5	90.9	26.2	197	686	787	508	610
W8X10	W200X15	15.0	1910	200	100	5.21	4.32	2.2	12.8	12.7	165	57.2	9.61	40.5	12.8	145	128	81.8	0.870	27.2	17.4	21.4	17.7	8.30	4880	0.637	24.3	70.3	25.7	195	681	780	500	602
W6X25	W150X37.1	37.1	4740	162	154	11.6	8.13	4.1	17.9	14.3	114	88.9	6.68	15.5	22.2	310	274	68.6	7.12	140	91.9	38.6	192	40.3	5810	2.59	63.6	154	44.2	151	759	914	478	632
W6X20	W150X29.8	29.8	3790	157	153	9.27	6.60	3.3	15.6	14.3	114	88.9	8.25	19.1	17.2	246	220	67.6	5.54	110	72.3	38.1	99.9	30.3	5660	2.01	50.3	121	43.2	148	749	902	467	620
W6X15	W150X22.5	22.5	2860	152	152	6.60	5.84	2.9	13.0	14.3	114	88.9	11.5	21.6	12.1	177	159	65.0	3.88	77.8	51.0	36.8	42.0	20.5	5540	1.39	35.2	87.2	42.2	146	739	892	457	610
W6X16	W150X24	24.0	3060	160	102	10.3	6.60	3.3	16.6	14.3	114	57.2	4.98	19.1	13.4	192	167	66.0	1.84	55.6	36.1	24.6	92.8	10.3	3820	1.01	36.7	94.6	28.7	149	602	704	422	523
W6X12	W150X18	18.0	2290	153	102	7.11	5.84	2.9	13.5	14.3	114	57.2	7.14	21.6	9.20	136	120	63.2	1.24	38.0	24.6	23.3	37.6	6.63	3710	0.670	24.9	66.9	27.4	146	589	691	409	511
W6X9	W150X13.5	13.5	1730	150	100	5.46	4.32	2.2	11.8	12.7	114	57.2	9.16	29.2	6.83	102	91.1	62.7	0.916	28.2	18.2	23.0	16.9	4.75	3610	0.495	18.8	49.8	26.9	145	582	681	399	500
W6X8.5	W150X13	13.0	1630	148	100	4.95	4.32	2.2	11.3	12.7	114	57.2	10.1	29.1	6.20	93.9	83.6	61.7	0.828	25.6	16.6	22.6	13.9	4.24	3580	0.441	16.9	45.6	26.7	143	579	678	396	495
W5X19	W130X28.1	28.1	3590	131	128	10.9	6.86	3.4	18.5	11.1	88.9	69.9	5.85	13.7	10.9	190	167	55.1	3.80	90.6	59.5	32.5	132	13.7	3830	1.34	39.7	93.9	36.8	120	620	747	389	518
W5X16	W130X23.8	23.8	3040	127	127	9.14	6.10	3.1	16.8	11.1	88.9	69.9	6.94	15.4	8.91	158	140	54.1	3.13	75.1	49.2	32.0	79.9	10.9	3750	1.09	32.6	77.7	36.3	118	610	737	381	508
W4X13	W100X19.3	19.3	2470	106	103	8.76	7.11	3.6	15.1	12.7	66.7	57.2	5.88	10.6	4.70	103	89.5	43.7	1.61	47.9	31.1	25.4	62.9	3.76	2500	0.566	20.3	50.6	29.5	97.0	495	599	315	417

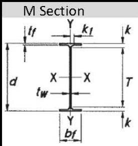


Palestine Technical University Kadoorie

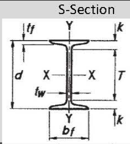
O.S

		Weight	Area	Depth	Flange		Web		Distance				Compact Section Critiria		Axis X-X				Axis Y-Y						Torsional Properties		Shear CTR															
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b_f	t_f	t_w	$t_{w/2}$	k_{des}	k1	T	WG_i	h/t_w	bf/2tf	b/t	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	x	xp	J	C_w	e_o	W_{no}	S_{w1}	S_{w2}	S_{w3}	Q_f	Q_w	r_o	H	r_{ts}	h_o	P_A	P_B	P_C	P_D
M12.5X12.4	M318X18.5	18.5	2340	318	95.3	5.79	3.94	1.97	14.3	9.53	289	–	74.8	7.75	–	37.2	270	233	126	0.837	27.5	17.5	18.9	–	–	20.5	20.4	–	7420	1.02	–	–	41.1	132	–	–	23.7	312	902	998	732	826
M12.5X11.6	M318X17.3	17.3	2190	318	88.9	5.36	3.94	1.97	14.3	9.53	289	–	74.8	6.01	–	33.4	246	210	123	0.629	22.5	14.2	16.9	–	–	17.2	15.3	–	6970	0.828	–	–	35.6	121	–	–	21.6	312	884	973	724	813
M12X11.8	M310X17.6	17.6	2240	305	78.0	5.72	4.50	2.25	14.3	9.53	276	–	62.5	11.9	–	30.1	234	197	116	0.454	18.8	11.6	14.2	–	–	20.8	10.1	–	5830	0.649	–	–	31.5	115	–	–	18.6	300	823	902	688	765
M12X10.8	M310X16.1	16.1	2050	305	78.0	5.33	4.06	2.03	14.3	9.53	276	–	69.2	6.62	–	27.8	216	182	116	0.420	17.5	10.8	14.3	–	–	16.4	9.40	–	5840	0.608	–	–	29.5	106	–	–	18.6	300	823	902	686	765
M12X10	M310X14.9	14.9	1900	305	82.6	4.57	3.78	1.89	12.7	9.53	279	–	74.7	8.65	–	25.7	200	169	116	0.429	16.7	10.4	15.0	–	–	12.2	9.64	–	6190	0.583	–	–	27.0	98.0	–	–	19.5	300	838	919	691	772
M10X9	M250X13.4	13.4	1710	254	68.3	5.23	3.99	2.00	14.3	9.53	225	–	58.4	8.65	–	16.2	151	128	97.3	0.280	13.3	8.19	12.8	–	–	13.1	4.32	–	4250	0.379	–	–	21.0	74.1	–	–	16.5	249	696	765	577	645
M10X8	M250X11.9	11.9	1530	253	68.3	4.62	3.58	1.79	14.3	9.53	225	–	65.0	8.65	–	14.4	134	114	97.0	0.247	11.7	7.23	12.7	–	–	9.32	3.81	–	4240	0.333	–	–	18.5	65.7	–	–	16.4	248	693	762	574	643
M10X7.5	M250X11.2	11.2	1430	254	68.3	4.39	3.30	1.65	11.1	7.94	232	–	71.0	3.69	–	13.7	127	108	97.8	0.234	11.0	6.85	12.8	–	–	7.78	3.63	–	4260	0.320	–	–	17.9	62.3	–	–	16.4	249	696	765	577	645
M8X6.5	M200X9.7	9.70	1240	203	57.9	4.80	3.43	1.72	14.3	9.53	175	–	53.8	3.61	–	7.70	89.0	75.9	79.0	0.157	8.67	5.39	11.3	–	–	7.66	1.54	–	2870	0.200	–	–	12.9	43.6	–	–	14.3	198	566	622	465	523
M8X6.2	M200X9.2	9.20	1170	203	57.9	4.50	3.28	1.64	11.1	6.35	181	–	56.5	4.16	–	7.33	84.4	71.9	78.7	0.147	8.11	5.05	11.2	–	–	6.49	1.44	–	2880	0.187	–	–	12.1	41.3	–	–	14.2	199	566	625	465	523
M6X4.4	M150X6.6	6.60	832	152	46.7	4.34	2.90	1.45	9.53	6.35	133	–	47.0	4.09	–	3.01	45.9	39.5	59.9	0.0749	5.10	3.20	9.45	–	–	4.12	0.411	–	1730	0.087	–	–	7.05	22.5	–	–	11.9	148	432	480	351	399
M6X3.7	M150X5.5	5.50	703	150	50.8	3.28	2.49	1.25	7.95	6.35	133	–	54.7	4.02	–	2.48	38.2	32.9	59.4	0.0720	4.47	2.83	10.1	–	–	2.21	0.389	–	1870	0.079	–	–	5.90	18.7	–	–	12.7	147	442	493	351	401
M5X18.9	M130X28.1	28.1	3590	127	127	10.6	8.03	4.02	20.7	12.7	85.7	69.9	11.2	3.91	–	10.1	182	158	52.8	3.62	87.3	57.0	31.8	–	–	130	12.3	–	3700	1.24	–	–	36.5	89.3	–	–	36.6	116	605	732	381	508
M4X6	M100X8.9	8.90	1130	96.5	96.5	4.06	3.30	1.65	12.7	9.53	69.9	–	22.0	3.84	–	1.96	44.9	40.6	41.7	0.612	19.3	12.6	23.2	–	–	7.66	1.31	–	2230	0.221	–	–	8.69	21.3	–	–	26.4	92.5	462	559	290	386
M4X4.08	M100X6.1	6.10	819	102	57.2	4.32	2.92	1.46	14.3	9.53	73.0	–	26.4	4.02	–	1.47	32.8	29.0	42.4	0.135	7.42	4.74	12.9	–	–	6.12	0.320	–	1390	0.087	–	–	5.74	15.2	–	–	15.1	97.3	356	411	262	318
M4X3.45	M100X5.1	5.10	652	102	57.2	3.30	2.34	1.17	12.7	9.53	76.2	–	33.9	3.93	–	1.19	26.2	23.4	42.7	0.103	5.67	3.62	12.6	–	–	3.41	0.250	–	1410	0.067	–	–	4.42	12.0	–	–	14.7	98.3	356	414	262	318
M4X3.2	M100X4.8	4.80	652	102	57.2	3.30	2.34	1.17	12.7	9.53	76.2	–	33.9	4.52	–	1.19	26.2	23.4	42.7	0.103	5.67	3.62	12.6	–	–	3.41	0.250	–	1410	0.067	–	–	4.42	12.0	–	–	14.7	98.3	356	414	262	318
M3X2.9	M100X4.3	4.30	590	76.2	57.2	3.30	2.29	1.15	12.7	9.53	50.8	–	23.6	4.34	–	0.624	18.4	16.4	32.5	0.103	5.64	3.62	13.2	–	–	3.29	0.137	–	1040	0.05	–	–	3.28	8.19	–	–	15.2	72.9	305	363	210	267
S24X121	S610X180	180	22900	622	204	27.7	20.3	10.15	50.8	–	521	102	25.9	4.53	–	1320	5010	4230	240	34.5	595	338	38.9	–	–	5330	3060	–	30400	42.9	–	–	757	2510	–	–	49.3	594	1740	1950	1450	1650
S24X106	S610X158	158	20100	622	200	27.7	15.7	7.85	50.8	–	521	102	33.4	4.42	–	1220	4570	3930	247	32.0	547	320	39.9	–	–	4200	2820	–	29700	41.1	–	–	757	2280	–	–	49.0	594	1740	1940	1450	1640
S24X100	S610X149	149	18900	610	184	22.1	18.9	9.45	44.5	–	521	102	27.8	4.16	–	991	3920	3260	229	19.7	393	215	32.3	–	–	3160	1710	–	27000	27.5	–	–	536	1950	–	–	42.2	587	1660	1850	1400	1590
S24X90	S610X134	134	17100	610	181	22.1	15.9	7.95	44.5	–	521	102	33.1	3.98	–	937	3640	3060	234	18.6	367	205	33.0	–	–	2520	1610	–	26600	26.6	–	–	536	1800	–	–	42.2	587	1660	18400	1400	1580
S24X80	S610X119	119	15200	610	178	22.1	12.7	6.35	44.5	–	521	102	41.4	4.67	–	874	3340	2870	241	17.5	341	197	34.0	–	–	2040	1510	–	26100	25.6	–	–	536	1660	–	–	42.4	587	1660	1830	1400	1570
S20X96	S510X143	143	18200	516	183	23.4	20.3	10.15	44.5	–	425	102	21.1	4.60	–	695	3240	2700	196	20.8	408	228	33.8	–	–	3500	1260	–	22500	24.1	–	–	467	1610	–	–	43.4	493	1470	1650	1210	1400
S20X86	S510X128	128	16300	516	179	23.4	16.8	8.40	44.5	–	425	102	25.6	5.03	–	653	3000	2540	200	19.4	379	216	34.5	–	–	2770	1170	–	22100	23.1	–	–	467	1490	–	–	43.4	493	1470	1650	1210	1390
S20X75	S510X112	112	14200	508	162	20.2	16.1	8.05	41.4	–	425	88.9	26.6	4.75	–	533	2490	2100	194	12.3	274	152	29.5	–	–	1910	730	–	19800	16.2	–	–	359	1240	–	–	37.8	488	1410	1570	1180	1340
S20X66	S510X98.2	98.2	12500	508	159	20.2	12.8	6.40	41.4	–	425	88.9	33.5	4.91	–	495	2280	1950	199	11.4	252	144	30.2	–	–	1490	679	–	19400	15.5	–	–	359	1130	–	–	37.8	488	1400	1560	1180	1330
S18X70	S460X104	104	13200	457	159	17.6	18.1	9.05	38.1	–	381	88.9	21.5	4.71	–	384	2030	1690	170	9.99	234	126	27.4	–	–	1710	483	–	17400	12.2	–	–	272	1010	–	–	36.1	439	1290	1450	1070	1230
S18X54.7	S460X81.4	81.4	10300	457	152	17.6	11.7	5.85	38.1	–	381	88.9	33.2	4.97	–	333	1700	1460	180	8.62	198	113	29.0	–	–	970	416	–	16800	11.2	–	–	272	849	–	–	36.1	439	1290	1440	1070	1220
S15X50	S380X74	74.0	9480	381	143	15.8	14.0	7.00	35.1	–	311	88.9	22.7	4.64	–	202	1260	1060	146	6.49	164	90.6	26.2	–	–	882	216	–	13100	7.41	–	–	187	626	–	–	33.5	366	1110	1250	904	1050
S15X42.9	S380X64	64.0	8130	381	140	15.8	10.4	5.20	35.1	–	311	88.9	30.4	4.61	–	186	1130	973	151	5.95	149	85.0	26.9	–	–	641	198	–	12800	7.03	–	–	187	562	–	–	33.3	366	1100	1240	902	1040
S12X50	S310X74	74.0	9480	305	139	16.7	17.4	8.70	36.6	–	232	76.2	13.7	4.77	–	126	998	829	116	6.49	169	93.2	26.2	–	–	1150	135	–	10000	5.83	–	–	147	497	–	–	33.5	287	937	1080	749	889
S12X40.8	S310X60.7	60.7	7680	305	133	16.7	11.7	5.85	36.6	–	232	76.2	20.6	4.54	–	112	864	739	121	5.62	145	84.1	26.9	–	–	703	116	–	9610	5.37	–	–	147	429	–	–	33.0	287	930	1060	744	876
S12X35	S310X52	52.0	6580	305	129	13.8	10.9	5.45	30.2	–	244	76.2	23.1	4.83	–	94.9	731	624	120	4.10	111	63.6	24.9	–	–	437	86.7	–	9350	4.16	–	–	119	364	–	–	31.0	292	925	1050	739	869
S12X31.8	S310X47.3	47.3	6010	305	127	13.8	8.89	4.45	30.2	–	244	76.2	28.3	4.48	–	90.3	685	593	123	3.88	106	61.1	25.4	–	–	365	82.2	–	9230	4.05	–	–	119	341	–	–	30.7	292	922	1050	737	864
S10X35	S250X52	52.0	6650	254	125	12.5	15.1	7.55	28.7	–	197	69.9	13.4	8.01	–	61.2	580	482	96.0	3.45	101	55.1	22.8	–	–	537	50.5	–	7610	2.97	–	–	83.2	288	–	–	29.5	242	805	932	632	759
S10X25.4	S250X37.8	37.8	4810	254	118	12.5	7.90	3.95	28.7	–	197	69.9	25.6	9.00	–	51.2	464	403	103	2.80	81.8	47.4	24.1	–	–	251	40.8	–	7160	2.64	–	–	83.2	229	–	–	29.0	242	800	917	627	744
S8X23	S200X34	34.0	4360	203	106	10.8	11.2	5.60	25.4	–	152	57.2	14.1	10.3	–	26.9	315	265	78.5	1.78	60.1	33.6	20.2	–	–	229	16.4	–	5100	1.46	–	–	49.2	156	–	–	25.4	193	660	765	513	617
S8X18.4	S200X27.4	27.4	3480	203	102	10.8	6.88	3.44	25.4	–	152	57.2	22.9	11.9	–	23.9	270	236	82.8	1.54	52.1	30.2	21.0	–	–	139	14.2	–	4890	1.34	–	–	49.2	134	–	–	25.0	193	655	757	508	610
S6X17.25	S150X25.7	25.7	3260	152	90.7	9.12	11.8	5.90	20.7	–	111	–	9.67	7.21	–	10.9	172	143	57.9	0.953	38.5	21.0	17.1	–	–	154	4.89	–	3250	0.670	–	–	25.7	85.7	–	–	21.8	143	518	610	396	485
S6X12.5	S150X18.6	18.6	2360	152	84.6	9.12	5.89	2.95	20.7	–	111	–	19.4	8.05	–	9.16	138	120	62.2	0.749	30.5	17.7	17.8	–	–	69.5	3.84	–	3030	0.587	–	–	25.7	68.5	–	–	21.1	143	513	597	389	475
S5X10	S130X15	15.0	1890	127	76.2	8.28	5.44	2.72	19.1	–	88.9	–	16.8	9.14	–	5.12	92.8	80.3	52.1	0.495	22.5	13.0	16.2	–	–	47.5	1.75	–	2260	0.358	–	–	17.4	45.7	–	–	19.2	119	439	516	330	406
S4X9.5	S100X14.1	14.1	1800	102	71.1	7.44	8.28	4.14	19.1	–	63.5	–	8.33	10.6	–	2.81	66.2	55.4	39.6	0.369	18.5	10.4	14.3	–	–	49.9	0.819	–	1670	0.221	–	–	11.0	32.6	–	–	17.7	94.2	368	439	274	345
S4X7.7	S100X11.5	11.5	1460	102	67.6	7.44	4.90	2.45	19.1	–	63.5	–	14.1	12.6	–	2.52	57.4	49.7	41.7	0.311	15.9	9.21	14.6	–	–	30.5	0.690	–	1590	0.200	–	–	11.0	28.3	–	–	17.2	94.2	366	434	272	338
S3X7.5	S75X11.2	11.2	1420	76.2	63.8	6.60	8.86	4.43	15.9	–	44.5	–	5.38	14.5	–	1.21	38.5	31.8	29.2	0.241	13.5	7.55	13.0	–	–	37.3	0.290	–	1110	0.117	–	–	6.31	19.0	–	–	16.2	69.6	300	363	216	279
S3X5.7	S75X8.5	8.50	1070	76.2	59.2	6.60	4.32	2.16	15.9	–	44.5	–	11.0	9.25	–	1.04	31.8	27.4	31.2	0.186	10.7	6.28	13.2	–	–	18.0	0.225	–	1030	0.101	–	–	6.31	15.7	–	–	15.4	69.6	295	356	212	272
HP18X204	HP460X304	304	38800	465	460	28.7	28.7	14.35	58.7	44.3	343	191	12.1	10.5	–	1450	7100	6230	193	466	3130	2030	109	–	–	12300	22200	–	50100	165	–	–	1350	3470	–	–	128	437	2200	2670	1390	1850
HP18X181	HP460X269	269	34300	457	457	25.4	25.4	12.70	55.4	42.7	343	191	13.6	11.9	–	1260	6210	5510	191	405	2740	1770	109	–	–	8620	18900	–	49400	143	–	–	1180	3030	–	–	126	432	2180	2640	1370	1830
HP18X157	HP460X234	234	29800	451	455	22.1	22.1	11.05	52.1	41.0	343	191	15.6	14.4	–	1070	5360	4750	189	347	2340	1530	108	–	–	5790	15800	–	48600	122	–	–	1020	2610	–	–	125	427	2170	2620	1350	1810
HP18X135	HP460X202	202	25700	445	452	19.1	19.1	9.55	49.0	39.5	343	191	18.2	8.54	–	916	4600	4110	189	294	2000	1300	107	–	–	3800	13300	–	48100	104	–	–	877	2230	–	–	123	427	2160	2620	1340	1790
HP16X183	HP410X272	272	34900	419	414	28.7	28.7	14.35	58.7	44.3	298	140	10.5	8.97	–	1040	5720	4980	173	340	2560	1640	98.8	–	–	11200	13000	–	40100	119	–	–	1070	2770	–	–	116	391	1970	2390	1250	1670
HP16X162	HP410X242	242	30800	414	409	25.4	25.4	12.70	55.4	42.7	298	140	11.9	10.0	–	912	5010	4410	172	290	2200	1420	97.0	–	–	7830	11000	–	39700	103	–	–	947	2440	–	–	113	389	1950	2360	1240	1650
HP16X141	HP410X211	211	26900	406	406	22.2	22.2	11.10	52.3	41.1	298	140	13.6	11.8	–	778	4330	3830	170	249	1900	1230	96.3	–	–	5370	9210	–	39000	88.2	–	–	819	2100	–	–	112	384	1940	2340	1220	1630
HP16X121	HP410X181	181	23100	401	404	19.1	19.1	9.55	49.0	39.5	298	140	15.9	13.8	–	662	3700	3290	169	210	1600	1040	95.3	–	–	3480	7650	–	38600	74.1	–	–	701	1790	–	–	110	384	1930	2330	1210	1610
HP16X101	HP410X151	151	19300	394	401	15.9	15.9	7.95	46.0	37.9	298	140	19.0	9.03	–	541	3060	2750	167	171	1310	855	94.2	–	–	2110	6120	–	37900	60.4	–	–	578	1460	–	–	108	378	1910	2310	1190	1590
HP16X88	HP410X131	131	16600	389	399	13.7	13.7	6.85	43.7	36.9	298	140	22.0	12.0	–	462	2640	2380	167	145	1120	729	93.5	–	–	1440	5100	–	37400	51.2	–	–	495	1250	–	–	107	376	1890	2290	1180	1570
HP14X117	HP360X174	174	22200	361	378	20.4	20.4	10.20	38.1	41.3	286	140	14.2	9.16	–	508	3180	2820	151	184	1500	975	91.2	–	–	3340	5340	–	32200	62.0	–	–	623	1580	–	–	105	340	105	2170	1100	1480
HP14X102	HP360X152	152	19400	356	376	17.9	17.9	8.95	35.1	39.7	286	140	16.2	–	–	437	2770	2460	150	158	1290	842	90.4	–	–	2240	4510	–	31700	53.3	–	–	541	1370	–	–	104	338	104	2150	1090	1460
HP14X89	HP360X132	132	16800	351	373	15.6	15.6	7.80	33.3	38.1	286	140	18.5	–	–	376	2390	2150	149	136	1110	726	89.7	–	–	1490	3810	–	31300	45.8	–	–	469	1180	–	–	103	335	103	2140	1070	1450
HP14X73	HP360X108	108	13800	345	371	12.8	12.8	6.40	30.2	36.5	286	140	22.6	–	–	303	1930	1750	148	109	895	587	88.6	–	–	837	3010	–	30800	36.6	–	–	382	955	–	–	102	333	102	2120	1060	1430
HP12X89	HP310X132	132	16700	315	312	18.3	18.3	9.15	33.5	30.2	241	140	13.6	–	–	288	2080	1840	131	93.2	918	597	74.7	–	–	2050	2050	–	23200	33.1	–	–	398	1020	–	–	86.9	297	1500	1820	942	1250
HP12X84	HP310X125	125	15900	312	312	17.4	17.4	8.70	35.1	30.2	241	140	14.2	–	–	271	1970	1740	131	88.7	872	567	74.7	–	–	1760	1920	–	23000	31.2	–	–	379	967	–	–	86.6	295	86.6	1810	937	1250
HP12X74	HP310X110	110	14100	307	310	15.5	15.4	7.70	33.3	28.6	241	140	16.1	–	–	237	1720	1540	130	77.4	764	498	74.2	–	–	1240	1650	–	22700	27.3	–	–	334	850	–	–	85.9	292	85.9	1800	925	1230
HP12X63	HP310X93	93.0	11900	302	307	13.1	13.1	6.55	31.8	27.0	241	140	18.9	–	–	196	1450	1300	129	63.7	634	415	73.2	–	–	762	1340	–	22300	22.5	–	–	280	710	–	–	84.6	290	84.6	1780	912	1220
HP12X53	HP310X79	79.0	10000	300	305	11.0	11.0	5.50	28.7	27.0	241	140	22.3	–	–	164	1210	1090	128	52.9	528	346	72.6	–	–	466	1100	–	22100	18.6	–	–	234	593	–	–	83.6	290	83.6	1770	904	1210
HP10X57	HP250X85	85.0	10800	254	259	14.4	14.4	7.20	31.8	23.8	191	140	13.9	–	–	122	1090	964	106	42.0	497	323	62.2	–	–	820	602	–	15500	14.5	–	–	211	537	–	–	72.1	240	1230	1490	767	1030
HP10X42	HP250X62	62.0	8000	246	257	10.7	10.5	5.25	28.7	20.6	191	140	18.9	–	–	87.4	791	711	105	29.8	357	233	61.2	–	–	338	414	–	15100	10.3	–	–	154	388	–	–	70.4	236	1220	1480	749	1010
HP8X36	HP200X53	53.0	6840	204	207	11.3	11.3	5.65	28.7	22.2	146	140	14.2	–	–	49.5	551	488	85.3	16.8	249	162	49.5	–	–	320	155	–	9940	5.83	–	–	107	272	–	–	57.4	193	988	1200	615	823
C15X50	C380X74	74.0	9480	381	94.5	16.5	18.2	9.10	36.6	–	308	57.2	17.7	–	5.72	168	1120	882	133	4.58	133	61.8	22.0	20.3	12.4	1100	132	14.8	11200	5.70	4.83	2.44	229	559	139	0.937	29.7	366	1010	1100	856	950
C15X40	C380X60	60.0	7610	381	89.4	16.5	13.2	6.60	36.6	–	308	50.8	24.4	–	5.42	145	942	762	138	3.82	112	54.7	22.4	19.8	9.96	604	110	19.5	10300	4.87	3.83	1.93	229	469	145	0.927	29.2	366	996	1080	851	940
C15X33.9	C380X50.4	50.4	6450	381	86.4	16.5	10.2	5.10	36.6	–	308	50.8	31.8	–	5.23	131	832	688	142	3.36	101	50.6	22.9	20.0	8.43	420	96.1	22.8	9740	4.33	3.14	1.59	229	413	151	0.920	28.7	366	986	1070	848	935
C12X30	C310X45	45.0	5680	305	80.5	12.7	13.0	6.50	28.7	–	248	44.5	20.1	–	6.33	67.4	554	442	109	2.13	70.8	33.6	19.4	17.1	9.32	358	40.5	15.7	7550	2.50	2.04	1.02	126	275	115	0.919	25.7	292	820	902	691	770

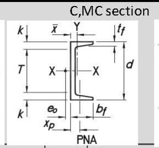
M Section



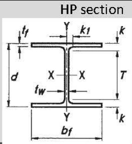
S-Section



C,MC section



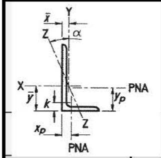
HP section



Palestine Technical University Kadoorie

O.S

		Weight	Area	Depth	Flange		Web		Distance				Compact Section Critiria			Axis X-X				Axis Y-Y						Torsional Properties		Shear CTR														
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b_f	t_f	t_w	$t_{w/2}$	k_{des}	k1	T	WG_i	h/t_w	bf/2tf	b/t	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	x	xp	J	C_w	e_o	W_{no}	S_{w1}	S_{w2}	S_{w3}	Q_f	Q_w	r_o	H	r_{ts}	h_o	P_A	P_B	P_C	P_D
C12X25	C310X37	37.0	4740	305	77.5	12.7	9.83	4.92	28.7	–	248	44.5	26.5	–	6.09	59.9	482	393	113	1.85	62.6	30.6	19.8	17.1	7.77	224	34.9	18.9	7100	2.20	1.67	0.828	126	239	120	0.909	25.4	292	813	889	688	765
C12X20.7	C310X30.8	30.8	3920	305	74.7	12.7	7.16	3.58	28.7	–	248	44.5	36.3	–	5.87	53.7	420	352	117	1.61	56.9	28.2	20.2	17.7	6.43	154	30.1	22.1	6650	1.91	1.30	0.658	126	208	125	0.899	25.0	292	805	879	683	759
C10X30	C250X45	45.0	5680	254	77.0	11.1	17.1	8.55	25.4	–	203	44.5	12.6	–	6.95	42.9	438	339	87.1	1.64	61.9	27.0	17.0	16.5	11.2	508	21.3	9.35	6140	1.71	1.50	0.753	80.5	218	92.2	0.921	23.5	243	711	787	584	663
C10X25	C250X37	37.0	4740	254	73.4	11.1	13.4	6.70	25.4	–	203	44.5	16.1	–	6.63	37.9	379	298	89.4	1.39	52.1	24.1	17.1	15.7	9.32	286	18.3	12.5	5770	1.52	1.27	0.624	80.8	188	95.5	0.912	23.1	243	701	775	582	655
C10X20	C250X30	30.0	3790	254	69.6	11.1	9.63	4.82	25.4	–	203	38.1	22.3	–	6.28	32.8	318	259	93.2	1.17	44.2	21.5	17.5	15.4	7.47	153	15.3	16.2	5320	1.29	0.995	0.491	80.6	158	99.8	0.900	22.7	243	691	759	577	648
C10X15.3	C250X22.8	22.8	2890	254	66.0	11.1	6.10	3.05	25.4	–	203	38.1	35.3	–	5.96	28.0	261	221	98.6	0.945	38.3	18.8	18.1	16.1	5.69	87.0	12.2	20.2	4830	1.06	0.695	0.350	80.6	130	106	0.884	22.0	243	681	747	574	640
C9X20	C230X30	30.0	3790	229	67.3	10.5	11.4	5.70	25.4	–	178	38.1	16.8	–	6.42	25.3	277	221	81.8	1.00	40.3	19.2	16.3	14.8	8.28	178	10.6	13.1	4670	1.05	0.849	0.420	63.9	138	87.9	0.899	21.6	218	632	701	526	592
C9X15	C230X22	22.0	2840	229	63.2	10.5	7.24	3.62	25.4	–	178	34.9	26.4	–	6.03	21.2	223	185	86.4	0.795	33.4	16.6	16.7	14.9	6.22	86.6	8.32	17.3	4220	0.857	0.608	0.293	64.1	111	93.7	0.882	21.0	218	622	686	521	584
C9X13.4	C230X19.9	19.9	2540	229	61.7	10.5	5.92	2.96	25.4	–	178	34.9	32.2	–	5.88	19.9	206	174	88.4	0.728	31.8	15.6	16.9	15.3	5.56	69.9	7.57	18.8	4030	0.783	0.508	0.260	63.9	102	96.3	0.875	20.7	218	617	678	518	582
C8X18.75	C200X27.9	27.9	3550	203	64.3	9.91	12.4	6.20	23.8	–	156	38.1	13.5	–	6.49	18.3	228	180	71.6	0.820	35.6	16.6	15.2	14.4	8.74	181	6.74	10.9	3950	0.803	0.662	0.328	49.7	114	77.5	0.894	20.3	193	574	638	470	536
C8X13.75	C200X20.5	20.5	2600	203	59.4	9.91	7.70	3.85	23.8	–	156	34.9	21.8	–	6.00	15.0	180	148	75.9	0.633	28.3	13.9	15.6	14.1	6.40	77.4	5.16	15.3	3520	0.633	0.458	0.232	49.5	89.3	82.8	0.874	19.7	193	561	620	465	526
C8X11.5	C200X17.1	17.1	2170	203	57.4	9.91	5.59	2.80	23.8	–	156	34.9	30.0	–	5.79	13.5	158	133	79.0	0.545	25.7	12.7	15.8	14.5	5.36	54.1	4.43	17.7	3300	0.558	0.356	0.179	49.7	78.5	86.6	0.862	19.2	193	556	612	465	521
C7X14.75	C180X22	22.0	2790	178	58.4	9.30	10.6	5.30	22.2	–	133	31.8	13.5	–	6.28	11.3	160	127	63.8	0.570	26.7	12.7	14.2	13.5	7.85	111	3.52	11.2	3080	0.524	0.416	0.207	37.4	79.5	69.9	0.875	18.7	168	508	566	414	472
C7X12.25	C180X18.2	18.2	2320	178	55.6	9.30	7.98	3.99	22.2	–	133	31.8	18.0	–	5.98	10.1	139	113	65.8	0.483	23.3	11.4	14.4	13.3	6.53	67.0	3.01	13.7	2860	0.454	0.330	0.169	37.4	68.8	72.6	0.862	18.3	168	500	556	411	467
C7X9.8	C180X14.6	14.6	1850	178	53.1	9.30	5.33	2.67	22.2	–	133	31.8	26.9	–	5.71	8.82	118	99.5	69.1	0.398	20.6	10.1	14.7	13.7	5.21	41.5	2.46	16.4	2640	0.384	0.241	0.120	37.4	58.5	76.7	0.845	17.7	168	493	546	409	462
C6X13	C150X19.3	19.3	2460	152	54.9	8.71	11.1	5.55	20.7	–	111	34.9	11.0	–	6.30	7.20	119	94.7	54.1	0.437	22.1	10.5	13.3	13.1	8.08	98.6	1.93	9.65	2450	0.364	0.292	0.144	27.4	59.6	60.2	0.858	17.5	144	447	503	361	414
C6X10.5	C150X15.6	15.6	1980	152	51.6	8.71	7.98	3.99	20.7	–	111	28.6	15.3	–	5.92	6.29	101	82.6	56.4	0.358	18.7	9.19	13.4	12.7	6.50	53.3	1.59	12.3	2250	0.306	0.222	0.114	27.2	50.5	63.0	0.842	17.0	144	439	490	356	409
C6X8.2	C150X12.2	12.2	1540	152	48.8	8.71	5.08	2.54	20.7	–	111	28.6	24.1	–	5.60	5.45	84.6	71.3	59.4	0.286	16.2	8.00	13.6	13.0	5.05	30.6	1.26	15.2	2050	0.254	0.155	0.078	27.4	42.1	67.3	0.824	16.3	144	432	480	353	401
C5X9	C130X13	13.0	1700	127	48.0	8.13	8.26	4.13	19.1	–	88.9	28.6	11.7	–	5.91	3.70	71.9	58.3	46.7	0.260	15.0	7.28	12.3	12.1	6.71	45.4	0.787	10.8	1720	0.202	0.148	0.071	19.2	35.9	53.3	0.815	15.6	119	378	427	302	351
C5X6.7	C130X10.4	10.4	1270	127	44.5	8.13	4.83	2.42	19.1	–	88.9	–	20.0	–	5.47	3.11	58.2	49.0	49.5	0.196	12.4	6.10	12.4	12.3	5.46	22.9	0.596	14.0	1520	0.158	0.0932	#####	19.2	28.8	57.4	0.790	14.8	119	368	414	300	343
C4X7.25	C100X10.8	10.8	1370	102	43.7	7.52	8.15	4.08	19.1	–	63.5	25.4	8.90	–	5.81	1.91	46.5	37.5	37.3	0.177	11.4	5.52	11.4	11.7	6.76	34.0	0.333	9.80	1210	0.117	0.0828	#####	12.6	23.1	44.5	0.767	14.3	94.0	315	361	247	290
C4X6.25	C100X9.3	9.30	1190	102	41.9	7.52	6.27	3.14	19.1	–	63.5	–	11.5	–	5.57	1.74	41.8	34.4	38.4	0.156	10.2	5.11	11.5	11.5	5.92	22.8	0.287	11.4	1140	0.104	0.0670	0.034	12.6	20.7	46.0	0.75	13.9	94.0	297	338	245	287
C4X5.4	C100X8	8.00	1020	102	40.1	7.52	4.67	2.34	19.1	–	63.5	–	15.5	–	5.34	1.60	37.5	31.5	39.6	0.130	9.26	4.54	11.3	11.6	5.87	16.6	0.247	12.7	1070	0.091	0.0512	0.027	12.5	18.5	47.8	0.742	13.4	94.0	307	345	243	284
C4X4.5	C100X6.7	6.70	865	102	38.6	7.52	3.18	1.59	19.1	–	63.5	–	22.8	–	5.14	1.47	33.6	29.0	41.1	0.110	8.11	4.15	11.3	12.0	7.75	12.7	0.209	14.1	1000	0.08	0.0368	0.018	12.5	16.6	50.0	0.73	12.9	94.0	292	330	242	279
C3X6	C75X8.9	8.90	1140	76.2	40.6	6.93	9.04	4.52	17.5	–	41.3	–	5.38	–	5.86	0.862	28.5	22.6	27.7	0.125	8.90	4.31	10.5	11.6	7.47	30.2	0.124	8.18	813	0.066	0.0466	0.022	7.59	14.2	35.6	0.690	13.2	69.3	257	297	193	234
C3X5	C75X7.4	7.40	948	76.2	38.1	6.93	6.55	3.28	17.5	–	41.3	–	7.42	–	5.49	0.770	24.9	20.2	28.4	0.100	7.60	3.74	10.3	11.2	6.22	17.7	0.102	9.96	748	0.056	0.0350	0.017	7.57	12.3	36.8	0.673	12.6	69.3	250	290	191	229
C3X4.1	C75X6.1	6.10	774	76.2	35.8	6.93	4.32	2.16	17.5	–	41.3	–	11.3	–	5.16	0.687	21.6	18.0	30.0	0.0795	6.54	3.21	10.1	11.1	6.65	11.2	0.0824	11.7	684	0.0470	0.0239	0.012	7.57	10.7	38.9	0.655	11.9	69.3	244	279	188	224
C3X3.5	C75X5.2	5.20	703	76.2	34.8	6.93	3.35	1.68	17.5	–	41.3	–	14.5	–	5.02	0.653	20.3	17.0	30.5	0.0703	5.96	2.98	10.0	11.3	7.52	9.41	0.0741	12.5	658	0.043	0.0188	0.01	7.55	9.98	39.9	0.646	11.6	69.3	241	277	187	222
MC18X58	MC460X86	86.0	11000	457	107	15.9	17.8	8.90	36.6	–	384	63.5	22.1	–	6.72	281	1560	1230	160	7.33	175	86.5	25.9	21.9	12.0	1170	287	17.7	15700	8.91	7.66	3.86	311	777	167	0.944	34.3	442	1190	1300	1020	1130
MC18X51.9	MC460X77.2	77.2	9870	457	104	15.9	15.2	7.60	36.6	–	384	63.5	25.8	–	6.56	261	1430	1140	163	6.78	162	82.3	26.2	21.8	10.8	845	265	20.2	15200	8.28	6.91	3.46	311	710	170	0.939	34.3	442	1190	1290	1020	1120
MC18X45.8	MC460X68.2	68.2	8710	457	102	15.9	12.7	6.35	36.6	–	384	63.5	31.0	–	6.40	241	1300	1050	166	6.20	150	78.2	26.7	22.0	9.50	604	241	23.1	14500	7.62	6.08	3.05	311	644	174	0.933	34.0	442	1180	1280	1020	1120
MC18X42.7	MC460X63.5	63.5	8130	457	100	15.9	11.4	5.70	36.6	–	384	63.5	34.4	–	6.32	231	1230	1010	169	5.95	145	76.0	27.2	22.3	8.86	512	229	24.6	14200	7.24	5.62	2.84	311	610	177	0.930	34.0	442	1180	1280	1020	1120
MC13X50	MC330X74	74.0	9480	330	112	15.5	20.0	10.00	36.6	–	257	63.5	13.7	–	7.23	131	996	791	117	6.83	167	78.2	26.9	24.7	14.4	1230	150	20.7	11200	6.20	5.04	2.57	225	497	129	0.875	35.8	315	955	1070	772	884
MC13X40	MC330X60	60.0	7550	330	106	15.5	14.2	7.10	36.6	–	257	63.5	19.3	–	6.87	114	839	687	122	5.70	142	69.5	27.4	24.5	11.5	645	124	26.2	10400	5.33	3.97	1.90	225	418	135	0.859	35.1	315	940	1040	767	874
MC13X35	MC330X52	52.0	6650	330	103	15.5	11.4	5.70	36.6	–	257	63.5	24.2	–	6.67	105	762	636	126	5.12	132	65.1	27.7	24.9	10.1	470	111	29.5	9870	4.79	3.27	1.68	225	379	140	0.849	34.3	315	932	1030	765	866
MC13X31.8	MC330X47.3	47.3	6030	330	102	15.5	9.53	4.77	36.6	–	257	63.5	28.9	–	6.56	99.5	711	601	128	4.75	126	62.1	27.9	25.4	9.14	390	102	31.5	9550	4.50	2.87	1.41	225	354	143	0.842	34.0	315	927	1030	762	864
MC12X50	MC310X74	74.0	9480	305	105	17.8	21.2	10.60	33.3	–	238	63.5	11.5	–	5.91	112	926	736	109	7.24	179	92.4	27.7	26.7	15.6	1340	110	18.8	9350	5.41	4.29	2.14	215	460	121	0.859	34.8	287	889	993	714	820
MC12X45	MC310X67	67.0	8520	305	102	17.8	18.0	9.00	33.3	–	238	63.5	13.5	–	5.73	104	852	687	111	6.58	166	86.9	27.7	26.4	14.0	970	100	21.4	8970	4.95	3.78	1.87	215	423	124	0.851	34.3	287	879	980	711	813
MC12X40	MC310X60	60.0	7610	305	98.8	17.8	15.0	7.50	33.3	–	238	63.5	16.3	–	5.56	97.4	782	639	113	5.91	153	81.6	27.9	26.4	12.4	703	90.2	24.2	8580	4.54	3.26	1.63	215	388	127	0.842	33.8	287	871	970	709	808
MC12X35	MC310X52	52.0	6650	305	95.8	17.8	11.8	5.90	33.3	–	238	63.5	20.6	–	5.39	89.9	708	590	117	5.24	141	76.0	28.2	26.7	10.9	516	79.8	27.2	8130	4.11	2.71	1.31	215	351	132	0.831	33.0	287	864	958	706	800
MC12X31	MC310X46	46.0	5880	305	93.2	17.8	9.40	4.70	33.3	–	238	57.2	25.9	–	5.24	84.1	651	552	120	4.70	134	71.6	28.2	27.4	10.8	416	71.7	29.7	7740	3.73	2.22	1.11	215	323	136	0.822	32.5	287	856	950	704	795
MC12X14.3	MC310X21.3	21.3	2700	305	53.8	7.95	6.35	3.18	19.1	–	267	31.8	43.5	–	6.77	31.7	261	208	108	0.416	19.8	9.41	12.4	9.58	4.42	48.7	8.81	11.0	5410	0.787	0.666	0.331	56.0	130	111	0.965	17.1	297	736	790	663	717
MC12X10.6	MC310X15.8	15.8	2000	305	38.1	7.85	4.83	2.42	19.1	–	267	–	57.3	–	4.85	23.0	190	151	107	0.157	10.4	5.03	8.86	6.83	3.28	24.8	3.14	7.21	3870	0.396	0.342	0.171	38.8	94.9	108	0.983	12.1	297	706	744	648	686
MC10X41.1	MC250X61.2	61.2	7810	254	110	14.6	20.2	10.10	33.3	–	187	63.5	9.66	–	7.51	65.3	644	516	91.7	6.53	156	79.5	29.0	27.7	15.3	941	72.2	21.9	8060	3.99	3.09	1.56	156	320	108	0.790	36.6	240	798	907	617	726
MC10X33.6	MC250X50	50.0	6370	254	104	14.6	14.6	7.30	33.3	–	187	63.5	13.4	–	7.13	57.9	552	456	95.3	5.45	136	71.3	29.2	27.7	12.5	499	60.2	26.9	7480	3.43	2.41	1.18	156	274	114	0.770	35.6	240	782	886	612	716
MC10X28.5	MC250X42.4	42.4	5400	254	100	14.6	10.8	5.40	33.3	–	187	63.5	18.1	–	6.87	52.4	492	415	98.8	4.70	124	65.4	29.5	28.4	10.6	329	51.8	30.7	7030	3.02	1.88	0.916	156	244	119	0.752	34.5	240	772	871	610	709
MC10X25	MC250X37	37.0	4740	254	86.6	14.6	9.65	4.83	33.3	–	187	50.8	20.2	–	5.93	45.8	429	361	98.3	3.02	92.6	48.5	25.2	24.2	9.32	266	33.3	26.2	6080	2.26	1.42	0.728	135	213	113	0.803	29.7	240	734	820	594	681
MC10X22	MC250X33	33.0	4160	254	84.3	14.6	7.37	3.69	33.3	–	187	50.8	26.5	–	5.77	42.5	392	336	101	2.66	86.7	45.1	25.3	25.1	11.9	212	29.5	28.4	5810	2.06	1.16	0.541	135	193	117	0.791	29.0	240	729	813	592	676
MC10X8.4	MC250X12.5	12.5	1590	254	38.1	7.11	4.32	2.16	19.1	–	216	–	52.6	–	5.36	13.3	130	105	91.7	0.136	8.98	4.39	9.25	7.21	3.12	17.2	1.88	8.43	3130	0.282	0.233	0.116	29.7	64.4	93.5	0.972	12.3	247	605	643	546	584
MC10X6.5	MC250X9.7	9.70	1260	254	29.7	5.13	3.86	1.93	14.3	–	225	–	59.8	–	5.79	9.53	96.7	75.2	87.1	0.0554	4.65	2.25	6.65	4.93	2.48	7.95	0.741	4.62	2650	0.144	0.130	0.066	16.6	47.7	87.9	0.988	9.22	249	575	605	538	566
MC9X25.4	MC230X37.8	37.8	4820	229	88.9	14.0	11.4	5.70	31.8	–	165	50.8	15.1	–	6.36	36.6	385	320	87.1	3.15	93.4	49.0	25.7	24.6	10.5	288	27.9	25.0	5630	2.06	1.35	0.670	116	190	104	0.770	30.5	215	691	780	546	635
MC9X23.9	MC230X35.6	35.6	4530	229	87.6	14.0	10.2	5.10	31.8	–	165	50.8	17.0	–	6.27	35.3	369	310	88.4	2.97	90.3	47.4	25.7	24.9	9.91	249	26.3	26.4	5480	1.95	1.21	0.633	116	182	105	0.763	30.0	215	686	775	546	632
MC8X22.8	MC200X33.9	33.9	4320	203	88.9	13.3	10.8	5.40	30.2	–	143	50.8	13.8	–	6.67	26.6	313	261	78.5	2.92	88.0	46.0	25.9	25.7	10.6	238	20.2	26.4	4900	1.69	1.05	0.508	98.8	155	97.5	0.715	30.5	190	640	729	495	584
MC8X21.4	MC200X31.8	31.8	4050	203	87.6	13.3	9.53	4.77	30.2	–	143	50.8	15.7	–	6.57	25.6	298	252	79.5	2.74	84.9	44.4	25.9	25.9	11.5	206	19.0	27.7	4790	1.61	0.945	0.450	98.8	148	99.3	0.707	30.0	190	638	724	495	582
MC8X20	MC200X29.8	29.8	3790	203	77.0	12.7	10.2	5.10	28.7	–	146	50.8	15.0	–	6.06	22.6	269	223	77.2	1.84	63.3	33.1	22.0	21.3	9.32	184	12.8	21.4	4320	1.24	0.820	0.401	80.8	133	90.9	0.779	26.2	190	607	686	483	561
MC8X18.7	MC200X27.8	27.8	3550	203	75.7	12.7	8.97	4.49	28.7	–	146	50.8	17.0	–	5.96	21.8	256	215	78.5	1.73	61.0	32.0	22.0	21.6	8.74	158	12.1	22.6	4210	1.18	0.737	0.364	80.8	127	92.7	0.773	25.9	190	605	681	483	559
MC8X8.5	MC200X12.6	12.6	1610	203	47.5	7.90	4.55	2.28	20.7	–	162	28.6	9.70	–	38.4	114	95.4	77.5	0.260	14.3	7.06	12.7	24.4	10.9	3.96	2.20	2850	13.8	0.328	0.229	0.119	33.1	56.5	82.3	0.910	15.8	195	528	577	455	500	
MC7X22.7	MC180X33.8	33.8	4300	178	91.4	12.7	12.8	6.40	28.7	–	121	50.8	19.7	7.20	9.94	269	221	67.8	3.01	88.2	46.4	26.4	260	26.4	12.1	15.7	4370	25.7	1.47	0.937	0.458	82.4	133	89.7	0.659	31.2	165	597	688	447	538	
MC7X19.1	MC180X28.4	28.4	3620	178	87.6	12.7	8.94	4.47	28.7	–	121	50.8	17.9	6.90	14.2	238	202	70.4	2.52	79.5	41.8	26.4	169	27.4	14.7	13.2	4080	29.2	1.28	0.687	0.339	82.4	118	94.0	0.638	30.2	165	587	673	445	531	
MC6X18	MC150X26.8	26.8	3410	152	88.9	12.1	9.63	4.82	26.9	–	98.4	50.8	12.4	7.37	10.8	192	162	60.2	2.45	76.7	40.5	26.7	158	28.4	16.4	9.29	3480	29.7	1.04	0.533	0.284	67.2	95.0	87.9	0.563	30.5	140	538	627	394	483	
MC6X15.3	MC150X22.8	22.8	2900	152	88.9	9.78	8.64	4.32	22.2	–	108	50.8	10.5	9.09	13.1	162	138	60.5	2.04	63.1	32.9	26.7	92.8	26.7	13.0	8.06	3630	29.5	0.899	0.504	0.239	56.0	81.1	86.6	0.579	30.5	143	541	630	394	483	
MC6X16.3	MC150X24.3	24.3	3090	152	76.2	12.1	9.53	4.77	26.9	–	98.4	44.5	10.8	6.32	10.9	170	142	59.2	1.57	56.9	29.8	22.5	140	23.5	11.8	5.93	3020	23.6	0.783	0.441	0.223	56.4	84.1	79.0	0.643	26.2	140	505	582	381	457	
MC6X15.1	MC150X22.5	22.5	2860	152	74.7	12.1	8.03	4.02	26.9	–	98.4	44.5	10.4	6.19	12.9	161	136	60.2	1.44	54.1	28.3	22.4	119	23.9	13.8	5.50	2930	24.9	0.737	0.381	0.190	56.4	79.8	80.8	0.634	25.7	140	500	574	378	455	
MC6X12	MC150X17.9	17.9	2280	152	63.5	9.53	7.87	3.94	22.2	–	108	38.1	7.78	6.67	14.5	122	102	58.4	0.770	32.3	16.9	18.4	64.5	17.9	7.47	3.03	2660	18.4	0.470	0.301	0.147	37.9	60.6	71.1	0.740	21.7	143	472	536	368	432	
MC6X7	MC150X10.4	10.4	1350	152	47.8	7.39	4.55	2.28	19.1	–	114	–	4.75	6.46	26.0	73.7	62.4	59.4	0.251	14.2	7.19	13.6	19.3	12.7	4.42	1.07	2060	14.8	0.216	0.138	0.0666	23.1	36.4	66.8	0.830	16.2	145	414	462	353	401	
MC6X6.5	MC150X9.7	9.70	1260	152	47.0	7.39	3.94	1.97	19.1	–	114	–	4.58	6.36	30.1	70.1	60.0	60.5	0.235	13.7	6.92	13.7	17.1	13.0	4.85	1.01	1990	15.5	0.203	0.121	0.0608	23.1	34.6	68.1	0.824	16.0	145	414	460	353	399	
MC4X13.8	MC100X20.5	20.5	2600	102	63.5	12.7	12.7	6.35	25.4	–	50.8	–	3.68	5.00	4.48	90.6	72.6	37.6	0.887	39.3	21.1	18.5	155	21.6	12.9	1.30	1530	16.3	0.335	0.190	0.0945	28.7	45.1	56.6	0.550	21.6	88.9	338	401	267	330	
MC3X7.1	10.6	1360	76.2	76.2	50.8	9.52	7.94	3.97	20.6	–			18.2	29.7	29.0	16.4	8.49	14.3	38.6	0.246	903	0.107	0.056	4.93	10.5	0.027	12.4	36.7	44.7	0.516	16.7	67.3	259	309	202	251	34.9	–				



Palestine Technical University Kadoorie

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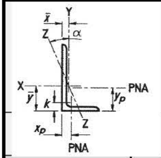
		Weight	Area	Dimensions					Axis X-X						Flexural-Torsional Properties			Axis Y-Y						Axis Z-Z																				
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b	t	k_{des}	b/t	I_x	Z_x	S_x	r_x	y	y_p	J	C_w	r_o	I_y	Z_y	S_y	r_y	x	x_p	I_z	r_z	S_z	tan(α)	H	I_w	z_A	z_B	z_C	w_A	w_B	w_C	S_{wA}	S_{wB}	S_{wC}	S_{zA}	S_{zB}	S_{zC}	P_A	P_{A2}	P_B
L12X12X1-3/8	L305X305X34.9	156	20100	305	305	35.1	53.1	8.70	172	1440	797	92.5	88.9	33.0	8280	56.7	165	172	1440	797	92.5	88.9	33.0	68.7	58.4	546	1.00	0.627	275	203	0	203	102	126	102	1350	–	1350	672	546	672	914	914	1220
L12X12X1-1/4	L305X305X31.8	143	18300	305	305	31.8	49.8	9.60	159	1320	731	93.0	87.6	30.0	6200	43.0	166	159	1320	731	93.0	87.6	30.0	63.3	58.7	510	1.00	0.627	254	204	0	204	103	124	103	1240	–	1240	615	510	615	914	914	1220
L12X12X1-1/8	L305X305X28.6	130	16600	305	305	28.7	46.7	10.6	146	1210	667	93.5	86.6	27.4	4620	32.2	167	146	1210	667	93.5	86.6	27.4	58.3	59.2	475	1.00	0.626	233	205	0	205	103	122	103	1130	–	1130	565	475	565	914	914	1220
L12X12X1	L305X305X25.4	116	14800	305	305	25.4	43.4	12.0	131	1080	598	94.0	85.3	24.3	3250	22.7	168	131	1080	598	94.0	85.3	24.3	52.4	59.4	434	1.00	0.626	210	207	0	207	104	121	104	1020	–	1020	505	434	505	914	914	1220
L10X10X1-3/8	L254X254X34.9	130	16500	254	254	35.1	55.4	7.25	96.1	982	541	76.2	76.2	32.5	6830	31.7	136	96.1	980	541	76.2	76.2	32.5	38.8	48.5	361	1.00	0.629	154	167	0	167	84.3	108	84.3	919	–	919	461	361	461	762	762	1020
L10X10X1-1/4	L254X254X31.8	119	15100	254	254	31.8	52.1	8.00	88.7	900	495	76.7	74.9	29.7	5120	24.0	137	88.7	900	495	76.7	74.9	29.7	35.5	48.5	336	1.00	0.628	142	168	0	168	84.8	106	84.8	842	–	842	420	336	420	762	762	1020
L10X10X1-1/8	L254X254X28.6	108	13700	254	254	28.7	49.0	8.85	81.6	823	452	77.0	73.7	27.2	3830	18.1	137	81.6	823	452	77.0	73.7	27.2	32.5	48.8	313	1.00	0.627	131	169	0	169	85.6	104	85.6	772	–	772	380	313	380	762	762	1020
L10X10X1	L254X254X25.4	96.3	12300	254	254	25.4	45.7	10.0	73.7	738	406	77.5	72.6	24.1	2690	12.8	139	73.7	738	406	77.5	72.6	24.1	29.3	48.8	285	1.00	0.626	118	171	0	171	85.9	103	85.9	693	–	693	341	285	341	762	762	1020
L10X10X7/8	L254X254X22.2	84.7	10800	254	254	22.2	42.7	11.4	65.8	654	359	78.0	71.1	21.3	1830	8.73	139	65.8	654	359	78.0	71.1	21.3	26.1	49.0	261	1.00	0.627	105	172	0	172	86.9	101	86.9	613	–	613	302	261	302	762	762	1020
L10X10X3/4	L254X254X19	73.1	9360	254	254	19.1	39.4	13.3	57.9	567	315	78.7	70.1	18.4	1170	5.61	140	57.9	567	315	78.7	70.1	18.4	23.2	49.8	234	1.00	0.628	92.4	173	0	173	87.1	99.1	87.1	534	–	534	266	234	266	762	762	1020
L8X8X1-1/8	L203X203X28.6	84.7	10800	203	203	28.6	44.5	7.08	40.8	518	287	61.2	61.0	26.7	2970	8.73	109	40.8	518	287	61.2	61.0	26.7	16.9	39.6	197	1.00	0.630	64.5	134	0	134	67.6	86.1	67.6	483	–	483	251	197	251	610	610	813
L8X8X1	L203X203X25.4	75.9	9740	203	203	25.4	41.4	8.00	37.1	467	259	61.7	59.9	24.0	2110	6.28	110	37.1	467	259	61.7	59.9	24.0	15.3	39.6	180	1.00	0.630	58.7	135	0	135	67.8	84.8	67.8	436	–	436	226	180	226	610	610	813
L8X8X7/8	L203X203X22.2	67.0	8580	203	203	22.2	38.1	9.14	33.2	415	229	62.2	58.7	21.1	1440	4.32	111	33.2	415	229	62.2	58.7	21.1	13.6	39.9	164	1.00	0.630	52.9	136	0	136	68.6	83.1	68.6	388	–	388	198	164	198	610	610	813
L8X8X3/4	L203X203X19	57.9	7420	203	203	19.1	35.1	10.7	29.1	361	200	62.5	57.4	18.3	920	2.79	112	29.1	361	200	62.5	57.4	18.3	11.9	39.9	146	1.00	0.630	46.2	137	0	137	69.3	81.3	69.3	338	–	338	170	146	170	610	610	813
L8X8X5/8	L203X203X15.9	48.7	6250	203	203	15.9	31.8	12.8	24.8	305	169	63.0	56.1	15.4	541	1.65	112	24.8	305	169	63.0	56.1	15.4	10.1	40.1	127	1.00	0.630	39.5	138	0	138	69.8	79.5	69.8	287	–	287	144	127	144	610	610	813
L8X8X9/16	L203X203X14.3	44.0	5660	203	203	14.3	30.2	14.2	22.6	275	153	63.2	55.6	13.9	400	1.22	113	22.6	275	153	63.2	55.6	13.9	9.12	40.1	116	1.00	0.630	36.0	139	0	139	70.1	78.7	70.1	259	–	259	130	116	130	610	610	813
L8X8X1/2	L203X203X12.7	39.3	5060	203	203	12.7	28.7	16.0	20.3	247	137	63.2	55.1	12.4	284	0.867	113	20.3	247	137	63.2	55.1	12.4	8.24	40.4	106	1.00	0.630	32.4	139	0	139	70.1	78.0	70.1	233	–	233	118	106	117	610	610	813
L8X6X1	L203X152X25.4	65.5	8450	152	203	25.4	38.1	8.00	33.7	447	247	63.2	67.3	36.8	1810	4.38	98.6	16.1	265	146	43.7	41.9	20.8	8.87	32.5	125	0.542	–	41.0	101	39.1	133	71.1	68.8	39.1	406	1050	306	125	129	226	559	508	711
L8X6X7/8	L203X152X22.2	57.9	7420	152	203	22.2	35.1	9.14	30.1	398	220	63.5	66.0	36.3	1230	3.03	99.6	14.5	236	130	44.2	40.6	18.3	7.87	32.5	110	0.546	–	36.8	102	38.4	135	71.6	67.3	39.9	361	959	274	110	117	197	559	508	711
L8X6X3/4	L203X152X19	50.1	6450	152	203	19.1	31.8	10.7	26.4	346	192	64.0	64.8	34.0	791	1.95	100	12.8	205	113	44.5	39.6	15.8	6.91	32.8	95.4	0.550	–	32.4	103	37.6	136	72.1	66.0	40.4	315	862	238	95.9	105	170	559	508	711
L8X6X5/8	L203X152X15.9	42.2	5430	152	203	15.9	28.7	12.8	22.6	293	162	64.5	63.5	32.3	466	1.16	101	11.0	172	96.4	45.0	38.4	13.4	5.87	32.8	80.5	0.554	–	27.7	104	36.8	137	72.9	64.3	41.1	267	752	202	80.5	91.3	143	559	508	711
L8X6X9/16	L203X152X14.3	38.1	4910	152	203	14.3	26.9	14.2	20.6	265	147	64.8	63.0	31.5	343	0.859	101	10.0	156	87.5	45.2	37.8	12.1	5.33	33.0	72.9	0.556	–	25.3	104	36.6	137	72.9	63.8	41.1	243	692	184	73.1	83.6	129	559	508	711
L8X6X1/2	L203X152X12.7	34.1	4390	152	203	12.7	25.4	16.0	18.5	239	131	64.8	62.5	30.5	243	0.612	102	9.03	140	78.5	45.5	37.1	10.8	4.79	33.0	65.2	0.557	–	22.7	105	36.6	138	73.4	62.7	41.7	216	621	166	65.2	76.4	115	559	508	711
L8X6X7/16	L203X152X11.1	29.9	3860	152	203	11.1	23.8	18.3	16.4	211	116	65.0	61.7	29.2	165	0.416	102	8.03	123	69.3	45.7	36.6	9.50	4.25	33.3	57.5	0.559	–	20.1	106	36.1	139	73.7	62.0	41.9	190	559	145	57.7	68.5	101	559	508	711
L8X4X1	L203X102X25.4	55.4	7160	102	203	25.4	38.1	8.00	29.0	398	229	63.8	77.0	62.2	1530	3.46	95.3	4.83	127	64.6	26.2	26.4	17.6	3.26	21.4	57.0	0.247	–	30.6	80.5	68.3	126	57.7	44.2	16.9	380	447	243	56.5	73.8	192	508	406	610
L8X4X7/8	L203X102X22.2	49.3	6320	102	203	22.2	35.1	9.14	26.1	356	205	64.3	75.9	61.2	1040	2.39	96.0	4.37	111	57.5	26.4	25.3	15.5	2.90	21.5	50.1	0.252	–	27.5	81.5	67.6	127	58.2	43.2	17.3	338	408	216	49.8	67.2	167	508	406	610
L8X4X3/4	L203X102X19	42.5	5480	102	203	19.1	31.8	10.7	22.9	310	179	64.8	74.7	59.4	670	1.54	96.5	3.90	95.4	50.3	26.7	24.1	13.5	2.56	21.6	43.4	0.257	–	24.2	82.3	66.3	128	58.9	41.9	17.9	295	365	188	43.4	61.0	143	508	406	610
L8X4X5/8	L203X102X15.9	36.0	4620	102	203	15.9	28.7	12.8	19.6	264	151	65.0	73.4	57.7	398	0.918	97.3	3.38	79.6	42.9	26.9	22.9	11.4	2.18	21.7	36.7	0.262	–	20.8	83.3	65.3	129	59.4	40.9	18.4	249	318	161	36.7	53.3	118	508	406	610
L8X4X9/16	L203X102X14.3	32.4	4190	102	203	14.3	26.9	14.2	17.9	239	137	65.3	72.6	56.6	293	0.679	97.5	3.10	71.9	39.0	27.2	22.3	10.3	1.99	21.8	33.3	0.264	–	19.0	83.6	64.5	130	59.9	40.1	18.7	228	295	146	33.3	49.7	106	508	406	610
L8X4X1/2	L203X102X12.7	29.0	3740	102	203	12.7	25.4	16.0	16.1	215	123	65.5	72.1	55.9	209	0.483	98.0	2.81	64.1	35.2	27.4	21.7	9.22	1.80	21.9	29.8	0.266	–	17.1	84.1	64.0	131	60.2	39.6	18.9	203	267	131	29.8	45.4	95.2	508	406	610
L8X4X7/16	L203X102X11.1	25.6	3300	102	203	11.1	23.8	18.3	14.2	190	108	65.8	71.4	54.9	142	0.328	98.3	2.51	56.0	31.1	27.7	21.1	8.10	1.60	22.0	26.4	0.268	–	15.2	84.6	63.5	131	60.7	38.9	19.3	179	239	115	26.4	41.1	83.1	508	406	610
L7X4X3/4	L178X102X19	38.8	4990	102	178	19.1	31.8	9.33	15.7	243	137	56.1	63.5	46.7	612	1.07	84.1	3.75	91.8	49.3	27.4	25.4	14.0	2.34	21.7	42.1	0.324	–	17.1	74.9	52.6	114	55.9	43.7	20.1	229	326	151	42.0	53.6	117	457	381	559
L7X4X5/8	L178X102X15.9	32.7	4190	102	178	15.9	28.7	11.2	13.5	205	117	56.6	62.2	45.7	361	0.636	84.8	3.24	76.9	42.0	27.9	24.3	11.8	2.00	21.8	35.4	0.329	–	14.7	75.7	51.6	115	56.4	42.7	20.5	195	285	128	35.6	46.9	97.5	457	381	559
L7X4X1/2	L178X102X12.7	26.5	3390	102	178	12.7	25.4	14.0	11.1	167	94.9	57.2	61.0	44.2	190	0.336	85.6	2.70	61.8	34.4	28.2	23.1	9.55	1.64	22.0	28.8	0.334	–	12.1	76.7	50.5	116	57.2	41.1	21.2	158	239	104	28.7	39.8	77.4	457	381	559
L7X4X7/16	L178X102X11.1	23.4	2990	102	178	11.1	23.8	16.0	9.82	148	83.7	57.4	60.5	43.4	129	0.229	85.9	2.41	54.2	30.5	28.4	22.5	8.41	1.46	22.1	25.4	0.337	–	10.8	77.2	50.0	117	57.4	40.6	21.5	140	215	92.4	25.4	35.9	67.9	457	381	559
L7X4X3/8	L178X102X9.5	20.2	2580	102	178	9.53	22.2	18.7	8.53	128	72.4	57.7	59.7	42.4	82.4	0.146	86.4	2.11	46.5	26.4	28.4	21.9	7.26	1.27	22.2	22.0	0.339	–	9.37	77.7	49.5	117	57.9	39.9	21.8	120	188	79.8	21.8	31.8	58.0	457	381	559
L6X6X1	L152X152X25.4	55.7	7100	152	152	25.4	38.1	6.00	14.7	252	140	45.5	47.2	23.3	1530	2.48	80.8	14.7	252	140	45.5	47.2	23.3	6.20	29.7	93.4	1.00	0.640	23.2	98.8	0	98.8	50.0	66.8	50.0	234	–	234	124	92.9	124	457	457	610
L6X6X7/8	L152X152X22.2	49.3	6290	152	152	22.2	35.1	6.86	13.3	225	125	46.0	46.0	20.7	1040	1.72	81.5	13.3	225	125	46.0	46.0	20.7	5.54	29.7	84.9	1.00	0.630	21.0	100	0	100	50.5	65.0	50.5	210	–	210	109	85.2	109	457	457	610
L6X6X3/4	L152X152X19	42.7	5460	152	152	19.1	31.8	8.00	11.7	195	109	46.2	45.0	17.9	670	1.12	82.3	11.7	195	109	46.2	45.0	17.9	4.83	29.7	75.9	1.00	0.630	18.6	101	0	101	50.8	63.5	50.8	184	–	184	95.1	76.0	95.1	457	457	610
L6X6X5/8	L152X152X15.9	36.0	4600	152	152	15.9	28.7	9.60	10.0	166	92.4	46.7	43.7	15.1	398	0.671	83.3	10.0	166	92.4	46.7	43.7	15.1	4.08	29.7	66.2	1.00	0.630	16.0	102	0	102	51.6	61.7	51.6	156	–	156	79.1	66.2	79.1	457	457	610
L6X6X9/16	L152X152X14.3	32.6	4160	152	152	14.3	26.9	10.7	9.16	150	83.9	47.0	43.2	13.7	293	0.497	83.6	9.16	150	83.9	47.0	43.2	13.7	3.70	30.0	61.1	1.00	0.630	14.6	103	0	103	51.8	61.0	51.8	142	–	142	71.4	60.8	71.5	457	457	610
L6X6X1/2	L152X152X12.7	29.2	3720	152	152	12.7	25.4	12.0	8.28	135	75.2	47.2	42.4	12.2	209	0.354	84.1	8.28	135	75.2	47.2	42.4	12.2	3.35	30.0	55.7	1.00	0.630	13.2	103	0	103	52.3	59.9	52.3	128	–	128	64.1	56.1	64.1	457	457	610
L6X6X7/16	L152X152X11.1	25.6	3280	152	152	11.1	23.8	13.7	7.33	119	66.5	47.2	41.9	10.7	142	0.241	84.3	7.33	119	66.5	47.2	41.9	10.7	2.93	30.0	50.0	1.00	0.630	11.7	104	0	104	52.3	59.2	52.3	113	–	113	56.1	49.7	56.0	457	457	610
L6X6X3/8	L152X152X9.5	22.2	2830	152	152	9.53	22.2	16.0	6.41	103	57.5	47.5	41.1	9.27	90.7	0.154	84.8	6.41	103	57.5	47.5	41.1	9.27	2.58	30.2	44.1	1.00	0.630	10.2	104	0	104	52.8	58.2	52.8	98.2	–	98.2	49.0	44.4	49.0	457	457	610
L6X6X5/16	L152X152X7.9	18.5	2370	152	152	7.94	20.7	19.2	5.41	86.2	48.3	47.8	40.6	7.77	53.7	0.0908	85.1	5.41	86.2	48.3	47.8	40.6	7.77	2.16	30.2	37.7	1.00	0.630	8.66	105	0	105	53.1	57.4	53.1	82.6	–	82.6	40.8	37.7	40.8	457	457	610
L6X4X7/8	L152X102X22.2	40.3	5160	102	152	22.2	35.1	6.86	11.5	208	117	47.2	53.8	36.3	845	1.08	71.6	4.04	103	55.2	27.9	28.4	16.9	2.42	21.7	47.7	0.421	–	13.2	67.8	38.6	97.5	50.8	47.2	22.3	193	341	135	47.7	51.3	109	406	356	508
L6X4X3/4	L152X102X19	35.0	4480	102	152	19.1	31.8	8.00	10.2	182	102	47.8	52.6	34.8	545	0.709	72.4	3.59	88.8	48.3	28.4	27.2	14.7	2.11	21.7	41.1	0.428	–	11.7	68.8	37.6	98.8	51.6	45.7	23.0	170	311	118	41.0	46.2	91.9	406	356	508
L6X4X5/8	L152X102X15.9	29.6	3780	102	152	15.9	28.7	9.60	8.74	155	86.7	48.0	51.6	33.3	323	0.427	73.2	3.11	74.7	41.3	28.7	26.2	12.4	1.80	21.8	34.7	0.435	–	10.1	70.1	36.8	100	51.8	44.4	23.5	144	274	101	34.7	40.5	76.5	406	356	508
L6X4X9/16	L152X102X14.3	26.9	3430	102	152	14.3	26.9	10.7	7.99	141	78.8	48.3	50.8	32.5	238	0.317	73.7	2.86	67.7	37.5	29.0	25.4	11.3	1.64	21.9	31.5	0.438	–	9.20	70.6	36.3	100	52.3	43.7	24.1	130	254	91.6	31.3	37.4	68.0	406	356	508
L6X4X1/2	L152X102X12.7	24.0	3060	102	152	12.7	25.4	12.0	7.20	126	70.6	48.5	50.3	31.8	169	0.226	73.9	2.59	60.5	33.8	29.0	24.9	10.1	1.47	21.9	28.2	0.440	–	8.32	71.1	35.8	101	52.3	43.2	24.3	117	233	82.6	28.2	34.1	60.8	406	356	508
L6X4X7/16	L152X102X11.1	21.2	2700	102	152	11.1	23.8	13.7	6.41	112	62.4	48.8	49.5	31.0	115	0.154	74.4	2.31	53.1	30.0	29.2	24.3	8.84	1.31	22.0	24.7	0.443	–	7.41	71.6	35.3	102	52.8	42.4	24.6	103	210	72.9	24.7	30.8	53.1	406	356	508
L6X4X3/8	L152X102X9.5	18.2	2330	102	152	9.53	22.2	16.0	5.58	96.5	54.1	49.0	49.0	30.2	73.7	0.0991	74.7	2.02	45.7	25.9	29.5	23.7	7.65	1.14	22.1	21.5	0.446	–	6.45	72.1	35.1	102	53.1	41.7	24.9	89.5	184	63.3	21.5	27.2	45.7	406	356	508
L6X4X5/16	L152X102X7.9	15.3	1950	102	152	7.94	20.7	19.2	4.75	81.3	45.4	49.3	48.3	29.2	43.3	0.0583	75.2	1.72	38.2	22.0	29.7	23.1	6.43	0.961	22.2	18.0	0.449	–	5.49	72.4	34.5	103	53.6	40.6	25.1	75.9	159	53.4	17.9	23.6	38.4	406	356	508
L6X3-1/2X1/2	L152X89X12.7	22.7	2900	88.9	152	12.7	25.4	12.0	6.91	123	69.3	48.8	52.6	38.1	161	0.209	73.2	1.76	47.2	26.1	24.6	21.1	9.53	1.08	19.2	22.0	0.343	–	7.62	65.8	42.9	99	49.3	37.1	18.5	116	177	76.9	22.0	29.0	58.2	394	330	483
L6X3-1/2X3/8	L152X89X9.5	17.3	2220	88.9	152	9.53	22.2	16.0	5.37	94.1	52.9	49.0	51.3	35.8	69.9	0.0916	73.7	1.39	35.7	20.0	25.0	19.8	7.29	0.837	19.4	16.7	0.349	–	5.91	66.5	41.9	100	50.0	35.6	19.0	88.8	141	58.8	16.7	23.6	44.1	394	330	483
L6X3-1/2X5/16	L152X89X7.9	14.5	1860	88.9	152	7.94	20.7	19.2	4.54	79.3	44.6	49.3	50.8	35.1	41.2	0.0540	74.2	1.18	29.8	16.9	25.2	19.2	6.12	0.708	19.5	14.1	0.352	–	4.99	67.3	41.7	101	50.3	35.1	19.4	74.2	120	49.5	14.1	20.2	36.5	394	330	483
L5X5X7/8	L127X127X22.2	40.5	5160	127	127	22.2	35.1	5.71	7.41	153	84.6	37.8	39.6	20.3	862	0.948	67.1	7.41	153	84.6	37.8	39.6	20.3	3.16	24.7	56.2	1.00	0.640	11.7	82.0	0	82.0	41.7	56.1	41.7	142	–	142	75.9	56.4	75.9	381	381	508
L5X5X3/4	L127X127X19	35.1	4500	127	127	19.1	31.8	6.67	6.53	133	74.1	38.1	38.6	17.7	554	0.623	67.8	6.53	133	74.1	38.1	38.6	17.7	2.73	24.7	50.5	1.00	0.630	10.3	83.1	0	83.1	41.9	54.6	41.9	124	–	124	65.1	50.0	65.1	381	381	508
L5X5X5/8	L127X127X15.9	29.8	3810	127	127	15.9	28.7	8.00	5.66	114	63.1	38.6	37.3	15.0	330	0.376	68.6	5.66	114	63.1	38.6	37.3	15.0	2.34	24.8	44.2	1.00	0.630	8.99	84.1	0	84.1	42.7	52.8	42.7	107	–	107	54.9	44.2	54.9	381	381	508
L5X5X1/2	L127X127X12.7	24.1	3090	127	127	12.7	25.4	10.0	4.70	92.8	51.6	38.9	36.1	12.2	174	0.200	69.3	4.70	92.8	51.6	38.9	36.1	12.2	1.93	24.9	37.5	1.00	0.630	7.49	85.3	0	85.3	43.2	51.1	43.2	87.8	–	87.8	44.7	37.9	44.7	381	381	508
L5X5X7/16	L127X127X11.1	21.3	2720	127	127	11.1	23.8	11.4	4.16	81.9	45.6	39.1	35.6	10.7	118	0.136	69.6	4.16	81.9	45.6	39.1	35.6	10.7	1.68	25.0	33.8	1.00	0.630	6.62	85.9	0	85.9	43.4	50.3	43.4	77.0	–	77.0	38.7	33.4	38.7	381	381	508
L5X5X3/8	L127X127X9.5	18.3	2350	127	127	9.53	22.2	13.3	3.65	71.0	39.5	39.4	34.8	9.27	76.2	0.0878	70.1	3.65	71.0	39.5	39.4	34.8	9.27	1.48	25.0	30.0	1.00	0.630	5.83	86.4	0	86.4	43.9	49.3	43.9	67.5	–	67.5	33.6	30.0	33.6	381	381	508
L5X5X5/16	L127X127X7.9	15.3	1980	127	127	7.94	20.7	16.0	3.10	59.8	33.4	39.6	34.3	7.80	45.0	0.0518	70.4	3.10	59.8	33.4	39.6	34.3	7.80	1.25	25.1	25.9	1.00	0.630	4.95	86.9	0	86.9	44.2	48.5	44.2	57.0	–	57.0	28.2	25.7	28.2	381	381	508
L5X3-1/2X3/4	L127X89X19	29.3	3770	88.9	127	19.1	30.2	6.67	5.79	125	69.8	39.4	44.2	27.9	454	0.408	59.9	2.30	66.7	36.1	24.7	25.2	14.9	1.34	18.9	31.1	0.464	–	6.74	58.2	29.5	81.8	43.2	41.4	20.6	116	229	82.4	31.1	32.4	65.4	343	305	432
L5X3-1/2X5/8	L127X89X15.9	24.9	3180	88.9	127	15.9	26.9	8.00	4.99	107	59.5	39.6	42.9	26.9	271	0.247	60.7	2.00	56.2	30.8	25.1	24.1	12.5	1.14	18.9	26.2	0.472	–	5.87	59.2	28.4	82.8	43.7	40.1	21.3	99.2	207	71.0	26.1	28.4	53.6	343	305	432
L5X3-1/2X1/2	L127X89X12.7	20.2	2580	88.9	127	12.7	23.8	10.0	4.16	87.3	48.7	40.1	41.9	25.4	143	0.132	61.5	1.67	45.7	25.4	25.4	22.9	10.2	0.941	19.1	21.1	0.479	–	4.91	60.5	27.9	83.8	44.2	38.6	21.7	81.3	175	58.7	21.3	24.4	43.4	343	305	432
L5X3-1/2X3/8	L127X89X9.5	15.4	1970	88.9	127	9.53	20.7	13.3	3.23	67.0	37.4	40.4	40.6	23.7	62.4	0.0583	62.2	1.31	34.7	19.5	25.9	21.7	7.75	0.720	19.2	16.1	0.485	–	3.81	61.7	27.2	85.1	44.7	37.3	22.5	61.8	140	44.7	16.1	19.3	32.1	343	305	432
L5X3-1/2X5/16	L127X89X7.9	12.9	1650	88.9	127	7.94	19.1	16.0	2.74	56.5	31.5	40.6	39.9	23.0	36.8	0.0344	62.7	1.12	29.0	16.6	25.9	21.1	6.50	0.612	19.3	13.6	0.489	–	3.25	62.0	26.7	85.9	45.2	36.3	22.9	52.4	122	37.9	13.5	16.9	26.7	343	305	432
L5X3-1/2X1/4	L127X89X6.4	10.4	1340	88.9	127	6.35	17.5	20.0	2.23	45.6	25.4	40.9	39.4	21.8	19.3	0.0180	63.0	0.916	23.3	13.4	26.2	20.4	5.26	0.495	19.3	10.9	0.491	–	2.65	62.7	26.4	86.4	45.5	35.8	23.2	42.3	100	30.6	10.9	13.8	21.3	343	305	432
L5X3X1/2	L127X76X12.7	19.0	2420	76.2	127	12.7	23.8	10.0	3.93	83.9	47.4	40.1	44.2	31.8	134	0.119	60.5	1.06	34.1	18.5	20.9	18.9	9.53	0.645	16.3	15.6	0.357	–	4.33	54.9	35.3	82.3	41.1	32.8	16.0	78.8	123	52.6	15.7	19.7	40.5	330	279	406
L5X3X7/16	L127X76X11.1	16.7	2140	76.2	127	11.1	22.2	11.4	3.50	74.2	42.0	40.4	43.7	31.0	91.6	0.0816	60.7	0.953	29.8	16.4	21.1	18.3	8.41	0.570	16.4	13.8	0.361	–	3.88	55.6	34.8	82.8	41.4	32.0	16.3	69.8	112	46.9	13.8	17.9	35.1	330	279	406
L5X3X3/8	L127X76X9.5	14.5	1850	76.2	127	9.53	20.7	13.3	3.06	64.4	36.4	40.6	42.9	30.2	58.7	0.0526	61.2	0.837	25.7	14.3	21.3	17.7	7.26	0.499	16.4	11.9	0.364	–	3.40	55.9	34.3	83.6	41.9	31.2	16.6	60.8	99.0	40.6	11.9	16.0	30.2	330	279	406
L5X3X5/16	L127X76X7.9	12.1	1550	76.2	127	7.94	19.1	16.0	2.60	54.4	30.6	40.9	42.4	29.0	34.6	0.0312	61.5	0.716	21.5	12.1	21.5	17.1	6.12	0.420	16.5	10.0	0.368	–	2.89	56.4	33.8	83.8	42.2	30.7	16.9	51.3	85.7	34.6	9.96	13.7	24.9	330	279	406
L5X3X1/4	L127X76X6.4	9.80	1250	76.2	127	6.35	17.5	20.0	2.12	43.9	24.7	41.1	41.7	28.4	18.2	0.0163	61.7	0.587	17.2	9.83	21.7	16.5	4.93	0.343	16.6	8.05	0.371	–	2.36	56.9	33.3	84.6	42.7	30.0	17.2	41.6	71.1	28.0	8.05	11.5	20.0	330	279	406
L4X4X3/4	L102X102X19	27.5	3510	102	102	19.1	28.7	5.33	3.17	82.3	45.7	30.0	32.3	17.3	425	0.301	53.3	3.17	82.3	45.7	30.0	32.3	17.3	1.35	19.7	29.7	1.00	0.640	4.99	65.0	0	65.0	33.0	45.7	33.0	76.9	–	76.9	41.0	29.7	41.0	305	305	406
L4X4X5/8	L102X102X15.9	23.4	2970	102	102	15.9	25.4	6.40	2.76	70.1	39.0	30.5	31.0	14.6	254	0.183	54.1	2.76	70.1	39.0	30.5	31.0	14.6	1.15	19.7	26.1	1.00	0.630	4.37	66.3	0	66.3	33.5	43.9	33.5	65.9	–	65.9	34.3	26.2	34.2	305	305	406
L4X4X1/2	L102X102X12.7	19.0	2420	102	102	12.7	22.2	8.00	2.30	57.4	32.1	30.7	30.0	11.9	134	0.0983	54.9	2.30	57.4	32.1	30.7	30.0	11.9	0.937	19.7	22.1	1.00	0.630	3.66	67.3	0	67.3	34.0	42.4	34.0	54.4	–	54.4	27.5	22.1	27.5	305	305	406



Palestine Technical University Kadoorie

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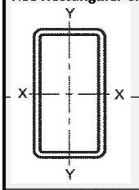
AISC US unit	AISC SI units	Weight	Area	Dimensions					Axis X-X						Flexural-Torsional Properties			Axis Y-Y						Axis Z-Z																				
		W (KG/m)	A (mm2)	d (mm)	b	t	k_{des}	b/t	I_x	Z_x	S_x	r_x	y	y_p	J	C_w	r_o	I_y	Z_y	S_y	r_y	x	x_p	I_z	r_z	S_z	tan(α)	H	I_w	z_A	z_B	z_C	w_A	w_B	w_C	S_{wA}	S_{wB}	S_{wC}	S_{zA}	S_{zB}	S_{zC}	P_A	P_{A2}	P_B
L4X4X7/16	L102X102X11.1	16.8	2130	102	102	11.1	20.7	9.13	2.05	50.8	28.3	31.0	29.2	10.5	91.6	0.0677	55.4	2.05	50.8	28.3	31.0	29.2	10.5	0.828	19.7	20.0	1.00	0.630	3.27	67.8	0	67.8	34.5	41.4	34.5	48.2	–	48.2	23.9	20.0	23.9	305	305	406
L4X4X3/8	L102X102X9.5	14.6	1850	102	102	9.53	19.1	10.7	1.80	44.1	24.6	31.2	28.7	9.09	58.7	0.0435	55.6	1.80	44.1	24.6	31.2	28.7	9.09	0.720	19.8	17.7	1.00	0.630	2.88	68.6	0	68.6	34.5	40.6	34.5	42.0	–	42.0	20.8	17.7	20.8	305	305	406
L4X4X5/16	L102X102X7.9	12.2	1550	102	102	7.94	17.5	12.8	1.53	37.0	20.8	31.5	28.2	7.62	34.6	0.0259	56.1	1.53	37.0	20.8	31.5	28.2	7.62	0.608	19.8	15.3	1.00	0.630	2.45	69.1	0	69.1	34.8	39.9	34.8	35.4	–	35.4	17.5	15.2	17.5	305	305	406
L4X4X1/4	L102X102X6.4	9.80	1250	102	102	6.35	15.9	16.0	1.25	29.8	16.9	31.8	27.4	6.12	18.2	0.0136	56.4	1.25	29.8	16.9	31.8	27.4	6.12	0.495	19.9	12.7	1.00	0.630	2.01	69.6	0	69.6	35.3	38.9	35.3	28.8	–	28.8	14.0	12.8	14.0	305	305	406
L4X3-1/2X1/2	L102X89X12.7	17.6	2260	88.9	102	12.7	22.2	8.00	2.21	56.7	31.5	31.2	31.5	12.7	125	0.0811	51.6	1.57	44.1	24.6	26.4	25.2	11.1	0.745	18.2	19.2	0.750	–	3.02	58.2	10.1	67.6	35.8	39.1	26.9	52.0	300	44.7	20.8	19.0	27.7	292	279	381
L4X3-1/2X3/8	L102X89X9.5	13.5	1730	88.9	102	9.53	19.1	10.7	1.73	43.6	24.3	31.8	30.5	10.8	54.9	0.0360	52.3	1.23	33.8	19.0	26.7	24.1	8.51	0.579	18.3	15.4	0.755	–	2.39	59.7	9.83	68.3	36.3	37.6	27.4	40.0	243	34.9	15.9	15.4	21.1	292	279	381
L4X3-1/2X5/16	L102X89X7.9	11.4	1450	88.9	102	7.94	17.5	12.8	1.47	36.7	20.5	31.8	29.7	10.2	32.5	0.0214	52.8	1.05	28.5	16.1	26.9	23.4	7.14	0.483	18.3	13.3	0.757	–	2.03	59.9	9.55	69.1	36.6	36.6	27.9	33.9	213	29.3	13.2	13.2	17.2	292	279	381
L4X3-1/2X1/4	L102X89X6.4	9.20	1170	88.9	102	6.35	15.9	16.0	1.20	29.7	16.6	32.0	29.0	9.14	17.1	0.0113	53.1	0.862	22.9	13.0	27.2	22.8	5.79	0.397	18.4	10.7	0.759	–	1.67	60.5	9.27	69.6	37.1	35.6	28.2	27.5	180	23.9	10.7	11.2	14.1	292	279	381
L4X3X5/8	L102X76X15.9	20.2	2570	76.2	102	15.9	25.4	6.40	2.50	66.9	37.4	31.2	34.8	20.5	220	0.127	48.5	1.19	40.1	22.0	21.5	22.0	12.7	0.662	16.0	18.5	0.534	–	3.03	49.3	20.3	65.5	35.1	35.8	19.0	61.5	149	46.2	18.8	18.5	34.7	279	254	356
L4X3X1/2	L102X76X12.7	16.4	2100	76.2	102	12.7	22.2	8.00	2.09	55.1	30.6	31.5	33.5	19.1	117	0.0685	49.3	0.999	32.6	18.0	21.8	20.9	10.3	0.541	16.1	15.2	0.542	–	2.55	50.3	19.5	66.8	35.6	34.3	19.7	50.6	131	38.2	15.2	15.8	27.4	279	254	356
L4X3X3/8	L102X76X9.5	12.6	1610	76.2	102	9.53	19.1	10.7	1.64	42.6	23.6	32.0	32.3	17.3	51.2	0.0306	50.0	0.787	24.9	13.9	22.2	19.7	7.90	0.416	16.2	11.6	0.551	–	2.01	51.3	18.8	68.1	36.3	32.8	20.3	39.2	107	29.5	11.5	12.7	20.5	279	254	356
L4X3X5/16	L102X76X7.9	10.7	1350	76.2	102	7.94	17.5	12.8	1.40	35.9	20.0	32.3	31.8	16.7	30.4	0.0182	50.3	0.674	21.0	11.8	22.4	19.1	6.63	0.353	16.2	9.68	0.554	–	1.72	52.1	18.5	68.3	36.6	32.0	20.7	32.9	92.8	25.2	9.67	11.0	17.0	279	254	356
L4X3X1/4	L102X76X6.4	8.60	1090	76.2	102	6.35	15.9	16.0	1.14	29.0	16.2	32.3	31.0	15.7	16.1	0.00956	50.5	0.554	16.9	9.59	22.5	18.4	5.36	0.288	16.2	7.80	0.558	–	1.41	52.3	18.1	69.1	37.1	31.2	21.0	27.0	77.9	20.5	7.77	9.23	13.7	279	254	356
L3-1/2X3-1/2X1/2	L89X89X12.7	16.5	2100	88.9	88.9	12.7	22.2	7.00	1.51	43.6	24.3	26.7	26.7	11.8	117	0.0639	47.5	1.51	43.6	24.3	26.7	26.7	11.8	0.629	17.2	16.6	1.00	0.630	2.39	58.4	0	58.4	29.7	37.6	29.7	41.0	–	41.0	21.1	16.7	21.1	267	267	356
L3-1/2X3-1/2X7/16	L89X89X11.1	14.6	1860	88.9	88.9	11.1	20.7	7.99	1.35	38.7	21.6	26.9	26.2	10.5	79.9	0.0440	48.0	1.35	38.7	21.6	26.9	26.2	10.5	0.554	17.3	15.1	1.00	0.630	2.15	58.9	0	58.9	29.7	37.1	29.7	36.4	–	36.4	18.7	14.9	18.7	267	267	356
L3-1/2X3-1/2X3/8	L89X89X9.5	12.6	1610	88.9	88.9	9.53	19.1	9.33	1.19	33.8	18.8	27.2	25.4	9.07	51.2	0.0285	48.3	1.19	33.8	18.8	27.2	25.4	9.07	0.487	17.3	13.5	1.00	0.630	1.89	59.4	0	59.4	30.2	35.8	30.2	31.8	–	31.8	16.1	13.6	16.1	267	267	356
L3-1/2X3-1/2X5/16	L89X89X7.9	10.7	1350	88.9	88.9	7.94	17.5	11.2	1.02	28.5	15.9	27.4	24.9	7.62	30.4	0.0170	48.8	1.02	28.5	15.9	27.4	24.9	7.62	0.410	17.4	11.7	1.00	0.630	1.62	59.9	0	59.9	30.5	35.1	30.5	27.0	–	27.0	13.4	11.7	13.4	267	267	356
L3-1/2X3-1/2X1/4	L89X89X6.4	8.60	1100	88.9	88.9	6.35	15.9	14.0	0.832	23.1	12.9	27.7	24.2	6.17	16.1	0.00897	49.0	0.832	23.1	12.9	27.7	24.2	6.17	0.334	17.5	9.80	1.00	0.630	1.33	60.7	0	60.7	30.7	34.3	30.7	21.8	–	21.8	10.8	9.73	10.9	267	267	356
L3-1/2X3X1/2	L89X76X12.7	15.1	1950	76.2	88.9	12.7	22.2	7.00	1.44	42.8	23.8	27.2	28.4	12.2	108	0.0513	44.5	0.966	32.3	17.9	22.3	22.1	10.9	0.479	15.7	13.9	0.713	–	1.92	49.5	10.3	58.4	31.2	34.5	22.3	38.8	187	32.9	15.3	13.9	21.5	254	241	330
L3-1/2X3X7/16	L89X76X11.1	13.5	1720	76.2	88.9	11.1	20.7	7.99	1.29	38.0	21.1	27.4	27.7	11.4	74.1	0.0354	44.7	0.870	28.7	15.9	22.5	21.5	9.68	0.425	15.7	12.7	0.717	–	1.73	49.8	9.98	58.9	31.5	33.5	22.7	34.7	174	29.3	13.5	12.7	18.7	254	241	330
L3-1/2X3X3/8	L89X76X9.5	11.7	1500	76.2	88.9	9.53	19.1	9.33	1.14	33.3	18.4	27.4	27.2	10.3	47.5	0.0230	45.2	0.766	24.9	13.9	22.7	20.9	8.41	0.372	15.8	11.3	0.720	–	1.53	50.5	9.88	59.4	31.8	32.8	22.9	30.3	155	25.7	11.7	11.4	16.3	254	241	330
L3-1/2X3X5/16	L89X76X7.9	9.80	1260	76.2	88.9	7.94	17.5	11.2	0.970	28.2	15.6	27.7	26.7	9.65	28.3	0.0137	45.5	0.658	21.0	11.8	22.9	20.3	7.09	0.316	15.8	9.87	0.722	–	1.31	51.1	9.73	59.9	32.0	32.0	23.3	25.7	135	21.8	9.87	9.87	13.6	254	241	330
L3-1/2X3X1/4	L89X76X6.4	8.00	1020	76.2	88.9	6.35	15.9	14.0	0.799	22.8	12.7	27.9	25.9	8.64	15.0	0.00725	45.7	0.541	17.0	9.59	23.1	19.6	5.74	0.259	16.0	7.98	0.725	–	1.08	51.6	9.50	60.7	32.5	31.0	23.6	21.0	114	17.9	7.97	8.36	11.0	254	241	330
L3-1/2X2-1/2X1/2	L89X64X12.7	13.9	1790	63.5	88.9	12.7	22.2	7.00	1.35	41.3	23.1	27.4	30.5	18.5	97.4	0.0427	42.2	0.566	22.8	12.4	17.8	17.8	10.1	0.325	13.5	10.6	0.485	–	1.59	41.7	19.7	57.7	30.5	29.2	15.2	38.2	81.0	27.5	10.7	11.1	21.5	241	216	305
L3-1/2X2-1/2X3/8	L89X64X9.5	10.7	1370	63.5	88.9	9.53	19.1	9.33	1.07	32.1	17.9	27.9	29.2	17.1	42.9	0.0192	42.9	0.454	17.5	9.65	18.2	16.6	7.70	0.253	13.6	8.13	0.495	–	1.27	42.7	18.8	58.7	31.0	27.9	15.9	29.7	67.4	21.6	8.18	9.08	15.9	241	216	305
L3-1/2X2-1/2X5/16	L89X64X7.9	9.00	1150	63.5	88.9	7.94	17.5	11.2	0.916	27.4	15.2	28.2	28.7	16.2	25.4	0.0114	43.4	0.390	14.7	8.21	18.4	16.1	6.50	0.216	13.7	6.87	0.500	–	1.09	43.4	18.5	59.2	31.5	27.2	16.1	25.1	58.8	18.4	6.85	7.93	13.4	241	216	305
L3-1/2X2-1/2X1/4	L89X64X6.4	7.30	935	63.5	88.9	6.35	15.9	14.0	0.753	22.3	12.3	28.4	27.9	15.2	13.4	0.00604	43.7	0.323	11.9	6.72	18.6	15.4	5.26	0.177	13.7	5.57	0.504	–	0.9	43.7	18.0	59.9	31.8	26.4	16.4	20.7	49.8	15.0	5.59	6.72	10.8	241	216	305
L3X3X1/2	L76X76X12.7	14.0	1780	76.2	76.2	12.7	22.2	6.00	0.916	31.3	17.4	22.7	23.6	11.7	95.7	0.0387	40.4	0.916	31.3	17.4	22.7	23.6	11.7	0.384	14.7	11.5	1.00	0.630	1.45	49.3	0	49.3	25.0	33.3	25.0	29.3	–	29.3	15.4	11.5	15.4	229	229	305
L3X3X7/16	L76X76X11.1	12.4	1570	76.2	76.2	11.1	20.7	6.85	0.824	27.9	15.5	22.9	23.0	10.3	65.3	0.0269	40.6	0.824	27.9	15.5	22.9	23.0	10.3	0.340	14.7	10.5	1.00	0.630	1.31	50.0	0	50.0	25.2	32.5	25.2	26.1	–	26.1	13.5	10.5	13.5	229	229	305
L3X3X3/8	L76X76X9.5	10.7	1360	76.2	76.2	9.53	19.1	8.00	0.728	24.3	13.5	23.1	22.5	8.94	42.0	0.0175	41.1	0.728	24.3	13.5	23.1	22.5	8.94	0.298	14.8	9.34	1.00	0.630	1.16	50.5	0	50.5	25.4	31.8	25.4	22.9	–	22.9	11.7	9.39	11.7	229	229	305
L3X3X5/16	L76X76X7.9	9.10	1150	76.2	76.2	7.94	17.5	9.58	0.624	20.6	11.5	23.3	21.8	7.54	24.8	0.0105	41.7	0.624	20.6	11.5	23.3	21.8	7.54	0.252	14.8	8.13	1.00	0.630	1	51.1	0	51.1	25.9	31.0	25.9	19.5	–	19.5	9.74	8.15	9.74	229	229	305
L3X3X1/4	L76X76X6.4	7.30	929	76.2	76.2	6.35	15.9	12.0	0.512	16.7	9.32	23.5	21.2	6.10	13.0	0.00553	41.9	0.512	16.7	9.32	23.5	21.2	6.10	0.204	14.9	6.80	1.00	0.630	0.820	51.6	0	51.6	26.2	30.0	26.2	15.9	–	15.9	7.80	6.80	7.80	229	229	305
L3X3X3/16	L76X76X4.8	5.50	703	76.2	76.2	4.76	14.3	16.0	0.395	12.7	7.10	23.7	20.6	4.62	5.66	0.00241	42.4	0.395	12.7	7.10	23.7	20.6	4.62	0.155	14.9	5.34	1.00	0.630	0.63	52.1	0	52.1	26.4	29.2	26.4	12.1	–	12.1	5.88	5.31	5.88	229	229	305
L3X2-1/2X1/2	L76X64X12.7	12.6	1610	63.5	76.2	12.7	22.2	6.00	0.862	30.5	16.9	23.1	25.3	12.7	88.7	0.0301	37.1	0.537	22.0	12.1	18.2	18.9	10.6	0.277	13.1	9.31	0.666	–	1.12	40.4	10.5	49.3	26.7	29.7	17.8	27.7	107	22.8	10.4	9.31	15.6	216	203	279
L3X2-1/2X7/16	L76X64X11.1	11.3	1430	63.5	76.2	11.1	20.7	6.85	0.778	27.2	15.1	23.3	24.7	11.8	60.8	0.0209	37.6	0.487	19.5	10.7	18.4	18.4	9.40	0.247	13.1	8.47	0.671	–	1.02	41.1	10.2	50.0	26.7	29.0	18.1	24.7	99.7	20.3	9.28	8.54	13.7	216	203	279
L3X2-1/2X3/8	L76X64X9.5	9.80	1250	63.5	76.2	9.53	19.1	8.00	0.687	23.8	13.2	23.5	24.1	10.8	39.3	0.0136	37.8	0.429	16.9	9.39	18.6	17.8	8.18	0.214	13.1	7.59	0.675	–	0.9	41.7	10.0	50.5	27.2	28.2	18.3	21.6	90.0	17.9	7.87	7.59	11.7	216	203	279
L3X2-1/2X5/16	L76X64X7.9	8.30	1050	63.5	76.2	7.94	17.5	9.58	0.587	20.2	11.2	23.7	23.5	9.96	23.3	0.00816	38.4	0.370	14.3	7.98	18.8	17.2	6.91	0.181	13.2	6.62	0.679	–	0.77	42.2	9.73	51.1	27.2	27.4	18.8	18.4	79.7	15.2	6.67	6.60	9.65	216	203	279
L3X2-1/2X1/4	L76X64X6.4	6.70	852	63.5	76.2	6.35	15.9	12.0	0.483	16.4	9.09	23.9	22.9	9.14	12.3	0.00432	38.6	0.306	11.6	6.51	18.9	16.6	5.59	0.148	13.2	5.36	0.683	–	0.64	42.7	9.47	51.6	27.4	26.7	19.1	15.0	67.7	12.4	5.39	5.54	7.72	216	203	279
L3X2-1/2X3/16	L76X64X4.8	5.10	645	63.5	76.2	4.76	14.3	16.0	0.374	12.5	6.93	24.1	22.2	8.46	5.41	0.00189	39.1	0.236	8.78	4.97	19.1	15.9	4.24	0.113	13.2	4.05	0.687	–	0.5	43.2	9.27	52.1	27.9	25.7	19.4	11.6	53.9	9.59	4.03	4.39	5.80	216	203	279
L3X2X1/2	L76X51X12.7	11.5	1460	50.8	76.2	12.7	20.7	6.00	0.799	29.2	16.4	23.4	27.4	18.8	79.9	0.0244	35.3	0.278	14.5	7.70	13.8	14.7	9.58	0.170	10.8	6.74	0.413	–	0.91	33.3	19.7	48.3	25.3	24.1	10.9	27.2	46.0	18.8	6.74	7.06	15.6	203	178	254
L3X2X3/8	L76X51X9.5	8.80	1130	50.8	76.2	9.53	17.5	8.00	0.641	22.8	12.8	23.8	26.2	16.9	35.6	0.0111	36.1	0.224	11.1	6.03	14.1	13.6	7.42	0.133	10.8	5.13	0.426	–	0.73	34.3	18.8	49.5	25.9	22.7	11.4	21.3	39.0	14.8	5.13	5.83	11.6	203	178	254
L3X2X5/16	L76X51X7.9	7.40	955	50.8	76.2	7.94	15.9	9.58	0.549	19.5	10.8	24.0	25.7	16.1	21.2	0.00666	36.3	0.194	9.37	5.15	14.3	13.0	6.27	0.113	10.9	4.33	0.432	–	0.63	34.8	18.4	50.0	26.2	22.1	11.8	18.2	34.4	12.7	4.31	5.10	9.56	203	178	254
L3X2X1/4	L76X51X6.4	6.10	774	50.8	76.2	6.35	14.3	12.0	0.454	15.9	8.87	24.2	24.9	15.2	11.2	0.00354	36.8	0.162	7.59	4.23	14.5	12.4	5.08	0.093	10.9	3.51	0.437	–	0.52	35.3	17.8	50.8	26.4	21.3	12.2	14.8	29.0	10.3	3.51	4.34	7.62	203	178	254
L3X2X3/16	L76X51X4.8	4.60	592	50.8	76.2	4.76	12.7	16.0	0.353	12.2	6.78	24.4	24.2	14.1	4.95	0.00155	37.1	0.127	5.75	3.24	14.7	11.7	3.89	0.0720	11.0	2.67	0.442	–	0.41	35.8	17.3	51.3	26.9	20.5	12.5	11.4	23.4	7.95	2.67	3.51	5.75	203	178	254
L2-1/2X2-1/2X1/2	L64X64X12.7	11.4	1460	63.5	63.5	12.7	19.1	5.00	0.508	21.1	11.7	18.7	20.4	11.5	78.3	0.0212	33.0	0.508	21.1	11.7	18.7	20.4	11.5	0.219	12.2	7.52	1.00	0.640	0.8	40.4	0	40.4	20.5	29.0	20.5	19.8	–	19.8	10.7	7.56	10.7	191	191	254
L2-1/2X2-1/2X3/8	L64X64X9.5	8.70	1120	63.5	63.5	9.53	15.9	6.67	0.405	16.6	9.14	19.0	19.3	8.79	34.7	0.00972	33.8	0.405	16.6	9.14	19.0	19.3	8.79	0.166	12.2	6.11	1.00	0.630	0.64	41.7	0	41.7	21.0	27.2	21.0	15.4	–	15.4	7.92	6.13	7.91	191	191	254
L2-1/2X2-1/2X5/16	L64X64X7.9	7.40	942	63.5	63.5	7.94	14.3	7.99	0.348	14.0	7.77	19.2	18.7	7.42	20.6	0.00585	34.3	0.348	14.0	7.77	19.2	18.7	7.42	0.141	12.2	5.34	1.00	0.630	0.56	42.2	0	42.2	21.3	26.4	21.3	13.2	–	13.2	6.60	5.33	6.60	191	191	254
L2-1/2X2-1/2X1/4	L64X64X6.4	6.10	768	63.5	63.5	6.35	12.7	10.0	0.288	11.4	6.34	19.4	18.1	6.05	10.9	0.00312	34.5	0.288	11.4	6.34	19.4	18.1	6.05	0.115	12.2	4.49	1.00	0.630	0.46	42.7	0	42.7	21.6	25.7	21.6	10.8	–	10.8	5.31	4.47	5.31	191	191	254
L2-1/2X2-1/2X3/16	L64X64X4.8	4.60	581	63.5	63.5	4.76	11.1	13.3	0.223	8.67	4.83	19.6	17.4	4.57	4.75	0.00137	35.1	0.223	8.67	4.83	19.6	17.4	4.57	0.0870	12.2	3.54	1.00	0.630	0.36	43.2	0	43.2	21.9	24.7	21.9	8.29	–	8.29	3.97	3.52	3.97	191	191	254
L2-1/2X2X3/8	L64X51X9.5	7.90	1000	50.8	63.5	9.53	15.9	6.67	0.380	16.1	8.95	19.5	21.0	11.0	31.1	0.00720	31.0	0.214	10.8	5.92	14.6	14.7	7.87	0.114	10.6	4.83	0.612	–	0.48	32.8	10.2	41.4	22.4	23.5	13.7	14.6	46.7	11.6	5.08	4.83	8.28	178	165	229
L2-1/2X2X5/16	L64X51X7.9	6.70	852	50.8	63.5	7.94	14.3	7.99	0.329	13.7	7.62	19.7	20.4	9.86	18.5	0.00435	31.2	0.186	9.13	5.06	14.8	14.1	6.71	0.0970	10.7	4.26	0.618	–	0.42	33.3	9.93	41.9	22.6	22.7	14.1	12.5	42.0	9.93	4.29	4.28	6.90	178	165	229
L2-1/2X2X1/4	L64X51X6.4	5.40	690	50.8	63.5	6.35	12.7	10.0	0.273	11.3	6.24	19.9	19.8	9.14	9.78	0.00233	31.8	0.155	7.44	4.15	15.0	13.5	5.44	0.08	10.7	3.49	0.624	–	0.35	33.8	9.65	42.7	22.9	21.9	14.4	10.3	36.1	8.16	3.49	3.64	5.57	178	165	229
L2-1/2X2X3/16	L64X51X4.8	4.20	528	50.8	63.5	4.76	11.1	13.3	0.213	8.67	4.80	20.1	19.2	8.10	4.29	0.00103	32.0	0.122	5.69	3.20	15.2	12.9	4.17	0.062	10.8	2.67	0.628	–	0.27	34.3	9.32	43.2	23.1	21.1	14.7	7.93	29.2	6.31	2.65	2.92	4.18	178	165	229
L2-1/2X1-1/2X1/4	L64X38X6.4	4.80	611	38.1	63.5	6.35	12.7	10.0	0.247	10.6	5.96	20.1	22.0	15.4	8.70	0.00186	30.2	0.0666	4.28	2.33	10.4	9.45	4.80	0.041	8.15	1.95	0.354	–	0.27	27.4	17.6	41.1	20.7	16.3	7.95	9.95	15.5	6.64	1.97	2.51	5.11	165	140	203
L2-1/2X1-1/2X3/16	L64X38X4.8	3.60	467	38.1	63.5	4.76	11.1	13.3	0.193	8.14	4.59	20.3	21.3	14.5	3.83	0.000822	30.5	0.0524	3.24	1.80	10.6	8.81	3.68	0.031	8.23	1.50	0.360	–	0.21	27.7	17.0	41.9	21.1	15.5	8.28	7.74	12.6	5.11	1.48	2.02	3.79	165	140	203
L2X2X3/8	L51X51X9.5	7.00	884	50.8	50.8	9.53	15.9	5.33	0.198	10.3	5.70	15.0	16.1	8.71	27.4	0.00467	26.7	0.198	10.3	5.70	15.0	16.1	8.71	0.085	9.80	3.72	1.00	0.640	0.31	32.5	0	32.5	16.6	22.7	16.6	9.59	–	9.59	5.10	3.72	5.10	152	152	203
L2X2X5/16	L51X51X7.9	5.80	748	50.8	50.8	7.94	14.3	6.39	0.172	8.80	4.88	15.2	15.5	7.37	16.4	0.00285	26.9	0.172	8.80	4.88	15.2	15.5	7.37	0.072	9.80	3.28	1.00	0.640	0.27	33.0	0	33.0	16.9	21.9	16.9	8.26	–	8.26	4.24	3.28	4.24	152	152	203
L2X2X1/4	L51X51X6.4	4.70	609	50.8	50.8	6.35	12.7	8.00	0.144	7.21	4.00	15.4	14.9	5.99	8.70	0.00154	27.4	0.144	7.21	4.00	15.4	14.9	5.99	0.059	9.83	2.80	1.00	0.630	0.23	33.8	0	33.8	17.1	21.1	17.1	6.79	–	6.79	3.46	2.80	3.46	152	152	203
L2X2X3/16	L51X51X4.8	3.60	466	50.8	50.8	4.76	11.1	10.6	0.113	5.54	3.08	15.5	14.2	4.60	3.83	0.000682	27.7	0.113	5.54	3.08	15.5	14.2	4.60	0.045	9.88	2.25	1.00	0.630	0.180	34.3	0	34.3	17.4	20.1	17.4	5.26	–	5.26	2.61	2.25	2.61	152	152	203
L2X2X1/8	L51X51X3.2	2.40	317	50.8	50.8	3.18	9.53	16.0	0.0787	3.77	2.11	15.7	13.6	3.12	1.22	0.000212	27.9	0.0787	3.77	2.11	15.7	13.6	3.12	0.032	9.93	1.63	1.00	0.630	0.13	34.8	0	34.8	17.9	19.2	17.9	3.62	–	3.62	1.77	1.64	1.77	152	152	203

HSS Rectanguler or Square



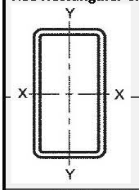
HSS round or Pipe

Palestine Technical University Kadoorie

O.S

		Weight	Area	Design Wall Thickness	Overall Depth	Overall Width	Axis X-X				Axis Y-Y				Workable Flat Dimensions		Torsional Propreties			Outside Diameter of Round Section			
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	t_{des}	Ht	B	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	h	b	J	C_w	C	OD	b/t_{des}	h/t_{des}	D/t
HSS24X12X3/4	HSS609.6X304.8X19	255	30400	17.7	610	305	1430	5880	4700	217	487	3620	3200	126	556	252	1190000	–	6000	–	14.2	31.4	–
HSS24X12X5/8	HSS609.6X304.8X15.9	215	25500	14.8	610	305	1220	4980	4020	219	416	3080	2740	128	566	262	1010000	–	5080	–	17.7	38.4	–
HSS24X12X1/2	HSS609.6X304.8X12.7	174	20700	11.8	610	305	1010	4060	3310	220	345	2520	2260	129	574	269	824000	–	4130	–	22.8	48.6	–
HSS22X22X7/8	HSS558.8X558.8X22.2	364	43400	20.7	559	559	2070	8690	7410	218	2070	8690	7410	218	498	498	3280000	–	11900	–	24.1	24.1	–
HSS22X22X3/4	HSS558.8X558.8X19	315	37600	17.7	559	559	1810	7570	6470	220	1810	7570	6470	220	505	505	2860000	–	10400	–	28.5	28.5	–
HSS20X20X7/8	HSS508X508X22.2	329	39200	20.7	508	508	1530	7100	6020	197	1530	7100	6020	197	447	447	2440000	–	9780	–	21.6	21.6	–
HSS20X20X3/4	HSS508X508X19	285	33900	17.7	508	508	1340	6200	5290	199	1340	6200	5290	199	455	455	2130000	–	8510	–	25.6	25.6	–
HSS20X20X5/8	HSS508X508X15.9	240	28600	14.8	508	508	1140	5240	4510	200	1140	5240	4510	200	465	465	1800000	–	7160	–	31.5	31.5	–
HSS20X20X1/2	HSS508X508X12.7	194	23100	11.8	508	508	941	4280	3700	202	941	4280	3700	202	472	472	1460000	–	5820	–	40.0	40.0	–
HSS20X12X3/4	HSS508X304.8X19	224	26800	17.7	508	305	911	4430	3590	184	411	3110	2700	124	455	252	924000	–	4970	–	14.2	25.6	–
HSS20X12X5/8	HSS508X304.8X15.9	189	22600	14.8	508	305	783	3770	3080	186	354	2650	2330	125	465	262	787000	–	4210	–	17.7	31.4	–
HSS20X12X1/2	HSS508X304.8X12.7	153	18300	11.8	508	305	645	3080	2540	188	293	2160	1920	127	472	269	641000	–	3420	–	22.8	40.0	–
HSS20X12X3/8	HSS508X304.8X9.5	117	13900	8.86	508	305	499	2360	1970	189	228	1670	1490	128	483	279	491000	–	2620	–	31.4	54.3	–
HSS20X12X5/16	HSS508X304.8X7.9	97.9	11700	7.39	508	305	420	2000	1660	190	193	1410	1270	129	485	282	415000	–	2200	–	38.2	65.7	–
HSS20X8X5/8	HSS508X203.2X15.9	164	19500	14.8	508	203	599	3030	2360	175	141	1580	1390	84.8	465	159	381000	–	2740	–	10.8	31.4	–
HSS20X8X1/2	HSS508X203.2X12.7	133	15900	11.8	508	203	495	2490	1950	177	118	1300	1160	86.1	472	168	315000	–	2250	–	14.2	40.0	–
HSS20X8X3/8	HSS508X203.2X9.5	102	12100	8.86	508	203	385	1920	1520	179	92.4	1010	911	87.4	483	177	244000	–	1720	–	19.9	54.3	–
HSS20X8X5/16	HSS508X203.2X7.9	85.3	10100	7.39	508	203	327	1620	1290	180	78.7	852	777	88.1	485	181	206000	–	1450	–	24.5	65.7	–
HSS20X4X1/2	HSS508X101.6X12.7	113	13500	11.8	508	102	349	1880	1370	161	24.4	557	480	42.7	472	66.0	81200	–	1050	–	5.60	40.0	–
HSS20X4X3/8	HSS508X101.6X9.5	86.4	10300	8.86	508	102	273	1460	1080	163	19.8	439	390	43.9	483	74.9	64900	–	818	–	8.46	54.3	–
HSS20X4X5/16	HSS508X101.6X7.9	72.7	8650	7.39	508	102	233	1240	918	164	17.1	375	338	44.5	485	79.5	55800	–	695	–	10.7	65.7	–
HSS20X4X1/4	HSS508X101.6X6.4	58.7	6970	5.92	508	102	191	1010	751	165	14.3	306	280	45.2	490	83.8	46200	–	569	–	14.2	82.8	–
HSS18X18X7/8	HSS457.2X457.2X22.2	293	35000	20.7	457	457	1090	5670	4790	177	1090	5670	4790	177	396	396	1760000	–	7850	–	19.2	19.2	–
HSS18X18X3/4	HSS457.2X457.2X19	255	30400	17.7	457	457	966	4950	4230	178	966	4950	4230	178	404	404	1540000	–	6830	–	22.8	22.8	–
HSS18X18X5/8	HSS457.2X457.2X15.9	215	25500	14.8	457	457	824	4210	3610	180	824	4210	3610	180	414	414	1300000	–	5770	–	28.1	28.1	–
HSS18X18X1/2	HSS457.2X457.2X12.7	174	20700	11.8	457	457	678	3440	2970	181	678	3440	2970	181	422	422	1060000	–	4690	–	35.7	35.7	–
HSS18X6X5/8	HSS457.2X152.4X15.9	139	16600	14.8	457	152	384	2210	1690	152	65.8	1000	864	63.0	414	108	192000	–	1790	–	7.33	28.0	–
HSS18X6X1/2	HSS457.2X152.4X12.7	113	13500	11.8	457	152	320	1840	1400	154	55.8	831	731	64.3	422	117	161000	–	1470	–	9.90	35.7	–
HSS18X6X3/8	HSS457.2X152.4X9.5	86.4	10300	8.86	457	152	251	1420	1100	156	44.1	647	582	65.5	432	126	126000	–	1140	–	14.2	48.6	–
HSS18X6X5/16	HSS457.2X152.4X7.9	72.7	8650	7.39	457	152	214	1200	934	157	38.0	549	498	66.3	434	130	107000	–	962	–	17.6	58.9	–
HSS18X6X1/4	HSS457.2X152.4X6.4	58.7	6970	5.92	457	152	174	973	762	158	31.3	447	410	66.8	439	135	87400	–	782	–	22.8	74.3	–
HSS16X16X7/8	HSS406.4X406.4X22.2	258	30800	20.7	406	406	749	4390	3690	156	749	4390	3690	156	345	345	1220000	–	6110	–	16.7	16.7	–
HSS16X16X3/4	HSS406.4X406.4X19.0	224	26800	17.7	406	406	662	3850	3260	157	662	3850	3260	157	353	353	1070000	–	5340	–	19.9	19.9	–
HSS16X16X5/8	HSS406.4X406.4X15.9	189	22600	14.8	406	406	570	3280	2800	159	570	3280	2800	159	363	363	903000	–	4520	–	24.5	24.5	–
HSS16X16X1/2	HSS406.4X406.4X12.7	153	18300	11.8	406	406	470	2690	2310	160	470	2690	2310	160	371	371	737000	–	3670	–	31.4	31.4	–
HSS16X16X3/8	HSS406.4X406.4X9.5	117	13900	8.86	406	406	363	2060	1790	162	363	2060	1790	162	381	381	562000	–	2800	–	42.8	42.8	–
HSS16X16X5/16	HSS406.4X406.4X7.9	97.9	11700	7.39	406	406	308	1740	1510	162	308	1740	1510	162	384	384	475000	–	2360	–	52.0	52.0	–
HSS16X12X3/4	HSS406.4X304.8X19	194	23200	17.7	406	305	529	3160	2610	151	337	2590	2210	121	353	252	670000	–	3930	–	14.2	19.9	–
HSS16X12X5/8	HSS406.4X304.8X15.9	164	19500	14.8	406	305	454	2700	2230	152	291	2210	1920	122	363	262	570000	–	3340	–	17.7	24.5	–
HSS16X12X1/2	HSS406.4X304.8X12.7	133	15900	11.8	406	305	376	2210	1850	154	242	1820	1590	123	371	269	466000	–	2720	–	22.8	31.4	–
HSS16X12X3/8	HSS406.4X304.8X9.5	102	12100	8.86	406	305	292	1700	1440	155	188	1400	1230	125	381	279	359000	–	2080	–	31.4	42.8	–
HSS16X12X5/16	HSS406.4X304.8X7.9	85.4	10100	7.39	406	305	248	1440	1220	156	160	1180	1050	125	384	282	303000	–	1750	–	38.2	52.0	–
HSS16X8X5/8	HSS406.4X203.2X15.9	139	16600	14.8	406	203	339	2110	1670	143	114	1300	1120	83.1	363	159	283000	–	2160	–	10.8	24.5	–
HSS16X8X1/2	HSS406.4X203.2X12.7	113	13500	11.8	406	203	283	1740	1390	145	95.7	1070	944	84.3	371	168	234000	–	1770	–	14.2	31.4	–
HSS16X8X3/8	HSS406.4X203.2X9.5	86.4	10300	8.86	406	203	221	1350	1090	147	75.3	832	742	85.6	381	177	181000	–	1370	–	19.9	42.8	–
HSS16X8X5/16	HSS406.4X203.2X7.9	72.7	8650	7.39	406	203	188	1140	924	147	64.5	705	634	86.4	384	181	154000	–	1150	–	24.5	52.0	–
HSS16X8X1/4	HSS406.4X203.2X6.4	58.7	6970	5.92	406	203	153	924	755	148	52.9	574	519	86.9	389	185	125000	–	934	–	31.3	65.7	–
HSS16X4X5/8	HSS406.4X101.6X15.9	113	13500	14.8	406	102	224	1520	1100	129	22.5	533	442	40.6	363	57.4	72400	–	991	–	3.88	24.5	–
HSS16X4X1/2	HSS406.4X101.6X12.7	92.7	11100	11.8	406	102	189	1270	932	131	19.6	449	385	41.9	371	66.0	62400	–	831	–	5.60	31.4	–
HSS16X4X3/8	HSS406.4X101.6X9.5	71.2	8520	8.86	406	102	150	987	737	133	15.9	356	313	43.4	381	74.9	49900	–	651	–	8.46	42.8	–
HSS16X4X5/16	HSS406.4X101.6X7.9	60.0	7160	7.39	406	102	128	837	631	134	13.8	303	272	43.9	384	79.5	42900	–	554	–	10.7	52.0	–
HSS16X4X1/4	HSS406.4X101.6X6.4	48.6	5780	5.92	406	102	105	683	518	135	11.5	249	226	44.7	389	83.8	35500	–	452	–	14.2	65.7	–
HSS16X4X3/16	HSS406.4X101.6X4.8	36.7	4360	4.42	406	102	80.3	519	397	136	8.95	192	177	45.2	394	88.4	27300	–	346	–	20.0	89.0	–
HSS14X14X7/8	HSS355.6X355.6X22.2	223	26600	20.7	356	356	487	3290	2740	135	487	3290	2740	135	295	295	795000	–	4610	–	14.3	14.3	–
HSS14X14X3/4	HSS355.6X355.6X19	194	23200	17.7	356	356	433	2900	2440	137	433	2900	2440	137	302	302	699000	–	4030	–	17.0	17.0	–
HSS14X14X5/8	HSS355.6X355.6X15.9	164	19500	14.8	356	356	373	2470	2100	138	373	2470	2100	138	312	312	595000	–	3410	–	21.1	21.1	–
HSS14X14X1/2	HSS355.6X355.6X12.7	133	15900	11.8	356	356	309	2030	1740	139	309	2030	1740	139	320	320	487000	–	2790	–	27.1	27.1	–
HSS14X14X3/8	HSS355.6X355.6X9.5	102	12100	8.86	356	356	240	1560	1350	141	240	1560	1350	141	330	330	375000	–	2130	–	37.1	37.1	–
HSS14X14X5/16	HSS355.6X355.6X7.9	85.3	10100	7.39	356	356	204	1320	1150	142	204	1320	1150	142	333	333	316000	–	1790	–	45.1	45.1	–
HSS14X10X5/8	HSS355.6X254X15.9	139	16600	14.8	356	254	286	1970	1610	131	169	1560	1340	101	312	210	346000	–	2390	–	14.2	21.1	–
HSS14X10X1/2	HSS355.6X254X12.7	113	13500	11.8	356	254	239	1620	1340	133	142	1290	1120	103	320	218	285000	–	1970	–	18.5	27.1	–
HSS14X10X3/8	HSS355.6X254X9.5	86.4	10300	8.86	356	254	186	1250	1050	134	111	995	875	104	330	227	220000	–	1500	–	25.7	37.1	–
HSS14X10X5/16	HSS355.6X254X7.9	72.7	8650	7.39	356	254	158	1060	890	135	94.5	842	746	105	333	232	186000	–	1270	–	31.4	45.1	–
HSS14X10X1/4	HSS355.6X254X6.4	58.7	6970	5.92	356	254	129	859	726	136	77.4	685	610	105	338	236	151000	–	1030	–	39.9	57.1	–
HSS14X6X5/8	HSS355.6X152.4X15.9	113	13500	14.8	356	152	199	1450	1120	121	51.6	793	675	61.7	312	108	139000	–	1370	–	7.33	21.1	–
HSS14X6X1/2	HSS355.6X152.4X12.7	92.7	11100	11.8	356	152	167	1210	941	123	43.7	662	575	63.0	320	117	116000	–	1140	–	9.90	27.1	–

HSS Rectanguler or Square



HSS round or Pipe

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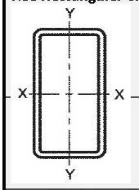
		Weight	Area	Design Wall Thickness	Overall Depth	Overall Width	Axis X-X				Axis Y-Y				Workable Flat Dimensions		Torsional Propreties			Outside Diameter of Round Section			
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	t_{des}	Ht	B	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	h	b	J	C_w	C	OD	b/t_{des}	h/t_{des}	D/t
HSS14X6X3/8	HSS355.6X152.4X9.5	71.2	8520	8.86	356	152	132	939	742	125	35.0	518	459	64.3	330	126	91200	–	880	–	14.2	37.1	–
HSS14X6X5/16	HSS355.6X152.4X7.9	60.0	7160	7.39	356	152	113	796	634	125	30.1	441	395	64.8	333	130	77400	–	746	–	17.6	45.1	–
HSS14X6X1/4	HSS355.6X152.4X6.4	48.6	5780	5.92	356	152	92.4	649	519	126	24.8	361	326	65.5	338	135	63300	–	605	–	22.8	57.1	–
HSS14X6X3/16	HSS355.6X152.4X4.8	36.7	4360	4.42	356	152	70.8	493	398	127	19.1	274	251	66.3	343	139	48300	–	459	–	31.5	77.5	–
HSS14X4X5/8	HSS355.6X101.6X15.9	101	12100	14.8	356	102	155	1200	873	114	19.6	467	387	40.4	312	57.4	61600	–	862	–	3.88	21.1	–
HSS14X4X1/2	HSS355.6X101.6X12.7	82.6	9870	11.8	356	102	132	1000	742	116	17.1	395	338	41.7	320	66.0	52900	–	723	–	5.60	27.1	–
HSS14X4X3/8	HSS355.6X101.6X9.5	63.6	7610	8.86	356	102	105	783	590	118	14.0	313	275	42.9	330	74.9	42500	–	567	–	8.46	37.1	–
HSS14X4X5/16	HSS355.6X101.6X7.9	53.7	6400	7.39	356	102	89.9	665	506	119	12.2	269	239	43.7	333	79.5	36500	–	483	–	10.7	45.1	–
HSS14X4X1/4	HSS355.6X101.6X6.4	43.5	5180	5.92	356	102	74.1	544	416	120	10.2	221	200	44.2	338	83.8	30100	–	395	–	14.2	57.1	–
HSS14X4X3/16	HSS355.6X101.6X4.8	32.9	3910	4.42	356	102	57.0	415	320	120	7.91	169	155	45.0	343	88.4	23200	–	302	–	20.0	77.5	–
HSS12X12X3/4	HSS304.8X304.8X19	164	19500	17.7	305	305	263	2080	1720	116	263	2080	1720	116	252	252	429000	–	2900	–	14.2	14.2	–
HSS12X12X5/8	HSS304.8X304.8X15.9	139	16600	14.8	305	305	228	1790	1500	117	228	1790	1500	117	262	262	368000	–	2470	–	17.7	17.7	–
HSS12X12X1/2	HSS304.8X304.8X12.7	113	13500	11.8	305	305	190	1470	1250	119	190	1470	1250	119	269	269	303000	–	2020	–	22.8	22.8	–
HSS12X12X3/8	HSS304.8X304.8X9.5	86.3	10300	8.86	305	305	149	1130	975	120	149	1130	975	120	279	279	234000	–	1550	–	31.4	31.4	–
HSS12X12X5/16	HSS304.8X304.8X7.9	72.6	8650	7.39	305	305	127	960	831	121	127	960	831	121	282	282	197000	–	1310	–	38.2	38.2	–
HSS12X12X1/4	HSS304.8X304.8X6.4	58.6	6970	5.92	305	305	103	780	678	122	103	780	678	122	287	287	160000	–	1060	–	48.5	48.5	–
HSS12X12X3/16	HSS304.8X304.8X4.8	44.4	5260	4.42	305	305	78.7	590	516	122	78.7	590	516	122	292	292	121000	–	796	–	66.0	66.0	–
HSS12X10X1/2	HSS304.8X254X12.7	103	12300	11.8	305	254	164	1290	1080	116	124	1140	978	101	269	218	227000	–	1670	–	18.5	22.8	–
HSS12X10X3/8	HSS304.8X254X9.5	78.8	9420	8.86	305	254	129	1000	846	117	97.4	885	769	102	279	227	175000	–	1280	–	25.7	31.4	–
HSS12X10X5/16	HSS304.8X254X7.9	66.4	7870	7.39	305	254	110	847	721	118	83.2	749	655	103	282	232	148000	–	1080	–	31.4	38.2	–
HSS12X10X1/4	HSS304.8X254X6.4	53.6	6390	5.92	305	254	89.9	690	590	119	68.3	610	536	103	287	236	120000	–	877	–	39.9	48.5	–
HSS12X8X5/8	HSS304.8X203.2X15.9	113	13500	14.8	305	203	165	1350	1080	110	87.4	1010	860	80.3	262	159	189000	–	1600	–	10.8	17.7	–
HSS12X8X1/2	HSS304.8X203.2X12.7	92.7	11100	11.8	305	203	139	1120	911	112	74.1	844	728	81.5	269	168	157000	–	1320	–	14.2	22.8	–
HSS12X8X3/8	HSS304.8X203.2X9.5	71.2	8520	8.86	305	203	109	869	716	114	58.3	657	575	83.1	279	177	122000	–	1020	–	19.9	31.4	–
HSS12X8X5/16	HSS304.8X203.2X7.9	60.1	7160	7.39	305	203	93.2	736	613	114	49.9	559	493	83.6	282	181	103000	–	859	–	24.5	38.2	–
HSS12X8X1/4	HSS304.8X203.2X6.4	48.5	5780	5.92	305	203	76.6	600	501	115	41.1	456	405	84.3	287	185	84100	–	696	–	31.3	48.5	–
HSS12X8X3/16	HSS304.8X203.2X4.8	36.9	4360	4.42	305	203	58.3	456	383	116	31.5	346	310	85.1	292	190	63700	–	528	–	43.0	66.0	–
HSS12X6X5/8	HSS304.8X152.4X15.9	101	12100	14.8	305	152	134	1130	875	105	44.5	690	582	60.7	262	108	113000	–	1170	–	7.33	17.7	–
HSS12X6X1/2	HSS304.8X152.4X12.7	82.6	9870	11.8	305	152	113	941	741	107	37.9	577	498	62.0	269	117	94500	–	967	–	9.90	22.8	–
HSS12X6X3/8	HSS304.8X152.4X9.5	63.6	7610	8.86	305	152	89.5	734	588	109	30.3	454	398	63.2	279	126	74100	–	751	–	14.2	31.4	–
HSS12X6X5/16	HSS304.8X152.4X7.9	53.7	6400	7.39	305	152	76.6	624	503	109	26.1	387	342	64.0	282	130	63300	–	636	–	17.6	38.2	–
HSS12X6X1/4	HSS304.8X152.4X6.4	43.4	5180	5.92	305	152	62.9	510	413	110	21.6	316	283	64.5	287	135	51600	–	518	–	22.8	48.5	–
HSS12X6X3/16	HSS304.8X152.4X4.8	33.1	3910	4.42	305	152	48.3	388	318	111	16.6	241	218	65.3	292	139	39400	–	393	–	31.5	66.0	–
HSS12X4X5/8	HSS304.8X101.6X15.9	88.0	10600	14.8	305	102	102	909	669	98.3	16.8	401	331	39.9	262	57.4	50800	–	731	–	3.88	17.7	–
HSS12X4X1/2	HSS304.8X101.6X12.7	72.5	8710	11.8	305	102	87.4	765	572	100	14.7	342	290	41.1	269	66.0	43700	–	615	–	5.60	22.8	–
HSS12X4X3/8	HSS304.8X101.6X9.5	56.0	6710	8.86	305	102	69.9	601	459	102	12.0	272	238	42.4	279	74.9	35000	–	483	–	8.46	31.4	–
HSS12X4X5/16	HSS304.8X101.6X7.9	47.4	5650	7.39	305	102	59.9	513	395	103	10.5	233	206	43.2	282	79.5	30100	–	413	–	10.7	38.2	–
HSS12X4X1/4	HSS304.8X101.6X6.4	38.4	4580	5.92	305	102	49.5	420	326	104	8.74	192	172	43.7	287	83.8	24900	–	338	–	14.2	48.5	–
HSS12X4X3/16	HSS304.8X101.6X4.8	29.3	3460	4.42	305	102	38.2	321	251	105	6.83	147	134	44.5	292	88.4	19200	–	257	–	20.0	66.0	–
HSS12X3-1/2X3/8	HSS304.8X88.9X9.5	54.1	6450	8.86	305	88.9	64.9	569	426	100	8.87	229	200	37.1	279	62.2	26900	–	418	–	7.03	31.4	–
HSS12X3-1/2X5/16	HSS304.8X88.9X7.9	45.8	5460	7.39	305	88.9	55.8	485	367	101	7.74	198	174	37.6	282	66.8	23300	–	357	–	9.03	38.2	–
HSS12X3X5/16	HSS304.8X76.2X7.9	44.2	5270	7.39	305	76.2	51.6	457	339	99.1	5.45	164	143	32.3	282	54.1	17200	–	302	–	7.31	38.2	–
HSS12X3X1/4	HSS304.8X76.2X6.4	35.8	4280	5.92	305	76.2	42.9	375	282	100	4.62	136	121	32.8	287	58.4	14400	–	247	–	9.88	48.5	–
HSS12X3X3/16	HSS304.8X76.2X4.8	27.4	3240	4.42	305	76.2	33.1	287	218	101	3.63	105	95.2	33.5	292	63.0	11200	–	190	–	14.2	66.0	–
HSS12X2X5/16	HSS304.8X50.8X7.9	41.0	4900	7.39	305	50.8	43.3	401	285	94.2	2.12	99.1	83.6	20.8	282	28.7	7330	–	190	–	3.87	38.2	–
HSS12X2X1/4	HSS304.8X50.8X6.4	33.3	3980	5.92	305	50.8	36.2	329	238	95.3	1.84	83.2	72.3	21.5	287	33.0	6290	–	158	–	5.58	48.5	–
HSS12X2X3/16	HSS304.8X50.8X4.8	25.4	3010	4.42	305	50.8	28.1	254	184	96.5	1.48	65.1	58.2	22.1	292	37.6	4990	–	123	–	8.49	66.0	–
HSS10X10X3/4	HSS254X254X19	133	15900	17.7	254	254	144	1390	1140	95.3	144	1390	1140	95.3	201	201	241000	–	1950	–	11.3	11.3	–
HSS10X10X5/8	HSS254X254X15.9	113	13500	14.8	254	254	127	1200	996	96.5	127	1200	996	96.5	210	210	207000	–	1670	–	14.2	14.2	–
HSS10X10X1/2	HSS254X254X12.7	92.7	11100	11.8	254	254	107	995	839	98.0	107	995	839	98.0	218	218	171000	–	1380	–	18.5	18.5	–
HSS10X10X3/8	HSS254X254X9.5	71.2	8520	8.86	254	254	84.1	773	662	99.6	84.1	773	662	99.6	227	227	133000	–	1060	–	25.7	25.7	–
HSS10X10X5/16	HSS254X254X7.9	60.0	7160	7.39	254	254	71.6	657	565	100	71.6	657	565	100	232	232	113000	–	898	–	31.4	31.4	–
HSS10X10X1/4	HSS254X254X6.4	48.5	5780	5.92	254	254	58.7	536	464	101	58.7	536	464	101	236	236	91600	–	728	–	39.9	39.9	–
HSS10X10X3/16	HSS254X254X4.8	36.8	4360	4.42	254	254	45.0	406	354	102	45.0	406	354	102	241	241	69500	–	551	–	54.5	54.5	–
HSS10X8X5/8	HSS254X203.2X15.9	101	12100	14.8	254	203	105	1020	828	93.5	74.1	873	729	78.5	210	159	144000	–	1320	–	10.8	14.2	–
HSS10X8X1/2	HSS254X203.2X12.7	82.6	9870	11.8	254	203	89.1	850	700	94.7	62.9	729	619	79.8	218	168	120000	–	1090	–	14.2	18.5	–
HSS10X8X3/8	HSS254X203.2X9.5	63.6	7610	8.86	254	203	70.3	664	556	96.3	49.9	570	492	81.0	227	177	93200	–	842	–	19.9	25.7	–
HSS10X8X5/16	HSS254X203.2X7.9	53.7	6400	7.39	254	203	60.4	564	475	97.0	42.9	485	421	81.8	232	181	79100	–	713	–	24.5	31.4	–
HSS10X8X1/4	HSS254X203.2X6.4	43.4	5180	5.92	254	203	49.5	460	390	97.8	35.3	397	347	82.6	236	185	64500	–	578	–	31.3	39.9	–
HSS10X8X3/16	HSS254X203.2X4.8	33.1	3910	4.42	254	203	38.0	351	300	98.6	27.1	302	267	83.3	241	190	49100	–	438	–	43.0	54.5	–
HSS10X6X5/8	HSS254X152.4X15.9	88.0	10600	14.8	254	152	83.7	841	659	88.9	37.2	587	488	59.4	210	108	87000	–	960	–	7.33	14.2	–
HSS10X6X1/2	HSS254X152.4X12.7	72.5	8710	11.8	254	152	71.2	705	562	90.7	32.0	493	420	60.7	218	117	73300	–	798	–	9.90	18.5	–
HSS10X6X3/8	HSS254X152.4X9.5	56.0	6710	8.86	254	152	57.0	554	449	92.2	25.7	388	338	62.0	227	126	57900	–	621	–	14.2	25.7	–
HSS10X6X5/16	HSS254X152.4X7.9	47.4	5650	7.39	254	152	49.1	472	385	93.0	22.2	331	292	62.7	232	130	49100	–	528	–	17.6	31.4	–
HSS10X6X1/4	HSS254X152.4X6.4	38.4	4580	5.92	254	152	40.3	387	318	93.7	18.4	272	241	63.2	236	135	40200	–	429	–	22.8	39.9	–
HSS10X6X3/16	HSS254X152.4X4.8	29.3	3460	4.42	254	152	31.1	295	244	94.7	14.2	208	187	64.0	241	139	30700	–	326	–	31.5	54.5	–

HSS Rectanguler or Square



HSS round or Pipe

Palestine Technical University Kadoorie

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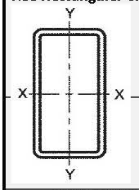
		Weight	Area	Design Wall Thickness	Overall Depth	Overall Width	Axis X-X				Axis Y-Y				Workable Flat Dimensions		Torsional Propreties			Outside Diameter of Round Section			
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	t_{des}	Ht	B	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	h	b	J	C_w	C	OD	b/t_{des}	h/t_{des}	D/t
HSS10X5X3/8	HSS254X127X9.5	52.2	6240	8.86	254	127	49.9	498	395	89.7	16.9	306	265	52.1	227	100	41600	–	511	–	11.3	25.7	–
HSS10X5X5/16	HSS254X127X7.9	44.2	5270	7.39	254	127	43.3	426	341	90.4	14.7	262	231	52.6	232	105	35800	–	434	–	14.2	31.4	–
HSS10X5X1/4	HSS254X127X6.4	35.8	4280	5.92	254	127	35.7	349	282	91.4	12.2	216	192	53.3	236	109	29400	–	354	–	18.5	39.9	–
HSS10X5X3/16	HSS254X127X4.8	27.4	3240	4.42	254	127	27.6	267	216	92.2	9.45	166	149	54.1	241	114	22500	–	270	–	25.7	54.5	–
HSS10X4X5/8	HSS254X101.6X15.9	75.3	9030	14.8	254	102	62.0	660	490	82.8	13.9	338	275	39.1	210	57.4	39800	–	601	–	3.88	14.2	–
HSS10X4X1/2	HSS254X101.6X12.7	62.4	7480	11.8	254	102	53.7	559	423	84.8	12.3	288	241	40.4	218	66.0	34400	–	508	–	5.60	18.5	–
HSS10X4X3/8	HSS254X101.6X9.5	48.4	5790	8.86	254	102	43.3	442	341	86.6	10.1	229	198	41.7	227	74.9	27700	–	400	–	8.46	25.7	–
HSS10X4X5/16	HSS254X101.6X7.9	41.0	4900	7.39	254	102	37.5	379	295	87.4	8.82	198	174	42.4	232	79.5	23900	–	342	–	10.7	31.4	–
HSS10X4X1/4	HSS254X101.6X6.4	33.3	3980	5.92	254	102	31.1	311	244	88.4	7.37	164	145	43.2	236	83.8	19700	–	280	–	14.2	39.9	–
HSS10X4X3/16	HSS254X101.6X4.8	25.4	3010	4.42	254	102	24.1	239	190	89.4	5.79	126	114	43.7	241	88.4	15200	–	215	–	20.0	54.5	–
HSS10X4X1/8	HSS254X101.6X3.2	17.2	2040	2.95	254	102	16.6	164	131	90.2	4.02	86.2	79.1	44.5	245	92.7	10400	–	146	–	31.5	83.2	–
HSS10X3-1/2X1/2	HSS254X88.9X12.7	59.8	7160	11.8	254	88.9	49.1	523	388	82.8	8.91	241	200	35.3	218	53.3	26300	–	434	–	4.53	18.5	–
HSS10X3-1/2X3/8	HSS254X88.9X9.5	46.5	5560	8.86	254	88.9	40.0	415	315	84.8	7.41	193	167	36.6	227	62.2	21400	–	346	–	7.03	25.7	–
HSS10X3-1/2X5/16	HSS254X88.9X7.9	39.5	4710	7.39	254	88.9	34.6	356	272	85.9	6.49	167	146	37.1	232	66.8	18600	–	295	–	9.03	31.4	–
HSS10X3-1/2X1/4	HSS254X88.9X6.4	32.0	3830	5.92	254	88.9	28.8	293	226	86.6	5.45	138	123	37.8	236	71.1	15400	–	243	–	12.0	39.9	–
HSS10X3-1/2X3/16	HSS254X88.9X4.8	24.5	2900	4.42	254	88.9	22.3	225	175	87.6	4.29	107	96.5	38.4	241	75.7	11900	–	187	–	17.1	54.5	–
HSS10X3-1/2X1/8	HSS254X88.9X3.2	16.6	1960	2.95	254	88.9	15.4	154	121	88.6	3.01	73.4	67.5	39.1	245	80.0	8240	–	127	–	27.2	83.2	–
HSS10X3X3/8	HSS254X76.2X9.5	44.6	5340	8.86	254	76.2	36.6	388	288	82.8	5.16	159	136	31.0	227	49.5	15700	–	290	–	5.60	25.7	–
HSS10X3X5/16	HSS254X76.2X7.9	37.9	4520	7.39	254	76.2	31.8	333	251	83.8	4.58	138	120	31.8	232	54.1	13700	–	249	–	7.31	31.4	–
HSS10X3X1/4	HSS254X76.2X6.4	30.8	3680	5.92	254	76.2	26.5	274	208	84.8	3.86	115	101	32.5	236	58.4	11500	–	205	–	9.88	39.9	–
HSS10X3X3/16	HSS254X76.2X4.8	23.5	2790	4.42	254	76.2	20.6	210	162	85.9	3.05	88.7	80.1	33.0	241	63.0	8950	–	158	–	14.2	54.5	–
HSS10X3X1/8	HSS254X76.2X3.2	15.9	1890	2.95	254	76.2	14.2	144	112	86.9	2.15	61.3	56.4	33.8	245	67.3	6200	–	108	–	22.9	83.2	–
HSS10X2X3/8	HSS254X50.8X9.5	40.8	4890	8.86	254	50.8	29.8	333	234	78.2	1.96	94.4	77.0	20.0	227	24.2	6620	–	180	–	2.73	25.7	–
HSS10X2X5/16	HSS254X50.8X7.9	34.7	4150	7.39	254	50.8	26.1	287	205	79.2	1.76	82.9	69.5	20.6	232	28.7	5910	–	157	–	3.87	31.4	–
HSS10X2X1/4	HSS254X50.8X6.4	28.3	3380	5.92	254	50.8	21.9	236	172	80.5	1.53	69.8	60.1	21.3	236	33.0	5080	–	131	–	5.58	39.9	–
HSS10X2X3/16	HSS254X50.8X4.8	21.6	2570	4.42	254	50.8	17.1	182	134	81.5	1.24	54.7	48.7	21.9	241	37.6	4050	–	102	–	8.49	54.5	–
HSS10X2X1/8	HSS254X50.8X3.2	14.7	1740	2.95	254	50.8	11.9	125	93.4	82.6	0.891	38.2	35.1	22.6	245	41.9	2870	–	70.6	–	14.2	83.2	–
HSS9X9X5/8	HSS228.6X228.6X15.9	101	12100	14.8	229	229	89.9	952	785	86.4	89.9	952	785	86.4	184	184	148000	–	1340	–	12.5	12.5	–
HSS9X9X1/2	HSS228.6X228.6X12.7	82.6	9870	11.8	229	229	76.2	793	665	87.6	76.2	793	665	87.6	193	193	123000	–	1100	–	16.4	16.4	–
HSS9X9X3/8	HSS228.6X228.6X9.5	63.6	7610	8.86	229	229	60.4	619	528	89.2	60.4	619	528	89.2	202	202	96100	–	854	–	22.8	22.8	–
HSS9X9X5/16	HSS228.6X228.6X7.9	53.6	6400	7.39	229	229	51.6	526	452	89.9	51.6	526	452	89.9	207	207	81600	–	721	–	27.9	27.9	–
HSS9X9X1/4	HSS228.6X228.6X6.4	43.4	5180	5.92	229	229	42.5	429	372	90.4	42.5	429	372	90.4	211	211	66200	–	587	–	35.6	35.6	–
HSS9X9X3/16	HSS228.6X228.6X74.8	33.0	3910	4.42	229	229	32.5	328	285	91.2	32.5	328	285	91.2	215	215	50400	–	444	–	48.7	48.7	–
HSS9X9X1/8	HSS228.6X228.6X3.2	22.3	2640	2.95	229	229	22.3	223	195	91.9	22.3	223	195	91.9	220	220	34100	–	300	–	74.6	74.6	–
HSS9X7X5/8	HSS228.6X177.8X15.9	88.0	10600	14.8	229	178	72.4	791	634	82.8	48.7	664	549	68.1	184	134	97800	–	1020	–	9.05	12.5	–
HSS9X7X1/2	HSS228.6X177.8X12.7	72.5	8710	11.8	229	178	62.0	664	541	84.3	41.6	557	470	69.3	193	142	82000	–	844	–	12.1	16.4	–
HSS9X7X3/8	HSS228.6X177.8X9.5	56.0	6710	8.86	229	178	49.5	521	433	85.9	33.5	438	377	70.6	202	151	64100	–	655	–	17.1	22.8	–
HSS9X7X5/16	HSS228.6X177.8X7.9	47.4	5650	7.39	229	178	42.5	444	370	86.6	28.8	374	324	71.4	207	156	54500	–	556	–	21.1	27.9	–
HSS9X7X1/4	HSS228.6X177.8X6.4	38.4	4580	5.92	229	178	35.0	364	306	87.4	23.8	306	267	72.1	211	160	44500	–	452	–	27.0	35.6	–
HSS9X7X3/16	HSS228.6X177.8X4.8	29.3	3460	4.42	229	178	26.9	277	236	88.1	18.4	234	206	72.9	215	165	34000	–	342	–	37.2	48.7	–
HSS9X5X5/8	HSS228.6X127X15.9	75.3	9030	14.8	229	127	55.4	631	485	78.2	21.6	415	341	48.8	184	82.8	53300	–	696	–	5.61	12.5	–
HSS9X5X1/2	HSS228.6X127X12.7	62.4	7480	11.8	229	127	47.9	533	418	79.8	18.8	352	297	50.0	193	91.4	45400	–	583	–	7.75	16.4	–
HSS9X5X3/8	HSS228.6X127X9.5	48.4	5790	8.86	229	127	38.5	421	336	81.5	15.3	280	241	51.6	202	100	36200	–	457	–	11.3	22.8	–
HSS9X5X5/16	HSS228.6X127X7.9	41.0	4900	7.39	229	127	33.2	361	290	82.3	13.3	239	210	52.1	207	105	31000	–	390	–	14.2	27.9	–
HSS9X5X1/4	HSS228.6X127X6.4	33.3	3980	5.92	229	127	27.5	297	241	83.1	11.1	197	174	52.8	211	109	25500	–	318	–	18.5	35.6	–
HSS9X5X3/16	HSS228.6X127X4.8	25.4	3010	4.42	229	127	21.3	226	187	84.1	8.62	152	136	53.3	215	114	19500	–	243	–	25.7	48.7	–
HSS9X3X1/2	HSS228.6X76.2X12.7	52.2	6280	11.8	229	76.2	33.6	403	295	73.2	5.49	177	144	29.7	193	40.6	16600	–	323	–	3.45	16.4	–
HSS9X3X3/8	HSS228.6X76.2X9.5	40.8	4890	8.86	229	76.2	27.6	323	241	75.2	4.66	144	122	30.7	202	49.5	13800	–	259	–	5.60	22.8	–
HSS9X3X5/16	HSS228.6X76.2X7.9	34.7	4150	7.39	229	76.2	24.0	277	210	76.2	4.11	125	108	31.5	207	54.1	12000	–	223	–	7.31	27.9	–
HSS9X3X1/4	HSS228.6X76.2X6.4	28.3	3380	5.92	229	76.2	20.1	229	175	77.2	3.49	104	91.6	32.3	211	58.4	10100	–	185	–	9.88	35.6	–
HSS9X3X3/16	HSS228.6X76.2X4.8	21.6	2570	4.42	229	76.2	15.7	177	137	78.0	2.76	80.6	72.4	32.8	215	63.0	7870	–	142	–	14.2	48.7	–
HSS8X8X5/8	HSS203.2X203.2X15.9	88.0	10600	14.8	203	203	60.8	733	598	75.9	60.8	733	598	75.9	159	159	102000	–	1040	–	10.8	10.8	–
HSS8X8X1/2	HSS203.2X203.2X12.7	72.5	8710	11.8	203	203	52.0	615	511	77.2	52.0	615	511	77.2	168	168	84900	–	859	–	14.2	14.2	–
HSS8X8X3/8	HSS203.2X203.2X9.5	56.0	6710	8.86	203	203	41.6	482	408	78.7	41.6	482	408	78.7	177	177	66600	–	667	–	19.9	19.9	–
HSS8X8X5/16	HSS203.2X203.2X7.9	47.3	5650	7.39	203	203	35.6	411	351	79.5	35.6	411	351	79.5	181	181	56600	–	565	–	24.5	24.5	–
HSS8X8X1/4	HSS203.2X203.2X6.4	38.4	4580	5.92	203	203	29.4	336	290	80.0	29.4	336	290	80.0	185	185	46200	–	460	–	31.3	31.3	–
HSS8X8X3/16	HSS203.2X203.2X4.8	29.2	3460	4.42	203	203	22.6	257	223	80.8	22.6	257	223	80.8	190	190	35200	–	349	–	43.0	43.0	–
HSS8X8X1/8	HSS203.2X203.2X3.2	19.7	2340	2.95	203	203	15.6	175	153	81.5	15.6	175	153	81.5	194	194	23900	–	236	–	66.0	66.0	–
HSS8X6X5/8	HSS203.2X152.4X15.9	75.3	9030	14.8	203	152	47.5	592	467	72.4	30.1	483	395	57.7	159	108	62400	–	754	–	7.33	10.8	–
HSS8X6X1/2	HSS203.2X152.4X12.7	62.4	7480	11.8	203	152	40.9	500	403	73.9	26.0	408	341	58.9	168	117	52900	–	629	–	9.90	14.2	–
HSS8X6X3/8	HSS203.2X152.4X9.5	48.4	5790	8.86	203	152	32.9	395	324	75.4	21.1	324	277	60.5	177	126	41600	–	492	–	14.2	19.9	–
HSS8X6X5/16	HSS203.2X152.4X7.9	41.0	4900	7.39	203	152	28.4	338	280	76.2	18.2	277	239	61.0	181	130	35700	–	418	–	17.6	24.5	–
HSS8X6X1/4	HSS203.2X152.4X6.4	33.3	3980	5.92	203	152	23.6	277	233	77.0	15.2	228	198	61.7	185	135	29300	–	341	–	22.8	31.3	–
HSS8X6X3/16	HSS203.2X152.4X4.8	25.4	3010	4.42	203	152	18.2	213	179	77.7	11.7	175	154	62.5	190	139	22400	–	259	–	31.5	43.0	–
HSS8X4X5/8	HSS203.2X101.6X15.9	62.6	7550	14.8	203	102	34.1	449	336	67.1	11.1	272	218	38.4	159	57.4	29300	–	470	–	3.88	10.8	–
HSS8X4X1/2	HSS203.2X101.6X12.7	52.2	6280	11.8	203	102	29.9	385	293	68.8	9.82	234	193	39.6	168	66.0	25400	–	400	–	5.60	14.2	–

HSS Rectanguler or Square



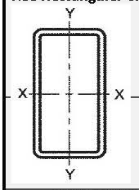
HSS round or Pipe

Palestine Technical University Kadoorie

O.S

		Weight	Area	Design Wall Thickness	Overall Depth	Overall Width	Axis X-X				Axis Y-Y				Workable Flat Dimensions		Torsional Propreties			Outside Diameter of Round Section			
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	t_{des}	Ht	B	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	h	b	J	C_w	C	OD	b/t_{des}	h/t_{des}	D/t
HSS8X4X3/8	HSS203.2X101.6X9.5	40.8	4890	8.86	203	102	24.4	308	241	70.6	8.16	188	161	40.9	177	74.9	20500	–	316	–	8.46	19.9	–
HSS8X4X5/16	HSS203.2X101.6X7.9	34.7	4150	7.39	203	102	21.2	264	210	71.6	7.16	162	141	41.4	181	79.5	17700	–	270	–	10.7	24.5	–
HSS8X4X1/4	HSS203.2X101.6X6.4	28.3	3380	5.92	203	102	17.7	218	174	72.4	5.99	134	118	42.2	185	83.8	14700	–	223	–	14.2	31.3	–
HSS8X4X3/16	HSS203.2X101.6X4.8	21.6	2570	4.42	203	102	13.8	167	136	73.2	4.70	104	92.6	42.9	190	88.4	11300	–	170	–	20.0	43.0	–
HSS8X4X1/8	HSS203.2X101.6X3.2	14.7	1740	2.95	203	102	9.53	115	93.9	74.2	3.29	71.4	64.7	43.4	194	92.7	7780	–	116	–	31.5	66.0	–
HSS8X3X1/2	HSS203.2X76.2X12.7	47.2	5680	11.8	203	76.2	24.4	328	239	65.5	4.87	158	128	29.2	168	40.6	14300	–	285	–	3.45	14.2	–
HSS8X3X3/8	HSS203.2X76.2X9.5	37.0	4440	8.86	203	76.2	20.2	264	198	67.3	4.16	129	109	30.5	177	49.5	11900	–	229	–	5.60	19.9	–
HSS8X3X5/16	HSS203.2X76.2X7.9	31.5	3770	7.39	203	76.2	17.6	228	174	68.3	3.67	112	96.2	31.2	181	54.1	10400	–	198	–	7.31	24.5	–
HSS8X3X1/4	HSS203.2X76.2X6.4	25.7	3080	5.92	203	76.2	14.8	188	146	69.3	3.12	93.4	81.8	31.8	185	58.4	8660	–	164	–	9.88	31.3	–
HSS8X3X3/16	HSS203.2X76.2X4.8	19.7	2340	4.42	203	76.2	11.6	145	114	70.4	2.47	72.6	64.9	32.5	190	63.0	6740	–	126	–	14.2	43.0	–
HSS8X3X1/8	HSS203.2X76.2X3.2	13.4	1590	2.95	203	76.2	8.03	100	79.1	71.1	1.75	50.3	45.9	33.3	194	67.3	4700	–	86.4	–	22.9	66.0	–
HSS8X2X3/8	HSS203.2X50.8X9.5	33.2	3990	8.86	203	50.8	15.9	220	157	63.2	1.55	75.5	61.1	19.7	177	24.2	5040	–	142	–	2.73	19.9	–
HSS8X2X5/16	HSS203.2X50.8X7.9	28.4	3390	7.39	203	50.8	14.0	190	138	64.3	1.41	66.5	55.4	20.4	181	28.7	4540	–	124	–	3.87	24.5	–
HSS8X2X1/4	HSS203.2X50.8X6.4	23.2	2770	5.92	203	50.8	11.9	159	117	65.3	1.22	56.2	48.2	21.0	185	33.0	3900	–	104	–	5.58	31.3	–
HSS8X2X3/16	HSS203.2X50.8X4.8	17.8	2120	4.42	203	50.8	9.32	123	91.9	66.3	0.995	44.2	39.2	21.7	190	37.6	3110	–	81.1	–	8.49	43.0	–
HSS8X2X1/8	HSS203.2X50.8X3.2	12.1	1440	2.95	203	50.8	6.53	85.0	64.4	67.3	0.716	31.1	28.2	22.3	194	41.9	2210	–	56.4	–	14.2	66.0	–
HSS7X7X5/8	HSS177.8X177.8X15.9	75.3	9030	14.8	178	178	38.9	542	438	65.5	38.9	542	438	65.5	134	134	65800	–	772	–	9.05	9.05	–
HSS7X7X1/2	HSS177.8X177.8X12.7	62.4	7480	11.8	178	178	33.5	457	377	66.8	33.5	457	377	66.8	142	142	55400	–	644	–	12.1	12.1	–
HSS7X7X3/8	HSS177.8X177.8X9.5	48.4	5790	8.86	178	178	27.1	362	305	68.3	27.1	362	305	68.3	151	151	43700	–	503	–	17.1	17.1	–
HSS7X7X5/16	HSS177.8X177.8X7.9	41.0	4900	7.39	178	178	23.4	310	262	69.1	23.4	310	262	69.1	156	156	37300	–	428	–	21.1	21.1	–
HSS7X7X1/4	HSS177.8X177.8X6.4	33.3	3980	5.92	178	178	19.4	254	218	69.9	19.4	254	218	69.9	160	160	30600	–	349	–	27.0	27.0	–
HSS7X7X3/16	HSS177.8X177.8X4.8	25.4	3010	4.42	178	178	15.0	195	169	70.4	15.0	195	169	70.4	165	165	23400	–	265	–	37.2	37.2	–
HSS7X7X1/8	HSS177.8X177.8X3.2	17.2	2040	2.95	178	178	10.3	133	116	71.1	10.3	133	116	71.1	169	169	15900	–	180	–	57.3	57.3	–
HSS7X5X1/2	HSS177.8X127X12.7	52.2	6280	11.8	178	127	25.2	359	283	63.5	14.8	283	233	48.5	142	91.4	31600	–	446	–	7.75	12.1	–
HSS7X5X3/8	HSS177.8X127X9.5	40.8	4890	8.86	178	127	20.6	287	231	65.0	12.2	226	192	50.0	151	100	25200	–	351	–	11.3	17.1	–
HSS7X5X5/16	HSS177.8X127X7.9	34.7	4150	7.39	178	127	17.9	246	202	65.8	10.6	195	167	50.5	156	105	21700	–	300	–	14.2	21.1	–
HSS7X5X1/4	HSS177.8X127X6.4	28.3	3380	5.92	178	127	14.9	203	167	66.5	8.87	161	140	51.3	160	109	17900	–	246	–	18.5	27.0	–
HSS7X5X3/16	HSS177.8X127X4.8	21.6	2570	4.42	178	127	11.6	156	130	67.3	6.91	124	109	52.1	165	114	13700	–	187	–	25.7	37.2	–
HSS7X5X1/8	HSS177.8X127X3.2	14.7	1740	2.95	178	127	8.03	107	90.5	68.1	4.83	85.2	75.9	52.6	169	118	9370	–	128	–	40.1	57.3	–
HSS7X4X1/2	HSS177.8X101.6X12.7	47.2	5680	11.8	178	102	21.1	308	238	61.0	8.62	206	170	38.9	142	66.0	21000	–	346	–	5.60	12.1	–
HSS7X4X3/8	HSS177.8X101.6X9.5	37.0	4440	8.86	178	102	17.4	247	195	62.5	7.20	167	141	40.1	151	74.9	17100	–	275	–	8.46	17.1	–
HSS7X4X5/16	HSS177.8X101.6X7.9	31.5	3770	7.39	178	102	15.2	215	170	63.5	6.33	145	124	40.9	156	79.5	14700	–	236	–	10.7	21.1	–
HSS7X4X1/4	HSS177.8X101.6X6.4	25.7	3080	5.92	178	102	12.7	177	143	64.3	5.33	120	105	41.7	160	83.8	12200	–	193	–	14.2	27.0	–
HSS7X4X3/16	HSS177.8X101.6X4.8	19.7	2340	4.42	178	102	9.91	137	112	65.0	4.16	92.9	82.3	42.2	165	88.4	9450	–	149	–	20.0	37.2	–
HSS7X4X1/8	HSS177.8X101.6X3.2	13.4	1590	2.95	178	102	6.91	93.9	77.5	65.8	2.93	64.1	57.5	42.9	169	92.7	6490	–	102	–	31.5	57.3	–
HSS7X3X1/2	HSS177.8X76.2X12.7	42.1	5080	11.8	178	76.2	16.9	259	190	57.7	4.25	139	111	29.0	142	40.6	11900	–	246	–	3.45	12.1	–
HSS7X3X3/8	HSS177.8X76.2X9.5	33.2	3990	8.86	178	76.2	14.2	210	159	59.7	3.63	114	95.2	30.2	151	49.5	9950	–	198	–	5.60	17.1	–
HSS7X3X5/16	HSS177.8X76.2X7.9	28.4	3390	7.39	178	76.2	12.4	182	140	60.5	3.22	99.1	84.6	30.7	156	54.1	8700	–	172	–	7.31	21.1	–
HSS7X3X1/4	HSS177.8X76.2X6.4	23.2	2770	5.92	178	76.2	10.5	151	118	61.5	2.75	82.9	72.1	31.5	160	58.4	7280	–	142	–	9.88	27.0	–
HSS7X3X3/16	HSS177.8X76.2X4.8	17.8	2120	4.42	178	76.2	8.24	117	92.6	62.2	2.18	64.6	57.4	32.0	165	63.0	5700	–	110	–	14.2	37.2	–
HSS7X3X1/8	HSS177.8X76.2X3.2	12.1	1440	2.95	178	76.2	5.74	80.8	64.7	63.2	1.54	44.7	40.6	32.8	169	67.3	3950	–	75.4	–	22.9	57.3	–
HSS7X2X1/4	HSS177.8X50.8X6.4	20.7	2480	5.92	178	50.8	8.24	125	92.9	57.7	1.07	49.5	42.3	20.8	160	33.0	3310	–	90.5	–	5.58	27.0	–
HSS7X2X3/16	HSS177.8X50.8X4.8	15.9	1890	4.42	178	50.8	6.53	97.5	73.6	58.7	0.874	39.2	34.4	21.5	165	37.6	2640	–	70.8	–	8.49	37.2	–
HSS7X2X1/8	HSS177.8X50.8X3.2	10.9	1290	2.95	178	50.8	4.62	67.7	51.8	59.7	0.633	27.5	24.9	22.1	169	41.9	1880	–	49.2	–	14.2	57.3	–
HSS6X6X5/8	HSS152.4X152.4X15.9	62.6	7550	14.8	152	152	23.0	380	302	55.1	23.0	380	302	55.1	108	108	39500	–	547	–	7.33	7.33	–
HSS6X6X1/2	HSS152.4X152.4X12.7	52.2	6280	11.8	152	152	20.1	324	264	56.6	20.1	324	264	56.6	117	117	33800	–	460	–	9.90	9.90	–
HSS6X6X3/8	HSS152.4X152.4X9.5	40.8	4890	8.86	152	152	16.4	259	216	57.9	16.4	259	216	57.9	126	126	26900	–	362	–	14.2	14.2	–
HSS6X6X5/16	HSS152.4X152.4X7.9	34.6	4150	7.39	152	152	14.3	223	187	58.7	14.3	223	187	58.7	130	130	23100	–	310	–	17.6	17.6	–
HSS6X6X1/4	HSS152.4X152.4X6.4	28.3	3380	5.92	152	152	11.9	184	156	59.4	11.9	184	156	59.4	135	135	19000	–	252	–	22.8	22.8	–
HSS6X6X3/16	HSS152.4X152.4X4.8	21.6	2570	4.42	152	152	9.28	141	122	60.2	9.28	141	122	60.2	139	139	14600	–	193	–	31.5	31.5	–
HSS6X6X1/8	HSS152.4X152.4X3.2	14.7	1740	2.95	152	152	6.45	97.0	84.4	60.7	6.45	97.0	84.4	60.7	144	144	9950	–	132	–	48.7	48.7	–
HSS6X5X1/2	HSS152.4X127X12.7	47.2	5680	11.8	152	127	17.1	282	225	54.9	12.8	249	202	47.5	117	91.4	24900	–	377	–	7.75	9.90	–
HSS6X5X3/8	HSS152.4X127X9.5	37.0	4440	8.86	152	127	14.1	226	185	56.4	10.6	200	167	48.8	126	100	20000	–	298	–	11.3	14.2	–
HSS6X5X5/16	HSS152.4X127X7.9	31.5	3770	7.39	152	127	12.3	195	161	57.2	9.28	172	146	49.5	130	105	17200	–	256	–	14.2	17.6	–
HSS6X5X1/4	HSS152.4X127X6.4	25.7	3080	5.92	152	127	10.3	162	135	57.9	7.78	143	122	50.3	135	109	14200	–	210	–	18.5	22.8	–
HSS6X5X3/16	HSS152.4X127X4.8	19.7	2340	4.42	152	127	8.03	125	106	58.7	6.08	110	95.7	51.1	139	114	10900	–	160	–	25.7	31.5	–
HSS6X5X1/8	HSS152.4X127X3.2	13.4	1590	2.95	152	127	5.58	85.9	73.4	59.4	4.25	75.9	66.7	51.6	144	118	7490	–	109	–	40.1	48.7	–
HSS6X4X1/2	HSS152.4X101.6X12.7	42.1	5080	11.8	152	102	14.2	239	185	52.8	7.41	180	146	38.1	117	66.0	16800	–	292	–	5.60	9.90	–
HSS6X4X3/8	HSS152.4X101.6X9.5	33.2	3990	8.86	152	102	11.8	195	155	54.4	6.20	147	122	39.4	126	74.9	13700	–	233	–	8.46	14.2	–
HSS6X4X5/16	HSS152.4X101.6X7.9	28.4	3390	7.39	152	102	10.3	169	136	55.1	5.49	127	108	40.1	130	79.5	11800	–	200	–	10.7	17.6	–
HSS6X4X1/4	HSS152.4X101.6X6.4	23.2	2770	5.92	152	102	8.70	140	114	55.9	4.62	106	91.1	40.9	135	83.8	9820	–	166	–	14.2	22.8	–
HSS6X4X3/16	HSS152.4X101.6X4.8	17.8	2120	4.42	152	102	6.83	108	89.5	56.6	3.65	81.9	71.8	41.4	139	88.4	7580	–	127	–	20.0	31.5	–
HSS6X4X1/8	HSS152.4X101.6X3.2	12.1	1440	2.95	152	102	4.75	74.7	62.4	57.4	2.56	56.7	50.5	42.2	144	92.7	5240	–	86.9	–	31.5	48.7	–
HSS6X3X1/2	HSS152.4X76.2X12.7	37.1	4480	11.8	152	76.2	11.2	198	147	50.0	3.62	119	94.9	28.4	117	40.6	9610	–	208	–	3.45	9.90	–
HSS6X3X3/8	HSS152.4X76.2X9.5	29.4	3540	8.86	152	76.2	9.45	162	124	51.8	3.11	98.8	81.8	29.7	126	49.5	8030	–	169	–	5.60	14.2	–
HSS6X3X5/16	HSS152.4X76.2X7.9	25.2	3020	7.39	152	76.2	8.37	141	110	52.6	2.78	86.4	72.9	30.2	130	54.1	7030	–	146	–	7.31	17.6	–

HSS Rectanguler or Square



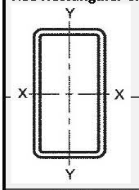
HSS round or Pipe

Palestine Technical University Kadoorie

O.S

							Axis X-X				Axis Y-Y				Workable Flat Dimensions		Torsional Propreties			Outside Diameter of Round Section			
		Weight	Area	Design Wall Thickness	Overall Depth	Overall Width																	
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	t_{des}	Ht	B	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	h	b	J	C_w	C	OD	b/t_{des}	h/t_{des}	D/t
HSS6X3X1/4	HSS152.4X76.2X6.4	20.7	2480	5.92	152	76.2	7.08	118	92.8	53.3	2.37	72.3	62.3	31.0	135	58.4	5910	–	121	–	9.88	22.8	–
HSS6X3X3/16	HSS152.4X76.2X4.8	15.9	1890	4.42	152	76.2	5.58	91.6	73.3	54.4	1.89	56.5	49.7	31.8	139	63.0	4620	–	93.6	–	14.2	31.5	–
HSS6X3X1/8	HSS152.4X76.2X3.2	10.9	1290	2.95	152	76.2	3.93	63.4	51.5	55.1	1.34	39.3	35.2	32.3	144	67.3	3220	–	64.4	–	22.9	48.7	–
HSS6X2X3/8	HSS152.4X50.8X9.5	25.6	3080	8.86	152	50.8	7.12	130	93.6	48.0	1.15	56.7	45.4	19.3	126	24.2	3500	–	104	–	2.73	14.2	–
HSS6X2X5/16	HSS152.4X50.8X7.9	22.0	2650	7.39	152	50.8	6.37	114	83.7	49.0	1.05	50.3	41.3	19.9	130	28.7	3160	–	91.4	–	3.87	17.6	–
HSS6X2X1/4	HSS152.4X50.8X6.4	18.1	2170	5.92	152	50.8	5.45	95.7	71.6	50.0	0.920	42.8	36.2	20.6	135	33.0	2730	–	77.0	–	5.58	22.8	–
HSS6X2X3/16	HSS152.4X50.8X4.8	14.0	1660	4.42	152	50.8	4.37	75.1	57.2	51.1	0.749	33.9	29.5	21.2	139	37.6	2180	–	60.3	–	8.49	31.5	–
HSS6X2X1/8	HSS152.4X50.8X3.2	9.59	1140	2.95	152	50.8	3.09	52.3	40.5	52.1	0.545	23.9	21.5	21.9	144	41.9	1550	–	42.1	–	14.2	48.7	–
HSS5-1/2X5-1/2X3/8	HSS139.7X139.7X9.5	37.0	4440	8.86	140	140	12.4	215	177	52.8	12.4	215	177	52.8	113	113	20400	–	302	–	12.8	12.8	–
HSS5-1/2X5-1/2X5/16	HSS139.7X139.7X7.9	31.5	3770	7.39	140	140	10.8	185	155	53.6	10.8	185	155	53.6	118	118	17600	–	257	–	15.9	15.9	–
HSS5-1/2X5-1/2X1/4	HSS139.7X139.7X6.4	25.7	3080	5.92	140	140	9.03	153	129	54.1	9.03	153	129	54.1	122	122	14500	–	211	–	20.6	20.6	–
HSS5-1/2X5-1/2X3/16	HSS139.7X139.7X4.8	19.7	2340	4.42	140	140	7.08	118	101	54.9	7.08	118	101	54.9	126	126	11100	–	161	–	28.6	28.6	–
HSS5-1/2X5-1/2X1/8	HSS139.7X139.7X3.2	13.4	1590	2.95	140	140	4.91	81.1	70.5	55.6	4.91	81.1	70.5	55.6	131	131	7620	–	110	–	44.4	44.4	–
HSS5X5X1/2	HSS127X127X12.7	42.1	5080	11.8	127	127	10.8	215	170	46.2	10.8	215	170	46.2	91.4	91.4	18600	–	306	–	7.75	7.75	–
HSS5X5X3/8	HSS127X127X9.5	33.2	3990	8.86	127	127	9.03	174	142	47.5	9.03	174	142	47.5	100	100	15000	–	244	–	11.3	11.3	–
HSS5X5X5/16	HSS127X127X7.9	28.3	3390	7.39	127	127	7.91	150	125	48.3	7.91	150	125	48.3	105	105	13000	–	210	–	14.2	14.2	–
HSS5X5X1/4	HSS127X127X6.4	23.2	2770	5.92	127	127	6.66	125	105	49.0	6.66	125	105	49.0	109	109	10700	–	172	–	18.5	18.5	–
HSS5X5X3/16	HSS127X127X4.8	17.8	2120	4.42	127	127	5.24	96.5	82.4	49.8	5.24	96.5	82.4	49.8	114	114	8280	–	132	–	25.7	25.7	–
HSS5X5X1/8	HSS127X127X3.2	12.1	1440	2.95	127	127	3.66	66.7	57.7	50.5	3.66	66.7	57.7	50.5	118	118	5700	–	90.6	–	40.1	40.1	–
HSS5X4X1/2	HSS127X101.6X12.7	37.1	4480	11.8	127	102	8.82	179	139	44.5	6.20	153	122	37.1	91.4	66.0	12600	–	238	–	5.60	7.75	–
HSS5X4X3/8	HSS127X101.6X9.5	29.4	3540	8.86	127	102	7.45	147	117	46.0	5.24	126	103	38.6	100	74.9	10400	–	192	–	8.46	11.3	–
HSS5X4X5/16	HSS127X101.6X7.9	25.2	3020	7.39	127	102	6.58	128	104	46.7	4.62	109	91.3	39.1	105	79.5	9030	–	166	–	10.7	14.2	–
HSS5X4X1/4	HSS127X101.6X6.4	20.7	2480	5.92	127	102	5.58	106	87.7	47.5	3.94	91.3	77.5	39.9	109	83.8	7490	–	136	–	14.2	18.5	–
HSS5X4X3/16	HSS127X101.6X4.8	15.9	1890	4.42	127	102	4.41	82.8	69.2	48.3	3.11	71.1	61.3	40.6	114	88.4	5830	–	105	–	20.0	25.7	–
HSS5X4X1/8	HSS127X101.6X3.2	10.9	1290	2.95	127	102	3.09	57.4	48.7	49.0	2.19	49.3	43.3	41.1	118	92.7	4020	–	71.9	–	31.5	40.1	–
HSS5X3X1/2	HSS127X76.2X12.7	32.0	3880	11.8	127	76.2	6.83	145	108	41.9	2.99	100	78.3	27.7	91.4	40.6	7330	–	169	–	3.45	7.75	–
HSS5X3X3/8	HSS127X76.2X9.5	25.6	3080	8.86	127	76.2	5.87	120	92.6	43.7	2.60	83.6	68.2	29.0	100	49.5	6200	–	138	–	5.60	11.3	–
HSS5X3X5/16	HSS127X76.2X7.9	22.0	2650	7.39	127	76.2	5.24	105	82.4	44.5	2.33	73.4	61.1	29.7	105	54.1	5450	–	120	–	7.31	14.2	–
HSS5X3X1/4	HSS127X76.2X6.4	18.1	2170	5.92	127	76.2	4.45	88.2	70.3	45.2	2.00	61.8	52.6	30.2	109	58.4	4580	–	100	–	9.88	18.5	–
HSS5X3X3/16	HSS127X76.2X4.8	14.0	1660	4.42	127	76.2	3.55	69.0	55.9	46.2	1.60	48.5	42.1	31.0	114	63.0	3600	–	77.5	–	14.2	25.7	–
HSS5X3X1/8	HSS127X76.2X3.2	9.59	1140	2.95	127	76.2	2.51	48.0	39.5	47.0	1.14	33.9	30.0	31.8	118	67.3	2510	–	53.4	–	22.9	40.1	–
HSS5X2-1/2X1/4	HSS127X63.5X6.4	16.9	2030	5.92	127	63.5	3.91	79.1	61.6	43.9	1.30	48.3	41.0	25.4	109	45.7	3300	–	81.8	–	7.73	18.5	–
HSS5X2-1/2X3/16	HSS127X63.5X4.8	13.1	1550	4.42	127	63.5	3.13	62.1	49.3	45.0	1.05	38.2	33.3	25.9	114	50.3	2610	–	63.7	–	11.4	25.7	–
HSS5X2-1/2X1/8	HSS127X63.5X3.2	8.96	1060	2.95	127	63.5	2.22	43.4	35.1	45.7	0.758	26.9	23.9	26.7	118	54.6	1830	–	44.2	–	18.6	40.1	–
HSS5X2X3/8	HSS127X50.8X9.5	21.8	2640	8.86	127	50.8	4.33	93.6	67.8	40.4	0.949	47.2	37.4	19.0	100	24.2	2750	–	85.2	–	2.73	11.3	–
HSS5X2X5/16	HSS127X50.8X7.9	18.8	2270	7.39	127	50.8	3.89	82.8	61.3	41.4	0.874	42.1	34.4	19.6	105	28.7	2490	–	75.2	–	3.87	14.2	–
HSS5X2X1/4	HSS127X50.8X6.4	15.6	1880	5.92	127	50.8	3.36	70.0	52.9	42.4	0.766	36.1	30.2	20.2	109	33.0	2150	–	63.6	–	5.58	18.5	–
HSS5X2X3/16	HSS127X50.8X4.8	12.1	1450	4.42	127	50.8	2.71	55.2	42.6	43.2	0.629	28.7	24.7	20.9	114	37.6	1730	–	50.0	–	8.49	25.7	–
HSS5X2X1/8	HSS127X50.8X3.2	8.33	994	2.95	127	50.8	1.94	38.8	30.5	44.2	0.458	20.3	18.0	21.5	118	41.9	1230	–	34.9	–	14.2	40.1	–
HSS4-1/2X4-1/2X1/2	HSS114.3X114.3X12.7	37.1	4480	11.8	114	114	7.53	167	132	40.9	7.53	167	132	40.9	78.7	78.7	13000	–	243	–	6.68	6.68	–
HSS4-1/2X4-1/2X3/8	HSS114.3X114.3X9.5	29.4	3540	8.86	114	114	6.37	137	111	42.4	6.37	137	111	42.4	87.6	87.6	10700	–	195	–	9.89	9.89	–
HSS4-1/2X4-1/2X5/16	HSS114.3X114.3X7.9	25.2	3020	7.39	114	114	5.62	119	98.3	43.2	5.62	119	98.3	43.2	92.2	92.2	9280	–	167	–	12.5	12.5	–
HSS4-1/2X4-1/2X1/4	HSS114.3X114.3X6.4	20.7	2480	5.92	114	114	4.75	99.3	83.2	43.9	4.75	99.3	83.2	43.9	96.5	96.5	7700	–	138	–	16.3	16.3	–
HSS4-1/2X4-1/2X3/16	HSS114.3X114.3X4.8	15.9	1890	4.42	114	114	3.75	77.2	65.7	44.5	3.75	77.2	65.7	44.5	101	101	5990	–	106	–	22.9	22.9	–
HSS4-1/2X4-1/2X1/8	HSS114.3X114.3X3.2	10.9	1290	2.95	114	114	2.64	53.6	46.2	45.2	2.64	53.6	46.2	45.2	105	105	4130	–	72.9	–	35.8	35.8	–
HSS4X4X1/2	HSS101.6X101.6X12.7	32.0	3880	11.8	102	102	4.95	126	97.8	35.8	4.95	126	97.8	35.8	66.0	66.0	8740	–	184	–	5.60	5.60	–
HSS4X4X3/8	HSS101.6X101.6X9.5	25.6	3080	8.86	102	102	4.29	105	84.1	37.3	4.29	105	84.1	37.3	74.9	74.9	7280	–	150	–	8.46	8.46	–
HSS4X4X5/16	HSS101.6X101.6X7.9	22.0	2650	7.39	102	102	3.80	91.6	74.9	37.8	3.80	91.6	74.9	37.8	79.5	79.5	6370	–	130	–	10.7	10.7	–
HSS4X4X1/4	HSS101.6X101.6X6.4	18.1	2170	5.92	102	102	3.25	76.9	63.9	38.6	3.25	76.9	63.9	38.6	83.8	83.8	5330	–	107	–	14.2	14.2	–
HSS4X4X3/16	HSS101.6X101.6X4.8	14.0	1660	4.42	102	102	2.58	60.1	50.8	39.4	2.58	60.1	50.8	39.4	88.4	88.4	4160	–	83.1	–	20.0	20.0	–
HSS4X4X1/8	HSS101.6X101.6X3.2	9.59	1140	2.95	102	102	1.83	42.0	36.1	40.1	1.83	42.0	36.1	40.1	92.7	92.7	2880	–	57.2	–	31.5	31.5	–
HSS4X3X3/8	HSS101.6X76.2X9.5	21.8	2640	8.86	102	76.2	3.30	83.9	65.1	35.3	2.09	68.5	54.7	28.2	74.9	49.5	4410	–	108	–	5.60	8.46	–
HSS4X3X5/16	HSS101.6X76.2X7.9	18.8	2270	7.39	102	76.2	2.97	73.9	58.5	36.1	1.88	60.5	49.5	28.7	79.5	54.1	3920	–	94.2	–	7.31	10.7	–
HSS4X3X1/4	HSS101.6X76.2X6.4	15.6	1880	5.92	102	76.2	2.56	62.4	50.3	36.8	1.63	51.1	42.8	29.5	83.8	58.4	3310	–	78.8	–	9.88	14.2	–
HSS4X3X3/16	HSS101.6X76.2X4.8	12.1	1450	4.42	102	76.2	2.05	49.2	40.5	37.8	1.32	40.3	34.4	30.2	88.4	63.0	2610	–	61.3	–	14.2	20.0	–
HSS4X3X1/8	HSS101.6X76.2X3.2	8.33	994	2.95	102	76.2	1.47	34.6	28.8	38.6	0.945	28.3	24.7	30.7	92.7	67.3	1820	–	42.4	–	22.9	31.5	–
HSS4X2-1/2X3/8	HSS101.6X63.5X9.5	19.9	2410	8.86	102	63.5	2.82	73.4	55.4	34.3	1.32	52.4	41.6	23.4	74.9	36.8	3150	–	87.2	–	4.16	8.46	–
HSS4X2-1/2X5/16	HSS101.6X63.5X7.9	17.3	2080	7.39	102	63.5	2.55	65.1	50.3	35.1	1.20	46.7	38.0	24.1	79.5	41.4	2820	–	76.5	–	5.59	10.7	–
HSS4X2-1/2X1/4	HSS101.6X63.5X6.4	14.3	1720	5.92	102	63.5	2.21	55.4	43.6	35.8	1.05	39.8	33.1	24.7	83.8	45.7	2410	–	64.4	–	7.73	14.2	–
HSS4X2-1/2X3/16	HSS101.6X63.5X4.8	11.2	1330	4.42	102	63.5	1.79	43.8	35.2	36.6	0.857	31.6	27.0	25.4	88.4	50.3	1910	–	50.5	–	11.4	20.0	–
HSS4X2-1/2X1/8	HSS101.6X63.5X3.2	7.70	916	2.95	102	63.5	1.29	30.8	25.2	37.3	0.620	22.3	19.5	26.2	92.7	54.6	1340	–	35.1	–	18.6	31.5	–
HSS4X2X3/8	HSS101.6X50.8X9.5	18.0	2190	8.86	102	50.8	2.33	62.9	45.9	32.8	0.749	37.9	29.5	18.5	74.9	24.2	2010	–	66.2	–	2.73	8.46	–
HSS4X2X5/16	HSS101.6X50.8X7.9	15.7	1900	7.39	102	50.8	2.14	56.2	42.0	33.5	0.695	34.1	27.4	19.2	79.5	28.7	1830	–	58.8	–	3.87	10.7	–
HSS4X2X1/4	HSS101.6X50.8X6.4	13.1	1570	5.92	102	50.8	1.87	48.2	36.9	34.5	0.616	29.3	24.3	19.8	83.8	33.0	1590	–	50.0	–	5.58	14.2	–
HSS4X2X3/16	HSS101.6X50.8X4.8	10.2	1220	4.42	102	50.8	1.52	38.3	30.0	35.3	0.508	23.4	20.0	20.4	88.4	37.6	1280	–	39.5	–	8.49	20.0	–
HSS4X2X1/8	HSS101.6X50.8X3.2	7.06	839	2.95	102	50.8	1.10	27.2	21.6	36.3	0.374	16.7	14.7	21.1	92.7	41.9	916	–	27.7	–	14.2	31.5	–

HSS Rectanguler or Square



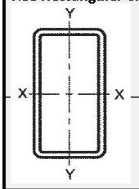
HSS round or Pipe

Palestine Technical University Kadoorie

O.S

AISC US unit	AISC SI units	Weight	Area	Design Wall Thickness	Overall Depth	Overall Width	Axis X-X				Axis Y-Y				Workable Flat Dimensions		Torsional Propreties			Outside Diameter of Round Section			
		W (KG/m)	A (mm2)	t_{des}	Ht	B	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	h	b	J	C_w	C	OD	b/t_{des}	h/t_{des}	D/t
HSS3-1/2X3-1/2X3/8	HSS88.9X88.9X9.5	21.8	2640	8.86	88.9	88.9	2.70	76.9	60.8	32.0	2.70	76.9	60.8	32.0	62.2	62.2	4660	–	111	–	7.03	7.03	–
HSS3-1/2X3-1/2X5/16	HSS88.9X88.9X7.9	18.8	2270	7.39	88.9	88.9	2.43	67.8	54.7	32.8	2.43	67.8	54.7	32.8	66.8	66.8	4120	–	96.7	–	9.03	9.03	–
HSS3-1/2X3-1/2X1/4	HSS88.9X88.9X6.4	15.6	1880	5.92	88.9	88.9	2.10	57.4	47.2	33.5	2.10	57.4	47.2	33.5	71.1	71.1	3480	–	80.6	–	12.0	12.0	–
HSS3-1/2X3-1/2X3/16	HSS88.9X88.9X4.8	12.1	1450	4.42	88.9	88.9	1.69	45.2	37.9	34.3	1.69	45.2	37.9	34.3	75.7	75.7	2730	–	62.8	–	17.1	17.1	–
HSS3-1/2X3-1/2X1/8	HSS88.9X88.9X3.2	8.33	994	2.95	88.9	88.9	1.21	31.6	27.2	34.8	1.21	31.6	27.2	34.8	80.0	80.0	1910	–	43.4	–	27.2	27.2	–
HSS3-1/2X2-1/2X3/8	HSS88.9X63.5X9.5	18.0	2190	8.86	88.9	63.5	1.98	58.8	44.5	30.1	1.15	46.3	36.3	23.0	62.2	36.8	2560	–	74.8	–	4.16	7.03	–
HSS3-1/2X2-1/2X5/16	HSS88.9X63.5X7.9	15.6	1900	7.39	88.9	63.5	1.81	52.5	40.7	30.9	1.06	41.4	33.3	23.6	66.8	41.4	2300	–	66.0	–	5.59	9.03	–
HSS3-1/2X2-1/2X1/4	HSS88.9X63.5X6.4	13.1	1570	5.92	88.9	63.5	1.58	44.8	35.5	31.7	0.928	35.4	29.2	24.3	71.1	45.7	1980	–	55.8	–	7.73	12.0	–
HSS3-1/2X2-1/2X3/16	HSS88.9X63.5X4.8	10.2	1220	4.42	88.9	63.5	1.29	35.7	28.9	32.5	0.760	28.3	23.9	25.0	75.7	50.3	1570	–	43.8	–	11.4	17.1	–
HSS3-1/2X2-1/2X1/8	HSS88.9X63.5X3.2	7.07	839	2.95	88.9	63.5	0.929	25.3	20.9	33.2	0.553	20.1	17.4	25.6	80.0	54.6	1110	–	30.6	–	18.6	27.2	–
HSS3-1/2X2X1/4	HSS88.9X50.8X6.4	11.8	1430	5.92	88.9	50.8	1.32	38.7	29.7	30.5	0.541	25.9	21.3	19.5	71.1	33.0	1320	–	43.3	–	5.58	12.0	–
HSS3-1/2X2X3/16	HSS88.9X50.8X4.8	9.27	1100	4.42	88.9	50.8	1.09	31.0	24.4	31.2	0.450	20.8	17.7	20.1	75.7	37.6	1060	–	34.2	–	8.49	17.1	–
HSS3-1/2X2X1/8	HSS88.9X50.8X3.2	6.43	768	2.95	88.9	50.8	0.791	22.0	17.9	32.3	0.331	14.9	13.0	20.8	80.0	41.9	762	–	24.1	–	14.2	27.2	–
HSS3-1/2X1-1/2X1/4	HSS88.9X38.1X6.4	10.5	1270	5.92	88.9	38.1	1.06	32.4	23.9	29.0	0.266	17.4	13.9	14.5	71.1	20.3	745	–	30.8	–	3.44	12.0	–
HSS3-1/2X1-1/2X3/16	HSS88.9X38.1X4.8	8.31	994	4.42	88.9	38.1	0.882	26.2	19.8	29.7	0.226	14.2	11.9	15.1	75.7	24.8	620	–	24.7	–	5.62	17.1	–
HSS3-1/2X1-1/2X1/8	HSS88.9X38.1X3.2	5.80	690	2.95	88.9	38.1	0.653	18.8	14.7	30.7	0.171	10.3	8.98	15.7	80.0	29.2	454	–	17.7	–	9.93	27.2	–
HSS3X3X3/8	HSS76.2X76.2X9.5	18.0	2190	8.86	76.2	76.2	1.57	53.3	41.3	26.9	1.57	53.3	41.3	26.9	49.5	49.5	2760	–	77.7	–	5.60	5.60	–
HSS3X3X5/16	HSS76.2X76.2X7.9	15.7	1900	7.39	76.2	76.2	1.44	47.5	37.7	27.4	1.44	47.5	37.7	27.4	54.1	54.1	2470	–	68.5	–	7.31	7.31	–
HSS3X3X1/4	HSS76.2X76.2X6.4	13.1	1570	5.92	76.2	76.2	1.26	40.6	32.9	28.2	1.26	40.6	32.9	28.2	58.4	58.4	2110	–	57.7	–	9.88	9.88	–
HSS3X3X3/16	HSS76.2X76.2X4.8	10.2	1220	4.42	76.2	76.2	1.02	32.3	26.9	29.0	1.02	32.3	26.9	29.0	63.0	63.0	1680	–	45.2	–	14.2	14.2	–
HSS3X3X1/8	HSS76.2X76.2X3.2	7.06	839	2.95	76.2	76.2	0.741	22.9	19.5	29.7	0.741	22.9	19.5	29.7	67.3	67.3	1180	–	31.5	–	22.9	22.9	–
HSS3X2-1/2X5/16	HSS76.2X63.5X7.9	14.1	1700	7.39	76.2	63.5	1.22	41.1	31.8	26.7	0.907	36.1	28.5	23.1	54.1	41.4	1810	–	55.6	–	5.59	7.31	–
HSS3X2-1/2X1/4	HSS76.2X63.5X6.4	11.8	1430	5.92	76.2	63.5	1.07	35.4	28.2	27.4	0.803	31.1	25.2	23.7	58.4	45.7	1560	–	47.0	–	7.73	9.88	–
HSS3X2-1/2X3/16	HSS76.2X63.5X4.8	9.27	1100	4.42	76.2	63.5	0.878	28.3	23.1	28.2	0.662	24.9	20.8	24.5	63.0	50.3	1250	–	37.2	–	11.4	14.2	–
HSS3X2-1/2X1/8	HSS76.2X63.5X3.2	6.43	768	2.95	76.2	63.5	0.641	20.2	16.9	29.0	0.483	17.9	15.3	25.1	67.3	54.6	887	–	26.1	–	18.6	22.9	–
HSS3X2X5/16	HSS76.2X50.8X7.9	12.5	1520	7.39	76.2	50.8	0.991	34.6	26.1	25.7	0.516	25.9	20.3	18.4	54.1	28.7	1190	–	42.6	–	3.87	7.31	–
HSS3X2X1/4	HSS76.2X50.8X6.4	10.5	1270	5.92	76.2	50.8	0.887	30.0	23.3	26.4	0.462	22.6	18.2	19.1	58.4	33.0	1050	–	36.5	–	5.58	9.88	–
HSS3X2X3/16	HSS76.2X50.8X4.8	8.31	994	4.42	76.2	50.8	0.737	24.3	19.3	27.2	0.388	18.4	15.3	19.8	63.0	37.6	853	–	29.2	–	8.49	14.2	–
HSS3X2X1/8	HSS76.2X50.8X3.2	5.80	690	2.95	76.2	50.8	0.541	17.4	14.2	27.9	0.288	13.2	11.3	20.4	67.3	41.9	612	–	20.5	–	14.2	22.9	–
HSS3X1-1/2X1/4	HSS76.2X38.1X6.4	9.26	1120	5.92	76.2	38.1	0.699	24.7	18.4	24.9	0.226	14.9	11.9	14.2	58.4	20.3	599	–	25.9	–	3.44	9.88	–
HSS3X1-1/2X3/16	HSS76.2X38.1X4.8	7.36	884	4.42	76.2	38.1	0.591	20.3	15.5	25.9	0.194	12.3	10.2	14.8	63.0	24.8	504	–	21.0	–	5.62	14.2	–
HSS3X1-1/2X1/8	HSS76.2X38.1X3.2	5.16	617	2.95	76.2	38.1	0.441	14.7	11.6	26.7	0.148	9.01	7.77	15.5	67.3	29.2	369	–	15.1	–	9.93	22.9	–
HSS3X1X3/16	HSS76.2X25.4X4.8	6.41	768	4.42	76.2	25.4	0.445	16.2	11.7	24.1	0.0720	7.08	5.65	9.65	63.0	12.1	219	–	13.0	–	2.75	14.2	–
HSS3X1X1/8	HSS76.2X25.4X3.2	4.53	542	2.95	76.2	25.4	0.340	11.9	8.93	25.1	0.0574	5.33	4.52	10.3	67.3	16.6	170	–	9.59	–	5.62	22.9	–
HSS2-1/2X2-1/2X5/16	HSS63.5X63.5X7.9	12.5	1520	7.39	63.5	63.5	0.758	30.8	23.9	22.4	0.758	30.8	23.9	22.4	41.4	41.4	1330	–	44.9	–	5.59	5.59	–
HSS2-1/2X2-1/2X1/4	HSS63.5X63.5X6.4	10.5	1270	5.92	63.5	63.5	0.678	26.7	21.3	23.1	0.678	26.7	21.3	23.1	45.7	45.7	1160	–	38.5	–	7.73	7.73	–
HSS2-1/2X2-1/2X3/16	HSS63.5X63.5X4.8	8.30	994	4.42	63.5	63.5	0.562	21.6	17.7	23.8	0.562	21.6	17.7	23.8	50.3	50.3	937	–	30.5	–	11.4	11.4	–
HSS2-1/2X2-1/2X1/8	HSS63.5X63.5X3.2	5.80	690	2.95	63.5	63.5	0.415	15.5	13.1	24.5	0.415	15.5	13.1	24.5	54.6	54.6	670	–	21.5	–	18.6	18.6	–
HSS2-1/2X2X1/4	HSS63.5X50.8X6.4	9.26	1120	5.92	63.5	50.8	0.554	22.5	17.4	22.2	0.387	19.2	15.2	18.6	45.7	33.0	791	–	29.8	–	5.58	7.73	–
HSS2-1/2X2X3/16	HSS63.5X50.8X4.8	7.36	884	4.42	63.5	50.8	0.466	18.4	14.7	23.0	0.327	15.7	12.9	19.3	50.3	37.6	645	–	23.9	–	8.49	11.4	–
HSS2-1/2X2X1/8	HSS63.5X50.8X3.2	5.16	617	2.95	63.5	50.8	0.347	13.3	10.9	23.7	0.245	11.4	9.65	19.9	54.6	41.9	466	–	17.0	–	14.2	18.6	–
HSS2-1/2X1-1/2X1/4	HSS63.5X38.1X6.4	8.00	974	5.92	63.5	38.1	0.429	18.2	13.5	21.0	0.187	12.5	9.82	13.9	45.7	20.3	458	–	21.1	–	3.44	7.73	–
HSS2-1/2X1-1/2X3/16	HSS63.5X38.1X4.8	6.41	768	4.42	63.5	38.1	0.367	15.0	11.6	21.8	0.162	10.4	8.52	14.5	50.3	24.8	387	–	17.2	–	5.62	11.4	–
HSS2-1/2X1-1/2X1/8	HSS63.5X38.1X3.2	4.53	542	2.95	63.5	38.1	0.278	11.0	8.77	22.7	0.125	7.69	6.54	15.2	54.6	29.2	286	–	12.4	–	9.93	18.6	–
HSS2-1/2X1X3/16	HSS63.5X25.4X4.8	5.46	658	4.42	63.5	25.4	0.269	11.7	8.47	20.2	0.0595	5.90	4.67	9.50	50.3	12.1	171	–	10.6	–	2.75	11.4	–
HSS2-1/2X1X1/8	HSS63.5X25.4X3.2	3.90	467	2.95	63.5	25.4	0.209	8.72	6.60	21.2	0.0479	4.49	3.77	10.1	54.6	16.6	134	–	7.91	–	5.62	18.6	–
HSS2-1/4X2-1/4X1/4	HSS57.2X57.2X6.4	9.26	1120	5.92	57.2	57.2	0.470	21.0	16.6	20.5	0.470	21.0	16.6	20.5	39.4	39.4	816	–	30.3	–	6.66	6.66	–
HSS2-1/4X2-1/4X3/16	HSS57.2X57.2X4.8	7.35	884	4.42	57.2	57.2	0.397	17.0	13.9	21.2	0.397	17.0	13.9	21.2	43.9	43.9	666	–	24.3	–	9.93	9.93	–
HSS2-1/4X2-1/4X1/8	HSS57.2X57.2X3.2	5.16	617	2.95	57.2	57.2	0.296	12.4	10.4	21.9	0.296	12.4	10.4	21.9	48.3	48.3	479	–	17.2	–	16.4	16.4	–
HSS2-1/4X2X3/16	HSS57.2X50.8X4.8	6.89	826	4.42	57.2	50.8	0.358	15.6	12.5	20.8	0.297	14.4	11.7	19.0	43.9	37.6	549	–	21.3	–	8.49	9.93	–
HSS2-1/4X2X1/8	HSS57.2X50.8X3.2	4.85	579	2.95	57.2	50.8	0.269	11.4	9.41	21.5	0.224	10.5	8.82	19.7	48.3	41.9	398	–	15.2	–	14.2	16.4	–
HSS2X2X1/4	HSS50.8X50.8X6.4	8.00	974	5.92	50.8	50.8	0.311	15.8	12.2	17.9	0.311	15.8	12.2	17.9	33.0	33.0	545	–	23.1	–	5.58	5.58	–
HSS2X2X3/16	HSS50.8X50.8X4.8	6.40	768	4.42	50.8	50.8	0.267	13.1	10.5	18.6	0.267	13.1	10.5	18.6	37.6	37.6	454	–	18.7	–	8.49	8.49	–
HSS2X2X1/8	HSS50.8X50.8X3.2	4.53	542	2.95	50.8	50.8	0.202	9.57	7.96	19.3	0.202	9.57	7.96	19.3	41.9	41.9	331	–	13.4	–	14.2	14.2	–
HSS2X1-1/2X3/16	HSS50.8X38.1X4.8	5.46	658	4.42	50.8	38.1	0.206	10.5	8.11	17.7	0.130	8.54	6.83	14.1	37.6	24.8	276	–	13.5	–	5.62	8.49	–
HSS2X1-1/2X1/8	HSS50.8X38.1X3.2	3.90	467	2.95	50.8	38.1	0.159	7.78	6.28	18.5	0.102	6.37	5.33	14.8	41.9	29.2	206	–	9.82	–	9.93	14.2	–
HSS2X1X3/16	HSS50.8X25.4X4.8	4.51	545	4.42	50.8	25.4	0.146	7.87	5.74	16.3	0.0466	4.72	3.69	9.27	37.6	12.1	125	–	8.28	–	2.75	8.49	–
HSS2X1X1/8	HSS50.8X25.4X3.2	3.26	392	2.95	50.8	25.4	0.117	6.00	4.59	17.2	0.0384	3.65	3.02	9.91	41.9	16.6	99.1	–	6.23	–	5.62	14.2	–
HSS20.000X0.500	HSS508X12.7	155	18400	11.8	–	–	566	2900	2230	176	566	2900	2230	176	–	–	1130000	–	4460	508	–	–	43.0
HSS20.000X0.375	HSS508X9.5	117	13900	8.86	–	–	433	2210	1700	177	433	2210	1700	177	–	–	866000	–	3410	508	–	–	57.3
HSS18.000X0.500	HSS457.2X12.7	139	16500	11.8	–	–	410	2340	1790	157	410	2340	1790	157	–	–	820000	–	3590	457	–	–	38.7
HSS18.000X0.375	HSS457.2X9.5	105	12500	8.86	–	–	314	1790	1370	158	314	1790	1370	158	–	–	629000	–	2750	457	–	–	51.6
HSS16.000X0.625	HSS406.4X15.9	153	18100	14.8	–	–	349	2260	1720	139	349	2260	1720	139	–	–	699000	–	3420	406	–	–	27.5
HSS16.000X0.500	HSS406.4X12.7	123	14600	11.8	–	–	285	1840	1400	139	285	1840	1400	139	–	–	570000	–	2800	406	–	–	34.4
HSS16.000X0.438	HSS406.4X11.1	108	12800	10.3	–	–	252	1620	1240	140	252	1620	1240	140	–	–	504000	–	2490	406	–	–	39.3
HSS16.000X0.375	HSS406.4X9.5	93.2	11100	8.86	–	–	219	1400	1080	140	219	1400	1080	140	–	–	437000	–	2150	406	–	–	45.8

HSS Rectanguler or Square



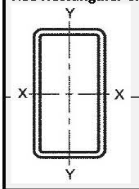
HSS round or Pipe

Palestine Technical University Kadoorie

O.S

		Weight	Area	Design Wall Thickness	Overall Depth	Overall Width	Axis X-X				Axis Y-Y				Workable Flat Dimensions		Torsional Propreties			Outside Diameter of Round Section			
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	t_{des}	Ht	B	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	h	b	J	C_w	C	OD	b/t_{des}	h/t_{des}	D/t
HSS16.000X0.312	HSS406.4X7.9	77.9	9290	7.39	–	–	184	1180	908	141	184	1180	908	141	–	–	369000	–	1820	406	–	–	55.0
HSS16.000X0.250	HSS406.4X6.4	62.6	7420	5.92	–	–	149	949	734	142	149	949	734	142	–	–	298000	–	1470	406	–	–	68.7
HSS14.000X0.625	HSS355.6X15.9	133	15800	14.8	–	–	230	1720	1290	121	230	1720	1290	121	–	–	458000	–	2590	356	–	–	24.1
HSS14.000X0.500	HSS355.6X12.7	107	12800	11.8	–	–	189	1400	1060	122	189	1400	1060	122	–	–	378000	–	2130	356	–	–	30.1
HSS14.000X0.375	HSS355.6X9.5	81.3	9680	8.86	–	–	145	1070	816	123	145	1070	816	123	–	–	291000	–	1640	356	–	–	40.1
HSS14.000X0.312	HSS355.6X7.9	67.9	8060	7.39	–	–	123	896	690	123	123	896	690	123	–	–	245000	–	1380	356	–	–	48.1
HSS14.000X0.250	HSS355.6X6.4	54.7	6520	5.92	–	–	99.5	724	559	124	99.5	724	559	124	–	–	199000	–	1120	356	–	–	60.1
HSS12.750X0.500	HSS323.9X12.7	97.4	11500	11.8	–	–	141	1150	872	110	141	1150	872	110	–	–	282000	–	1740	324	–	–	27.4
HSS12.750X0.375	HSS323.9X9.5	73.8	8770	8.86	–	–	109	880	672	112	109	880	672	112	–	–	218000	–	1350	324	–	–	36.5
HSS12.750X0.250	HSS323.9X6.4	49.7	5910	5.92	–	–	74.9	598	462	113	74.9	598	462	113	–	–	149000	–	923	324	–	–	54.7
HSS10.750X0.500	HSS273.1X12.7	81.5	9680	11.8	–	–	82.8	806	606	92.5	82.8	806	606	92.5	–	–	166000	–	1210	273	–	–	23.1
HSS10.750X0.375	HSS273.1X9.5	61.9	7350	8.86	–	–	64.1	619	470	93.5	64.1	619	470	93.5	–	–	129000	–	941	273	–	–	30.8
HSS10.750X0.250	HSS273.1X6.4	41.8	4970	5.92	–	–	44.1	423	324	94.5	44.1	423	324	94.5	–	–	88700	–	649	273	–	–	46.1
HSS10.000X0.625	HSS254X15.9	93.2	11100	14.8	–	–	79.5	846	628	84.8	79.5	846	628	84.8	–	–	159000	–	1260	254	–	–	17.2
HSS10.000X0.500	HSS254X12.7	75.6	8970	11.8	–	–	66.2	693	519	85.9	66.2	693	519	85.9	–	–	132000	–	1040	254	–	–	21.5
HSS10.000X0.375	HSS254X9.5	57.4	6840	8.86	–	–	51.2	533	405	86.6	51.2	533	405	86.6	–	–	103000	–	808	254	–	–	28.7
HSS10.000X0.312	HSS254X7.9	48.1	5730	7.39	–	–	43.7	449	342	87.1	43.7	449	342	87.1	–	–	87000	–	687	254	–	–	34.4
HSS10.000X0.250	HSS254X6.4	38.8	4610	5.92	–	–	35.5	364	280	87.6	35.5	364	280	87.6	–	–	71200	–	559	254	–	–	42.9
HSS10.000X0.188	HSS254X4.8	29.3	3460	4.42	–	–	27.0	275	213	88.1	27.0	275	213	88.1	–	–	54100	–	424	254	–	–	57.5
HSS9.625X0.500	HSS244.5X12.7	72.6	8650	11.8	–	–	58.7	639	479	82.3	58.7	639	479	82.3	–	–	117000	–	959	244	–	–	20.7
HSS9.625X0.375	HSS244.5X9.5	55.2	6580	8.86	–	–	45.8	492	374	83.3	45.8	492	374	83.3	–	–	91200	–	746	244	–	–	27.6
HSS9.625X0.312	HSS244.5X7.9	46.2	5500	7.39	–	–	38.7	416	316	83.8	38.7	416	316	83.8	–	–	77400	–	634	244	–	–	33.1
HSS9.625X0.250	HSS244.5X6.4	37.3	4430	5.92	–	–	31.6	338	259	84.3	31.6	338	259	84.3	–	–	63300	–	516	244	–	–	41.3
HSS9.625X0.188	HSS244.5X4.8	28.2	3340	4.42	–	–	24.0	254	197	84.8	24.0	254	197	84.8	–	–	47900	–	393	244	–	–	55.3
HSS8.625X0.625	HSS219.1X15.9	79.5	9480	14.8	–	–	49.5	618	454	72.4	49.5	618	454	72.4	–	–	99500	–	908	219	–	–	14.8
HSS8.625X0.500	HSS219.1X12.7	64.6	7680	11.8	–	–	41.6	508	379	73.4	41.6	508	379	73.4	–	–	82800	–	757	219	–	–	18.5
HSS8.625X0.375	HSS219.1X9.5	49.2	5850	8.86	–	–	32.4	392	295	74.4	32.4	392	295	74.4	–	–	64900	–	592	219	–	–	24.7
HSS8.625X0.322	HSS219.1X8.2	42.5	5060	7.62	–	–	28.3	341	259	74.9	28.3	341	259	74.9	–	–	56600	–	518	219	–	–	28.8
HSS8.625X0.250	HSS219.1X6.4	33.3	3960	5.92	–	–	22.5	269	205	75.4	22.5	269	205	75.4	–	–	45000	–	411	219	–	–	37.0
HSS8.625X0.188	HSS219.1X4.8	25.2	2980	4.42	–	–	17.2	203	157	75.9	17.2	203	157	75.9	–	–	34300	–	313	219	–	–	49.6
HSS7.625X0.375	HSS193.7X9.5	43.2	5150	8.86	–	–	22.0	303	228	65.5	22.0	303	228	65.5	–	–	44100	–	456	194	–	–	21.8
HSS7.625X0.328	HSS193.7X8.3	38.1	4520	7.75	–	–	19.6	269	202	65.8	19.6	269	202	65.8	–	–	39200	–	405	194	–	–	25.0
HSS7.500X0.500	HSS190.5X12.7	55.7	6650	11.8	–	–	26.6	377	279	63.2	26.6	377	279	63.2	–	–	53300	–	559	191	–	–	16.1
HSS7.500X0.375	HSS190.5X9.5	42.5	5060	8.86	–	–	20.9	293	220	64.3	20.9	293	220	64.3	–	–	41600	–	439	191	–	–	21.5
HSS7.500X0.312	HSS190.5X7.9	35.7	4250	7.39	–	–	17.9	247	187	64.8	17.9	247	187	64.8	–	–	35700	–	375	191	–	–	25.8
HSS7.500X0.250	HSS190.5X6.4	28.8	3430	5.92	–	–	14.7	202	154	65.3	14.7	202	154	65.3	–	–	29300	–	306	191	–	–	32.2
HSS7.500X0.188	HSS190.5X4.8	21.9	2580	4.42	–	–	11.2	153	117	65.8	11.2	153	117	65.8	–	–	22400	–	234	191	–	–	43.1
HSS7.000X0.500	HSS177.8X12.7	51.7	6160	11.8	–	–	21.3	326	239	58.9	21.3	326	239	58.9	–	–	42500	–	480	178	–	–	15.1
HSS7.000X0.375	HSS177.8X9.5	39.5	4700	8.86	–	–	16.8	254	190	59.7	16.8	254	190	59.7	–	–	33700	–	379	178	–	–	20.1
HSS7.000X0.312	HSS177.8X7.9	33.2	3950	7.39	–	–	14.4	215	162	60.2	14.4	215	162	60.2	–	–	28800	–	324	178	–	–	24.1
HSS7.000X0.250	HSS177.8X6.4	26.8	3190	5.92	–	–	11.8	175	133	60.7	11.8	175	133	60.7	–	–	23600	–	265	178	–	–	30.0
HSS7.000X0.188	HSS177.8X4.8	20.4	2410	4.42	–	–	9.03	133	102	61.2	9.03	133	102	61.2	–	–	18100	–	203	178	–	–	40.2
HSS7.000X0.125	HSS177.8X3.2	13.7	1620	2.95	–	–	6.20	90.1	69.6	61.7	6.20	90.1	69.6	61.7	–	–	12400	–	139	178	–	–	60.3
HSS6.875X0.500	HSS174.6X12.7	50.7	6040	11.8	–	–	20.1	313	231	57.7	20.1	313	231	57.7	–	–	40200	–	460	175	–	–	14.8
HSS6.875X0.375	HSS174.6X9.5	38.8	4620	8.86	–	–	15.9	244	182	58.7	15.9	244	182	58.7	–	–	31800	–	364	175	–	–	19.7
HSS6.875X0.312	HSS174.6X7.9	32.6	3880	7.39	–	–	13.6	206	156	59.2	13.6	206	156	59.2	–	–	27200	–	311	175	–	–	23.6
HSS6.875X0.250	HSS174.6X6.4	26.3	3140	5.92	–	–	11.2	169	128	59.7	11.2	169	128	59.7	–	–	22400	–	256	175	–	–	29.5
HSS6.875X0.188	HSS174.6X4.8	20.0	2360	4.42	–	–	8.57	128	98.2	60.2	8.57	128	98.2	60.2	–	–	17100	–	197	175	–	–	39.5
HSS6.625X0.500	HSS168.3X12.7	48.7	5810	11.8	–	–	17.9	290	213	55.4	17.9	290	213	55.4	–	–	35800	–	424	168	–	–	14.2
HSS6.625X0.432	HSS168.3X11	42.6	5070	10.2	–	–	15.9	256	188	55.9	15.9	256	188	55.9	–	–	31800	–	379	168	–	–	16.5
HSS6.625X0.375	HSS168.3X9.5	37.3	4440	8.86	–	–	14.2	226	169	56.4	14.2	226	169	56.4	–	–	28300	–	336	168	–	–	19.0
HSS6.625X0.312	HSS168.3X7.9	31.3	3740	7.39	–	–	12.1	192	144	56.9	12.1	192	144	56.9	–	–	24200	–	288	168	–	–	22.8
HSS6.625X0.280	HSS168.3X7.1	28.3	3350	6.60	–	–	11.0	172	130	57.2	11.0	172	130	57.2	–	–	21900	–	261	168	–	–	25.5
HSS6.625X0.250	HSS168.3X6.4	25.4	3020	5.92	–	–	9.95	156	118	57.4	9.95	156	118	57.4	–	–	19900	–	236	168	–	–	28.4
HSS6.625X0.188	HSS168.3X4.8	19.2	2280	4.42	–	–	7.66	119	90.8	57.9	7.66	119	90.8	57.9	–	–	15300	–	182	168	–	–	38.1
HSS6.625X0.125	HSS168.3X3.2	12.9	1530	2.95	–	–	5.24	80.6	62.1	58.4	5.24	80.6	62.1	58.4	–	–	10400	–	124	168	–	–	57.1
HSS6.000X0.500	HSS152.4X12.7	43.7	5220	11.8	–	–	13.0	234	170	49.8	13.0	234	170	49.8	–	–	26000	–	341	152	–	–	12.9
HSS6.000X0.375	HSS152.4X9.5	33.6	4000	8.86	–	–	10.3	184	136	50.8	10.3	184	136	50.8	–	–	20700	–	272	152	–	–	17.2
HSS6.000X0.312	HSS152.4X7.9	28.2	3370	7.39	–	–	8.87	156	117	51.3	8.87	156	117	51.3	–	–	17700	–	233	152	–	–	20.6
HSS6.000X0.280	HSS152.4X7.1	25.5	3030	6.60	–	–	8.03	140	106	51.6	8.03	140	106	51.6	–	–	16100	–	211	152	–	–	23.1
HSS6.000X0.250	HSS152.4X6.4	22.9	2720	5.92	–	–	7.33	127	96.0	51.8	7.33	127	96.0	51.8	–	–	14700	–	192	152	–	–	25.8
HSS6.000X0.188	HSS152.4X4.8	17.4	2050	4.42	–	–	5.62	96.8	73.9	52.3	5.62	96.8	73.9	52.3	–	–	11200	–	148	152	–	–	34.5
HSS6.000X0.125	HSS152.4X3.2	11.7	1380	2.95	–	–	3.86	65.9	50.6	52.8	3.86	65.9	50.6	52.8	–	–	7740	–	101	152	–	–	51.7
HSS5.563X0.500	HSS141.3X12.7	40.3	4810	11.8	–	–	10.2	198	144	46.0	10.2	198	144	46.0	–	–	20300	–	287	141	–	–	12.0
HSS5.563X0.375	HSS141.3X9.5	30.9	3690	8.86	–	–	8.12	156	115	47.0	8.12	156	115	47.0	–	–	16200	–	229	141	–	–	15.9
HSS5.563X0.258	HSS141.3X6.6	21.8	2590	6.10	–	–	5.91	111	83.9	47.8	5.91	111	83.9	47.8	–	–	11900	–	167	141	–	–	23.2

HSS Rectanguler or Square



HSS round or Pipe

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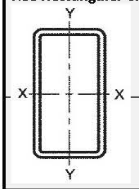
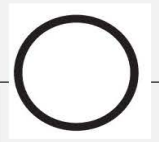
		Weight	Area	Design Wall Thickness	Overall Depth	Overall Width	Axis X-X				Axis Y-Y				Workable Flat Dimensions		Torsional Propreties			Outside Diameter of Round Section			
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	t_{des}	Ht	B	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	h	b	J	C_w	C	OD	b/t_{des}	h/t_{des}	D/t
HSS5.563X0.188	HSS141.3X4.8	16.1	1900	4.42	–	–	4.45	82.8	63.1	48.5	4.45	82.8	63.1	48.5	–	–	8910	–	126	141	–	–	32.0
HSS5.563X0.134	HSS141.3X3.4	11.6	1370	3.15	–	–	3.26	60.1	46.2	48.8	3.26	60.1	46.2	48.8	–	–	6530	–	92.4	141	–	–	44.9
HSS5.500X0.500	HSS139.7X12.7	39.8	4750	11.8	–	–	9.78	193	140	45.5	9.78	193	140	45.5	–	–	19600	–	280	140	–	–	11.8
HSS5.500X0.375	HSS139.7X9.5	30.6	3650	8.86	–	–	7.83	152	112	46.5	7.83	152	112	46.5	–	–	15700	–	225	140	–	–	15.8
HSS5.500X0.258	HSS139.7X6.6	21.5	2560	6.10	–	–	5.70	109	81.9	47.2	5.70	109	81.9	47.2	–	–	11400	–	164	140	–	–	22.9
HSS5.000X0.500	HSS127X12.7	35.8	4270	11.8	–	–	7.16	157	113	40.9	7.16	157	113	40.9	–	–	14300	–	226	127	–	–	10.8
HSS5.000X0.375	HSS127X9.5	27.6	3290	8.86	–	–	5.79	124	90.9	41.9	5.79	124	90.9	41.9	–	–	11500	–	182	127	–	–	14.3
HSS5.000X0.312	HSS127X7.9	23.3	2770	7.39	–	–	4.99	106	78.5	42.4	4.99	106	78.5	42.4	–	–	9990	–	157	127	–	–	17.2
HSS5.000X0.258	HSS127X6.6	19.5	2320	6.10	–	–	4.25	89.1	66.9	42.9	4.25	89.1	66.9	42.9	–	–	8490	–	134	127	–	–	20.8
HSS5.000X0.250	HSS127X6.4	18.9	2250	5.92	–	–	4.14	86.9	65.1	42.9	4.14	86.9	65.1	42.9	–	–	8280	–	130	127	–	–	21.5
HSS5.000X0.188	HSS127X4.8	14.4	1700	4.42	–	–	3.20	66.4	50.5	43.4	3.20	66.4	50.5	43.4	–	–	6410	–	101	127	–	–	28.7
HSS5.000X0.125	HSS127X3.2	9.69	1150	2.95	–	–	2.21	45.4	34.7	43.9	2.21	45.4	34.7	43.9	–	–	4410	–	69.6	127	–	–	43.1
HSS4.500X0.375	HSS114.3X9.5	24.6	2940	8.86	–	–	4.11	98.8	71.9	37.3	4.11	98.8	71.9	37.3	–	–	8200	–	144	114	–	–	12.9
HSS4.500X0.337	HSS114.3X8.6	22.3	2660	7.95	–	–	3.78	90.1	66.0	37.6	3.78	90.1	66.0	37.6	–	–	7530	–	132	114	–	–	14.4
HSS4.500X0.237	HSS114.3X6	16.1	1910	5.59	–	–	2.83	66.0	49.5	38.6	2.83	66.0	49.5	38.6	–	–	5660	–	99.0	114	–	–	20.5
HSS4.500X0.188	HSS114.3X4.8	12.9	1520	4.42	–	–	2.31	53.4	40.3	38.9	2.31	53.4	40.3	38.9	–	–	4620	–	80.8	114	–	–	25.9
HSS4.500X0.125	HSS114.3X3.2	8.70	1030	2.95	–	–	1.60	36.5	28.0	39.4	1.60	36.5	28.0	39.4	–	–	3200	–	55.9	114	–	–	38.8
HSS4.000X0.313	HSS101.6X8	18.4	2190	7.39	–	–	2.44	65.7	48.0	33.5	2.44	65.7	48.0	33.5	–	–	4870	–	96.2	102	–	–	13.7
HSS4.000X0.250	HSS101.6X6.4	14.9	1780	5.92	–	–	2.04	54.2	40.1	33.8	2.04	54.2	40.1	33.8	–	–	4090	–	80.5	102	–	–	17.2
HSS4.000X0.237	HSS101.6X6	14.2	1680	5.59	–	–	1.95	51.6	38.3	34.0	1.95	51.6	38.3	34.0	–	–	3900	–	76.7	102	–	–	18.2
HSS4.000X0.226	HSS101.6X5.7	13.6	1610	5.33	–	–	1.87	49.5	36.9	34.0	1.87	49.5	36.9	34.0	–	–	3750	–	73.7	102	–	–	19.0
HSS4.000X0.220	HSS101.6X5.6	13.2	1570	5.21	–	–	1.84	48.5	36.2	34.0	1.84	48.5	36.2	34.0	–	–	3680	–	72.3	102	–	–	19.5
HSS4.000X0.188	HSS101.6X4.8	11.4	1350	4.42	–	–	1.59	41.8	31.5	34.3	1.59	41.8	31.5	34.3	–	–	3190	–	62.8	102	–	–	23.0
HSS4.000X0.125	HSS101.6X3.2	7.70	916	2.95	–	–	1.11	28.7	22.0	34.8	1.11	28.7	22.0	34.8	–	–	2220	–	43.8	102	–	–	34.5
HSS3.500X0.313	HSS88.9X8	15.9	1890	7.39	–	–	1.59	49.2	35.7	29.0	1.59	49.2	35.7	29.0	–	–	3170	–	71.3	88.9	–	–	12.0
HSS3.500X0.300	HSS88.9X7.6	15.3	1820	7.09	–	–	1.54	47.5	34.6	29.0	1.54	47.5	34.6	29.0	–	–	3070	–	69.2	88.9	–	–	12.5
HSS3.500X0.250	HSS88.9X6.4	12.9	1540	5.92	–	–	1.34	40.8	30.0	29.5	1.34	40.8	30.0	29.5	–	–	2670	–	60.0	88.9	–	–	15.0
HSS3.500X0.216	HSS88.9X5.5	11.3	1340	5.11	–	–	1.18	35.9	26.7	29.7	1.18	35.9	26.7	29.7	–	–	2370	–	53.3	88.9	–	–	17.4
HSS3.500X0.203	HSS88.9X5.2	10.6	1270	4.80	–	–	1.12	33.9	25.2	29.7	1.12	33.9	25.2	29.7	–	–	2250	–	50.6	88.9	–	–	18.5
HSS3.500X0.188	HSS88.9X4.8	9.90	1170	4.42	–	–	1.05	31.6	23.6	30.0	1.05	31.6	23.6	30.0	–	–	2100	–	47.2	88.9	–	–	20.1
HSS3.500X0.125	HSS88.9X3.2	6.71	794	2.95	–	–	0.737	21.8	16.6	30.5	0.737	21.8	16.6	30.5	–	–	1470	–	33.1	88.9	–	–	30.2
HSS3.000X0.250	HSS76.2X6.4	10.9	1310	5.92	–	–	0.812	29.3	21.3	24.9	0.812	29.3	21.3	24.9	–	–	1620	–	42.6	76.2	–	–	12.9
HSS3.000X0.216	HSS76.2X5.5	9.57	1140	5.11	–	–	0.724	25.9	19.0	25.2	0.724	25.9	19.0	25.2	–	–	1450	–	38.0	76.2	–	–	14.9
HSS3.000X0.203	HSS76.2X5.2	9.03	1080	4.80	–	–	0.691	24.6	18.0	25.3	0.691	24.6	18.0	25.3	–	–	1380	–	36.2	76.2	–	–	15.9
HSS3.000X0.188	HSS76.2X4.8	8.41	994	4.42	–	–	0.645	22.8	16.9	25.4	0.645	22.8	16.9	25.4	–	–	1290	–	33.8	76.2	–	–	17.2
HSS3.000X0.152	HSS76.2X3.9	6.89	819	3.58	–	–	0.541	18.8	14.2	25.7	0.541	18.8	14.2	25.7	–	–	1080	–	28.3	76.2	–	–	21.3
HSS3.000X0.134	HSS76.2X3.4	6.11	723	3.15	–	–	0.483	16.9	12.7	25.9	0.483	16.9	12.7	25.9	–	–	966	–	25.4	76.2	–	–	24.2
HSS3.000X0.125	HSS76.2X3.2	5.72	677	2.95	–	–	0.454	15.8	12.0	25.9	0.454	15.8	12.0	25.9	–	–	912	–	23.9	76.2	–	–	25.9
HSS2.875X0.250	HSS73X6.4	10.4	1250	5.92	–	–	0.708	26.7	19.3	23.8	0.708	26.7	19.3	23.8	–	–	1420	–	38.8	73.0	–	–	12.3
HSS2.875X0.203	HSS73X5.2	8.63	1030	4.80	–	–	0.604	22.5	16.6	24.2	0.604	22.5	16.6	24.2	–	–	1200	–	32.9	73.0	–	–	15.2
HSS2.875X0.188	HSS73X4.8	8.04	955	4.42	–	–	0.562	20.8	15.4	24.3	0.562	20.8	15.4	24.3	–	–	1120	–	30.8	73.0	–	–	16.5
HSS2.875X0.125	HSS73X3.2	5.47	652	2.95	–	–	0.399	14.5	10.9	24.8	0.399	14.5	10.9	24.8	–	–	799	–	21.8	73.0	–	–	24.8
HSS2.500X0.250	HSS63.5X6.4	8.95	1070	5.92	–	–	0.450	19.7	14.1	20.5	0.450	19.7	14.1	20.5	–	–	895	–	28.2	63.5	–	–	10.7
HSS2.500X0.188	HSS63.5X4.8	6.91	819	4.42	–	–	0.360	15.5	11.3	21.0	0.360	15.5	11.3	21.0	–	–	720	–	22.6	63.5	–	–	14.4
HSS2.500X0.125	HSS63.5X3.2	4.72	561	2.95	–	–	0.258	10.8	8.11	21.4	0.258	10.8	8.11	21.4	–	–	516	–	16.2	63.5	–	–	21.6
HSS2.375X0.250	HSS60.3X6.4	8.45	1010	5.92	–	–	0.379	17.5	12.6	19.4	0.379	17.5	12.6	19.4	–	–	758	–	25.1	60.3	–	–	10.2
HSS2.375X0.218	HSS60.3X5.5	7.48	897	5.16	–	–	0.343	15.7	11.4	19.6	0.343	15.7	11.4	19.6	–	–	687	–	22.8	60.3	–	–	11.7
HSS2.375X0.188	HSS60.3X4.8	6.54	774	4.42	–	–	0.305	13.8	10.1	19.8	0.305	13.8	10.1	19.8	–	–	612	–	20.2	60.3	–	–	13.6
HSS2.375X0.154	HSS60.3X3.9	5.44	645	3.63	–	–	0.261	11.7	8.65	20.1	0.261	11.7	8.65	20.1	–	–	520	–	17.4	60.3	–	–	16.6
HSS2.375X0.125	HSS60.3X3.2	4.47	531	2.95	–	–	0.219	9.70	7.26	20.3	0.219	9.70	7.26	20.3	–	–	437	–	14.5	60.3	–	–	20.5
HSS1.900X0.188	HSS48.3X4.8	5.12	608	4.42	–	–	0.148	8.52	6.13	15.6	0.148	8.52	6.13	15.6	–	–	296	–	12.2	48.3	–	–	10.9
HSS1.900X0.145	HSS48.3X3.7	4.05	483	3.43	–	–	0.122	6.90	5.06	15.9	0.122	6.90	5.06	15.9	–	–	244	–	10.1	48.3	–	–	14.1
HSS1.900X0.120	HSS48.3X3.0	3.40	403	2.82	–	–	0.104	5.83	4.33	16.1	0.104	5.83	4.33	16.1	–	–	209	–	8.64	48.3	–	–	17.1
HSS1.660X0.140	HSS42.2X3.6	3.38	403	3.30	–	–	0.0766	5.00	3.64	13.8	0.0766	5.00	3.64	13.8	–	–	153	–	7.28	42.2	–	–	12.8
Pipe26STD	Pipe650STD	153	18200	8.86	–	–	966	3770	2920	230	966	3770	2920	230	–	–	1930000	–	–	660	–	–	74.5
Pipe24STD	Pipe600STD	141	16800	8.86	–	–	757	3210	2490	212	757	3210	2490	212	–	–	1510000	–	–	610	–	–	68.8
Pipe20STD	Pipe500STD	117	13900	8.86	–	–	433	2210	1700	177	433	2210	1700	177	–	–	870000	–	–	508	–	–	57.3
Pipe18STD	Pipe450STD	105	12500	8.86	–	–	315	1790	1380	158	315	1790	1380	158	–	–	628000	–	–	457	–	–	51.6
Pipe16STD	Pipe400STD	93.1	11100	8.86	–	–	219	1400	1080	140	219	1400	1080	140	–	–	437000	–	–	406.4	–	–	45.8
Pipe14STD	Pipe350STD	81.2	9680	8.86	–	–	146	1070	820	123	146	1070	820	123	–	–	291000	–	–	355.6	–	–	40.1
Pipe12STD	Pipe300STD	73.8	8840	8.86	–	–	109	880	672	112	109	880	672	112	–	–	218000	–	–	323.8	–	–	36.5
Pipe10STD	Pipe250STD	60.2	7420	8.64	–	–	62.9	605	460	93.5	62.9	605	460	93.5	–	–	126000	–	–	273.0	–	–	31.6
Pipe8STD	Pipe200STD	42.5	5060	7.62	–	–	28.3	341	259	74.9	28.3	341	259	74.9	–	–	56600	–	–	219.1	–	–	28.8
Pipe6STD	Pipe150STD	28.3	3350	6.63	–	–	11.0	174	131	57.2	11.0	174	131	57.2	–	–	22000	–	–	168.3	–	–	25.4
Pipe5STD	Pipe125STD	21.7	2590	6.12	–	–	5.95	112	84.2	47.8	5.95	112	84.2	47.8	–	–	11900	–	–	141.3	–	–	23.1
Pipe4STD	Pipe100STD	16.1	1910	5.61	–	–	2.84	66.4	49.7	38.4	2.84	66.4	49.7	38.4	–	–	5660	–	–	114.3	–	–	20.4

HSS Rectanguler or Square



HSS round or Pipe



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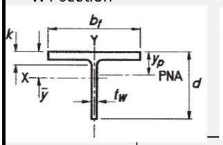
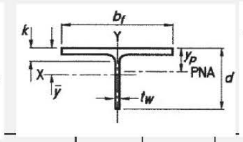
		Weight	Area	Design Wall Thickness	Overall Depth	Overall Width	Axis X-X				Axis Y-Y				Workable Flat Dimensions		Torsional Propreties			Outside Diameter of Round Section			
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	t_{des}	Ht	B	I_x	Z_x	S_x	r_x	I_y	Z_y	S_y	r_y	h	b	J	C_w	C	OD	b/t_{des}	h/t_{des}	D/t
Pipe3-1/2STD	Pipe90STD	13.6	1610	5.36	–	–	1.88	49.7	37.0	34.0	1.88	49.7	37.0	34.0	–	–	3760	–	–	101.6	–	–	19.0
Pipe3STD	Pipe80STD	11.3	1340	5.11	–	–	1.19	35.9	26.7	29.7	1.19	35.9	26.7	29.7	–	–	2370	–	–	88.9	–	–	17.4
Pipe2-1/2STD	Pipe65STD	8.62	1040	4.80	–	–	0.604	22.5	16.6	24.2	0.604	22.5	16.6	24.2	–	–	1200	–	–	73.0	–	–	15.2
Pipe2STD	Pipe50STD	5.44	658	3.63	–	–	0.261	11.7	8.65	20.1	0.261	11.7	8.65	20.1	–	–	520	–	–	60.3	–	–	16.6
Pipe1-1/2STD	Pipe40STD	4.04	483	3.43	–	–	0.122	6.90	5.06	15.9	0.122	6.90	5.06	15.9	–	–	244	–	–	48.3	–	–	14.1
Pipe1-1/4STD	Pipe32STD	3.38	403	3.30	–	–	0.0766	5.00	3.64	13.8	0.0766	5.00	3.64	13.8	–	–	153	–	–	42.2	–	–	12.8
Pipe1STD	Pipe25STD	2.50	303	3.15	–	–	0.0345	2.90	2.06	10.7	0.0345	2.90	2.06	10.7	–	–	69.1	–	–	33.4	–	–	10.6
Pipe3/4STD	Pipe20STD	1.68	201	2.67	–	–	0.0146	1.54	1.10	8.53	0.0146	1.54	1.10	8.53	–	–	29.1	–	–	26.7	–	–	10.0
Pipe1/2STD	Pipe15STD	1.26	151	2.57	–	–	0.00666	0.909	0.636	6.71	0.00667	0.909	0.636	6.71	–	–	13.3	–	–	21.3	–	–	8.32
Pipe26XS	Pipe650XS	202	23300	11.8	–	–	1230	4820	3720	229	1230	4820	3720	229	–	–	2460000	–	–	660	–	–	55.9
Pipe24XS	Pipe600XS	187	21500	11.8	–	–	961	4100	3150	212	961	4100	3150	212	–	–	1920000	–	–	610	–	–	51.6
Pipe20XS	Pipe500XS	155	17800	11.8	–	–	549	2820	2160	176	549	2820	2160	176	–	–	1100000	–	–	508	–	–	43.0
Pipe18XS	Pipe450XS	139	16000	11.8	–	–	398	2280	1740	158	398	2280	1740	158	–	–	795000	–	–	457	–	–	38.7
Pipe16XS	Pipe400XS	123	14200	11.8	–	–	277	1790	1360	140	277	1790	1360	140	–	–	554000	–	–	406.4	–	–	34.4
Pipe14XS	Pipe350XS	107	12400	11.8	–	–	183	1360	1030	122	183	1360	1030	122	–	–	366000	–	–	355.6	–	–	30.1
Pipe12XS	Pipe300XS	97.4	11300	11.8	–	–	141	1150	872	110	141	1150	872	110	–	–	282000	–	–	323.8	–	–	27.4
Pipe10XS	Pipe250XS	81.5	9740	11.8	–	–	82.8	806	606	92.5	82.8	806	606	92.5	–	–	166000	–	–	273.0	–	–	23.1
Pipe8XS	Pipe200XS	64.5	7680	11.8	–	–	41.6	508	379	73.4	41.6	508	379	73.4	–	–	82800	–	–	219.1	–	–	18.5
Pipe6XS	Pipe150XS	42.5	5050	10.2	–	–	15.9	256	190	55.9	15.9	256	190	55.9	–	–	31900	–	–	168.3	–	–	16.4
Pipe5XS	Pipe125XS	30.9	3700	8.86	–	–	8.12	156	115	47.0	8.12	156	115	47.0	–	–	16200	–	–	141.3	–	–	15.9
Pipe4XS	Pipe100XS	22.3	2670	8.00	–	–	3.80	90.6	66.4	37.6	3.80	90.6	66.4	37.6	–	–	7580	–	–	114.3	–	–	14.3
Pipe3-1/2XS	Pipe90XS	18.6	2210	7.52	–	–	2.47	66.7	48.7	33.3	2.47	66.7	48.7	33.3	–	–	4950	–	–	101.6	–	–	13.5
Pipe3XS	Pipe80XS	15.3	1830	7.11	–	–	1.54	47.7	34.6	29.0	1.54	47.7	34.6	29.0	–	–	3080	–	–	88.9	–	–	12.5
Pipe2-1/2XS	Pipe65XS	11.4	1350	6.53	–	–	0.762	29.0	20.8	23.6	0.762	29.0	20.8	23.6	–	–	1520	–	–	73.0	–	–	11.2
Pipe2XS	Pipe50XS	7.48	903	5.18	–	–	0.344	15.8	11.4	19.6	0.344	15.8	11.4	19.6	–	–	687	–	–	60.3	–	–	11.7
Pipe1-1/2XS	Pipe40XS	5.40	645	4.72	–	–	0.155	9.00	6.42	15.5	0.155	9.00	6.42	15.5	–	–	310	–	–	48.3	–	–	10.2
Pipe1-1/4XS	Pipe32XS	4.46	540	4.52	–	–	0.0961	6.44	4.56	13.4	0.0961	6.44	4.56	13.4	–	–	192	–	–	42.2	–	–	9.33
Pipe1XS	Pipe25XS	3.23	388	4.22	–	–	0.0420	3.62	2.52	10.4	0.0420	3.62	2.52	10.4	–	–	84.1	–	–	33.5	–	–	7.92
Pipe3/4XS	Pipe20XS	2.20	263	3.63	–	–	0.0179	1.95	1.34	8.26	0.0179	1.95	1.34	8.26	–	–	35.8	–	–	26.7	–	–	7.34
Pipe1/2XS	Pipe15XS	1.62	195	3.48	–	–	0.00791	1.12	0.757	6.43	0.00791	1.12	0.757	6.43	–	–	15.8	–	–	21.3	–	–	6.13
Pipe12XXS	Pipe300XXS	187	22800	23.6	–	–	260	2200	1600	107	260	2200	1600	107	–	–	520000	–	–	323.8	–	–	13.8
Pipe10XXS	Pipe250XXS	155	18600	23.6	–	–	147	1490	1080	89.2	147	1490	1080	89.2	–	–	295000	–	–	273.0	–	–	11.6
Pipe8XXS	Pipe200XXS	108	12900	20.7	–	–	64.1	818	587	70.6	64.1	818	587	70.6	–	–	128000	–	–	219.1	–	–	10.6
Pipe6XXS	Pipe150XXS	79.1	9480	20.4	–	–	26.4	449	315	52.8	26.4	449	315	52.8	–	–	52900	–	–	168.3	–	–	8.23
Pipe5XXS	Pipe125XXS	57.4	6900	17.8	–	–	13.4	274	190	44.2	13.4	274	190	44.2	–	–	26800	–	–	141.3	–	–	7.96
Pipe4XXS	Pipe100XXS	41.0	4940	16.0	–	–	6.12	156	107	35.3	6.12	156	107	35.3	–	–	12200	–	–	114.3	–	–	7.17
Pipe3XXS	Pipe80XXS	27.7	3340	14.2	–	–	2.41	80.1	54.2	26.9	2.41	80.1	54.2	26.9	–	–	4830	–	–	88.9	–	–	6.26
Pipe2-1/2XXS	Pipe65XXS	20.4	2470	13.1	–	–	1.16	47.7	31.8	21.7	1.16	47.7	31.8	21.7	–	–	2310	–	–	73.0	–	–	5.59
Pipe2XXS	Pipe50XXS	13.4	1620	10.3	–	–	0.529	26.2	17.5	18.1	0.529	26.2	17.5	18.1	–	–	1060	–	–	60.3	–	–	5.85

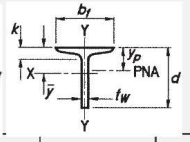
WT section



MT section



ST section

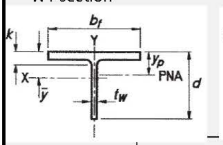


Palestine Technical University Kadoorie

O.S

		Weight	Area	Depth	Flange		Stem			Distance		Compact Section Critiria		Axis X-X						Axis Y-Y				Torsional Properties							
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b_f	t_f	t_w	$t_{w/2}$	Stem Area	k_{des}	WG_i	$b_f/2t_f$	D/t_w	I_x	Z_x	S_x	r_x	y	y_p	I_y	Z_y	S_y	r_y	J	C_w	r_o	H	P_A	P_B	P_C	P_D
WT22X167.5	WT550X249.5	250	31700	559	404	45.0	26.2	13.1	14645.8	65.0	140	4.50	21.4	903	3830	2150	168	140	39.1	250	1930	1230	88.6	15500	118	224	0.723	1500	1900	1520	1930
WT22X145	WT550X216.5	216	27500	554	401	40.1	22.0	11.0	12188.0	59.9	140	5.02	25.2	762	3210	1820	166	134	34.3	217	1670	1080	88.6	10600	73.8	220	0.733	1480	1880	1510	1910
WT22X131	WT550X195	195	24800	551	401	36.1	19.9	10.0	10964.9	55.9	140	5.57	27.6	683	2880	1630	166	132	31.0	192	1490	960	88.1	7740	53.7	219	0.731	1480	1880	1500	1910
WT22X115	WT550X171.5	172	21900	546	401	31.0	18.0	9.0	9828.0	51.1	140	6.45	30.3	599	2570	1450	166	131	27.2	166	1280	828	87.1	5160	37.3	220	0.723	1470	1870	1490	1890
WT20X327.5	WT500X488	487	62200	554	429	89.9	50.0	25.0	27700.0	120	191	2.39	11.1	1550	6980	3840	158	149	72.4	599	4440	2790	98.0	122000	857	213	0.763	1510	1940	1540	1970
WT20X296.5	WT500X441.5	442	56300	546	424	82.0	45.5	22.8	24843.0	112	191	2.58	12.0	1380	6210	3420	156	144	66.3	524	3930	2470	96.5	92000	628	211	0.762	1490	1920	1520	1940
WT20X251.5	WT500X374	374	47700	533	417	70.1	39.1	19.6	20840.3	100	191	2.98	13.6	1140	5150	2850	154	137	57.2	425	3230	2030	94.5	57400	376	208	0.760	1460	1870	1480	1900
WT20X215.5	WT500X321	321	40800	523	411	59.9	34.0	17.0	17782.0	89.9	191	3.44	15.4	953	4360	2430	153	132	49.5	351	2690	1700	92.7	36700	237	205	0.756	1430	1840	1460	1870
WT20X198.5	WT500X295.5	296	37600	521	409	55.9	31.0	15.5	16151.0	85.9	191	3.66	16.8	862	3930	2200	151	128	46.0	321	2460	1570	92.2	29400	182	203	0.760	1420	1830	1450	1860
WT20X186	WT500X277	277	35300	516	409	52.1	29.5	14.8	15222.0	82.0	191	3.93	17.5	803	3690	2060	151	126	43.2	295	2260	1450	91.4	24000	150	203	0.756	1410	1820	1440	1850
WT20X181	WT500X269.5	270	34300	516	406	51.1	28.4	14.2	14654.4	81.0	191	3.99	18.1	778	3560	2000	150	125	42.2	288	2210	1410	91.4	22600	137	202	0.759	1410	1820	1440	1840
WT20X162	WT500X241.5	242	30800	511	404	46.0	25.4	12.7	12979.4	75.9	191	4.40	20.1	687	3150	1770	149	121	38.1	253	1950	1260	90.7	16500	97.2	200	0.760	1400	1800	1420	1830
WT20X148.5	WT500X221.5	222	28100	505	401	41.9	23.6	11.8	11918.0	71.9	191	4.80	21.4	624	2880	1620	149	120	35.1	227	1750	1130	89.9	12700	74.9	200	0.756	1390	1790	1410	1810
WT20X138.5	WT500X206	206	26300	503	401	40.1	21.1	10.6	10613.3	70.1	191	5.03	23.9	566	2570	1450	147	114	32.8	217	1670	1080	90.9	10700	58.5	197	0.770	1380	1780	1410	1810
WT20X124.5	WT500X185.5	186	23700	500	401	36.1	19.1	9.6	9550.0	66.0	191	5.55	26.3	504	2290	1300	146	112	29.5	193	1490	964	90.2	7910	42.4	196	0.770	1380	1780	1400	1800
WT20X107.5	WT500X160.5	160	20500	495	401	31.0	16.5	8.3	8167.5	61.0	191	6.45	30.0	429	1970	1110	145	109	25.7	166	1270	828	89.9	5160	27.1	195	0.771	1370	1770	1390	1790
WT20X99.5	WT500X148	148	18800	490	401	27.2	16.5	8.3	8085.0	57.2	191	7.39	29.7	411	1920	1090	148	114	23.6	144	1120	723	87.6	3800	22.4	199	0.746	1360	1760	1380	1780
WT20X196	WT500X292	292	37300	528	315	64.0	36.1	18.1	19060.8	94.0	191	2.45	14.6	945	4510	2510	159	151	59.2	167	1740	1060	67.1	35500	214	210	0.679	1350	1660	1370	1690
WT20X165.5	WT500X247	247	31500	518	310	54.1	31.0	15.5	16058.0	84.1	191	2.86	16.7	783	3790	2100	158	146	50.8	134	1400	867	65.3	21900	130	208	0.674	1320	1630	1350	1660
WT20X163.5	WT500X243	243	30900	518	307	54.1	30.0	15.0	15540.0	84.1	191	2.85	17.3	766	3670	2050	157	144	50.3	133	1390	864	65.5	21400	121	207	0.680	1320	1630	1340	1650
WT20X147	WT500X219	219	27800	513	305	49.0	26.9	13.5	13799.7	79.0	191	3.11	19.1	678	3260	1820	156	140	45.7	117	1230	765	64.8	15900	86.5	205	0.681	1310	1610	1330	1640
WT20X139	WT500X207.5	208	26500	511	305	46.0	26.2	13.1	13388.2	75.9	191	3.31	19.5	645	3130	1740	156	140	43.4	109	1150	713	64.0	13500	75.7	205	0.675	1300	1610	1330	1630
WT20X132	WT500X196.5	196	25000	508	302	43.9	24.4	12.2	12395.2	73.9	191	3.45	20.8	604	2920	1630	155	137	41.4	102	1080	677	64.0	11600	62.6	204	0.679	1290	1600	1320	1620
WT20X117.5	WT500X175	175	22300	503	302	40.1	21.1	10.6	10613.3	70.1	191	3.77	23.9	524	2510	1400	153	131	36.8	92.4	967	611	64.5	8570	41.9	200	0.691	1280	1580	1310	1610
WT20X105.5	WT500X157	157	20100	500	300	36.1	19.1	9.6	9550.0	66.0	191	4.17	26.3	466	2250	1260	153	129	33.3	81.2	854	541	63.8	6330	30.3	199	0.690	1280	1570	1300	1600
WT20X91.5	WT500X136	136	17200	495	300	30.5	16.5	8.3	8167.5	60.5	191	4.92	30.0	398	1920	1080	152	126	28.7	68.7	721	459	63.2	4020	19.1	198	0.688	1260	1560	1290	1590
WT20X83.5	WT500X124.5	125	15800	490	300	26.2	16.5	8.3	8085.0	56.1	191	5.76	29.7	374	1880	1040	154	132	27.9	58.7	619	392	61.0	2910	16.9	203	0.659	1250	1550	1280	1580
WT20X74.5	WT500X111	111	14100	485	300	21.1	16.0	8.0	7760.0	51.1	191	7.11	30.3	339	1770	978	155	138	43.7	47.5	506	318	58.2	1940	13.9	209	0.626	1240	1540	1270	1570
WT18X462.5	WT460X688.5	688	87700	549	472	115	76.7	38.4	42108.3	134	191	2.05	7.15	2140	10100	5520	156	162	93.0	1030	7060	4360	108	294000	2600	216	0.769	1550	2030	1570	2040
WT18X426.5	WT460X634.5	635	81300	549	462	115	64.0	32.0	35136.0	134	191	2.01	8.57	1860	8740	4690	151	151	87.9	957	6610	4150	108	256000	1910	209	0.799	1540	2010	1560	2020
WT18X401	WT460X597	597	76100	541	457	109	60.5	30.3	32730.5	128	191	2.10	8.95	1710	8050	4340	150	147	83.3	874	6100	3820	107	216000	1570	206	0.797	1520	1980	1540	2000
WT18X361.5	WT460X538.5	538	69000	531	452	99.1	55.1	27.6	29258.1	118	191	2.28	9.63	1500	7110	3850	148	141	76.5	770	5390	3410	106	162000	1140	203	0.798	1500	1950	1510	1970
WT18X326	WT460X485	485	62100	521	447	89.9	50.0	25.0	26050.0	114	191	2.48	10.4	1320	6280	3410	146	136	69.3	670	4750	3020	104	123000	824	201	0.795	1460	1910	1490	1940
WT18X264.5	WT460X393.5	394	50200	505	437	73.9	40.9	20.5	20654.5	98.0	191	2.96	12.4	1020	4880	2690	142	126	57.4	516	3720	2380	102	67800	430	196	0.794	1420	1860	1450	1880
WT18X243.5	WT460X362.5	362	46300	500	434	68.1	38.1	19.1	19050.0	92.2	191	3.19	13.1	924	4460	2460	141	123	53.3	466	3380	2150	101	53300	336	195	0.792	1410	1840	1440	1870
WT18X220.5	WT460X328	328	41900	493	432	62.0	34.5	17.3	17008.5	86.1	191	3.48	14.3	824	3970	2200	140	119	48.5	415	3020	1920	99.6	40200	245	193	0.792	1390	1820	1420	1850
WT18X197.5	WT460X294	294	37500	488	427	55.9	31.0	15.5	15128.0	80.0	191	3.83	15.7	724	3490	1950	139	115	43.9	365	2650	1700	98.6	29400	175	192	0.792	1380	1800	1400	1830
WT18X180.5	WT460X268.5	268	34200	483	424	51.1	28.4	14.2	13717.2	75.2	191	4.16	17.0	653	3150	1750	138	112	40.4	327	2390	1540	97.8	22500	132	190	0.792	1360	1790	1390	1810
WT18X165	WT460X245.5	246	31200	478	422	47.0	25.9	13.0	12380.2	71.1	191	4.49	18.4	587	2830	1590	137	109	37.1	296	2160	1400	97.3	17500	99.9	189	0.793	1350	1770	1380	1800
WT18X151	WT460X224.5	224	28700	475	424	42.7	24.0	12.0	11400.0	66.8	191	4.96	19.8	533	2590	1460	136	107	33.8	270	1970	1270	97.0	13400	76.5	188	0.792	1350	1770	1370	1800
WT18X141	WT460X210	210	26800	472	422	39.9	22.5	11.3	10620.0	64.0	191	5.29	21.0	495	2390	1350	136	106	31.8	249	1840	1180	96.5	10900	62.0	187	0.791	1340	1760	1370	1790
WT18X131	WT460X195	195	24800	467	422	36.6	21.3	10.7	9947.1	60.7	191	5.75	21.9	462	2250	1270	136	105	29.5	227	1670	1080	95.5	8660	49.7	188	0.785	1330	1750	1360	1780
WT18X123.5	WT460X184	184	23400	465	419	34.3	20.3	10.2	9439.5	58.4	191	6.11	22.9	433	2110	1200	136	105	27.9	211	1550	1010	95.0	7200	41.6	188	0.783	1320	1740	1350	1770
WT18X115.5	WT460X171.9	172	22000	464	419	32.0	19.3	9.7	8955.2	56.1	191	6.54	23.9	407	2000	1130	136	104	26.2	196	1440	934	94.2	5950	34.6	188	0.780	1320	1740	1340	1760
WT18X128	WT460X190.5	190	24300	475	310	43.9	24.4	12.2	11590.0	63.0	140	3.53	19.5	504	2560	1430	144	125	39.1	110	1120	708	67.3	11000	55.0	189	0.703	1230	1540	1260	1570
WT18X116	WT460X172.5	172	21900	472	307	39.9	22.1	11.1	10431.2	58.9	140	3.86	21.4	450	2290	1290	143	122	35.6	97.4	998	633	66.5	8200	40.5	188	0.703	1230	1530	1250	1560
WT18X105	WT460X156.5	156	19900	465	310	34.5	21.1	10.6	9811.5	53.6	140	4.48	22.0	410	2150	1200	144	124	32.3	85.7	875	554	65.5	5790	32.0	190	0.687	1210	1520	1240	1550
WT18X97	WT460X144.5	144	18400	462	307	32.0	19.4	9.7	8962.8	51.1	140	4.81	23.8	375	1970	1100	143	122	30.0	77.8	800	506	65.0	4620	24.9	189	0.688	1210	1510	1230	1540
WT18X91	WT460X135.5	136	17300	462	307	30.0	18.4	9.2	8500.8	49.0	140	5.12	25.1	352	1850	1030	143	121	28.2	72.4	742	472	64.8	3830	20.8	189	0.685	1210	1510	1230	1540
WT18X85	WT460X126.5	126	16100	460	305	27.9	17.3	8.7	7958.0	47.0	140	5.47	26.6	327	1720	965	142	120	26.4	66.6	685	436	64.3	3130	17.0	189	0.684	1200	1500	1220	1530
WT18X80	WT460X119	119	15200	457	305	25.9	16.5	8.3	7540.5	45.0	140	5.88	27.7	308	1640	914	142	120	24.9	61.2	633	403	63.5	2570	14.4	189	0.678	1190	1500	1220	1520
WT18X75	WT460X111.5	112	14300	455	305	23.9	15.9	8.0	7234.5	42.9	140	6.37	28.6	291	1560	870	143	121	23.4	56.2	580	369	62.7	2100	12.4	191	0.670	1190	1490	1210	1520
WT18X67.5	WT460X100.5	100	12800	452	305	20.1	15.2	7.6	6870.4	39.1	140	7.56	29.7	265	1480	814	144	126	31.2	47.0	488	310	60.5	1450	10.0	194	0.644	1180	1490	1210	1510
WT16.5X193.5	WT420X288	288	36800	457	411	57.9	32.0	16.0	14624.0	78.0	140	3.55	14.3	608	3160	1750	129	108	44.7	337	2560	1640	95.8	30800	165	179	0.803	1300	1710	1330	1740
WT16.5X177	WT420X263.5	264	33600	452	409	53.1	29.5	14.8	13334.0	73.2	140	3.85	15.3	549	2850	1590	128	105	41.1	303	2310	1480	95.0	23800	126	178	0.803	1290	1700	1310	1720
WT16.5X159	WT420X236.5	237	30200	447	406	48.0	26.4	13.2	11800.8	68.1	140	4.23	16.9	483	2520	1410	127	102	37.1	268	2050	1320	94.2	17500	90.0	176	0.804	1280	1680	1300	1710
WT16.5X145.5	WT420X216.5	216	27600	442	404	43.9	24.4	12.2	10784.8	64.0	140	4.60	18.1	441	2290	1280	126	99.8	34.3	242	1850	1200	93.5	13500	68.7	175	0.802	1260	1670	1290	1690
WT16.5X131.5	WT420X196	196	25000	439	401	39.9	22.1	11.1	9701.9	59.9	140	5.03	19.9	393	2050	1150	125	97.3	31.2	215	1660	1070	92.7	10100	50.5	174	0.802	1250	1660	1280	1680
WT16.5X120.5	WT420X179.5	180	23000	434	404	35.6	21.1	10.6	9157.4	55.6	140	5.66	20.6	363	1900	1080	126	97.5	28.4	194	1490	964	91.9	7490	39.2	175	0.792	1250	1650	1270	1680
WT16.5X110.5	WT420X164.5	164	21000	432	401	32.5	19.7	9.9	8510.4	52.3	140	6.20	21.9	333	1750	996	126	96.8	26.2	175	1350	872	91.2	5790	30.3	175	0.788	1240	1640	1260	1670
WT16.5X100.5	WT420X149.5	150	19200	427	399	29.2	18.2	9.1	7771.4	49.3	140	6.85	23.5	302	1600	909	126	95.8	23.9	156	1200	780	90.4	4330	22.8	175	0.784	1230	1630	1250	1650

WT section



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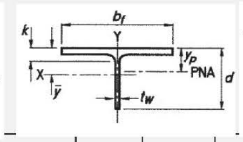

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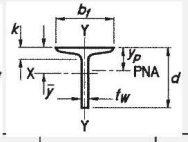
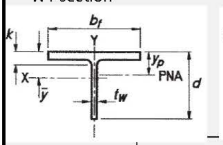


Palestine Technical University Kadoorie

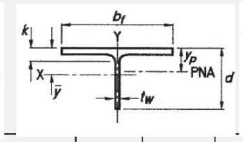
O.S

		Weight	Area	Depth	Flange		Stem			Distance		Compact Section Critiria		Axis X-X						Axis Y-Y				Torsional Properties							
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b_f	t_f	t_w	$t_{w/2}$	Stem Area	k_{des}	WG_i	$b_f/2t_f$	D/t_w	I_x	Z_x	S_x	r_x	y	y_p	I_y	Z_y	S_y	r_y	J	C_w	r_o	H	P_A	P_B	P_C	P_D
WT16.5X84.5	WT420X125.5	125	15900	429	292	31.0	17.0	8.5	7293.0	48.8	140	4.71	25.2	270	1490	837	130	107	27.4	64.5	690	442	63.5	3670	14.9	171	0.715	1130	1420	1150	1440
WT16.5X76	WT420X113	113	14500	424	295	26.9	16.1	8.1	6826.4	44.7	140	5.48	26.3	246	1380	777	131	108	24.6	56.6	605	387	62.7	2560	11.5	173	0.700	1120	1410	1140	1440
WT16.5X70.5	WT420X105	105	13400	424	292	24.4	15.4	7.7	6529.6	42.2	140	6.01	27.6	230	1310	733	131	109	22.9	51.2	547	349	61.7	2010	9.51	174	0.691	1120	1410	1140	1430
WT16.5X65	WT420X96.5	96.5	12300	419	292	21.7	14.7	7.4	6159.3	39.6	140	6.73	28.4	214	1240	690	132	111	21.1	45.4	487	310	60.5	1530	7.87	176	0.677	1100	1400	1130	1420
WT16.5X59	WT420X88	88.0	11200	417	292	18.8	14.0	7.0	5838.0	36.6	140	7.76	29.8	195	1160	642	132	114	21.9	38.9	420	267	58.9	1100	6.28	178	0.659	1100	1390	1130	1420
WT15X195.5	WT380X291	291	37200	422	396	62.0	34.5	17.3	14559.0	82.0	140	3.19	12.2	508	2900	1590	117	102	47.0	322	2540	1630	93.2	35900	171	165	0.817	1210	1610	1240	1640
WT15X178.5	WT380X265.5	266	33900	417	394	56.9	31.5	15.8	13135.5	77.0	140	3.45	13.2	454	2610	1430	116	98.3	43.2	288	2290	1470	92.5	27700	128	164	0.818	1200	1600	1230	1620
WT15X163	WT380X242	242	31000	411	391	52.1	29.0	14.5	11919.0	72.1	140	3.75	14.2	408	2340	1290	115	95.5	39.6	259	2060	1330	91.4	21300	96.9	163	0.817	1190	1580	1210	1610
WT15X146	WT380X217	217	27700	406	389	47.0	25.9	13.0	10515.4	67.1	140	4.12	15.7	358	2050	1140	114	91.9	35.8	229	1820	1180	90.9	15600	69.0	161	0.819	1180	1560	1200	1590
WT15X130.5	WT380X194.5	194	24800	401	386	41.9	23.6	11.8	9463.6	62.0	140	4.59	17.0	318	1840	1020	113	89.9	32.3	200	1600	1040	89.7	11200	49.4	160	0.815	1160	1550	1190	1570
WT15X117.5	WT380X175	175	22400	399	384	38.1	21.1	10.6	8418.9	58.2	140	5.02	18.9	281	1610	903	112	86.6	29.2	178	1430	931	89.2	8370	35.7	158	0.818	1160	1540	1180	1560
WT15X105.5	WT380X157	157	20100	394	384	33.5	19.7	9.9	7761.8	53.3	140	5.74	20.0	254	1470	828	113	86.1	26.2	157	1270	821	88.6	5870	25.9	159	0.809	1150	1530	1170	1550
WT15X95.5	WT380X142	142	18100	389	381	30.2	18.0	9.0	7002.0	50.0	140	6.35	21.5	229	1320	749	112	84.8	23.7	140	1130	733	87.9	4370	19.1	159	0.807	1130	1510	1160	1540
WT15X86.5	WT380X128.5	128	16400	386	381	27.2	16.6	8.3	6407.6	47.0	140	7.04	23.2	207	1200	683	112	84.1	21.6	124	1010	654	86.9	3240	14.2	158	0.802	1130	1510	1150	1530
WT15X74	WT380X110	110	14100	389	267	30.0	16.5	8.3	6418.5	46.5	140	4.44	23.5	194	1180	665	118	97.5	26.4	47.5	556	356	57.9	3010	10.1	155	0.716	1020	1290	1040	1310
WT15X66	WT380X98	98.0	12600	386	267	25.4	15.6	7.8	6021.6	41.9	140	5.27	24.7	175	1090	613	118	99.1	23.4	40.8	479	305	57.2	2020	7.65	157	0.698	1010	1280	1040	1310
WT15X62	WT380X92.5	92.5	11700	384	267	23.6	14.9	7.5	5721.6	40.1	140	5.65	25.8	165	1030	578	118	99.1	22.0	37.6	442	282	56.6	1660	6.42	157	0.694	1010	1280	1030	1300
WT15X58	WT380X86.5	86.5	11000	381	267	21.6	14.4	7.2	5486.4	38.1	140	6.17	26.5	155	990	552	119	100	20.7	34.2	403	256	55.6	1340	5.50	158	0.683	1000	1270	1030	1300
WT15X54	WT380X80.5	80.5	10300	378	267	19.3	13.8	6.9	5216.4	35.8	140	6.89	27.3	145	946	524	119	102	19.2	30.4	359	228	54.6	1040	4.65	160	0.668	998	1260	1020	1290
WT15X49.5	WT380X73.5	73.5	9350	376	267	17.0	13.2	6.6	4963.2	33.5	140	7.80	28.5	134	891	492	120	104	23.2	26.6	316	200	53.3	783	3.84	162	0.653	993	1260	1020	1290
WT15X45	WT380X67	67.0	8520	376	264	15.5	11.9	6.0	4474.4	32.0	140	8.52	31.5	121	803	444	119	103	21.2	23.9	283	180	53.1	587	2.82	161	0.654	991	1250	1020	1280
WT13.5X269.5	WT345X401	401	51200	414	389	89.9	50.0	25.0	20700.0	110	140	2.15	8.30	637	3970	2100	112	110	66.0	441	3570	2260	92.7	103000	467	159	0.831	1200	1590	1220	1610
WT13.5X184	WT345X274	274	35000	386	373	63.0	35.1	17.6	13548.6	83.1	140	2.96	11.0	391	2470	1340	106	94.2	47.0	273	2290	1460	88.4	35200	143	151	0.828	1120	1490	1150	1520
WT13.5X168	WT345X250	250	31900	381	371	57.9	32.0	16.0	12192.0	78.0	140	3.19	11.9	349	2210	1200	105	90.9	43.2	244	2060	1320	87.6	27200	108	150	0.829	1110	1480	1130	1500
WT13.5X153.5	WT345X228.5	228	29200	376	366	53.1	29.5	14.8	11092.0	73.2	140	3.46	12.8	313	1980	1090	104	88.1	39.6	219	1850	1190	86.6	21000	81.6	149	0.828	1090	1460	1120	1480
WT13.5X140.5	WT345X209.5	210	26800	371	366	49.0	26.9	13.5	9979.9	69.1	140	3.72	13.8	282	1790	982	103	85.1	36.6	199	1690	1090	86.1	16500	62.3	147	0.830	1080	1450	1110	1470
WT13.5X129	WT345X192	192	24600	368	363	45.0	24.9	12.5	9163.2	65.0	140	4.03	14.8	255	1620	896	102	83.1	33.8	179	1530	987	85.3	12800	47.8	146	0.828	1070	1440	1100	1460
WT13.5X117.5	WT345X175	175	22400	363	361	40.9	23.1	11.6	8385.3	61.0	140	4.41	15.7	231	1470	819	102	81.3	31.0	160	1370	888	84.6	9740	36.3	146	0.825	1060	1420	1090	1450
WT13.5X108.5	WT345X161.5	162	20600	361	358	38.1	21.1	10.6	7617.1	58.2	140	4.71	17.1	209	1330	741	101	78.7	28.7	147	1260	818	84.3	7830	28.2	144	0.828	1050	1410	1080	1440
WT13.5X97	WT345X144.5	145	18500	358	356	34.0	19.1	9.6	6837.8	54.1	140	5.24	18.8	185	1180	660	100	76.7	25.9	129	1110	723	83.6	5620	20.0	143	0.827	1050	1400	1070	1430
WT13.5X89	WT345X132.5	132	17000	353	358	30.2	18.4	9.2	6495.2	50.3	140	5.92	19.2	172	1110	626	101	77.2	23.7	116	996	646	82.6	4160	15.5	145	0.815	1040	1400	1060	1420
WT13.5X80.5	WT345X120	120	15400	351	356	27.4	16.8	8.4	5896.8	47.5	140	6.49	20.9	155	996	564	100	75.7	21.6	103	893	580	82.0	3130	11.5	144	0.814	1030	1390	1060	1410
WT13.5X73	WT345X108.5	108	13900	348	356	24.8	15.4	7.7	5359.2	44.7	140	7.16	22.6	140	901	511	100	74.7	19.6	92.4	800	519	81.3	2340	8.51	143	0.812	1030	1380	1050	1410
WT13.5X64.5	WT345X96	96.0	12200	351	254	27.9	15.5	7.8	5440.5	43.2	140	4.55	22.6	134	903	508	105	86.1	24.0	38.4	472	302	56.1	2310	6.44	139	0.732	930	1180	955	1210
WT13.5X57	WT345X85	85.0	10800	345	257	23.6	14.5	7.3	5002.5	38.9	140	5.41	23.9	120	826	464	105	86.9	21.1	33.0	403	259	55.4	1520	4.70	141	0.716	922	1180	947	1200
WT13.5X51	WT345X76	76.0	9680	343	254	21.1	13.1	6.6	4493.3	36.3	140	6.03	26.2	107	737	415	105	85.6	19.1	29.0	356	228	54.6	1090	3.38	140	0.713	914	1170	940	1190
WT13.5X47	WT345X70	70.0	8900	343	254	18.9	12.4	6.2	4253.2	34.0	140	6.70	27.6	99.5	695	390	106	86.6	17.6	25.8	318	203	53.8	837	2.74	141	0.702	914	1170	940	1190
WT13.5X42	WT345X62.5	62.5	8000	340	254	16.3	11.7	5.9	3978.0	31.5	140	7.78	29.1	89.9	642	359	106	88.4	15.8	22.0	272	174	52.6	583	2.09	143	0.685	909	1160	935	1190
WT12X185	WT305X275.5	276	35200	356	348	69.1	38.6	19.3	13741.6	81.8	140	2.51	9.20	324	2290	1220	96.0	90.7	50.5	242	2180	1390	83.1	41600	149	139	0.837	1030	1380	1060	1410
WT12X167.5	WT305X249	249	31700	351	343	63.0	35.1	17.6	12320.1	75.7	140	2.73	10.0	286	2020	1090	94.7	86.9	46.2	214	1950	1240	82.0	31500	109	137	0.837	1020	1360	1040	1390
WT12X153	WT305X227.5	228	29000	345	340	57.9	32.0	16.0	11040.0	70.6	140	2.94	10.8	254	1800	973	93.7	83.6	42.4	191	1750	1120	81.3	24300	81.9	136	0.837	1010	1350	1030	1370
WT12X139.5	WT305X207.5	208	26500	340	338	53.1	29.5	14.8	10030.0	65.8	140	3.18	11.6	227	1620	878	92.7	80.8	39.1	171	1580	1010	80.5	18800	61.8	134	0.837	993	1330	1020	1360
WT12X125	WT305X186	186	23700	335	335	48.0	26.4	13.2	8844.0	60.7	140	3.49	12.7	199	1420	773	91.7	77.5	35.3	151	1400	900	79.8	13800	44.3	133	0.838	980	1320	1010	1340
WT12X114.5	WT305X170.5	170	21700	330	333	43.9	24.4	12.2	8052.0	56.6	140	3.79	13.5	179	1280	703	90.9	75.2	32.5	136	1260	814	79.0	10600	33.6	132	0.836	968	1300	993	1330
WT12X103.5	WT305X153.5	154	19500	328	330	39.9	22.1	11.1	7248.8	52.6	140	4.14	14.8	159	1140	628	90.2	72.9	29.7	120	1120	728	78.2	7950	24.5	131	0.836	960	1290	986	1320
WT12X96	WT305X142.5	142	18200	323	330	37.1	20.6	10.3	6653.8	49.8	140	4.43	15.7	146	1040	577	89.7	71.1	27.7	110	1030	670	78.0	6370	19.5	130	0.836	950	1280	975	1310
WT12X88	WT305X131	131	16600	320	328	34.0	19.1	9.6	6112.0	46.7	140	4.81	16.8	133	947	528	89.2	69.6	25.4	99.9	939	610	77.2	4950	15.0	129	0.835	942	1270	968	1300
WT12X81	WT305X120.5	120	15400	318	330	31.0	17.9	9.0	5692.2	43.7	140	5.31	17.7	122	873	490	88.9	68.6	23.4	92.0	862	560	77.5	3840	11.8	129	0.832	940	1270	965	1300
WT12X73	WT305X108.5	108	13900	315	328	27.7	16.5	8.3	5197.5	40.4	140	5.92	19.1	110	790	446	88.9	67.6	21.2	81.2	764	497	76.5	2790	8.57	129	0.827	932	1260	958	1290
WT12X65.5	WT305X97.5	97.5	12500	310	328	24.4	15.4	7.7	4774.0	37.1	140	6.70	20.2	99.1	719	406	89.4	67.3	19.1	70.8	667	434	75.4	1970	6.20	129	0.818	922	1250	947	1280
WT12X58.5	WT305X87	87.0	11100	307	325	21.6	14.0	7.0	4298.0	34.3	140	7.53	22.0	88.2	642	365	89.2	66.5	17.1	62.0	585	380	74.7	1390	4.40	129	0.814	914	1240	940	1260
WT12X52	WT305X77.5	77.5	9870	305	325	19.1	12.7	6.4	3873.5	31.8	140	8.50	24.0	78.7	575	328	89.2	65.8	15.2	54.1	511	333	73.9	978	3.12	129	0.809	909	1230	935	1260
WT12X51.5	WT305X76.5	76.5	9740	312	229	24.9	14.0	7.0	4368.0	37.6	140	4.59	22.4	84.9	642	361	93.2	76.5	21.4	24.8	339	218	50.5	1470	3.30	124	0.733	828	1060	853	1080
WT12X47	WT305X70	70.0	8900	310	230	22.2	13.1	6.6	4061.0	35.1	140	5.18	23.7	77.4	592	333	93.2	75.9	19.4	22.7	306	197	50.3	1090	2.57	124	0.727	826	1050	851	1080
WT12X42	WT305X62.5	62.5	8000	307	229	19.6	11.9	6.0	3653.3	32.3	140	5.86	25.7	69.1	533	300	93.2	75.4	17.4	19.6	267	172	49.5	766	1.85	124	0.720	818	1050	843	1070
WT12X38	WT305X56.5	56.5	7230	305	228	17.3	11.2	5.6	3416.0	30.0	140	6.61	27.3	62.9	493	277	93.5	76.2	15.8	17.2	234	150	48.8	558	1.42	125	0.709	813	1040	838	1070
WT12X34	WT305X50.5	50.5	6450	302	228	14.9	10.5	5.3	3171.0	27.7	140	7.66	28.7	57.0	457	256	94.0	77.7	14.2	14.7	202	129	47.5	388	1.10	127	0.691	808	1030	833	1060
WT12X31	WT305X46	46.0	5880	302	179	15.0	10.9	5.5	3291.8	27.7	88.9	5.97	27.7	54.5	465	256	96.3	87.9	32.5	7.16	129	80.3	35.1	354	1.05	130	0.619	767	945	782	963
WT12X27.5	WT305X41	41.0	5230	300	178	12.8	10.0	5.0	3000.0	25.7	88.9	6.94	29.9	48.7	420	231	96.5	88.9	38.9	6.04	109	68.0	34.0	245	0.787	131	0.606	759	937	777	955
WT10.5X137.5	WT265X204.5	205	26400	307	328	55.6	31.0	15.5	9517.0	85.6	140	2.95	9.92	175	1410	749	81.3	73.7	40.4	164	1560	1000	78.7	22300	60.2	122	0.859	917	1240	942	1270
WT10.5X124	WT265X184.5	185	23900	302	325	50.5	27.9	14.0	8425.8	80.5	140	3.22	10.8	153	1240	661	80.0	70.4	36.8	145	1390	893	78.0	16700	43.8	121	0.860	904	1230	930	1250

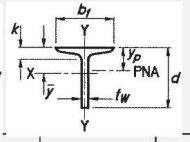
WT section



MT section



ST section



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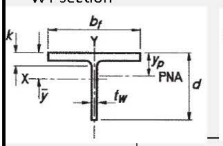
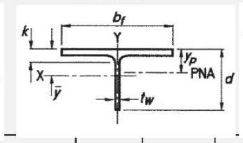
		Weight	Area	Depth	Flange		Stem			Distance		Compact Section Critiria		Axis X-X						Axis Y-Y				Torsional Properties							
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b_f	t_f	t_w	$t_{w/2}$	Stem Area	k_{des}	WG_i	$b_f/2t_f$	D/t_w	I_x	Z_x	S_x	r_x	y	y_p	I_y	Z_y	S_y	r_y	J	C_w	r_o	H	P_A	P_B	P_C	P_D
WT10.5X111.5	WT265X166	166	21400	297	323	45.5	25.4	12.7	7543.8	75.4	140	3.55	11.7	135	1090	588	79.2	67.6	33.3	128	1230	792	77.2	12300	31.4	119	0.859	892	1210	917	1240
WT10.5X100.5	WT265X150	150	19100	292	320	41.4	23.1	11.6	6745.2	54.1	140	3.86	12.6	119	960	523	78.7	65.3	30.0	113	1090	706	76.7	8490	22.9	119	0.859	879	1200	904	1220
WT10.5X91	WT265X136	136	17300	290	318	37.6	21.1	10.6	6119.0	50.3	140	4.22	13.7	105	854	467	78.0	63.0	27.2	100	975	633	76.2	6370	16.9	118	0.859	871	1190	897	1210
WT10.5X83	WT265X124	124	15700	284	315	34.5	19.1	9.6	5424.4	47.2	140	4.57	14.9	94.1	759	418	77.2	60.7	25.0	90.3	883	574	75.9	4910	12.7	117	0.861	859	1170	884	1200
WT10.5X73.5	WT265X109.5	110	13900	279	318	29.2	18.3	9.2	5105.7	41.9	140	5.44	15.3	84.9	695	388	78.2	60.7	21.9	78.3	759	492	74.9	3200	8.73	118	0.846	851	1170	876	1190
WT10.5X66	WT265X98	98.0	12500	277	315	26.4	16.5	8.3	4570.5	39.1	140	6.01	16.8	75.3	616	346	77.7	59.2	19.8	69.1	674	438	74.4	2340	6.28	117	0.845	843	1160	869	1180
WT10.5X61	WT265X91	91.0	11500	274	315	24.4	15.2	7.6	4164.8	37.1	140	6.45	18.0	69.1	562	316	77.2	57.9	18.4	63.3	619	403	73.9	1860	4.94	116	0.846	838	1150	864	1180
WT10.5X55.5	WT265X82.5	82.5	10500	274	312	22.2	14.0	7.0	3836.0	35.1	140	7.05	19.6	62.4	508	287	77.0	56.6	16.8	57.0	559	364	73.7	1420	3.71	116	0.845	836	1150	861	1170
WT10.5X50.5	WT265X75	75.0	9610	272	312	20.3	12.7	6.4	3454.4	33.0	140	7.68	21.4	56.2	457	259	76.5	55.4	15.4	51.6	505	331	73.4	1080	2.79	115	0.846	831	1140	856	1170
WT10.5X46.5	WT265X69	69.0	8840	274	214	23.6	14.7	7.4	4027.8	36.3	140	4.53	18.6	59.9	521	293	82.6	69.6	20.6	19.3	283	180	46.7	1250	2.51	111	0.730	749	963	762	975
WT10.5X41.5	WT265X61.5	61.5	7870	272	212	21.2	13.1	6.6	3563.2	34.0	140	5.00	20.8	52.9	459	257	81.8	67.6	18.5	16.9	249	160	46.5	899	1.75	110	0.732	742	955	757	968
WT10.5X36.5	WT265X54.5	54.5	6900	269	211	18.8	11.6	5.8	3120.4	31.5	140	5.60	23.3	45.8	400	226	81.5	66.0	16.4	14.7	218	139	46.0	629	1.19	109	0.732	737	947	749	960
WT10.5X34	WT265X50.5	50.5	6450	269	210	17.4	10.9	5.5	2932.1	30.2	140	6.04	24.7	42.9	375	211	81.3	65.8	15.4	13.5	200	128	45.7	508	0.972	109	0.728	737	945	749	958
WT10.5X31	WT265X46	46.0	5890	267	209	15.6	10.2	5.1	2723.4	28.4	140	6.70	26.3	39.0	346	195	81.5	65.5	14.1	11.9	179	114	45.0	380	0.747	109	0.721	729	940	742	953
WT10.5X27.5	WT265X41	41.0	5230	264	209	13.3	9.53	4.8	2515.9	25.9	140	7.87	27.7	35.1	318	179	82.0	67.1	12.5	10.1	150	96.5	43.9	257	0.559	111	0.703	724	932	737	945
WT10.5X24	WT265X36	36.0	4560	262	207	10.9	8.89	4.4	2329.2	23.6	140	9.47	29.4	31.2	292	162	82.8	69.6	11.7	8.07	122	78.0	42.2	166	0.408	113	0.676	716	925	729	937
WT10.5X28.5	WT265X42.5	42.5	5400	267	167	16.5	10.3	5.2	2750.1	29.2	88.9	5.04	25.9	37.6	347	193	83.6	72.4	16.2	6.37	121	76.5	34.3	368	0.671	111	0.665	686	853	701	866
WT10.5X25	WT265X37	37.0	4750	264	166	13.6	9.65	4.8	2547.6	26.4	88.9	6.10	27.4	33.4	318	175	83.8	74.4	19.6	5.20	99.6	62.6	33.0	237	0.508	113	0.640	681	846	693	861
WT10.5X22	WT265X33	33.0	4190	262	165	11.4	8.89	4.4	2329.2	24.1	88.9	7.22	29.4	29.6	288	159	84.1	75.7	26.9	4.29	83.1	52.1	32.0	159	0.376	114	0.623	676	841	688	853
WT9X155.5	WT230X232	232	29500	284	305	69.6	38.6	19.3	10962.4	82.3	140	2.19	7.37	159	1480	764	73.4	74.4	48.5	166	1700	1080	74.9	36300	91.0	112	0.875	856	1160	874	1180
WT9X141.5	WT230X210.5	210	26900	277	302	63.5	35.6	17.8	9861.2	76.2	140	2.38	7.79	140	1310	680	72.4	71.1	44.5	147	1520	970	73.9	27700	67.4	111	0.873	838	1140	856	1160
WT9X129	WT230X192	192	24500	272	300	58.4	32.5	16.3	8840.0	68.6	140	2.56	8.36	124	1160	606	71.1	68.1	40.9	131	1360	875	73.2	21300	50.8	109	0.874	826	1130	843	1140
WT9X117	WT230X174.5	174	22100	267	297	53.6	29.5	14.8	7876.5	63.8	140	2.76	9.05	109	1020	536	69.9	64.8	37.6	116	1220	785	72.4	16300	37.6	107	0.875	813	1110	831	1130
WT9X105.5	WT230X157.5	158	20100	262	295	48.5	26.9	13.5	7047.8	58.7	140	3.02	9.72	95.3	901	477	69.1	62.0	34.0	102	1080	700	71.6	12100	27.4	106	0.874	800	1090	818	1110
WT9X96	WT230X143	143	18100	259	292	44.5	24.4	12.2	6319.6	54.6	140	3.27	10.6	84.1	795	423	68.1	59.4	31.2	91.6	973	629	70.9	9280	20.3	105	0.875	792	1080	810	1100
WT9X87.5	WT230X130	130	16600	254	290	40.4	22.6	11.3	5740.4	50.5	140	3.58	11.2	75.3	714	383	67.6	57.4	28.7	81.6	870	564	70.1	6990	15.2	104	0.872	780	1070	798	1090
WT9X79	WT230X117.5	118	15000	250	287	36.6	20.6	10.3	5150.0	46.7	140	3.92	12.2	66.6	631	341	66.8	55.1	25.9	72.4	777	503	69.6	5200	11.1	103	0.872	770	1060	787	1070
WT9X71.5	WT230X106.5	106	13500	248	284	33.5	18.5	9.3	4588.0	43.7	140	4.25	13.4	59.1	557	303	66.0	53.1	23.8	64.9	700	454	69.1	3990	8.24	102	0.874	762	1050	780	1060
WT9X65	WT230X96.5	96.5	12400	245	284	30.5	17.0	8.5	4165.0	40.6	140	4.65	14.4	52.9	500	274	65.5	51.3	21.7	57.9	628	408	68.6	3010	6.12	102	0.873	757	1040	775	1060
WT9X59.5	WT230X88.5	88.5	11400	241	287	26.9	16.6	8.3	4000.6	37.1	140	5.31	14.5	49.5	470	261	66.0	51.6	19.8	52.4	565	369	68.3	2210	4.67	102	0.862	752	1040	770	1060
WT9X53	WT230X79	79.0	10100	238	284	23.9	15.0	7.5	3570.0	34.0	140	5.96	15.9	43.3	413	231	65.8	50.0	17.7	45.8	495	323	67.6	1550	3.25	102	0.860	744	1030	759	1040
WT9X48.5	WT230X72	72.0	9160	236	282	22.1	13.6	6.8	3209.6	32.3	140	6.41	17.4	39.0	370	208	65.0	48.5	16.3	41.6	452	295	67.3	1220	2.49	101	0.863	737	1020	754	1040
WT9X43	WT230X64	64.0	8190	234	282	19.6	12.2	6.1	2854.8	29.7	140	7.20	19.2	34.3	326	184	64.8	47.2	14.5	36.5	397	259	66.8	849	1.72	100	0.861	732	1010	749	1030
WT9X38	WT230X56.5	56.5	7160	231	279	17.3	10.8	5.4	2494.8	27.4	140	8.11	21.4	29.9	283	161	64.5	45.7	12.8	31.7	346	226	66.3	587	1.17	99.8	0.861	724	1000	742	1020
WT9X35.5	WT230X53	53.0	6710	235	194	20.6	12.6	6.3	2961.0	30.7	88.9	4.71	18.7	32.5	328	184	69.6	57.4	17.3	12.5	202	129	43.2	724	1.06	94.5	0.752	650	843	663	859
WT9X32.5	WT230X48.5	48.5	6160	233	193	19.1	11.4	5.7	2656.2	29.2	88.9	5.06	20.4	29.4	295	166	69.1	55.9	16.0	11.4	184	118	42.9	566	0.808	93.7	0.755	645	838	660	851
WT9X30	WT230X44.5	44.5	5690	232	192	17.7	10.5	5.3	2436.0	27.9	88.9	5.44	22.0	26.9	270	152	68.8	54.9	14.8	10.4	169	109	42.7	450	0.631	93.2	0.756	643	833	655	848
WT9X27.5	WT230X41	41.0	5230	230	191	16.0	9.91	5.0	2279.3	26.2	88.9	5.98	23.2	24.8	251	141	68.8	54.9	13.7	9.37	152	97.8	42.4	345	0.494	93.5	0.749	638	831	653	843
WT9X25	WT230X37	37.0	4740	229	191	14.5	9.02	4.5	2065.6	24.7	88.9	6.57	25.4	22.3	226	128	68.6	53.8	12.4	8.32	136	87.7	41.9	258	0.365	93.0	0.748	635	826	648	838
WT9X23	WT230X34	34.0	4370	229	154	15.4	9.14	4.6	2093.1	25.7	88.9	5.01	25.1	21.7	228	127	70.4	59.2	14.2	4.70	95.7	60.8	32.8	253	0.322	93.2	0.695	599	754	612	767
WT9X20	WT230X30	30.0	3790	227	153	13.3	8.00	4.0	1816.0	23.5	88.9	5.73	28.4	18.6	197	110	70.1	58.2	12.4	3.98	81.4	51.9	32.3	168	0.212	92.7	0.693	594	747	607	759
WT9X17.5	WT230X26	26.0	3320	225	152	10.8	7.62	3.8	1714.5	21.0	88.9	7.06	29.5	16.7	184	102	70.9	60.7	11.4	3.19	65.9	42.0	31.0	105	0.161	95.0	0.662	589	742	602	754
WT8X50	WT205X74.5	74.5	9480	216	264	25.0	14.9	7.5	3218.4	35.3	140	5.29	14.5	32.0	339	187	57.9	44.7	17.9	38.8	449	293	63.8	1600	2.79	92.2	0.878	678	942	696	960
WT8X44.5	WT205X66	66.0	8450	213	264	22.2	13.3	6.7	2832.9	32.5	140	5.92	16.0	28.0	297	166	57.7	43.2	16.0	33.8	393	257	63.2	1130	1.93	91.4	0.877	673	937	691	955
WT8X38.5	WT205X57	57.0	7290	210	262	19.3	11.6	5.8	2436.0	29.5	140	6.77	18.2	23.7	251	141	56.9	41.4	13.9	28.8	336	220	62.7	741	1.24	90.7	0.877	663	925	681	942
WT8X33.5	WT205X50	50.0	6330	208	259	16.9	10.0	5.0	2080.0	27.2	140	7.70	20.7	20.2	213	121	56.4	39.6	12.2	24.8	290	190	62.5	495	0.808	89.9	0.879	658	917	673	932
WT8X28.5	WT205X42.5	42.5	5410	209	181	18.2	10.9	5.5	2278.1	28.4	88.9	4.98	19.1	20.3	226	127	61.2	49.3	15.0	8.99	154	99.3	40.6	458	0.534	83.8	0.770	584	767	599	780
WT8X25	WT205X37.5	37.5	4750	207	180	16.0	9.65	4.8	1997.6	26.2	88.9	5.61	21.4	17.6	197	111	61.0	48.0	13.2	7.74	134	86.2	40.4	316	0.360	83.3	0.769	579	759	592	772
WT8X22.5	WT205X33.5	33.5	4280	205	179	14.4	8.76	4.4	1795.8	24.6	88.9	6.23	23.4	15.7	177	100	60.7	47.2	12.0	6.83	118	76.5	39.9	231	0.262	83.1	0.767	577	754	589	767
WT8X20	WT205X30	30.0	3800	203	178	12.8	7.75	3.9	1573.3	23.0	88.9	6.93	26.3	13.8	155	87.7	60.2	46.0	10.7	5.99	104	67.5	39.6	165	0.181	82.3	0.769	572	749	584	762
WT8X18	WT205X26.5	26.5	3410	201	178	10.9	7.49	3.7	1505.5	21.1	88.9	8.12	26.9	12.7	146	82.8	61.2	47.8	9.60	5.08	88.8	57.4	38.6	113	0.139	83.8	0.745	566	744	582	757
WT8X15.5	WT205X23.05	23.1	2940	202	140	11.2	6.99	3.5	1412.0	21.4	88.9	6.28	28.9	11.4	136	76.0	62.2	51.3	10.5	2.58	57.5	36.7	29.7	95.7	0.0983	82.8	0.695	531	671	544	683
WT8X13	WT205X19.4	19.4	2480	199	140	8.76	6.35	3.2	1263.7	19.0	88.9	7.97	31.4	9.78	121	67.0	62.7	53.1	9.45	1.99	44.7	28.5	28.4	54.1	0.0653	84.3	0.667	526	665	538	678
WT7X436.5	WT180X694.5	650	83200	300	478	140	100	50.0	30000.0	155	216	1.71	2.99	433	4610	2150	72.1	98.6	87.1	1280	8380	5380	124	462000	2410	146	0.962	1060	1540	1080	1550
WT7X404	WT180X601	601	76800	290	472	130	95.0	47.5	27550.0	145	216	1.82	3.05	374	4080	1900	69.9	93.7	81.3	1150	7620	4880	122	374000	1880	144	0.960	1040	1510	1050	1520
WT7X365	WT180X543	543	69000	284	455	125	78.0	39.0	22152.0	140	191	1.82	3.65	308	3460	1560	66.5	88.1	76.2	982	6690	4330	119	297000	1410	139	0.966	998	1450	1020	1480
WT7X332.5	WT180X495	495	63100	274	450	115	71.9	36.0	19700.6	130	191	1.95	3.82	259	2980	1350	64.0	82.6	70.4	866	5980	3870	117	231000	1050	136	0.966	973	1420	998	1450
WT7X302.5	WT180X450	450	57400	267	442	106	66.0	33.0	17622.0	121	191	2.09	4.04	218	2570	1160	61.7	77.5	64.8	766	5340	3460	116	179000	787	133	0.966	950	1390	975	1420
WT7X275	WT180X409	409	52200	257	437	97.0	60.5	30.3	15548.5	112	191	2.25	4.24	184	2230	998	59.4	72.4	59.7	678	4790	3100	114	138000	585	131	0.966	925	1360	950	1390
WT7X250	WT180X372	372	47400	249	432	88.9	55.6	27.8	13844.4	104	191	2.43	4.47	156	1920	864	57.4	67.8	54.9	599	4280	2770	113	106000	435	129	0.967	904	1340	930	1360
WT7X227.5	WT180X338.5	338	43200	242	427	81.5	51.3	25.7	12414.6	96.8	191	2.62	4.71	134	1670	752	55.6	63.8	50.5	533	3830	2490	111	81600	325	126	0.967	884	1310	909	1340

WT section



MT section



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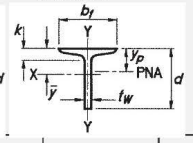

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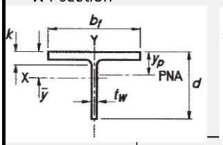
O.S

		Weight	Area	Depth	Flange		Stem			Distance		Compact Section Critiria		Axis X-X						Axis Y-Y				Torsional Properties							
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b_f	t_f	t_w	$t_{w/2}$	Stem Area	k_{des}	WG_i	$b_f/2t_f$	D/t_w	I_x	Z_x	S_x	r_x	y	y_p	I_y	Z_y	S_y	r_y	J	C_w	r_o	H	P_A	P_B	P_C	P_D
WT7X213	WT180X317	317	40500	237	424	77.2	47.8	23.9	11328.6	92.2	191	2.75	4.97	119	1500	678	54.4	61.0	47.8	491	3560	2310	110	68300	266	125	0.968	874	1300	899	1320
WT7X199	WT180X296	296	37700	232	422	72.4	45.0	22.5	10440.0	87.4	191	2.92	5.17	107	1360	616	53.3	58.4	44.7	454	3290	2150	109	56200	215	124	0.968	861	1280	886	1310
WT7X185	WT180X275.5	276	35100	228	419	67.6	42.2	21.1	9621.6	82.8	191	3.10	5.40	95.3	1220	556	52.1	55.6	41.9	414	3030	1980	108	45800	172	122	0.968	848	1270	874	1290
WT7X171	WT180X254.5	255	32500	223	417	62.7	39.1	19.6	8719.3	78.0	191	3.31	5.69	84.5	1080	498	51.1	53.1	39.1	376	2770	1800	108	36800	135	121	0.968	836	1250	861	1280
WT7X155.5	WT180X231.5	232	29500	217	411	57.4	35.8	17.9	7768.6	72.6	191	3.59	6.07	73.3	946	438	49.8	50.0	35.8	336	2490	1630	107	28100	101	120	0.969	820	1230	846	1260
WT7X141.5	WT180X210.5	210	26800	213	409	52.6	32.8	16.4	6986.4	67.8	191	3.89	6.49	63.7	826	385	48.8	47.2	32.8	301	2250	1470	106	21600	75.5	118	0.969	808	1220	833	1240
WT7X128.5	WT180X191	191	24400	208	406	48.0	30.0	15.0	6240.0	63.2	191	4.23	6.94	55.4	719	339	47.8	44.5	30.0	268	2020	1320	105	16400	56.1	117	0.969	798	1200	823	1230
WT7X116.5	WT180X173.5	174	22100	204	404	43.7	27.2	13.6	5548.8	58.9	191	4.62	7.50	48.3	626	298	46.7	41.9	27.4	240	1800	1190	104	12300	41.4	116	0.970	785	1190	810	1210
WT7X105.5	WT180X157	157	20000	200	401	39.6	24.9	12.5	4980.0	54.9	191	5.06	8.02	42.5	547	265	46.0	39.9	24.9	214	1620	1070	103	9240	30.3	115	0.970	775	1180	800	1200
WT7X96.5	WT180X143.5	144	18300	197	399	36.6	22.6	11.3	4452.2	51.8	191	5.45	8.70	37.4	482	236	45.2	37.8	22.9	194	1480	972	103	7200	23.4	114	0.971	767	1170	792	1190
WT7X88	WT180X131	131	16700	193	399	33.3	21.1	10.6	4072.3	48.5	191	5.97	9.17	33.5	431	213	44.7	36.3	21.0	174	1330	877	102	5490	17.5	113	0.970	759	1160	785	1180
WT7X79.5	WT180X118.5	118	15100	190	396	30.2	18.9	9.5	3591.0	45.5	191	6.54	10.1	29.2	374	187	43.9	34.3	19.1	156	1200	788	102	4100	12.9	113	0.971	752	1150	777	1170
WT7X72.5	WT180X108	108	13700	188	394	27.7	17.3	8.7	3252.4	42.9	191	7.11	10.9	26.0	331	167	43.4	32.8	17.5	141	1080	716	101	3150	9.75	112	0.971	744	1140	770	1160
WT7X66	WT180X98	98.0	12500	186	373	26.2	16.4	8.2	3050.4	41.4	140	7.15	11.4	24.1	305	157	43.9	32.8	16.7	114	926	610	95.5	2550	7.14	107	0.966	719	1090	747	1120
WT7X60	WT180X89.5	89.5	11400	184	373	23.9	15.0	7.5	2760.0	39.1	140	7.80	12.3	21.5	270	141	43.4	31.5	15.3	103	839	552	95.0	1940	5.37	106	0.966	716	1090	742	1120
WT7X54.5	WT180X81	81.0	10300	182	371	21.8	13.3	6.7	2420.6	37.1	140	8.49	13.6	18.9	236	124	42.7	29.7	13.9	92.8	759	501	94.7	1480	4.03	106	0.968	709	1080	734	1100
WT7X49.5	WT180X73.5	73.5	9420	180	371	19.8	12.3	6.2	2214.0	35.1	140	9.34	14.6	17.0	211	113	42.4	29.0	12.7	83.7	685	452	94.2	1120	2.98	105	0.967	704	1070	732	1100
WT7X45	WT180X67	67.0	8520	178	368	18.0	11.2	5.6	1993.6	33.3	140	10.2	15.9	15.2	188	101	42.2	27.7	11.6	75.3	619	410	94.0	845	2.23	105	0.968	699	1070	724	1090
WT7X41	WT180X61	61.0	7740	182	257	21.7	13.0	6.5	2366.0	36.8	140	5.92	14.0	17.1	216	117	47.0	35.3	15.1	30.8	367	239	63.0	1050	1.51	82.3	0.912	602	859	620	876
WT7X37	WT180X55	55.0	7030	180	257	19.9	11.4	5.7	2052.0	35.1	140	6.41	15.8	15.0	188	102	46.2	33.5	13.7	27.8	331	218	63.0	803	1.13	81.5	0.916	599	856	617	874
WT7X34	WT180X50.5	50.5	6450	178	254	18.3	10.5	5.3	1869.0	33.3	140	6.97	16.9	13.6	170	93.2	46.0	32.8	12.6	25.3	302	198	62.5	624	0.862	81.0	0.916	594	848	610	864
WT7X30.5	WT180X45.5	45.5	5780	177	254	16.4	9.53	4.8	1686.8	31.5	140	7.75	18.5	12.0	150	83.1	45.7	31.8	11.4	22.4	269	175	62.2	454	0.615	80.5	0.915	589	843	607	861
WT7X26.5	WT180X39.5	39.5	5030	177	205	16.8	9.40	4.7	1663.8	31.8	140	6.11	18.8	11.5	145	81.0	47.8	35.1	12.3	12.0	180	117	48.8	402	0.392	73.4	0.868	541	747	559	762
WT7X24	WT180X36	36.0	4560	175	204	15.1	8.64	4.3	1512.0	30.2	140	6.75	20.3	10.4	131	73.6	47.8	34.3	11.2	10.7	161	105	48.5	301	0.287	72.9	0.866	536	742	554	759
WT7X21.5	WT180X32	32.0	4070	173	203	13.5	7.75	3.9	1340.8	28.4	140	7.54	22.4	9.12	116	65.2	47.2	33.3	10.0	9.41	142	92.6	48.0	217	0.202	72.6	0.865	533	737	551	754
WT7X19	WT180X28.9	28.9	3600	179	172	13.1	7.87	3.9	1408.7	23.2	88.9	6.57	22.7	9.70	122	69.2	51.8	39.1	10.5	5.54	99.5	64.6	39.4	166	0.149	72.6	0.799	518	688	531	701
WT7X17	WT180X25.5	25.5	3230	178	171	11.6	7.24	3.6	1288.7	21.7	88.9	7.41	24.5	8.70	110	62.8	51.8	38.9	9.42	4.83	87.2	56.5	38.9	118	0.107	72.9	0.792	513	686	526	699
WT7X15	WT180X22	22.0	2850	176	171	9.78	6.86	3.4	1207.4	19.9	88.9	8.74	25.6	7.91	102	58.2	52.6	40.1	8.36	4.07	73.6	47.7	37.8	79.1	0.0771	73.7	0.772	511	681	523	693
WT7X13	WT180X19.5	19.5	2480	177	128	10.7	6.48	3.2	1147.0	20.8	69.9	5.98	27.3	7.20	96.5	54.2	53.8	43.7	9.73	1.85	45.2	29.0	27.4	74.5	0.0556	71.6	0.712	467	597	483	610
WT7X11	WT180X16.45	16.5	2100	174	127	8.51	5.84	2.9	1016.2	18.7	69.9	7.46	29.9	6.16	85.2	47.7	54.4	44.7	8.26	1.46	35.9	22.9	26.4	43.3	0.0360	72.6	0.689	462	589	475	602
WT6X168	WT155X250	250	31900	214	340	75.2	45.2	22.6	9672.8	90.2	140	2.26	4.72	79.1	1120	511	49.8	58.7	46.7	247	2250	1450	88.1	49900	129	103	0.958	749	1090	767	1110
WT6X152.5	WT155X227	227	28800	207	335	68.8	41.4	20.7	8569.8	83.8	140	2.45	5.01	67.4	968	442	48.3	54.9	42.9	219	2000	1300	86.9	38300	95.6	102	0.959	732	1070	749	1080
WT6X139.5	WT155X207.5	208	26500	201	333	62.7	38.9	19.5	7818.9	78.0	140	2.66	5.18	58.7	850	395	47.2	52.1	39.6	195	1800	1170	85.9	29500	71.7	100	0.958	719	1050	737	1070
WT6X126	WT155X187.5	188	23900	196	330	57.2	35.6	17.8	6977.6	72.4	140	2.89	5.51	50.4	734	342	46.0	48.8	36.1	172	1600	1040	84.8	22300	52.4	98.6	0.958	704	1030	721	1050
WT6X115	WT155X171	171	21800	191	328	52.6	32.8	16.4	6264.8	67.8	140	3.11	5.84	44.1	646	303	45.0	46.2	33.3	154	1450	942	84.1	17300	39.7	97.3	0.958	693	1020	711	1040
WT6X105	WT155X156.5	156	19900	187	325	48.3	30.0	15.0	5610.0	63.5	140	3.37	6.24	38.3	565	269	43.9	43.7	30.7	138	1310	850	83.3	13400	30.1	96.3	0.958	681	1010	699	1020
WT6X95	WT155X141.5	142	18100	183	323	44.2	26.9	13.5	4922.7	59.2	140	3.65	6.78	32.9	488	233	42.7	41.1	27.9	123	1170	762	82.6	10100	22.0	94.7	0.960	671	993	688	1010
WT6X85	WT155X126.5	126	16100	178	320	39.6	24.4	12.2	4343.2	54.9	140	4.03	7.31	28.2	420	202	41.9	38.6	25.2	108	1030	675	81.8	7370	15.7	93.7	0.960	660	980	676	996
WT6X76	WT155X113	113	14500	174	318	35.6	22.1	11.1	3845.4	50.8	140	4.46	7.89	24.3	361	177	41.1	36.3	22.8	94.5	911	596	81.0	5330	11.1	92.7	0.960	648	965	665	983
WT6X68	WT155X101	101	12900	170	315	31.8	20.1	10.1	3417.0	47.0	140	4.96	8.49	21.1	311	155	40.4	34.3	20.4	82.8	801	526	80.3	3830	7.76	91.7	0.959	638	953	655	971
WT6X60	WT155X89.5	89.5	11400	167	312	28.2	18.0	9.0	3006.0	43.2	140	5.57	9.24	18.1	265	135	39.9	32.5	18.2	71.6	700	459	79.5	2670	5.29	90.7	0.959	627	940	645	958
WT6X53	WT155X79	79.0	10100	164	310	25.1	15.5	7.8	2542.0	40.4	140	6.17	10.6	15.1	223	113	38.9	30.2	16.2	62.9	615	405	79.0	1890	3.65	89.7	0.961	620	930	638	947
WT6X48	WT155X71.5	71.5	9100	162	310	22.9	14.0	7.0	2268.0	38.1	140	6.76	11.6	13.3	195	100	38.4	28.7	14.7	56.2	552	364	78.5	1420	2.71	89.2	0.962	615	925	632	942
WT6X43.5	WT155X64.5	64.5	8260	159	307	20.6	13.1	6.6	2082.9	35.8	140	7.48	12.2	12.0	175	91.8	38.1	27.9	13.4	49.9	495	326	78.0	1060	1.97	88.6	0.960	610	917	625	932
WT6X39.5	WT155X58.5	58.5	7480	157	307	18.7	11.9	6.0	1868.3	33.8	140	8.22	13.2	10.7	156	82.4	37.8	26.9	12.2	45.0	444	293	77.5	795	1.46	88.1	0.960	605	912	622	930
WT6X36	WT155X53.5	53.5	6840	156	305	17.0	10.9	5.5	1700.4	32.3	140	8.99	14.3	9.66	139	74.4	37.6	25.9	11.2	40.6	403	265	77.2	608	1.09	87.6	0.960	599	904	617	922
WT6X32.5	WT155X48.5	48.5	6150	154	305	15.4	9.91	5.0	1526.1	30.5	140	9.92	15.5	8.57	123	66.5	37.3	25.0	10.1	36.3	361	238	76.7	454	0.798	87.1	0.960	594	899	612	917
WT6X29	WT155X43	43.0	5500	155	254	16.3	9.14	4.6	1416.7	31.5	140	7.82	16.9	7.95	114	61.6	38.1	26.2	10.8	22.3	265	175	63.8	437	0.559	76.2	0.944	549	803	564	818
WT6X26.5	WT155X39.5	39.5	5020	153	254	14.6	8.76	4.4	1340.3	30.0	140	8.69	17.5	7.37	106	58.0	38.4	25.9	9.88	19.9	238	157	63.0	328	0.411	76.2	0.939	546	800	561	815
WT6X25	WT155X37	37.0	4710	155	205	16.3	9.40	4.7	1457.0	29.0	140	6.31	16.5	7.78	113	62.1	40.6	29.7	11.5	11.7	174	114	49.8	356	0.330	67.8	0.899	500	706	516	721
WT6X22.5	WT155X33.5	33.5	4230	153	204	14.6	8.51	4.3	1302.0	27.4	140	7.00	18.0	6.91	100	55.6	40.4	28.7	10.4	10.4	155	102	49.5	261	0.238	67.6	0.898	495	701	511	716
WT6X20	WT155X30	30.0	3770	152	203	13.1	7.49	3.7	1138.5	25.9	140	7.77	20.2	5.99	86.5	48.3	39.9	27.7	9.27	9.16	137	90.1	49.3	188	0.166	66.8	0.901	490	696	508	711
WT6X17.5	WT155X26	26.0	3340	159	167	13.2	7.62	3.8	1211.6	20.8	88.9	6.31	20.8	6.66	93.6	52.9	44.7	33.0	10.0	5.08	93.9	61.1	39.1	154	0.117	65.0	0.834	470	638	485	650
WT6X15	WT155X22.25	22.3	2840	157	166	11.2	6.60	3.3	1036.2	18.8	88.9	7.41	23.7	5.62	79.1	45.1	44.5	32.3	8.56	4.25	78.3	51.1	38.6	94.9	0.0717	64.5	0.830	465	632	480	645
WT6X13	WT155X19.35	19.4	2460	155	165	9.65	5.84	2.9	905.2	17.3	88.9	8.54	26.6	4.87	68.8	39.3	44.5	31.8	7.49	3.60	66.9	43.8	38.4	62.4	0.0467	64.5	0.827	462	627	475	640
WT6X11	WT155X16.35	16.4	2090	156	102	10.8	6.60	3.3	1029.6	18.4	57.2	4.74	23.7	4.87	75.9	42.4	48.3	41.4	10.2	0.970	30.0	18.8	21.5	60.8	0.0368	64.0	0.683	406	508	417	518
WT6X9.5	WT155X14.15	14.2	1800	154	102	8.89	5.97	3.0	919.4	16.5	57.2	5.72	25.9	4.20	67.4	37.4	48.3	41.9	8.84	0.783	24.4	15.4	20.9	37.4	0.0251	64.5	0.665	401	503	411	513
WT6X8	WT155X11.9	11.9	1520	152	101	6.73	5.59	2.8	849.7	14.4	57.2	7.53	27.3	3.62	61.0	33.4	48.8	44.2	16.2	0.587	18.5	11.6	19.6	21.3	0.0182	66.5	0.624	396	498	406	508
WT6X7	WT155X10.5	10.5	1340	151	101	5.72	5.08	2.5	767.1	13.3	57.2	8.82	29.8	3.19	54.4	30.0	48.8	44.7	19.3	0.491	15.5	9.72	19.1	14.6	0.0132	67.1	0.611	394	495	404	505
WT5X56	WT125X83.5	83.5	10600	144	264	31.8	19.2	9.6	2764.8	44.5	140	4.17	7.52	11.9	220	105	33.5	30.7	20.1	49.1	567	370	67.8	3120	4.54	77.2	0.963	538	803	554	818
WT5X50	WT125X74.5	74.5	9480	141	262	28.4	17.3	8.7	2439.3	41.1	140	4.62	8.16	10.2	187	91.1	32.8	28.7	18.1	42.9	500	328	67.3	2250	3.20	76.2	0.964	531	792	544	805

WT section



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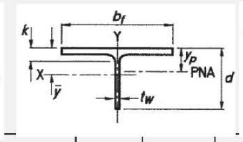

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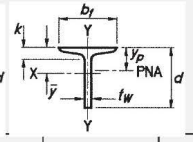
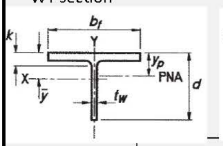


Palestine Technical University Kadoorie

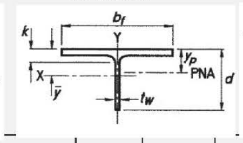
O.S

		Weight	Area	Depth	Flange		Stem			Distance		Compact Section Critiria		Axis X-X						Axis Y-Y				Torsional Properties							
AISC US unit	AISC SI units	W (KG/m)	A (mm2)	d (mm)	b_f	t_f	t_w	$t_{w/2}$	Stem Area	k_{des}	WG_i	$b_f/2t_f$	D/t_w	I_x	Z_x	S_x	r_x	y	y_p	I_y	Z_y	S_y	r_y	J	C_w	r_o	H	P_A	P_B	P_C	P_D
WT5X44	WT125X65.5	65.5	8390	138	262	25.1	15.4	7.7	2125.2	37.8	140	5.18	8.96	8.66	158	78.2	32.3	26.9	16.0	37.2	434	285	66.8	1560	2.15	75.4	0.964	523	785	536	798
WT5X38.5	WT125X57.5	57.5	7290	135	259	22.1	13.5	6.8	1822.5	34.8	140	5.86	10.0	7.24	132	66.4	31.5	25.1	14.1	32.0	375	247	66.0	1060	1.43	74.7	0.964	516	775	528	787
WT5X34	WT125X50.5	50.5	6450	132	257	19.6	11.9	6.0	1570.8	32.3	140	6.58	11.1	6.20	112	57.2	31.0	23.7	12.5	27.8	328	216	65.5	741	0.972	73.9	0.965	508	765	521	777
WT5X30	WT125X44.5	44.5	5700	130	257	17.3	10.7	5.4	1391.0	30.0	140	7.41	12.2	5.37	96.2	49.8	30.7	22.5	11.1	24.2	287	188	65.3	512	0.661	73.4	0.964	503	759	516	772
WT5X27	WT125X40	40.0	5100	128	254	15.6	9.40	4.7	1203.2	28.4	140	8.15	13.6	4.62	82.8	43.3	30.2	21.2	10.0	21.5	256	169	65.0	378	0.478	72.9	0.966	498	752	511	765
WT5X24.5	WT125X36.5	36.5	4650	127	254	14.2	8.64	4.3	1097.3	26.9	140	8.93	14.7	4.16	74.1	39.2	30.0	20.5	9.17	19.4	231	153	64.5	288	0.357	72.4	0.966	495	749	508	762
WT5X22.5	WT125X33.5	33.5	4280	128	204	15.7	8.89	4.4	1137.9	28.4	140	6.47	14.4	4.25	76.2	40.5	31.5	23.0	10.5	11.1	166	109	51.1	313	0.263	61.7	0.940	447	650	460	663
WT5X19.5	WT125X29	29.0	3700	126	203	13.5	8.00	4.0	1008.0	26.2	140	7.53	15.7	3.68	65.4	35.4	31.5	22.3	9.12	9.37	140	92.4	50.3	203	0.165	61.5	0.936	442	645	455	658
WT5X16.5	WT125X24.55	24.6	3130	124	202	11.0	7.37	3.7	913.9	23.7	140	9.15	16.8	3.21	57.0	31.6	32.0	22.1	7.75	7.62	115	75.4	49.3	121	0.0956	61.0	0.927	437	638	450	653
WT5X15	WT125X22.4	22.4	2850	133	148	13.0	7.62	3.8	1013.5	20.6	69.9	5.70	17.5	3.86	65.7	36.7	36.8	27.9	9.65	3.48	72.3	47.0	34.8	129	0.0733	55.1	0.849	404	551	414	561
WT5X13	WT125X19.25	19.3	2460	131	147	11.2	6.60	3.3	864.6	18.8	69.9	6.56	19.9	3.27	55.6	31.3	36.6	26.9	8.38	2.93	61.5	40.0	34.5	83.7	0.0465	54.6	0.848	399	546	409	556
WT5X11	WT125X16.35	16.4	2090	129	146	9.14	6.10	3.1	786.9	16.8	69.9	7.99	21.2	2.86	49.5	28.2	37.1	27.2	7.16	2.38	50.0	32.6	33.8	49.5	0.0287	54.9	0.830	394	541	404	551
WT5X9.5	WT125X14.2	14.2	1810	130	102	10.0	6.35	3.2	825.5	17.7	57.2	5.09	20.5	2.78	50.8	28.5	39.1	32.5	8.86	0.895	27.4	17.5	22.2	48.3	0.0214	52.8	0.729	353	455	363	465
WT5X8.5	WT125X12.65	12.7	1610	129	102	8.38	6.10	3.1	786.9	16.0	57.2	6.08	21.1	2.52	47.5	26.5	39.6	33.5	7.90	0.741	22.9	14.5	21.4	32.3	0.0164	53.6	0.703	351	452	358	460
WT5X7.5	WT125X11.15	11.2	1430	127	102	6.86	5.84	2.9	741.7	14.5	57.2	7.41	21.7	2.27	44.4	24.6	39.9	34.8	7.75	0.604	18.8	11.8	20.6	21.6	0.0128	54.9	0.672	345	447	356	457
WT5X6	WT125X8.95	8.95	1140	125	101	5.33	4.83	2.4	603.8	13.0	57.2	9.43	26.0	1.81	36.1	20.0	39.9	34.5	8.18	0.454	14.2	9.03	19.9	11.3	0.00685	54.9	0.661	343	442	351	452
WT4X33.5	WT100X50	50.0	6350	114	210	23.7	14.5	7.3	1653.0	33.8	140	4.43	7.89	4.54	103	50.0	26.7	23.8	15.1	18.4	267	175	53.8	1040	0.956	61.2	0.962	427	635	439	650
WT4X29	WT100X43	43.0	5510	111	209	20.6	13.0	6.5	1443.0	30.5	140	5.07	8.59	3.80	86.0	42.8	26.2	22.2	13.2	15.6	228	150	53.3	691	0.612	60.5	0.961	419	627	432	640
WT4X24	WT100X35.5	35.5	4550	108	206	17.4	10.2	5.1	1101.6	27.4	140	5.92	10.6	2.85	64.6	32.3	25.0	19.7	11.0	12.7	187	123	52.8	407	0.349	59.4	0.966	409	615	422	627
WT4X20	WT100X29.5	29.5	3790	105	205	14.2	9.14	4.6	959.7	24.2	140	7.21	11.5	2.39	53.3	27.7	25.1	18.7	9.25	10.2	151	99.6	51.8	232	0.192	58.9	0.961	401	607	414	620
WT4X17.5	WT100X26	26.0	3320	103	204	12.6	7.87	3.9	810.6	22.6	140	8.10	13.1	2.01	44.4	23.4	24.6	17.5	8.15	8.87	132	87.0	51.6	160	0.129	58.4	0.963	396	599	409	615
WT4X15.5	WT100X23.05	23.1	2940	102	203	11.0	7.24	3.6	738.5	21.1	140	9.19	14.0	1.78	39.2	21.0	24.6	17.0	7.24	7.70	115	76.0	51.3	111	0.0878	57.9	0.961	394	597	406	610
WT4X14	WT100X20.85	20.9	2660	102	166	11.8	7.24	3.6	738.5	21.8	102	7.03	14.1	1.76	39.0	21.0	25.7	18.6	8.00	4.50	82.6	54.2	41.1	112	0.0618	50.3	0.935	361	528	371	536
WT4X12	WT100X17.95	18.0	2280	101	165	10.2	6.22	3.1	628.2	20.2	102	8.12	16.2	1.47	32.4	17.7	25.4	17.7	6.91	3.80	70.1	46.0	40.9	72.0	0.0387	49.8	0.936	358	523	366	531
WT4X10.5	WT100X15.65	15.7	1990	105	134	10.2	6.35	3.2	666.8	17.8	69.9	6.59	16.6	1.62	34.6	19.3	28.4	21.1	7.42	2.03	46.5	30.3	32.0	58.7	0.0246	45.7	0.877	335	470	345	478
WT4X9	WT100X13.3	13.3	1700	103	133	8.38	5.84	2.9	601.5	16.0	69.9	7.95	17.7	1.42	30.5	17.2	29.0	21.2	6.38	1.66	38.2	24.9	31.2	35.6	0.0151	45.7	0.863	333	465	340	472
WT4X7.5	WT100X11.25	11.3	1430	103	102	8.00	6.22	3.1	640.7	15.6	57.2	6.37	16.6	1.37	31.3	17.5	31.0	25.3	7.01	0.708	21.8	13.9	22.3	28.3	0.0103	43.7	0.760	300	401	307	411
WT4X6.5	WT100X9.65	9.65	1240	102	102	6.48	5.84	2.9	595.7	14.1	57.2	7.84	17.4	1.20	28.5	16.0	31.2	26.2	6.10	0.566	17.5	11.2	21.4	18.0	0.00722	44.2	0.733	297	399	305	406
WT4X5	WT100X7.5	7.50	955	100	100	5.21	4.32	2.2	432.0	12.8	57.2	9.61	23.2	0.895	20.8	11.7	30.5	24.2	4.78	0.437	13.5	8.70	21.3	8.82	0.00306	43.2	0.749	292	391	300	401
WT3X12.5	WT75X18.55	18.6	2370	81.0	154	11.6	8.13	4.1	658.5	17.9	88.9	6.68	10.0	0.953	27.5	14.5	20.0	15.5	7.67	3.55	70.1	46.0	38.6	95.3	0.0459	44.7	0.953	307	462	318	470
WT3X10	WT75X14.9	14.9	1900	78.7	153	9.27	6.60	3.3	519.4	15.6	88.9	8.25	11.9	0.733	21.1	11.4	19.7	14.2	6.20	2.76	55.1	36.2	38.1	49.9	0.0230	43.9	0.953	302	455	310	462
WT3X7.5	WT75X11.25	11.3	1430	76.2	152	6.60	5.84	2.9	445.0	13.0	88.9	11.5	13.0	0.587	16.9	9.46	20.2	14.2	4.70	1.94	38.8	25.6	36.8	21.0	0.00918	43.4	0.937	297	447	305	457
WT3X8	WT75X12	12.0	1530	79.8	102	10.3	6.60	3.3	526.7	16.6	57.2	4.98	12.1	0.703	20.5	11.2	21.4	17.2	7.47	0.920	27.7	18.0	24.5	46.2	0.0114	34.8	0.880	254	356	262	363
WT3X6	WT75X9	9.00	1150	76.7	102	7.11	5.84	2.9	447.9	13.5	57.2	7.14	13.1	0.549	16.6	9.24	21.9	17.2	5.64	0.624	19.0	12.3	23.3	18.7	0.00478	34.8	0.846	246	348	254	356
WT3X4.5	WT75X6.75	6.75	865	74.9	100	5.46	4.32	2.2	323.6	11.8	57.2	9.16	17.4	0.395	11.8	6.69	21.4	15.8	4.32	0.458	14.0	9.13	23.0	8.41	0.00198	34.0	0.852	241	340	250	351
WT3X4.25	WT75X6.5	6.50	813	74.2	100	4.95	4.32	2.2	320.5	11.3	57.2	10.1	17.2	0.377	11.5	6.51	21.5	16.2	4.06	0.414	12.7	8.28	22.6	6.91	0.00166	34.0	0.839	240	340	248	348
WT2.5X9.5	WT65X14.05	14.1	1790	65.5	128	10.9	6.86	3.4	449.3	18.5	69.9	5.85	9.56	0.420	15.9	7.95	15.3	12.4	7.01	1.90	45.2	29.7	32.5	65.3	0.0208	36.6	0.964	252	381	259	386
WT2.5X8	WT65X11.9	11.9	1520	63.8	127	9.14	6.10	3.1	389.2	16.8	69.9	6.94	10.5	0.352	13.1	6.77	15.2	11.6	5.97	1.56	37.4	24.6	32.0	39.9	0.0122	36.3	0.962	248	376	254	381
WT2X6.5	WT50X9.65	9.65	1230	52.8	103	8.76	7.11	3.6	375.4	15.1	57.2	5.88	7.43	0.219	10.1	5.26	13.3	11.2	5.99	0.803	23.9	15.6	25.4	31.2	0.00626	29.5	0.947	202	305	209	312
MT6.25X6.2	MT159X9.25	9.25	1170	159	95.3	5.79	3.94	2.0	626.5	14.3	–	8.22	40.4	3.03	47.9	26.4	51.1	44.2	9.45	0.416	13.7	8.78	18.9	10.2	0.00763	68.3	0.634	–	–	–	–
MT6.25X5.8	MT159X8.65	8.65	1100	159	88.9	5.36	3.94	2.0	626.5	14.3	–	8.29	40.3	2.89	46.9	25.7	51.6	46.7	20.5	0.315	11.2	7.08	17.0	8.57	0.00720	69.9	0.602	–	–	–	–
MT6X5.9	MT155X8.8	8.80	1120	152	78.0	5.72	4.50	2.3	684.0	14.3	–	6.82	33.9	2.75	47.4	26.4	49.8	48.0	28.7	0.226	9.42	5.80	14.2	10.4	0.00905	68.8	0.567	–	–	–	–
MT6X5.4	MT155X8.05	8.05	1030	152	78.0	5.33	4.06	2.0	617.1	14.3	–	7.31	37.4	2.51	43.1	23.9	49.5	47.2	26.7	0.211	8.72	5.41	14.4	8.16	0.00671	68.3	0.574	–	–	–	–
MT6X5	MT155X7.45	7.45	955	152	82.6	4.57	3.78	1.9	574.6	12.7	–	9.03	40.2	2.34	40.1	22.3	49.8	47.2	27.4	0.215	8.34	5.21	15.1	6.04	0.00542	68.8	0.572	–	–	–	–
MT5X4.5	MT125X6.7	6.70	858	127	68.3	5.23	3.99	2.0	506.7	14.3	–	6.53	31.8	1.44	29.7	16.4	41.1	39.1	20.5	0.140	6.60	4.10	12.8	6.49	0.00371	56.4	0.585	–	–	–	–
MT5X4	MT125X5.95	5.95	768	126	68.3	4.62	3.58	1.8	451.1	14.3	–	7.39	35.3	1.28	26.4	14.7	41.1	38.6	20.5	0.123	5.80	3.61	12.8	4.66	0.00266	56.4	0.583	–	–	–	–
MT5X3.75	MT125X5.6	5.60	716	127	68.3	4.39	3.30	1.7	419.1	11.1	–	7.77	38.4	1.21	24.7	13.7	41.4	38.4	19.3	0.117	5.47	3.42	12.8	3.88	0.00213	56.4	0.588	–	–	–	–
MT4X3.25	MT100X4.85	4.85	619	102	57.9	4.80	3.43	1.7	349.9	14.3	–	6.03	29.6	0.653	16.6	9.14	32.8	30.0	12.0	0.0783	4.33	2.70	11.3	3.82	0.00124	44.2	0.612	–	–	–	–
MT4X3.1	MT100X4.6	4.60	588	102	57.9	4.50	3.28	1.6	334.6	11.1	–	6.44	31.0	0.624	15.8	8.73	32.8	30.0	12.6	0.0733	4.05	2.52	11.2	3.24	0.00108	44.5	0.608	–	–	–	–
MT3X2.2	MT75X3.3	3.30	417	76.2	46.7	4.34	2.90	1.5	221.0	9.53	–	5.38	26.3	0.241	7.91	4.39	24.1	21.4	4.83	0.0373	2.54	1.59	9.50	2.06	0.000333	32.3	0.646	–	–	–	–
MT3X1.85	MT75X2.75	2.75	352	75.2	50.8	3.28	2.49	1.2	187.2	7.95	–	7.75	30.2	0.201	6.70	3.70	24.0	21.0	4.42	0.0359	2.23	1.41	10.2	1.10	0.000202	32.5	0.644	–	–	–	–
MT2.5X9.45	MT65X14.05	14.1	1790	63.5	127	10.6	8.03	4.0	509.9	20.7	69.9	6.01	7.91	0.437	16.9	8.65	15.7	13.0	7.01	1.81	43.6	28.5	32.0	64.9	0.0197	36.3	0.955	–	–	–	–
MT2X3	MT50X4.45	4.45	565	48.3	96.5	4.06	3.30	1.7	159.4	12.7	–	11.9	14.6	0.0866	3.95	2.18	12.5	8.66	2.84	0.305	9.64	6.31	23.5	3.83	0.000518	27.4	0.942	–	–	–	–
ST12X60.5	ST305X90	90.0	11500	312	204	27.7	20.3	10.2	6333.6	50.8	102	3.69	15.4	108	893	493	97.0	92.2	32.0	17.3	297	169	38.9	2660	7.38	131	0.640	–	–	–	–
ST12X53	ST305X79	79.0	10100	312	200	27.7	15.7	7.9	4898.4	50.8	102	3.61	19.8	89.9	710	395	94.5	83.3	25.9	16.0	274	160	39.9	2100	4.03	124	0.686	–	–	–	–
ST12X50	ST305X74.5	74.5	9480	305	184	22.1	18.9	9.5	5764.5	44.5	102	4.17	16.1	89.5	778	431	97.3	97.5	54.9	9.86	197	107	32.3	1570	5.24	134	0.584	–	–	–	–
ST12X45	ST305X67	67.0	8520	305	181	22.1	15.9	8.0	4849.5	44.5	102	4.10	19.2	79.1	674	370	96.3	91.4	36.1	9.28	184	103	33.0	1250	3.25	130	0.615	–	–	–	–
ST12X40	ST305X59.5	59.5	7550	305	178	22.1	12.7	6.4	3873.5	44.5	102	4.02	24.0	67.4	551	305	94.5	83.8	23.1	8.74	170	98.3	34.0	1020	1.86	124	0.656	–	–	–	–
ST10X48	ST255X71.5	71.5	9100	259	183	23.4	20.3	10.2	5257.7	44.5	102	3.91	12.7	59.5	605	333	80.8	79.5	34.3	10.4	205	114	33.8	1730	4.03	111	0.625	–	–	–	–
ST10X43	ST255X64	64.0	8190	259	179	23.4	16.8	8.4	4351.2	44.5	102	3.84	15.4	51.6	510	282	79.5	73.9	24.7	9.70	190	108	34.5	1370	2.46	107	0.659	–	–	–	–
ST10X37.5	ST255X56	56.0	7100	254	162	20.2	16.1	8.1	4089.4	41.4	88.9	4.02	15.7	45.4	469	259	80.0	78.0	34.0	6.16	137	75.7	29.5	949	1.94	109	0.613	–	–	–	–

WT section



MT section



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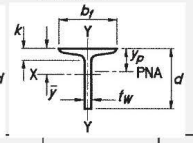

Palestine Technical University Kadoorie

O.S

		Weight	Area	Depth	Flange		Stem			Distance		Compact Section Critiria		Axis X-X						Axis Y-Y				Torsional Properties						
AISC US unit	**AISC SI units**	***W*** *(KG/m)*	***A*** *(mm2)*	***d*** *(mm)*	b_f	t_f	t_w	$t_{w/2}$	***Stem Area***	k_{des}	WG_i	$b_f/2t_f$	D/t_w	I_x	Z_x	S_x	r_x	y	y_p	I_y	Z_y	S_y	r_y	J	C_w	r_o	H	P_A	P_B	P_C	P_D
ST10X33	ST255X49.1	49.1	6260	254	159	20.2	12.8	6.4	3251.2	41.4	88.9	3.94	19.8	38.7	383	211	78.7	71.4	21.4	5.70	126	71.9	30.2	741	1.08	104	0.654	–	–	–	–
ST9X35	ST230X52	52.0	6650	229	159	17.6	18.1	9.1	4144.9	38.1	88.9	4.52	12.7	35.2	411	229	72.9	74.7	45.2	4.99	117	62.9	27.4	841	1.89	102	0.582	–	–	–	–
ST9X27.35	ST230X40.7	40.7	5170	229	152	17.6	11.7	5.9	2679.3	38.1	88.9	4.34	19.5	25.9	283	157	70.9	63.8	18.7	4.33	99.3	56.5	29.0	483	0.607	94.2	0.660	–	–	–	–
ST7.5X25	ST190X37	37.0	4740	191	143	15.8	14.0	7.0	2674.0	35.1	88.9	4.53	13.6	16.9	229	127	59.7	57.2	21.0	3.24	81.8	45.2	26.2	437	0.542	81.8	0.635	–	–	–	–
ST7.5X21.45	ST190X32	32.0	4060	191	140	15.8	10.4	5.2	1986.4	35.1	88.9	4.42	18.2	13.7	177	98.2	58.2	51.1	15.4	2.97	74.4	42.4	26.9	318	0.267	77.2	0.689	–	–	–	–
ST6X25	ST155X37	37.0	4730	152	139	16.7	17.4	8.7	2644.8	36.6	76.2	4.17	8.73	10.4	180	99.0	47.0	46.7	19.3	3.24	84.6	46.5	26.2	566	0.529	66.0	0.662	–	–	–	–
ST6X20.4	ST155X30.35	30.4	3850	152	133	16.7	11.7	5.9	1778.4	36.6	76.2	3.98	13.0	7.87	126	70.0	45.2	40.1	14.7	2.81	72.6	42.1	26.9	350	0.211	61.5	0.732	–	–	–	–
ST6X17.5	ST155X26	26.0	3300	152	129	13.8	10.9	5.5	1656.8	30.2	76.2	4.67	14.0	7.16	117	64.7	46.5	41.9	13.8	2.05	55.7	31.8	24.9	218	0.149	63.2	0.695	–	–	–	–
ST6X15.9	ST155X23.65	23.7	3000	152	127	13.8	8.89	4.4	1351.3	30.2	76.2	4.60	17.1	6.16	97.3	54.1	45.2	38.4	12.2	1.94	52.8	30.6	25.4	182	0.0977	60.7	0.731	–	–	–	–
ST5X17.5	ST125X26	26.0	3320	127	125	12.5	15.1	7.6	1917.7	28.7	69.9	5.03	8.42	5.20	108	59.3	39.6	39.6	17.1	1.73	50.8	27.5	22.8	263	0.195	56.6	0.653	–	–	–	–
ST5X12.7	ST125X18.9	18.9	2400	127	118	12.5	7.90	4.0	1003.3	28.7	69.9	4.75	16.1	3.24	60.6	33.6	36.8	30.5	10.2	1.40	40.8	23.6	24.1	125	0.0465	50.3	0.767	–	–	–	–
ST4X11.5	ST100X17	17.0	2180	102	106	10.8	11.2	5.6	1142.4	25.4	57.2	4.91	9.07	2.08	52.3	28.8	31.0	29.2	11.2	0.887	30.2	16.7	20.2	113	0.0451	43.9	0.704	–	–	–	–
ST4X9.2	ST100X13.7	13.7	1740	102	102	10.8	6.88	3.4	701.8	25.4	57.2	4.71	14.8	1.45	33.9	18.7	29.0	23.9	8.53	0.766	26.1	15.1	21.0	69.5	0.0172	40.1	0.788	–	–	–	–
ST3X8.6	ST75X12.85	12.9	1630	76.2	90.7	9.12	11.8	5.9	899.2	20.7	–	4.97	6.45	0.882	30.3	16.7	23.2	23.2	10.0	0.475	19.2	10.5	17.1	75.3	0.0207	34.3	0.705	–	–	–	–
ST3X6.25	ST75X9.3	9.30	1180	76.2	84.6	9.12	5.89	2.9	448.8	20.7	–	4.64	12.9	0.524	16.6	8.96	21.1	17.6	6.88	0.375	15.2	8.87	17.8	34.5	0.00529	30.5	0.819	–	–	–	–
ST2.5X5	ST65X7.5	7.50	942	63.5	76.2	8.28	5.44	2.7	345.4	19.1	–	4.60	11.7	0.279	10.7	5.70	17.2	14.5	6.07	0.248	11.2	6.52	16.2	23.6	0.00269	25.9	0.839	–	–	–	–
ST2X4.75	ST50X7.05	7.05	903	50.8	71.1	7.44	8.28	4.1	420.6	19.1	–	4.78	6.13	0.192	9.70	5.23	14.6	14.0	6.35	0.185	9.26	5.19	14.3	24.6	0.00267	22.9	0.797	–	–	–	–
ST2X3.85	ST50X5.75	5.75	729	50.8	67.6	7.44	4.90	2.5	248.9	19.1	–	4.54	10.4	0.128	6.24	3.24	13.3	11.4	5.18	0.156	7.95	4.60	14.6	15.2	0.00123	21.2	0.869	–	–	–	–
ST1.5X3.75	ST37.5X5.6	5.60	710	38.1	63.8	6.60	8.86	4.4	337.6	15.9	–	4.83	4.30	0.0832	5.75	3.06	10.8	11.0	5.56	0.120	6.74	3.77	13.0	18.0	0.00133	18.6	0.830	–	–	–	–
ST1.5X2.85	ST37.5X4.25	4.25	535	38.1	59.2	6.60	4.32	2.2	164.6	15.9	–	4.48	8.82	0.0475	3.21	1.59	9.40	8.36	4.34	0.0928	5.37	3.15	13.2	8.99	0.000508	16.9	0.911	–	–	–	–