

# THE METROLL MATE

A GUIDE FOR ROOFERS



A Met-TECH™ GUIDE

FEBRUARY 2023



**Metroll**®

BETTER SERVICE • BETTER BUILDING SOLUTIONS

# THE METROLL MATE

The Met-TECH Metroll Mate is a general information resource for roofers. It's a handy guide to roofing information and is complemented by the full range of Metroll Met-TECH product and design guides.

This manual is designed to provide general roofing information and guidance for non-cyclonic application.

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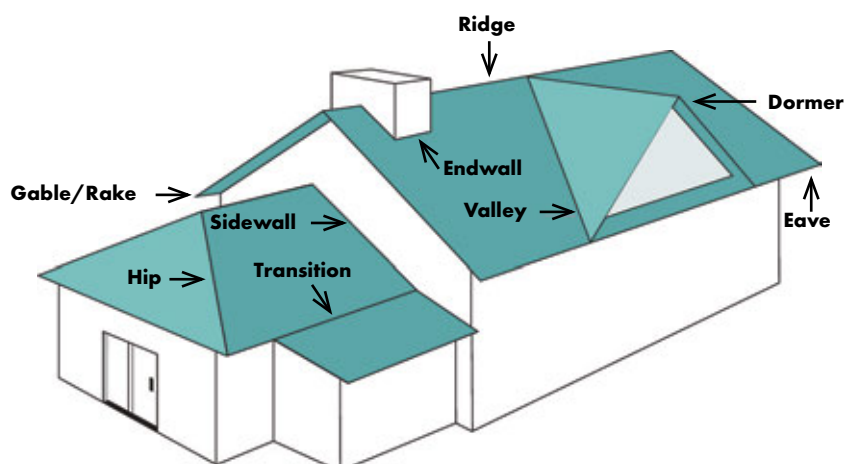
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## What is Met-TECH™ ?

Met-TECH™ is Metroll's Technical Resource Centre. It is the one stop shop for all of Metroll's product and technical information. Perfect for builders, contractors and specifiers to source all the information they may require. You can find other Met-TECH items on our website

[www.metroll.com.au/resources](http://www.metroll.com.au/resources)

## ROOF TERMINOLOGY



## FREQUENTLY USED ROOFING TERMS

**AIR VENTING** Allowing air to enter or exit a confined space.

**APRON** Metal flashing used where a roof meets a vertical face, such as walls and chimneys.

**BARGE CAP** A flashing that is used to fix the gable end of the roof where the sheets start and finish.

**BATTEN** A long strip of squared timber or rolled metal that roof sheets are screwed onto.

**BMT** Base Metal Thickness.

**BOX GUTTER** A gutter that is not on an eave. Typically installed at the base of two opposing roof faces or inside a parapet wall.

**CAPPING** Metal caps which are installed as a waterproof device where roof sheeting ends.

**CEILING BATTS** A type of bulk insulation designed to fit in the roof space between joists, rafters or studs. Typically made from glass wool, polyester or wool.

**COATING CLASS** Refers to the level of corrosion protection. It is directly proportional to the coating mass.

**CONCEALED-FIX** A type of decking/roofing that is locked into obscured fixing clips which have been fastened to the roof supports, rather than being fixed by visible screws.

**COR-STRIP®** A removable polyethylene film which protects roof and wall sheeting during storage.

**DOWNPIPE** A pipe that carries rainwater from guttering to ground level or a drain.

**EAVES** The external ceiling between the fascia and the outside wall of a building.

**EDGE PROTECTION** A temporary safety rail system attached to the perimeter of a building during installation to prevent roof falls.

**FALL** The difference in height between two points in the direction of water flow.

**FASCIA** A timber board or rolled metal panel fixed along the eave to which a gutter is secured.

**FASTENER** A fixing object designed to bolt, screw, fasten or attach items.

**FLASHING** The material placed around any roof projection in order to cover and waterproof the join.

**GABLE** A traditional roof style where two sloping roof planes meet at a ridge line.

**GAUGE** The thickness or diameter of a small or thin object; such as the thickness of sheet metal or the diameter of a screw.

**GUTTER** A shallow trough fixed under the roof edge designed to carry water.

**HIP ROOF** A style of roof with four roof planes which come together at a peak and four separate hip edges.

**INSULATION BLANKET** A glass-wool layer joined to an impermeable, reinforced, reflective foil facing installed over the roof frame and directly beneath the roof sheeting.

**LAP** The area where roof sheeting or insulation overlaps one another during installation.

**OIL CANNING** Undulations or waviness on the surface of otherwise flat metal sheets.

**OVERHANG** The part of the roof structure which extends horizontally beyond the vertical plane of the exterior wall of a building.

**PARAPET** A wall on the perimeter of a building that extends above the line of the eaves.

**PENETRATION** A protrusion; such as a pipe or duct, that goes through the roof sheeting and requires a flashing to be installed around it.

**PITCH** The slope of a roof or gutter; typically expressed in degrees.

**PONDING** The pooling of undrained water on a roof.

**RAIN HEAD** An external gutter pit used to connect downpipes to roof gutters and to provide an external overflow.

**RIDGE** The horizontal angle on the upper part of the roof where two sloped roof planes meet.

**RUN-OFF** The water discharge from a surface.

**R-VALUE** An insulation term for the value given for heat transfer resistance in a roof or wall system.

**SARKING/SISALATION** A water resistant vapour barrier fixed beneath roof sheeting; commonly a reflective foil.

**SKILLION** A single sloped roof generally separate from another roof.

**SPAN** The distance between roof sheeting supports.

**SUMP** A roof gutter pit used to connect downpipes to internal roof gutters.

**SWARF** Fine filings or chips of metal generated when cutting or drilling.

**TENSILE STRENGTH** The maximum amount of pressure a material can be subjected to before breaking.

**THERMAL EXPANSION/CONTRACTION** The increase or reduction in material due to changes in temperature.

**VALLEY** The area where two adjoining roof planes intersect creating a V-shaped gully.

**VENT** An opening which allows air to exit a space.

**VENT RIDGE** A roof accessory that runs along the roof peak allowing air to enter and exit the roof.

**WATER CARRYING CAPACITY** A measurement that states the max. amount of water a roof can carry.

**WIND LOAD CAPACITY** A measurement that states the max. amount of wind speed and associated pressures a building can withstand without failure.

# Colorbond® ROOFING & WALLING COLOUR RANGE

## STANDARD RANGE

Classic Finish



Dover White™  
Classic Finish SA 0.28



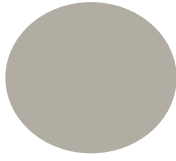
Surfmist®  
Classic Finish SA 0.33  
Ⓢ



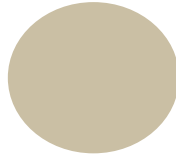
Evening Haze®  
Classic Finish SA 0.43



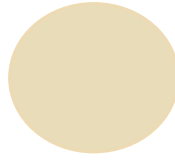
Southerly®  
Classic Finish SA 0.40



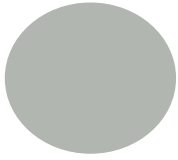
Dune®  
Classic Finish SA 0.48  
Ⓢ



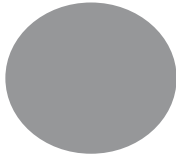
Paperbark®  
Classic Finish SA 0.43



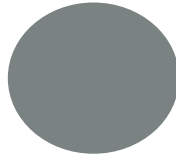
Classic Cream™  
Classic Finish SA 0.33



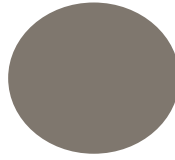
Shale Grey™  
Classic Finish SA 0.44  
Ⓢ



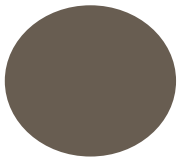
Blue Gum®  
Classic Finish SA 0.57



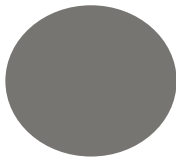
Windspray®  
Classic Finish SA 0.60  
Ⓢ



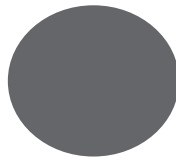
Gully®  
Classic Finish SA 0.64



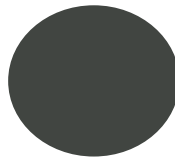
Jasper®  
Classic Finish SA 0.67



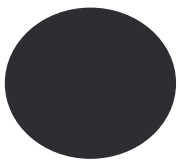
Wallaby®  
Classic Finish SA 0.64  
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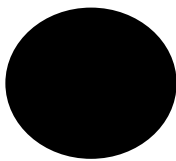
Basalt®  
Classic Finish SA 0.67



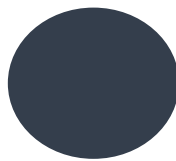
Woodland Grey®  
Classic Finish SA 0.70  
Ⓢ



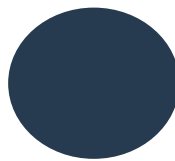
Monument®  
Classic Finish SA 0.73  
Ⓢ



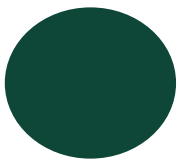
Night Sky®  
Classic Finish SA 0.95



Ironstone®  
Classic Finish SA 0.73



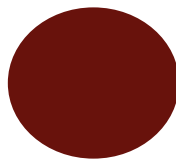
Deep Ocean®  
Classic Finish SA 0.74



Cottage Green®  
Classic Finish SA 0.73

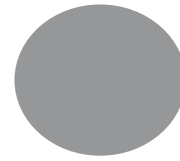


Pale Eucalypt®  
Classic Finish SA 0.60

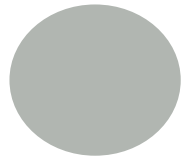


Manor Red®  
Classic Finish SA 0.70

## MATT RANGE



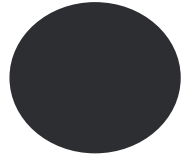
Blue Gum®  
Classic Finish SA 0.57



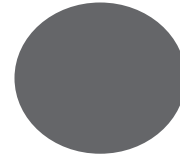
Shale Grey™  
Classic Finish SA 0.44



Surfmist®  
Classic Finish SA 0.33



Monument®  
Classic Finish SA 0.73



Basalt®  
Classic Finish SA 0.67



Dune®  
Classic Finish SA 0.48

The COLORBOND® steel colours shown have been reproduced to represent actual product colours as accurately as possible. However, we recommend checking your chosen colour against a sample of the product before specifying as varying light conditions and limitations of the printing process may affect colour tones. COLORBOND®, BlueScope, the BlueScope brand mark and ® colour names are registered trade marks of BlueScope Steel Ltd. ™ colour names are trademarks of BlueScope Steel Ltd.

Ⓢ Available in COLORBOND® Ultra steel for coastal and industrial environments .

**SA = Solar Absorptance.** Solar Absorptance is a measure of how much of the sun's heat a material absorbs. Choosing a colour with a lower SA is a cooler option and may help you meet building regulations such as NCC or BASIX. These are nominal values based on new product and measured in accordance with ASTM E 903-96.

# MATERIAL FINISHES

## COLORBOND® STEEL

COLORBOND® steel is developed for, and therefore more resilient to, the intense sunlight and temperatures typical of Australian environments. BlueScope scientists have tested COLORBOND® steel in some of Australia's harshest climates. COLORBOND® steel is pre-painted for exterior roofing and walling. Painting complies with AS/NZS 2728:2013 and the steel base is an aluminium/zinc alloy-coated steel which complies with AS 1397:2011. Minimum yield strengths are G550 (550 MPa), or G300 (300 MPa) depending on profile. Minimum coating mass is AM100 (100 g/m<sup>2</sup>).

## ZINCALUME® STEEL

Next generation ZINCALUME® steel's patented Activate™ technology introduces magnesium into the aluminium/zinc alloy coating. This improves the galvanic protection by activating the aluminium. The result is a tougher protective coating that is more resistant to scratches and scuffs encountered during the construction process. ZINCALUME® steel complies with AS 1397:2011. Material is G550, AM125 (550 MPa minimum yield stress, 125 g/m<sup>2</sup> minimum coating mass).

## COLORBOND® ULTRA STEEL

While standard COLORBOND® steel will suit most home designs and locations, BlueScope also make specialist grades suited to more demanding environments, like those by the sea or in areas prone to industrial or chemical fumes and fallout. COLORBOND® Ultra is pre-painted steel for severe coastal or industrial environments, (generally within 100 - 200m of the source). The painting complies with AS/NZS 2728:2013 and the steel base is an aluminium/zinc alloy-coated steel which complies with AS 1397:2011. Minimum yield strength is G550 (550 MPa). Minimum coating mass is AM150 (150 g/m<sup>2</sup>).

## COLORBOND® METALLIC STEEL

The COLORBOND® Metallic steel range features an innovative paint technology that boosts its signature lustre effect. The paint type and production method strategically places particles in the paint system to optimise light penetration and colour reflectivity to increase brilliance.

## SUPERDURA® STAINLESS STEEL

SUPERDURA® Stainless is a pre-painted steel for severe coastal or industrial environments. The painting complies with AS/NZS 2728:2013 and the steel base is a stainless steel which complies with AISI/ASTM Type 430; UNS No. S43000 conforming to AS 1397.

## GALVSPAN® STEEL

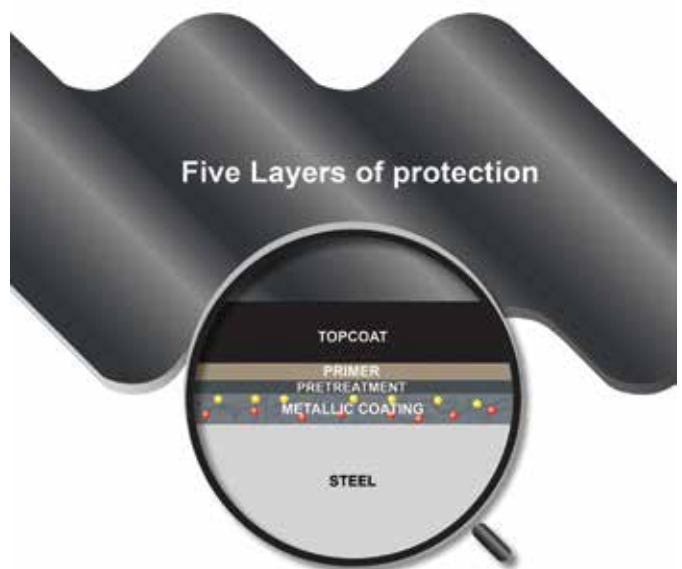
GALVSPAN® steel has been specifically developed for purlins and girts, and is cold formed into a wide range of sizes. Metroll purlins, girts and other structural products are manufactured from hi-tensile galvanised steel (G450, G500 or G550), with a minimum Z350 galvanised coating (350 g/m<sup>2</sup>) conforming to AS 1397.

## FIVE LAYERS OF PROTECTION

Manufactured in Australia to Australian Standards (AS 1397 and AS/NZS 2728), and tested in some of the harshest Australian conditions over the last 50 years, genuine COLORBOND® steel is far more than just 'paint on steel'.

The steel base is manufactured to meet relevant Australian standards ensuring strict adherence to the required grade and strength. The base is then coated in BlueScope's industry leading metallic coating incorporating Activate® technology to provide enhanced corrosion resistance.

A thin pre-treatment layer is applied to optimise the adhesion of further coatings. A corrosion inhibitive primer is baked onto the surface. A top coat of specially developed exterior grade paint is baked on and provides resistance to chipping, flaking and blistering; and to ensure the finish retains its look for longer.



Activate® technology is not available for COLORBOND® stainless, Permagard® or steel products with a galvanised steel substrate.

# MATERIAL SELECTION & CORROSION

It is important that the appropriate material is selected for application. Environmental conditions will impact the corrosive nature of each project site. These conditions include the direction of prevailing winds, rainfall amount, temperature, proximity to marine and industrial environments and the amount of exposed area not washed by natural rainfall.

## BLUESCOPE® STEEL PRODUCT GUIDE FOR ROOFING IN MARINE ENVIRONMENTS

| Severity           | Distance from...             |             | Recommended Steel Roofing Product    |
|--------------------|------------------------------|-------------|--------------------------------------|
|                    | Breaking Surf/Exposed Marine | Calm Marine |                                      |
| Benign             | Greater than 1 km            |             | Zincalume®<br>Colorbond®             |
| Moderate           | 401 - 1000m                  | 201 - 1000m | Coolmax®<br>Metallic                 |
| Marine             | 201 - 400m                   | 101 - 200m  | Zincalume®<br>Colorbond®<br>Coolmax® |
| Severe Marine      | 101 - 200m                   | 0 - 100m    | Ultra®                               |
| Very Severe Marine | 0 -100m                      | N/A         | Stainless Steel                      |

### Notes:

- This table is sourced from BlueScope Steel TB-1A and is intended as a guide only.
- Absolute performance is subject to local conditions.
- Distance is as measured from the high-water mark.
- Applies to salt marine environments only. Contact BlueScope Steel for installations subject to heavy industrial conditions or internal humidity.
- Refer to BlueScope TB-35 for further information on marine classifications.

## MATERIAL COMPATIBILITY TABLES

| Roof or Rainwater Material | Direct Material Contact              |            |      |                  |                            |                 |                  |                 |      | Drainage from Upper Surface to Lower Surface |            |      |                  |                            |                 |                  |                 |      |                            |
|----------------------------|--------------------------------------|------------|------|------------------|----------------------------|-----------------|------------------|-----------------|------|--|------------|------|------------------|----------------------------|-----------------|------------------|-----------------|------|----------------------------|
|                            | Accessory, Fastener or Upper Surface |            |      |                  |                            |                 |                  |                 |      | Accessory, Fastener or Upper Surface         |            |      |                  |                            |                 |                  |                 |      |                            |
|                            | ZINCALUME®                           | Galvanised | Zinc | COLORBOND® Steel | SUPERDURA® Stainless Steel | Stainless Steel | Aluminium Alloys | Copper & Alloys | Lead | ZINCALUME®                                   | Galvanised | Zinc | COLORBOND® Steel | SUPERDURA® Stainless Steel | Stainless Steel | Aluminium Alloys | Copper & Alloys | Lead | Roof Tiles, Glass, Plastic |
| ZINCALUME®                 | ✓                                    | ✓          | ✓    | ✓                | ✗                          | ✗               | ✓                | ✗               | ✗    | ✓  | ✓          | ✓    | ✓                | ✓                          | ✓               | ✓                | ✗               | ✗    | ✓                          |
| Galvanised                 | ✓                                    | ✓          | ✓    | ✓                | ✗                          | ✗               | ✓                | ✗               | ✗    | ✗  | ✓          | ✓    | ✗                | ✗                          | ✗               | ✗                | ✗               | ✓    | ✗                          |
| Zinc                       | ✓                                    | ✓          | ✓    | ✓                | ✗                          | ✗               | ✓                | ✗               | ✗    | ✗  | ✓          | ✓    | ✗                | ✗                          | ✗               | ✗                | ✗               | ✓    | ✗                          |
| COLORBOND® Steel           | ✓                                    | ✓          | ✓    | ✓                | ✗                          | ✗               | ✓                | ✗               | ✗    | ✓  | ✓          | ✓    | ✓                | ✓                          | ✓               | ✓                | ✗               | ✗    | ✓                          |
| SUPERDURA® Stainless Steel | ✗                                    | ✗          | ✗    | ✗                | ✓                          | ✓               | ✗                | ✗               | ✗    | ✓  | ✓          | ✓    | ✓                | ✓                          | ✓               | ✓                | ✓               | ✓    | ✓                          |
| Stainless Steel            | ✗                                    | ✗          | ✗    | ✗                | ✓                          | ✓               | ✗                | ✗               | ✗    | ✓  | ✓          | ✓    | ✓                | ✓                          | ✓               | ✓                | ✓               | ✓    | ✓                          |
| Aluminium Alloys           | ✓                                    | ✓          | ✓    | ✓                | ✗                          | ✗               | ✓                | ✗               | ✗    | ✓  | ✓          | ✓    | ✓                | ✓                          | ✓               | ✓                | ✗               | ✗    | ✓                          |
| Copper & Alloys (C&A)      | ✗                                    | ✗          | ✗    | ✗                | ✗                          | ✗               | ✗                | ✓               | ✗    | ✓  | ✓          | ✓    | ✓                | ✓                          | ✓               | ✓                | ✓               | ✓    | ✓                          |
| Lead (L)                   | ✗                                    | ✗          | ✗    | ✗                | ✗                          | ✗               | ✗                | ✓               | ✓    | ✓  | ✓          | ✓    | ✓                | ✓                          | ✓               | ✓                | ✓               | ✓    | ✓                          |

## CORROSIVE PATH

Coated steel products can be damaged by contact with or run-off from some metals, treated timbers and chemicals. If any of the two metals listed here are in contact or a run-off situation, the metal higher in the table will corrode to protect the metal lower in the table. A simple rule to note is to remember that you can run water downhill but not up, e.g. Zinc to Copper is fine but Copper to Zinc is not.



**Magnesium**  
**Zinc**  
**Zincalume®**  
**Aluminium**  
**Cadmium**  
**Steel**  
**Lead**  
**Tin**  
**Nickel**  
**Brass**  
**Copper**



## NEVER USE BLACK LEAD PENCILS

Black lead pencils can be a problem, not because they have lead in them, but rather because they haven't any lead in them.

Lead pencils are now made from graphite and clay; and graphite is a form of carbon. When placed in contact with most metals, this creates an electric cell when wet. This cell acts like a battery and eats away at the metal surface leaving an indelible mark. The trick is to use any other coloured pencil - except black.

## ZINCALUME® OR GALVANISED?

Not sure if it's ZINCALUME® or galvanised steel? If in doubt submit the surface to the acid test:

1. Clean the surface area of the steel.
2. Apply a single drop of spirits of salts (muriatic or hydrochloric acid) at about 1/3 strength.
3. If the surface stays clean the material is galvanised, if it turns black it is ZINCALUME®.

## ROOFING & WALLING PRODUCT TABLES

| PROFILE | BMT mm | Steel Base MPa | Colorbond® Mass Kg/m <sup>2</sup> | Zinc Mass Kg/m <sup>2</sup> | Cover Width mm | Profile Depth mm | Minimum Pitch ° | Max. Spans mm* |          | Overhang mm** |           |
|---------|--------|----------------|-----------------------------------|-----------------------------|----------------|------------------|-----------------|----------------|----------|---------------|-----------|
|         |        |                |                                   |                             |                |                  |                 | End            | Internal | Plain         | Stiffened |

### ROOFING

|              |      |      |      |      |     |    |             |      |      |     |     |
|--------------|------|------|------|------|-----|----|-------------|------|------|-----|-----|
| Corodek®     | 0.42 | G550 | 4.30 | 4.23 | 762 | 16 | 5 (1 in 12) | 900  | 1200 | 200 | 250 |
|              | 0.48 | G550 | 4.88 | 4.81 | 762 | 16 | 5 (1 in 12) | 1300 | 1700 | 250 | 250 |
|              | 0.60 | G300 | 5.95 | 5.88 | 762 | 16 | 5 (1 in 12) | 1600 | 1800 | 200 | 250 |
| Hi-Deck 650® | 0.42 | G550 | 5.04 | 4.96 | 650 | 50 | 1 (1 in 50) | 2550 | 3200 | 200 | 500 |
|              | 0.48 | G550 | 5.72 | 5.64 | 650 | 50 | 1 (1 in 50) | 3100 | 3900 | 250 | 550 |
| Metlok 700®  | 0.42 | G550 | 4.68 | 4.61 | 700 | 40 | 1 (1 in 50) | 1800 | 2200 | 150 | 450 |
|              | 0.48 | G550 | 5.32 | 5.24 | 700 | 40 | 1 (1 in 50) | 2200 | 2800 | 200 | 500 |
| Metrospan®   | 0.42 | G550 | 4.68 | 4.61 | 700 | 24 | 2 (1 in 30) | 1800 | 2400 | 200 | 400 |
|              | 0.48 | G550 | 5.32 | 5.24 | 700 | 24 | 2 (1 in 30) | 2200 | 3000 | 250 | 500 |
| Trimclad®    | 0.42 | G550 | 4.30 | 4.23 | 762 | 29 | 2 (1 in 30) | 1350 | 1900 | 150 | 300 |
|              | 0.48 | G550 | 4.88 | 4.81 | 762 | 29 | 2 (1 in 30) | 1900 | 2600 | 200 | 350 |

### WALLING

|               |      |      |      |      |     |    |  |      |      |     |     |
|---------------|------|------|------|------|-----|----|--|------|------|-----|-----|
| Corodek®      | 0.42 | G550 | 4.30 | 4.23 | 762 | 16 |  | 2200 | 2700 | 200 | 300 |
|               | 0.48 | G550 | 4.88 | 4.81 | 762 | 16 |  | 2400 | 2700 | 250 | 350 |
|               | 0.60 | G300 | 5.95 | 5.88 | 762 | 16 |  | 2200 | 2700 | 200 | 300 |
| Hi-Deck 650®  | 0.42 | G550 | 5.04 | 4.96 | 650 | 50 |  | 3300 | 4150 | 250 | 500 |
|               | 0.48 | G550 | 5.72 | 5.64 | 650 | 50 |  | 3600 | 4500 | 300 | 550 |
| Metlok 700®   | 0.42 | G550 | 4.68 | 4.61 | 700 | 40 |  | 2200 | 2200 | 200 | 450 |
|               | 0.48 | G550 | 5.32 | 5.24 | 700 | 40 |  | 2400 | 2700 | 250 | 500 |
| Metrib®       | 0.35 | G550 | 3.25 | 3.19 | 850 | 4  |  | 1000 | 1250 | 100 | 100 |
|               | 0.42 | G550 | 3.86 | 3.80 | 850 | 4  |  | 1000 | 1250 | 150 | 150 |
|               | 0.48 | G550 | 4.38 | 4.32 | 850 | 4  |  | 1000 | 1300 | 150 | 150 |
| Metroclad®    | 0.35 | G550 | 3.20 | 3.14 | 864 | 11 |  | 1300 | 1650 | 100 | 150 |
|               | 0.42 | G550 | 3.79 | 3.73 | 864 | 11 |  | 1400 | 1750 | 150 | 200 |
| Metrospan®    | 0.42 | G550 | 4.68 | 4.61 | 700 | 24 |  | 2400 | 3000 | 200 | 400 |
|               | 0.48 | G550 | 5.32 | 5.24 | 700 | 24 |  | 2400 | 3000 | 250 | 500 |
| Mini Corodek® | 0.42 | G550 | 3.97 | 3.91 | 825 | 6  |  | 1150 | 1450 | 100 | 100 |
|               | 0.48 | G550 | 4.51 | 4.45 | 825 | 6  |  | 1150 | 1450 | 125 | 125 |
| Trimclad®     | 0.35 | G550 | 3.62 | 3.56 | 762 | 29 |  | 2400 | 3000 | 150 | 250 |
|               | 0.42 | G550 | 4.30 | 4.23 | 762 | 29 |  | 2400 | 3000 | 200 | 300 |
|               | 0.48 | G550 | 4.88 | 4.81 | 762 | 29 |  | 2400 | 3000 | 250 | 350 |

**NOTES:** \*Maximum Spans are based on N2 Wind Category and 1.5mm substrate.

\*\*Minimum Overhang is 50mm.

\*Plain Overhangs limited to 20% of adjacent end span.

\*\*Stiffened Overhangs limited to 33% of adjacent end span.

# SHEET COVERAGE BY PROFILE

**METROSPAN®**  
Cover: 700mm

| Roof Width (m) | Sheets | Sheets | Cover (m) |
|----------------|--------|--------|-----------|
| 3              | 5      | 3      | 2.1       |
| 4              | 6      | 4      | 2.8       |
| 5              | 8      | 5      | 3.5       |
| 6              | 9      | 6      | 4.2       |
| 7              | 10     | 7      | 4.9       |
| 8              | 12     | 8      | 5.6       |
| 9              | 13     | 9      | 6.3       |
| 10             | 15     | 10     | 7.0       |
| 11             | 16     | 11     | 7.7       |
| 12             | 18     | 12     | 8.4       |
| 13             | 19     | 13     | 9.1       |
| 14             | 20     | 14     | 9.8       |
| 15             | 22     | 15     | 10.5      |
| 16             | 23     | 16     | 11.2      |
| 17             | 25     | 17     | 11.9      |
| 18             | 26     | 18     | 12.6      |
| 19             | 28     | 19     | 13.3      |
| 20             | 29     | 20     | 14.0      |

**CORODEK®**  
Cover: 762mm

| Roof Width (m) | Sheets | Sheets | Cover (m) |
|----------------|--------|--------|-----------|
| 3              | 4      | 3      | 2.3       |
| 4              | 6      | 4      | 3.0       |
| 5              | 7      | 5      | 3.8       |
| 6              | 8      | 6      | 4.6       |
| 7              | 10     | 7      | 5.3       |
| 8              | 11     | 8      | 6.1       |
| 9              | 12     | 9      | 6.9       |
| 10             | 14     | 10     | 7.6       |
| 11             | 15     | 11     | 8.4       |
| 12             | 16     | 12     | 9.1       |
| 13             | 18     | 13     | 9.9       |
| 14             | 19     | 14     | 10.7      |
| 15             | 20     | 15     | 11.4      |
| 16             | 21     | 16     | 12.2      |
| 17             | 23     | 17     | 13.0      |
| 18             | 24     | 18     | 13.7      |
| 19             | 25     | 19     | 14.5      |
| 20             | 27     | 20     | 15.2      |

**METROCLAD®**  
Cover: 850mm

| Roof Width (m) | Sheets | Sheets | Cover (m) |
|----------------|--------|--------|-----------|
| 3              | 4      | 3      | 2.6       |
| 4              | 5      | 4      | 3.4       |
| 5              | 6      | 5      | 4.3       |
| 6              | 8      | 6      | 5.1       |
| 7              | 9      | 7      | 6.0       |
| 8              | 10     | 8      | 6.8       |
| 9              | 11     | 9      | 7.7       |
| 10             | 12     | 10     | 8.5       |
| 11             | 14     | 11     | 9.4       |
| 12             | 15     | 12     | 10.2      |
| 13             | 16     | 13     | 11.1      |
| 14             | 17     | 14     | 11.9      |
| 15             | 18     | 15     | 12.8      |
| 16             | 20     | 16     | 13.6      |
| 17             | 21     | 17     | 14.5      |
| 18             | 22     | 18     | 15.3      |
| 19             | 23     | 19     | 16.2      |
| 20             | 24     | 20     | 17.0      |

**METLOK 700®**  
Cover: 700mm

| Roof Width (m) | Sheets | Sheets | Cover (m) |
|----------------|--------|--------|-----------|
| 3              | 5      | 3      | 2.1       |
| 4              | 6      | 4      | 2.8       |
| 5              | 8      | 5      | 3.5       |
| 6              | 9      | 6      | 4.2       |
| 7              | 10     | 7      | 4.9       |
| 8              | 12     | 8      | 5.6       |
| 9              | 13     | 9      | 6.3       |
| 10             | 15     | 10     | 7.0       |
| 11             | 16     | 11     | 7.7       |
| 12             | 18     | 12     | 8.4       |
| 13             | 19     | 13     | 9.1       |
| 14             | 20     | 14     | 9.8       |
| 15             | 22     | 15     | 10.5      |
| 16             | 23     | 16     | 11.2      |
| 17             | 25     | 17     | 11.9      |
| 18             | 26     | 18     | 12.6      |
| 19             | 28     | 19     | 13.3      |
| 20             | 29     | 20     | 14.0      |

**TRIMCLAD®**  
Cover: 762mm

| Roof Width (m) | Sheets | Sheets | Cover (m) |
|----------------|--------|--------|-----------|
| 3              | 4      | 3      | 2.3       |
| 4              | 6      | 4      | 3.0       |
| 5              | 7      | 5      | 3.8       |
| 6              | 8      | 6      | 4.6       |
| 7              | 10     | 7      | 5.3       |
| 8              | 11     | 8      | 6.1       |
| 9              | 12     | 9      | 6.9       |
| 10             | 14     | 10     | 7.6       |
| 11             | 15     | 11     | 8.4       |
| 12             | 16     | 12     | 9.1       |
| 13             | 18     | 13     | 9.9       |
| 14             | 19     | 14     | 10.7      |
| 15             | 20     | 15     | 11.4      |
| 16             | 21     | 16     | 12.2      |
| 17             | 23     | 17     | 13.0      |
| 18             | 24     | 18     | 13.7      |
| 19             | 25     | 19     | 14.5      |
| 20             | 27     | 20     | 15.2      |

**METRIB®**  
Cover: 850mm

| Roof Width (m) | Sheets | Sheets | Cover (m) |
|----------------|--------|--------|-----------|
| 3              | 4      | 3      | 2.6       |
| 4              | 5      | 4      | 3.4       |
| 5              | 6      | 5      | 4.3       |
| 6              | 8      | 6      | 5.1       |
| 7              | 9      | 7      | 6.0       |
| 8              | 10     | 8      | 6.8       |
| 9              | 11     | 9      | 7.7       |
| 10             | 12     | 10     | 8.5       |
| 11             | 14     | 11     | 9.4       |
| 12             | 15     | 12     | 10.2      |
| 13             | 16     | 13     | 11.1      |
| 14             | 17     | 14     | 11.9      |
| 15             | 18     | 15     | 12.8      |
| 16             | 20     | 16     | 13.6      |
| 17             | 21     | 17     | 14.5      |
| 18             | 22     | 18     | 15.3      |
| 19             | 23     | 19     | 16.2      |
| 20             | 24     | 20     | 17.0      |



# FASTENER SELECTION GUIDES
















## CORRUGATED PROFILES







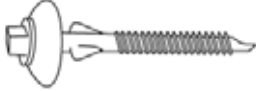
|   | NON-CYCLONIC FIXING  |  | CYCLONIC FIXING   |  |   |
|---|--|--|---|--|---|
|   | Valley Fix   | Crest Fix  | Valley Fix  | Crest Fix  | Ridge Cap Fix   |
| <b>Fix to Timber Supports</b>             | <br>RoofZIPS®<br>M6 - 11 x 25 Hd/Seal<br>6-030-3308-3C4 | <br>RoofZIPS®<br>M6 - 11 x 50 Hd/Seal<br>6-030-3306-1C4 | <br>14 - 10 x 25mm<br>Hex Hd SL Type 17<br>6-030-3007-4C4        | <br>14 - 10 x 50mm<br>Hex Hd Roof-Lok®<br>Type 17<br>6-030-3633-2C4       | <br>14 - 10 x 50mm<br>25mm Multiseal Assy<br>Type 17<br>6-030-3093-2C4     |
| <b>Fix to Metal Supports 0.42 - 1.5mm</b> | <br>RoofZIPS®<br>M6 - 11 x 25 Hd/Seal<br>6-030-3308-3C4 | <br>RoofZIPS®<br>M6 - 11 x 50 Hd/Seal<br>6-030-3306-1C4 | <br>RoofZIPS®<br>M6 - 11 x 25 Hd/Seal<br>6-030-3308-3C4          | <br>RoofZIPS®<br>M6.5 - 12 x 55mm<br>Roof-lok® Cyl Assy<br>6-030-3331-1C4 | <br>RoofZIPS®<br>M6.5 - 12 x 55mm<br>Multiseal Assy<br>6-030-3333-3C4      |
| <b>Fix to Steel Supports 1.5 - 4.5mm</b>  | <br>10 - 16 x 16mm<br>Hex Hd SL Tek®<br>6-310-3117-5Z4 | <br>M5.5 x 39mm<br>AutoTek®<br>6-310-3637-7C4          | <br>14 - 10 x 25mm<br>Hex Hd SL<br>Metal Tek®<br>6-310-3637-7C4 | <br>14 - 10 x 53mm<br>Hex Hd Roof-Lok®<br>Metal Tek®<br>6-310-3162-2C4   | <br>14 - 10 x 53mm<br>25mm Ridge Cap Assy<br>Metal Tek®<br>6-310-3150-2C4 |

## SQUARE RIB PROFILES



|   | NON-CYCLONIC FIXING  |  | CYCLONIC FIXING  |   |  |
|---|--|--|--|---|--|
|   | Valley Fix   | Crest Fix  | Valley Fix   | Crest Fix   | Ridge Cap Fix  |
| <b>Fix to Timber Supports</b>             | <br>RoofZIPS®<br>M6 - 11 x 25 Hd/Seal<br>6-030-3308-3C4 | <br>RoofZIPS®<br>M6 - 11 x 65mm<br>6-030-3307-2C4       | <br>14 - 10 x 25mm<br>Hex Hd Seal Type 17<br>6-031-3007-4C4     | <br>14 - 10 x 65mm<br>Roof-Lok® Type 17<br>6-030-3655-7C4        | <br>14 - 10 x 65mm<br>Multiseal Assy Type 17<br>6-030-3088-6C4            |
| <b>Fix to Metal Supports 0.42 - 1.5mm</b> | <br>RoofZIPS®<br>M6 - 11 x 25 Hd/Seal<br>6-030-3308-3C4 | <br>RoofZIPS®<br>M6 - 11 x 50 Hd/Seal<br>6-030-3306-1C4 | <br>RoofZIPS®<br>M6 - 11 x 25 Hd/Seal<br>6-030-3308-3C4         | <br>RoofZIPS®<br>M6.5 - 12 x 55mm<br>Roof-lok®<br>6-030-3332-2C4 | <br>RoofZIPS®<br>M6.5 - 12 x 55mm<br>Multiseal Assy<br>6-030-3333-3C4     |
| <b>Fix to Steel Supports 1.5 - 4.5mm</b>  | <br>10 - 16 x 16mm<br>Hex Hd SL Tek®<br>6-310-3117-5Z4  | <br>M5.5 x 50mm<br>AutoTek®<br>6-310-3579-4C4           | <br>14 - 10 x 25mm<br>Hex Hd SL<br>Metal Tek®<br>6-310-3323-5C4 | <br>14 - 10 x 50mm<br>Roof-Lok®<br>Metal Tek®<br>6-310-3164-2C4  | <br>14 - 10 x 53mm<br>25mm Ridge Cap Assy<br>Metal Tek®<br>6-310-3150-2C4 |

# FASTENER SELECTION GUIDES

| Approx. Fasteners per m <sup>2</sup> |                                  |   |  |
|--------------------------------------|----------------------------------|---|--|
| <b>Mini Corodek®</b>                 | 5 - 6                            | <b>Fix to Timber Supports &amp; Steel 1 - 3mm BMT</b><br><br>M4.8 x 25mm RippleZIPS®  |  |
| <b>Metlok 700®</b>                   | 3 per clip                       | <b>Fix to Timber Supports</b><br><br>#12 Hex Head Type 17 x 25mm<br>Add 10mm for softwood  | <b>Fix to Steel &lt; 1.5mm BMT</b><br>#12 Hex Head Zip Screws x 25mm   |
|                                      |                                  |   | <b>Fix to Steel &gt; 1.5mm BMT</b><br>#12 Hex Head Self Drilling Screws x 25mm   |
| <b>Roofing Battens</b>               | 8                                | <b>Fix to Timber Supports</b><br><br>M5.5 x 40mm Hex Head BattenZIPS®  | <b>Fix to Steel 1 - 4mm BMT</b><br><br>12 - 14 x 20mm Hex Head Metal Tek® |
| <b>Polycarbonate Roofing</b>         | See manufacturers recommendation | <b>Fix: Roof profile heights 16 to 24mm to timber battens; Fix roof profile heights 16 to 29mm to metal batten &amp; purlins up to 1.6mm</b><br><br>PolyZIPS® M6.5 - 14 x 50mm Hex Head |  |
| <b>Fibreglass Roofing</b>            | See manufacturers recommendation | <b>Fix roof profile heights 18 to 29mm to purlins 1.2 to 5mm</b><br>Fibreglass Tek® M6.5 - 14 x 65mm Hex Head   | <b>Fix roof profile heights 40 to 62.5mm to purlins 1.2 to 5mm</b><br>Fibreglass Tek® M6.5 - 14 x 85mm Hex Head  |

All fasteners to be installed as per manufacturers recommendations. This guide outlines only the most frequently used screw assemblies. The screw length may vary depending on the actual profile and the type of insulation system used. These recommendations should always be considered in conjunction with the roof manufacturers fixing specifications. Self drilling and tapping screws must comply with AS 3566.

# FASTENER QUANTITY GUIDE

| PROFILE       | Fasteners per sheet width | Sheet Cover (mm) | FASTENERS PER m <sup>2</sup>  |     |     |      |      |      |
|---------------|---------------------------|------------------|-------------------------------|-----|-----|------|------|------|
|               |                           |                  | Typical Support Spacings (mm) |     |     |      |      |      |
|               |                           |                  | 450                           | 600 | 900 | 1200 | 1500 | 1600 |
| Corodek®      | 3                         | 762              | 9                             | 7   | 5   | 4    | 3    | 3    |
|               | 5                         |                  | 15                            | 11  | 8   | 6    | 5    | 4    |
| Trimclad®     | 4                         | 762              | 12                            | 9   | 6   | 5    | 4    | 3    |
| Metrospan®    | 3                         | 700              | 10                            | 8   | 5   | 4    | 3    | 3    |
|               | 4                         |                  | 13                            | 10  | 6   | 5    | 4    | 3    |
| Metlok 700®   | 3 per clip                | 700              |                               |     | 2   | 1    | 1    | 1    |
| Metroclad®    | 4                         | 850              | 11                            | 8   | 6   | 4    | 4    | 3    |
| Mini Corodek® | 6                         | 825              | 17                            | 13  | 9   | 7    | 5    | 5    |
|               | 11                        |                  | 30                            | 22  | 15  | 11   | 9    | 7    |
| Metrib®       | 4                         | 850              | 11                            | 8   | 6   | 4    | 4    | 3    |
|               | 8                         |                  | 21                            | 16  | 10  | 8    | 6    | 6    |

## SIDE LAPS

It is considered good practice to use fasteners on side laps, although these are generally not necessary when the sheeting is supported as indicated in maximum span tables or for roof spans under 900mm and wall cladding spans under 1200mm. Side lap fastening should be considered if the weather resistance of the joint is questionable for any reason.

## DRAINAGE & OVERFLOW

### MAXIMUM ROOF RUNS (m) FOR SLOPES & RAINFALL INTENSITIES

| PROFILE      | Intensity<br>mm/hr | ROOF SLOPE    |               |               |               |                  |               |
|--------------|--------------------|---------------|---------------|---------------|---------------|------------------|---------------|
|              |                    | 1 in 50<br>1° | 1 in 30<br>2° | 1 in 20<br>3° | 1 in 12<br>5° | 1 in 7.5<br>7.5° | 1 in 6<br>10° |
| Corodek®     | 100                |               |               |               | 47            | 47               | 51            |
|              | 150                |               |               |               | 27            | 32               | 35            |
|              | 200                |               |               |               | 20            | 24               | 26            |
|              | 250                |               |               |               | 16            | 19               | 21            |
|              | 300                |               |               |               | 13            | 16               | 17            |
|              | 400                |               |               |               | 10            | 12               | 13            |
| Hi Deck 650® | 100                | 143           | 480           | 209           | 256           |                  | 348           |
|              | 150                | 95            | 120           | 139           | 171           |                  | 232           |
|              | 200                | 71            | 90            | 104           | 128           |                  | 174           |
|              | 250                | 57            | 72            | 83            | 102           |                  | 139           |
|              | 300                | 47            | 60            | 69            | 85            |                  | 116           |
|              | 400                | 35            | 45            | 52            | 64            |                  | 87            |
| Metlok 700®  | 100                | 316           | 398           | 462           | 567           | 676              | 769           |
|              | 150                | 211           | 265           | 308           | 378           | 450              | 513           |
|              | 200                | 158           | 199           | 231           | 284           | 338              | 385           |
|              | 250                | 127           | 159           | 185           | 227           | 270              | 308           |
|              | 300                | 105           | 133           | 154           | 189           | 225              | 256           |
|              | 400                | 79            | 99            | 116           | 142           | 169              | 192           |
| Metrospan®   | 100                |               | 97            | 110           | 131           |                  | 168           |
|              | 150                |               | 65            | 73            | 87            |                  | 112           |
|              | 200                |               | 49            | 55            | 65            |                  | 84            |
|              | 250                |               | 39            | 44            | 52            |                  | 67            |
|              | 300                |               | 32            | 37            | 44            |                  | 56            |
|              | 400                |               | 24            | 28            | 33            |                  | 42            |
| Trimclad®    | 100                |               | 220           | 257           | 320           | 382              | 439           |
|              | 150                |               | 146           | 172           | 214           | 255              | 293           |
|              | 200                |               | 110           | 129           | 160           | 191              | 220           |
|              | 250                |               | 88            | 103           | 128           | 153              | 176           |
|              | 300                |               | 73            | 86            | 107           | 127              | 146           |
|              | 400                |               | 55            | 64            | 80            | 96               | 110           |

- Rainwater run-off and drainage capacity may place some limitations on the total length of a sheet run and must be considered during the design and construction phase of a project.
- The total length of roof sheeting which shall include ends laps, expansion joints or steps and draining the roof in one direction, shall be considered a single roof run.
- Thermal expansion must also be considered.
- Maximum production and transportation lengths may limit availability.

## RAINFALL DURATION INTENSITIES (mm/Hr)

|            |                | 5 min. RAINFALL INTENSITY |                      |            |               | 5 min. RAINFALL INTENSITY |                      |     |
|------------|----------------|---------------------------|----------------------|------------|---------------|---------------------------|----------------------|-----|
|            |                | Once in<br>20 years       | Once in 100<br>years |            |               | Once in<br>20 years       | Once in 100<br>years |     |
| <b>ACT</b> | Canberra       | 143                       | 193                  | <b>SA</b>  | Adelaide      | 124                       | 184                  |     |
|            | Gungahlin      | 137                       | 179                  |            | Gawler        | 110                       | 158                  |     |
|            | Tuggeranong    | 148                       | 210                  |            | Mt. Gambler   | 103                       | 144                  |     |
| <b>NSW</b> | Albany         | 139                       | 180                  |            | Murray Bridge | 120                       | 178                  |     |
|            | Broken Hill    | 143                       | 219                  |            | Port Augusta  | 133                       | 199                  |     |
|            | Goulburn       | 121                       | 156                  |            | Port Pirie    | 122                       | 181                  |     |
|            | Kiama          | 226                       | 319                  |            | Yorke town    | 155                       | 166                  |     |
|            | Newcastle      | 226                       | 319                  |            | <b>TAS</b>    | Burnie                    | 128                  | 180 |
|            | Orange         | 142                       | 186                  |            |               | Flinders Island           | 122                  | 165 |
|            | Sydney         | 200                       | 262                  | Hobart     |               | 85                        | 116                  |     |
|            | Avalon         | 206                       | 278                  | Launceston |               | 90                        | 121                  |     |
|            | Campbeltown    | 167                       | 222                  | Queenstown |               | 94                        | 120                  |     |
|            | Penrith        | 180                       | 244                  | St Marys   | 146           | 203                       |                      |     |
|            | Windsor        | 175                       | 233                  | <b>VIC</b> | Ballarat      | 131                       | 188                  |     |
|            | Tweed Heads    | 252                       | 330                  |            | Benalla       | 146                       | 194                  |     |
|            | Wollongong     | 217                       | 308                  |            | Geelong       | 102                       | 144                  |     |
|            | <b>NT</b>      | Alice Springs             | 166                  |            | 239           | Horsham                   | 120                  | 173 |
| Darwin     |                | 233                       | 274                  |            | Lake Entrance | 145                       | 198                  |     |
| Katherine  |                | 216                       | 250                  |            | Melbourne     | 132                       | 187                  |     |
| <b>QLD</b> | Bamaga         | 252                       | 298                  |            | Hastings      | 117                       | 145                  |     |
|            | Brisbane       | 234                       | 305                  |            | Sorrento      | 106                       | 140                  |     |
|            | Ipswich        | 211                       | 278                  |            | Mildura       | 142                       | 218                  |     |
|            | Victoria Point | 245                       | 320                  |            | Stawell       | 130                       | 186                  |     |
|            | Bundaberg      | 265                       | 340                  | <b>WA</b>  | Albany        | 125                       | 178                  |     |
|            | Cairns         | 229                       | 278                  |            | Broome        | 232                       | 287                  |     |
|            | Concurry       | 218                       | 278                  |            | Bunbury       | 147                       | 199                  |     |
|            | Innisfail      | 248                       | 301                  |            | Derby         | 211                       | 256                  |     |
|            | Mackay         | 250                       | 316                  |            | Geraldton     | 138                       | 193                  |     |
|            | Mt. Isa        | 199                       | 260                  |            | Kalgoorlie    | 137                       | 204                  |     |
|            | Noosa Heads    | 258                       | 331                  |            | Perth         | 130                       | 172                  |     |
|            | Rockhampton    | 229                       | 300                  |            | Joondalup     | 133                       | 180                  |     |
|            | Toowoomba      | 203                       | 268                  |            | Midland       | 122                       | 163                  |     |
|            | Townsville     | 235                       | 300                  |            | Port Headland | 168                       | 230                  |     |
|            | Weipa          | 239                       | 283                  |            | Tom Price     | 138                       | 182                  |     |

Source: National Construction Code. Table 3.5.2.1

# GUTTER OVERFLOW

## RAINWATER OVERFLOW PROVISIONS

The NCC 2016 Part 3.5.2 sets out the appropriate performance requirements for overflow measures of eave and valley gutters. This was updated in May 2016 and incorporates the requirements for rainfall intensities for 1 in 20 year and 1 in 100 year intervals in locations across Australia.

It is important that the drainage system diverts water away from the building. Part 3.5.2 of the NCC 2016 sets out the acceptable construction practice and gives consideration to materials, gutter selection, gutter installation and downpipe size and installation. The code also provides detail on rainfall duration intensities, gutter and downpipe selection, overflow volumes and acceptable overflow measures both continuous and dedicated.

It is important to note that a combination of overflow measures may be required in order to achieve a complying drainage system. As high fronted gutters have become very popular, overflow systems must be considered in the totality of the drainage system as relying on gutter capacity alone may not be sufficient.

## DESIGNER RESPONSIBILITY

The designer may be the builder, hydraulic engineer, architect, building designer, roofing and guttering contractor or home owner. It is up to the designer to design a complete rainwater drainage system that meets the relevant requirements of the NCC Building Code and relevant Australian Standards. Designers should take note of AS/NZS 3500.3 and AS/NZS 3500.5.

Broadly, the steps a roof drainage designer takes are as follows:

- Ascertain duration of rainfall intensity.
- Consider the roof design, roof catchment area, slope, number and positions of downpipes, length of gutter, ridge to gutter length etc.
- Calculate the overflow volume.
- Select downpipes, gutters and overflow measures that are suitable based on the required overflow volume.

## INSTALLER RESPONSIBILITY

The installer is responsible for installing the rainwater drainage system as per the design provided by the designer. Section 3.5.2.4 of the NCC 2016 sets out the minimum requirements for the installation of gutters.

## HOMEOWNER RESPONSIBILITY

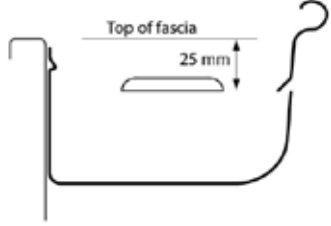
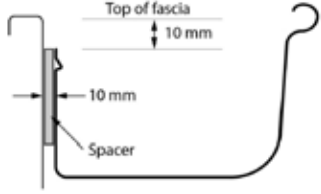
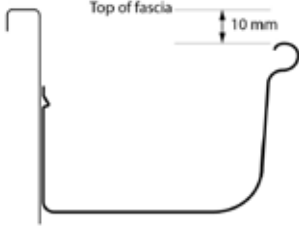
A rainwater drainage system is only as good as the maintenance of the system. Blocked gutters, downpipes or other overflow items will negatively impact on the performance of the drainage system. The homeowner is responsible for ensuring basic maintenance of the system is carried out at regular intervals.

# RAINWATER OVERFLOW DESIGN & PROVISION

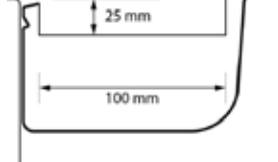
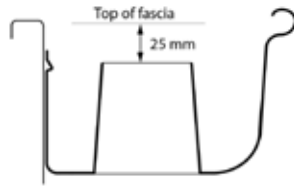
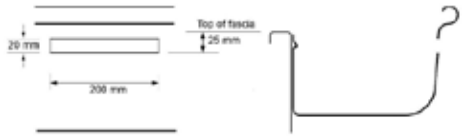
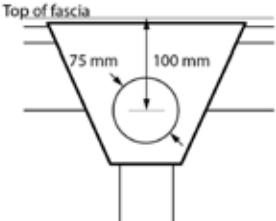
## NCC: Table 3.5.2.4 ACCEPTABLE OVERFLOW MEASURES

Note: Extracted directly from the NCC. (L/s/m = Litres per second per metre)

**TABLE A: ACCEPTABLE CONTINUOUS OVERFLOW MEASURES**

|   | Overflow Capacity<br>(L/s/m) |  |
|---|------------------------------|--|
| <p><b>Front face slotted gutter with;</b></p> <p>a. A minimum slot opening area of 1200mm<sup>2</sup> per metre gutter; and</p> <p>b. The lower edge of the slots is installed a minimum of 25mm below the fascia.</p>  | 0.50                         |   |
| <p><b>Controlled back gap with;</b></p> <p>a. A permanent minimum 10mm spacer installed between the gutter back and fascia; and</p> <p>b. One spacer per bracket, with the spacer not more than 50mm wide; and</p> <p>c. The back of the gutter installed a minimum of 10mm below the fascia.</p> | 1.50                         |   |
| <p><b>Controlled front bead height;</b></p> <p>a. The front bead of the gutter installed a minimum 10mm below the top of the fascia.</p>  | 1.50                         |  |

**TABLE B: ACCEPTABLE DEDICATED OVERFLOW MEASURES PER DOWNPIPE**

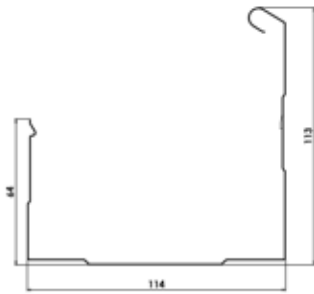
|   |      |   |
|---|------|---|
| <p><b>End-stop weir with;</b></p> <p>a. A minimum clear width of 100mm; and</p> <p>b. The weir edge installed a minimum of 25mm below the fascia.</p>   | 0.50 |  |
| <p><b>Inverted nozzle installed within 500mm of a gutter high point with;</b></p> <p>a. A minimum nozzle size of 100mm x 50mm positioned lengthways in the gutter; and</p> <p>b. The top of the nozzle installed a minimum of 25mm below the top of the fascia.</p> | 1.2  |  |
| <p><b>Front race weir with;</b></p> <p>a. A minimum clear width of 200mm; and</p> <p>b. A minimum clear height of 20mm; and</p> <p>c. The weir edge installed a minimum of 25mm below the top of the fascia.</p>  | 1.0  |  |
| <p><b>Rainhead with;</b></p> <p>a. A 75mm diameter hole in the outward face of the rainhead; and</p> <p>b. The centreline of the hole positioned 100mm below the top of the fascia.</p>   | 3.5  |  |

# METROLL GUTTER PROFILES

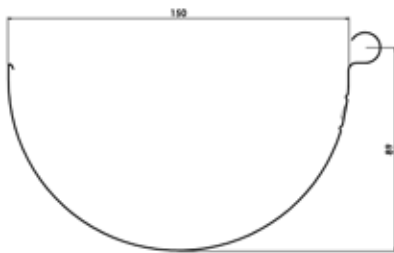
There may be variations in dimensions across Metroll's manufacturing locations. Check with your local Metroll branch for dimensions, lead times and availability.

TCA = Total Cross Sectional Area

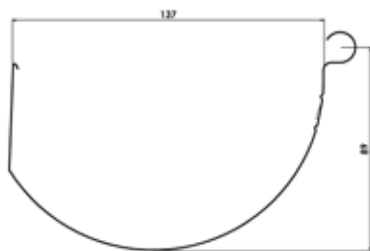
ECA = Effective Cross Sectional Area. ECA is calculated as per AS/NZS 2179:2014 and is 10mm below the overflow level.



| <b>METROLINE SQUARE GUTTER</b><br>QLD, NSW, VIC | <b>TCA mm<sup>2</sup></b> | <b>ECA mm<sup>2</sup></b> |
|---|---------------------------|---------------------------|
| Standard  | 6,971                     | 5,874                     |
| Slotted   | 6,305                     | 5,202                     |

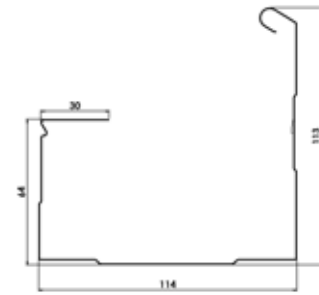


| <b>150 HALF ROUND GUTTER</b><br>QLD, NSW, VIC | <b>TCA mm<sup>2</sup></b> | <b>ECA mm<sup>2</sup></b> |
|---|---------------------------|---------------------------|
| Standard                                      | 9,791                     | 8,303                     |
| Slotted                                       | 6,232                     | 4,811                     |

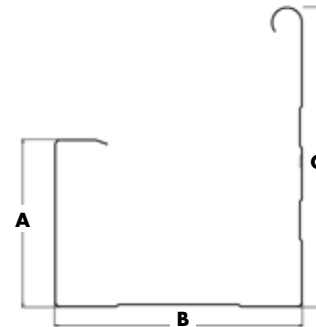


| <b>SKYLINE GUTTER*</b><br>QLD, NSW, VIC | <b>TCA mm<sup>2</sup></b> | <b>ECA mm<sup>2</sup></b> |
|---|---------------------------|---------------------------|
| Standard                                | 9,364                     | 8,005                     |
| Slotted                                 | 6,039                     | 4,706                     |

\* Suitable for use with Graptor Bracket.



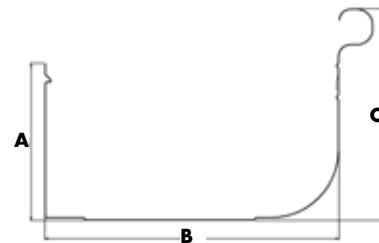
| <b>METROLINE FASCIA GUTTER</b><br>QLD, VIC | <b>TCA mm<sup>2</sup></b> | <b>ECA mm<sup>2</sup></b> |
|--|---------------------------|---------------------------|
| Standard                                   | 6,971                     | 5,874                     |
| Slotted                                    | 6,305                     | 5,202                     |



## SQUARELINE GUTTER

VIC, WA

| MODEL             | DIMENSIONS mm |     |     | ECA mm <sup>2</sup> |       | TCA mm <sup>2</sup> |       |
|-------------------|---------------|-----|-----|---------------------|-------|---------------------|-------|
|                   | A             | B   | C   | STD                 | SLTD  | STD                 | SLTD  |
| WA                | 81            | 120 | 145 | 8,302               | 6,734 | 9,471               | 7,923 |
| Standard VIC      | 65            | 127 | 122 | 6,800               | 5,800 | 8,000               | 7,100 |
| Commercial VIC    | 83            | 125 | 136 | -                   | 8,210 | -                   | 9,450 |
| Fascia Gutter VIC | 60            | 127 | 121 | 6,310               | 5,840 | 7,570               | 7,100 |



## HIGH FRONT QUAD GUTTER

NT, QLD, NSW, VIC, TAS, SA

| MODEL | DIMENSIONS mm |     |    | ECA mm <sup>2</sup> |       | TCA mm <sup>2</sup> |       |
|-------|---------------|-----|----|---------------------|-------|---------------------|-------|
|       | A             | B   | C  | STD                 | SLTD  | STD                 | SLTD  |
| 115*  | 61            | 115 | 90 | 5,529               | 4,763 | 6,660               | 5,895 |
| 125*  | 68            | 107 | 94 | 5,837               | 4,939 | 6,895               | 5,991 |
| 150** | 68            | 130 | 98 | 7,298               | 5,852 | 8,578               | 7,137 |
| 175   | 71            | 160 | 99 | 9,389               | 7,617 | 10,970              | 9,204 |

\* Suitable for use with Graptor Bracket.

\*\* 150 model suitable use with Graptor Bracket in QLD only

## GRAPTOR BRACKET

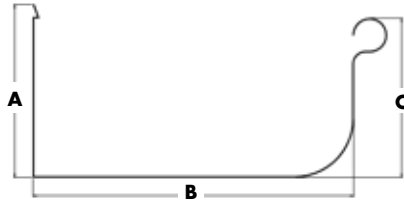
The Graptor bracket offers a compliant solution for the mandatory gutter overflow requirements of the NCC 2019, Part 3.5.2, by way of a controlled back gap between the fascia and the back of the gutter. The Graptor is suitable for use with the Skyline Gutter, 115 High Front Quad Gutter, 125 High Front Quad Gutter, 150 High Front Quad Gutter (QLD only) and Big M Gutter (QLD).



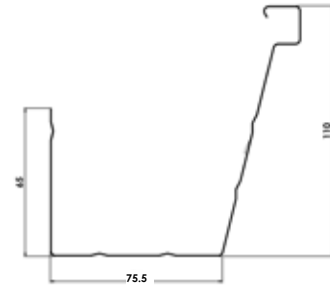
# METROLL GUTTER PROFILES

TCA = Total Cross Sectional Area

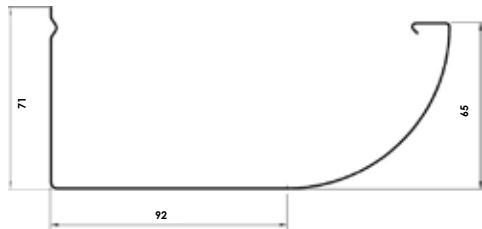
ECA = Effective Cross Sectional Area. ECA is calculated as per AS/NZS 2179:2014 and is 10mm below the overflow level.



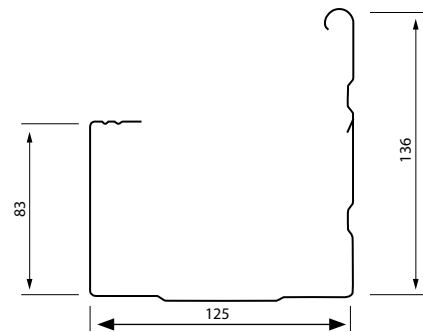
| LOW FRONT QUAD GUTTER |               |     |     | QLD, Newcastle      |                     |
|-----------------------|---------------|-----|-----|---------------------|---------------------|
| MODEL                 | DIMENSIONS mm |     |     | ECA mm <sup>2</sup> | TCA mm <sup>2</sup> |
|                       | A             | B   | C   | STD                 | STD                 |
| 115                   | 58            | 113 | 61  | 5,367               | 6,497               |
| 150                   | 76            | 141 | 70  | 8,239               | 9,762               |
| 175                   | 105           | 175 | 100 | 15,430              | 17,297              |



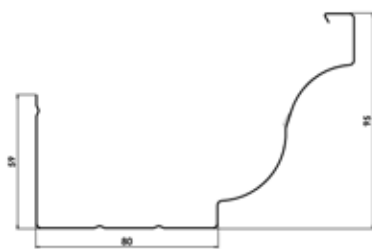
| EAVESLINE GUTTER WA |  | TCA mm <sup>2</sup> | ECA mm <sup>2</sup> |
|---------------------|--|---------------------|---------------------|
| Standard            |  | 5,339               | 4,453               |
| Slotted             |  | 3,555               | 2,714               |



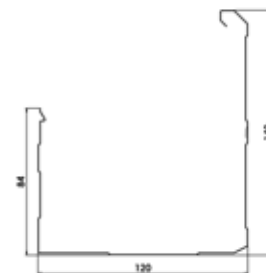
| SMARTLINE GUTTER WA |  | TCA mm <sup>2</sup> | ECA mm <sup>2</sup> |
|---------------------|--|---------------------|---------------------|
| Standard            |  | 9,057               | 7,518               |



| NEWCASTLE FASCIA GUTTER NSW |  | TCA mm <sup>2</sup> | ECA mm <sup>2</sup> |
|-----------------------------|--|---------------------|---------------------|
| Standard                    |  | 10,312              | 9,062               |
| Slotted                     |  | 9,687               | 8,437               |



| ROOFLINE COLONIAL GUTTER WA |  | TCA mm <sup>2</sup> | ECA mm <sup>2</sup> |
|-----------------------------|--|---------------------|---------------------|
| Standard                    |  | 5,849               | 4,729               |
| Slotted                     |  | 4,329               | 3,222               |



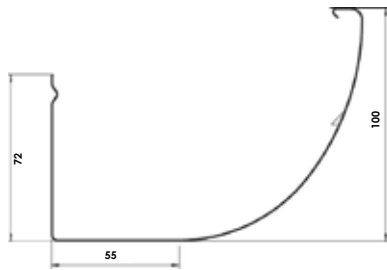
| BIG M GUTTER QLD |  | TCA mm <sup>2</sup> | ECA mm <sup>2</sup> |
|------------------|--|---------------------|---------------------|
| Standard         |  | 9,727               | 8,564               |
| Slotted          |  | 7,813               | 6,634               |



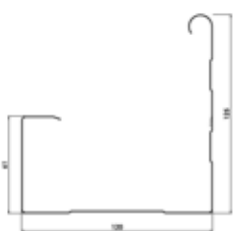
# METROLL GUTTER PROFILES

TCA = Total Cross Sectional Area

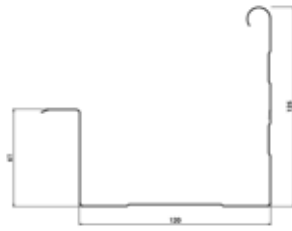
ECA = Effective Cross Sectional Area. ECA is calculated as per AS/NZS 2179:2014 and is 10mm below the overflow level.



| QUARTER ROUND GUTTER<br>WA | TCA mm <sup>2</sup> | ECA mm <sup>2</sup> |
|----------------------------|---------------------|---------------------|
| Standard                   | 7,849               | 6,567               |
| Slotted                    | 5,127               | 3,920               |

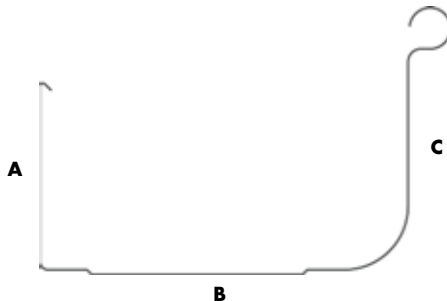


**PATIOLINE**



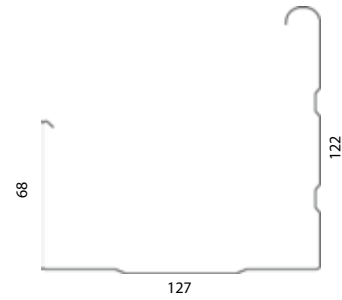
**QUICKFIX**

| PATIOLINE & QUICKFIX GUTTERS<br>WA | TCA mm <sup>2</sup> | ECA mm <sup>2</sup> |
|------------------------------------|---------------------|---------------------|
| Patioline Standard                 | 7,097               | 5,924               |
| Quickfix Standard                  | 7,108               | 5,918               |
| Patioline & Quickfix Slotted       | 6,378               | 5,195               |

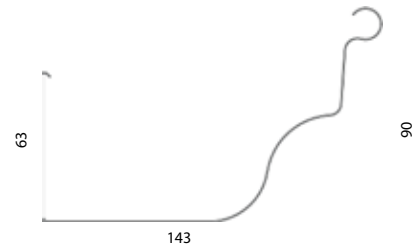


## QUAD GUTTER

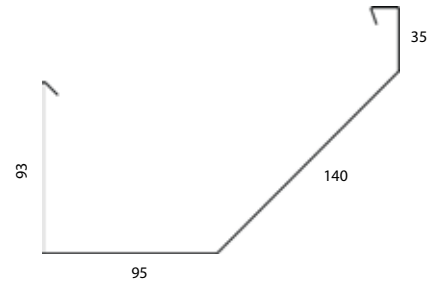
| MODEL | DIMENSIONS mm |     |    | TCA mm <sup>2</sup> |       | ECA mm <sup>2</sup> |     |
|-------|---------------|-----|----|---------------------|-------|---------------------|-----|
|       | A             | B   | C  | STD                 | STD   | STD                 | STD |
| 115   | 64            | 110 | 94 | 5,611               | 4,673 |                     |     |
| 125   | 67            | 130 | 94 | 7,177               | 5,564 |                     |     |
| 150   | 67            | 160 | 94 | 8,889               | 6,902 |                     |     |



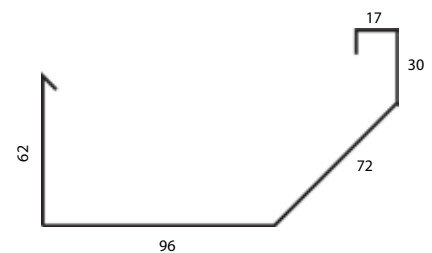
| METROLINE GUTTER<br>SA | TCA mm <sup>2</sup> | ECA mm <sup>2</sup> |
|------------------------|---------------------|---------------------|
| Standard               | 6,071               | 7,331               |



| OG GUTTER<br>SA | TCA mm <sup>2</sup> | ECA mm <sup>2</sup> |
|-----------------|---------------------|---------------------|
| Standard        | 4,834               | 5,209               |



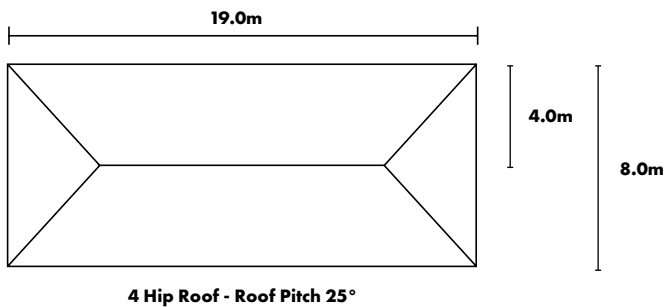
| CITY GUTTER<br>SA | ECA mm <sup>2</sup> |
|-------------------|---------------------|
| Standard          | 11,246              |



| SUBURBAN GUTTER<br>SA | ECA mm <sup>2</sup> |
|-----------------------|---------------------|
| Standard              | 7,502               |

# ROOF PITCH & QUANTITY ESTIMATOR

**IMPORTANT NOTE** This detail is used for quick estimating purposes only. Exact measurements must be taken from the actual roof frame prior to ordering any roof sheeting or accessories.



## CALCULATING ROOF AREA

Multiply the length of the roof by the width and then multiply by the roof pitch factor to increase plan area.

**Example:** For 25° factor = 1.103  
 $19 \times 8 = 152\text{m}^2$   
 $152 \times 1.103 = 169.56\text{m}^2$

## CALCULATING SHEET LENGTH

Measure from ridge to fascia on the plan (e.g. 4.000), multiply by factor to increase plan area.

**Example:** For 25° factor = 1.103  
 $4 \times 1.103 = 4.412$  Lm (Rafter length)  
 Add 50mm (Fall to gutter)  
 Sheet Length = 4.462

## CALCULATING HIP & VALLEY LENGTH

Measure from ridge to fascia on the plan (e.g. 4.000), multiply by factor to determine length of hip.

**Example:** For 25° factor = 1.489  
 $4 \times 1.489 = 5.956$  Lm (Rafter length)  
 Add 50mm (Fall to gutter)  
 Hip Cover = 6.006 Lm Ridge Flashing.

**Note:** All ridges that run 90° or parallel to fascia can simply be scaled off roof plan for actual roof length.

| ROOF PITCH ° | Factor to increase plan area of Roof | Factor to determine length of Hip per units of 1 across span |
|--------------|--------------------------------------|--|
| 1            | 1.000                                | 1.414  |
| 2            | 1.001                                | 1.415  |
| 3            | 1.001                                | 1.415  |
| 4            | 1.002                                | 1.416  |
| 5            | 1.004                                | 1.417  |
| 6            | 1.006                                | 1.418  |
| 7            | 1.008                                | 1.420  |
| 8            | 1.010                                | 1.421  |
| 9            | 1.012                                | 1.423  |
| 10           | 1.015                                | 1.425  |
| 11           | 1.019                                | 1.428  |

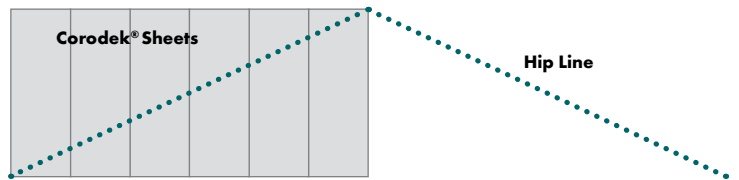
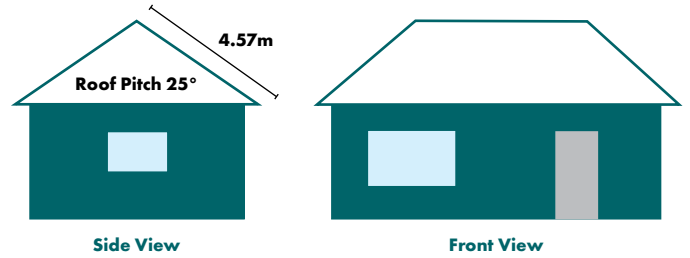
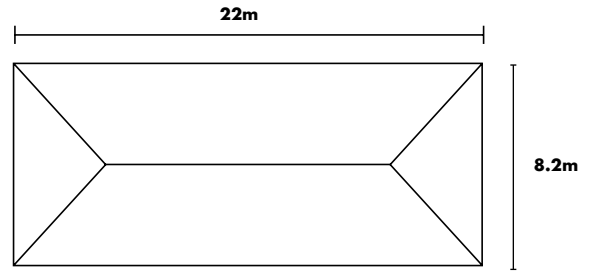
| ROOF PITCH ° | Factor to increase plan area of Roof | Factor to determine length of Hip per units of 1 across span |
|--------------|--------------------------------------|--|
| 12           | 1.022                                | 1.430  |
| 13           | 1.026                                | 1.433  |
| 14           | 1.031                                | 1.436  |
| 15           | 1.035                                | 1.439  |
| 16           | 1.040                                | 1.442  |
| 17           | 1.046                                | 1.447  |
| 18           | 1.051                                | 1.451  |
| 19           | 1.058                                | 1.456  |
| 20           | 1.064                                | 1.460  |
| 21           | 1.071                                | 1.465  |
| 22           | 1.079                                | 1.471  |
| 23           | 1.086                                | 1.477  |
| 24           | 1.095                                | 1.483  |
| 25           | 1.103                                | 1.489  |
| 26           | 1.113                                | 1.496  |
| 27           | 1.122                                | 1.503  |
| 28           | 1.133                                | 1.511  |
| 29           | 1.143                                | 1.519  |
| 30           | 1.155                                | 1.528  |
| 31           | 1.167                                | 1.537  |
| 32           | 1.179                                | 1.546  |
| 33           | 1.192                                | 1.556  |
| 34           | 1.206                                | 1.567  |
| 35           | 1.221                                | 1.578  |
| 36           | 1.236                                | 1.590  |
| 37           | 1.252                                | 1.602  |
| 38           | 1.269                                | 1.616  |
| 39           | 1.287                                | 1.630  |
| 40           | 1.305                                | 1.644  |
| 41           | 1.325                                | 1.660  |
| 42           | 1.346                                | 1.677  |
| 43           | 1.367                                | 1.694  |
| 44           | 1.390                                | 1.712  |
| 45           | 1.414                                | 1.732  |
| 46           | 1.440                                | 1.753  |
| 47           | 1.466                                | 1.775  |
| 48           | 1.494                                | 1.798  |
| 49           | 1.524                                | 1.823  |
| 50           | 1.556                                | 1.849  |
| 51           | 1.589                                | 1.877  |
| 52           | 1.624                                | 1.907  |
| 53           | 1.662                                | 1.939  |
| 54           | 1.701                                | 1.973  |
| 55           | 1.743                                | 2.010  |
| 56           | 1.788                                | 2.049  |
| 57           | 1.836                                | 2.091  |
| 58           | 1.887                                | 2.136  |
| 59           | 1.942                                | 2.184  |
| 60           | 2.00                                 | 2.236  |

# QUANTITY ESTIMATOR EXAMPLES

## A. How to calculate a hip roof and minimise material wastage This example uses Corodek®

To determine the quantity of roof sheets for the sample house illustrated here:

1. Check the plan for the roof type and pitch.
2. Divide 22m by the sheet cover width.  
(Corodek® sheets have an effective cover of 762mm)  
 **$22000\text{mm} \div 762\text{mm} = 28.8 \text{ sheets} = 29 \text{ sheets.}$**
3. Multiply x 2 to cover both sides of the roof = 58 sheets.
4. Length of sheets required is 4570mm. Therefore the sheeting required for this project is 58 sheets at 4570mm.
5. On an equal hip roof as shown, ordering the sheets at one length will eliminate wastage.
6. As shown in the diagram, when the sheets are cut along the hip line the surplus sheeting can be used on the reverse corner of the roof.

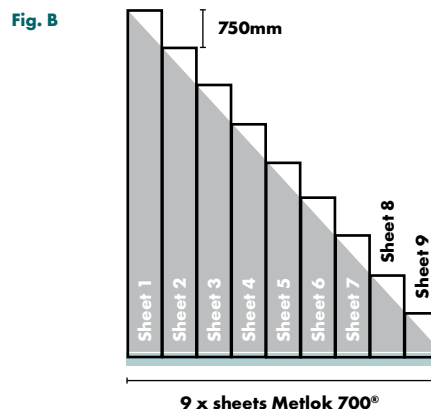
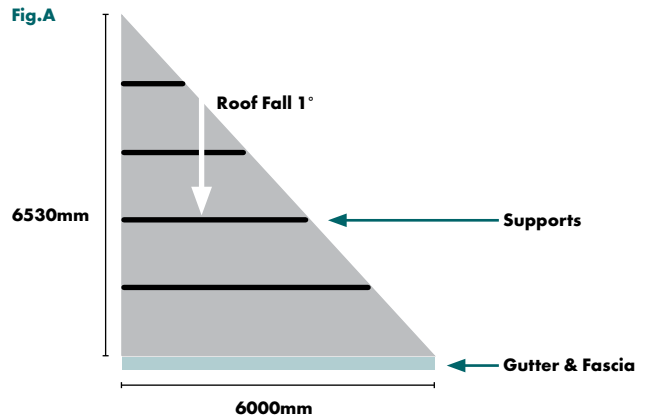


## B. How to calculate an irregular sized roof and minimise material wastage

This example uses Metlok 700® sheets with an effective cover of 700mm.

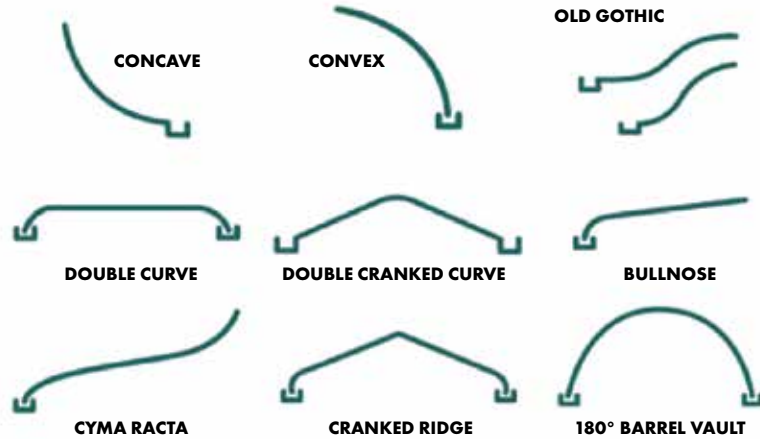
1. Check the plan for the roof type and pitch.
2. To determine the quantity of roof sheets required, divide roof cover by sheet cover width  
 **$6000\text{mm} \div 700\text{mm} = 8.57 \text{ sheets} = 9 \text{ sheets}$**
3. As per Fig. A, this roof tapers from 6530 mm to 0mm. Ensure gutter overhang and fascia thickness are added to the sheet length  
 **$6530\text{mm} + 70\text{mm} = 6600\text{mm}$**
4. To work out the sheet steps required (Fig.B), divide the sheet length by the sheet quantity  
 **$6600\text{mm} \div 9 \text{ sheets} = 750\text{mm}$**
5. Each sheet starting from 6600 will be 750mm shorter than the previous sheet, e.g:

|                |               |                |               |
|----------------|---------------|----------------|---------------|
| <b>Sheet 1</b> | <b>6600mm</b> | <b>Sheet 6</b> | <b>2850mm</b> |
| <b>Sheet 2</b> | <b>5850mm</b> | <b>Sheet 7</b> | <b>2100mm</b> |
| <b>Sheet 3</b> | <b>5100mm</b> | <b>Sheet 8</b> | <b>1350mm</b> |
| <b>Sheet 4</b> | <b>4350mm</b> | <b>Sheet 9</b> | <b>600mm</b>  |
| <b>Sheet 5</b> | <b>3600mm</b> |                |               |

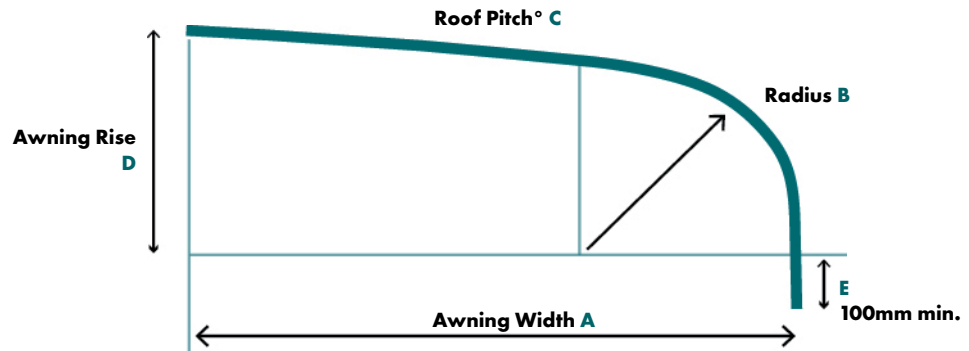


# CURVING & BULLNOSING

## CURVING STYLES



## CURVING DETAILS



### Details required when curving:

1. Awning Width (A)
2. Radius (B)
3. Roof Pitch° (C)
4. Awning Rise (D)
5. Straight Vertical Lead (E)
6. Number of sheets required
7. Sheet Length
8. Colour or Finish
9. Stipulate Colour Underside or Topside
10. Direction of Laying L to R or R to L
11. Does the bullnose sheet end lap a straight sheet? Y or N
12. Is a template supplied? Y or N

**Note:** Metroll takes no responsibility for variances on sheets curved from drawings. A template should be supplied to ensure accuracy. The minimum recommended curving radius is 450mm.

## THERMAL EXPANSION

Change in temperature will cause all metals to expand and contract. There is a minimal effect with steel roofing and cladding, however care must be taken when long sheet runs are proposed and high temperature variations occur.

**Metroll recommends the following maximum roof runs for pierce fixed roofing or cladding**

| Profile    | Dark Colours | Light Colours |
|------------|--------------|---------------|
| Corodek®   | Up to 17m    | Up to 24m     |
| Trimclad®  |              |               |
| Metrospan® |              |               |

# FLASHINGS

Metroll offers a comprehensive selection of flashings, barge ends, corner trims and foot moulds. These are manufactured to enhance the appearance and functionality of all Metroll gutter, cladding, roofing and building products.

Metroll offers custom made or standard flashings which are available in a selection of materials to suit your building requirements.

Flashings come in a large range of COLORBOND®, ZINCALUME® and galvanised steels. These come in various widths to a maximum of 1200mm.

# CUSTOM MADE FLASHINGS

## HOW TO ORDER

1. Choose the appropriate profile number, material thickness and finish.
2. Should COLORBOND® steel be required, nominate which side the colour is to be.
3. Specify the measurement for each letter shown.
4. Specify the angle where applicable.
5. Specify direction for tapered flashings.
6. Specify the quantity and length applicable to each profile.



**CORNER MOULD**



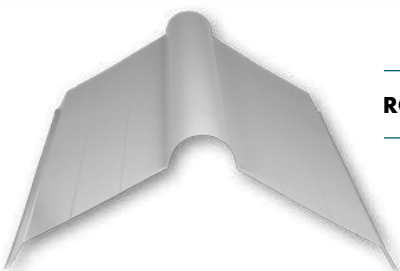
**VALLEY GUTTER**



**END APRON**

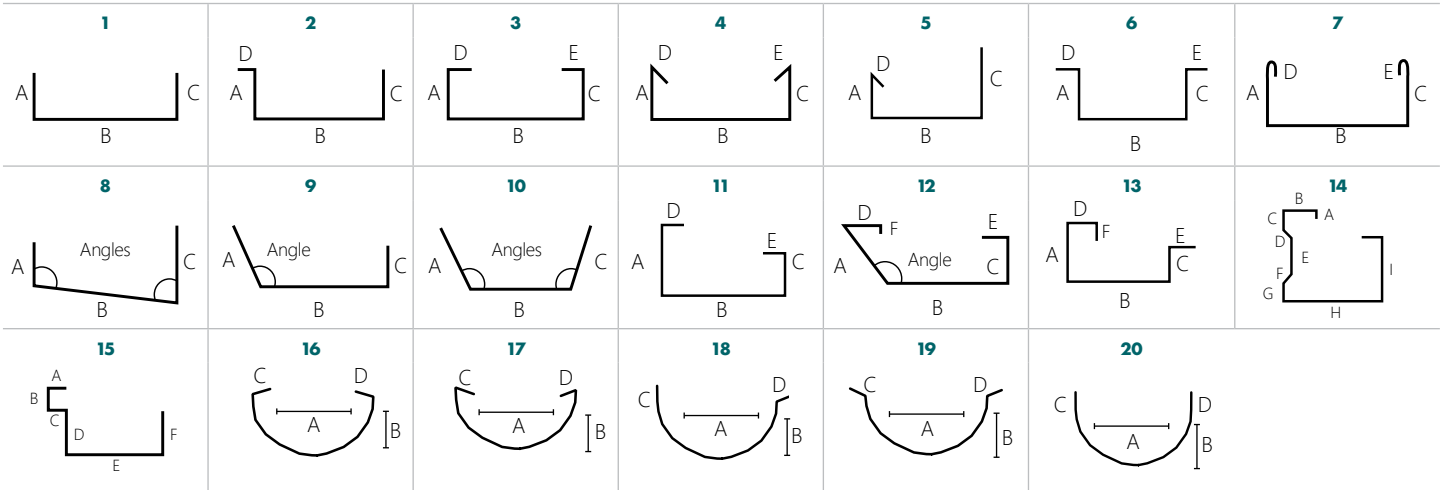


**PLAIN RIDGE**

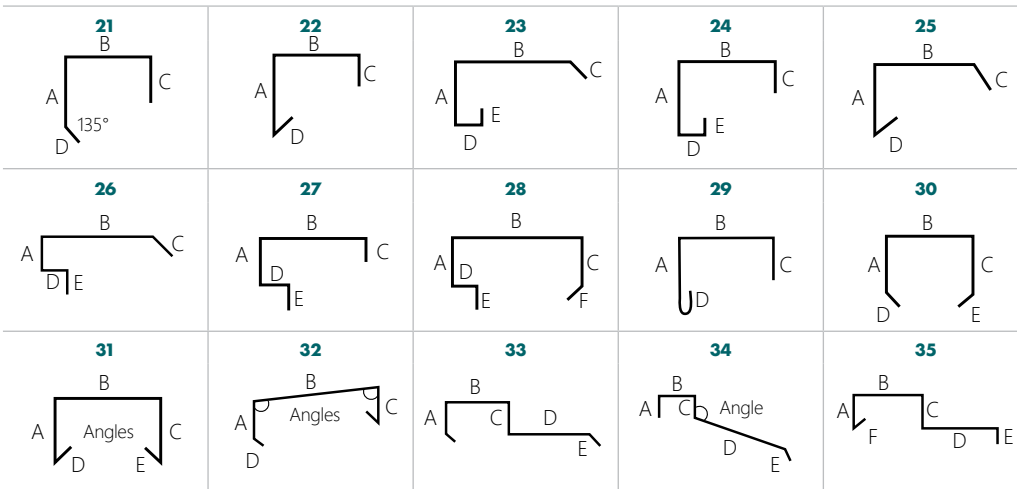


**ROLL TOP RIDGE**

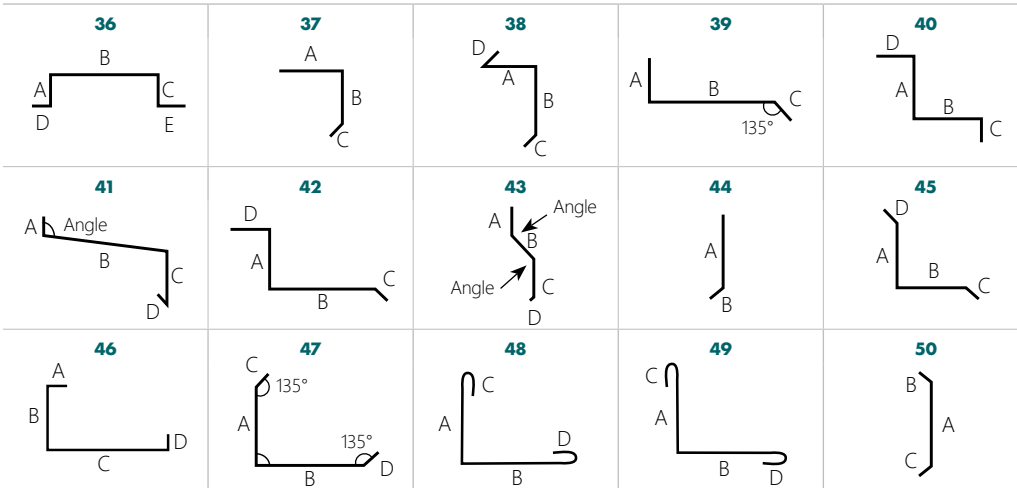
**GUTTERS**



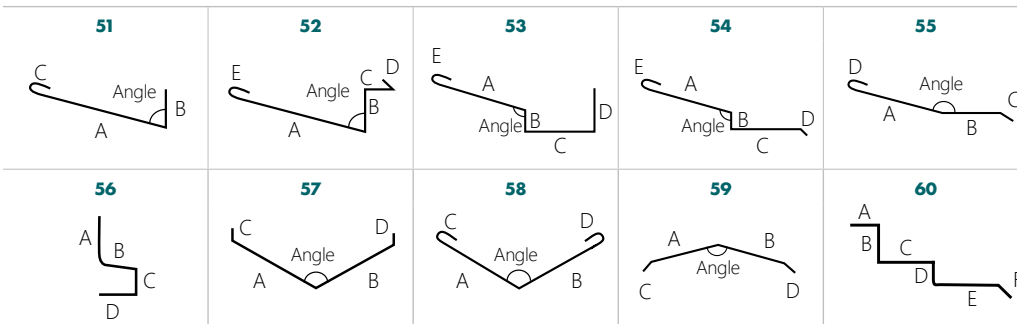
**CAPPINGS**



**FLASHINGS**



**OTHER**



# GENERAL INSTALLATION INFO

## SAFETY

Always ensure all OH&S regulations have been considered and applied.

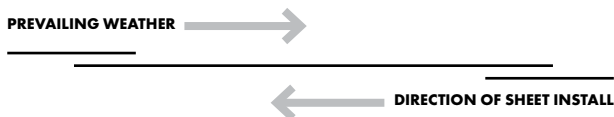
### Before commencing installation:

1. Ensure support for sheeting is in the same plane.
2. Ensure sheet overhang does not exceed recommendations.
3. Check roof pitch is within minimum recommendation.
4. Ensure the first and last supports together with clips/fasteners are at least 75mm from the end of the sheet for maximum hold.
5. Check set-out is correct as making changes further into installation is very difficult.

## SHEET PLACEMENT PRIOR TO INSTALL

Determine prevailing wind and weather direction for maximum weather tightness. Identify downward direction and start install from that end.

Turn sheets on the ground rather than on the roof, this is easier and safer. Before lifting ensure sheets are the correct way up and the overlapping side is facing the edge of the roof where installation will commence. Position sheet bundles over firm supports, not at mid span of roof members.



## SHEET LAYING

Sheets must be laid in such a manner that the side laps face away from the prevailing winds. A minimum of 50mm must be provided for projection into gutters. Flashings must be provided in compatible materials and their minimum cover must be 150mm.

## CLEAN UP

Prior to departing the work site remove all foreign debris, screws, rivets and especially any swarf created by drilling or cutting from the roof surface and/or inside gutters. Failure to do so may result in premature corrosion of the roof or gutters.

## CARE, HANDLING & STORAGE

Care should be taken at all times when handling sheets to preserve the quality of the finish. Keep packs dry, stored clear of the ground and protected from rain and moisture. Any sheets which become wet should be separated, wiped and placed in the open air to dry.

## CUTTING

Cut sheets with a method and in a location so that damage is avoided to sheets and other building products. Material should be cut on the ground and not above other materials. Remove all swarf and debris from the work and installation area. Sheets may be cut using a power saw with a steel cutting blade, a power nibbler or with tin snips. Avoid using abrasive discs as these can cause edge and coating damage.

## WALKING ON SHEETING

When walking on roof sheeting always wear flat rubber soled shoes and only walk over areas where purlins or batten supports are installed.

## STOP ENDS & LIPPING

For roof pitches below 15° turn the pans at the top of the sheets up 90° using a turn-up tool to prevent wind driven water entering beneath the flashing. Additionally, turn the pans at the bottom of the sheets down 15° using a turn-down tool to prevent water running along the underside of the sheet.

## LENGTH

Metroll supplies roof sheeting and other products cut to order as required depending on load limit regulations set by local transport authorities. Lengths for manufacture need to be site measurements and not taken off plans.

## DELIVERY

Ensuring suitable arrangements are made to assist the unloading of Metroll trucks will help supply material in good order. When lifting long lengths by crane please ensure the load is evenly spread. Where a crane cannot be made available it is the customers responsibility to provide sufficient labour to assist the driver in unloading.

## MAINTENANCE & CLEANING

Basic maintenance of steel cladding by regular washing with water is recommended. Applications where cladding is naturally washed by rainwater do not usually require this maintenance, e.g. roofing. Areas that are not naturally washed by rainfall, such as eaves, wall cladding and the underside of gutters, will benefit from regular washing. These areas and any others that are not regularly exposed to rainfall should be hosed down every six months. In coastal areas where marine salt is prevalent or areas where high levels of industrial fall-out occur, washing should be carried out more frequently.

If required wash the surface with a mild solution of pure soap or mild non abrasive kitchen detergent in warm water. Apply with a sponge, soft cloth or soft bristle nylon brush. Rinse thoroughly with clean water.

Never use abrasive or solvent based cleaners (turpentine, petrol, kerosene, paint thinner) on COLORBOND® and ZINCALUME® steels.

## BLUESCOPE® STEEL WARRANTIES

Visit the BlueScope® Steel website for more information and to apply for a warranty.



| QLD            |              | NSW         |              | VIC        |              | SA         |              |
|----------------|--------------|-------------|--------------|------------|--------------|------------|--------------|
| Cairns         | 07 4054 0888 | Lismore     | 02 6622 6677 | Sunshine   | 03 9480 3744 | Adelaide   | 08 82823300  |
| Townsville     | 07 4779 8266 | Tamworth    | 02 6765 4799 | Laverton   | 03 8369 8300 | <b>NT</b>  |              |
| Mackay         | 07 4968 1255 | Newcastle   | 02 4954 5799 | Geelong    | 03 5248 2006 | Darwin     | 08 8935 9555 |
| Rockhampton    | 07 4920 0900 | Sydney      | 1300 766 346 | Ballarat   | 03 5335 6416 | <b>WA</b>  |              |
| Bundaberg      | 07 4155 5999 | Dubbo       | 02 6883 4800 | Pakenham   | 03 8710 9300 | Kalgoorlie | 08 9024 1388 |
| Toowoomba      | 07 4634 6144 | Wagga Wagga | 02 5924 4500 | <b>TAS</b> |              | Perth      | 08 9365 5444 |
| Sunshine Coast | 07 5493 7872 | Canberra    | 02 6298 2777 | Hobart     | 03 6335 8555 | Bunbury    | 08 9796 9796 |
| Brisbane       | 07 3375 0100 | Albury      | 02 6043 6800 | Launceston | 03 6335 8555 | Albany     | 08 9841 6966 |

## 29 Metroll Branches Nationwide

Visit our website  
[metroll.com.au](http://metroll.com.au)



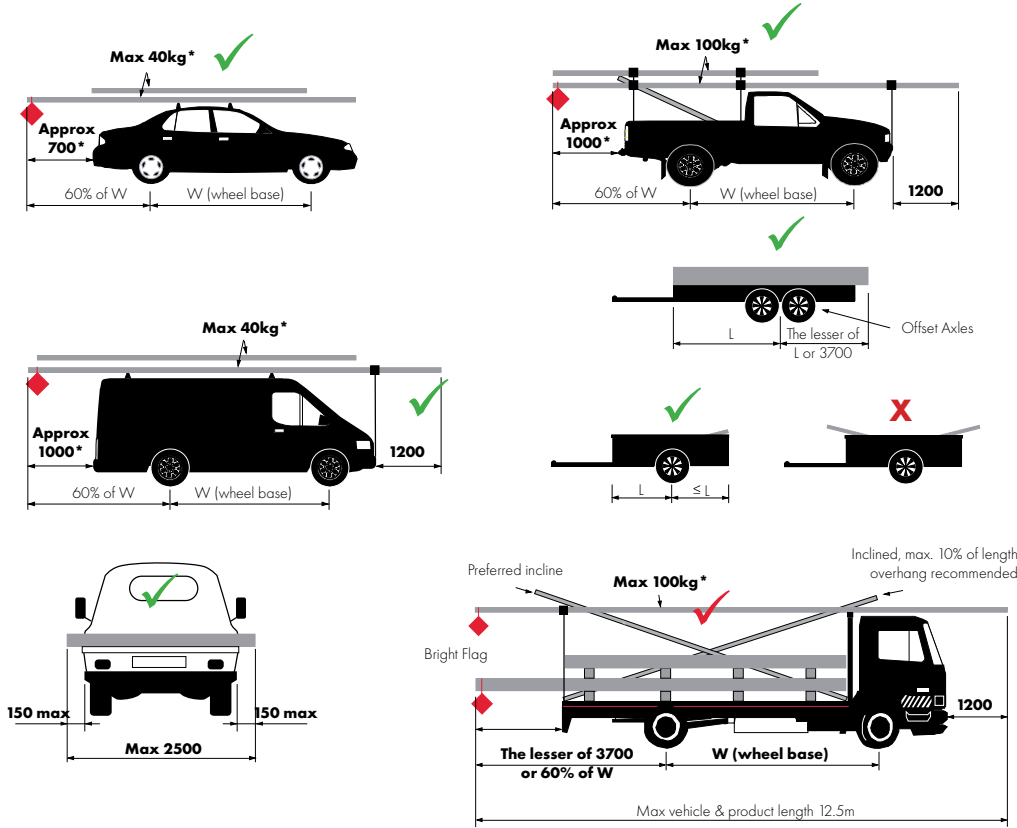
All reasonable care has been taken in the compilation of the information contained in this brochure. All recommendations on the use of Metroll products are made without guarantee as conditions of use are beyond the control of Metroll. It is the customers responsibility to ensure that the product is fit for its intended purpose and that the actual conditions of use are suitable. Metroll pursues a policy of continuous development and reserves the right to amend specifications without prior notice. The Metroll M and Logo are registered trademarks of Metroll.

COLORBOND®, ZINCALUME®, GALVASPAN®, SUPERDURA® steels are all registered trademarks of BlueScope Steel Limited.



# METROLL VEHICLE LOADING GUIDE

The drivers vision **MUST NOT** be obstructed

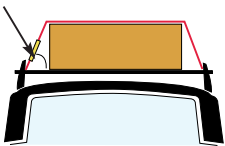


A 300mm square bright flag is required on any overhang that cannot be easily seen and is mandatory over 1200mm.

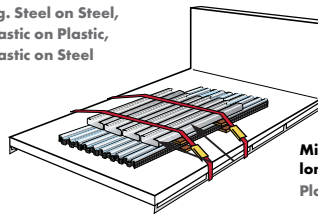


## Secure Your Load

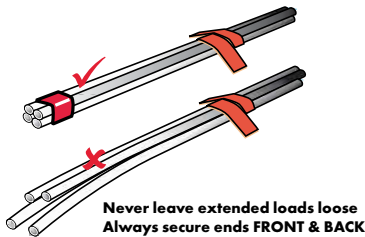
**Roof Racks must be secure**  
Max of 40kg  
Check the Lashing Angle, the more upright = the more secure



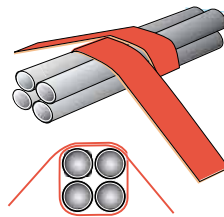
**Avoid Low Friction surfaces**  
E.g. Steel on Steel,  
Plastic on Plastic,  
Plastic on Steel



Min. 2 Lashings per stack for items longer than 750mm  
Place wood or rubber between items



Never leave extended loads loose  
Always secure ends FRONT & BACK



Round & Loose Loads require belly wrapping and extra restraints

**Your safety is our concern.**  
**Vehicles considered inappropriate will not be loaded.**

This information is a guideline only.  
Compliance with applicable laws and standards remains your responsibility.