

HARDOX[®] 450

Data sheet

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, sieves, 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
max	max	max	max	max	max	max	max	max	max	typv.	typv.
inch	%	%	%	%	%	%	%	%	%		
$\frac{1}{8}$ *)-($\frac{5}{16}$)	0.19	0.70	1.60	0.025	0.010	0.25	0.25	0.25	0.004	0.41	0.30
$\frac{5}{16}$ - $\frac{3}{4}$	0.21	0.70	1.60	0.025	0.010	0.50	0.25	0.25	0.004	0.47	0.34
($\frac{3}{4}$)- $1\frac{1}{4}$	0.23	0.70	1.60	0.025	0.010	1.00	0.25	0.25	0.004	0.57	0.37
($1\frac{1}{4}$)- 2	0.23	0.70	1.60	0.025	0.010	1.40	0.25	0.60	0.004	0.59	0.36
(2)- $3\frac{5}{32}$	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 $\frac{5}{32}$ 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 value	Yield strength R_e	Tensile strength R_m	Elongation A_{50}
$\frac{3}{4}$ inch plate thickness	KSI	KSI	%
	175	205	14

Impact Properties

Typical value for $\frac{3}{4}$ inch plate thickness	Testing temperature °F	Impact energy 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 0.02-0.08 inch below plate surface per heat and 40 metric tons. Tests are made for every variation of $\frac{5}{8}$ inch in the thickness of plates from the same heat.

Delivery Conditions

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Dimensions

HARDOX 450 is supplied in plate thicknesses of $\frac{1}{8}$ *- $3\frac{5}{32}$ inch. More detailed information on dimensions is provided in our brochure 41-General product information WELDOX, HARDOX, ARMOX and TOOLOX-UK.

*) Plate thickness below $\frac{5}{32}$ inch only after special agreement.

Tolerances

Thickness tolerances according to SSAB Oxelösund thickness precision guarantee AccuRollTech™.
- AccuRollTech™ meets the requirements of EN 10 029 Class A, but offers a more narrow tolerance.
More detailed information is given in our brochure 41-General product information WELDOX, HARDOX, ARMOX and TOOLOX-UK.

According to EN 10 029.

- Tolerances on shape, length and width.
- Tolerances on flatness according to Class N (Normal tolerances).

Surface Properties

According to EN 10 163-2

- Requirements according to Class A.
- Repair conditions according to Subclass 1.
(Repair welding is allowed)

General Technical Delivery Requirement

According to our brochure 41-General product information WELDOX, HARDOX, ARMOX and TOOLOX-UK.

Heat Treatment and Fabrication

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 exposed to service or preheating temperatures above 480°F (250°C). HARDOX 450 is not intended for further heat treatment.

For information concerning welding and fabrication, see our brochures on www.hardox.com or consult our Technical Customer Service.

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.



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HARDOX®
WEAR PLATE