

Heléns stainless steel tubes 4003



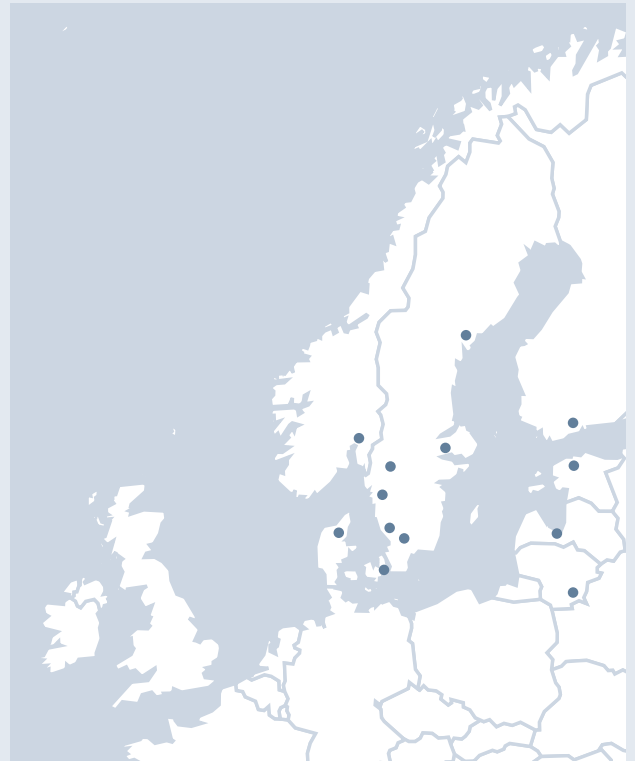
Heléns

Heléns - the trusted brand in engineering and automotive materials

Heléns is among the largest metals materials companies in Europe, serving major companies in a wide range of automotive, engineering, construction and product design industries. Every year Heléns manages around 300,000mt of steel with its tube processing facility handling more than 100,000mt.

Heléns offer both European and Global service and support.

Heléns offer cost-efficient solutions delivered at the right time direct into your production. Processing and stock management is a key part of the service.



Typical processing services include:

- > Lasercutting
- > Flaring
- > Deburring
- > Cleaning
- > Tumbling
- > Sandblasting
- > Bevelling
- > Surface treatment
- > Flairing ends
- > Bending of tubes and hollow sections
- > Milling and turning
- > Threading
- > Piercing



The design solutions stainless steel

Heléns - the optimum choice

As a lean-alloy, stable cost stainless steel, Heléns 4003 is the optimum-choice material for engineering structures in a wide range of applications.

Heléns 4003 offers significant savings compared to conventional, richly alloyed stainless steels, where strength, durability and corrosion resistance is important criteria. It also offers major advantages over coated or treated mild steel or aluminium alternatives, as such additional processes and materials can be eliminated. Essentially, 4003 offers the best-of-both-worlds high performance with high value.

Using a material which lasts longer, is ultimately recyclable, avoids the use of coating processes and additional energy also has positive environmental implications.

The steel is a new generation of low-carbon ferritic stainless steel which in addition to provides corrosion resistance, excellent strength properties and good weldability.

For over 20 years, 4003 utility stainless steel has been proven in applications, around the world. It has been specified by leading manufacturers in many industries, and continues in service, out performing many alternative materials.

Heléns 4003 - delivers more, takes out less

- Lasts longer, resists corrosion
- Takes less material and reduces weight
- Builds strength and safety
- Need no maintenance
- Demands no special welding or joining process
- Is generally a costs saving investment
- Does not usually need coating or treating
- Has lower environmental impact



Sectional tube is the optimum material for structures and frames in many industries, including;

> Coach, bus, LRT, Tram and Train Constructions	Chassis, frames, box sections, supports
> Highway/maintenance vehicles - sweepers, gritters etc	Chassis, frames, sections, corrosion zones.
> Trucks and specialist vehicles - RCVs, airport vehicles, trailers, refrigeration units, emergency vehicles etc	Chassis, frames, trailer frames, supports, sections, lifts, doors.
> Engineering	Sections, frames, supports, reinforcing, structures, barriers, posts, fencing, decking, safety rails etc
> Designed products	Seating, street furniture, signage etc Parts and components where economic corrosion resistance, strength and elevated temperature performance is a requirement.

Technical properties

Heléns 4003 is stainless steel and needs to be handled as such. Therefore care should be taken to avoid contamination in handling, cutting etc to avoid contamination with less noble metals.

The minimum requirements for the mechanical properties of RST 4003 tubes



	Yield strength	Tensile strength	Elongation
	R _{p0.2} min N/mm ²	R min N/mm ²	A5 min %
RST 4003	320	450	10

The chemical composition of RST 4003 tubes meets the requirements for steel X2CrNi12 (1.4003) in accordance with EN 10088-22

	C % max	Si % max	Mn % max	P % max	S % max	N % max	Cr %	Ni % max
RST 4003	0.030	1.00	1.50	0.040	0.015	0.030	10.50 - 12.50	0.30 - 1.00

The dimensional tolerances for RST 4003 tubes

Circular RST 4003 tubes	Tolerances (in accordance with standard En 10305-3 for precision tubes)
Outside diameter, D [mm]	
20 ≤ D < 32	± 0.15 mm
32 ≤ D < 44	± 0.20 mm
44 ≤ D < 55	± 0.25 mm
Out-of-roundness	Included in outside diameter tolerance
Wall thickness, T	± 10% of normal thickness
Length, L	0/ +50 mm
Straightness	0.20% of total tube length
Square and rectangular RST 4003 tubes	Tolerances (in accordance with standard EN 10219-2 for structural hollow sections)
Outside dimensions, B and H	± 1% minimum ± 0.5 mm, when B, H < 100 mm ± 0.8%, when B, H ≥ 100 mm
Concavity/convexity	± 0.8% of side length, minimum ± 0.5 mm
Wall thickness, T	± 0.10% of normal thickness
Squareness	90° ± 1
Outside corner radius, R	2.0 T - 3.0 T, when T ≤ 2 mm *) 1.6 T - 2.4 T when T > 2 mm
Length, L	0/ +50 mm
Straightness	0.15% of total tube length
Twist	2 mm + 0.5 mm/m

*) Deviates from standard EN 10219-2 requirement

Product range

Material is manufactured in Square, rectangular and circular weld tube sections up to standard lengths of 6m (Other lengths can be supplied by agreement).

Tube section material meets EN 10088-2 specification for steel grade X2CrNi12 (1.4003).

Dimension tolerances for round tubes are based on EN 10305-3 standard. Rectangular and square-

tubes are produced to EN 10219-2 standard for structural hollow sections.

Products are supplied with an EN 10204 inspection document as agreed at the time of order.

Material tracability is provided through continuous ink-jet marking, with dimensions and input steel identification number.

Dimensions

Circular RST 4003 tubes

Outside diameter, D [mm]	Weight [kg/m] Wall thickness, T [mm]		
	1.5	2.0	3.0
22	0.748	0.973	1.39
25	0.857	1.12	1.60
28	0.967	1.26	1.82
30	1.04	1.36	1.97
32	1.11	1.46	2.12
35	1.22	1.60	2.33
42	1.48	1.95	2.84
43	1.51	1.99	2.92
45	1.59	2.09	3.06
48	1.70	2.24	3.28
50	1.77	2.33	3.43

The weights have been calculated using the nominal dimensions. Density = 7.74 kg/dm³.

Square RST 4003 tubes

Outside dimensions, H x B [mm]	Weight [kg/m] Wall thickness, T [mm]			
	1.5	2.0	3.0	4.0
20 x 20	0.814	1.03		
30 x 30	1.28	1.65		
35 x 35	1.51	1.96	2.79	
40 x 40	1.74	2.27	3.26	4.14
50 x 50	2.21	2.89	4.19	5.38
60 x 60	2.67	3.51	5.11	6.62
70 x 70	3.14	4.13	6.04	
80 x 80	3.60	4.75	6.97	9.09

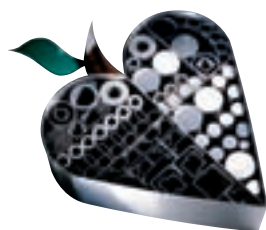
The weights have been calculated using the nominal dimensions and an outside corner radius R = 2 x T. Density = 7.74kg/dm³.

Rectangular RST 4003 tubes

Outside dimensions, H X B [mm]	Weight [kg/m] Wall thickness, T [mm]			
	1.5	2.0	3.0	4.0
30 x 20	1.05	1.34		
40 x 20	1.28	1.65		
40 x 30	1.51	1.96	2.79	
50 x 30	1.74	2.27	3.26	4.14
50 x 40	1.98	2.58	3.72	
60 x 30	1.98	2.58	3.72	
60 x 40	2.21	2.89	4.19	5.38
70 x 30	2.21	2.89	4.19	
70 x 50	2.67	3.51	5.11	
80 x 40	2.67	3.51	5.11	6.62
80 x 60	3.14	4.13	6.04	7.85
90 x 50	3.14	4.13	6.04	7.85
100 x 40	3.14	4.13	6.04	7.85
100 x 50		6.51	8.47	
100 x 60	3.60	4.75	6.97	9.09
100 x 80	4.07	5.37	7.90	10.3
110 x 70		5.37	7.90	10.3
120 x 40	3.60	4.75	6.97	9.09
120 x 50	3.83	5.06	7.44	9.71
120 x 60	4.07	5.37	7.90	10.3
120 x 80	4.53	5.99	8.83	11.6
140 x 80			9.76	12.8
150 x 50	4.53	5.99	8.83	11.6

The weights have been calculated using the nominal dimensions and an outside corner radius R = 2 x T. Density = 7.74kg/dm³.

The presentation in this brochure is accurate to the best of our knowledge and understanding. Although every effort has been made to ensure accuracy, the company cannot accept responsibility for any loss, damage or other consequence resulting from the use of this publication. We reserve the right to make changes.

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