Grade A Ship Plate

OMEGA STEEL CO.
Istanbul · Dilovası plant

Grade A is the basic ordinary-strength hull steel of every classification society: 235 MPa minimum yield, 400–520 MPa tensile, impact tested at +20 °C, rolled from a semi-killed or killed steel and stamped by the society surveyor at the mill. It is the plate of hull shell, decks, bulkheads and internal structure on all vessel types up to the thickness where Grade B or D take over. We supply 5–50 mm from Turkish and EU class-approved mills, with or without shop primer, cut and bevelled at Dilovası.

Yield ≥ 235 MPa | Impact at +20 °C | Society-stamped | 5–50 mm | Shop primer option

The steel a shipyard buys most of is Grade A: the same strength as S235JR but with a surveyor's stamp on every plate and a heat traceable to the mill test. Turkish mills hold approvals from all the major societies, and we supply it certified to whichever one the yard's class contract names.

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Al
max. % (ladle)	≤ 0.21	≤ 0.50	≥ 2.5 × C	≤ 0.035	≤ 0.035	killed or semi-killed

Grade A may be semi-killed up to 50 mm; above 50 mm it must be fully killed and fine-grain. CEV usually 0.30–0.38.

MECHANICAL PROPERTIES

Property	Requirement	Typical value	Note
Yield strength ReH	≥ 235 MPa	260–300 MPa	
Tensile strength Rm	400–520 MPa	430–470 MPa	
Elongation A5	≥ 22 %	28–34 %	
Charpy V longitudinal	≥ 27 J at +20 °C	> 80 J	required only > 50 mm
Charpy V transverse	≥ 20 J at +20 °C	> 60 J	
Delivery condition	as rolled (≤ 50 mm)		N above 50 mm

EQUIVALENT GRADES

System	Grade	Note
IACS / all societies	Grade A	LR A, BV A, DNV NV A, ABS A, RINA A, TL A, NK KA
EN 10025-2	S235JR (approx.)	same strength, no class certificate
ASTM	A131 Grade A	US equivalent
JIS G3106	SS400 / KA	
GB 712	A	Chinese
Next grade up	Grade B	impact at 0 °C

ORDINARY-STRENGTH GRADES COMPARED

Grade	Impact test	Deoxidation	Where the rules require it
A	+20 °C (> 50 mm only)	killed / semi-killed	general hull structure
B	0 °C, 27 J	killed / semi-killed	thicker shell and deck plate (> 20 mm in some zones)
D	−20 °C, 27 J	killed, fine grain	sheer strake, stringer, bilge in thick sections
E	−40 °C, 27 J	killed, fine grain, normalised	highest-stress zones, thick plate, cold-climate vessels

Selection by thickness and hull zone follows each society's material grade tables (e.g. LR Rules Pt 3 Ch 2); the yard's class plan defines the grade per plate.

STANDARDS

IACS UR W11 — normal and higher strength hull structural steels · LR / BV / DNV / ABS / RINA / TL / NK rules Part 2 · EN 10204 3.2 equivalent (society certificate) · EN 10029 / society tolerances (−0.3 mm under-thickness)

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