



Industrial Tube™
OUR PEOPLE DELIVER



AUSTRALIAN
PRODUCT CATALOGUE



PRECISION STEEL TUBING

ITM is a specialist manufacturer of precision ERW carbon steel tube. We provide a wide range of traditional ERW products between 12mm and 101mm round and are capable of producing a range of customised tube sizes.

Our products are available in bright mild steel, galvanised and aluminised coatings, as well as other specialty materials. We offer welded steel tube in Round, Square, Rectangle, Flat Sided Oval, Elliptical and customized shapes.

ITM's quality systems ensure that all tube is manufactured to exceed the following specifications: Australian Standard — A.S. 1450 — 1983 British Standard — B.S. 6300-6323

During the tube manufacturing process, quality control tests conducted include:

- Dimensional measurements
- Weld integrity testing, flare and flattening tests
- Internal mandrel sizing
- Weld position
- Surface quality inspection
- Straightness and twist

All procedures are in place to ensure that ITM tube is of the highest standard and that quality assurance is guaranteed.

ON SITE SERVICES

ROTARY AXIS TUBE LASER CUTTING

ITM offers Tube Laser Cut components from our dedicated rotary axis laser cutting machine.

Suitable for both small batches and large runs, the tube laser cutting system makes jobs quick, easy, accurate and cost effective. The automatic laser cutting system is perfect for thin wall round tubes up to 120mm diameter.

Starting with a bundle of tube, all the work processes are done automatically within the system: selection of stock lengths, measurement, feeding, 3D cutting and unloading of the finished part.

Part programming is done through CAD CAM software linked with Solidworks or similar 3D model drawing packages.

The tube laser cutter also allows us to produce complex parts that are also bent or robotically welded in our other processing areas.

MAXIMUM DIAMETER

120mm

MINIMUM DIAMETER

19mm

MAXIMUM PART LENGTH

3500mm

MAXIMUM TUBE STOCK LENGTH

6500mm

LASER POWER

1500watts



ON SITE SERVICES

CNC MANDREL TUBE BENDING

ITM offers CNC Mandrel tube bending with capacity up to 90mm diameter. The three axis CNC machine allows for extremely accurate and complex bending.

Mandrel tube bending is a process where tube is bent around a specific die. The tube is supported internally with a mandrel during the bending process to produce a bend with minimal deformation.

ITM is also able to bend tube that has been previously laser cut. This allows bent components to have holes, scallops and angle cut ends.

ROBOTIC WELDING

Robotic welding is the ideal solution where weld quality and repeatability is important. ITM's Robotic Welding Cell consists of a central robot with two loading areas which both include robotic rotators with 500kg and 250kg capacity.

The welding areas allow for parts to be both welded and rotated up to 2.1m x 1.2m x 2.8m in cubic area with parts as large as 4.8m long in some situations.

The robotic welding cell provides the benefit of high production capacity by having one part being welded while the other is being loaded.

MILD STEEL TUBE BENDING CAPACITY
(CLR 1.5D) — 88.9mm Dia x 2.3T

MAX BENDING RADIUS
250mm

MAX BENDING ANGLE
190°

BENDER ACCURACY
Bending Accuracy $\pm 0.2^\circ$
Rotation Accuracy $\pm 0.15^\circ$
Feeding Accuracy $\pm 0.25\text{mm}$



WELDING ROBOT CAPACITY
Welder 320AMP Fronius

ROBOT REACH
2.3m

MAX WELDED PART SIZE
4.8m x 2.1m x 1.2m

MAX WELDED PART WEIGHT
500kg

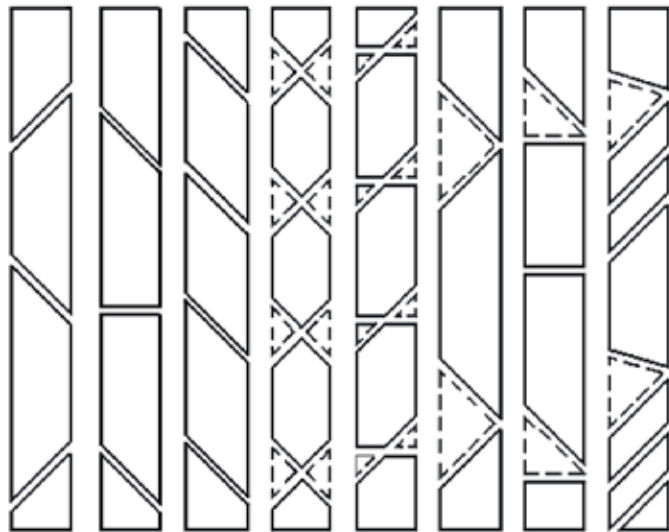


ON SITE SERVICES

PRECISION CUTTING DEBURRING

Tolerating both round and square tubes of a minimum 12mm size, our precision cutting and brush deburring services produce clean square and accurate cuts at affordable prices.

If your tubular parts require burr free ends, our wire brush deburr can cut tubes to provide a smooth, slightly rounded cut end.



DRILLING CAPACITY

Ø2.0mm – Ø40.0mm

TAPPING CAPACITY

M3 – M24

THERMAL DRILLING

Predominantly for tapping,
Capacity M5 – M10

MILLING ONLY LINEAR DIRECTIONS

Light milling only, i.e. tube

LENGTH CAPACITY

50mm – 6000mm

BED

400mm x 4500mm

SPINDLE SPEED

100 RPM – 3000 RPM

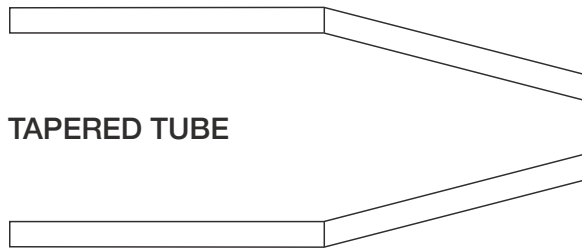


SPECIALISED SOLUTIONS

(ON REQUEST)

TAPERED TUBE

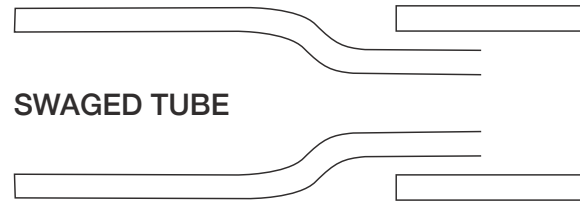
Tapered tube is achieved using a rotary hammering process. A tube pushed into the rotating hammer tapered dies reduces the tube diameter into a conical taper. Tube can be pushed into larger diameter dies or a combination of two tapers can be used to achieve other variations if the correct die is not available.



TAPERED TUBE

SWAGED TUBE

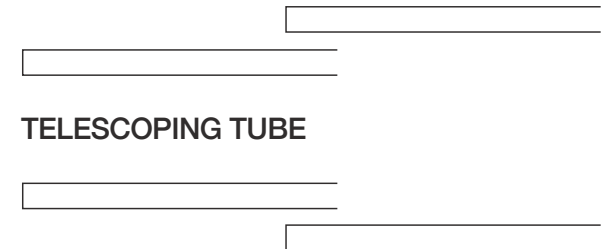
Swaging is a process when tube is expanded or reduced to allow another tube or component to slide over or inside. A single piece of tube is clamped and pushed into or over a parallel die to reduce or expand the outside diameter. ITM has several standard swaging dies and is also able to manufacture specific customised dies on request.



SWAGED TUBE

TELESCOPING TUBE

Generally, a round tube of 1.2mm wall thickness will fit over the tube size below it with a reasonable amount of clearance. 1.4mm wall thickness will usually fit quite tightly. When calculating clearance allow for the internal weld bead of the outside tube.



TELESCOPING TUBE

To calculate Telescoping Tube: Take the outer tube outside diameter (O.D.) measurement and subtract two times the wall thickness and the weld bead (0.5mm) to calculate the inside diameter (I.D.). i.e. $31.8 - (1.2 + 1.2) - 0.5 = 28.9$, therefore tube 28.6mm O.D. will have 0.3mm clearance including the internal weld bead of the 31.8mm O.D. tube.

CARBON TUBE

SPECIFICATION

Precision tube and heavy wall hollows is manufactured from cold rolled coil, (contact our sales team for more information on international specification).

MECHANICAL PROPERTIES

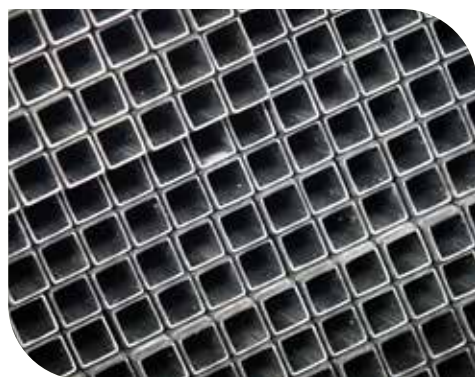
Coil tensile strength expected

290 -365 Mpa.

Tensile strength typical 340 Mpa.

Elongation expected 34% minimum.

HRB Hardness expected 40-60.



Common item
Non stock item

TUBE SIZES

Round Tube 12.7mm – 101.6mm

Square Tube 12.7x12.7 – 65x65mm

Rectangles Tube 25.4x12.7 – 68x43mm

FSO Tube 31.8x15.9 – 50.8x15.9mm

Elliptical Tube 32x17 – 32x22mm

WALL THICKNESS

1.2mm, 1.4mm, 1.6mm, 2.0mm

GAUGE

0.8 – 3.0mm also available)

MATERIAL TYPES

Bright Mild Steel, Galvanised & Aluminised, plus range of High Strength products

MILL LENGTHS

Tube Length 3m - 11m

(available on mill order only)

TOLERANCES

Wall thickness +/- 8%

Dimension +/- .15mm

Stock/Mill Length +40mm - 0mm

PROTECTIVE COATING

Lightly Oiled

CARBON - PRECISION ROUND

Wall thickness	1.2mm	1.4mm	1.6mm	2mm	2.5mm
	kg/m	kg/m	kg/m	kg/m	kg/m
12.7	0.34	0.39	0.44	0.53	
15.9	0.43	0.5	0.56	0.69	
19.1	0.53	0.61	0.69	0.84	
22.2	0.62	0.72	0.81	1	1.21
25	0.72	0.83	0.94	1.15	1.41
25.4	0.81	0.83	0.94	1.15	1.4
28.6	0.81	0.94	1.06	1.31	
31.8	0.9	1.05	1.19	1.47	1.8
34.9	1		1.31	1.62	
38.1	1.09		1.44	1.78	2.19
41.3	1.19		1.57	1.94	
44.5	1.28		1.69	2.09	2.58
47.6	1.37		1.82	2.25	
50		1.68	1.91	2.37	2.93
50.8	1.47	1.17	1.94	2.41	2.98
54	1.55		2.07	2.55	
57.2	1.66		2.19	2.72	
60.3	1.75		2.32	2.88	
63.5	1.84		2.44	3.03	3.76
76.2			2.94	3.65	4.54
101.6			3.94	4.91	

CARBON TUBE

CARBON - PRECISION SQUARE

Wall thickness	1.2mm	1.4mm	1.6mm	2mm	2.5mm
	kg/m	kg/m	kg/m	kg/m	kg/m
12.7 x 12.7	0.43	0.49	0.55		
15.9 x 15.9	0.55	0.64	0.72	0.87	
19.1 x 19.1	0.67	0.77	0.86	1.07	1.54
22.2 x 22.2	0.79	0.91	1.03	1.26	
25.4 x 25.4	0.91	1.05	1.19	1.46	1.89
31.8 x 31.8	1.15	1.33	1.51	1.86	2.29
34.9 x 34.9	1.27	1.47	1.67	2.06	2.54
38.1 x 38.1	1.38	1.6	1.82	2.25	2.78
40 x 40			1.94		
50 x 50			2.44		

CARBON - PRECISION RECTANGLE

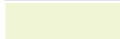
Wall thickness	1.2mm	1.4mm	1.6mm	2mm	2.5mm
	kg/m	kg/m	kg/m	kg/m	kg/m
25.4 x 12.7	0.67	0.77	0.87	1.06	
31.8 x 12.7			1.09		
31.8 x 15.9	0.85	0.98	1.11		
34.9 x 19.1	0.97	1.12	1.27	1.56	1.91
38.1 x 25.4	1.14	1.33	1.51	1.86	2.28
50.8 x 25.4	1.38	1.6	1.82	2.25	2.78
50.8 x 31.8		1.8	2	2.45	
57.1 x 34.9			1.98	2.75	
63.5 x 38.1	1.86	2.14	2.22	3.05	3.77
68 x 14			1.97	2.43	
68 x 43			2.69	3.43	

CARBON - PRECISION FLAT OVAL (FSO)

Wall thickness	1.2mm	1.4mm	1.6mm	2mm	2.5mm
	kg/m	kg/m	kg/m	kg/m	kg/m
31.8 x 15.9	0.73	0.85	0.96		
34.9 x 15.9	0.79	0.92	1.04	1.36	
50.8 x 15.9	1.09	1.26	1.44	1.84	

CARBON - ELLIPTICAL

Wall thickness	1.2mm	1.4mm	1.6mm	2mm	2.5mm
	kg/m	kg/m	kg/m	kg/m	kg/m
31.8 x 17			0.94		
31.8 x 21.8			0.98		

 Common item
 Non stock item

PRE GALVANISED CARBON TUBE

SPECIFICATION

All galvanised hollows is manufactured from AS/NZS 1365 cold rolled coil. Galvansied coating Z275.

MECHANICAL PROPERTIES - G250

Standard Precision Tube is manufactured from G250 steel. Tensile strength expected min 320 Mpa. Elongation expected min 25%.

MECHANICAL PROPERTIES - G310

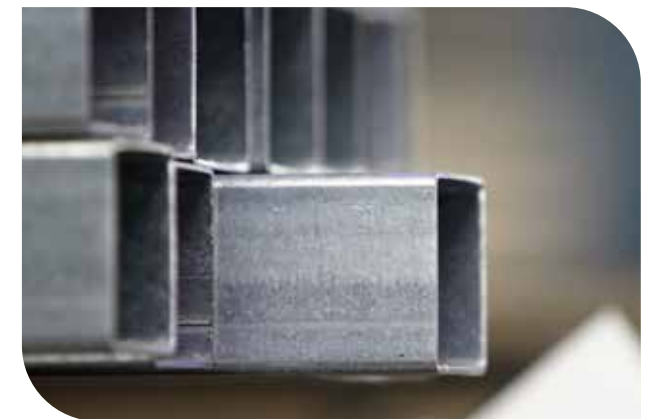
Grade 310 hollows is manufactured from G310 steel. Tensile strength expected min 340 Mpa. Tensile strength typically above 450 Mpa. Elongation typically above 25%.

CARBON - PRECISION ROUND GALVANISED

Wall thickness	1.2mm	1.6mm	2mm	2.5mm
	kg/m	kg/m	kg/m	kg/m
19.1	0.53	0.69	0.84	
22.2	0.62	0.81	1	
25.4	0.72	0.94	1.21	1.41
28.6	0.81	1.06	1.31	
31.8	1.05	1.19	1.47	
34.9	1	1.31	1.62	
38.1	1.09	1.44	1.78	
41.3	1.19	1.57	1.94	
44.5	1.28	1.69	2.09	
47.6	1.37	1.82	2.25	
50		2		
50.8	1.47	1.94	2.5	
54		1.57	2.55	
57.2		2.21		
60.3	1.75	2.32	2.88	
63.5	1.84	2.44	3.03	
76.2		2.94	3.65	

CARBON - PRECISION RECTANGLE GALVANISED

Wall thickness	1.6mm	2mm
	kg/m	kg/m
25.4 x 12.7	0.87	
31.8 x 12.7	1.09	
31.8 x 15.9	1.11	1
34.9 x 19.1	1.35	1.58
38.1 x 25.4	1.48	1.76
50.8 x 25.4	1.82	



	Common item
	Non stock item

STAINLESS STEEL HYGIENIC TUBE™

SPECIFICATION

Manufactured to the AS 1528.1 standard for Stainless Steel Tube for food processing and hygienic applications.

QUALITY ASSURANCE

The standard specifies requirements and tests for welded austenitic Stainless Tube. Industrial Tube QA management processes include full traceability, dimension and tolerance inspections, weld colour management and buff polishing.

MATERIAL

Hygienic Tube™ is manufactured from Stainless Cold-Rolled coil strip ASTM A240M in grade 304L or 316L.

EXTERNAL SURFACE

The standard finish of hygienic tube is buff polished to 320Ra finish. Higher Ra finishes available on request.

ANNEALING TREATMENT

Industrial Tube offer in-house annealing treatment for austenitic stainless tube to standards ASTM A249 or A269.

EDDY CURRENT TEST

All tube is Eddy current tested for integrity in accordance with ASTM A240M.

IDENTIFICATION MARKING

Industrial Tube's line marking identification is ITMNZ HYGIENIC TUBE™ as shown in the image to the right.



STAINLESS STEEL HYGIENIC TUBE™

HYGIENIC TUBE™ 304L

Dia	0.9mm	1.2mm	1.6mm	2.0mm
Rounds	kg/m	kg/m	kg/m	kg/m
6.35	0.13			
7.95	0.16			
9.5	0.19	0.25	0.31	
12.7	0.27	0.34	0.44	
15.9	0.33	0.43	0.56	
19.1	0.41	0.53	0.69	
22.2	0.47	0.61	0.81	
25.4	0.55	0.72	0.94	1.22
31.8	0.69	0.92	1.19	
38.1	0.83	1.10	1.44	
44.5			1.69	2.15
50.8	1.14	1.47	1.94	2.41
63.5		1.84	2.44	
76.2		2.17	2.94	3.86
101.6			3.46	4.91
127.0			4.63	
152.4			5.94	7.46
203.2				9.96

HYGIENIC TUBE™ 316L

Dia	1.2mm	1.6mm	2.0mm
Rounds	kg/m	kg/m	kg/m
6.35			
7.95			
9.5	0.25		
12.7	0.34	0.44	
15.9	0.43	0.57	
19.1		0.69	
22.2		0.81	
25.4	0.72	0.94	1.21
31.8	0.91	1.19	
38.1	1.10	1.44	
44.5		1.69	
50.8		1.94	2.41
63.5		2.44	
76.2		2.94	
101.6		3.46	4.91
127.0		4.63	
152.4		5.94	7.46
203.2			9.96



Non standard size and thickness available on request

	Common stock lines
	Non stock material - available ex-mill rolling

Weights are theoretical and rounded to two decimal points



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Speak to our in-house experts today.

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