Product and Service Guide

CELEBRATING 40 YEARS SINCE 1985

Industrial Tube™
OUR PEOPLE DELIVER

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Our Heritage

In 1985, Peter Green founded Industrial Tube Manufacturing Company Limited in Hamilton, New Zealand, motivated by his passion for charity and his discovery of an under-served market. With the purchase of a discarded Yoder Tube Mill imported from Ohio, USA, Peter and his small crew resurrected the machine using scrap metal parts and inventive design. The company took a lease on Unit 1, 278 Kahikatea Drive, and in October 1985 began manufacturing tube.

The mill initially produced 28 tube sizes across four gauges, supplying a wide-range of industries including fencing, play equipment, exhaust systems and agricultural support structures. As the company grew, additional machinery was introduced, and both slitting and cutting services were brought in-house.

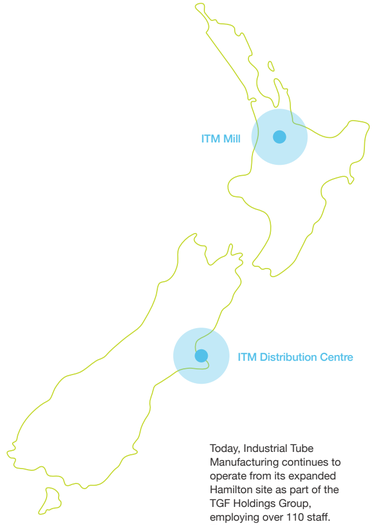
It took four years of unwavering belief, hard work, and reinvestment for Industrial Tube to record its first profit in 1989 - a milestone worth celebrating. The first coil was slit on the new slitter line in July 1990, and around this time, exports to Australia also commenced.

Later that decade, with Australian demand increasing, a cutting service was established at the Sydney distribution centre.

To accommodate new machinery and rising demand, major extensions were undertaken, and a second mill was commissioned in 2001. Expansion into Australia continued with the 2004 acquisition of East Coast Tube Mills in Brisbane.

In 2013, Industrial Tube Manufacturing acquired the New Zealand assets and a portion of the Australian assets of Stainless Tube Mills. After a 2000m2 extension and the commissioning of four stainless mills, stainless tube production began.

In 2021, the company reached a production milestone with the slitting of its 1000th coil for the year.



Today, Industrial Tube Manufacturing continues to operate from its expanded Hamilton site as part of the TGF Holdings Group, employing over 110 staff. The business remains proudly family-owned by the Green family.

Our Hamilton Mill in 1985.

About Us

Industrial Tube Manufacturing has been producing New Zealand-made tube since 1985. We're New Zealand's leading manufacturer of quality, locally-made steel and stainless precision tube. From our purpose-built 12,500m² plant in Hamilton, we manufacture class-leading Precision Steel Tube, Stainless Steel Tube, and tubular components. We source steel from premier local and international mills, continually meeting the growing demands of our customers across New Zealand, Australia, and the South Pacific.

Quality Assured

At Industrial Tube Manufacturing, our Precision and Stainless Steel Tube meets or exceeds all required industry standards and our robust in-house procedures and technology ensures we provide a best-in-class product, every time. We pride ourselves on our customer service and strict adherence to the highest quality control standards. This commitment includes the development, implementation, and continuous review of quality procedures across all aspects of our operations.

Research & Development

We have a proud history of creative thinking, consistently exceeding expectations when it comes to realising concepts and bringing ideas to life. Our team of experienced specialists excels at creating practical, and cost-effective outcomes. Led by our Engineering Manager, our technical team works closely with our customers to fully understand their needs and design innovative engineering solutions tailored to their specific requirements.

Our People Deliver

At Industrial Tube Manufacturing, it's not just our people that deliver, it's our products. Monthly rolling programmes, extensive inventory carried in stock and supply flexibility means our product is available on demand. We're strategically placed to maximise our in-house and third-party freight networks, both domestically and internationally. This enables prompt and cost-effective service to our customers.

Sustainably Made

Being awarded Gold Certification from the New Zealand Sustainable Steel Council reflects our focus on sustainability. Our products are 100 percent recyclable, and our people are passionate about supporting New Zealand and Australian manufacturing, delivering Precision and Stainless Steel Tube with purpose.

Memberships

We are members and contributors to NZSSDA and ASSDA, a global network developed to support and network Fabricators, Manufacturers, Engineers and Architects with industry standards and information.

Precision Steel Tube

Our Precision Tube can enhance your products by making them lighter, stronger, more formable and more accurate. Whether you need materials for furniture, medical equipment, tools, or vehicles, Industrial Tube Manufacturing provides a diverse selection of high-quality, high-strength steel tubing. Our Precision Tube delivers exceptional dimensional accuracy and highly consistent base material properties, minimising scrap and reducing production downtime in automated processing. Additionally, it features industry-leading elongation for outstanding formability and design flexibility. Our manufacturing process is tightly controlled, offering customisable internal weld bead and position options to meet specific customer requirements.

Cold Rolled Mild Steel Tube

CR250

Manufactured from Australian made, high grade cold-rolled and batch-annealed steel coil, our CR250 tube provides an exceptional surface finish, superior dimensional accuracy, and a high level of formability across a wide range of thinner walled profiles. As an uncoated product, it is perfect for finishing processes such as powder coating, high-gloss painting, zinc and chrome plating.

Hot Rolled, Pickled & Oiled Tube

HR350

Produced from New Zealand made, hot-rolled, pickled, and oiled steel coil. HR350 has a high-grade finish due to skin-passing and the same OD accuracy as CR250. The higher yield strength is suitable for more physically demanding applications. Formability is reduced and wall thickness tolerances are wider compared to CR250.

Pre-Galvanised Steel Tube

GS300

Manufactured using New Zealand made, continuously hot-dipped galvanised G250 steel coil. GS300 features a Z275 (ZB135/135) coating with external weld seam zinc repair, ensuring coating continuity. The product features a smooth and consistent surface finish, is highly formable and is particularly suitable for outdoor and corrosion prone environments where long term durability is essential.

Advanced High-Strength Steel

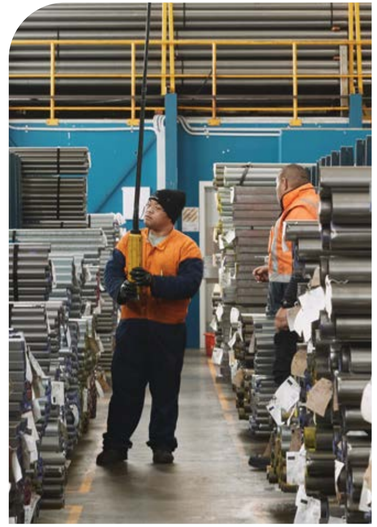
UltraTube™

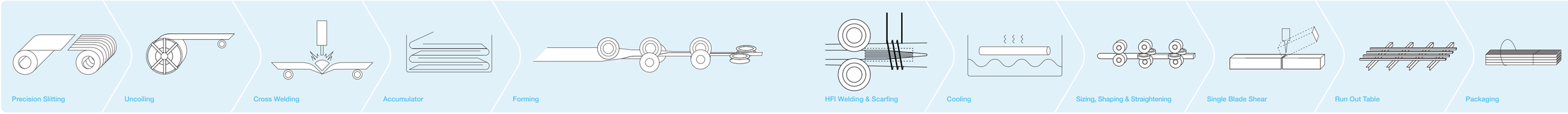
Made from EU-sourced cold-rolled dual-phase steel, UltraTube offers significantly greater yield strength than conventional mild steel grades. It maintains a good level of formability, excellent weldability, a smooth surface finish, and highly consistent mechanical properties. Enables thinner-wall designs in frames, components, and load-bearing structures where strength and durability are critical.

The Process

Our in-house precision slitting and edge preparation is the starting point for producing a tube with exceptional weld integrity. Precision Tube is cold-formed and longitudinally welded through a high-frequency induction welding process.

The tube is cut with a single-blade shear which produces a small dimple at each end - the nominal mill length is provided exclusive of this distortion (+50mm). Pre-galvanised tube is repaired at the weld zone using a zinc flame spray process. See diagram below.





Precision Steel Tube Sizing

Round Tube

Size (mm)	Product Type & Gauge (mm)				Nom. Linear Mass (kg/m)					Lengths per pack
	CR250	GS300	HR350	UltraTube	1.2	1.4	1.6	2.0	2.5	
9.5	1.2, 1.6				0.25	0.28	0.31			100
12.7	1.2, 1.6, 2.0	1.2, 1.6			0.32	0.39	0.44	0.52		100
15.9	1.2, 1.4, 1.6, 2.0	1.2, 1.6	2.0		0.43	0.50	0.57	0.67		100
19.1	1.2, 1.4, 1.6, 2.0	1.2, 1.6, 2.0			0.51	0.61	0.68	0.83	1.02	100
22.2	1.2, 1.4, 1.6, 2.0	1.2, 1.6, 2.0		1.6	0.61	0.72	0.81	0.98	1.21	100
25.4	1.2, 1.4, 1.6, 2.0	1.2, 1.6, 2.0	2.0, 2.5	1.6	0.71	0.83	0.93	1.15	1.41	100
28.6	1.2, 1.4, 1.6, 2.0	1.2, 1.6			0.78	0.94	1.07	1.32	1.69	48
31.8	1.2, 1.4, 1.6, 2.0	1.2, 1.6, 2.0	2.5	1.6, 2.0	0.87	1.04	1.17	1.43	1.80	48
34.9	1.2, 1.4, 1.6, 2.0	1.2, 1.6		1.6	0.99	1.15	1.30	1.60	2.00	48
38.1	1.2, 1.4, 1.6, 2.0	1.2, 1.6	2.5	1.6, 2.0	1.07	1.22	1.36	1.78	2.13	48
41.3	1.2, 1.6, 2.0	1.6, 2.0		2.0	1.15	1.38	1.52	1.89	2.42	48
44.5	1.2, 1.6, 2.0	1.6	2.5	1.6, 2.0	1.06	1.49	1.65	2.03	2.52	48
47.6	1.2, 1.6, 2.0				1.35	1.57	1.78	2.19	2.78	48
50.8	1.2,1.4, 1.6, 2.0	1.2, 1.6, 2.0	2.5	1.6	1.42	1.67	1.88	2.35	3.02	48
54.0	1.6				1.56	1.82	2.03	2.53	3.14	48
57.2	1.2, 1.6, 2.0	1.6			1.61	1.89	2.14	2.66	3.33	24
60.3	1.2, 1.6, 2.0	2.0		1.6	1.72	2.00	2.28	2.80	3.60	24
63.5	1.2, 1.6, 2.0	1.6		1.6	1.71	2.09	2.39	2.99	3.79	24
69.9	2.0	2.0				2.35	2.67	3.23	4.16	24
76.2	1.6, 2.0	1.6, 2.0				2.56	2.89	3.59	4.57	24
88.9	1.6, 2.0						3.44	4.28	5.33	10
101.6	1.6, 2.0						3.95	4.91	6.11	10
127.0	1.6						4.87	6.04	7.68	8
152.4	2.0						5.87	7.57	9.24	8

Square Tube

Size (mm)	Product Type & Gauge (mm)				Nom. Linear Mass (kg/m)					Lengths per pack
	CR250	GS300	HR350	UltraTube	1.2	1.4	1.6	2.0	2.5	
12.7x12.7	1.2, 1.4, 1.6				0.41	0.48	0.53			100
15.9x15.9	1.2, 1.4, 1.6, 2.0	1.6			0.51	0.60	0.66	0.83		100
19.1x19.1	1.2, 1.4, 1.6, 2.0	1.2, 1.6	2.0		0.64	0.75	0.83	1.00		100
22.2x22.2	1.2, 1.4, 1.6, 2.0	1.6			0.78	0.89	1.03	1.25		100
25.4x25.4	1.2, 1.4, 1.6, 2.0	1.2, 1.6, 2.0	2.5		0.89	1.03	1.17	1.42	1.75	100
31.8x31.8	1.2, 1.4, 1.6, 2.0	1.6	2.5		1.11	1.31	1.48	1.79	2.24	50
34.9x34.9	1.2, 1.4, 1.6, 2.0	1.2. 1.6, 2.0			1.22	1.42	1.63	2.01	2.51	49
38.1x38.1	1.4, 1.6, 2.0	1.6, 2.0	2.0, 2.5		1.32	1.57	1.78	2.13	2.75	49
40.0x40.0	2.0	2.0			1.43	1.67	1.89	2.26	3.06	49
50.8x50.8	1.2, 1.4, 1.6, 2.0	1.6, 2.0	2.0		1.81	2.10	2.40	3.94	3.69	49
65.0x65.0	1.6, 2.0	1.6, 2.0				2.78	3.08	3.58	4.78	30

Any products not shown in the stocked (bolded) items are available ex-mill run in most wall thicknesses. Kg/m denotes what is possible to manufacture in each wall thickness. Coatings including Z450 or other grades such as G450 or 1P are available for some profiles. MOQ's apply.

Rectangle Tube

Size (mm)	Product Type & Gauge (mm)				Nom. Linear Mass (kg/m)					Lengths per pack
	CR250	GS300	HR350	UltraTube	1.2	1.4	1.6	2.0	2.5	
25.4x12.7	1.2, 1.4, 1.6	1.6			0.65	0.76	0.84	1.06		50
31.8x15.9					0.82	1.00	1.13	1.42		50
34.9x19.1	1.2, 1.4, 1.6, 2.0	1.2, 1.6			0.95	1.21	1.28	1.58		50
38.1x25.4	1.6, 2.0				1.13	1.50	1.76	1.79	2.24	49
46.5x21.2	1.6				1.06	1.49	1.65	2.03	2.52	50
50.8x25.4	1.2, 1.4, 1.6, 2.0	1.2, 1.6, 2.0	2.5		1.35	1.62	1.82	2.25	2.78	50
50.8x31.8	1.6, 2.0				1.49	1.74	1.95	2.45	2.94	50
57.2x34.9					1.61	1.89	2.14	2.66	3.33	50
60.0x30.0	1.6				1.61	1.89	2.14	2.66	3.33	50
63.5x38.1	1.6, 2.0	1.6			1.84	2.09	2.39	2.99	3.26	50
68.0x14.0	1.6				1.43	1.67	1.91	2.39		100
68.0x43.0					1.97	2.35	2.67	3.23	4.16	50
70.0x11.0					1.43	1.67	1.91	2.39		100

Flat-Sided Oval & Oval Tube

Size (mm)	FSO/Oval	Product Type & Gauge (mm)				Nom. Linear Mass (kg/m)					Lengths per pack
		CR250	GS300	HR350	UltraTube	1.2	1.4	1.6	2.0	2.5	
19.0x12.0	OV					0.43	0.50	0.56	0.67		50
25.4x15.9	FSO					0.65	0.75	0.83	1.00		50
31.8x15.9	FSO	1.2, 1.6	1.6			0.71	0.83	0.93	1.15		50
31.8x17.1	OV	1.6		2.0		0.71	0.83	0.93	1.15		50
32.0x22.0	OV					0.74	0.89	1.01	1.26		50
34.9x15.9	FSO	1.2, 1.4, 1.6				0.78	0.94	1.07	1.32		50
50.8x15.9	FSO	1.2, 1.6				1.07	1.26	1.36	1.78		50
54.0x35.0	FSO	1.6*				1.35	1.57	1.79	2.19	2.78	49
59.0x30.0	OV					1.35	1.57	1.79	2.19	2.78	49
72.0x45.0	FSO		1.2			1.81	2.14	2.42	3.02	3.85	42
97.0x42.0	FSO	1.6	2.0	2.0				2.89	3.59	4.54	24

Packaging & Storage

- Standard stocked lengths are 5.5m. Custom lengths are available, timed with the mill rolling schedule.
- Our bundled tube is delivered lightly oiled to ensure it is delivered in the best possible condition. During prolonged storage, it is advisable to apply a rust-preventative oil periodically.
- Bundles vary by size. *See product schedules.*

White Rust

This condition can develop when pre-galvanised tube is transported or stored in damp, poorly ventilated environments. This environment leads to the formation of zinc hydroxide instead of the more common iron oxide, or rust. Generally, this condition is superficial and aesthetic, not typically affecting the integrity of the coating. To mitigate this issue, the tube is provided with a light oil coating. However, if the tube will not be processed immediately, we recommend separating and filleting the bundle to allow for proper ventilation.

Colour Chart

Thickness	Colour
1.0mm	Orange
1.2mm	White
1.4mm	Red
1.6mm	Purple
2.0mm	Yellow
2.5mm	Pink

Products & Surface Finishes

Products	Base Material (Strip)	Finish	Typical Applications
CR250	Cold-rolled close annealed	Higher-grade, bright, critical finish	Furniture, displays, automotive
HR350	Hot-rolled pickled & oiled	Steel grey, semi-bright finish	Racking, cargo barriers, seat frames
GS300	Continuously hot-dip galvanised	Z275 coating (both sides). Spangle	Outdoor structures, furniture, fencing, conveyors
UltraTube™	Cold-rolled continuously annealed	Clean, semi-bright finish	Space frames, bullbars, vehicle fit-outs

Coating Suitability

Products	Powder Coating	Paint	Chrome Plating	Electroplating	Hot Dip Galvanising
CR250	Excellent	Excellent	Excellent	Excellent	Excellent
HR350	Good	Excellent	Poor	Good	Excellent
GS300	Excellent	Excellent	n/a	n/a	n/a
UltraTube™	Excellent	Excellent	Good	Excellent	Poor

Note: Our pre-galvanised range maintains the zinc coating adhesion during all of our in-house mechanical testing. Higher zinc coating thickneses are available.

During the manufacturing process, our tube undergoes a series of in-house mechanical tests, measurements and inspections to ensure it consistently meets the desired specifications and standards.

- **Flare test:** Outside diameter increased by up to 25%, dependent on profile or material type, without failure to either the base material or the weld zone.
- **Flattening test:** Capable of being flattened without cracking between two parallel planes with the weld zone located at both 90 and 0 degrees.
- **Surface examination:** Visual inspection for external surface damage. Straightness, twist, weld position and weld bead height are tested to meet internal and external standards and/or customer specifications.

Note: UltraTube is subject to a distinct mechanical testing methodology. Some of the above details may not be directly applicable. Specifications are available on request.

Standards & Tolerances

Made to AS 1450, EN 10305-3 and ASTM A513-1.

Tolerances	
External Dimensions	±0.13mm <50.8mm ±0.26mm <101.6mm
Wall Thickness	CRCA & UltraTube™ ±5% (<2.0mm), HRPO ±10% (<2.6mm), GALVSTEEL ±7% (<2.5mm)
Out-of-Roundness (Ovality)	±0.13mm <50.8mm, ±0.26mm <101.6mm
Squareness of sides	90° ±1 degree
Twist (Rectangle/Square)	<3mm over 5.5m
Straightness	<5.5mm over 5.5m

Precision Steel Tube is cold-formed and longitudinally welded through a high frequency induction welding process.

Base Material Standards

- Cold-rolled Close Annealed (CRCA) AS/NZS 1365:1996 (R2016), AS/NZS 1595:1998.
- Hot-Rolled Pickled & Oiled (HRPO): AS/NZS 1365:1996 (R2016).
- Galvsteel® (GS): AS/NZS 1365:1996 (R2016), AS 1397:2021.
- UltraTube™: EN 10338:2015, EN 10131:2006.

During the tube-forming process, when the steel strip is shaped into tubular profiles, the mechanical properties change. The degree of this change is influenced by the specific dimensions of the tube being manufactured, especially the diameter to thickness ratio (D/T). Typically, during the tube-forming process, the yield strength experiences a significant increase, the tensile strength sees a slight increase, and elongation is reduced. The thickness of a material does not directly influence its yield strength. However, thicker materials can endure higher stresses before deforming, which indirectly impacts the yield strength.

As an example to illustrate how tube forming effects the mechanical properties of the base material, test data of formed profiles from the same slit width are below.

Formed Tube - Example of Mechanical Properties (CRCA, CR250)			
149mm Slit Width	1.6x47.6	1.6x38.1x38.1	1.6x50.8x25.4
YS 193 MPa, TS 313 MPa, EL % 46	YS 260 MPa, TS 326 MPa, EL % 43	YS 286 MPa, TS 340 MPa, EL % 41	YS 276 MPa, TS 335 MPa, EL % 42

Note: Tested to AS 1391. Rectangle test sample taken from the 50.8 side. The above mechanical properties are from a specific coil batch and mill run/s and are to be treated as such. When full test certificates are required for a specific product, this must be requested at time of order and an additional charge applies.

CRCA Base Material - Typical Mechanical Properties		
Yield strength	Tensile strength	El % on Lo = 50mm
170 MPa	320 MPa	43

HRPO Base Material - Typical Mechanical Properties		
Yield strength	Tensile strength	El % on Lo = 50mm
285 MPa	380 MPa	30

G250 (GS) Base Material - Typical Mechanical Properties		
Yield strength	Tensile strength	El % on Lo = 50mm
250 MPa	320 MPa	27

UltraTube™ Base Material - Typical Mechanical Properties		
Yield strength	Tensile strength	El % on Lo = 50mm
509 MPa	810 MPa	18

Additional Base Material Options

In addition to our core production materials, we also hold base material in the below products for specific applications, manufacturing tube to order as required.

G310 (GS) Base Material - Typical Mechanical Properties		
Yield strength	Tensile strength	El % on Lo = 50mm
338	470	30

NZCC-1P Base Material - Typical Mechanical Properties		
Yield strength	Tensile strength	El % on Lo = 50mm
505 MPa	510 MPa	11

Automotive

Safety Cage Tubing

The primary purposes for a safety cage are to protect the vehicle's occupants in the event of a roll-over and provide structural rigidity in motor sport applications.

The high-strength properties of Industrial Tube's Safety Cage Tube ensures that the safety cage can withstand significant forces during a roll-over or crash, providing crucial protection. With over 170,000 metres of safety cage tubing for Motorsport and Roll-over protection systems (ROPS), produced and supplied across New Zealand and Australia over the past 15 years, Industrial Tube has an unmatched track record in this critical application, backed by stringent testing and quality control.

UltraTube™ RS

UltraTube RS is a New Zealand–manufactured dual-phase steel tube, engineered specifically for motorsport safety cages. It delivers over 650 MPa yield strength with excellent ductility, progressive strain hardening, and proven crash energy absorption. Unlike traditional high-strength alloy steels such as 4130 CrMo, UltraTube RS requires no preheat or post-weld heat treatment, ensuring predictable weld zone behaviour and consistent fabrication results. It can be welded using standard TIG and MIG processes with commonly used filler metals.

UltraTube RS demonstrates reliable formability, achieving tight-radius bends with minimal ovality, allowing fabricators to produce complex cage geometries with confidence. Its strength and ductility enable weight-optimised designs that maintain crash integrity even with thinner wall sections. Each tube length is line-marked for full traceability, identifying batch, grade and specification. Verified to strict quality standards, UltraTube RS provides a high-performance, compliant alternative to legacy imported materials, with mill test certificates supplied with every order

ITM-MSNZ-Q29

Industrial Tube's Mild Steel Roll Cage Tube is manufactured in New Zealand to MotorSport New Zealand's ITM-MSNZ-Q29 standard and has been proven in service for over 15 years. Our tube is HFIW from tube designated steel strip manufactured locally by New Zealand Steel. Each batch is fully traceable with test certificates supplied for every order and like all of our products, undergoes extensive mechanical testing and checks during the production process.

Typical Mechanical Properties

Product	Yield strength	Tensile strength	El % on Lo = 50mm	HRB (Hardness)
UltraTube RS	690 MPa	850 MPa	17	104
ITM-MSNZ-Q29	350 MPa	420 MPa	20	86

Typical Chemical Composition % (Ladle Analysis)

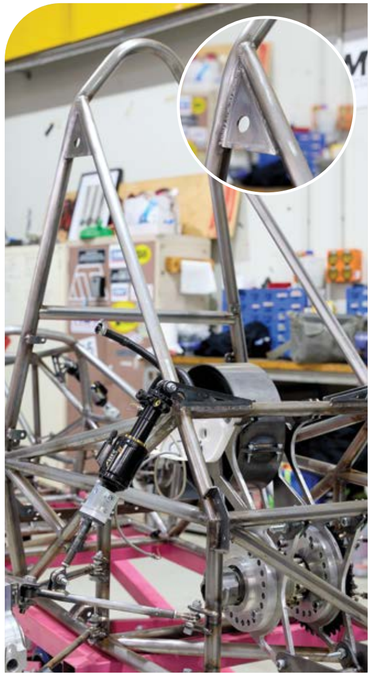
Product	C	Si	Mn	S	P	Al	Cr
UltraTube RS	0.087	0.247	1.902	0.001	0.015	0.026	0.201
ITM-MSNZ-Q29	0.050	0.007	0.200	0.018	0.014	-	-

Size (metric)	Size (imperial)	Product Type & Gauge (mm)		Nom. Linear Mass (kg/m)			Length size (Tube)
		UltraTube RS	ITM-MSNZ-Q29	1.6	2.0	2.6	
22.2 mm	7/8"	1.6		0.81			5.5m
25.4 mm	1"	1.6		0.93	1.16	1.41	5.5m
31.8 mm	1 1/4"	1.6, 2.0	2.6	1.17	1.43	1.80	5.5m
34.9 mm	1 3/8"	1.6		1.30	1.63	2.0	5.5m
38.1 mm	1 1/2"	1.6, 2.0	2.6	1.36	1.78	2.13	5.5m
41.3 mm	1 5/8"	2.0		1.60	1.96	2.39	5.5m
44.5 mm	1 3/4"	1.6, 2.0	2.6	1.65	2.03	2.52	3.6m
50.8 mm	1"	1.6	2.6	1.98	2.44	3.02	5.5m

Note on Mechanical Properties: The ITM-MSNZ-Q29 standard requires a minimum base material (strip) yield strength of 250 MPa and does not mandate batch specific tensile testing on the finished tube. While Industrial Tube periodically undertakes tensile testing to AS 1391 where required, and results consistently show yield strength well above 350 MPa, a yield strength is not guaranteed for every batch unless tensile test data is specifically ordered by the customer.

UltraTube RS, is subject to a more defined test regime. Multiple tube profiles are tensile tested to AS 1391 from each coil batch, verifying a minimum 650 MPa yield strength across the UltraTube RS size range. Testing is repeated with each new coil batch, and full certification is supplied with every order. Batch and coil numbers are printed directly on each tube length at regular intervals, providing full traceability.

Note on sizing (imperial equivalence): Typical imperial mechanical-tubing standards—ASTM A513, ASTM A519, and AMS-T-6736—specify wall-thickness tolerances of approximately ± 10 %. UltraTube™ 1.6 mm and 2.0 mm nominal walls are targeted at 1.65 mm and 2.02 mm actual to align within the 0.065 in (1.65 mm) and 0.083 in (2.11 mm) imperial ranges. This ensures compatibility with imperial tooling and fit-ups while remaining compliant with EN 10131. Minor variation may occur between coil batches within the same tolerance band.



Formula SAE space frame fabricated from UltraTube RS by the University of Waikato's WESMO team.

Aluminised Steel Tube

Precision Tube manufactured from Aluminium-Silicon-Coated Mild Steel (ACMS) is typically used for automotive exhaust systems due to its heat resistance and reflectivity, weldability, formability and corrosion protection.

The aluminised coating is applied to the steel strip through a continuous hot-duip process, in which the base material is immersed in a bath of molten aluminium-silicon alloy. This creates a metallurgically bonded surface layer that resists oxidisation and scaling at elevated temperatures while maintaining excellent coating adhesion during forming and welding operations.

The resulting tube combines the strength and formability of mild steel with the heat and corrosion resistance of the aluminium-silicon coating, making it well suited to exhaust manifolds, mufflers, intermediate and tail pipes and other components exposed to heat and corrosion prone environments.

Aluminised tube is also used in machinery and equipment where heat and corossion resistance are required without the cost of stainless steel, such as heater assemblies, ventilation systems and engine-bay ducting.

Size (mm)	Product Type & Gauge (mm)		Nom. Linear Mass (kg/m)			Length size (Tube)	Lengths per pack
	Tube	Perf	1.6	2.0	Perf		
38.1	1.6		1.44			4.0m	48
41.3	1.6		1.57			4.0m	48
44.5	1.6	1.6	1.69		1.13	4.0m, 5.5m	48
47.6	1.6		1.82			4.0m	48
50.8	1.6	1.6	1.94		1.27	4.0m	48
57.2	1.6, 2.0	1.6	2.19	2.71	1.61	4.0m, 5.5m	24
63.5	1.6, 2.0	1.6	2.44	3.02	1.69	4.0m, 5.5m	24
76.2	1.6, 2.0	1.6	2.94	3.65	2.89	4.0m, 5.5m	24

Base Material Properties:

Extra-Deep-Drawing-Steel (EDDS) T1-25 Coating (150 gm/2) to ASTM A 463-96a and JIS G3314-2022. Perforated tube has a P136 pattern - 23% open area, 3mm hole size.

Typical Mechanical Properties (Base Material)

Yield strength	Tensile strength	El % on Lo = 50mm
200 MPa	290 MPa	43

Typical Chemical Composition % (Ladle Analysis)

C	Mn	P	S	Al	Ti
0.020	0.40	0.02	0.020	0.026	0.3

409 Stainless Steel Tube

Precision Tube manufactured from Type 409L ferritic stainless steel is widely used in OEM automotive exhaust systems for its combination of heat resistance, oxidation performance, and cost-effectiveness. Containing approximately 11% chromium, 409 forms a stable oxide layer that protects against corrosion and scaling at elevated temperatures. It combines good mechanical strength, formability, and weldability, allowing ease of fabrication and dependable performance in service.

These properties make 409 stainless particularly suited to exhaust components such as manifolds, catalytic converter shells, mufflers, and tailpipes, where resistance to cyclic heating and cooling is essential. The material retains its strength and appearance under prolonged thermal exposure, extending component life.

Beyond automotive applications, 409 stainless is also used in heat exchangers, agricultural equipment, and other machinery where moderate corrosion resistance and elevated temperature capability are required - offering a practical and economical alternative to higher-alloy stainless steels.

Size (mm)	Product Type & Gauge (mm)	Nom. Linear Mass (kg/m)		Length size (Tube)	Lengths per pack
	409	1.6	2.0		
38.1		1.43	1.75		48
41.3		1.56	1.91		48
44.5	2.0	1.68	2.06		48
47.6		1.80	2.21		48
50.8		1.93	2.37		48
57.2		2.18	2.68		24
63.5	2.0	2.42	2.98	4.0m	24
76.2	2.0	2.92	3.60	2.75m	24

Notes: A limited size and length range is currently offered in 2.0mm; additional sizes and lengths may be produced on request, subject to minimum order quantities (MOQs). Kg/m denotes what is possible to manufacture, not stocked items.

Type 409 offers improved heat and corrosion performance over aluminised steel but it is less resistant to surface oxidation than austenetic grades such as 304. Light rust or discolouration is typical in service.

Base Material Properties:

Type 409L ferritic stainless steel manufactured to ASTM A240M-22 and JIS SUS 409L

Typical Mechanical Properties (Base Material)

Yield strength	Tensile strength	El % on Lo = 50mm
243 MPa	395 MPa	37

Typical Chemical Composition % (Ladle Analysis)

C	Si	Mn	P	S	Ni	Cr	Ti
0.012	0.320	0.320	0.025	0.001	0.100	11.520	0.198


Miller

Stainless Steel Tube

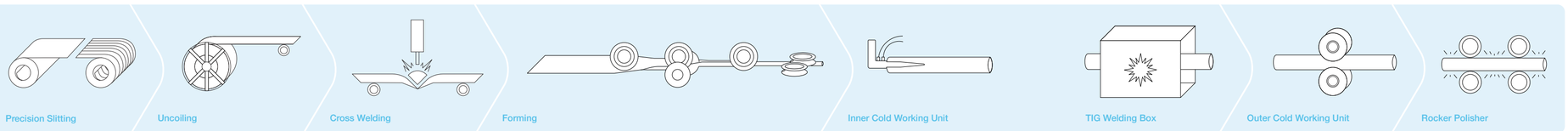
Industrial Tube Manufacturing produces a class-leading stainless steel tube, HygienicTube™, primarily used for process lines in dairy factories, breweries, distilleries and other sanitary applications.

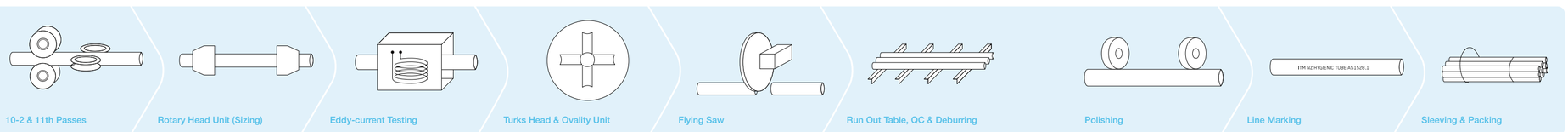
Specification

Manufactured to the AS 1528.1 Standard for austenitic Stainless Steel tube for food processing and other hygienic applications.

Other standards:

- ASTM A249 - Austenitic Steel Boiler, Superheater, Heat-Exchanger & Condenser.
- ASTM A269 - Welded Austenitic Stainless Steel Tubing for General Service.
- ASTM A554 - Welded Stainless Steel Mechanical Tubing.





Quality Assurance

Industrial Tube QA management processes include full traceability, strength testing, dimension and tolerance inspections, weld colour management and buff polishing. Weld integrity tests are: Reverse bend test, flare/cone test and flange test.

Material

HygienicTube™ is manufactured from cold-rolled, annealed and skin-passed coil strip (2B) in grades 304L or 316L to ASTM A240/A240M-16a. We source from leading international mills to our exacting specification, with a tight thickness tolerance window.

Eddy-Current Tested

Eddy current testing is a non-destructive testing (NDT) method that uses electromagnetic induction to detect flaws, cracks and other imperfections. All tube is in-line (tangent coil weld inspection) eddy-current tested for integrity, to ASTM A1016M.

Surface Finish

The standard finish of HygienicTube™ is buff polished to a minimum 320G finish. Other surface finishes are available on request. The internal finish of our tube (excluding the weld zone) is typically 0.2µm to 0.6µm R_a. The internal weld zone roughness allows for a maximum Rt value of 14.0µm. Our results typically range from 2.0 to 6.5 Rt.

Annealing Treatment

Industrial Tube offer in-house annealing treatment for austenitic stainless tube to standards ASTM A249 or A269. We can accommodate 6.35-76.2mm tube. Annealing is performed to reduce the hardness of the formed tube, increase its ductility and improve the weld zone micro-structure, facilitating further processing.

Our process is through an off-line natural gas oven with hydrogen and nitrogen purge, run at 1065°. A continuous conveyor system takes the tube through the oven and the tube is rapidly cooled as the muffle continues through an aerated water bath. The tube is then put through a further straightening process, is 360° eddy-current tested then line marked with the appropriate information and standard.

Our Manufacturing Process

HygienicTube™ is longitudinally welded through an automatic TIG welding process with no addition of filler material. Tube with diameters of 31.8mm and above are internally cold worked with the internal weld bead rolled flat to form a smooth internal surface. Tube with diameters of 25.4mm and below are in an as welded condition and internal weld height is controlled to a minimum height as per AS 1528.1.

Tube is formed in small stages at slower speeds to minimise work hardening, allowing the formed tube to be more easily bent or manipulated. The first stage of polishing is performed on-line. Mill lengths are all end deburred on the run out table and final QC checks are performed at this time.

Polishing is completed off-line before line marking with our identification, the standard, heat and work order numbers. The tube is then sleeved and packed, ready for dispatch to our distribution centres. *See diagram on the left.*

Stainless Steel Tube Sizing

Round Tube

Size (mm)	Product Type & Gauge (mm)		Finish	Nom. Linear mass (kg/m)				6.0m Lengths per pack
	304L	316L		0.9	1.2	1.6	2.0	
6.35	0.9		AWBP	0.13				50
7.95	0.9		AWBP	0.16				50
9.5	0.9, 1.2	1.2	AWBP	0.19	0.25	0.31		50
12.7	0.9, 1.2, 1.6	1.2, 1.6	AWBP	0.27	0.34	0.44		50
15.9	0.9, 1.2, 1.6	1.2, 1.6	AWBP	0.33	0.43	0.56		50
19.1	0.9, 1.2, 1.6	1.6	AWBP	0.41	0.53	0.69	0.88	50
22.2	1.2, 1.6		AWBP	0.47	0.61	0.81	1.04	50
25.4	0.9, 1.2, 1.6, 2.0	1.2, 1.6	AWBP	0.55	0.72	0.94	1.22	50
31.8	1.2, 1.6	1.6	CWBP	0.69	0.92	1.19	1.54	50
38.1	0.9, 1.2, 1.6	1.6	CWBP	0.83	1.10	1.44	1.87	50
44.5	1.6, 2.0	1.6	CWBP	0.95	1.29	1.69	2.15	50
50.8	0.9, 1.2, 1.6, 2.0	1.6	CWBP	1.14	1.47	1.94	2.41	50
63.5	1.2, 1.6	1.6	CWBP		1.84	2.44	3.06	28
76.2	1.2, 1.6	1.6	CWBP		2.17	2.94	3.86	28
101.6	1.6, 2.0	1.6, 2.0	CWBP			3.46	4.91	18
127.0	1.6	1.6	CWBP			4.96	6.15	8
152.4	1.6, 2.0	1.6, 2.0	CWBP			5.97	7.46	8
203.2	2.0	2.0	CWBP				9.96	5

Custom lengths available. Any products not shown in the stocked (bolded) items are available ex-mill rolling in most wall thicknesses. Kg/m denotes what is possible to manufacture in each wall thickness. 2.5mm, 321 and other austenitic and ferritic grades can be manufactured. MOQ's apply.

Industrial Tube QA management processes include full traceability, strength testing, dimension and tolerance inspections, weld colour management and buff polishing.

HygienicTube™ is longitudinally welded through an automatic TIG welding process with no addition of filler material.

Identification

Industrial Tube's line marking identification is ITMNZ HYGIENIC - TUBE. All Tube is individually line marked with the heat number for identification and batch traceability. CWBP = Cold worked buff polished, AWBP = As welded buff polished. AS 1528.1 base material test certificates are provided with each order as per EN10204 Type 3.1.

Packing

304L is sleeved in clear plastic, 316L in blue plastic. Bundles are strapped with timber cleats and plywood for the forklift plate. See sizing table for individual bundle sizes.

Tolerances	
External Dimensions (OD)	±0.13mm <31.8, ±0.25mm <76.2, ±0.38mm <101.6, ±0.50mm <203.2
Wall Thickness	±5% (<2.0mm) of nominal wall thickness
Out-of-roundness (Ovality)	Refer OD tolerances & Ovality heading
Straightness	<2.0mm over 1000mm
Length	-0,+40mm. Exact length ±1mm by arrangement

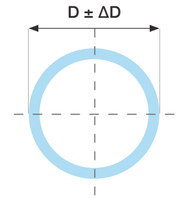
Minimum Mechanical Properties (Base Material)		
Yield strength	Tensile strength	El % on Lo = 50mm
170 MPa	485 MPa	40

304L Typical Chemical Composition % (Ladle Analysis)								
C	S	P	Mn	Si	Cr	Ni	Mo	N
0.024	0.002	0.028	1.390	0.330	18.200	8.000	0.000	0.070

316L Typical Chemical Composition % (Ladle Analysis)								
C	S	P	Mn	Si	Cr	Ni	Mo	N
0.024	0.001	0.026	1.350	0.270	16.690	10.030	2.030	0.040

Ovality

Difference between max and minimum diameters at any one cross section to be within OD tolerances, i.e ±0.13mm <31.8mm. Our in-house R&D team have developed industry leading, proprietary in-line processes to control ovality and provide exceptional roundness in our tube.



Services

At Industrial Tube Manufacturing, we are committed to supporting New Zealand's manufacturing sector. We specialise in creating precision tubular components and assemblies, made from the tube we manufacture, to your exact specifications. Managed at one site, from start to finish, our process provides complete control over quality, timing, and cost. Our partnership approach includes a comprehensive just-in time service to ensure you receive the product you need, when you need it.

Stock Management

We offer a full Kanban just-in-time (JIT) manufacturing service to streamline your ordering process. This reduces stock-outs, wait times between mill rolling schedules and scrap. We will manufacture the tube to your exact length and tolerance requirements, precision or laser cut to length and hold a rotating minimum stock-holding with automatic replenishment. Inventory levels match your demand and with our internal and external freight network, we partner with you to provide the product you need, on your schedule.

Capabilities

- Tube Laser Cutting
- Precision Cutting to Length
- CNC Drilling
- Swaging & End Forming
- Robot Welding

Design and Prototyping

Our advanced in-house capabilities enable us to offer an extensive range of tube fabrication solutions. Utilising our cutting-edge tube processing technologies and our deep engineering expertise, we are well equipped to handle everything from one-off prototype designs to large-scale production runs.

Our in-house design team uses leading CAD/CAM software packages including ArTube and SolidWorks, to evolve your design and provide unrivalled accuracy. The fact that ArTube is software designed specifically for tubes provides a wide range of tube specific options, focused on every detail.

Our software is fully integrated with our cutting machinery and is optimised for our specific Precision Steel tube and Stainless Steel tube weldment profiles; delivering exceptional, precise results, every time.

The Process

If you're in the product concept stage, reach out to share your project ideas. Whether you prefer an in-person meeting at your location or ours, or a video conference, we'll work to understand your requirements. We'll then offer expert feedback on the best way to bring your vision to life.

We also offer design services for customers without in-house CAD capability.

If you already have the design completed, and require a quote, email both STP (or agreed equivalent) and PDF files of your parts along with required quantities, material type and your project lead time to technicalsales@industrialtube.co.nz. In all cases a drawing will be produced for sign-off before initial production and this is item coded and held for repeat ordering.

"Smokai is a precision engineered product, and if the components are even a tenth of a millimetre out, the final product may not fit together. It is obvious when you see the quality and care of their work that they really do take ownership of the part they each play in the production process. We love the work done by Industrial Tube to make our product the success it is."

Tony Parton - Director of Smokai

Automation and high-speed capabilities significantly boost production efficiency, allowing for quicker turnaround times on projects.

Tube Laser Cutting

Our BLM LT7 3kw Fibre Tube Laser provides highly accurate and repeatable tube cutting. Automation and high-speed capabilities boost production efficiency, allowing for quicker turnaround times on projects.

Active tilt adds the linear movement of the tube to the oscillating movement of the 5-axis cutting head to significantly increase output, adding unimaginable productivity, especially when cutting light-wall materials.

BLM's ArTube CAD/CAM software is specifically for the design of tube components. It allows creation, simulation and optimisation of tube cutting processes, improving efficiency and precision. With advanced AI functionality, 3D files can be imported and ArTube will effortlessly generate the corresponding part program.

Advanced features, including weld seam detection, twist compensation, dynamic waste reduction, and automated splash reduction, ensure unmatched accuracy and efficiency.

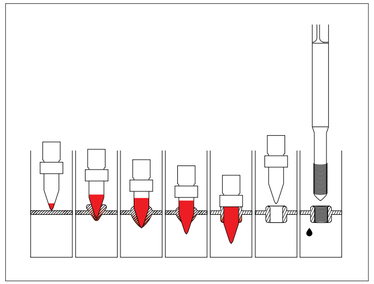
The ability to cut a wide range of materials and tube sizes makes the LT7 a versatile tool for various industries and applications. We can process round, square, rectangle, oval and open profiles in Mild Steel, Stainless Steel and Aluminium.

BLM LT7 Laser Capability	
Load length	1900-6500mm
Unload length (Max)	6500mm
Min/Max Cutting dimensions	12 - 152.4mm
Max difference between sides	137mm
Max weight (kg/m)	23
Max cutting thickness (Steel)	6mm

CNC Drilling

Our CNC drilling machine is the perfect solution for tubular products requiring multiple precision holes, flow drilling and tapping. Flow drilling (or thermal/friction drilling) is often used as an alternative to rivet nuts, creating tapped holes for bolts and screws in product assembly. The thread length is generally 2-3x the wall thickness with the ability to feature a flat, collarless finish.

Equipped with an automatic tool changer that accommodates up to six different drill bit sizes in a single setup, our CNC drilling machine has a large bed size for volume work. This bed allows for multiple parts to be stacked and batch processed without compromising tolerances and quality control.



Flow Drilling & Tapping

Drilling Capability

Drilling	Tapping	Thermal Drilling	Milling	Length	Bed	Spindle Speed
ø 2mm - ø 40mm	M3 - M24	M5-M10	Linear only	50-6000mm	0.4x4.5m	750-3000 RPM

Precision Cutting to Length

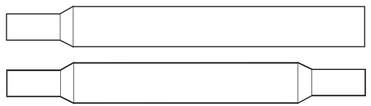
Precision cutting produces clean, square and accurate cuts economically. Our BLM TS72 Automatic saw can quickly cut profiles from 12-102mm in diameter with a +/- 0.5mm cutting tolerance. Tube is bundle loaded, with the workpiece kept in place with adjustable hydraulic clamps to ensure accuracy. A motorised locater with automatic nesting, can cut up to four different parts from the same length to reduce material waste. *Cut Sizing: 20-4500mm.*

Deburring

Brush deburring removes burrs, rough and sharp edges and other imperfections from cut lengths. Deburring is ideal when powder coating or electroplating is required and is essential when assembling parts with plugs or bearings. *Deburring Size Range: 300-4000mm*

Swaging and End Forming

Manipulating tube size and shape is made easy with our swaging process. This involves reducing or increasing the diameter of the tube while increasing or decreasing its length. Common applications are automotive, furniture, medical, sporting equipment or anywhere a temporary sleeved join or diameter reduction is required. Swaging is available for most of our manufactured sizes from 15.9-63.5mm and the maximum swage length is 90mm. Other sizes available by request, MOQ's apply.



Swage Tooling List	
Swage (mm)	Tube Profile (mm)
13.2, 14	15.9
15, 17	19.1
19.5, 20.7, 21,6, 21.8	22.2
22.5, 24	25.4
25.7, 26.8	28.6
28.1, 28.6, 30	31.8
34.4, 35	38.1
40	41.3
42.5	44.5
46.6, 50	50.8
55	57.2
60.15	63.5

Robot Welding

Robotic welding is the ideal solution where weld quality and repeatability is important. Our OTC Daihen FD-B6 Arc Robot Welder is a versatile and high-performance welding machine designed to meet the rigorous demands of modern manufacturing. Offering 6 axes of articulation, the FD-B6 offers exceptional arc stability and control, ensuring consistent weld quality across various materials and applications. The FD-B6's streamlined coaxial cable improves wire feeding, giving a better overall weld quality.

This machine is specifically set up with feed bunkers to produce tubular components, fittings, and assemblies with foot-plates in 57mm and 44.5mm, with a maximum length of 120mm. Production runs outside of this scope will require specific jigs and MOQ's will apply.

Telescoping

Tube telescoping applications are used where additional strength is required, or when there is a requirement for one tube to extend out from another. Common uses for telescoped tube are extension arms, shop-fittings, tables and adjustable legs. The internal tube can be of any nominated wall thickness however the telescoping tube (external) will need to be of 1.2mm or 1.4mm wall thickness in most cases.

Telescoping			
	Outer	Inner	Nominal Clearance
Rectangular	68.0x43.0	63.5x38.1	0.8mm (1.6 Outer wall)
	50.8x25.4	46.5x22.2	0.8mm (1.6 Outer wall)
	38.1x25.4	34.9x19.1	0.5mm (1.2 Outer wall)
	34.9x19.1	31.8x15.9	0.4mm (1.2 Outer wall)
Square	38.1x38.1	34.9x34.9	0.3mm (1.2 Outer wall)
	34.9x34.9	31.8x31.8	0.4mm (1.2 Outer wall)
	25.4x25.4	22.2x22.2	0.3mm (1.2 Outer wall)
	22.2x22.2	19.1x19.1	0.3mm (1.2 Outer wall)
	19.1x19.1	15.9x15.9	0.3mm (1.2 Outer wall)
	15.9x15.9	12.7x12.7	0.4mm (1.2 Outer wall)

Telescoping			
	Outer	Inner	Nominal Clearance
Round	76.2	69.9	1.8mm (2.0 Outer wall)
	63.5	60.3	0.8mm (1.2 Outer wall)
	60.3	57.2	0.4mm (1.2 Outer wall)
	57.2	54.0	0.3mm (1.2 Outer wall)
	54.0	50.8	0.4mm (1.2 Outer wall)
	50.8	47.6	0.5mm (1.2 Outer wall)
	47.6	44.5	0.3mm (1.2 Outer wall)
	44.5	41.3	0.3mm (1.2 Outer wall)
	41.3	38.1	0.3mm (1.2 Outer wall)
	38.1	34.9	0.3mm (1.2 Outer wall)
	34.9	31.8	0.4mm (1.2 Outer wall)
	31.8	28.6	0.5mm (1.2 Outer wall)
	28.6	25.4	0.4mm (1.2 Outer wall)
	25.4	22.2	0.3mm (1.2 Outer wall)
	22.2	19.1	0.3mm (1.2 Outer wall)
	19.1	15.9	0.3mm (1.2 Outer wall)
	15.9	12.7	0.4mm (1.2 Outer wall)
	12.7	9.5	0.4mm (1.2 Outer wall)

Other variations are available and the internal weld bead can be reduced for additional clearance. MOQs apply. For production runs, plug gauges will be used as per customer specification.

Ag-Steel

Ag-Steel is Industrial Tube Manufacturing's dedicated product line for New Zealand's horticultural sector. With over 30 years of supplying kiwifruit, vineyard, and pip-fruit growers, Ag-Steel provides durable, recyclable steel solutions that deliver long-term performance in demanding environments.

Manufactured in our Hamilton mill from high-tensile New Zealand made G310 steel with a Z450 coating, Ag-Steel products are engineered for superior corrosion protection and strength. They are designed to replace timber with more consistent, longer-lasting alternatives that withstand the rigours of orchard and vineyard environments.

The Ag-Steel range includes:

- **Ag-Beam** – a proven alternative to timber, engineered for crop protection structures and orchard infrastructure.
- **Ag-Tripost** – a labour-efficient, sustainable steel option designed for quick one-person installation using ground pins, no post hole required.
- **Ag-Stringing Pole** – designed to easily support a stringing teepee orchard system. These can be installed on timber posts in existing orchard structures and will last the lifetime of the orchard. The bracket system simplifies the installation and removal of poles.
- **Vine Posts & Vineyard System** – lightweight yet strong steel posts compatible with self-release clips (Wirecare, KLIMA), adaptable to different wire spacing.
- **Ag-Brace, Ag-Wire and Accessorie**s – structural components and fittings engineered to integrate seamlessly with the range.

All Ag-Steel products are 100% recyclable and certified sustainable, holding Gold Certification from the New Zealand Sustainable Steel Council. Unlike timber, they do not leach CCA into the soil, making them a safe and environmentally responsible choice for both organic and conventional growers.

We also work closely with growers to develop customised solutions that fit the specific needs of each orchard or vineyard, ensuring structures are practical, durable, and cost-effective.

For full specifications, installation guides, and product details, visit **www.agsteel.co.nz**.

Service Promise

At Industrial Tube, it's not just our people that deliver, it's our products. From Precision Steel Tube to Hygienic Tube™, Aluminised Tube to Roll Cage Tube, our Mild Steel and Stainless offering reflects the full scope of our manufacturing expertise.

With extensive experience in tube processing, we offer consultation, design, and quoting services to support your unique projects. Whatever your Precision Steel Tube, Stainless Steel Tube and manufacturing needs may be, reach out to the team at Industrial Tube today.

Our Customer Service Delivery Goals

- Next day dispatch on ex stock holding or scheduled mill run.
- Four-day dispatch for value-added services from placement of order or mill-run completion.
- Delivery on time, in the specification ordered.
- Nationwide delivery partnership ensures prompt shipping of completed orders.

To Order

P: 07 847 5333
E: sales@industrialtube.co.nz

Industrial Tube™

OUR PEOPLE DELIVER

Mill Address

278 Kahikatea Drive, Frankton
Hamilton, New Zealand

Postal Address

PO Box 9506, Hamilton 3240

General Enquiries

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South Island 03 341 2023
sales@industrialtube.co.nz

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