

Hardox® Tube 400

General Product Description

Abrasion-resistant tubes for extreme performance and extended service life

Hardox® Tube 400, as hard and tough as our wear plates, offer outstanding performance when you need both high wear resistance and a lighter product.

Dimension Range

Hardox® 400 tubes are available in circular shape.

Circular	76.1 - 219.1 mm
Wall thickness	3.0 - 6.0 mm
Mill length	6000 mm

Other lengths are available upon request.

Circular

Diameter	3.0 mm	4.0 mm	5.0 mm	6.0 mm
76.1 mm	5.41	7.11	8.77	10.4
88.9 mm	6.36	8.38	10.4	12.3
101.6 mm	7.29	9.63	11.9	14.2
108 mm	7.77	10.3	12.7	15.1
114.3 mm	8.23	10.9	13.5	16.0
121 mm	8.73	11.5	14.3	17.0
133 mm	9.62	12.7	15.8	18.8
139.7 mm		13.4	16.6	19.8
168.3 mm			20.1	24.0
193.7 mm			23.3	27.8
219.1 mm				31.5

Mechanical Properties

Wall Thickness (mm)	Hardness HBW ¹⁾ (HBW)
3.0 - 6.0	360 - 440

¹⁾ Brinell hardness test, HBW, according to EN ISO 6506-1.

Chemical Composition

C (max %)	Si (max %)	Mn (max %)	P (max %)	S (max %)	Cr (max %)	Ni (max %)	Mo (max %)	B (max %)
0.30	0.70	1.60	0.020	0.010	1.50	1.5	0.60	0.005

The steel is grain refined.

Carbon Equivalent CET(CEV)

Product type	Hardox® 400
Wall Thickness (mm)	3.0 - 6.0
Typ CET(CEV)	0.33 (0.52)

$$CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40}$$

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

Tolerances

Characteristic	Circular wear tube Tolerances based on the requirements of EN 10219
Outside diameter (D) ¹⁾	±1%, with a minimum of ±0.5 mm and a maximum of ±10 mm
Out-of-roundness	2%, when D/T ≤ 100
Thickness (T)	±10% when T ≤ 5 mm and ±0.5 mm when T > 5 mm
Straightness	0.20% of total length and 3 mm over any 1 m length
Mass per unit length	Individual tube: ±6%
Standard length	≥ 6000 mm: 0/+50 mm
Exact length	Agreed at the time of enquiry and order

¹⁾ All external dimensions are measured with a minimum distance from the end of the section. The distance must be a minimum of 100 mm.

Delivery Conditions

The Hardox® Tube 400 is delivered in as-rolled condition lightly oiled.

Delivery requirements can be found in SSAB's brochure 41-General product information Strenx®, Hardox®, ArmoX and Toolox-UK or at www.ssab.com.

Fabrication and Other Recommendations

Recommendations can be found in SSAB's brochures at www.hardox.com or consult Tech Support, techsupport@ssab.com.

Appropriate health and safety precautions must be taken when welding, cutting, grinding or otherwise working on this product. Grinding, especially of primer coated plates, may produce dust with a high particle concentration.

Contact Information

www.ssab.com/contact