

MILD STEEL RECTANGULAR HOLLOW SECTIONS

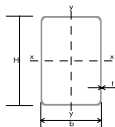
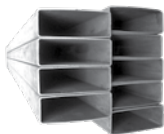


RECTANGULAR HOLLOW SECTIONS

EN 10219 - 1 & 2 : 2006

Size H x B mm	Thickness T mm	Mass M kg/m
40 x 20	1.2	1.06
	1.5	1.30
	1.8	1.53
	2.0	1.68
	2.5	2.03
	3.0	2.36
50 x 25	1.5	1.65
	1.8	1.95
	2.0	2.15
	2.5	3.07
	3.0	3.88
	4.0	
50 x 30	2.5	2.89
	3.0	3.41
	3.2	3.61
	4.0	4.39
	4.9	5.20
	5.0	5.28
60 x 30	1.5	2.00
	1.8	2.38
	2.0	2.62
	2.5	3.21
	3.0	3.77
	4.0	4.83
60 x 40	2.5	3.68
	3.0	4.35
	3.2	4.62
	4.0	5.64
	4.9	6.74

Size H x B mm	Thickness T mm	Mass M kg/m
	5.0	6.85
	6.0	7.99
	6.3	8.31
65 x 35	2.0	2.93
	2.5	3.60
	3.0	4.25
75 x 50	1.5	2.83
	1.8	3.37
	2.0	3.72
	2.5	4.58
	3.0	5.42
	4.0	7.02
80 x 40	5.0	8.52
	6.0	9.92
	3.0	5.29
	3.2	5.62
	4.0	6.90
	4.9	8.28
	5.0	8.42
	6.0	9.87
	6.3	10.3
	8.0	12.5

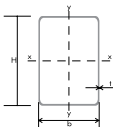


RECTANGULAR HOLLOW SECTIONS

EN 10219 - 1 & 2 : 2006

Size H x B mm	Thickness T mm	Mass M kg/m
90 x 50	3.0	6.24
	3.2	6.63
	3.6	7.40
	4.0	8.15
	4.9	9.81
	5.0	9.99
	5.6	11.1
	6.0	11.8
	6.3	12.3
	7.1	13.6
	8.0	15.0
100x50	3.2	7.13
	3.6	7.96
	4.0	8.78
	4.9	10.6
	5.0	10.8
	6.0	12.7
	6.3	13.3
	7.1	14.7
	8.0	16.3
100x60	3.0	7.18
	3.2	7.63
	3.6	8.53
	4.0	9.41
	4.9	11.4
	5.0	11.6
	5.6	12.8
	6.0	13.6
	6.3	14.2
	7.1	15.8

	8.0	17.5
120 x 60	3.6	9.7
	4.0	10.7
	4.9	12.9
	5.0	13.1
	5.6	14.6
	6.0	15.5
	6.3	16.2
	7.1	18.1
	8.0	20.1
120 x 80	3.6	10.8
	4.0	11.9
	4.9	14.4
	5.0	14.7
	5.6	16.3
	6.0	17.4
	6.3	18.2
	7.1	20.3
	8.0	22.6
	10.0	27.4
125 x 75	2.5	7.53
	3.0	8.96
	4.0	11.70
	4.5	13.08
	5.0	14.40
	5.5	15.71
	6.0	17.00

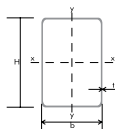
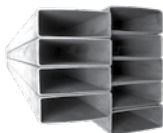


RECTANGULAR HOLLOW SECTIONS

EN 10219 - 1 & 2 : 2006

Size H x B mm	Thickness T mm	Mass M kg/m
150 x 75	2.0	6.86
	2.5	8.51
	3.0	10.13
	4.0	13.30
	4.5	14.85
	5.0	16.37
	5.5	17.87
	6.0	19.09
	8.0	21.53
150 x 100	4.0	15.1
	4.9	18.3
	5.0	18.6
	5.6	20.7
	6.0	22.1
	6.3	23.1
	7.1	25.9
	8.0	28.9
	8.8	31.5
	10.0	35.3
	12.0	41.4
	12.5	42.8
160 x 80	4.0	14.4
	4.9	17.5
	5.0	17.8
	5.6	19.9
	6.0	21.2
	6.3	22.2
	7.1	24.7
	8.0	27.6
	8.8	30.1
	10.0	33.7

Size H x B mm	Thickness T mm	Mass M kg/m
180 x 100	12.0	39.5
	12.5	40.9
	5.0	21.0
	5.6	23.4
	6.0	24.9
	6.3	26.1
	7.1	29.2
	8.0	32.6
200 x 100	8.8	35.6
	10.0	40.0
	12.0	47.0
	12.5	48.7
	5.0	22.6
	5.6	25.1
	6.0	26.8
	6.3	28.1
	7.1	31.4
	8.0	35.1
	8.8	38.4
200 x 120	10.0	43.1
	12.0	50.8
	12.5	52.7
	14.2	58.9
	16.0††	65.2
	5.0	24.1
200 x 120	5.6	26.9
	6.0	28.7
	6.3	30.1
	7.1	33.7
	8.0	37.6

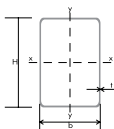


RECTANGULAR HOLLOW SECTIONS

EN 10219 - 1 & 2 : 2006

Size H x B mm	Thickness T mm	Mass M kg/m
	8.8	41.1
	10.0	46.3
	12.0	54.6
	12.5	56.6
	14.2	63.3
	16.0	70.2
200 x 150	5.0	26.5
	5.6	29.5
	6.0	31.5
	6.3	33.0
	7.1	37.0
	8.0	41.4
	8.8	45.3
	10.0	51.0
	12.0	60.2
	12.5	62.5
250 x 100	14.2	70.0
	16.0	77.7

Size H x B mm	Thickness T mm	Mass M kg/m
250 x 150	5.0	30.4
	5.6	33.9
	6.0	36.2
	6.3	38.0
	7.1	42.6
	8.0	47.7
	8.8	52.2
	10.0	58.8
	12.0	69.6
	12.5	72.3
260 x 140	14.2	81.1
	16.0	90.3
260 x 140	5.0	30.4
	5.6	33.9
	6.0	36.2
	6.3	38.0
	7.1	42.6
	8.0	47.7
	8.8	52.2
	10.0	58.8
	12.0	69.6
	12.5	72.3
300 x 100	14.2	81.1
	16.0	90.3
300 x 100	5.0	30.4
	5.6	33.9
	6.0	36.2
	6.3	38.0
	7.1	42.6
	8.0	47.7

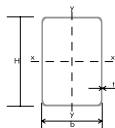
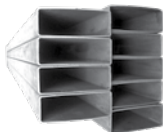


RECTANGULAR HOLLOW SECTIONS

EN 10219 - 1 & 2 : 2006

Size H x B mm	Thickness T mm	Mass M kg/m
300 x 200	5.0	38.3
	5.6	42.7
	6.0	45.7
	6.3	47.9
	7.1	53.7
	8.0	60.3
	8.8	66.0
	10.0	74.5
	12.0	88.5
	12.5	91.9
	14.2	103
	16.0	115
400 x 200	6.0	55.1
	6.3	57.8
	7.1	64.9
	8.0	72.8
	8.8	79.8
	10.0	90.2
	12.0	107
	16.0	141
450 x 250	8.0	85.4
	10.0	106
	12.0	126
	16.0	166

Size H x B mm	Thickness T mm	Mass M kg/m
400 x 300	8.0	85.4
	8.8	93.6
	10.0	106
	12.0	126
	12.5	131
	14.2	148
	16.0	166
500 x 300	8.0	97.0
	12.0	145.6
	16.0	194.7





SPECIFICATION FOR STANDARD SIZES EN 10219-1 & 2:2006 RECTANGULAR HOLLOW SECTIONS

Tolerances :	
Characteristic	Rectangular Hollow Sections
Out Side Dimensions (B & H)	Side Length (mm)
	H,B<100
	100< H, B< 200
Thickness	H,B>200
	± 10% for thickness
	5.0mm & ± 0.5mm for Thickness >5.0mm
Concavity/ Convexity	Max. 0.8% with a min. of 0.5mm
Squareness Of Side	90° ± 1°
External Corner Profile	1-56.0mm - 1.6T to 2.4T, 6.0 < 1.510.0mm - 2.0T to 3.0T, T>10.0mm - 2.4T to 3.6T
Twist	2.0 mm + 0.5mm/m length
STRAIGHTNESS	0.15% of total length and 3.0 mm over any 1m length
MASS PER UNIT LENGTH	± 6% on individual delivered length



SPECIFICATION FOR STANDARD SIZES EN 10219-1&2:2006 RECTANGULAR HOLLOW SECTIONS

Chemical Composition		Chemical composition % max.					
Grade	C	Si	Mn	P	S	N	Carbon Equivalent (CEV)
S235JRH	0.17	--	1.40	0.040	0.040	0.009	0.35
S275J0H	0.20		1.50	0.035	0.035	0.009	0.40
S275J2H	0.20		1.50	0.030	0.030	--	0.40
S355J0H	0.22	0.55	1.60	0.035	0.035	0.009	0.45
S355J2H	0.22	0.55	1.60	0.030	0.030	--	0.45

Carbon Equivalent : Max carbon equivalent shall be
 $CEV = C + (Mn / 6) + (Cr + Mo + V) / 5 + (Ni + Cu) / 15$

MECHANICAL PROPERTIES

Grade	Min. Yield Strength ReN (Mpa)	Tensile Strength Rm (MPa)		Elongation % Min.	Min. Impact Energy(J)		
		Thk<3 mm	Th>1.3 mm		-20°C	0°C	20°C
S235JRH	235	360-510	360-510	24	--	--	--
S275J0H	275	430-580	410-560	20	--	27	27
S275J2H	275	430-580	410-560	20	27	--	--
S355J0H	355	510-680	470-630	20	--	27	27
S355J2H	355	510-680	470-630	20	27	--	--

WORKMANSHIP-Free from overlap, Lamination, tool/roll marks, pin holes, open seam & other harmful defect.

PACKING-Box Type

MILL TEST CERTIFICATE-We can issue a MTC, Certifying that the tubes supplied comply with this standard.

RECTANGLE HOLLOW SECTIONS

AS/NZS 1163

Nominal Size		Wall Thickness (t)		Mass per unit Length		Pieces Per Bundle	Nominal Size		Wall Thickness (t)		Mass per unit Length		Pieces Per Bundle
Inch	NB(mm)	Inch	mm	Kg/mtr	lb/Ft		Inch	NB(mm)	Inch	mm	Kg/mtr	lb/Ft	
2 X 3/4	2 X 3/4	0.063	1.6	1.63	1.095	100	4 X 2	100 X 50	0.079	2.0	4.50	3.024	36
		0.079	2.0	1.99	1.337	100			0.098	2.5	5.56	3.737	30
		0.098	2.5	2.42	1.626	64			0.118	3.0	6.60	4.435	25
		0.118	3.0	2.83	1.902	64			0.138	3.5	7.53	5.060	25
2 X 1	50 X 25	0.063	1.6	1.75	1.176	100	5 X 3	125 X 75	0.157	4.0	8.49	5.706	25
		0.079	2.0	2.15	1.445	100			0.197	5.0	10.30	6.922	20
		0.098	2.5	2.62	1.761	64			0.236	6.0	12.00	8.065	20
		0.118	3.0	3.07	2.063	64			0.118	3.0	8.96	6.022	24
2 9/16 X 1 3/8	65 X 35	0.079	2.0	2.93	1.969	64	6 X 2	150 X 50	0.157	4.0	11.60	7.796	20
		0.098	2.5	3.60	2.419	49			0.197	5.0	14.2	9.543	16
		0.118	3.0	4.25	2.856	49			0.079	2.0	6.07	4.08	21
		0.063	1.6	2.38	1.599	64			0.098	2.5	7.53	5.06	21
3 X 1	75 X 25	0.079	2.0	2.93	1.969	64	6 X 4	150 X 100	0.118	3.0	8.96	6.02	21
		0.098	2.5	3.60	2.419	49			0.157	4.0	11.63	7.82	15
		0.098	2.5	3.60	2.419	49			0.197	5.0	14.24	9.57	15
		0.079	2.0	3.72	2.500	49			0.236	6.0	16.74	11.25	15
3 X 2	75 X 50	0.079	2.0	4.58	3.078	36	8 X 4	200 X 100	0.157	4.0	14.8	9.95	16
		0.098	2.5	5.42	3.642	36			0.197	5.0	18.2	12.23	12
		0.118	3.0	6.92	4.651	25			0.236	6.0	21.4	14.38	12
		0.157	4.0	6.92	4.651	25			0.157	4.0	17.9	12.03	12
3 X 1 1/2	76 X 38	0.063	1.6	2.73	1.835	50	10 X 6	250 X 150	0.197	5.0	22.1	14.85	9
		0.079	2.0	3.37	2.265	56			0.236	6.0	26.20	17.61	9
		0.098	2.5	4.15	2.789	45			0.354	9.0	37.70	25.34	6
		0.118	3.0	4.90	3.293	40			0.197	5.0	29.90	20.09	6
		0.157	4.0	6.23	4.187	32			0.236	6.0	35.60	23.92	4
									0.354	9.0	51.8	34.81	4

RECTANGLE HOLLOW SECTIONS

AS/NZS 1163

Color marked sizes can also be manufactured in Pre-Galvanized with zinc coating Z275 (275gm/m²)

1. Tolerances For Shape And Mass:

Characteristics

External Dimensions

(d And b)

Thickness (T)

Concavity/Convexity

Squareness Of Sides

External Corner Profile

Twist

Straightness

Mass (M) Per Unit Length

RECTANGULAR HOLLOW SECTIONS

± 1 %, with a minimum of ±0.5 mm

± 10%

Max. 0.8% or 0.5mm, Whichever is greater

90° ± 1°

Perimeter (mm)

Equivalent to 50X50 or less : 1.5 t to 3.0 t

Equivalent to greater than 50X50 : 1.8 t to 3.0 t

2.0+ 0.5 mm/m length

0.15% of total length

Not less than 0.96 times the specified mass on individual Length

2. Chemical Composition:

Steel Grade	C	Si	Mn	P	S	Cr	Mo	Al	Ni	Cu	Ti	Microalloying Elements	CE
C 250, C250L0	0.12	0.05	0.50	0.03	0.03	0.15	0.10	0.10	0.25	0.25	0.04	0.03 (Note-1)	0.25
C 350, C350L0	0.20	0.45	1.60	0.03	0.03	0.30	0.10	0.10	0.25	0.25	0.04	0.15 (Note-2)	0.43
C 450, C450L0	0.20	0.45	1.70	0.03	0.03	0.50	0.35	0.10	0.25	0.25	0.04	0.15 (Note-2)	0.43

Note-1) Nb - 0.010 Max, Note-2) V - 0.10 Max.

Carbon Equivalent : Carbon equivalent shall be calculated from the following formula.

$$CEV = C + (Mn / 6) + (Cr + Mo + V) / 5 + (Ni + Cu) / 15$$

RECTANGLE HOLLOW SECTIONS

AS/NZS 1163

3. Mechanical Properties:

Steel Grade	Min. Yield Strength Reh(Mpa)	Tensile Strength Rm(Mpa)	Elonga- tion %	Test Temp	Min. Impact Energy(J)					
					Size of Test piece					
					10 X 10 mm		10 X 7.5 mm		10 X 5.0 mm	
					Average of 3 tests	Individual Test	Average of 3 tests	Individual Test	Average of 3 tests	Individual Test
C 250/ C250L0	250	320	18	0°C	27	20	22	16	18	13
C 350/ C350L0	350	430	16							
C 450/ C450L0	450	500	14							

4. Workmanship

Free from overlap, Lamination, tool/roll marks, pin holes, open seam & other harmful defect.

5. Marking

We can do on line stenciling as per this standard & as per customer needs at one meter interval

6. Packing

Box Type

7. Mill Test Certificate

We can issue a MTC, Certifying that the tubes supplied comply with this standard.

