S500MC High-Strength Steel

OMEGA STEEL CO.
Istanbul · Dilovası plant

1.0984 · S500MC is the most-used upper grade of EN 10149-2: 500 MPa minimum yield, 550–700 MPa tensile, ≤ 0.12 % carbon, cold-formable to 1–1.5 × t, 40 J at −20 °C. It is the standard steel for tipper bodies, crane and platform booms and weight-optimised trailer chassis. Material number 1.0984, formerly QStE 500 TM. We supply coil and cut sheet 2–12 mm from Turkish and EU mills.

1.0984 | Yield ≥ 500 MPa | Bend 1–1.5 × t | 2–12 mm coil & sheet | KV 40 J at −20 °C

S500MC is where the weight saving becomes visible: 40 % more yield than S355 means a tipper side wall goes from 5 mm to 4 mm and a boom section loses a fifth of its mass, with the same press brake and the same MAG welder. It is the grade our bodybuilding customers in the Gulf, Iraq and the Balkans order most after S355MC.

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Al	Nb	V	Ti
max. % (ladle)	0.12	0.50	1.70	0.025	0.015	≥ 0.015	0.09	0.20	0.15

Nb + V + Ti ≤ 0.22 %. CEV typically 0.31–0.35.

MECHANICAL PROPERTIES

Thickness	Yield ReH min (MPa)	Tensile Rm (MPa)	Elongation min	Impact KV
1.5–3 mm	500	550–700	12 (A80)	—
> 3 mm	500	550–700	16 % (A5)	40 J at −20 °C (long.)

EQUIVALENT GRADES

System	Grade	Note
SEW 092	QStE 500 TM	old German name
EN 10025-4	S460M (nearest plate)	
ASTM	A1011 HSLAS-F Gr. 70 / A656 Gr. 70	near
JIS G3134	SPFH 590	
SSAB	Strenx 500MC / Domex 500MC	brand

THICKNESS RANGE AND STOCK SIZES

Thickness	Widths × lengths	Availability
2–3 mm	coil 1 000–1 500 mm; sheet to 6 000	to order 2–4 weeks
4–6 mm	coil 1 250–1 500 mm; sheet 1 500 × 6 000	part stock, else 2–3 weeks
8–12 mm	coil 1 500 mm; sheet 1 500 × 6 000	to order 3–4 weeks

STANDARDS

EN 10149-2:2013 — S500MC, 1.0984 · EN 10051 tolerances · EN 10204 3.1 · Former SEW 092 QStE 500 TM