S355NL Steel Plate

OMEGA STEEL CO.
Istanbul · Dilovası plant

1.0546 · S355NL is the low-temperature member of EN 10025-3, the normalised fine-grain structural steels: 355 MPa yield with 27 J Charpy energy guaranteed at −50 °C (L = low temperature). Micro-alloyed with Nb and V, normalised for a uniform fine grain, it is the plate for LPG and cryogenic-adjacent tank structures, arctic and high-altitude steelwork, wind towers and offshore. Imported to order in 8–100 mm.

1.0546 | Yield ≥ 355 MPa | KV 27 J at −50 °C | Normalised fine grain | 8–100 mm to order

When the design temperature drops below what J2 or K2 can cover — Kazakh winters, mountain sites, LPG sphere supports, offshore jackets — S355NL is the next rung: a clean normalised fine-grain steel with toughness proven at −50 °C. We bring it from EU mills against your order with full 3.1/3.2 documentation and ultrasonic testing.

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Nb	V	Al	Ni	Cr	Mo	N
max. % (ladle)	0.18	0.50	0.90–1.65	0.025	0.020	0.05	0.12	≥ 0.020	0.50	0.30	0.10	0.015

Cu ≤ 0.55, Ti ≤ 0.05. CEV max 0.43 (≤ 63 mm), 0.45 (63–100 mm).

MECHANICAL PROPERTIES

Thickness	Yield ReH min (MPa)	Tensile Rm (MPa)	Elongation A min	Impact KV (long. / trans.)
≤ 16 mm	355	470–630	22 %	27 J at −50 °C (L) / 16 J (T)
> 16–40 mm	345	470–630	22 %	27 J at −50 °C
> 40–63 mm	335	470–630	22 %	27 J at −50 °C
> 63–80 mm	325	470–630	21 %	27 J at −50 °C
> 80–100 mm	315	470–630	21 %	27 J at −50 °C

EQUIVALENT GRADES

System	Grade	Note
EN 10025-3	S355N	−20 °C version
EN 10025-4	S355ML	thermomechanical −50 °C
DIN 17102	TStE 355	direct predecessor
ASTM	A633 Gr. C/D	normalised HSLA, near
ASTM	A537 Cl. 1	pressure-vessel analogue
GB/T 1591	Q355E (near)	−40 °C

THICKNESS RANGE AND STOCK SIZES

Thickness	Widths × lengths	Availability
8–20 mm	2 000 / 2 500 × 6 000–12 000	to order 4–6 weeks
25–60 mm	2 000 / 2 500 / 3 000 × 6 000–12 000	to order 5–8 weeks
80–100 mm	2 000–2 500 × 6 000	to order 6–8 weeks, UT standard

STANDARDS

EN 10025-3:2019 — S355NL, 1.0546 · EN 10160 UT · EN 10164 Z-quality · EN 10029 class A/B

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