

Sigma Purlins

Cold-formed sigma sections for long-span roof systems

Sigma purlins are cold-formed sections with a stiffening rib in the web, which raises the rotational stiffness of the section compared with a plain Z or C — the reason they are used where bays are long and the roof must be restrained efficiently.

Where they are used

Bay widths	Up to about 15 m for typical proprietary systems
Maximum roof slope	Around 25° for standard sigma systems
Steel	Pre-hot-dip galvanised steel, grade S450 (minimum yield 450 N/mm ²) typical for sigma sections
Restraint	The top flange must be restrained by sheeting or purlin bridging fixed directly to it

Design basis

Section properties for sigma purlins are calculated to **EN 1993-1-3** (cold-formed steel structures — supplementary rules) and, in North America, to **AISI S100**. Ultimate loads and working deflections come from full-scale testing and finite element analysis for the proprietary system, which is why a sigma purlin is quoted as a system with its span tables rather than as a bare section.

Standards referenced

EN 1993-1-3 (design of cold-formed steel members) · EN 10346 (coated steel flat products, e.g. Z275) · AISI S100 (North American cold-formed steel design) · SANS 10162-1 (South Africa) and AS/NZS 4600 (Australia / New Zealand) where the project uses those codes

Need a quote? Send the bay width, roof slope, span and load case, plus the code your engineer is designing to.

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