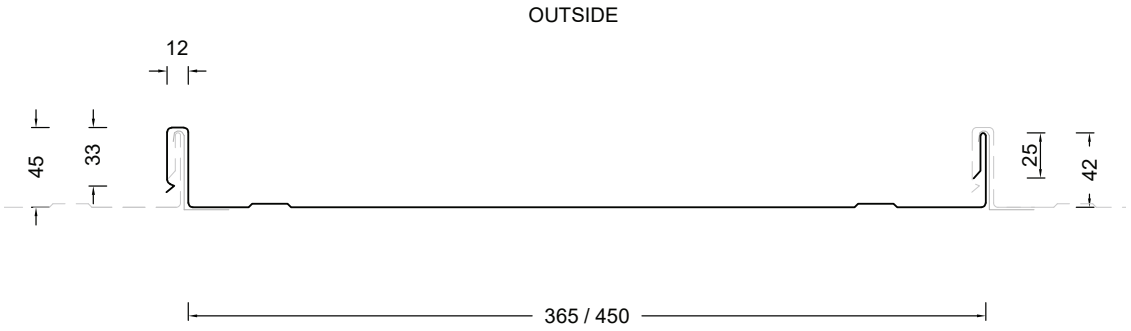
DIMOND HERITAGE TRAY™

PRODUCT TECHNICAL STATEMENT



Evolving from the already popular and stylish Eurotray® family, Heritage Tray® markets itself as an elegant, economical and flexible roofing profile. Additionally, it can be roll-formed on-site, an attractive logistic option for larger construction projects.

SHEET TOLERENCES

Cover: ± 5mm - Sheet length: +10mm, -0mm (Steel)

Cover: +10mm, -15mm – Sheet length: +0mm, -15mm (Aluminium)

RECOMMENDED PRODUCT/DESIGN USE

- **Minimum Pitch:** 3 degrees
- **Pan (mm):** 365mm & 450mm Refer www.rooftech@dimond.co.nz
- **Applications:** Residential / Industrial / Commercial Roofing and Wall Cladding
- **Materials:** Specified coating and material based on environmental conditions in accordance with E2/AS1. Available in metallic coated and pre-painted steel in 0.55mm - Aluminium 0.90mm BMT (base material thickness)
- **Material Thickness:** Steel 0.55mm, Aluminium 0.90mm
- **Colours:** Available in pre-painted ColorCote® ZinaCore™, MagnaFlow™ and AlumiGard® COLORSTEEL® MAXAM™, Altimate®, UniCote® LUX Refer to www.colorcote.co.nz,www.colorsteel.co.nz, www.unicote.com.au
- **Durability:** All material selections must be compatible with the prevailing environmental conditions and adjacent materials. Areas not naturally exposed to rain will require scheduled maintenance.

ENVIRONMENTAL PRODUCT DECLARATION

Dimond Roofing® has been implementing green building principles across the industry for several years now and has developed a fully realised environmental sustainability pathway to reach our goal of reducing our carbon emissions by 30% by 2030. Dimond Roofing® has met the criteria for “Level A” certification for the Global GreenTag™ GreenRate™ ecolabel and as part of Dimond’s Toitū carbonreduce® accreditation, essential Scope 1 & 2 emissions, are being measured as well as voluntarily measuring Scope 3 emissions.

Dimond Roofing® profiles are accredited with Eco Choice Aotearoa when manufactured from COLORSTEEL®. All manufacturing sites have been Audited by NZ Steel.

Dimond Roofing® recycle all steel scrap waste and offcuts which can then be remelted down and reused in other steel-based products. At the end of its useful life as a roofing profile can be recycled back by remelted down.

NEW ZEALAND BUILDING CODE COMPLIANCE

When used in accordance with Dimond Roofing installation and maintenance requirements, facilitate with meeting the following provisions of the NZBC:

- **B1 Structure:** Performance clauses B1.3.1, B1.3.2, B1.3.3 (a) (b) (c) (g) (h), B1.3.4 (b) and (d)
- **B2 Durability:** Performance clauses B2.3.1(b) and (c)
- **C3 Fire affecting areas beyond the fire source:** Performance clauses C3.4(a) and C3.9
- **E2 External moisture:** Performance clauses E2.3.1 and E2.3.2
- **F2 Hazardous building materials:** Performance clause F2.3.1
- **G12 Water Supplies:** Performance clauses G12.3.1 and G12.3.2

To comply with the performance clauses of NZBC E2 all cladding to be installed in accordance with:

- Acceptable Solutions NZS E2/AS1 or an Acceptable Alternative Solution
- MZ Metal Roofing Manufacturers Code of Practice
- Dimond Roofing Specification; details available on www.dimond.co.nz

Dimond Roofing is not subject to any warning or ban under section 26 of the Building Act 2004.

MAINTENANCE

In general, NZ metal roofing materials exposed to rain washing can be expected to comply with NZBC B2 without manual washing, or replacement of protective finishes.

Areas not directly exposed to rain, such as soffits, wall cladding under eaves, the undersides of gutters, fascia's, and sheltered areas like garage doors, will require scheduled maintenance.

Refer to ColorCote® Minimum Maintenance Schedule and COLORSTEEL® Maintenance Recommendations Brochure.

MATERIAL CLADDING TESTING AND PREFORMANCE

All cladding testing is carried out in accordance with the NZMRM Code of Practice – Testing and MRM Standards.

Material Options	Steel G300	Aluminium H34
Thickness (BMT) mm	0.55	0.90
Nominal Weight/lineal metre (kg/m)	2.77	1.48
Drape curved – min. radius (m)	N/A	N/A
Substrate Required – Minimum Thickness 12mm	Extra High and SED wind zones	
P60 x 10mm Tray Roofing Foam laid central onto the back of the tray, continuously	High Wind Zone	
Vented between underlay and pan	Yes	Yes
(1) Purlin spacings for curving (m)	N/A	N/A
(2) Machine curved - min. radius (mm)	N/A	N/A
(3) Drip edge/grab flashing is required	Yes	Yes

**Please contact Dimond Roofing 0800 DIMOND (0800346 663) for availability

(1) Recommended maximum purlin spacings at minimum radius
(2) Only available in BMT's 0.55mm and 0.90mm
(3) Based on 1.1kN point load support, but not intended for roof access
N/A – Not available.

Roll-forming facility location: Auckland, Christchurch and Invercargill
Sheet lengths: Heritage Tray® is custom run to order
Also available to be manufactured on site.

Where long sheets are used consideration must be given to:
- Special transportation licences for sheets over 25m
- Site access for special lifting equipment
- Fixing techniques to accommodate thermal expansion.

DIMOND HERITAGE TRAY® LIMIT STATE LOAD / SPAN CAPACITY CHART

(span in mm, distributed serviceability loads in kPa)

Serviceability Category		Unrestricted-Access Roof	Wall
		Fix clip to every purlin	Fix clip to every dwang/girt
G300 steel 0.55mm	End Span	500	600
	Internal Span	500	600
	Ultimate	**4.7**	**3.5**
5052, H34 Aluminium 0.90mm	End Span	500	600
	Internal Span	500	600
	Ultimate	**2.8**	**2.0**

Notes:

1. In Restricted Access Roof and Non-Access Roof & Wall applications, spans exceeding the maximum values shown should not be used. The maximum spans for Restricted Access Roofs are based on static point load testing as a guide and are further limited by practical experience of roof performance under dynamic foot traffic loads. For Non-Access Roof & Wall applications, the maximum spans are limited to ensure satisfactory appearance for wall cladding.
2. Loads given are based on 1 clip/sheet/purlin.
3. Loads given are limited to a maximum of 4.7 kPa. If design requirements exceed this limit, contact Dimond for specific advice.
4. End span capacities given in this table are based on the end span being the same as the internal span.
5. Design Criteria for Limit State Capacities

   a) Serviceability Limit State (SLS Design)
   No deflection or permanent distortion that would cause unacceptable appearance, side lap leakage or water ponding, due to foot traffic point loads, inward or outward wind loads or snow loads.

   b) Ultimate Limit State (ULS Design)
   No pull through of fixings or fastener withdrawal resulting in sheet detachment due to wind up-lift (outward) loads.
6. System Design
   The span capacity of the roofing or cladding profile is determined from the Load Span Table, using the section of the chart appropriate to the grade and type of material, and the category of serviceability selected from the two categories above. Serviceability loads have been derived by testing according to NZMRM procedures. To obtain an ultimate limit state load, we recommend factoring the serviceability load by 1.4 in line with NZMRM guidelines.

   Note: The capacities given do not apply for cyclone wind conditions.

   Serviceability Requirements
   While these categories are provided for design guidance to meet the serviceability limit state criteria, foot traffic point load damage may still occur if point loads are placed carelessly.

   Service Category
   Refer to MRMCOP 3.7.4 Roof Traffic. The designer must consider the degree and type of foot traffic expected on a roof. The following equirements are subjective standards and must be considered in line with customer expectations, building use, and type. More robust design than specified below (such as reducing purlin spacing or adding protection from mechanical action) is required for roofs that are regularly accessed, used as staging by subsequent trades, or areas adjacent to access points, particularly step-down access.
7. Wind Pressure Guide
   As a guide for non-specific design the following S.L.S. design loads in accordance with the MRM Roofing Code of Practice can be used for buildings less than 10m high, otherwise AS/NZS 1170.2 should be used Low wind zone = 0.68kPa, Medium wind zone = 0.93kPa, High wind zone = 1.32kPa, Very high wind zone = 1.72kPa and Extra high wind zone = 2.09kPa

FASTENERS

The durability of the fasteners should equal or exceed that of the material being fastened, and the fastener metal or coating must be compatible with the cladding material if in contact. Refer to NZS E2/AS1 table 20 for compatibility requirements.

The minimum embedment of 30mm is the requirement for screws fixing into timber and minimum of three threads to pass through steel. When fastening through cavity battens, thermal break materials etc ensure the length of the screw is increased to accommodate the extra material.

Common Fastener Lengths – Roof Cladding				
Cladding Material	*Timber Purlins (mm)	*Timber Purlins with 20mm (nom.) Cavity batten	*Steel Purlins up to 2.5mm (minimum 3 threads) (mm)	*Steel Purlins up to 2.5mm (minimum 3 threads) (mm) With 20mm (nom.) Cavity batten
Steel	ULP Screw 5.5 x 30mm	ULP Screw 5.5 x 65mm	ST10-16x16 Class 4 Wafer Head	ST10-16x30 Class 4 Wafer Head
Aluminium	ULP Screw 5.5 x 30mm	ULP Screw 5.5 x 65mm	ST10-16x16 Class 4 Wafer Head	ST10-16x16 Class 4 Wafer Head
VM Zinc	N/A	N/A	N/A	N/A
Copper	N/A	N/A	N/A	N/A

* When a substrate is used the fastener length will need to be adjusted to suit thickness
N/A – Not Available
Note: Use a minimum 75mm long driver to set the screw

Low to Very High Wind Zones

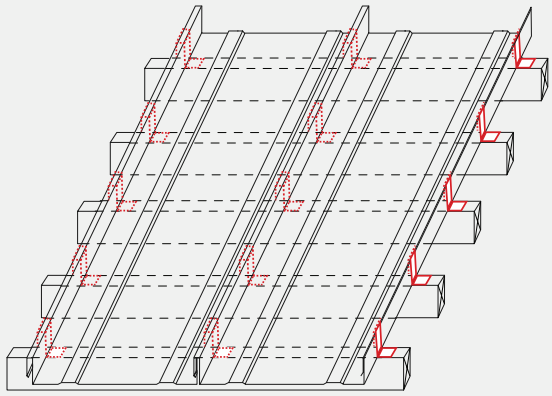
- Fix clips to all ribs of all purlin lines
- Purlins at maximum 500mm Centres
- Tray Roofing Foam P60 Required in High Wind Zones
  For 450mm Pan, continuous up the centre of the Pan

Extra High & SED Wind Zones Contact:

- Dimond Roofing 0800 766 377 for specific Advice on suitability for your location

Wall Cladding

- Fix clips to all ribs of all dwangs/girts
- Can be installed over plastic cavibat battens.



Sheet end

Common Fastener Lengths – Wall Cladding		
Cladding Material	Timber Dwangs (mm)	Steel Girts up to 2.5mm (mm)
Steel - Direct fix	N/A	N/A
Steel - On 20mm (nom.) Cavity Batten	ULP Screw 5.5 x 65mm	ST10-16x30 Class 4 Wafer Head
Aluminium - Direct Fix	N/A	N/A
Aluminium- On 20mm (nom.) Cavity Batten	ULP Screw 5.5 x 65mm	ST10-16x30 Class 4 Wafer Head

N/A – Not available

DESIGN DETAILS

Design details covering residential & commercial roof & wall claddings are available at www.dimond.co.nz in PDF, DWG & RVT files under each product section.

PUBLICATIONS

To achieve the product's full potential, it must be designed, installed, and maintained in accordance with Good Trade Practice. For more information, please refer to:

NZS E2/AS1: www.building.govt.nz

NZMRM: New Zealand Metal Roofing and Wall Cladding Code of Practice – www.metalroofing.org.nz

NZMRM: Installation Guide – Metal Longrun Roofing and Cladding - www.metalroofing.org.nz

RANZ: How to Guides - www.ranz.co.nz

Pacific Coil Coaters: Choose the Right Roof www.colorcote.co.nz

Pacific Coil Coaters: Maintenance Schedule www.colorcote.co.nz

Pacific Coil Coaters: Environmental Product Declaration www.colorcote.co.nz

New Zealand Steel: Environmental Categories, Warranty & Product Maintenance Recommendations Brochure www.colorsteel.co.nz

New Zealand Steel: Maintenance Recommendations Bulletin - www.colorsteel.co.nz

New Zealand Steel: Installers Guide www.colorsteel.co.nz

UniCote LUX: Performance - www.unicote.com.au

UniCote LUX: Technical & Warranty – www.unicote.com.au

BRANZ: Good Profiled Metal Roofing and Wall Cladding - www.branz.co.nz

MBIE: Guide to tolerances, materials and workmanship in new residential construction 2015 - www.mbie.govt.nz

THERMAL NOISE

All profiled metal roofs and wall cladding can produce thermal noise from time to time. This occurs as the roof expands and contracts due to temperature changes, with darker colours potentially increasing the noise. The NZMRM Code of Practice addresses this issue.

According to the MBIE's 2015 "Guide to Tolerances, Materials, and Workmanship in New Residential Construction," noise from metal roofing's thermal expansion is considered normal and should be expected.

OIL CANNING

Differential thermal movement between wide, flat surfaces and ribs or corners within a metal sheet can create a visual effect known as oil canning. This refers to the visible waviness or undulations in the flat sections of metal cladding, roofing, or walling. Oil canning is an inherent architectural characteristic of flat metal surfaces and is not indicative of any performance issues with the product.

It may occur during the forming and installation processes, as well as throughout the roof's lifecycle due to thermal expansion. The visibility of oil canning can vary depending on lighting conditions, sun angles, and the gloss level of the coating.

For more details, please refer to Section 12.4 of the New Zealand Metal Roof and Wall Cladding Code of Practice.

Dimond Roofing, NZBN 9429037626563

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Contact us

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dimond.co.nz

Dimond Roofing®