EH36 Steel Plate

OMEGA STEEL CO.
Istanbul · Dilovası plant

EH36 is the −40 °C grade of the 355 MPa hull-steel series: fully killed, fine-grain, always normalised or thermomechanically rolled, with 34 J guaranteed at −40 °C through the full thickness. The rules call for it in the thickest plates of the hull girder, in ice-class and polar vessels, in offshore structures and in crane and lifting foundations. Supplied 10–100 mm from class-approved EU and Turkish mills with the society certificate, optionally shop-primed, cut and bevelled at Dilovası.

Yield ≥ 355 MPa | 34 J at −40 °C | Always N or TM | Society-stamped | 10–100 mm

Where a hull is thickest and coldest — a 60 mm sheer strake on a container ship, the leg chords of a jack-up, the deck of an arctic supply vessel — the grade is EH36. It is the toughest of the standard 36-series and the one that offshore fabricators specify almost by default.

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

Fine-grain and killed mandatory; offshore orders often restrict P, S ≤ 0.010–0.020 and specify Z35 through-thickness ductility. CEV ≤ 0.38 (TM) / ≤ 0.40 (N).

MECHANICAL PROPERTIES

Property	Requirement	Typical value	Note
Yield strength ReH	≥ 355 MPa	370–420 MPa	
Tensile strength Rm	490–630 MPa	510–560 MPa	
Elongation A5	≥ 21 %	24–30 %	
Charpy V longitudinal	≥ 34 J at −40 °C	> 150 J	
Charpy V transverse	≥ 24 J at −40 °C	> 100 J	
Delivery condition	N, NR or TM only		as rolled not permitted
Z-quality (option)	Z35: RA ≥ 35 %		through-thickness, offshore

EQUIVALENT GRADES

System	Grade	Note
IACS / all societies	EH36	LR EH36, BV EH36, DNV NV E36, ABS EH36, RINA EH36, TL EH36, NK KE36
ASTM	A131 Grade EH36	identical
EN 10025-3	S355NL (approx.)	−50 °C impact, no class
EN 10025-4	S355ML (approx.)	TM
Offshore	NV E36 / ABS EH36 MODU	offshore rules
GB 712	EH36	Chinese

DELIVERY CONDITION — N VS TM

Aspect	Normalised (N / NR)	TM-rolled (TM)
Structure	fine ferrite–pearlite	fine ferrite–bainite, lower carbon
Carbon equivalent	≈ 0.38–0.42	≈ 0.32–0.38
Preheat for welding	from ≈ 30 mm	rarely below 50 mm
Heat input limit	generous	per mill data (typ. ≤ 5 kJ/mm)
Hot forming / normalising after delivery	permitted (re-normalise)	not permitted (> 600 °C)
Thickness availability	to 150 mm	to ≈ 100 mm
Price	base	similar; leaner alloy

The yard's welding procedures are qualified per condition — state N or TM on the order if the WPS requires it.

STANDARDS

IACS UR W11 · LR / BV / DNV / ABS / RINA / TL rules; DNV-OS-B101 / ABS MODU for offshore · ASTM A131 Grade EH36 · Society certificate (3.2 equivalent)

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