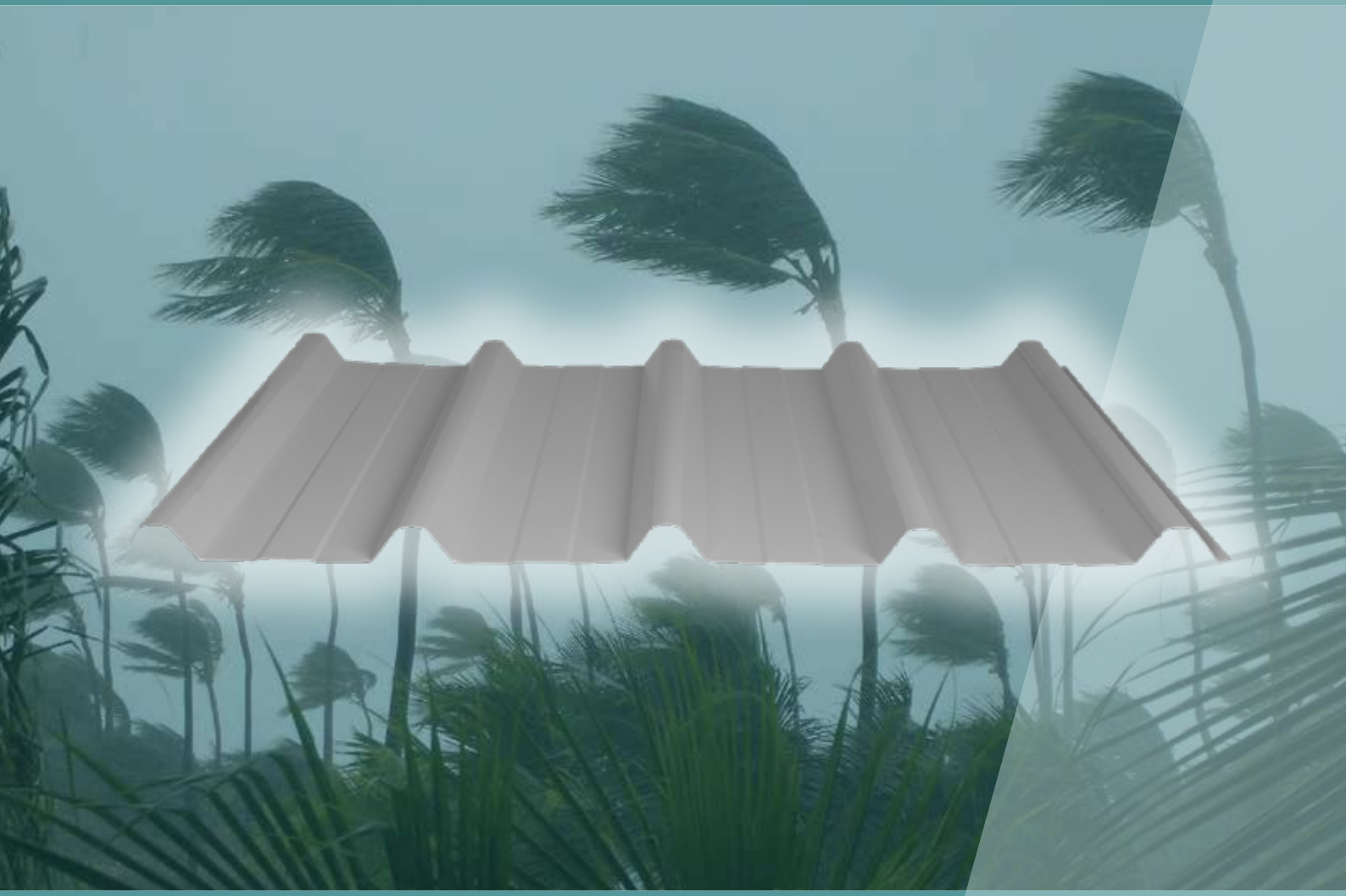
# TRIMCLAD®
# CYCLONIC SPECIFICATION

## POPULAR ROOFING & WALLING PROFILE

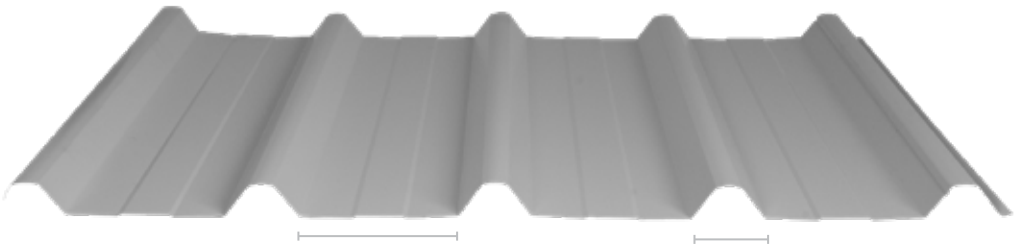


## A Met-TECH™ GUIDE

OCTOBER 2021

Metroll®
BETTER SERVICE • BETTER BUILDING SOLUTIONS

# TRIMCLAD®
# CYCLONIC SPECIFICATION



**Pan Width: ≈130mm** **Rib Width: ≈60mm**

**Cover: 760mm** **Height: 29mm**

**This Metroll Cyclonic Specification provides relevant information for builders, contractors and specifiers who wish to specify or use Metroll Trimclad® in cyclonic areas.**

Trimclad® is custom length, high tensile G550 steel roofing and wall cladding. It is manufactured from 0.42mm and 0.48mm BMT COLORBOND® steel, ZINCALUME® steel and zinc-aluminium coated steel conforming to AS 1397.

**TRIMCLAD® - ROOFING**

| BMT mm | Steel Base Mpa | Mass Colorbond kg/m² | Mass Zinc kg/m² | Min. Pitch ° |
|---|---|---|---|---|
| 0.42 | G550 | 4.30 | 4.23 | 2 (1 in 30) |
| 0.48 | G550 | 4.88 | 4.81 | 2 (1 in 30) |

**TRIMCLAD® - WALLING**

| | | | | |
|---|---|---|---|---|
| 0.42 | G550 | 4.30 | 4.23 | |

## CYCLONIC TESTING

The Building Code of Australia requires all roof claddings used in cyclonic areas to withstand a Low High Low (LHL) cyclonic testing regime.

Metroll has undergone extensive testing to confirm it meets or exceeds all relevant requirements of the BCA and associated Australian Standards. Metroll's products were tested at the Cyclone Testing Station - James Cook University. Townsville.

The wind pressures and capacities stated in this manual are based on the testing completed and comply with AS 4040.3. Simplified design tables provided comply with AS 4055. Ultimate limit state capacity tables comply with AS 1170.2.

## NORTHERN TERRITORY - DEEMED TO COMPLY

The data tables in this brochure may be used for designers, builders and contractors operating in the Northern Territory. Metroll products have been approved under the Deemed to Comply regime. More information can be accessed on the NT BAC website.

## 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**

# INSTALLATION & GENERAL INFORMATION

## LENGTH

Metroll supplies Trimclad® 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. Sheet length is obtained by measuring the distance from the ridges to the external edges or fascia and adding a minimum of 50mm for overhang into the gutter. Length tolerance for Trimclad® is ±10mm. To prevent damage when lifting long lengths, ensure sheets are lifted with the use of multiple lift point spreader bars.

## 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. Cut COLORBOND® steel sheets face down to reduce the likelihood of swarf embedding into the surface.

## 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.

## WALKING ON TRIMCLAD®

When walking on Trimclad® roof sheeting always wear flat rubber soled shoes and only walk over areas where purlins or batten supports are installed. Walk in either pan next to lapped edge ribs.

## 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.

## MATERIAL SPECIFICATION & SCOPE

All roofing and walling should be specified on drawings as Trimclad®, manufactured by Metroll and installed in accordance with the manufacturers recommendations. Base sheet steel is G550 with specified finish.

## HARSH ENVIRONMENTS

Contact your local Metroll branch if you intend to use Trimclad® within 1 km of industrial, chemical, marine or corrosive environments.

## CORROSION PROTECTION & MATERIAL COMPATIBILITY

Some building materials and environmental conditions can be detrimental to coated steel products irrespective of the product thickness. These include contact with or exposure to run off from:

- Industrial, agricultural, marine or other aggressive atmospheric conditions.
- Incompatible materials such as lead or copper.
- Building materials subject to cycles of excessive moisture content such as non-seasoned timber.
- Materials which have been treated with preservatives such as CCa or tanalith treated sections.

The best way to minimise corrosion is to keep incompatible materials apart. Never use lead flashings with ZINCALUME®, COLORBOND® or galvanised steels. Drainage from copper roofs onto ZINCALUME®, COLORBOND® or galvanised steels must be avoided.

## AVAILABILITY & DELIVERY

Trimclad® is available nationwide. Contact your local Metroll branch for lead times, colours and availability.

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.

# TRIMCLAD LIMIT STATE CAPACITY TABLES

## ULTIMATE LIMIT STATE DESIGN PRESSURE (kPa)

Tables and values must be used in conjunction with the Design Notes to Limit State Capacity Tables

| SUPPORT STRUCTURE | BMT mm | CYCLONE WASHERS FITTED? | SPAN TYPE | MAX. DESIGN PRESSURE (kPa) FOR SPAN (mm) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 450 | 600 | 900 | 1200 | 1500 | 1800 | 2100 |
| Metal 1.5mm or Timber F17 Hardwood | 0.42 | No | Internal | 7.68 | 5.49 | 3.29 | 2.19 | 1.75 | 1.46 | 1.25 |
| | | | Equal | 7.00 | 4.75 | 2.83 | 2.00 | 1.59 | 1.33 | 1.14 |
| | | | Double | 5.60 | 3.80 | 2.27 | 1.60 | 1.28 | 1.06 | 0.91 |
| | | Yes | Internal | - | 9.87 | 6.52 | 4.84 | 3.63 | 2.82 | 2.25 |
| | | | Equal | - | 9.00 | 5.92 | 4.41 | 3.21 | 2.50 | 2.05 |
| | | | Double | - | 7.20 | 4.74 | 3.53 | 2.57 | 2.00 | 1.64 |
| | 0.48 | No | Internal | 9.87 | 7.31 | 4.74 | 3.46 | 2.71 | 2.22 | 1.86 |
| | | | Equal | 9.00 | 6.57 | 4.26 | 3.15 | 2.45 | 2.01 | 1.70 |
| | | | Double | 7.20 | 5.26 | 3.41 | 2.52 | 1.96 | 1.61 | 1.36 |
| | | Yes | Internal | - | - | 9.16 | 6.58 | 4.76 | 3.54 | 2.68 |
| | | | Equal | - | - | 8.35 | 6.00 | 4.15 | 3.10 | 2.44 |
| | | | Double | - | - | 6.68 | 4.80 | 3.33 | 2.48 | 1.95 |
| Metal 1.0mm | 0.42 | No | Internal | 7.68 | 5.49 | 3.29 | 2.19 | 1.75 | 1.46 | 1.25 |
| | | | Equal | 7.00 | 4.75 | 2.83 | 2.00 | 1.59 | 1.33 | 1.14 |
| | | | Double | 5.60 | 3.80 | 2.27 | 1.60 | 1.28 | 1.06 | 0.91 |
| | | Yes | Internal | - | 9.87 | 6.52 | 4.84 | 3.63 | 2.82 | 2.25 |
| | | | Equal | - | 9.00 | 5.92 | 4.41 | 3.21 | 2.50 | 2.05 |
| | | | Double | - | 7.20 | 4.74 | 3.53 | 2.57 | 2.00 | 1.64 |
| | 0.48 | No | Internal | 9.87 | 7.31 | 4.74 | 3.46 | 2.71 | 2.22 | 1.86 |
| | | | Equal | 9.00 | 6.57 | 4.26 | 3.15 | 2.45 | 2.01 | 1.70 |
| | | | Double | 7.20 | 5.26 | 3.41 | 2.52 | 1.96 | 1.61 | 1.36 |
| | | Yes | Internal | - | - | 8.20 | 6.15 | 4.76 | 3.54 | 2.68 |
| | | | Equal | - | - | 7.48 | 5.61 | 4.15 | 3.10 | 2.44 |
| | | | Double | - | - | 6.58 | 4.80 | 3.33 | 2.48 | 1.95 |
| Metal 0.75mm | 0.42 | No | Internal | 7.68 | 5.49 | 3.29 | 2.19 | 1.75 | 1.46 | 1.25 |
| | | | Equal | 7.00 | 4.75 | 2.83 | 2.00 | 1.59 | 1.33 | 1.14 |
| | | | Double | 5.60 | 3.80 | 2.27 | 1.60 | 1.28 | 1.06 | 0.91 |
| | | Yes | Internal | - | 8.90 | 5.93 | 4.45 | 3.63 | 2.82 | 2.25 |
| | | | Equal | - | 8.11 | 5.41 | 4.06 | 3.21 | 2.50 | 2.05 |
| | | | Double | - | 7.14 | 4.74 | 3.53 | 2.57 | 2.00 | 1.64 |
| | 0.48 | No | Internal | 9.87 | 7.31 | 4.74 | 3.46 | 2.71 | 2.22 | 1.86 |
| | | | Equal | 9.00 | 6.57 | 4.26 | 3.15 | 2.45 | 2.01 | 1.70 |
| | | | Double | 7.20 | 5.26 | 3.41 | 2.52 | 1.96 | 1.61 | 1.36 |
| | | Yes | Internal | - | - | 5.93 | 4.45 | 3.56 | 2.97 | 2.54 |
| | | | Equal | - | - | 5.51 | 4.06 | 3.25 | 2.70 | 2.32 |
| | | | Double | - | - | 4.76 | 3.57 | 2.86 | 2.38 | 1.95 |

Shaded value denotes spans outside of recommended foot traffic

## TRIMCLAD® ROOFING SERVICEABILITY LIMIT STATE DESIGN PRESSURE (kPa)

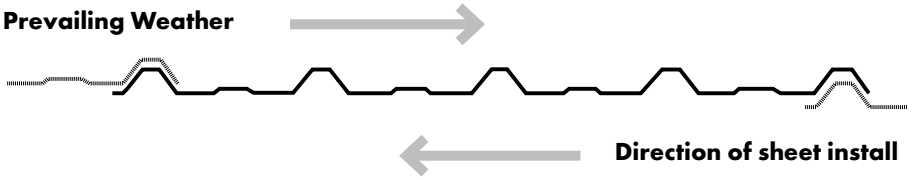
| BMT mm | CYCLONE WASHERS FITTED? | SPAN TYPE | MAX. DESIGN PRESSURE (kPa) FOR SPAN (mm) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 450 | 600 | 900 | 1200 | 1500 | 1800 | 2100 |
| 0.42 | No | Internal | 5.08 | 3.86 | 2.64 | 2.03 | 1.50 | 1.14 | 0.89 |
| | | Equal | 4.63 | 3.51 | 2.41 | 1.85 | 1.32 | 1.01 | 0.81 |
| | | Double | 3.70 | 2.85 | 1.95 | 1.48 | 1.05 | 0.81 | 0.65 |
| | Yes | Internal | - | 5.46 | 4.04 | 3.32 | 2.26 | 1.55 | 1.04 |
| | | Equal | - | 4.98 | 3.68 | 3.03 | 1.91 | 1.31 | 0.95 |
| | | Double | - | 3.99 | 3.04 | 2.42 | 1.53 | 1.05 | 0.76 |
| 0.48 | No | Internal | 7.80 | 6.01 | 4.22 | 3.32 | 2.33 | 1.67 | 1.20 |
| | | Equal | 7.11 | 5.48 | 3.85 | 3.03 | 2.00 | 1.44 | 1.09 |
| | | Double | 5.69 | 4.50 | 3.15 | 2.42 | 1.60 | 1.15 | 0.87 |
| | Yes | Internal | - | - | 6.11 | 4.82 | 3.20 | 2.12 | 1.35 |
| | | Equal | - | - | 5.57 | 4.39 | 2.68 | 1.77 | 1.23 |
| | | Double | - | - | 4.46 | 3.51 | 2.14 | 1.41 | 0.98 |

Shaded value denotes spans outside of recommended foot traffic

# FASTENER SELECTION

Trimclad® can be fixed to supports with Class 4 fasteners in accordance with manufacturers recommendations. Length to suit insulation, sarking and 30mm embedment into timber. Fasteners to be crest fixed to every rib. Always face side laps away from the prevailing weather.

| | |
|---|---|
| **Timber F17 Hardwood Supports** | 14 - 10 x 65mm Type 17 |
| **Steel Supports 0.75 - 1.0mm BMT** | M6 - 11 x 50mm Roof Zips® or equivalent |
| **Steel Supports 1.2 - 4.0mm BMT** | 14 - 10 x 53mm Hex Head |
| **Side Laps (where required)** | 8 - 18 x 12mm Screws |
| Cyclonic washers to be Square Lok® or equivalent | |




## 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 the maximum span tables. Side lap fastening should be considered if the weather resistance of the joint is questionable for any reason.

# CYCLONIC LIMIT STATE SPAN TABLES

## TRIMCLAD® ROOFING
### Fixed to minimum Steel 1.0mm or Timber F17 Hardwood

Tables and values must be used in conjunction with Design Notes

| BMT mm | CYCLONE WASHERS FITTED? | WIND CATEGORY | C1 | | | C2 | | | C3 | | | C4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PRESSURE kPa | 2.16 | 3.38 | 4.59 | 3.21 | 5.02 | 6.83 | 4.73 | 7.39 | 10.05 | 6.39 | 9.98 | 13.58 |
| | | SPAN TYPE | G | RE | RC | G | RE | RC | G | RE | RC | G | RE | RC |
| 0.42 | N | End | 760 | 640 | 530 | 660 | - | - | 520 | - | - | - | - | - |
| | | Internal | 1430 | 970 | 740 | 1010 | 680 | 520 | 720 | - | - | 550 | - | - |
| | Y | End | 1400 | 990 | 780 | 1030 | 730 | 570 | 760 | 540 | - | 600 | - | - |
| | | Internal | 1600 | 1250 | 990 | 1300 | 930 | 730 | 970 | 690 | 550 | 770 | 550 | - |
| 0.48 | N | End | 1140 | 790 | 610 | 830 | 570 | - | 600 | - | - | - | - | - |
| | | Internal | 1490 | 1030 | 800 | 1070 | 740 | 570 | 780 | 540 | - | 610 | - | - |
| | Y | End | 1600 | 1190 | 950 | 1240 | 890 | 710 | 930 | 670 | 530 | 740 | 530 | - |
| | | Internal | 1600 | 1510 | 1210 | 1570 | 1130 | 900 | 1180 | 850 | 670 | 940 | 680 | 540 |

G = General Areas, RE = Within 1200mm of Roof Edges, RC = At corners within 1200mm of the Roof Edges

## TRIMCLAD® WALL CLADDING
### Fixed to minimum Steel 1.0mm or Timber F17 Hardwood

Tables and values must be used in conjunction with Design Notes

| BMT mm | CYCLONE WASHERS FITTED? | WIND CATEGORY | C1 | | | C2 | | | C3 | | | C4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PRESSURE kPa | 1.80 | 1.80 | 2.70 | 2.68 | 2.68 | 4.02 | 3.94 | 3.94 | 5.91 | 5.33 | 5.33 | 7.99 |
| | | SPAN TYPE | G, SC | G | SC | G, SC | G | SC | G, SC | G | SC | G, SC | G | SC |
| 0.42 | N | End | 800 | 800 | 710 | 710 | 710 | 580 | 590 | 590 | - | - | - | - |
| | | Internal | 1670 | 1670 | 1180 | 1180 | 1180 | 830 | 840 | 840 | 590 | 650 | 650 | - |
| | Y | End | 1610 | 1610 | 1180 | 1180 | 1180 | 860 | 880 | 880 | 640 | 700 | 700 | 510 |
| | | Internal | 2020 | 2020 | 1490 | 1490 | 1490 | 1100 | 1110 | 1110 | 820 | 890 | 890 | 650 |
| 0.48 | N | End | 1330 | 1330 | 950 | 960 | 960 | 690 | 700 | 700 | 500 | 540 | 540 | - |
| | | Internal | 1730 | 1730 | 240 | 1240 | 1240 | 890 | 910 | 910 | 650 | 710 | 710 | 500 |
| | Y | End | 1890 | 1890 | 1400 | 1410 | 1410 | 1050 | 1060 | 1060 | 790 | 850 | 850 | 630 |
| | | Internal | 1800 | 2400 | 1790 | 1800 | 1800 | 1330 | 1350 | 1350 | 1000 | 1080 | 1080 | 800 |

Wall cladding may be crest or pan fixed

# REGION D ROOFING & WALLING SPAN TABLES

| | ROOF HEIGHT (m) | TERRAIN CATEGORY | LOCAL PRESSURE FACTOR (k) | ROOF PRESSURE (kPa) | | MAX. BATTEN SPACING (mm) FOR BATTEN SPAN & FIXING | | | | SPAN | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 2 x No. 14 screws into 1.5 G450 Metal | | | | 0.42 BMT | | 0.48 BMT | |
| | | | | SERVICE | STRENGTH | 450 | 600 | 900 | 1200 | INTERNAL | EQUAL | INTERNAL | EQUAL |
| TRIMCLAD® ROOFING | < = 5 | 1 & 2 | 1 | 1.84 | 6.04 | 1200 | 900 | 600 | 450 | 1100 | 1050 | 1200 | 1150 |
| | | | 1.5 | 2.59 | 7.74 | 950 | 700 | 475 | 350 | 1000 | 950 | 1050 | 1000 |
| | | | 2 | 3.34 | 9.44 | 775 | 575 | 375 | 275 | 900 | 850 | 950 | 900 |
| | | | 3 | 4.85 | 12.83 | 575 | 425 | 275 | 525 | 750 | 700 | 800 | 750 |
| | | 2.5 | 1 | 1.26 | 5.12 | 1425 | 1075 | 700 | 400 | 1200 | 1150 | 1300 | 1250 |
| | | | 1.5 | 1.78 | 6.56 | 1125 | 825 | 550 | 325 | 1100 | 1000 | 1150 | 1100 |
| | | | 2 | 2.30 | 8.00 | 900 | 675 | 450 | 250 | 950 | 900 | 1050 | 1000 |
| | | | 3 | 3.33 | 10.89 | 675 | 500 | 325 | 625 | 850 | 800 | 900 | 850 |
| | | 3 | 1 | 1.15 | 4.28 | 1725 | 1275 | 850 | 500 | 1350 | 1250 | 1450 | 1350 |
| | | | 1.5 | 1.62 | 5.49 | 1325 | 1000 | 650 | 400 | 1200 | 1100 | 1250 | 1200 |
| | | | 2 | 2.09 | 6.69 | 1100 | 825 | 550 | 300 | 1050 | 1000 | 1150 | 1100 |
| | | | 3 | 3.03 | 9.10 | 800 | 600 | 400 | 400 | 900 | 850 | 1000 | 900 |
| | < = 10 | 1 & 2 | 1 | 2.09 | 6.69 | 1100 | 825 | 500 | 300 | 1050 | 1000 | 1150 | 1100 |
| | | | 1.5 | 2.95 | 8.57 | 850 | 625 | 425 | 250 | 950 | 900 | 1000 | 950 |
| | | | 2 | 3.81 | 10.45 | 700 | 525 | 350 | 175 | 850 | 800 | 900 | 850 |
| | | | 3 | 5.52 | 14.22 | 500 | 375 | 250 | 450 | 700 | 700 | 750 | 750 |
| | | 2.5 | 1 | 1.40 | 5.98 | 1225 | 925 | 600 | 350 | 1150 | 1050 | 1200 | 1150 |
| | | | 1.5 | 1.97 | 7.66 | 950 | 700 | 475 | 275 | 1000 | 950 | 1050 | 1000 |
| | | | 2 | 2.54 | 9.34 | 775 | 575 | 375 | 275 | 900 | 850 | 950 | 900 |
| | | | 3 | 3.68 | 12.70 | 575 | 425 | 275 | 200 | 750 | 750 | 800 | 800 |
| | | 3 | 1 | 1.15 | 5.30 | 1375 | 1025 | 675 | 500 | 1200 | 1150 | 1300 | 1200 |
| | | | 1.5 | 1.62 | 6.79 | 1075 | 800 | 525 | 400 | 1050 | 1000 | 1150 | 1050 |
| | | | 2 | 2.09 | 8.26 | 875 | 650 | 425 | 325 | 950 | 900 | 1000 | 950 |
| | | | 3 | 3.03 | 11.26 | 650 | 475 | 325 | 225 | 800 | 750 | 650 | 850 |
| TRIMCLAD® WALLING | < = 5 | 1 & 2 | 1 | 1.42 | 5.09 | 1450 | 1075 | 725 | 525 | 1250 | 1150 | 1300 | 1250 |
| | | | 1.5 | 1.96 | 6.32 | 1150 | 875 | 575 | 425 | 1100 | 1050 | 1150 | 1100 |
| | | | 2 | 2.51 | 7..55 | 975 | 725 | 475 | 350 | 1000 | 950 | 1050 | 1000 |
| | | 2.5 | 1 | 0.98 | 4.32 | 1700 | 1275 | 850 | 625 | 1350 | 1250 | 1450 | 1350 |
| | | | 1.5 | 1.35 | 5.36 | 1375 | 1025 | 675 | 500 | 1200 | 1150 | 1300 | 1200 |
| | | | 2 | 1.72 | 6.40 | 1150 | 850 | 575 | 425 | 1100 | 1050 | 1150 | 1100 |
| | | 3 | 1 | 0.89 | 3.61 | 2025 | 1525 | 1000 | 750 | 1450 | 1400 | 1550 | 1500 |
| | | | 1.5 | 1.23 | 4.48 | 1650 | 1225 | 825 | 600 | 1300 | 1250 | 1400 | 1350 |
| | | | 2 | 1.57 | 5.35 | 1375 | 1025 | 675 | 500 | 1200 | 1150 | 1300 | 1200 |
| | < = 10 | 1 & 2 | 1 | 1.62 | 5.65 | 1300 | 975 | 650 | 475 | 1150 | 1100 | 1250 | 1200 |
| | | | 1.5 | 2.24 | 7.00 | 1050 | 775 | 525 | 375 | 1050 | 1000 | 1100 | 1050 |
| | | | 2 | 2.85 | 8.36 | 875 | 650 | 425 | 325 | 950 | 900 | 1000 | 950 |
| | | 2.5 | 1 | 1.08 | 8.04 | 1450 | 1100 | 725 | 550 | 1250 | 1150 | 1300 | 1250 |
| | | | 1.5 | 1.49 | 6.26 | 1175 | 875 | 575 | 425 | 1100 | 1050 | 1200 | 1100 |
| | | | 2 | 1.90 | 7.47 | 975 | 725 | 475 | 350 | 1000 | 950 | 1100 | 1000 |
| | | 3 | 1 | 0.89 | 4.47 | 1650 | 1225 | 825 | 600 | 1300 | 1250 | 1400 | 1350 |
| | | | 1.5 | 1.23 | 5.55 | 1325 | 975 | 650 | 475 | 1150 | 1100 | 1250 | 1200 |
| | | | 2 | 1.57 | 6.62 | 1100 | 825 | 550 | 400 | 1050 | 1000 | 1150 | 1100 |

# TECHNICAL NOTES TO LIMIT STATE CAPACITY TABLES C CLASS WIND REGIONS

## DESIGN CRITERIA

The following criteria from AS/NZS 1170 have been used to generate the tables in this brochure:

1. Importance Level 2.
   Annual probability of exceedance 1:500.
2. $V_{500}$ = 66m/s, Fc + 1.05, $V_R$ = 69m/s.
3. Ms = Mt = Md = 1.0.
4. Cpe = as per AS/NZS 1170.
5. Height multiplier as determined by Structural Engineer.
6. For local pressure factors and building aspect ratios refer to table 5.6 AS 1170.

## LIMITATIONS

- Information provided is for roof application only.
- Values in shaded cells denotes spans that exceed foot traffic limitations.
- Internal spans should have both end spans 20% shorter than tabulated values.
- The maximum permissible free edge overhang is 150mm from the screw line.
- The maximum permissible stiffened edge overhang is 300mm from the screw line.
- Sheeting span can be limited by maximum batten spacing when using cyclonic steel battens.
- It is essential that the relevant deemed to comply information (for NT) for the batten product is used in conjunction with these tables.

## FOOT TRAFFIC

Recommended maximum spans for foot traffic on roofs are:

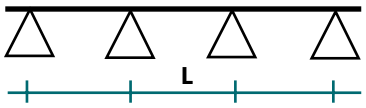
| | 0.42 BMT | 0.48 BMT |
|---|---|---|
| Trimclad® | 1350mm | 1850mm |

## NOTES TO TABLES

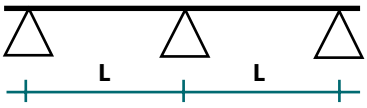
These tables have been prepared by LCJ Engineers Pty Ltd. Information is based on Low High Low testing completed by the Cyclone Testing Station - School of Engineering, James Cook University.

1. The table values are only valid for use when the supporting steel members are high enough tensile strength, G450 with a thickness greater than 0.75mm or F17 Hardwood.
2. Roof sheeting shall be crest fixed to supports with Class 4 self drilling screws (refer fixing table), in accordance with manufacturers recommendations. Length to suit insulation, sarking and 30mm embedment into timber.
3. Side lap fasteners required on all spans greater than 900mm and shall consist of No. 8 - 18 x 12mm screws at midspan.
4. Description of span types in the tables refer to the following support configurations:


**Internal Span**




**Equal Span**




**Double Span**

# D CLASS WIND REGIONS

## DESIGN CRITERIA

The values in the tables are calculated in accordance with AS 4600 Cold-formed Steel Structures and are derived from beam movement and deflection formulas. Spans are designed to limit maximum deflection of span/150 under service load. Design criteria to AS 1170.2 as follows:

1. Importance Level 2.
2. Ms = 1.0, Mt = 1.0, Cdyn = 1.0.
3. Roof height = 5m top 10m, roof height/building length <=5
4. Roof slope <=10°
5. V strength = 88 m/s
6. V serviceability = 53 m/s
7. kce = kci = 0.9
8. ka = 1.0
9. kp = 1.0

## NOTES TO TABLES

- The capacities are theoretical values derived from beam movement and deflection formulas.
- Internal = Internal spans with end spans at least 20% shorter.
- Equal = All spans equal, with minimum of 3 spans.
- Crest fixing to be Buildex 15 - 15 Teks or M6 - 11 Roof Zips with cyclone caps or equivalent.
- Maximum 5 fixings per sheet per steel support.
- Support to be minimum 0.5mm thick G550 steel.

## TERRAIN CATEGORY TO AS 1170.2

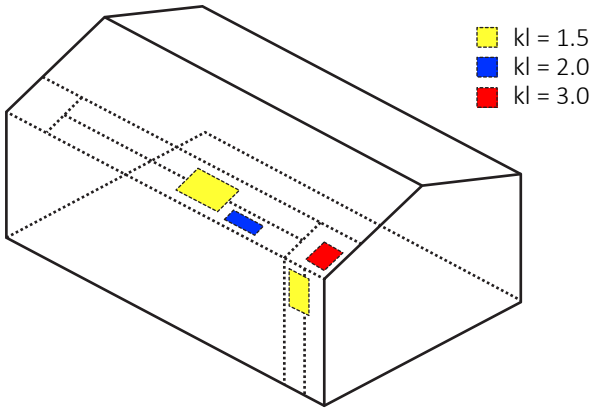
**CATEGORY 1:**
Exposed open terrain with few or no obstructions and water surfaces at serviceability wind speeds.

**CATEGORY 2:**
Water surfaces, open terrain, grassland with few; well scattered obstructions having heights generally from 1.5m to 10m.

**CATEGORY 3:**
Terrain with numerous closely spaced obstructions 3m to 5m high, such as areas of suburban housing.

**CATEGORY 4:**
Terrain with numerous large, high (10m to 30m) and closely placed obstructions, such as large city centres and well-developed industrial complexes.

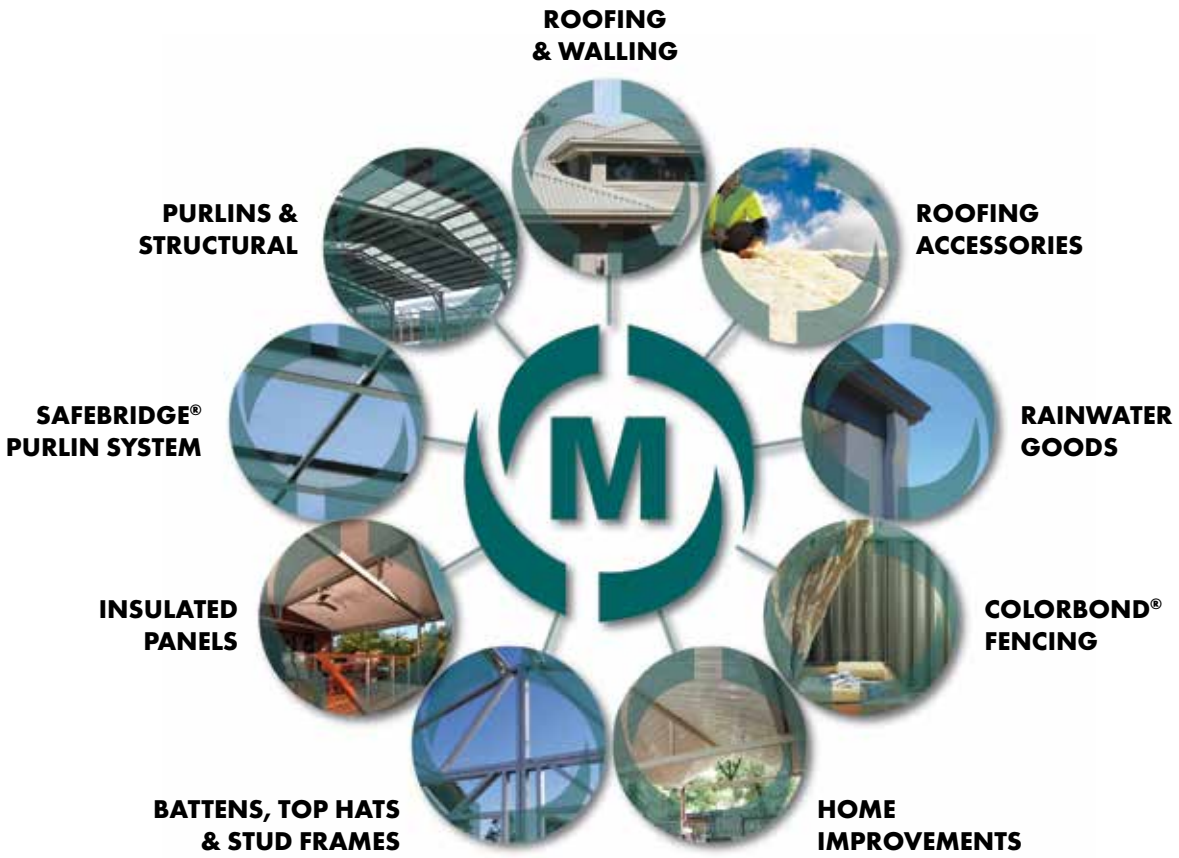
## LOCAL PRESSURE DIAGRAM




# REFERENCED AUSTRALIAN STANDARDS

| | |
|---|---|
| AS/NZS 1170.1:2011 | Structural Design Actions - Permanent, imposed & other actions. |
| AS/NZS 1170.2:2011 | Structural Design Actions - Wind actions. |
| AS/NZS 1397:2013 | Steel Sheet & Strip - Hot dipped zinc-coated or aluminium/zinc coated. |
| AS/NZS 1562.1:1992 | Design & Installation of Sheet Roof & Wall Cladding - Metal |
| AS/NZS 2179.1:1994 | Specification for Rainwater Goods, Accessories & Fasteners - Metal shape or sheet rainwater goods & metal accessories & fasteners. |
| AS 2180.2:1986 | Metal Rainwater Goods Selection & Installation. |
| AS/NZS 2334:1980 | Steel Nails - Metric series. |
| AS/NZS 2728:2007 | Prefinished/prepainted Sheet Metal Products for Interior/Exterior Building Applications - Performance Requirements. |
| AS 3500.3:2003 | Plumbing & Drainage - Stormwater drainage. |
| AS 3566.1:2002 | Self-drilling Screws for the Building & Construction Industries - General requirements and mechanical properties. |
| AS 4040.1:1992 | Methods of Testing Sheet Roof & Wall Cladding - Resistance to concentrated loads. |
| AS 4040.2:1992 | Resistance to Wind Pressures for Non-cyclonic Regions. |
| AS 4055:2012 | Wind Loads for Housing. |
| HB 39:1997 | Installation Code for Metal Roof & Wall Cladding. |

# Can we assist with any additional Steel Building Products?

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|---|---|---|---|---|---|---|---|
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