

SSAB Boron 22

General Product Description

SSAB Boron 22 is steel for quench- and press hardening. The degree of hardness and toughness that can be achieved after heat-treatment will provide the final products with wear- and shock resistance properties that assure longer lifetime.

Dimension Range

SSAB Boron 22 is available in thickness range 0.70-80.00 mm and widths up to 1800 mm as coils, slit coils and CTL and 3300 mm as plate. Lengths up to 16 meters as cut to length.

Mechanical Properties (typical values)

Condition	Yield strength (MPa)	Tensile strength (MPa)	Elongation A (%)	Hardness (HBW)
Cold rolled annealed	350	500	27	160
Cold rolled water quenched		1580		460
Cold rolled oil quenched		1400		415
Hot rolled	400	600	22	170
Hot rolled annealed	350	530	25	165
Hot rolled water quenched	1080	1500	10	460
Hot rolled oil quenched	920	1170	11	360

BENDING RADIUS

Minimum bending radius of hot rolled strip products is 2 x sheet thickness. A tighter bending radius, 1 x sheet thickness, can be guaranteed for the annealed strip products.

Minimum bending radius of hot rolled SSAB Boron 22 heavy plate is 3 x plate thickness up to 16 mm thickness. For bending instructions of thicker plates, please contact SSAB's Technical Customer Service at techsupport@ssab.com

Materials testing

A test certificate according to EN 10204/2.2 (chemical composition) is part of the delivery.

A test certificate according to EN 10204/3.1 can be provided by special agreement only.

Chemical Composition

Condition	C (%)	Si (%)	Mn (%)	S (max %)	P (max %)	Cr (%)	B (%)
Cold Rolled	0.20- 0.25	0.10- 0.40	1.10- 1.40	0.010	0.020	0.10- 0.30	0.0008- 0.0050
Hot Rolled Strip	0.20- 0.25	0.10- 0.30	1.10- 1.30	0.010	0.020	0.10- 0.40	0.0008- 0.0050
Hot Rolled Plate	0.20- 0.26	0.10- 0.40	1.10- 1.30	0.010	0.020	0.20- 0.50	0.0008- 0.0050

The steel is grain refined.

Carbon Equivalent Values

Condition	Hot Rolled Strip	Hot Rolled Plate
Typical CEV	0.47	0.50

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

Tolerances

SSAB Boron steels are delivered with SSAB Boron tolerances which meet and exceed the requirements in corresponding EN standards. Tighter tolerances are available on request.

Thickness

Cold rolled coils and sheet products: according to EN 10 131:2006. Tighter tolerances are available on request.

Hot rolled coils and sheet products: according to SSAB Boron thickness tolerances that exceed EN 10051 and correspond to 2/3 of EN 10051:2010 as default value.

Hot rolled plate products: are delivered with tolerances that correspond to ¾ of EN 10 029:2011 as default value.

Length and width

Cold rolled coils and sheet products: according to EN 10 131:2006. Tighter tolerances are available on request.

Hot rolled coils and sheets with mill edges: SSAB Boron width tolerances are corresponding to -0/+20 mm.

Hot rolled coils and sheets with cut edges: SSAB Boron width tolerances are corresponding to -0/+2 mm.

Hot rolled plate products: width tolerance -0/+4-10mm depending on the thickness. Length tolerance -0/+15-25mm depending on length.

Shape

Hot rolled coils and sheets: SSAB Boron is delivered with shape tolerances according to EN 10051:2010. Tighter shape tolerances are available on request.

Hot rolled plate products: Shape tolerances according to EN 10029.

Flatness

Hot rolled sheets: SSAB Boron tolerances correspond to SSAB Flatness Guarantees Class B. SSAB Boron tolerances guarantee a maximum flatness deviation of 6 mm/m in addition to the EN 10051:2010 flatness requirements. Flatness guarantees only apply for cut to length sheets.

Hot rolled plate products: Maximum flatness deviation 6 mm/m.

Surface Properties

Hot rolled strip products and hot rolled plate products: According to EN 10 163-2 Class A, Subclass 3.

Delivery Conditions

Cold rolled coils and sheets are delivered in annealed condition.

Hot rolled coils and sheets are delivered in as-rolled or by separate agreement annealed condition.

Heavy plates are as-rolled.

SURFACE CONDITION

Cold rolled products are available with oiled or dry surface.

Hot rolled strip products are available in non-pickled, pickled dry or pickled & oiled condition.

Heavy plates are available in as rolled, shot-blasted or shot-blasted & primed condition.

Fabrication and Other Recommendations

For information concerning fabrication, see SSAB's brochures on www.ssab.com or consult Tech Support, techsupport@ssab.com.

Appropriate health and safety precautions must be taken when bending, welding, cutting, grinding or otherwise working on the product.

Contact Information

www.ssab.com/contact