S690QL Steel Plate

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Istanbul · Dilovası plant

1.8928 · EN 10025-6 · S690QL is the quenched-and-tempered high-strength structural steel of EN 10025-6: 690 MPa minimum yield (twice S355), guaranteed 30 J impact at −40 °C (the L suffix), CE-marked and designable under EN 1993-1-12. It halves the section weight of cranes, booms, trailers, lifting equipment and mining structures. We supply 6–60 mm from Strenx 700, Weldox 700, Dillimax 690, XABO 690, Raex Optim 700 and equivalent mills, plasma- and laser-cut at Dilovası.

1.8928 · EN 10025-6 | Yield ≥ 690 MPa | 30 J at −40 °C | 6–60 mm | CE-marked structural

Every mobile crane boom, every lightweight trailer chassis and every telescopic handler arm is S690QL: the grade that lets a designer halve the plate thickness and keep the capacity. Unlike wear plate it comes with a guaranteed yield and a CE mark, so it can be calculated, not just used.

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Cr	Ni	Mo	V	B	Cu
max. % (ladle)	≤ 0.20	≤ 0.80	≤ 1.70	≤ 0.020	≤ 0.010	≤ 1.50	≤ 2.00	≤ 0.70	≤ 0.12	≤ 0.005	≤ 0.50

CEV ≤ 0.65 (≤ 50 mm) by EN 10025-6; brand steels typically 0.40–0.55 for ≤ 20 mm, which is what makes them weldable with modest preheat.

MECHANICAL PROPERTIES

Thickness	Yield ReH min (MPa)	Tensile Rm (MPa)	Elongation A / impact
3–50 mm	690	770–940	A ≥ 14 %; KV ≥ 30 J at −40 °C (QL)
> 50–100 mm	650	760–930	A ≥ 14 %
> 100–150 mm	630	710–900	A ≥ 14 %
S690Q	same	same	KV ≥ 30 J at −20 °C
S690QL1	same	same	KV ≥ 30 J at −60 °C
Hardness (typical)	—	≈ 240–290 HB	not a wear grade

EQUIVALENT GRADES

System	Grade	Note
EN 10025-6	S690QL (1.8928)	the standard
SSAB	Strenx 700 E / Weldox 700	brand
Dillinger	Dillimax 690 T	brand
thyssenkrupp	XABO 690, N-A-XTRA 700	brand
voestalpine	Aldur 700 QL	brand
ASTM	A514 Grade Q / A709 HPS 100W (approx.)	US Q&T structural
JIS	SHY685 / HW700 (approx.)	
GB	Q690D / Q690E	Chinese

WEIGHT SAVING VS S355

S355J2	S690QL equivalent	Weight saving	Typical part
10 mm	6 mm	40 %	trailer side member
15 mm	8 mm	47 %	crane boom plate
20 mm	10 mm	50 %	lifting beam flange
25 mm	12–15 mm	40–50 %	excavator boom, outrigger
40 mm	20–25 mm	38–50 %	mining structure, press frame

Where deflection or buckling governs, the saving is smaller (stiffness E is the same for all steels) — check with EN 1993-1-12; fatigue-critical welded details also do not benefit from the higher yield.

STANDARDS

EN 10025-6 — S690QL (1.8928), S690Q (1.8931), S690QL1 (1.8988) · EN 1993-1-12 — design of high-strength steel structures · EN 10029 tolerances · EN 10204 3.1 / 3.2

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