Grade B Ship Plate

OMEGA STEEL CO.
Istanbul · Dilovası plant

Grade B is ordinary-strength hull steel with a guaranteed Charpy impact of 27 J at 0 °C — the grade the class rules call for once plate thickness passes the limits allowed for Grade A in shell, deck and bulkhead zones. Strength is the same 235 MPa; the steel is killed or semi-killed with a controlled manganese level. Supplied 6–50 mm from class-approved Turkish and EU mills with the society certificate, optional shop primer, cut and bevelled at Dilovası.

Yield ≥ 235 MPa | 27 J at 0 °C | Society-stamped | 6–50 mm | Thick shell & deck grade

Every hull has a thickness beyond which Grade A is no longer allowed and Grade B takes over — typically the heavier shell and deck plates amidships. It costs a little more than A for the guaranteed 0 °C impact and is otherwise the same plate to cut and weld.

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Al
max. % (ladle)	≤ 0.21	≤ 0.35	≥ 0.80	≤ 0.035	≤ 0.035	killed (semi-killed ≤ 25 mm)

Mn may be reduced to 0.60 % when C ≤ 0.18 %. Above 25 mm fully killed; above 50 mm fine-grain. CEV typically 0.32–0.40.

MECHANICAL PROPERTIES

Property	Requirement	Typical value	Note
Yield strength ReH	≥ 235 MPa	255–295 MPa	
Tensile strength Rm	400–520 MPa	430–480 MPa	
Elongation A5	≥ 22 %	26–32 %	
Charpy V longitudinal	≥ 27 J at 0 °C	> 70 J	all thicknesses
Charpy V transverse	≥ 20 J at 0 °C	> 50 J	
Delivery condition	as rolled ≤ 50 mm; N or TM above		

EQUIVALENT GRADES

System	Grade	Note
IACS / all societies	Grade B	LR B, BV B, DNV NV B, ABS B, RINA B, TL B, NK KB
ASTM	A131 Grade B	US
EN 10025-2	S235J0 (approx.)	same impact temperature, no class
JIS G3106	KB	
GB 712	B	Chinese
Higher-strength counterpart	AH36	355 MPa, 0 °C

WHEN THE RULES REQUIRE GRADE B

Hull area (material class)	Grade A up to	Grade B up to	Grade D up to
Class I — internal structure, decks inboard	30 mm	40 mm	50 mm
Class II — shell, bottom, strength deck outboard	20 mm	25 mm	40 mm
Class III — sheer strake, stringer, bilge strake amidships	—	20 mm	25 mm
Longitudinal hatch coamings, thick brackets	20 mm	25 mm	40 mm

Limits vary by society, ship length and service temperature (ice class and cold-climate vessels go one grade up). The class-approved drawing is the authority.

STANDARDS

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

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