

Z purlins are lipped zed sections whose unequal flanges let one purlin nest over the next at the rafter, so that a run of purlins becomes a continuous beam — the system that carries the roofs of large portal-frame buildings with the least steel. We roll them at Dilovası in web depths 120–350 mm and 1.5–3.0 mm from S280GD and S350GD Z275 strip, punched for lapped or sleeved connections, sag rods and bracing to the fabricator's drawing, in lengths to 13.5 m.

Web 120–350 mm	1.5–3.0 mm	Lapped / sleeved continuous	S350GD Z275	Lengths to 13.5 m
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On a 100 m warehouse the difference between C and Z purlins is a truckload of steel. The Z's lap over each rafter turns twelve simple spans into one continuous beam, and that continuity is what every pre-engineered building designer counts on.

GRADES, STANDARDS AND TOLERANCES

Grade / standard	Yield (MPa)	Note
S280GD+Z275 (EN 10346)	280	standard purlin strip; the stock grade
S350GD+Z275	350	higher-strength purlins, longer spans
S450GD+Z275	450	to order; maximum span per kg
DX51D+Z140 / Z275	≈ 140 (not guaranteed)	non-structural profiles only
Zinc Z275	—	275 g/m² both sides ≈ 20 µm per side; ZM on request

For lapped systems S350GD is the usual grade — the lap bolts and web bearing at the cleat govern; S450GD on request for maximum span per kilogram.

Z PURLIN SECTION TABLE

Section	Web × flanges × lip (mm)	t (mm)	kg/m	Ix (cm⁴)	Wx (cm³)
Z120	120 × 50/47 × 15	1.5 / 2.0	2.9 / 3.8	80 / 105	13.4 / 17.5
Z150	150 × 60/57 × 20	1.5 / 2.0	3.5 / 4.6	155 / 205	20.7 / 27.3
Z175	175 × 65/62 × 20	2.0 / 2.5	5.1 / 6.3	290 / 355	33.1 / 40.6
Z200	200 × 70/67 × 20	2.0 / 2.5	5.7 / 7.1	420 / 515	42.0 / 51.5
Z225	225 × 75/72 × 20	2.0 / 2.5	6.3 / 7.8	575 / 710	51.1 / 63.1
Z250	250 × 75/72 × 25	2.5 / 3.0	8.5 / 10.1	960 / 1 140	76.8 / 91.2
Z300	300 × 80/77 × 25	2.5 / 3.0	9.6 / 11.4	1 510 / 1 790	101 / 119
Z350	350 × 90/87 × 25	2.5 / 3.0	10.9 / 13.0	2 350 / 2 780	134 / 159

Flange widths are given as broad/narrow to allow nesting. Effective properties for EN 1993-1-3 design and the lap-joint capacities are in the calculation note.

LAPPED AND SLEEVED SYSTEMS

System	Detail at rafter	Lap / sleeve length	Steel saving vs simple span	Note
Simple span (C or Z)	one purlin per bay on cleats	—	0	small buildings, cheapest detailing
Lapped Z	purlins nest and bolt through webs over the rafter	10–15 % of span each side (≥ 600 mm)	20–30 %	the PEB standard; end bays often one size heavier
Sleeved Z	both purlins bolt into a 1.2–1.6 m sleeve of the next size	sleeve 1.2–1.6 m	15–25 %	equal-length purlins, easier logistics
Double-span Z	purlins two bays long, staggered	butted	10–15 %	lengths to 13.5 m needed
Heavy-end-bay	end bays thicker or lapped longer	—	—	end-bay moments are highest

Cleats, lap bolts (M12/M16 8.8), sleeves and anti-sag systems are dimensioned with the purlin design and supplied in the package.

STANDARDS

EN 10346 — S280GD / S350GD + Z275 strip · EN 1993-1-3 — cold-formed design (continuous systems) · EN 1090-1 / -2 — CE marking · EN 10204 3.1