DH36 Steel Plate

OMEGA STEEL CO.
Istanbul · Dilovası plant

DH36 is AH36 with the impact test moved to −20 °C: the same 355 MPa yield and 490–630 MPa tensile, a fine-grain killed steel normalised or TM-rolled so that the guaranteed 34 J holds at −20 °C. The class rules require it in the thicker and more highly stressed hull plates — sheer strake, deck stringer, bilge strake, hatch coamings — and throughout the hull of vessels for cold waters and ice class. Supplied 8–80 mm from class-approved mills, certified and stamped, optionally shop-primed, cut and bevelled at Dilovası.

Yield ≥ 355 MPa | 34 J at −20 °C | N or TM rolled | Society-stamped | 8–80 mm

DH36 is the plate the surveyor looks for at the corners of the hull girder — where the thickest plates meet the highest stresses and a crack would run. Same strength as AH36, tougher at −20 °C, and the workhorse grade of offshore and cold-climate tonnage.

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Al	Nb	V	Ti	Cu	Cr	Ni	Mo
max. % (ladle)	≤ 0.18	≤ 0.50	0.90–1.60	≤ 0.035	≤ 0.035	≥ 0.015 (total)	0.02–0.05	0.05–0.10	≤ 0.02	≤ 0.35	≤ 0.20	≤ 0.40	≤ 0.08

Ladle analysis; fine-grain practice with Al (≥ 0.015 % total) for the higher grades. Carbon equivalent CEV ≤ 0.40 for the 36 grades (≤ 0.38 for TMCP).

MECHANICAL PROPERTIES

Property	Requirement	Typical value	Note
Yield strength ReH	≥ 355 MPa	375–420 MPa	
Tensile strength Rm	490–630 MPa	510–560 MPa	
Elongation A5	≥ 21 %	24–30 %	
Charpy V longitudinal	≥ 34 J at −20 °C	> 120 J	
Charpy V transverse	≥ 24 J at −20 °C	> 80 J	
Delivery condition	AR (thin) / N / NR / TM		N or TM above ≈ 25–35 mm

EQUIVALENT GRADES

System	Grade	Note
IACS / all societies	DH36	LR DH36, BV DH36, DNV NV D36, ABS DH36, RINA DH36, TL DH36, NK KD36
ASTM	A131 Grade DH36	identical
EN 10025-2 / -3	S355J2 / S355N (approx.)	no class certificate
EN 10025-4	S355M	TM equivalent
JIS G3106	KD36	
GB 712	DH36	Chinese

AH36 OR DH36 — THICKNESS AND ZONE

Hull area	AH36 up to	DH36 up to	EH36 from
Internal structure, decks inboard (class I)	30 mm	50 mm	> 50 mm
Shell, bottom, strength deck outboard (class II)	20–25 mm	40 mm	> 40 mm
Sheer strake, stringer, bilge strake amidships (class III)	15–20 mm	25–30 mm	> 30 mm
Hatch corners, coaming tops, crane pedestals	15 mm	25 mm	> 25 mm
Design temperature ≤ −10 °C (ice class, polar)	not used exposed	per rules	per rules

Values differ between societies and with ship length; the class-approved drawings and material plan are the reference.

STANDARDS

IACS UR W11 · LR / BV / DNV / ABS / RINA / TL rules · ASTM A131 Grade DH36 · Society certificate (3.2 equivalent)

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