

Hardox® 550

General Product Description

At 550 HBW and with a toughness close to Hardox® 500

Hardox® 550, with a nominal hardness of 550 HBW and toughness close to Hardox® 500, increases wear life but not at the expense of crack integrity.

Dimension Range

Hardox® 550 is supplied in plate thickness of 8.0 – 65 mm, up to 2900 mm in width and up to 14630 mm in length. More detailed information on dimensions is provided in the dimension program.

Mechanical Properties

Thickness (mm)	Hardness ¹⁾
8.0- 65.0	525- 575

¹⁾ Brinell hardness, HBW, according to EN ISO 6506-1, on a milled surface 0.5 – 3 mm below surface. At least one test specimen per heat and 40 tons. The nominal material thickness will not deviate more than ± 15 mm from that of the test specimen.

Hardox is through-hardened. Minimum core hardness is 90% of the guaranteed minimum surface hardness.

Impact Properties

Grade	Longitudinal test, Typical Impact energy, Charpy V 10 x10 mm test specimen
Hardox®550	30 J /-40 °C

Chemical Composition

C ^{*)} (max %)	Si ^{*)} (max %)	Mn ^{*)} (max %)	P (max %)	S (max %)	Cr ^{*)} (max %)	Ni ^{*)} (max %)	Mo ^{*)} (max %)	B ^{*)} (max %)
0.44	0.50	1.30	0.020	0.010	1.40	1.40	0.60	0.004

The steel is grain refined. ^{*)} Intentional alloying elements.

Carbon Equivalent CET(CEV)

Thickness (mm)	8 - 31.9	32 - 51	51.1 - 65
Max CET(CEV)	0.49 (0.70)	0.52 (0.75)	0.61 (0.82)
Typ CET(CEV)	0.46 (0.67)	0.49 (0.72)	0.58 (0.79)

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

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

Tolerances

More details are given in SSAB's brochure 41-General product information Strenx, Hardox, Armox and Toolox-UK and Hardox® Guarantees or on www.ssab.com.

Thickness

Tolerances according to Hardox® Thickness Guarantees. Hardox® Guarantees meets the requirements of EN 10 029 Class A but offers more narrow tolerances.

Length and Width

According to SSAB's dimensions program. Tolerances according to SSAB's mill edge standards or tolerances that conform to EN 10 029.

Shape

Tolerance according to EN 10 029.

Flatness

Tolerances according to Hardox® Flatness Guarantee class E, which are more restrictive than EN 10 029 Class N.

Surface Properties

EN 10163-2 Class A Subclass 1.

Delivery Conditions

The delivery condition is Q or QT (Quenched or Quenched and Tempered). The plates are delivered with sheared or thermally cut edges. Untrimmed mill edges available by agreement.

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

Welding, bending and machining.

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

Hardox® 550 is not intended for further heat treatment. It has obtained its mechanical properties by quenching and when necessary by means of subsequent tempering. The properties of the delivery condition cannot be retained after exposure to temperatures in excess of 250°C.

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