HARDOX®
WEAR PLATE

HARDOX 500 PLATE

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GENERAL PRODUCT DESCRIPTION

The bendable, weldable and highly abrasion-resistant steel
Hardox® 500 is a bendable and weldable abrasion-resistant steel at a nominal hardness of 500 HBW. Suitable for applications that demand higher wear resistance.
Hardox 500 enables a longer lifetime, increased payload and increased service life while maintaining good processability with guaranteed impact toughness.

Dimension Range
Hardox 500 is available in thicknesses of 4.0 – 103 mm. Hardox 500 Tuf is available in thicknesses of 4 – 65 mm. Both grades are available in widths up to 3350 mm and lengths up to 14630 mm. More detailed information on dimensions is provided in the dimension program.

MECHANICAL PROPERTIES

Thickness (mm)	Width (mm)	Length (mm)	Hardness [1)] (HBW)	Typical yield strength, not guaranteed (Mpa)
4.0- 32.0	1000- 3350	2000- 14630	470- 530	1250- 1400
32.1- 103.0	1000- 3350	2000- 14630	450- 540	1250- 1400

[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.
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SSAB

HARDOX 500 PLATE

Impact Properties

Grade	Longitudinal test, Typical Impact energy, Charpy V 10 x10 mm test specimen [2)]	Guaranteed transverse test Impact energy, Charpy V 10 x10 mm test specimen[2)]
Hardox 500	37 J/-40 C	-
Hardox 500 Tuf		27 J / 0 C

[2)] For thicknesses between 6- 11.9 mm, subsize Charpy V-specimens are used. The specified minimum value is then proportional to the cross-sectional area of the test specimen, compared to a full-size specimen (10 x 10 mm). Impact testing according to ISO EN 148 per heat and thickness group. Average of three tests. Single value minimum 70% of specified average. Impact test is performed from 6 mm.

CHEMICAL COMPOSITION (HEAT ANALYSIS)

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	1.50	0.60	0.005

The steel is grain refined. [*)] Intentional alloying elements.

Carbon Equivalent CET(CEV)

Thickness (mm)	4.0 - 4.9 mm	5.0 - 9.9 mm	10.0 - 19.9 mm	20.0 - 39.9 mm	40.0 - 103.0 mm
Max CET(CEV)	0.34 (0.49)	0.36 (0.52)	0.43 (0.64)	0.45 (0.66)	0.47 (0.75)

$$CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40} \qquad CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

TOLERANCES

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

Thickness
Tolerances according to SSAB's thickness precision guarantee AccuRollTech. AccuRollTech meets the requirements of EN 10 029 Class A, but offers narrower tolerances.

Length and Width
According to SSAB's dimension program. Tolerances conform to EN 10 029.

Shape
Tolerances according to EN 10 029.

Flatness
Tolerances according to SSAB's flatness tolerances which are more restrictive than EN 10 029 Class N (steel type L).

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Surface Properties
According to EN 10 163-2, 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. 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, help@ssab.com.
Hardox 500 and Hardox 500 Tuf are 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 250ºC .
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.