DH32 Steel Plate

OMEGA STEEL CO.
Istanbul · Dilovası plant

DH32 carries the H32 series to −20 °C: 315 MPa yield, 440–570 MPa tensile and 31 J longitudinal at −20 °C, normalised or thermo-mechanically rolled with fine grain. Class rules assign it to the thicker plates and the higher-stress zones of an H32 hull — bilge and sheer strakes, deck stringers, coamings — and to hulls of vessels operating in the Baltic, Black Sea winter and ice-class notations where AH32 no longer satisfies the toughness table. Supplied 8–80 mm from class-approved mills, stamped, certified, primed and cut at Dilovası.

Yield ≥ 315 MPa | 31 J at −20 °C | N or TM | Ice-class ready | 8–80 mm

When the class toughness table moves from grade A/AH to D/DH, the mill changes the rolling, not the strength: DH32 is AH32 with a guaranteed −20 °C Charpy and a normalised or TM structure that keeps a crack from running in a January sea.

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

IACS UR W11 ladle analysis for the H32 series; grain refinement by Al, Nb, V or Ti singly or in combination. CEV ≤ 0.36 typical for TM plate, ≤ 0.38 normalised.

MECHANICAL PROPERTIES

Property	Requirement	Typical value	Note
Yield strength ReH	≥ 315 MPa	335–380 MPa	
Tensile strength Rm	440–570 MPa	460–520 MPa	
Elongation A5	≥ 22 %	26–32 %	
Charpy V, longitudinal	≥ 31 J at −20 °C	60–120 J	t ≤ 50 mm; 22 J transverse
Charpy V, t 50–70 mm	≥ 38 J at −20 °C	—	50 J above 70 mm
Bend test	180°, 3 t	passes	transverse

EQUIVALENT GRADES

System	Grade	Note
ASTM A131	DH32	identical
LR	DH32	
DNV	NV D32	
BV	DH32	
ABS	DH32	
GL (legacy)	GL-D32	
EN 10025-2 (approx.)	S275J2	no class certificate — not a substitute
EN 10025-3 (approx.)	S275N	normalised structural, commercial only

WHEN THE RULES REQUIRE D INSTEAD OF A

Hull member	Thickness ≤ 15 mm	15–20 mm	20–25 mm	25–30 mm	30–40 mm
Deck and shell plating, general	AH32	AH32	AH32	DH32	DH32
Sheer strake, deck stringer	AH32	DH32	DH32	EH32	EH32
Bilge strake	AH32	DH32	DH32	DH32	EH32
Hatch coamings, stringers in tanks	DH32	DH32	DH32	EH32	EH32
Ice-belt plating (ice class)	DH32	DH32	EH32	EH32	EH32

Illustrative for Class I–III members; the society's material class table and the vessel's design temperature govern. We select the grade from the yard's plate schedule, not from this table.

STANDARDS

IACS UR W11 · LR / BV / DNV / ABS / RINA / TL rules · ASTM A131 Grade DH32 · Society certificate (3.2 equivalent)