

Celsius® structural hollow sections

For offshore applications

Celsius® is a range of true hot finished, fully normalized hollow sections, only from Tata Steel. The unique properties of Celsius® hollow sections make them ideal for all applications in offshore structures.

Celsius® hollow sections are available in a range of grades, some of which are specifically designated for offshore structures. All benefit from fully normalized steel, giving outstanding fatigue resistance as well as guaranteed low temperature toughness.



Hot finished Celsius® hollow sections are a cost-effective, technically compliant solution for all offshore applications and an alternative to seamless sections. Indeed, Celsius® is manufactured to tighter tolerances on shape, straightness and mass than seamless equivalents, with a fully-normalized weld-region and additional NDT testing above the standard requirements to suit the application.

Celsius® is available in a wide range of circular, square and rectangular sizes up to 508mm / 400x400mm / 500x300mm with wall thickness from 3.2mm to 17.5mm. All grades have a low CEV for efficient welding and are suitable for galvanizing.

High strength for efficient structures

With minimum yield strength of 460 MPa, Celsius® S460NH is ideal for creating efficient, sustainable steel structures. In strength-limited applications, this enables real-world weight savings of at least 20%.

Fabrication

All Celsius® grades have a low Carbon Equivalent Value (CEV) to enable efficient welding and fabrication.

Tolerances

Dimensional tolerances are to EN 10210: Part 2 as standard, except for radius which is max 2T (standard states max 3T). Tighter tolerances may be available on request.

Inspection & Testing

All Celsius® hollow sections are subject to specific inspection and testing and are supplied with an inspection certificate type 3.1 to EN 10204. All Celsius® sections undergo 100% weld line NDT inspection to either E4 or U5 standard. Higher NDT tests for specific applications can also be offered.

Technical Support

We want you to get the best from Celsius® hollow sections. Our technical engineers and trained sales staff are always happy to answer your questions on steel selection and application. Our engineers are available to assist you with the application of all grades of Celsius® for efficient and lightweight design. We can also provide advice on welded joints, including software which can help in their design.

For further technical/design assistance email technicalmarketing@tatasteel.com

Available grades of Celsius® hot finished hollow sections

Product Specification	Old standard reference	Minimum Yield Strength Mpa	Minimum Impact Energy	Carbon Equivalent Value (CEV Max.)
EN 10210 S355NH		355	40J @ -20°C	0.43
EN 10210 S355NLH		355	27J @ -50°C	0.43
EN 10210 S420NH		420	40J @ -20°C	0.45
EN 10210 S460NH		460	40J @ -20°C	0.45
EN 10225 S355NH (2019)	EN 10225 S355G1+N	355	50J @ -20°C	0.43
EN 10255 S355NLH (2019)	EN 10255 S355G13+N	355	50J @ -40°C	0.43
MDS 120 Norsok Y07 (modified)		355	40J @ -20°C	0.43
MDS 120 Norsok Y28 (modified)		355	50J @ -40°C	0.43

Availability

Celsius® structural hollow sections are available across a broad size range. The tables shown here are indicative for Celsius® S355NH. Not all sizes are available in all grades and minimum order quantities may apply. The latest size range availability for all grades can be found on our website. Intermediate sizes not shown here may also be available. For further information please contact your Tata Steel representative for details.

Celsius® is available with internal weld bead trimmed where specified.

Celsius® is available in standard lengths from 6.0m to 14.5m for sizes up to 100/100 or 120/80 and up to 15.3m for all other sizes. Other lengths are available by request.

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. We take sustainability very seriously and as well as being a member of Responsible Steel, we have BES 6001 certification for all our hollow section manufacture. Celsius® is also available with a product specific Environmental Product Declaration (EPD).



Rectangular hollow sections (RHS)

mm	3.2	3.6	4.0	5.0	6.3	8.0	10.0	12.5	16.0	17.5
50/30										
60/40										
80/40										
90/50										
100/50										
100/60										
120/60										
120/80										
150/100										
160/80										
200/100										
200/120										
200/150										
250/100										
250/150										
300/100										
300/200										
350/150										
350/250										
400/200										
400/300										
450/250										
500/200										
500/300										

Circular hollow sections (CHS)

mm	3.2	3.6	4.0	5.0	6.3	8.0	10.0	12.5	16.0	17.5
42.4										
48.3										
60.3										
76.1										
88.9										
114.3										
139.7										
168.3										
193.7										
219.1										
244.5										
273.0										
323.9										
355.6										
406.4										
457.0										
508.0										

Square hollow sections (SHS)

mm	3.2	3.6	4.0	5.0	6.3	8.0	10.0	12.5	16.0	17.5
40/40										
50/50										
60/60										
70/70										
80/80										
90/90										
100/100										
120/120										
140/140										
150/150										
160/160										
180/180										
200/200										
250/250										
300/300										
350/350										
400/400										

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