

AS/NZS 1163

SQUARE HOLLOW SECTIONS

Nominal Sizes		Wall Thickness(t)		Mass per unit length		Pieces /bdls	Nominal Sizes		Wall Thickness (t)		Mass per unit length		Pieces /bdls
Inch	NB(mm)	Inch	mm	Kg/Mtr	lb/Ft		Inch	NB(mm)	Inch	mm	Kg/Mtr	lb/Ft	
3/4 x 3/4	20 x 20	0.063	1.6	0.873	0.587	150	3 x 3	75 X 75	0.098	2.5	5.56	3.737	36
1 x 1	25 x 25	0.063	1.6	1.12	0.753	150			0.118	3.0	6.60	4.435	36
		0.079	2.0	1.36	0.914	100			0.138	3.5	7.53	5.060	36
		0.098	2.5	1.64	1.102	80			0.157	4.0	8.49	5.706	25
		0.118	3.0	1.89	1.270	64			0.197	5.0	10.30	6.922	20
1 1/5 x 1 1/5	30 x 30	0.063	1.6	1.38	0.927	100	0.236	6.0	12.00	8.065	20		
		0.079	2.0	1.68	1.129	100	0.14	3.5	9.06	6.089	25		
1 3/8 x 1 3/8	35 x 35	0.063	1.6	1.63	1.095	100	3 1/2 x 3 1/2	89 x 89	0.20	5.0	12.50	8.401	20
		0.079	2.0	1.99	1.337	80			0.24	6.0	14.60	9.812	16
		0.098	2.5	2.42	1.626	64			Ø8	3.0	8.96	6.022	20
		0.118	3.0	2.83	1.902	49			0.157	4.0	1.60	7.796	20
1 3/5 x 1 3/5	40 x 40	0.063	1.60	1.88	1.263	100	4 x 4	100 x 100	0.197	5.0	14.2	9.543	16
		0.079	2.0	2.31	1.552	80			0.236	6.0	16.7	1.223	12
		0.098	2.5	2.82	1.895	64			0.354	9.0	23.5	15.793	9
		0.157	4.0	4.09	2.749	49			0.157	4.0	14.8	9.95	16
2 x 2	50 x 50	0.063	1.6	2.38	1.599	64	5 x 5	125 x 125	0.197	5.0	18.2	12.23	
		0.079	2.0	2.93	1.969	49			0.236	6.0	21.4	14.38	12
		0.098	2.5	3.60	2.419	49			0.354	9.0	30.6	20.56	9
		0.118	3.0	4.25	2.856	36			0.197	5.0	22.1	14.85	9
2 9/16 x 2 9/16	65 X 65	0.157	4.0	5.35	3.595	36	6 x 6	150 x 150	0.236	6.0	26.2	17.61	9
		0.079	2.0	3.88	2.608	49			0.354	9.0	37.70	25.34	6
		0.098	2.5	4.78	3.212	36			0.197	5.0	29.90	20.09	6
		0.118	3.0	5.66	3.804	36			0.236	6.0	35.60	23.92	4
10 x 10	250 x 250	0.354	9.0	51.80	34.81	4	8 x 8	200 x 200	0.197	5.0	29.90	20.09	6
		0.236	6.0	45.0	30.24	4			0.236	6.0	35.60	23.92	4
		0.354	9.0	65.9	44.29	4			0.354	9.0	51.80	34.81	4

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

TOLERANCES FOR SHAPE AND MASS:

CHARACTERISTICS	SQUARE HOLLOW SECTIONS
EXTERNAL DIMENSIONS (d and b)	± 1 %, with a minimum of ±0.5 mm
THICKNESS (T)	± 10%
CONCAVITY/CONVEXITY	Max. 0.8% or 0.5mm, Whichever is greater
SQUARENESS OF SIDES	90° ± 1°
EXTERNAL CORNER PROFILE	Perimeter (mm) Equivalent to 50X50 or less : 1.5 † to 3.0 † Equivalent to greater than 50X50 : 1.8 † to 3.0 †
TWIST	2.0+ 0.5 mm/m length
STRAIGHTNESS	0.15% of total length
MASS (m) PER UNIT LENGTH	Not less than 0.96 times the specified mass on individual Length

CHEMICAL COMPOSITION:

GRADE	Chemical composition % max.												
	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.

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

MECHANICAL PROPERTIES:

GRADE	Min. Yield Strength R _{eh} (Mpa)	Tensile Strength R _m (Mpa)	Elongation %	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									
C450/C450L0	450	500	14									