Install® and Install® Plus product offering

Thread Size R (inch)	Specified Outside Diameter D (mm)	NB	Thickness (mm)									
			2.00	2.30	2.60	2.90	3.20	3.60	4.00	4.50	5.00	5.40
⅜	17.2	10		Medium		Heavy						
½	21.3	15	L2	L	Medium		Heavy					
¾	26.9	20		L&L2	Medium		Heavy					
1	33.7	25			L2	L	Medium		Heavy			
1¼	42.4	32			L2	L	Medium		Heavy			
1½	48.3	40				L&L2	Medium		Heavy			
2	60.3	50				L2	L	Medium		Heavy		
2½	76.1	65					L&L2	Medium		Heavy		
3	88.9	80					L&L2		Medium		Heavy	
4	114.3	100						L&L2		Medium		Heavy
5	139.7	125									Medium	Heavy
6	165.1	150									Medium	Heavy

Note: L and L2 light weight material is non standard. Please contact one of our account managers to confirm availability.

Inflow™, Inflow™ Plus, Inline™ and Inline™ Plus generic product offering

OD (mm)	Thickness (mm)																		
	2.0	2.3	2.6	2.9	3.2	3.6	4.0	4.5	5.0	5.6	6.3	7.1	8.0	8.8	10.0	11.0	12.5	14.2	16.0
17.2	■	■	■	■	■														
21.3	■	■	■	■	■	■	■												
26.9	■	■	■	■	■	■	■												
31.8		■	■	■	■	■	■	■											
33.7		■	■	■	■	■	■	■											
38.0		■	■	■	■	■	■	■											
42.4		■	■	■	■	■	■	■	■										
48.3		■	■	■	■	■	■	■	■	■	■								
51.0		■	■	■	■	■	■	■	■	■	■								
57.0			■	■	■	■	■	■	■	■	■								
60.3			■	■	■	■	■	■	■	■	■	■							
70.0			■	■	■	■	■	■	■	■	■								
76.1				■	■	■	■	■	■	■	■	■							
82.5				■	■	■	■	■	■	■	■	■	■						
88.9					■	■	■	■	■	■	■	■	■						
114.3					■	■	■	■	■	■	■	■	■	■	■				
139.7					■	■	■	■	■	■	■	■	■	■	■				
159.0							■	■	■	■	■	■	■	■	■	■	■		
168.3							■	■	■	■	■	■	■	■	■	■	■		
193.7							■	■	■	■	■	■	■	■	■	■	■		
219.1								■	■	■	■	■	■	■	■	■	■	■	■
244.5									■	■	■	■	■	■	■	■	■	■	■
273.0									■	■	■	■	■	■	■	■	■	■	■
323.9									■	■	■	■	■	■	■	■	■	■	■
355.6									■	■	■	■	■	■	■	■	■	■	■
406.4										■	■	■	■	■	■	■	■	■	■
457.0										■	■	■	■	■	■	■	■	■	■
508.0										■	■	■	■	■	■	■	■	■	■

The table above is for guidance only, some sizes may not be standard or covered by regular manufacturing cycles. Other sizes may be available upon request. Please refer to the relevant technical literature or contact one of our account managers for confirmation of product specifications, sizes, lengths and finishing options available.

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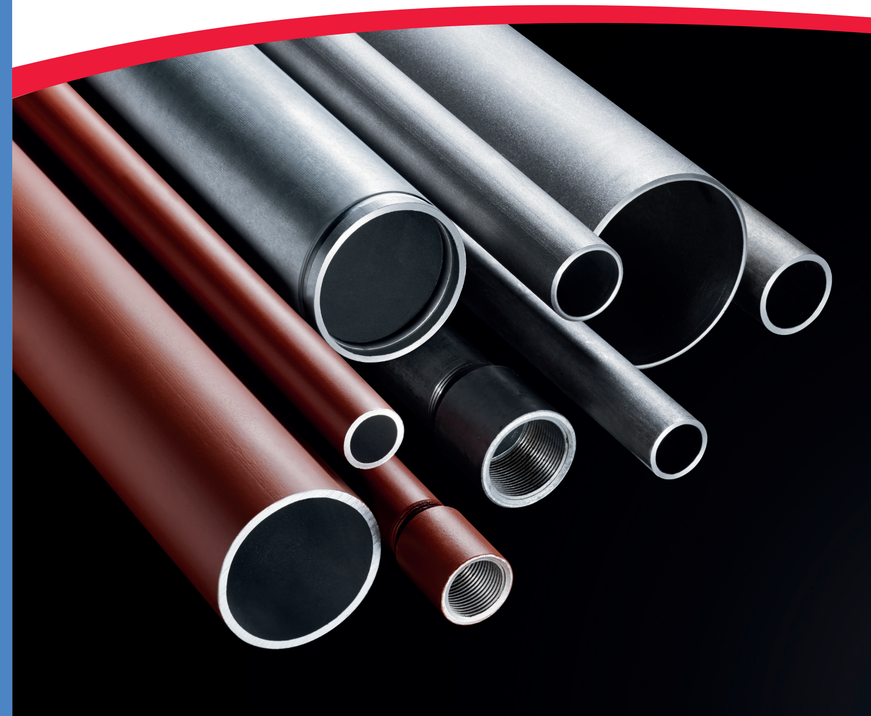
TATA STEEL

TATA

The complete solution

A dedicated family of tube products for conveyance and pressure applications



THE PRODUCT FAMILY

Multi-certified pressure products - the complete solution

We are Tata Steel
Tata Steel is one of Europe's largest steel manufacturers, with many decades of experience in the production of robust and reliable conveyance and pressure tube products.

The challenge
In today's markets, customers are presented with a confusing assortment of different standards, regulations and tube specifications, making it difficult to clearly understand what tube product is best suited for any particular market application.

The solution
Our family of multi-certified and aligned HFW (High Frequency Welded) tubes, deliver a rationalised, simplified and convenient range of dedicated products, to satisfy the widest range of conveyance and pressure requirements.

Maximum flexibility
By manufacturing to the widest range of aligned standards, even historic ones, we provide the ability to satisfy project specifications, and service different market requirements from a rationalised range.

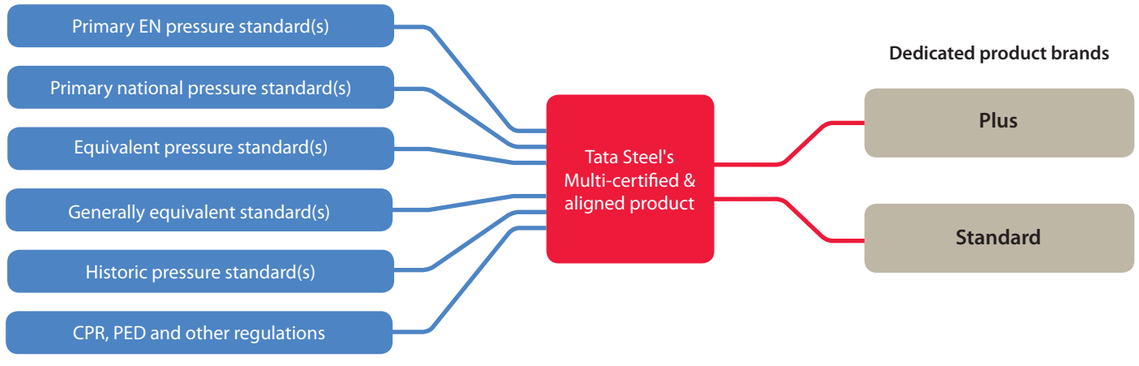
Hot vs cold
Unlike cold-formed alternatives, our fully hot-finished products provide uniform fully stress-free tubes, with consistent mechanical properties, improved ductility and no loss of structural integrity as a result of subsequent heating, delivering true application benefit.

Seamless substitution
Our hot-finished (fully normalised or weld line annealed) products are an ideal cost effective substitute for comparable hot-finished seamless products, whilst providing improved ovality, uniform wall thickness, better end matching and tighter control on standard lengths.

Multiple options that can confuse or restrict flexibility

Our simplified tube offering for maximum convenience and flexibility

Dedicated brands, with 'Standard' and 'Plus' options to satisfy a wide range of market requirements



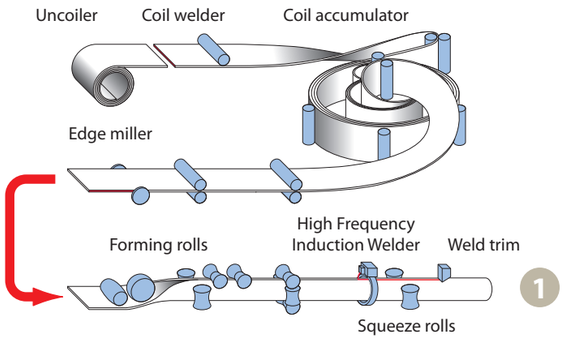
'**Plus**' products have enhanced applications suitability, delivering additional features and benefits to satisfy customer and market demands

Multi-cert, hot-finished **Install® Plus 235**	Multi-cert, hot-finished **Inflow™ Plus 235 & 355**	Multi-cert, hot-finished **Inline™ Plus 360**
Single cert, hot-finished **Install® 195 & 235**	Dual cert, cold-formed **Inflow™ CDC 235**	Multi-cert, hot-finished **Inline™ 245 & 265**
		
S Grades Based on EN10255	**P Grades Based on EN10217**	**L Grades Based on EN ISO3183**
Building and engineering services	**General purpose pressure and industrial conveyance**	**Specialist building and engineering services - industrial, process and line-pipe**

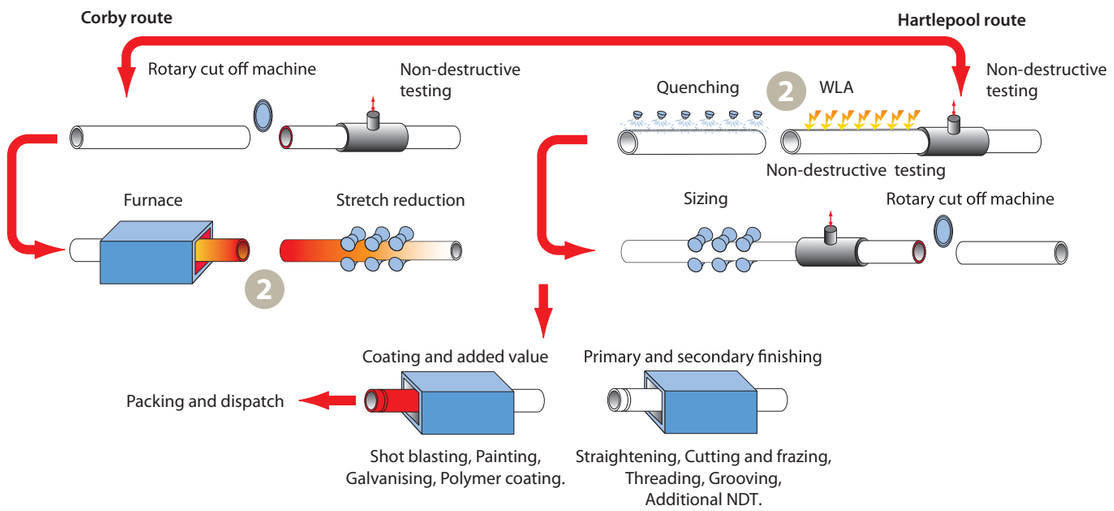
MADE WITH CONFIDENCE

Proven, robust, consistent and fully supported

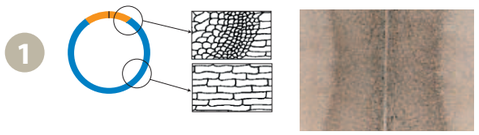
Process diagram



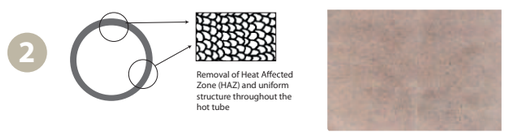
Corby route



Hartlepool route



Cold-formed tube micrograph: Inconsistent structure with pockets of stress and variations in mechanical properties.



Hot-finished tube micrograph: Stress free, consistent and uniform fine microstructure, with no variations in mechanical properties.

Product testing

All products undergo stringent testing to ensure full compliance with the relevant primary product standards; in addition we carry out regular supplementary testing as part of our in-house quality process.

Pressure tightness

Tube integrity is proven through both destructive (flattening and drift expansion) and non destructive testing (e.g. eddy current, ultrasonic (V=1.0) or hydro-testing) where applicable.

Weld seam integrity

The HFW weld seam is structually sound, of an equivalent strength to the rest of the tube body, and is able to withstand excessive force; it is not a weak point, thereby dispelling an incorrectly held belief.

Internal weld bead

Where applicable, the internal weld bead is fully trimmed and removed, providing a clear, unrestricted tube bore, dispelling another incorrectly held belief that the internal weld bead is always left in place on HFW welded products.

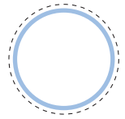
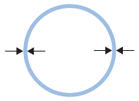
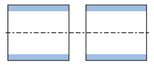
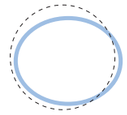
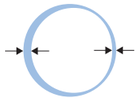
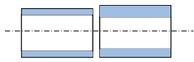
Hot vs cold

Our hot-finished manufacturing process routes (fully normalised for Corby sizes ≤OD193.7 mm, and Weld Line Annealed (WLA) normalised strip for Hartlepool sizes ≥OD219.1 mm) provide a range of products with consistent mechanical properties and improved ductility delivering true application benefit.

Seamless substitution

Our hot-finished products are aligned with comparable seamless standards, and are therefore interchangeable, and an ideal substitute for comparable hot-finished carbon steel seamless products, delivering real benefits, and providing end users with the flexibility to service both welded and seamless market requirements from the same product stock.

Welded vs seamless - the benefits of HFW

	Ovality	Wall	End matching	Length tolerances
Advantages of HFW Welded	 Consistent roundness	 Consistent thickness	 Consistent	 Fixed length as standard (mm)
Disadvantages of Seamless	 Out of roundness	 Inconsistent thickness	 Inconsistent	 Random length as standard (m)

A SIMPLIFIED APPROACH

Dedicated brands for targeted market applications - making it easier for you, your customer and specifiers

With confidence

Proven and robust, multi-certified, high quality tube products, UK manufactured to exacting standards, using fully traceable, fully killed, hot rolled coil supplied from our steel works in Port Talbot, Wales.

Product offering

Our Install®, Inflow™ and Inline™ products are avaibable in a wide range of diameters, wall thicknesses and lengths; refer to our technical literature or contact one of our dedicated account managers for full details regarding availability and full product specifications.

Added value finishing

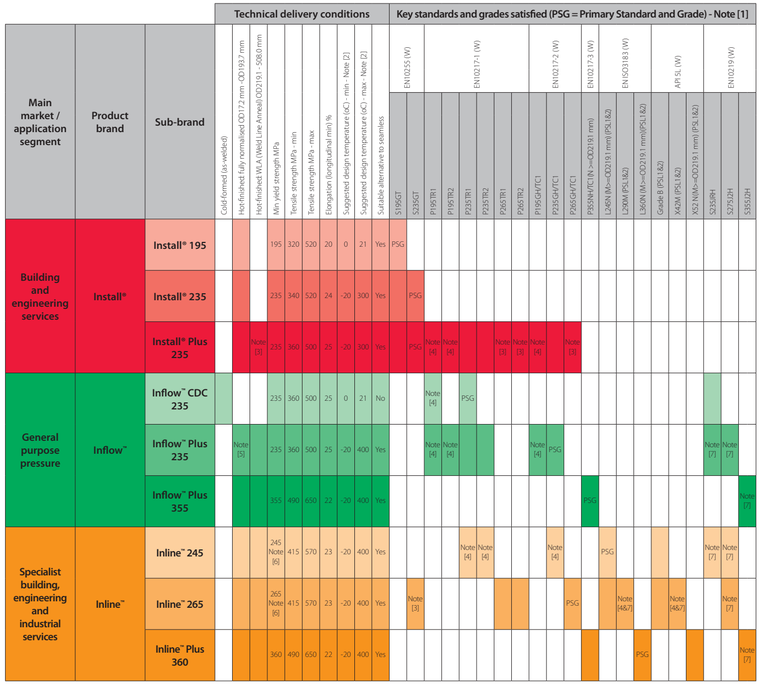
For selected sizes, products can be supplied with a choice of alternative end and surface finishes; please refer to our technical literature or contact one of our dedicated account managers for full details.

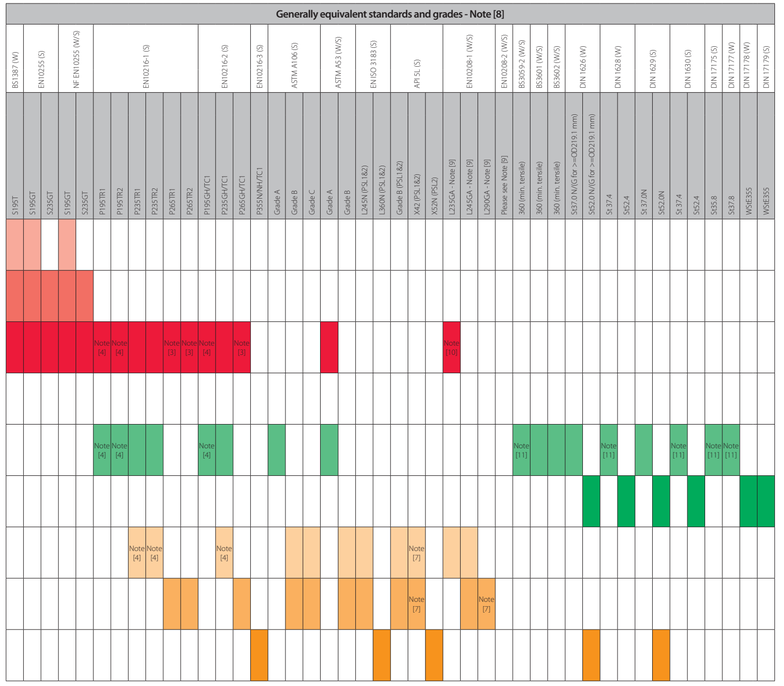
Technical support

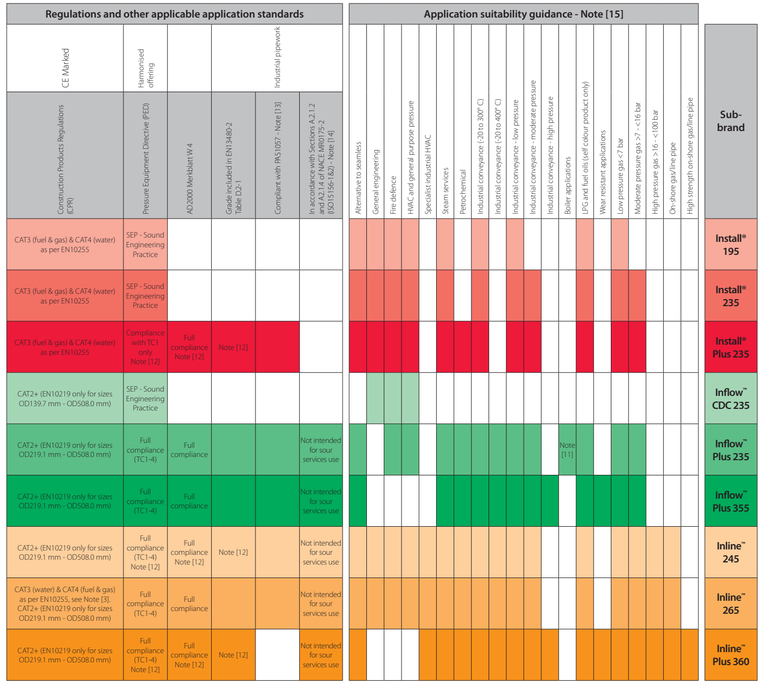
Our Install®, Inflow™ and Inline™ products are supported by a full set of technical literature, including design and pressure data; in addition we have technical experts who can offer advice on applications and product sustainability.

For more information

For detailed technical brochures and other product literature, including the latest version of Technical Support Document TST41, please go to our website or contact one of our account or technical managers for assistance.







1. PSG = Primary Standard & Grade, delivery conditions, test methods etc shall conform to the primary product standard unless otherwise stated within Technical Support Document TST41.
2. These temperatures apply except when used in accordance with EN10219 - as EN10219 is only suitable for ambient temperatures.
3. Only applicable to OD219.1 mm (200 nb), OD273.0 (250 nb) and OD323.9 mm (300 nb) EN10255 sizes that are aligned with the Inline™ 265 offering.
4. Except max tensile, please refer to Technical Support Document TST41 for full confirmation of technical delivery conditions.
5. OD219.1 - OD508.0 mm fully normalised also available on low-temperature option - Inflow™ Plus 235 Low Temp. to be specified at time of order.
6. For sizes ≥OD219.1 mm the min. yield = 290MPa, please refer to Technical Support Document TST41 for full confirmation of technical delivery conditions.
7. For WLA products only, for sizes ≥OD219.1 mm only.
8. For 'generally equivalent', we are stating that the product has equivalent performance to the other referenced product standard(s), only with respect to mechanical properties, pressure rating, formability and welding please refer to TST41 for full details.
9. EN10208 is now a withdrawn standard, we can supply EN10208 product options, please contact our technical or commercial team to discuss your requirements in full.
10. Grade and composition only - see Install® Plus 235 technical data sheets - gas datasheet TST66.
11. Boiler option only - to be specified at time of order.
12. Due to the product also being aligned with a relevant EN10217 standard and grade.
13. Products comply due to alignment with EN10217-2, except for sizes ≤OD42.4 mm which are not individually marked.
14. Products meet the composition heat treatment, hardness and welding requirements only - and are not intended for sour services use.
15. For guidance only - please refer to the relevant technical standards, regulations or customer specifications for confirmation of product suitability for particular applications.

Key: W = Welded S=Seamless