

## 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

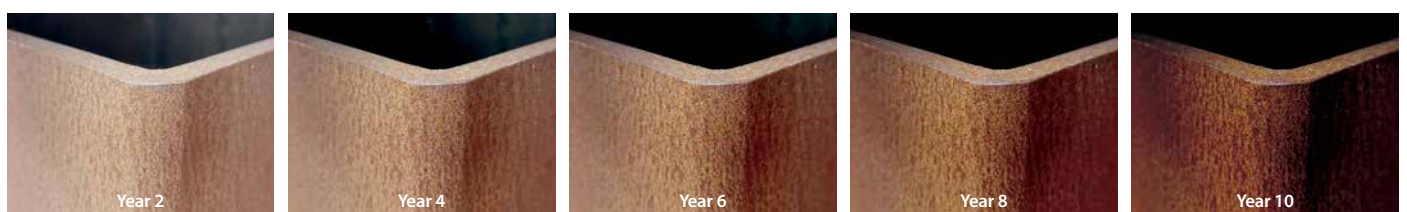
Availability, lead-time and minimum order quantities are dependent on size. Please contact your Tata Steel representative for full details.

- 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.

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