S320GD Galvanized Steel

OMEGA STEEL CO.
Istanbul · Dilovası plant

1.0250 · S320GD is the intermediate structural galvanized grade of EN 10346: guaranteed yield ≥ 320 MPa, tensile ≥ 390 MPa, elongation ≥ 17 %. Material number 1.0250. It is specified for composite floor decking, heavier purlins, solar structures and framing where S280GD is marginal and the S350GD formability limits matter. Coil 0.60–3.0 mm with Z275, to order; S350GD from stock as the upward substitute.

1.0250 | Yield ≥ 320 MPa | Rm ≥ 390 MPa | 0.60–3.0 mm to order | Z275

S320GD is the grade a designer reaches when the S280GD span table runs out by a few percent — decking that has to carry wet concrete over 3 m, a purlin over a 7 m bay. We roll it to order; more often we deliver S350GD from stock against it, which the design accepts without a change.

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S
max. % (ladle)	0.20	0.60	1.70	0.10	0.045

Typical heat: C 0.08–0.12, Mn 0.60–1.00.

MECHANICAL PROPERTIES

Property	Requirement	Typical value	Note
Yield strength ReH / Rp0.2	≥ 320 MPa	340–390 MPa	fyb = 320
Tensile strength Rm	≥ 390 MPa	420–470 MPa	
Elongation A80	≥ 17 %	20–25 %	
Bend radius (180°)	1.5 × t	passes	

EQUIVALENT GRADES

System	Grade	Note
EN 10147 (old)	Fe E 320 G	withdrawn
ASTM A653	SS Grade 50 Class 1 (340 MPa)	near
JIS G3302	SGC490	
GB/T 2518	S320GD+Z	
EN 10346	S350GD	upward substitute

COATING CLASSES SUPPLIED ON S320GD

Class	Zinc mass (g/m², both sides)	Thickness per side (µm)	Typical life C3	Where used
Z200	200	≈ 14	9–13 years	racking uprights, beams and internal framing
Z275	275	≈ 20	12–18 years	composite floor decking and exposed framing
Z350	350	≈ 25	15–22 years	humid plant, agricultural and coastal structures
Z450 / Z600	450 / 600	≈ 32 / 42	20–35 years	ground contact, tunnel and drainage components

Composite floor decking is a special case: the top face is cast into concrete, which is alkaline and passivates zinc, while the soffit stays exposed. Z275 on both faces is the normal specification; heavier classes buy nothing on the embedded face and only help the soffit.

STANDARDS

EN 10346:2015 — S320GD+Z, 1.0250 · EN 10143 — tolerances · EN 1993-1-3 — cold-formed design (fyb = 320 MPa) · EN 10204 3.1

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