

*Lightweight, High Strength Building Materials*

# STRUCTURAL PRODUCTS



Metroll offers a range of purlins, including 100, 150, 200, 250, 300, 350 and 400mm in C & Z profiles cut to length, unpunched or punched to customer specifications in a range of different thicknesses.

A cold formed G450 and in some case G500/G550 coated high tensile, Z350 or Z450 GALVSPAN® steel purlin is engineered to support floor, roof and wall structures. Metroll provides a complete system including bridging, fasteners and a range of accessories.

These high quality products come at competitive prices and are industry proven in sporting, commercial, industrial, rural and domestic applications.

You can span further and save on overall construction costs using Metroll purlins and girts. The high strength to low weight ratio makes these products easy to transport and handle on site. The relatively thin profile facilitates affixing to roof and cladding sheets.

Before specifying purlins and girts contact your nearest Metroll office for advice on the most appropriate material, coating process, maintenance and costs.

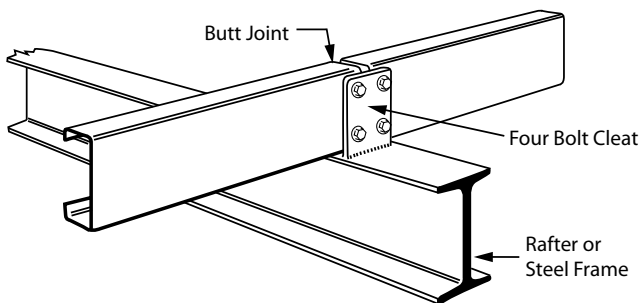
## Benefits

- Cost effective
- High strength/low weight ratio
- Easy to install
- High quality materials
- Multipurpose
- Fire resistant
- Termite proof
- Strong & durable
- Long spans



## C Sections

Sizes C10010 - C40030



## C Section Purlins

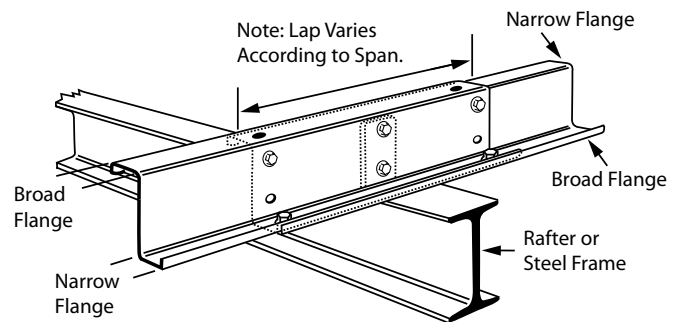
C Section Purlins are generally manufactured from GALVSPAN® steel and are roll formed into C Section. Metroll C Section Purlins are recommended for simple, non-continuous span construction.

Structural applications include portal frames, roofing, single bay buildings, wall cladding and flooring systems. These can also be used on multi bay buildings in lines of simple spanning purlins and girts.

Metroll offers a range of C profiles. Sections can be cut to customer specified lengths. Complete systems including bridging, fasteners and accessories are also available.

## Z Sections

Sizes Z10012 - Z40030



## Z Section Purlins

Z Section Purlins are generally manufactured from GALVSPAN® steel and are roll formed into Z Section.

Metroll Z Section Purlins have one broad and one narrow flange. These are designed to fit neatly and are used for lapping at the internal supports producing structurally continuous lines of purlins for the length of the building.

Structural continuity results in improved rigidity, but lapping doubles the thickness of the purlin over the supports where the bending movement is the greatest. This saves 30-50% of steel in purlins relative to C Section Purlins.

When additional purlin strength is needed Z Section Purlins of the same depth but greater thickness can be lapped as needed. Structural applications include grain or coal handling facilities and manufacturing facilities.

## Corrosion Protection

AS/NZS4600 requires that cold formed sections must be adequately protected from corrosion attack. The protection options range from basic painting through to heavy galvanised systems.

Before specifying the type of purlin, you need to consider the type of structure, climatic conditions, the proximity to salt sprays and maintenance provisions.

The zinc coating and quality controlled galvanising process used in GALVSPAN® steel ensure a high standard of corrosion protection.

The two standards of corrosion protection used in GALVSPAN® steel are 350g/m<sup>2</sup> zinc coating weight and 450g/m<sup>2</sup> zinc coating weight.

The zinc coating weight is the total weight of zinc on the base steel, and is usually referred to by the coating class, that is 350g/m<sup>2</sup> of zinc is class Z350. The respective coating classes represent approximate coating thickness of Z350 - 24µm and Z450 - 31µm of zinc on each side of the strip. Z450 purlins should be specified for environments requiring additional corrosion protection.

## Design Issues

In the absence of specific product standards, designers have a number of options when specifying purlins.

- Nominate the purlins by size and specific manufacturer, to the exclusion of all others
- Specify by size and manufacturer and allow equivalent manufacturers
- Specify the major dimensions and properties - depth, flange width, base metal thickness, yield strength, protective coating mass of section and leave the choice of manufacturer to the contractor

Selection of the correct coating weight, Z350 or Z450, is critical to the long-term corrosion performance of the purlin.

The choice is dependent on the environment in which the purlin is to be used. For example, Z350 will suit most applications that are not subject to high corrosive environments. For high corrosive environments you need to specify Z450.

## Warranty

For GALVSPAN® steel Z350 or Z450 there is a 10 year warranty from the date of purchase against corrosion to perforation by natural degradation, when used within the building envelope.

It is applicable to light industrial/commercial applications located greater than 1km from a marine environment only.

## Installation

Purlins need to be bolted to the primary frame by cleats welded to the rafters or columns by a qualified steel fabricator. The cleats and the associated hole geometry have been standardised in the AISC Standardised Structural Connections.

The bolts are usually M12 Grade 4.6 requiring snug tightening to make an effective connection.

To allow for minor variations in frame alignment, purlins made from GALVSPAN® steel generally have quite large clearance holes - 18mm x 22mm slots for greater adjustment. These generous clearances facilitate assembly, without affecting structural performance.

When Z purlins are lapped, additional holes are provided to ensure structural continuity.

Purlins are engineered for M12 bolts and in these cases, M16 should not be used. With lapped Z Section Purlins in some of the thicker gauges, the holes cover one another sufficiently to prevent assembly with M16 bolts unless they are forced.

To minimise the tendency of the sections to rotate between supports or bridgings, purlins need to be installed with the top flange facing up the slope from the cleat:

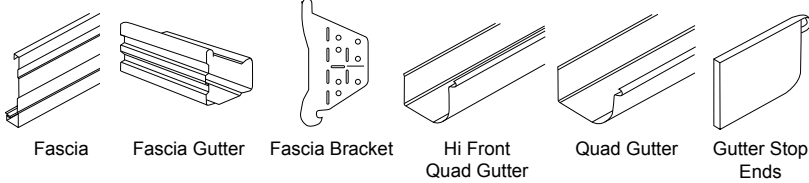
- C sections should be fitted on the high side of the cleat, open face facing up the slope
- Z sections should be fitted with the web on the low side of the cleat, with the top flange above it

Fixing purlins to cladding is quite straightforward, the sections are very flexible until they become part of the total sheeted system. The aim should be to maintain a stable framework by fitting the bridging as the purlins are attached.

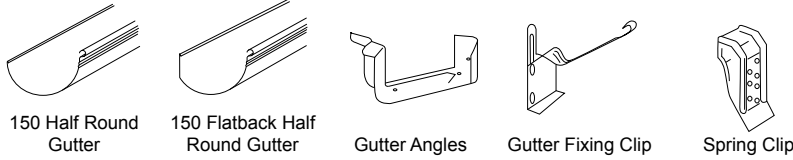
Bundles of roof sheeting should not be placed on unsheeted purlins, as this can cause overloading and result in permanent deformation of the sections.

# CHECKLIST Do you require any of the following?

## Fascias, Gutters & Ancillary Items

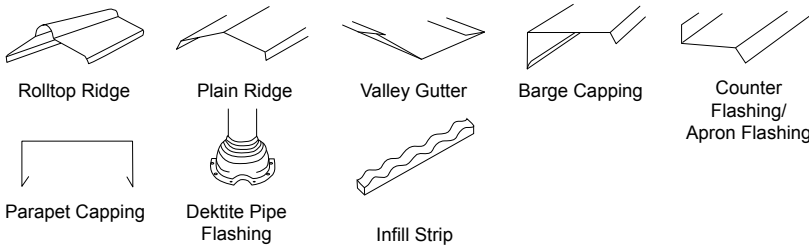


Fascia Fascia Gutter Fascia Bracket Hi Front Quad Gutter Quad Gutter Gutter Stop Ends



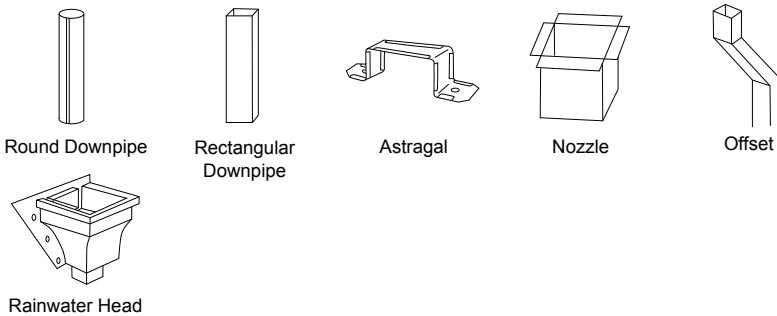
150 Half Round Gutter 150 Flatback Half Round Gutter Gutter Angles Gutter Fixing Clip Spring Clip

## Flashings & Cappings



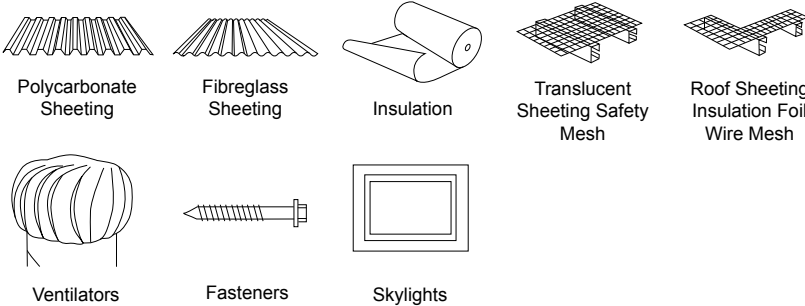
Rolltop Ridge Plain Ridge Valley Gutter Barge Capping Counter Flashing/Apron Flashing Parapet Capping Deklite Pipe Flashing Infill Strip

## Downpipes & Ancillary Items



Round Downpipe Rectangular Downpipe Astragal Nozzle Offset Rainwater Head

## Other Products



Polycarbonate Sheeting Fibreglass Sheeting Insulation Translucent Sheeting Safety Mesh Roof Sheeting Insulation Foil Wire Mesh Ventilators Fasteners Skylights

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