

HARDOX® TUBES & PIPES, THE INSIDE STORY

Hard and tough on wear, easy in the workshop

- Perfect for pumping wet concrete
- Uniform properties in the entire tube
- Field test shows 4-5 times extended service life
- Compatible with standard sized elbows and fittings



Field test*	Wear rate mm/1000 m ³ (inches/1308 cubic yards)	Relative service life Mild steel = 1	Service life for a 4 mm (0.156") thick tube, m ³
Mild steel pipe	0.6 (0.024)	1	5,000-10,000
Hardox® 500 pipe	0.12 (0.005)	4-5	30,000-40,000
Double-walled pipe	0.07 (0.003)	8-9	50,000-70,000

* In the field test, Hardox® 500 pipe was installed in two sections of a concrete pump truck (1 and 2 above) to measure the wear rate. Particle fractions were 16-25 mm (0.630-0.984") and 25-32 mm (0.984-1.260"), rock type granite. In total, 17,000 m³ (22,200 cubic yards) of concrete were pumped.

FAMILIAR HARDNESS IN CIRCULAR SHAPE

SSAB has developed a range of wear-resistant steel tubes and pipes that are suitable for transporting wet concrete, soil, gravel, ore slurry and other abrasive materials.

Despite their hardness, Hardox® 400 and 500 tubes and pipes can be welded, cut, milled and drilled using standard workshop practices. They also fit perfectly with the new overlay elbows currently being developed by SSAB. Hardox® 400 and 500 tubes and pipes are usually a more cost-efficient alternative to products such as double-walled pipes.

PRESSURE RESISTANT

Hardox® 400 and 500 tubes and pipes have been subjected to extensive pressure tests. All dimensions could withstand a peak pressure of 600 bar (8,700 psi). Hardox® 500 tubes and pipes in diameters of 108 mm (4.25") and 133 mm (5.24") with a 4 mm (0.118") wall thickness could withstand at least 900 bars (13,100 psi), until burst. In six hour static tests, the pipes cleared 300 bar (4,350 psi) of pressure without plastic deformation.

STOCK AVAILABILITY

Hardox® 500 tubes and pipes are available in diameters of 76.1, 88.9, 101.6, 108, 114.3, 121 and 133 mm (3", 3.5", 4", 4.25", 4.5", 4.76" and 5.24") with a wall thickness between 3.0 and 6.0 mm (0.118-0.236").

Hardox® 400 tubes and pipes are available in diameters of 139, 168.3 and 219.1 mm (5.472", 6.626" and 8.622") with a wall thickness of 6.0 mm (0.236").

UNIFORM PROPERTIES

Hardox® 500 tubes and pipes are roll formed and plasma welded before quenching. This guarantees that the mechanical properties in the weld are the same as in the rest of the material.

Properties	Hardox® 400 tubes and pipes	Hardox® 500 tubes and pipes
External diameter	76.1-219.1 mm (3-8 5/8")	76.1-133 mm (3-5.24")
Cross section	Circular	Circular
Wall thickness	3.0 / 4.0 / 5.0 / 6.0 mm (0.118" / 0.157" / 0.197" / 0.236")	3.0 / 4.0 / 5.0 / 6.0 mm (0.118" / 0.157" / 0.197" / 0.236")
Standard length	≥ 6000 mm (19' 8")	≥ 6000 mm (19' 8")
Hardness	360-440 HBW	470-530 HBW
Dimension tolerances and testing	According to EN 10219	According to EN 10210
Typical carbon equivalent	CEV 0.52	CEV 0.62

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