

ABRASION RESISTANT PLATE

Hardox 450 is an abrasion resistant plate with a hardness of 450 HBW, intended for applications where demands are imposed on abrasion resistance in combination with good cold bending properties. Hardox 450 offers very good weldability.

Applications Dumper bodies, containers, crushers, sievers, feeders, measuring pockets, skips, cutting edges, conveyors, buckets, knives, gears, sprockets, etc.

Chemical Composition (ladle analysis)	Plate thickness	C	Si	Mn	P	S	Cr	Ni	Mo	B	CEV	CET
	inch	max %	max %	max %	max %	max %	max %	max %	max %	max %	typv.	typv.
	1/8 *) - (5/16)	0.21	0.70	1.60	0.025	0.010	0.25	0.25	0.25	0.004	0.41	0.30
	5/16 - 3/4	0.21	0.70	1.60	0.025	0.010	0.50	0.25	0.25	0.004	0.47	0.34
	(3/4) - 1 1/4	0.23	0.70	1.60	0.025	0.010	1.00	0.25	0.25	0.004	0.57	0.37
	(1 1/4) - 2	0.23	0.70	1.60	0.025	0.010	1.40	0.25	0.60	0.004	0.59	0.36
	(2) - 3 3/32	0.26	0.70	1.60	0.025	0.010	1.40	1.00	0.60	0.004	0.72	0.41

*) Plate thickness below 5/32 inch only after special agreement.

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

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

The steel is grain refined.

Hardness HBW
425-475

Mechanical Properties Typical values for 3/4 inch plate thickness	Yield strength	Tensile strength	Elongation
	R _e KSI	R _m KSI	A ₅₀ %
	175	205	14

Impact Properties Typical value for 3/4 inch plate thickness	Test temperature	Impact energy
	°F	Charpy-V, longitudinal Ft-lbs (J)
	-40 (-40 °C)	30 (40)

Testing Brinell hardness, HBW according to EN ISO 6506-1, on a milled surface 0.02-0.12 inch below plate surface per heat and 40 metric tons. Tests are made for every variation of 5/8 inch in the thickness of plates from the same heat.

Delivery Conditions Q.

Dimensions	<p>Hardox 450 is supplied in plate thicknesses of $1/8$"¹⁾-$3 5/32$ inch. More detailed information on dimensions is provided in our brochure 41-General product information Weldox, Hardox, Armox and Toolox-UK.</p> <p>¹⁾Plate thickness below $5/32$ inch only after special agreement.</p>
Tolerances	<p>Thickness tolerance according to SSAB Oxelösund thickness precision guarantee AccuRollTech™, Class B. - AccuRollTech™ Class B meets the requirements of ASTM A6 but offers a more narrow tolerance width. More detailed information is given in our brochure 41-General product information Weldox, Hardox, Armox and Toolox-UK.</p> <p>Flatness tolerances according to SSAB Oxelösund internal requirements, Class N. The SSAB Oxelösund requirements for Class N meet the flatness requirements of ASTM A6 but will be at least twice as close.</p>
Surface Properties	<p>According to ASTM A6.</p>
General Technical Delivery Requirement	<p>According to our brochure 41-General product information Weldox, Hardox, Armox and Toolox-UK.</p>
Heat Treatment and Fabrication	<p>Hardox 450 has obtained its mechanical properties by quenching and when necessary by means of subsequent tempering. The properties of the delivery condition can not be retained after exposure to service or preheating temperatures in excess of 480°F (250°C). Hardox 450 is not intended for further heat treatment</p> <p>For information concerning welding and fabrication, see our brochures on www.hardox.com or consult our Technical Customer Service.</p> <p>Appropriate health and safety precautions must be taken when welding, cutting, grinding or otherwise working on the product. Grinding, especially of primer coated plates, may produce dust with high particle concentration. Our Technical Customer Service Department will provide further information on request.</p>