

## Quality & Certification

Our fully integrated steel works at Port Talbot and IJmuiden ensure the quality and traceability of our products are guaranteed through the whole supply chain. This gives us guaranteed consistency in coil and ensures that every tube uses fully-killed steel - a key ingredient for high quality tubes.

Traceability is becoming more and more important and Tata Steel are at the forefront, ensuring the best quality and most efficient tube for the required application.

Tata Steel are approved and have the following certification for our structural hollow section products:

- ISO 9001
- ISO 14001
- OHSAS 18001
- Construction Product Regulation (CPR) with CE Marking
- Declaration of Performance (DOP)
- Factory Production Control (FPC)
- BES 6001
- Environmental Product Declaration (EPD)

For a more in depth list see

[www.tatasteelconstruction.com/certification](http://www.tatasteelconstruction.com/certification)

## Sustainability

The essential properties of steel make it the sustainable choice for a wide range of applications. Steel is strong, durable, versatile, re-usable and most importantly, it is 100% recyclable.

Structural hollow sections made from steel have even better credentials with their high strength-to-weight ratio enhancing efficiency and reducing cost when compared to other structural sections.

Sustainability is not just about delivering environmental benefits – it is about optimising social & economic impacts too. We take the subject very seriously and have gained a 'very good' rating for responsible sourcing according to BES 6001. This looks at not only the finished steel but the up-stream steel making process as well.

Tata Steel is the world's first steel company to become an operator of an Environmental Product Declaration (EPD) Programme. This allows Tata Steel to produce our own EPD's which are valued by our construction clients who require transparent sustainability reporting.



[www.tatasteeleurope.com](http://www.tatasteeleurope.com)

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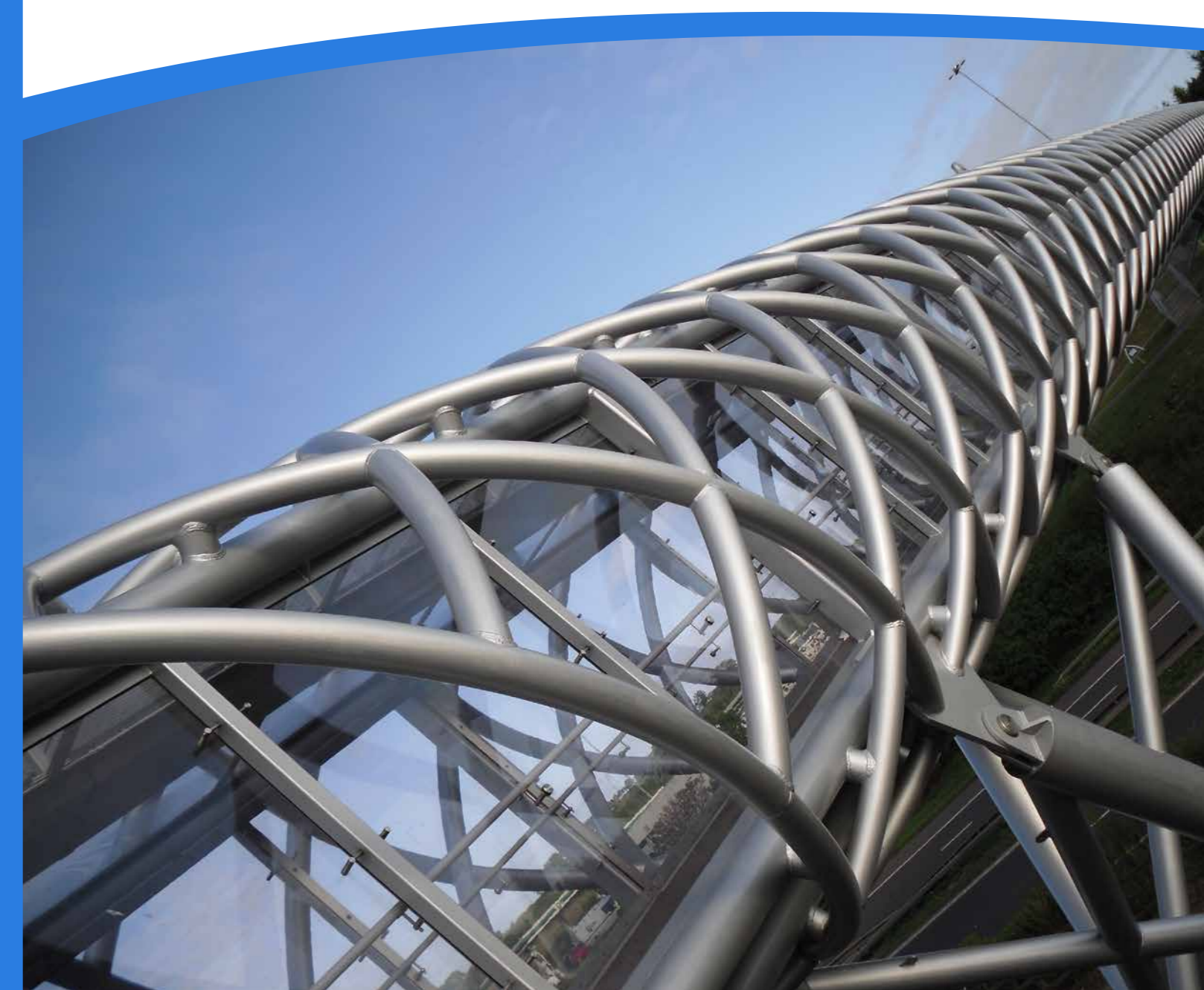
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**TATA STEEL**



## Structural Hollow Sections



# TATA STEEL

We have a long history of manufacturing steel tubes in both the UK and the Netherlands and one of the broadest product ranges of any tube manufacturer. From five manufacturing sites in the UK and the Netherlands, we supply customers throughout Europe with the broadest range of structural hollow sections, for use in everything from buses and ski lifts to bridges and stadia, as well as precision tubes, conveyance and linepipe.

Because we own the supply chain right from steel-making, we can be sure of the consistency and reliability of the steel we use in our structural hollow sections. All of our steel comes from our blast furnaces at Port Talbot in the UK and IJmuiden in the Netherlands.

At Tata Steel, we take pride in our relationship with customers – we build true partnerships which stand the test of time, backed by high quality technical service. That is why we say “Together we make the difference.”

**The right product for the right application**  
Tata Steel offer one of the widest range of structural hollow sections available from any single manufacturer, including both hot-finished and cold-formed HFI-welded tubes from 40mm up to 400mm square. This wide range means we can always recommend the right product for your application.

Our structural tubes find their way into a myriad of end-uses, including fencing, packaging racks, cranes, trailers, agricultural machinery, ski lifts, buildings, bridges, parapets, buses, trailers and offshore structures.

We never stand still – even with the broad range we have, we are continuing to develop this further. We have recently introduced innovative products such as Hybox® TT which helps in efficient processing and our hot-finished range Celsius® is now available in S420NH, S460NH and weathering steel grades. The future promises further innovation from Tata Steel.

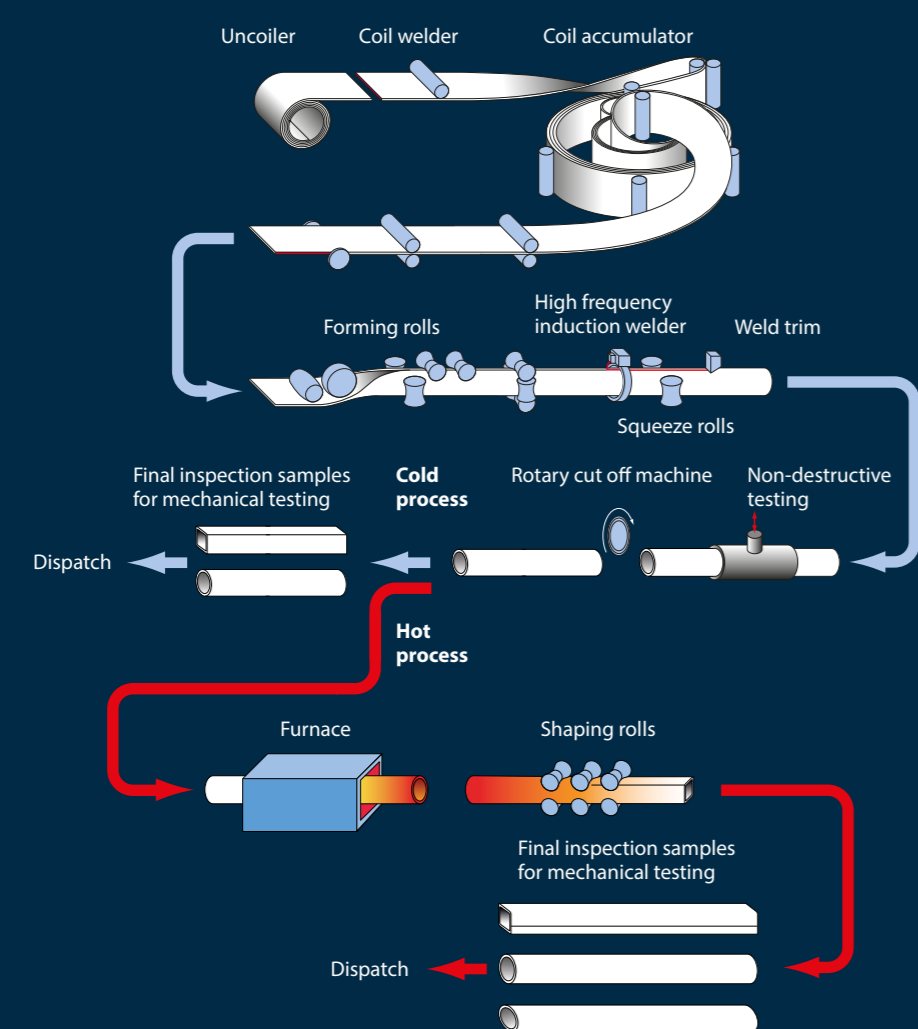
## Manufacturing

Our Strongbox® and Hybox products are cold-formed to EN 10219, while our Celsius range is a true full body normalised hot-finished product to EN 10210. Celsius hollow sections

are formed into their final shape at the normalising temperature of at least 850°C. Shaping at this high temperature gives advantages to Celsius compared to other forms of manufacture as it allows a better metal flow into the corner without introducing any stress, thus improving the mechanical properties around the whole perimeter.

The manufacture also allows for a tighter corner profile giving better aesthetics and improved capacities when comparing Celsius against the same cold formed hollow sections. Cold formed sections, on the other hand are formed into their shape at ambient temperatures, which exhibit a high degree of built in stress particularly in the corner.

## Manufacturing route



## PRODUCTS

### Celsius®

The ultimate range of structural hollow sections for high-performance applications – hot-formed, fully normalised and supported by over 50 years of expertise.

The ultimate structural hollow section. Celsius is a range of true hot-finished, fully normalised tubes offering a wide range of benefits. Made exclusively from fine-grain steel, Celsius hollow sections are fully stress-relieved with uniform mechanical properties. This makes them ideal for demanding structural and mechanical applications – delivering reliable performance even at lower temperatures.

Where looks matter, tight corner profiles, consistent dimensions and superior surface finish are hallmarks of Celsius hollow sections. All Celsius products have low CEV, making them easy to weld, saving fabrication time and cost. For added customer confidence, Celsius is fully traceable, batch tested and supplied with full test certification.

Celsius is available in grades S355NH, S355NLH, S420NH and S460NH, fully compliant to EN 10210 as well as grades S355G1+N and S355G13+N to EN 10225 for offshore structures and in weathering steel grades. It is available in circular hollow sections from 42.4 x 3.2mm to 508 x 17.5mm, in square and rectangular sections from 40 x 40 x 3mm to 400 x 400 x 17.5mm and elliptical sizes from 300 x 150 x 8mm to 500 x 250 x 16mm.

### Hybox®

A range of premium cold-formed structural hollow sections, designed to meet exacting specifications and supported by our extensive technical expertise.

A wide range of high-grade, multi-purpose cold-formed hollow sections, Hybox is perfect for projects where you require guaranteed minimum strength and mechanical properties. It can be used in a wide range of structural and engineering applications, including all those where specific properties and compliance with design codes are required.

Our unique Hybox TT offering brings a new level of performance to cold-formed hollow sections with a combination of improved dimensional tolerances, superior surface finish and clean tube ends. Available in a wide range of grades, Hybox TT enables automated welding, while reducing rework and eliminating shotblasting before painting.

Hybox is available in S355J2H to S700MH and in circular, square and rectangular sections from 33.7 x 3mm or 25 x 25 x 2mm up to 508 x 17.5mm, 400 x 400 x 12.5 or 500 x 300 x 12.5mm. Hybox TT is available in a range of grades from S275J2H to S700MH (and many grades in between). Squares and rectangles are available from 50 x 50 x 2mm up to 250 x 250 x 12.5mm. Circular sections are available from 88.9 x 2mm up to 323.9 x 12.5mm.

### Strongbox®

An economical range of structural hollow sections to EN 10219, specially tailored towards the most popular specifications.

A general purpose hollow section, Strongbox is a cold-formed, low-grade tube, suitable for a wide range of applications including light, non-critical structures. Strongbox is quality-assured and manufactured from fully-killed steel in Western Europe to our high standards and using our integrated steel supply-chain.

Strongbox is available in grades S235JRH and S275JRH according to EN 10219 and in sizes from 33.7 x 3.0mm OD up to and including 139.7 x 6.0mm OD in our circular hollow sections range and from 25 x 25 x 2.0mm up to and including 150 x 150 x 8.0mm and the equivalent rectangles in our rectangular hollow sections range.

## Technical aspects:

Product standard		Celsius®		Hybox®	Strongbox®
		EN 10210	EN 10225	EN 10219	EN 10219
Grades MPa	235	✓		✓	✓
	275	✓		✓	✓
	355	✓	✓	✓	
	420	✓		✓	
	460	✓		✓	
	500			✓	
	600			✓	
Impact Test	JRH	✓		✓	✓
	J0H	✓		✓	
	J2H	✓		✓	
	K2H	✓		✓	
	MH	✓		✓	
	MLH			✓	
	NH	✓			
	NLH	✓			
	G1+N		✓		
	G13+N		✓		

## Product Benefits:

	Celsius	Hybox	Strongbox
Manufactured in Western Europe with a fully integrated supply-chain from steel manufacture to tube-finishing	✓	✓	✓
Suitable for galvanising	✓	✓	✓
Using fully-killed steel for better formability and weldability	✓	✓	✓
Clearly marked for quality assurance	✓	✓	✓
Certified for batch traceability	✓	✓	
Compliant with the CPR through CE marking	✓	✓	✓
Fully normalised and stress-relieved for optimum performance in service	✓		
Tight corner radii for aesthetic appeal and improved geometric properties	✓		
Fatigue-resistant	✓		
Available with ½ tolerances to ease automated manufacturing		Hybox TT	
Available with an enhanced surface finish suitable for direct painting		Hybox TT	
Available with internal weld bead removed	Yes	Depending on size	Depending on size