

Celsius® 420

Raising the standard with the ultimate hot-finished structural steel range

At Tata Steel we are committed to supplying our customers with high quality products. Our latest development comes from our leading product range Celsius® and through advances in steel manufacturing; we are now able to offer our latest innovation in structural steel grades, Celsius® 420.



Innovative hot-finished structural steel products with reliability and proven performance built-in.

Celsius® 420 is the next generation in hot-finished structural steel. Our new steel grade yields greater strength of 420 MPa, requiring less welding, foundations and temporary structures onsite, and offers weight saving capabilities for more cost-effective construction.

The complete range of advanced Celsius® 420 hollow sections combine the ultimate structural steel grade with enhanced aesthetics to support your design ambitions.

Design freedom is at the core of the Celsius® 420 range. Circular, square, rectangular and elliptical hollow sections help you meet a broad scope of specification requirements, while the product's tight corner radii exceeds industry standards to reduce the risk of fracture and delivers improved visual appeal.

Complete confidence in the sourcing and supply of hot-finished structural sections from a company you can trust.

Tata Steel is committed to providing fully traceable hot-finished structural steel products, from raw material through to manufacture. Celsius® 420 is the new product standard, offering an integrated supply chain with proven performance to give you complete reassurance on material quality and composition.

A collaborative approach to sustainable building using the latest innovative techniques in hot-finished structural steel products.

Celsius® 420 is a fully recyclable, cradle to cradle product, providing a completely sustainable solution at the end of the products life. With a stronger steel grade and yield strength of 420 MPa, Celsius® 420 requires less material in use and contributes to a more sustainable building.

Higher performance with confidence

When specifying Celsius® 420 there are a number of intrinsic benefits:

- Guaranteed normalised rolled for a fully stress-relieved product with uniform grain structure and hardness values and stable and uniform mechanical properties across the whole section - making it easy to fabricate, weld and manipulate.
- Guaranteed fine grain steel for consistency - superior steel product.
- Higher yield - enabling weight saving.
- More energy absorbed at lower temperatures (40J @ -20°C) – ideal for demanding applications including offshore structures.
- Tighter corner profiles (2T) for improved aesthetics - good preparation for welding.
- Comprehensive analysis of 14 chemical elements - full visibility and traceability.
- Guaranteed lower CEV of 0.45 - better for weldability.

Table showing weight saving for Celsius® 420 against EN 10210 S355 for a 3m length

Grade	Size (mm)	Weight (kg/m)
Celsius® 420 EN 10210	500 x 300 x 10	122
Celsius® 355 EN 10210	500 x 300 x 12.5	151

Celsius® 420 - Circular Hollow Sections

Size (mm)	2.6	2.9	3.2	3.6	4.0	4.5	5.0	6.3	8.0	10.0
21.3										
26.9										
33.7										
42.4										
48.3										
60.3										
76.1										
88.9										
101.6										
114.3										
139.7										
168.3										
193.7										
219.1										
244.5										
273.0										
323.9										
355.6										

Celsius® 420 - Square Hollow Sections

Size (mm)	3.0	3.2	3.6	4.0	5.0	6.3	8.0	10.0	12.5
40 x 40									
50 x 50									
60 x 60									
70 x 70									
80 x 80									
90 x 90									
100 x 100									
120 x 120									
140 x 140									
150 x 150									
160 x 160									
180 x 180					r				
200 x 200									
220 x 220									
250 x 250									
260 x 260					r				
300 x 300									
350 x 350									
400 x 400									

Celsius® 420 - Elliptical Hollow Sections

Size (mm)	4.5	5.0	6.3	8.0	10.0
150 x 75					
200 x 100					
250 x 125					
300 x 150					
400 x 200					
500 x 250					



Celsius® 420 - Rectangular Hollow Sections

Size (mm)	3.0	3.2	3.6	4.0	5.0	6.3	8.0	10.0	12.5
50 x 30									
60 x 40									
80 x 40									
90 x 50									
100 x 50									
100 x 60									
120 x 60									
120 x 80									
150 x 100									
160 x 80									
180 x 60									
180 x 100									
200 x 100									
200 x 120									
200 x 150									
220 x 120					r	r			
250 x 100									
250 x 150									
250 x 200								r	r
260 x 140									
260 x 180									
300 x 100									
300 x 150							r	r	r
300 x 200									
300 x 250									
350 x 150									
350 x 250									
400 x 120					r	r	r	r	
400 x 150									
400 x 200									
400 x 300									
450 x 250									
500 x 200									
500 x 300									

r = External corner radius >2T but <3T

Tata Steel

PO Box 101, Weldon Road, Corby, Northants
NN17 5UA, United Kingdom

T: +44 (0) 1536 402121

F: +44 (0) 1536 404111

commercialcelsius420@tatasteel.com

www.tatasteelconstruction.com

English Language TST83:PDF:UK:10/2015 Version 3

www.tatasteelconstruction.com

While care has been taken to ensure that the information contained in this publication is accurate, neither Tata Steel Europe Limited, nor its subsidiaries, accept responsibility or liability for errors or for information which is found to be misleading.

Copyright 2015
Tata Steel Europe Limited