

## Celsius® Weathering Grade

### Long life, hot finished hollow sections

Combining the corrosion resistance of weathering steel, with a true hot-finished structural hollow section, Celsius® is now available in weathering grade. Weathering steels have small additions of copper and chromium that help improve the corrosion resistance of the steel to atmospheric sources for a long, maintenance-free life.



#### Key product features

- Weathering steel forms a dense patina which protects it from oxygen, slowing corrosion for a useful life of 50 to 120 years.
- Weathering steel doesn't need any further protection eliminating, in most cases, the need for galvanising, painting and ongoing maintenance.
- The natural and evolving patina of weathering grade Celsius® blends in perfectly with the natural environment.
- All Celsius® hollow sections are true Hot-Finished, so free from internal stresses and with tight corner radii to maximise weldable-surface and enhance aesthetic appeal, whilst avoiding the risk of brittle fracture which occurs in some cold formed products.
- The corner radius on squares and rectangles is 2T max. This exceeds the requirements of EN 10210:2006.
- Weathering grade Celsius® has a low CEV of 0.44 max. This guarantees excellent weldability.
- Suitable for galvanising (where necessary) and for low temperature applications (40J @ -20°C).
- Batch-tested and fully traceable, supplied with a full 3.1 test certificate.
- All Celsius® sections are CE marked and fully compliant with the Construction Products Regulation.
- Available in a wide range of circular, square and rectangular hollow sections with a wall thickness up to 16mm.
- Full technical support in material selection and application available.

#### Availability

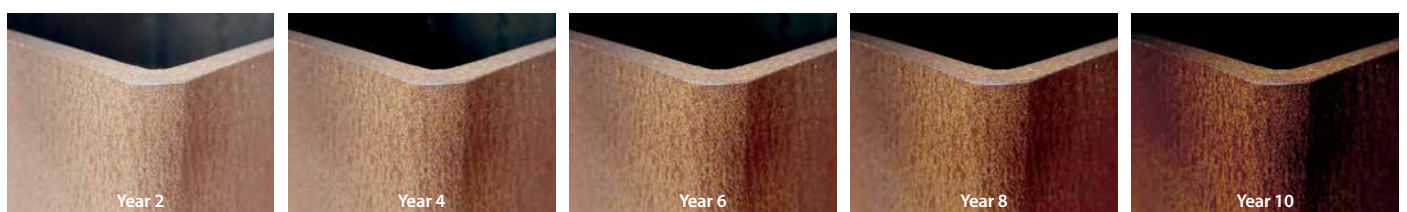
Availability, lead-time and minimum order quantities are dependent on size. Please contact your Tata Steel representative for full details.

- Circular Hollow Sections: from 42.4 x 3mm to 508 x 16mm
- Square Hollow Sections: from 40 x 40 x 3mm to 400 x 400 x 16mm
- Rectangular Hollow Sections: from 50 x 30 x 3mm to 500 x 300 x 16mm

#### Technical data

High strength hot finished hollow sections suitable for a wide range of construction and mechanical applications. Weathering grade Celsius® is suitable for all external applications to European and American design standards.

#### Patina formation



## Mechanical properties

Yield strength ReH min N/mm <sup>2</sup>	Tensile strength R <sub>m</sub> N/mm <sup>2</sup>	Elongation % min L <sub>0</sub> = 5,65 √S <sub>0</sub> specimen	Impact strength 10mm x 10mm		Carbon equivalent (CEV) max
T ≤ 16mm	3mm < T ≤ 100mm	T	°C	J	
355	470-630	22	-20	40	0.44

CEV value **exceeds** the requirements of S355J2WH, prEN 10210 (2016).

## Chemical composition % by mass

C max	Si max	Mn	P max	S max	Nb max	V max	Al total	Ti max	Cr	Ni max	Mo max	Cu	N max
0.16	0.50	0.50 min 1.50 max	0.025	0.008	0.050	0.10	0.020	0.03	0.40 min 0.65 max	0.40	0.10	0.25 min 0.40 max	0.012

- Chemical composition meets or **exceeds** the requirements of S355J2WH, prEN 10210 (2016).
- Available in grades S355J2H and S355K2H.
- Chemistry and mechanical properties comply with ASTM A847.
- The steel is aluminium-killed.

## Tolerances

Dimensional tolerances are to EN10210: Part 2 – for full details, please consult our publication *Celsius® 355NH Technical Guide*.

## Inspection and testing

Celsius® Weathering Grade hollow sections are subject to specific inspection and testing and are supplied with an inspection certificate type 3.1 to EN 10204.

## Designation

Celsius® Weathering Grade hollow sections are designated by their product name, outside dimensions and thickness in millimetres.

## CE marking

Celsius® Weathering Grade hollow sections are manufactured and CE marked in accordance with EN10210-1&2:2006 grade S355J2H or S355K2H. Manufactured from steel with improved atmospheric corrosion resistance (chemistry complies with the requirements for EN10025-5 S355K2W). 3.1 test certification to EN10204.

## Tata Steel

Weldon Road  
Corby, Northants, NN17 5UA  
United Kingdom  
T: +44 (0) 1536 404561  
tubes@tatasteel.com

TU19:Celsius:PDF:EN:0918

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

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

Before using products or services supplied or manufactured by Tata Steel and its subsidiaries, customers should satisfy themselves as to their suitability.

Copyright 2018  
Tata Steel Europe Limited