S355JR Steel Plate

OMEGA STEEL CO.
Istanbul · Dilovası plant

1.0045 · S355JR is the base grade of the S355 family: 355 MPa minimum yield, 470–630 MPa tensile and 27 J Charpy at +20 °C, material number 1.0045. It is the economical high-strength plate for workshop-fabricated frames, chassis and equipment where sub-zero toughness is not specified. Stocked 6–20 mm at Dilovası, cut to size; 3–100 mm rolled to order.

1.0045 | Yield ≥ 355 MPa | KV 27 J at +20 °C | 6–20 mm stock | Cut to size

S355JR is what most fabricators mean by "S355 plate": the same strength as J2, the same chemistry family, tested for impact at room temperature instead of −20 °C — and therefore a little cheaper and more often in stock. If your structure lives indoors or in a warm climate and the code does not call for a lower test temperature, JR is the right buy.

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	N	Cu
max. % (ladle)	0.24 (≤ 30 mm)	0.55	1.60	0.035	0.035	0.012	0.55

C 0.24 above 30 mm as well; typical heats C 0.14–0.18, Mn 1.20–1.45. CEV max 0.45 (≤ 30 mm), 0.47 (30–40 mm).

MECHANICAL PROPERTIES

Thickness	Yield ReH min (MPa)	Tensile Rm (MPa)	Elongation A min	Impact KV (long.)
≤ 16 mm	355	470–630	22 %	27 J at +20 °C
> 16–40 mm	345	470–630	22 %	27 J at +20 °C
> 40–63 mm	335	470–630	21 %	27 J at +20 °C
> 63–80 mm	325	470–630	20 %	27 J at +20 °C
> 80–100 mm	315	470–630	20 %	27 J at +20 °C
3 mm sheet	355	470–630	18 % (A80)	—

EQUIVALENT GRADES

System	Grade	Note
DIN 17100	ST52-3 (loosely)	no exact JR class existed
ASTM	A572 Gr. 50	345 MPa; A992 for shapes
JIS G3106	SM490A	no impact spec
GB/T 1591	Q355B	+20 °C impact
BS 4360	50B	historic
ISO 630	E355B	

THICKNESS RANGE AND STOCK SIZES

Thickness	Widths × lengths	Availability
3–5 mm	1 250 / 1 500 × 2 500–6 000	to order (sheet from coil)
6–12 mm	1 500 / 2 000 × 6 000	stock
15–20 mm	2 000 × 6 000	stock
25–50 mm	2 000 × 6 000	to order 2–4 weeks (or S355J2 from stock)

STANDARDS

EN 10025-2:2019 — S355JR, 1.0045 · EN 10029 class A thickness tolerance · EN 10163-2 surface class A · EN 10204 3.1 / 3.2