

Robor 355 Structural Hollow Sections



Robor is a world-class manufacturer and supplier of welded tube and pipe, cold formed steel profiles, and associated value added products. The company is the largest steel tube manufacturer in southern Africa and is active in most industries, including building and construction, mining, logistics - rail and road, petrochemical, agriculture, energy, water, and automotive.

Benefits of Using Tubular Steel

- Structural efficiency
 - Most effective profile for compression and torsion
 - Lighter trusses that can span further
- Commercial benefits
 - Fewer columns required for long spans resulting in more effective rentable space
- Aesthetically pleasing
- Reduced wind resistance
- Reduced paint areas
- Improved laser and plasma profiling technology makes tubular fabrication quick and easy

Circular Hollow Sections										
Size dxh (mm)	Thickness									
	2.5	3.0	3.5	4.0	4.5	5.0	6.0	8.0	10.0	12.0
48.3	2.82	3.35	3.87	4.37						
60.3	3.56	4.24	4.91	5.56	6.20					
63.5	3.76	4.48	5.18	5.87	6.55					
76.2	4.54	5.42	6.28	7.12	7.96	8.78	10.4			
88.9	5.33	6.36	7.37	8.38	9.37	10.3	12.3			
101.6	6.11	7.30	8.47	9.63	10.8	11.9	14.1			
114.3	6.89	8.23	9.56	10.9	12.2	13.5	16.0			
127.0	7.68	9.17	10.7	12.1	13.6	15.0	17.9			
139.7		10.1	11.8	13.4	15.0	16.6	19.8			
152.4		11.1	12.9	14.6	16.4	18.2	21.7			
165.1		12.0	13.9	15.9	17.8	19.7	23.5			
177.8			15.0	17.1	19.2	21.3	25.4			
193.7			16.4	18.7	21.0		27.8			
219.1			18.6	21.2	23.8		31.5	41.6	51.6	
273.1							39.5	52.3	64.9	77.3
323.9							47.0	62.3	77.4	92.3
355.6							51.7	68.6	85.2	102
406.4							59.2	78.6	97.8	117
457.0							66.7	88.6	110	132
508.0								98.7	123	147

Rectangular Hollow Sections										
Size dxh (mm)	Thickness									
	2.5	3.0	3.5	4.0	4.5	5.0	6.0	8.0	10.0	10.0
50.0 x 25.0	2.83	3.36	3.88							
60.0 x 40.0	3.76	4.48	5.18	5.87	6.55					
76.0 x 38.0	4.35	5.18	6.00	6.81	7.60					
80.0 x 40.0	4.54	5.42	6.28	7.12	7.96					
100.0 x 50.0	5.70	6.81	7.90	8.98	10.0	11.1				
120.0 x 60.0		8.23	9.56	10.9	12.2	13.5	16.0			
160.0 x 80.0		11.1	12.9	14.6	16.4	18.2	21.7			
200.0 x 100.0				18.4	20.6		27.2	35.9	44.4	
200.0 x 150.0				21.2	23.8		31.5	41.6	51.6	
250.0 x 100.0				21.2	23.8		31.5	41.6	51.6	
250.0 x 150.0							35.8	46.5	57.0	
300.0 x 140.0							39.5	52.3	64.9	
320.0 x 200.0							47.1	62.3	77.4	
340.0 x 100.0							39.5	52.3	64.9	
340.0 x 180.0							47.0	62.3	77.4	

Square Hollow Sections										
Size dxh (mm)	Thickness									
	2.5	3.0	3.5	4.0	4.5	5.0	6.0	8.0	10.0	10.0
38.0 x 38.0	2.83	3.36	3.88							
50.0 x 50.0	3.76	4.48	5.18	5.87	6.55					
60.0 x 60.0	4.54	5.42	6.28	7.12	7.96					
75.0 x 75.0	5.70	6.81	7.90	8.98	10.0	11.1				
80.0 x 80.0	6.11	7.29	8.47	9.63	10.8	11.9	14.1			
100.0 x 100.0	7.68	9.17	10.7	12.1	13.6	15.0	17.9			
120.0 x 120.0		11.1	12.9	14.6	16.4	18.2	21.7			
150.0 x 150.0				18.4	20.6		27.2	35.9	44.4	
175.0 x 175.0				21.2	23.8		31.5	41.6	51.6	
195.0 x 195.0							35.2	46.6	57.7	
200.0 x 200.0							35.8	46.5	57.0	
220.0 x 220.0							39.5	52.3	64.9	
250.0 x 250.0							45.2	59.1	72.7	
260.0 x 260.0							47.1	62.3	77.4	
285.0 x 285.0								68.7	85.3	

Chemical composition - Maximum			
Carbon Equivalent	Carbon	Mn	Si
0.39	0.22	1.6	0.25

Mechanical properties - Minimum		
Yield Strength	UTS	Elongation
355 MPa	450 MPa	20%

- Notes
- 1 Structural Hollow Section made in accordance to SANS 657 Part 1
 - 2 Steel will be galvanisable and not in the reactive zone of the Sandlin curve i.e. not between 0.035 to 0.15
 - 3 Steel fully weldable
 - 4 Tube tolerances are shown on reverse size of leaflet
 - 5 Steel is hard stamped with company logo and 355 logo at 1m centres.
 - 6 Contact RoborTube for a list of stocked and preferred items.

Tubular Steel - a product for the 21st Century



Robor 355 Structural Hollow Sections

Advanced Cutting Technology

Robor has sourced two state-of-the-art cutting machines from international technology pioneers bringing new levels of quality and precision to operations.

Trumpf TruLaser Tube 7000

The first of its kind in South Africa and one of very few in the world, this machine features advanced hardware and software for customised solutions.







Microstep HD Plasma Cutter

This high definition plasma cutting machine cuts larger, heavier material with consistent precision and accuracy.



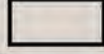


Technical Data		
Dimensions		
Minimum thickness		0.7 mm for mild steel
Maximum thickness		8 mm for mild steel
Maximum input length		9200 mm
Minimum remaining tube length		120 mm
Maximum finished part length		6000 mm
		Manually 6500 mm
Mass material weight		
Input and finished part mass		37,5 kg/m

Standard Tube		
Round		Minimum diameter = 15 mm Maximum diameter = 250 mm
Square		Minimum size = 15 x 15 mm Maximum size = 180 x 180 mm
Rectangular		Outer circle diameter < 250 mm
Oval round / oval flat		Outer circle diameter < 250 mm

Additional shapes available on request

Technical Data - Tube (3D tube cutting)		
Dimensions		
Minimum thickness		3 mm for mild steel
Maximum thickness		25 mm for mild steel
Maximum input length		13500 mm
Minimum input length		600 mm
Maximum finished part length		13400 mm
Maximum outer circle diameter		508 mm
Minimum outer circle diameter		100 mm

Standard Tube		
Round		Minimum diameter = 100 mm Maximum diameter = 508 mm
Square		Minimum size = 100 x 100 mm Maximum size = 300 x 300 mm
Rectangular		Width < 300 mm Height < 300 mm

Additional shapes available on request

Technical Data - Flatbed		
Dimensions		
Maximum input length		13500 mm
Maximum input width		2500 mm

Tolerances for Shape, Mass and External Corner Profiles		
Characteristics	Circular hollow sections	Square and rectangular hollow sections
Outside dimensions (D, B and H)	The greater of $\pm 0.5\text{mm}$ and $\pm 1\%$ D	The greater of $\pm 0.5\text{mm}$ and $\pm 1\%$ B or H
Out-of-roundness (O)	For D/T ratio ≤ 100 : 2% For D/T ratio > 100 : by agreement	N/A
Thickness (T)	For structural applications: $3.0\text{mm} \leq T \leq 4.0\text{mm}$ $4.0\text{mm} < T \leq 5.0\text{mm}$ $5.0\text{mm} < T \leq 6.0\text{mm}$ $T > 6.0\text{mm}$	$\pm 9.0\%$ $\pm 7.5\%$ $\pm 6.5\%$ $\pm 6.0\%$
Squareness of sides	N/A	Cold formed: $90^\circ \pm 1^\circ$ Cold drawn: $90^\circ \pm 2^\circ$
Concavity /convexity (independent of B or H)	N/A	Maximum 0.8% with a minimum of 0.5mm
External corner radius	N/A	$T \leq 6.0\text{ mm}$ cold formed: 1.5T to 2.5T $6 < T \leq 10$ cold formed: 2T to 3T $T > 10$ cold formed: 2.4 to 3.6T Cold drawn: As agreed with the supplier
Straightness (e)	0.20 % of total length	0.20 % of total length
Twist (V)	N/A	2mm plus 0.5 mm/m length
Mass (M)	$\pm 10\%$	

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233 Barbara Road, Elandsfontein, 1406. P O Box 263, Isando 1600, South Africa.

Tel: +27 (0) 11 971 1600 Fax: +27 (0) 11 392 4435, Website: www.robobor.co.za, e-mail: info@robobor.co.za