

HARDOX® 400**ABRASION RESISTANT PLATE**

HARDOX 400 is an abrasion resistant plate with a hardness of about 400 HB, intended for applications where demands are imposed on abrasion resistance in combination with impact and/or good cold bending properties. HARDOX 400 possesses very good weldability.

APPLICATIONS

Crushers, sieves, feeders, measuring pockets, skips, journals, cutting edges, conveyors, buckets, knives, gears, sprockets, dumptrucks, loaders, industrial trucks, lorries, bulldozers, excavators, slurry pipe systems, screw conveyors, presses etc.

CHEMICAL COMPOSITION

(ladle analysis)

Plate thickness mm	C	Si	Mn	P	S	Cr	Ni	Mo	B	CEV	CET
	max %	max %	max %	max %	max %	max %	max %	max %	max %	typv.	typv.
4 –10	0,14	0,70	1,60	0,025	0,010	0,30	0,25	0,25	0,004	0,33	0,23
(10)– 20	0,14	0,70	1,60	0,025	0,010	0,50	0,25	0,25	0,004	0,37	0,26
(20)– 32	0,18	0,70	1,60	0,025	0,010	1,00	0,25	0,25	0,004	0,48	0,29
(32)– 51	0,22	0,70	1,60	0,025	0,010	1,40	0,50	0,60	0,004	0,58	0,35
(51)– 80	0,27	0,70	1,60	0,025	0,010	1,40	1,00	0,60	0,004	0,62	0,41
(80)– 130	0,32	0,70	1,60	0,025	0,010	1,40	1,50	0,60	0,004	0,70	0,48

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

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

The steel is grain-refined.

HARDNESS

HBW
370–430

MECHANICAL PROPERTIES

Typical values for
20 mm plate thickness.

Yield strength	Tensile strength	Elongation	
R_s	R_m	A_5	A_{50}
N/mm ²	N/mm ²	%	%
1000	1250	10	16

IMPACT PROPERTIES

Typical value for
20 mm plate thickness.

Testing temperature	Impact energy
°C	Charpy-V, longitudinal
J	
–40 (–40°F)	45

TESTING

Brinell hardness HBW according to EN ISO 6506-1, on a milled surface 0,5-2 mm below plate surface per heat and 40 t.

FORM OF SUPPLY

Quenched. When necessary, hardness is adjusted by means of subsequent tempering.

DIMENSIONS

HARDOX 400 is supplied in plate thicknesses of 4–130 mm. More detailed information on dimensions is provided in our brochure General Product Information E-40.

TOLERANCES

According to EN 10 029.
– Tolerances on thickness according to Class A.
– Tolerances on flatness according to Class N.
(Normal tolerances)

SURFACE FINISH

According to EN 10 163-2.
– Requirements according to Class A.
– Repair conditions according to Subclass 1.
(Repair by welding is allowed).



DATA SHEET

HARDOX 400

GENERAL TECHNICAL DELIVERY REQUIREMENT

According to our brochure E-40, General Product Information.

HEAT TREATMENT

HARDOX 400 is not intended for further heat treatment.

FABRICATION

HARDOX 400 has obtained its mechanical properties by quenching. The properties of the delivery condition can not be retained after a preheating temperature above 250°C (480°F). HARDOX 400 is not suited for applications requiring hot working at temperatures above 250°C (480°F) since the material may then lose its good properties.

For information concerning welding and fabrication, see our brochures listed below or consult our Technical Customer Service.

Fabrication	Brochure No:
Machining	En-10
Welding	En-11
Bending Shearing	En-12
Cutting	En-14

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.