AH36 Steel Plate

OMEGA STEEL CO.
Istanbul · Dilovası plant

AH36 is the entry grade of the higher-strength hull steels: 355 MPa minimum yield — 50 % more than Grade A — with 34 J impact at 0 °C, fine-grain killed and micro-alloyed with niobium, vanadium or titanium. Using it lets the designer take 10–15 % out of the hull steel weight of a cargo ship, tanker or offshore unit. Supplied 6–60 mm from class-approved Turkish and EU mills with the society certificate and stamp, optionally shop-primed, cut and bevelled at Dilovası.

Yield ≥ 355 MPa | 34 J at 0 °C | Fine-grain, Nb/V/Ti | Society-stamped | 6–60 mm

Above about 120 m of ship length the hull steel weight matters enough that the higher-strength grades pay for themselves, and AH36 is where every yard starts: the same welding as Grade A, 355 MPa instead of 235, and the tonnage in the shell and decks drops with it.

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	380–430 MPa	
Tensile strength Rm	490–630 MPa	520–570 MPa	
Elongation A5	≥ 21 %	24–30 %	
Charpy V longitudinal	≥ 34 J at 0 °C	> 100 J	
Charpy V transverse	≥ 24 J at 0 °C	> 70 J	
Delivery condition	AR / N / TM per thickness		TM common ≤ 50 mm

EQUIVALENT GRADES

System	Grade	Note
IACS / all societies	AH36	LR AH36, BV AH36, DNV NV A36, ABS AH36, RINA AH36, TL AH36, NK KA36
ASTM	A131 Grade AH36	identical
EN 10025-2	S355J0 (approx.)	no class certificate
EN 10025-4	S355M (TM, approx.)	
JIS G3106	KA36	
GB 712	AH36	Chinese
Same strength, colder	DH36 / EH36	−20 / −40 °C

HIGHER-STRENGTH HULL GRADES AT A GLANCE

Grade	Yield (MPa)	Tensile (MPa)	Charpy (long.)	Typical use
AH32 / DH32 / EH32	315	440–570	31 J at 0 / −20 / −40 °C	less common, some Asian yards
AH36	355	490–630	34 J at 0 °C	general hull, decks, shell
DH36	355	490–630	34 J at −20 °C	thick plate, sheer strake, cold service
EH36	355	490–630	34 J at −40 °C	highest-stress zones, ice-class, offshore
FH36	355	490–630	34 J at −60 °C	arctic, LNG deck structures
AH40 / DH40 / EH40	390	510–660	41 J	container ships, large tankers

The grade per plate is fixed by the society material-class tables (thickness × hull zone × service temperature) on the class-approved drawings.

STANDARDS

IACS UR W11 — higher-strength hull structural steels · LR / BV / DNV / ABS / RINA / TL rules · ASTM A131 Grade AH36 · Society certificate (3.2 equivalent)

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