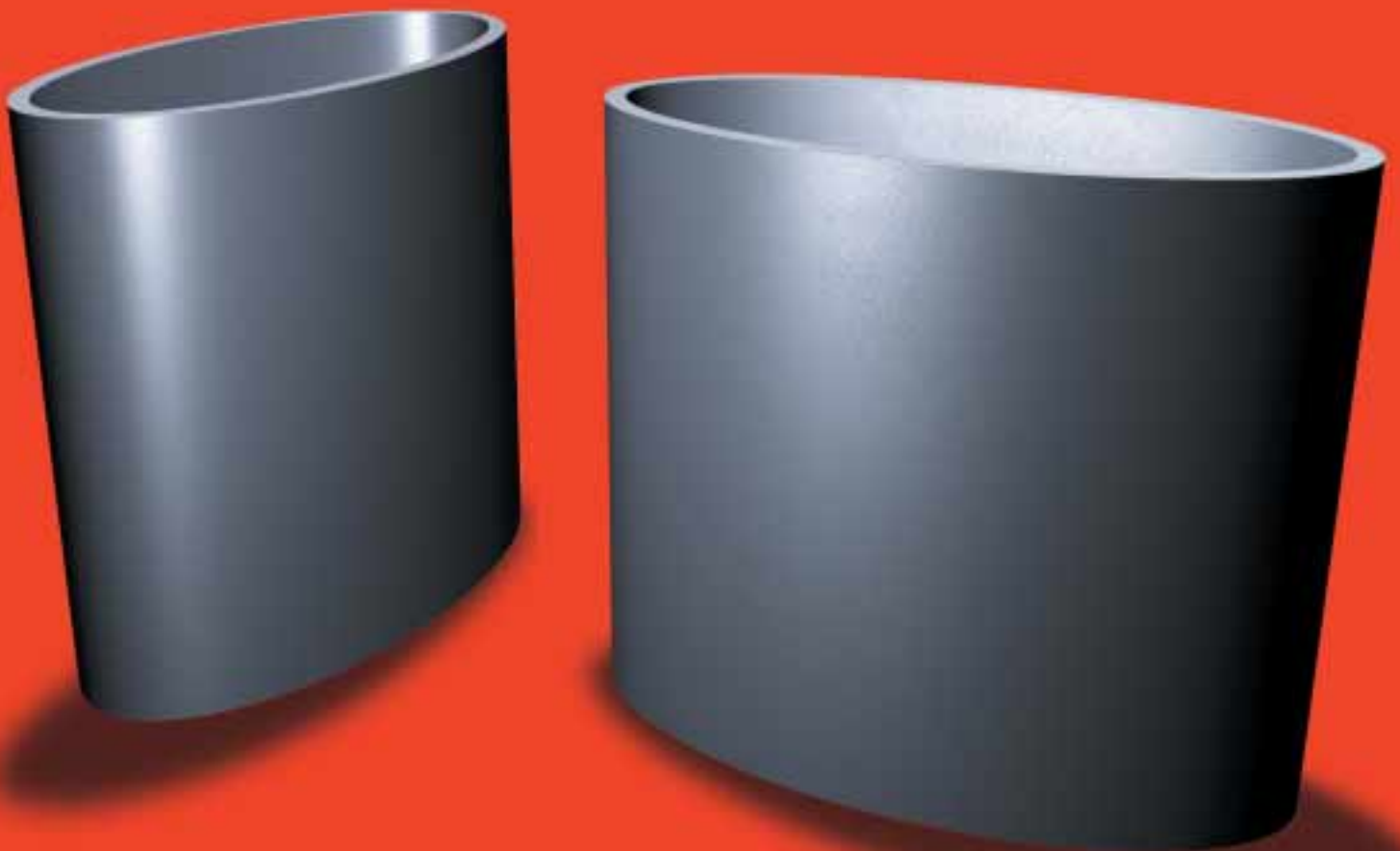


Corus Tubes

Celsius[®] 355 Ovals

Structural & Conveyance Business



Let your designs



take off...



**...with
Celsius[®] Ovals**

Celsius® 355 Ovals

- **Formed at normalising temperature**
- **High sectional properties**
- **Fine grain structure**
- **Uniform mechanical properties**
- **Fully weldable**
- **Negligible residual stress**
- **Suitability for galvanising**

Celsius® 355 Ovals are produced in a standard grade, which fully complies with EN 10210 S355J2H. The grade has a Charpy impact minimum average energy of 27J at -20°C.



Technical data

Celsius® 355 Ovals Specification

Corus Tubes manufactures its Celsius® Ovals in accordance with the technical delivery requirements and the tolerances of EN 10210 the European Standard for hot finished structural hollow sections. Celsius® 355 Ovals are supplied as standard to quality J2 making them suitable for all internal and external applications to BS 5950-1:2000.

Celsius® 355 Ovals are produced by the Electric Weld (EW) process in sizes from 150 x 75mm up to 500 x 250mm. Details of the sizes and thicknesses are shown on the opposite page.

Chemical Composition and Mechanical Properties

Chemical composition - ladle analysis

	Celsius® 355 Ovals
Specification	EN 10210 S355J2H % max
Carbon	0.22
Silicon	0.55
Manganese	1.60
Sulphur	0.035
Phosphorus	0.035
Carbon equivalent (CEV) max T ≤ 16mm	0.45

Mechanical properties

	Celsius® 355 Ovals
Specification	EN 10210 S355J2H
Tensile Strength R _m N/mm ² : 3 ≤ T ≤ 65mm	490 - 630
Yield Strength R _{eH} min. N/mm ² : T ≤ 16mm	355
Min Elongation % T ≤ 40mm on gauge length 5.65. √S ₀	22
Impact properties Minimum Ave energy (J) 10 x 10mm Specimen at -20°C	27

Inspection and Testing

Celsius® 355 Ovals are submitted to specific inspection and testing, and supplied with an inspection certificate to EN 10204 type 3.1.B.

Designation

Celsius® 355 Ovals are designated by their outside dimensions and thickness in millimetres followed by their product standard and the material grade.

Examples:

Celsius® 355 Ovals 400 x 200 x 10.0 EN 10210 S355J2H

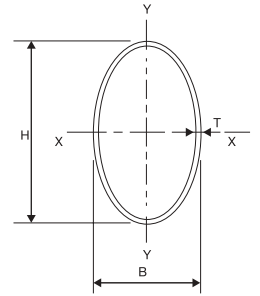
Dimensional tolerances

Specification	EN 10210 S355J2H
Outside dimension (B and H)	± 1% with a min of ± 0.5mm
Thickness (T)	- 10% Note. Positive deviation limited by mass tolerance
Mass (M)	± 6% on individual lengths
Straightness	Maximum 0.2% of the total length.
Length	+150mm-0

Celsius® 355 Ovals

Size mm	Thickness mm						Mill lengths
	4	5	6.3	8	10	12.5	
Elliptical							
150 x 75							7.5, 10.0
200 x 100							7.5, 10.0, 12.0
250 x 125							7.5, 10.0, 12.0
300 x 150							10.0, 12.0
400 x 200							10.0, 12.0
500 x 250							10.0, 12.0

Corus Tubes Celsius 355 oval hollow sections will be manufactured to meet technical delivery requirements of EN10210 in steel grade EN 10210 S355J2H. Dimensional tolerances for external sizes, thickness and mass will be in accordance with EN 10210-2.



Celsius® 355 Ovals - Geometric Properties

Size H x B mm	Thickness T mm	Mass M kg/m	Area A cm ²	Moment of inertia		Radius of gyration		Elastic modulus		Plastic modulus		Torsional constants		Superficial area A _s m ² /m	Approx length/tonne L _t m/t
				I _{xx} cm ⁴	I _{yy} cm ⁴	i _{xx} cm	i _{yy} cm	W _{elxx} cm ³	W _{elyy} cm ³	W _{plxx} cm ³	W _{plyy} cm ³	I _t cm ⁴	C _t cm ³		
150 x 75	4.0	11.0	14.0	313	103	4.72	2.71	41.8	27.6	69.4	36.9	302	65.1	0.364	90.7
	5.0	13.7	17.4	382	125	4.69	2.68	51.0	33.3	85.6	45.2	365	79.7	0.364	73.2
	6.3	17.0	21.7	467	150	4.64	2.63	62.3	40.1	106.2	55.4	440	97.7	0.364	58.8
200 x 100	6.3	23.0	29.3	1149	376	6.26	3.58	115	75.2	192	102	1100	180	0.485	43.5
	8.0	28.9	36.8	1417	457	6.20	3.52	142	91	241	126	1338	222	0.485	34.6
	10.0	35.6	45.4	1709	542	6.14	3.46	171	108	295	152	1588	269	0.485	28.1
	12.5	43.8	55.8	2044	635	6.05	3.37	204	127	361	183	1858	322	0.485	22.8
250 x 125	6.3	29.0	36.9	2295	759	7.88	4.53	184	121	304	162	2217	286	0.606	34.5
	8.0	36.5	46.5	2846	931	7.82	4.47	228	149	382	202	2721	356	0.606	27.4
	10.0	45.1	57.5	3458	1116	7.75	4.41	277	179	470	246	3266	434	0.606	22.2
	12.5	55.7	70.9	4173	1324	7.67	4.32	334	212	577	297	3877	525	0.606	18.0
300 x 150	8.0	44.1	56.2	5011	1653	9.44	5.42	334	220	555	295	4829	521	0.727	22.7
	10.0	54.6	69.6	6118	1997	9.37	5.36	408	266	685	361	5838	638	0.727	18.3
	12.5	67.6	86.1	7426	2390	9.29	5.27	495	319	843	440	6995	776	0.727	14.8
	16.0	85.1	108	9122	2879	9.17	5.15	608	384	1057	542	8428	956	0.727	11.7
400 x 200	8.0	59.3	75.6	12159	4056	12.7	7.33	608	406	999	536	11831	946	0.969	16.9
	10.0	73.7	93.8	14934	4941	12.6	7.26	747	494	1237	660	14428	1164	0.969	13.6
	12.5	91.3	116	18261	5980	12.5	7.17	913	598	1528	808	17481	1427	0.969	10.9
	16.0	116	147	22665	7314	12.4	7.05	1133	731	1925	1006	21405	1776	0.969	8.65
500 x 250	10.0	92.7	118	29685	9903	15.9	9.2	1187	792	1951	1047	28885	1847	1.212	10.8
	12.5	115	147	36460	12063	15.8	9.1	1458	965	2416	1289	35225	2273	1.212	8.69
	16.0	146	186	45533	14892	15.6	8.9	1821	1191	3052	1613	43537	2846	1.212	6.85

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Care has been taken to ensure that this information is accurate, but Corus Group plc, including its subsidiaries, does not accept responsibility or liability for errors or information which is found to be misleading

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