S355ML Steel Plate

OMEGA STEEL CO.
Istanbul · Dilovası plant

1.8834 · S355ML is the −50 °C grade of EN 10025-4, the thermomechanically rolled fine-grain structural steels: 355 MPa yield, 450–610 MPa tensile, 27 J at −50 °C, with a carbon equivalent (≤ 0.39) lower than any normalised S355 — so it welds without preheat to greater thickness. Material number 1.8834. It is the plate of choice for welded offshore, pipeline and heavy-structure fabrication at low temperature, imported to order in 6–80 mm.

1.8834 | Yield ≥ 355 MPa | KV 27 J at −50 °C | CEV ≤ 0.39 | 6–80 mm to order

S355ML gives the fabricator what S355NL gives the designer — −50 °C toughness — while making the welding easier: a leaner chemistry rolled thermomechanically instead of alloyed and normalised. The trade-off is that the plate must stay cold: no hot forming, no normalising. For welded-only structures in cold service it is the more economical of the two, and we import it to order.

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Nb	V	Al	Ti	Ni	Cr	Mo	N
max. % (ladle)	0.14	0.50	1.60	0.025	0.020	0.05	0.10	≥ 0.020	0.05	0.50	0.30	0.10	0.015

Cu ≤ 0.55. CEV max 0.39 (≤ 16 mm), 0.39 (16–40), 0.40 (40–63), 0.45 (63–120).

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 −50 °C
> 16–40 mm	345	470–630	22 %	27 J at −50 °C
> 40–63 mm	335	450–610	22 %	27 J at −50 °C
> 63–80 mm	325	440–600	21 %	27 J at −50 °C

EQUIVALENT GRADES

System	Grade	Note
EN 10025-4	S355M	−20 °C version
EN 10025-3	S355NL	normalised −50 °C
ASTM	A633 Gr. C / A709 Gr. 50W (near)	
API	2W Gr. 50	offshore TMCP
GB/T 1591	Q355E (TMCP)	

THICKNESS RANGE AND STOCK SIZES

Thickness	Widths × lengths	Availability
6–20 mm	2 000 / 2 500 × 6 000–12 000	to order 4–6 weeks
25–50 mm	2 500 / 3 000 × 6 000–12 000	to order 5–8 weeks
60–80 mm	2 500 × 6 000–8 000	to order 6–8 weeks, UT standard

STANDARDS

EN 10025-4:2019 — S355ML, 1.8834 · EN 10160 UT · EN 10164 Z-quality · EN 10029 class A/B