AR400 Wear Plate

OMEGA STEEL CO.
Istanbul · Dilovası plant

AR400 is the entry class of quenched-and-tempered abrasion-resistant plate: 360–440 HB Brinell, about three times the wear life of S355 in sliding abrasion, yet still bendable to a 3 × t radius and weldable with ordinary low-hydrogen consumables. It is the plate of truck bodies, excavator buckets, chutes, hoppers and liner plates where impact is moderate and the part must be formed. We supply 6–40 mm from EU and Asian mills (Hardox 400, Dillidur 400, XAR 400, Raex 400 and equivalents), cut to size by plasma or laser at Dilovası.

360–440 HB | 6–40 mm | Bendable 3 × t | Weldable, no preheat ≤ 20 mm | Hardox 400 class

Most wear parts are AR400 — not because it is the hardest, but because it is the hardest plate that a workshop can still bend, drill and weld without special measures. If you are replacing S355 that wears out too fast, AR400 is the first step and usually the last.

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Cr	Ni	Mo	B
max. % (ladle)	≤ 0.20	≤ 0.70	≤ 1.60	≤ 0.025	≤ 0.010	≤ 1.00	≤ 0.25	≤ 0.25	≤ 0.005

CEV typically 0.35–0.45 for ≤ 20 mm; the boron is what gives through-hardening at low carbon. Composition is chosen by the mill per thickness to reach the hardness — check the certificate.

HARDNESS AND MECHANICAL PROPERTIES

Property	Requirement	Typical value	Note
Brinell hardness (surface)	360–440 HB	400 HB	EN ISO 6506-1, 0.5–2 mm below surface
Yield strength Rp0.2	not guaranteed	≈ 1 000 MPa	for design use mill data
Tensile strength Rm	not guaranteed	≈ 1 250 MPa	
Elongation A5	—	≈ 10 %	
Charpy V (longitudinal)	—	≈ 45 J at −40 °C	mill guarantee available
Max. service temperature	—	250 °C	hardness drops above

EQUIVALENT GRADES

System	Grade	Note
SSAB	Hardox 400	the reference brand
Dillinger	Dillidur 400 V	
thyssenkrupp	XAR 400	
Raahe / SSAB	Raex 400	
JFE	JFE-EH400	
GB/T 24186	NM400	Chinese mills
ASTM	A514 (approx.)	structural Q&T, not a wear grade

BENDING AND FORMING LIMITS

Thickness	Min. inner radius	Min. die width	Note
6–8 mm	3 × t	10 × t	longitudinal bends: 4 × t
10–12 mm	3 × t	12 × t	grind cut edges before bending
15–20 mm	3.5 × t	14 × t	slow bending, no impact
25–40 mm	4 × t	16 × t	consider hot forming or pre-bent supply

Bend with the cut burr on the inside; remove hardened plasma edges (0.5–1 mm) by grinding on critical bends. Radii apply at ≥ 10 °C plate temperature.

STANDARDS

Mill specifications (Hardox 400, Dillidur 400, XAR 400, Raex 400, JFE-EH400, NM400) · EN ISO 6506-1 Brinell hardness test · EN 10029 plate tolerances · EN 10204 3.1

Updated 22 September 2026 · figures are nominal; the mill certificate governs