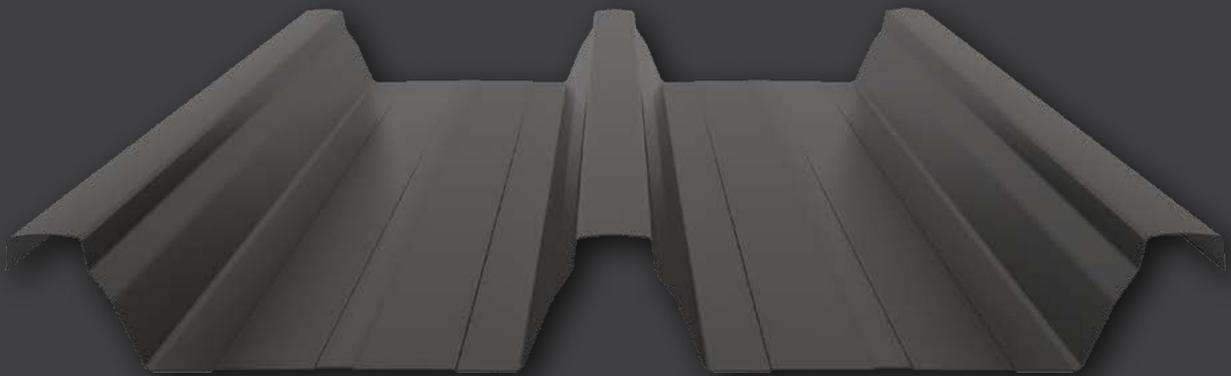




PurlinDek[®] 600

Profile Overview and Technical Specification



0800 CARPORTS
streamlinecarports.kiwi

Contents

Introduction	3
PurlinDek® 600 Profile	4
Roofing Spans	5
Cladding Spans	6
Prepainted Colours	8
Design Guide	9
Fixing Instructions	11
Translucent Sheeting	13

PurlinDek® 600

The original favourite, PurlinDek® 600's patented high rib profile delivers unmatched strength. That means fewer purlins and less labour during construction, and minimal buckling under concentrated loads where foot traffic is common. It's likely you'll require maintenance before your PurlinDek® profile ever will.

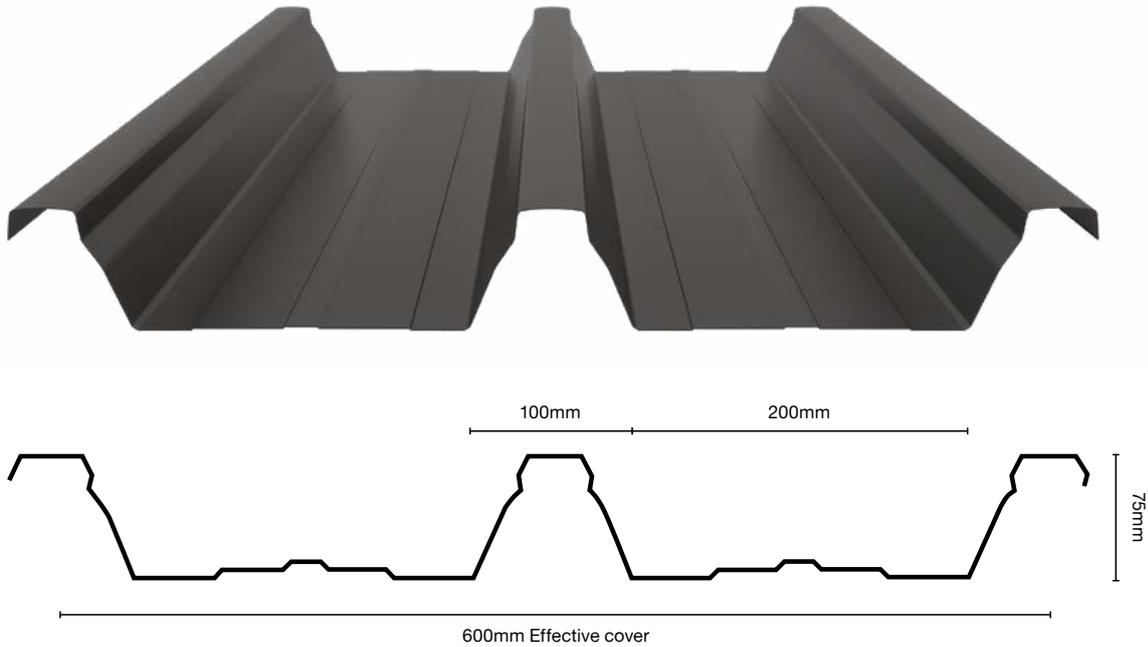
For Design Advice & Technical Assistance: Contact your Streamline Carports Sales Team 0800 CARPORTS
For Sales, Delivery, Availability & Pricing Information: Contact your Streamline Carports Sales Team 0800 CARPORTS

With almost 5 decades in the New Zealand market, the PurlinDek® 600 high rib profile is a proven performer for large commercial, industrial or residential buildings. Where wide coverage and large spans is an essential part of the structure, PurlinDek® 600 is ideal with its 6 metre load-bearing span capability. The trapezoidal profile & shape provides incredible strength. This gives a distinct advantage under the 1.10 kPa Live Load requirement embodied within NZS 4203, which governs loading conditions in most regions within New Zealand. It also delivers greater water carrying capacity, and superior

weather performance across a range of applications. It complies with current code requirements for loading without purlins or sub-framing. PurlinDek® 600 also has outstanding eave overhang credentials. It can extend up to 1.8 metres, unsupported from the roof purlins in a 0.75 BMT. Available in a range of our popular colour or Zinc finishes throughout New Zealand, in 0.4mm and 0.75mm base metal thicknesses. PurlinDek® 600 can be supplied with all the necessary fasteners and accessories. Translucent sheeting options also available in the PurlinDek® 600 profile. For strength & durability like no other, choose PurlinDek®.

PurlinDek® 600 Profile

- Aesthetic High Rib (75mm) bold profile
- Up to 6m load bearing span
- Premium pre-painted coating
- Forms structural diaphragm with all ribs working
- Provides greater water carrying capacity
- Lay at lower pitch of 3 degrees
- Strengthens building structure
- Less fixing points
- Translucent sheeting also available
- G550 grade steel gives more resilience to damage



Thickness	0.40mm and 0.75mm
Material	Z400 - G550 zinc coated strip (AS/NZS 1397:2011)
Finishes	Coloured Steel
Minimum Pitch	3 degrees
Coverage	600mm
Applications	Commercial / Industrial
Long-run Length	Up to 30 metres custom cut over certain lengths. Ministry of Transport approval may be needed.
Orientation	Roofs, horizontal & vertical wall cladding
Overhang	0.40mm = 600mm Overhang. 0.75mm = 1800mm Overhang.

Falls	Recommended Fall	Rafter Length
Minimum Fall =	3° (40mm/metre)	up to 9m
	3.5° (60mm/metre)	over to 9m
	4° (70mm/metre)	over to 14m
	4.5° (79mm/metre)	over to 18m
	5° (87mm/metre)	over to 23m

Roofing Spans Access Restricted

WITH Snow Load 1 kPa at SLS						
SLS wind on roof (kPa)	Roofing Span Length (m)					
	Simply Supported		End Span		Internal Span	
Thickness (mm)	0.4	0.75	0.4	0.75	0.4	0.75
0.5 kPa	3.2	4.5	2.8	4.5	3.2	5.0
0.6 kPa	3.2	4.5	2.8	4.5	3.2	5.0
0.7 kPa	3.2	4.5	2.8	4.5	3.2	5.0
0.8 kPa	3.2	4.5	2.8	4.5	3.2	5.0
0.9 kPa	3.2	4.5	2.8	4.5	3.2	5.0
1.0 kPa	3.2	4.3	2.8	4.5	3.2	5.0
1.1 kPa	3.0	4.2	2.8	4.5	3.2	5.0
1.2 kPa	2.9	4.1	2.8	4.5	3.2	5.0
1.3 kPa	2.8	3.9	2.8	4.4	3.1	4.9
1.4 kPa	2.7	3.8	2.7	4.2	3.0	4.7
1.5 kPa	2.6	3.8	2.6	4.1	2.9	4.6
1.6 kPa	2.5	3.7	2.5	4.0	2.8	4.4
1.7 kPa	2.4	3.6	2.4	3.8	2.7	4.3

WITHOUT Snow Load 1 kPa at SLS						
SLS wind on roof (kPa)	Roofing Span Length (m)					
	Simply Supported		End Span		Internal Span	
Thickness (mm)	0.4	0.75	0.4	0.75	0.4	0.75
0.5 kPa	4.4	5.4	4.4	6.7	4.9	7.4
0.6 kPa	4.1	5.1	4.0	6.3	4.5	6.9
0.7 kPa	3.8	4.8	3.7	5.9	4.2	6.6
0.8 kPa	3.6	4.6	3.5	5.5	3.9	6.2
0.9 kPa	3.4	4.5	3.3	5.2	3.7	5.8
1.0 kPa	3.2	4.3	3.1	5.0	3.5	5.5
1.1 kPa	3.0	4.2	3.0	4.7	3.3	5.3
1.2 kPa	2.9	4.1	2.9	4.5	3.2	5.1
1.3 kPa	2.8	3.9	2.8	4.4	3.1	4.9
1.4 kPa	2.7	3.8	2.7	4.2	3.0	4.7
1.5 kPa	2.6	3.8	2.6	4.1	2.9	4.6
1.6 kPa	2.5	3.7	2.5	4.0	2.8	4.4
1.7 kPa	2.4	3.6	2.4	3.8	2.7	4.3

Cladding span lengths shall be multiplied by a factor 1.15 if one of the following condition is met:

- 1) Importance level 1 structures OR
- 2) Ratio between inward and outward wind pressure at SLS is less than 0.7

Cladding Spans

SLS Wind on Cladding (kPa)	Cladding Span Length (m)					
	Simply Supported		End Span		Internal Span	
Thickness (mm)	0.4	0.75	0.4	0.75	0.4	0.75
0.5 kPa	4.4	5.4	4.5	6.7	5.0	7.4
0.6 kPa	4.1	5.1	4.1	6.3	4.6	6.9
0.7 kPa	3.8	4.8	3.8	6.0	4.2	6.6
0.8 kPa	3.5	4.6	3.5	5.7	4.0	6.3
0.9 kPa	3.3	4.5	3.3	5.3	3.7	6.0
1.0 kPa	3.2	4.3	3.2	5.1	3.5	5.7
1.1 kPa	3.0	4.2	3.0	4.8	3.4	5.4
1.2 kPa	2.9	4.1	2.9	4.6	3.2	5.2
1.3 kPa	2.8	3.9	2.8	4.4	3.1	5.0
1.4 kPa	2.7	3.8	2.7	4.3	3.0	4.8
1.5 kPa	2.6	3.8	2.6	4.1	2.9	4.6
1.6 kPa	2.5	3.7	2.5	4.0	2.8	4.5
1.7 kPa	2.4	3.6	2.4	3.9	2.7	4.3

Cladding span lengths shall be multiplied by a factor 1.15 if one of the following condition is met:

- 1) Importance level 1 structures OR
- 2) Ratio between inward and outward wind pressure at SLS is less than 0.7

Loading Zones & Descriptions

Zone 1

Corresponds to NZS4203 Wind Regions 1, Sand 7.

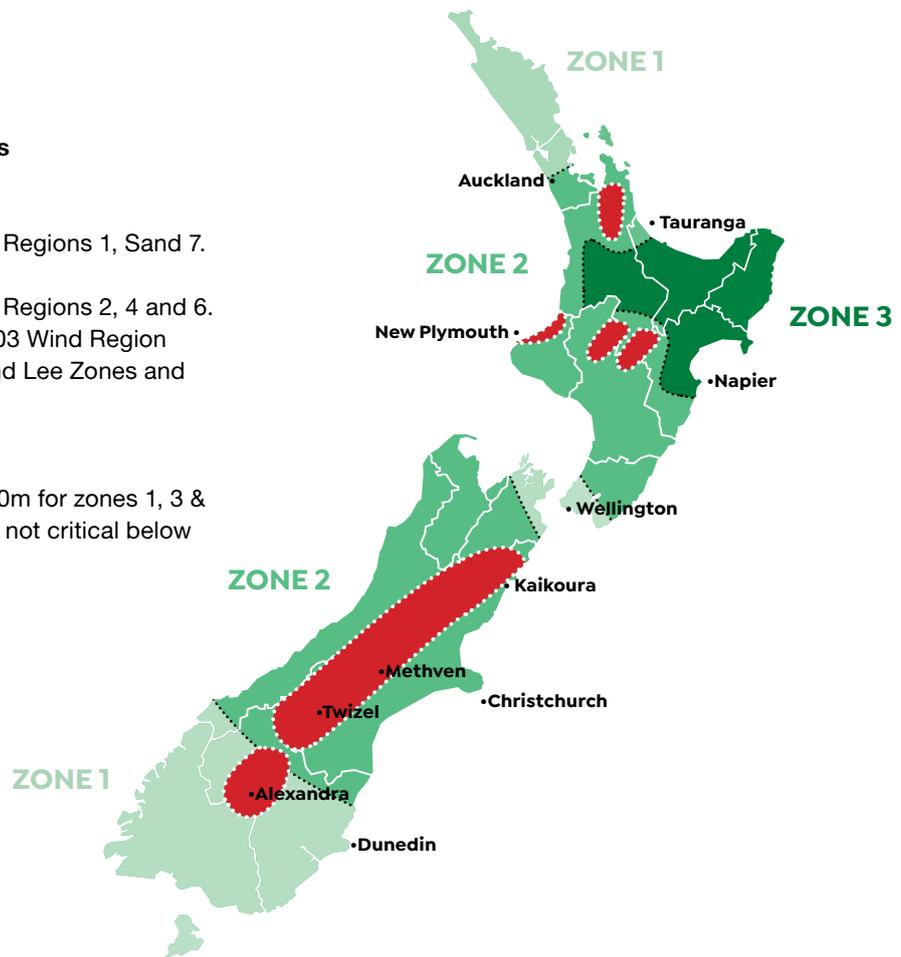
Zone 2

Corresponds to NZS4203 Wind Regions 2, 4 and 6.

Zone 3 Corresponds to NZS4203 Wind Region 3
3 Corresponds to NZS4203 Wind Lee Zones and requires specific design.

Note:

Snow load not critical below 500m for zones 1, 3 & North Island Zone 2. Snow load not critical below 330m for South Island Zone 2.



**Choose from a quality range of
pre-painted steel coatings made for
New Zealand's unique environment.**



Colour Range

Our coloured steel range is inspired by the landscape that surrounds us. Our steel products undergo intense, long-term colour performance and exposure testing. Streamline Carports don't compromise on quality our steel is designed specifically for New Zealand's demanding conditions.

For Availability & Pricing Information: Contact your Streamline Carports Sales Team 0800 CARPORTS

Black



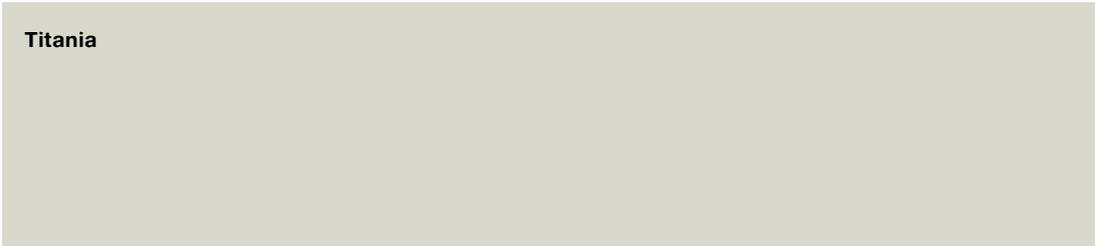
Grey Friars



Ironsand



Titania



Zinc



Design Guide

Building design & product selection

The designer must ensure that the most appropriate roofing and cladding product is chosen for the building. There are several considerations to take into account. Aesthetics and product availability are essential, but ultimately the chosen profile must meet specific performance criteria - ability to shed water from the roof and the ability of the product to span purlin and girt spacings. For most roof installations, the purlin spacings are determined by the traffic-able limitations of the profile, or the structural design.

It's then necessary for the designer to calculate the design wind load for the roofing and cladding regarding AS/NZS 1170.2:2011 and NZS 3604:2011. The purlin spacings should be limited to the lower of the traffic-able limitations and design wind load, with the capacity of the structure being higher than the design load for the application. For more detail, refer to <https://www.metalroofing.org.nz/cop> for NZ Metal Roof and Wall Cladding code of practice. For roofs or wall cladding applications that are untrafficable or have traffic-able limitations, these limits may be exceeded if the design wind loading criteria adhered to. Please note that it may require considerable extra secondary fasteners installed within the laps.

There are other factors the designer should always take into account. Such as where heavy roof traffic is likely, high snow loadings in NZ high country regions, or where the roofing supports extra equipment such as air conditioning units. We recommend that the purlin spacing should be reduced accordingly in light of these factors. Important to note that consideration should be given to translucent sheeting & limitations around purlin spacings.

Storage & handling

PurlinDek® 600 should be stored under cover at all times. Care should be taken during handling to avoid distortion or damage to the corners, ribs and the clipping edges. Where the clipping edges are deformed they should be straightened before installation and fixing.

Supply & service

Available from Streamline Carports and through distributor fixers. The manufacturer maintains a technical design and quotation service for designers and specifiers.

General fixing

PurlinDek® 600 may be fixed to timber or steel portal frames and trusses, widening the need for purlins & girts.

Fixing method

For PurlinDek® 600 the fixing method provides for fixing through the crest of the rib with 105mm Tek screws (to steel purlins). Fix through metal washer and roofing. Expansion and contraction is allowed for when lengths exceed 30 metres by lapping the sheets in accordance with the Streamline Carports detail.

Minimum fall

PurlinDek® 600 should be laid to a minimum fall of 50mm in 3 metres (1 in 60). For changes in pitch or break in direction the ribs may be cut and capped. PurlinDek® 600 may be reverse fixed on cladding applications.

Paint durability & maintenance

PurlinDek® 600 is designed with a premium PVDF coating for absolute maximum protection against the weather and environmental elements. The corrosion zone set out in the maintenance schedule determines how often you need to wash the building. Many factors determine the corrosivity of a particular location, and are identified as moderate, severe or very severe, based on proximity to the coast, geothermal or high wind environments. The designer should choose the appropriate materials for the location, which meet the standard durability requirements of the NZBC and satisfy customer expectations. For maintenance of PurlinDek® coated steel and Zinc, contact Streamline Carports.

Material thickness

For commercial and industrial applications, 0.75 is almost universally used on the roof, and 0.40 or 0.75 on the walls. In higher winds speeds, fastener patterns may have to be increased or purlin spacings decreased to accommodate wind loads, or thicker materials can be used. In buildings with high foot traffic expectancy or highly visible roofs, eg, multi level mono pitch roofs, roofs with UV collectors, flues, air-con devices or chimneys that need servicing 0.75 material should be selected. G300 at 0.40 is the most common specification for spouting, flashings and ridging.

Translucent sheeting

Translucent sheeting is manufactured to the highest specification that resists UV degradation and yellowing much longer than what is usually experienced with general purpose translucent roofing products. We recommend Opal as the best choice because of its lower light and solar transmission properties in commercial & industrial buildings. The 3660g/m² is fully traffic-able. It's further supported by our manufacturers comprehensive 25 year warranty and a 20 year visible light and solar transmission warranty.

Dissimilar metals corrosion

Where 2 different metals are in contact and moisture is present, one metal is relatively protected while the other suffers accelerated corrosion. This is known as galvanic or bi-metallic corrosion. A similar effect commonly occurs with water flowing over dissimilar metals. This form of corrosion is commonly found:

1. Where water is discharged from copper or brass systems over a galvanised or Zinalume steel roof.
2. Where unpainted lead flashings are applied directly to Zinalume products.
3. Where fasteners are incompatible with the roofing material.

Separate dissimilar metals by using a barrier such as PVC tape, bituminous felt, neutral cure silicone sealant or an appropriate paint system. Prevent potential run-off from copper or brass pipes over Galvanised Steel, Zinalume or painted surfaces by diverting the discharge clear of the roofing. **Note:** Coastal areas with high salt levels and high humidity will increase the possibility of dissimilar metals corrosion.

Run-off from inert materials

The zinc coating on galvanised steel products develops a protective surface film as a result of natural weathering. This provides the longevity of performance which we have come to expect from galvanised steel products. When flowing over galvanised roofing, rainwater dissolves small amounts of minerals and salts from the zinc surface. These minerals and salts promote and maintain the protective film on and enhance the corrosion resistance of downstream galvanised steel products (eg lean-to roofs, gutters and valleys). However when rainwater flows over, or is collected from roofing materials which do not promote this protective

film (INERT MATERIALS), accelerated corrosion of unpainted galvanised steel roofs and gutters can occur.

Some examples of inert materials

- Zinalume material
- Coloured Steel material
- Acrylic
- Glass
- Glazed tiles
- Aluminium
- Fibre-glass
- PVC

On galvanised roofing run skylights down to the gutter. To achieve maximum life from your rainwater goods we recommend that they are manufactured from approved products. Unpainted galvanised steel must not be used for roofing or rainwater goods, including valleys and gutters, to collect water run-off from Zinalume products or any other inert material.

Edge sealing

PurlinDek® material is designed for very severe environments and its performance relies on maintaining the integrity of the barrier coating. Where PurlinDek® material is cut, the cut edge must be sealed in order to retain the protective envelope. All cut edges of sheets and accessories such as ridding, flashings and guttering should be treated.

General PurlinDek® 600 Roofing Fixing Instructions

***Refer to instruction manual for full installation details for all roofing & cladding profiles.**

Walk only in the pans.

End turn-up tools are available from Streamline Carports. Sheets must be clipped together as they are laid and then screwed. Generally they will not clip after screwing.

Lap stitching at 1/3 points on spans over 5 metres.

Wind pressure can cause failure in roof systems in 2 ways. Destructive positive upward pressure can be exerted by high winds at eaves with unusually large overhangs, and powerful negative pressure (suction) effects can be created both on the leeward side of the ridges or parapets, and over the total area of flat roofs.

Expansion may normally be allowed for with oversize holes 10mm to 12mm through rib. Allow for expansion both ways from centre of the sheet.

Neoprene washer (PD3) and cap washer (PD1) to be placed under head of screw and screwed down using a suitable power tool with the head of screw brought down just firm. **DO NOT OVER-TIGHTEN SCREWS.**

TEK screws must be 115mm long for fixing to steel purlins through crest of rib. Special PurlinDek® washer (PD1) must be used.

Type screws must be 125mm long for fixing to timber purlins through crest of rib. Special PurlinDek® Washer (PD1) must be used. **DO NOT PRE-DRILL TIMBER FOR WOOD-SCREWS OR HAMMER IN WOOD SCREWS.**

Fixing method A screw through metal washer PD1 (as specified) with neoprene washer between metal washer and roofing.

1. Sheet must be fastened to every purlin (or girt) to transfer outward loads evenly to every structural member.

2. The screw and washer system used should meet specification requirements and have a durability to at least match that of the sheeting, and be in accordance with Streamline Carports literature for that profile.

3. Fasteners must be perpendicular to the sheeting and tightened sufficiently to effect a durable seal without over tightening. Over tightening results in the seal washer distortion, or the profile crest dishing and depressing. Fixings must be to a line.

Fixing cladding All fixings shall be tightened to **TOUCH SHEET ONLY**. Otherwise deformation of the pan will occur, and the appearance of this is unsightly. Fixings must be backed off to achieve a flat pan.

Netting 19 gauge 75mm netting is recommended in 2m wide rolls and is adequate for all spans but should be laid out carefully to 2m edge of netting and then clip or twist edges together. Specify Sisalation® or building paper in 1.370m wide rolls, this covers 2 runs of roofing per width.

Substructure Care must be taken to ensure that the roof framing is adequately tied to the walls, galvanised steel straps or long bolts must be used.

Walking on the roof PurlinDek® 600 will support the weight of a man even when fixed at the maximum support centre suggested in our brochure. However, to minimize risk of denting ribs. **WALK ONLY IN THE PANS. USE APPROPRIATE FOOTWEAR.**

Storage and handling Care should be taken during handling, transport & storing of PurlinDek® 600 roofing to protect the corners, ribs & particularly the clipping edges from damage. If clipping edges are deformed they should be straightened before laying.

Paint manufacturers instructions should be followed. **CLEAN OFF ALL CONSTRUCTION DEBRIS AND DRILLING OR GRINDING DEPOSITS AS WORK PROCEEDS AND ON COMPLETION.**

Fixings

Low / Medium Wind Zone:

14 x 115mm Tek screws with neo washer and embossed washer.

High Wind Zone:

14 x 115mm Tek screws with neo washer & embossed washer, approved profile's metal washer & EPDM washer.

Wall Cladding Fixings:

Every pan with 12 x 25mm Tek screws with neo washers. Gutter and Periphery area. Underlay as per the project specification is to be used.

Fixings, Fastenings and Underlay

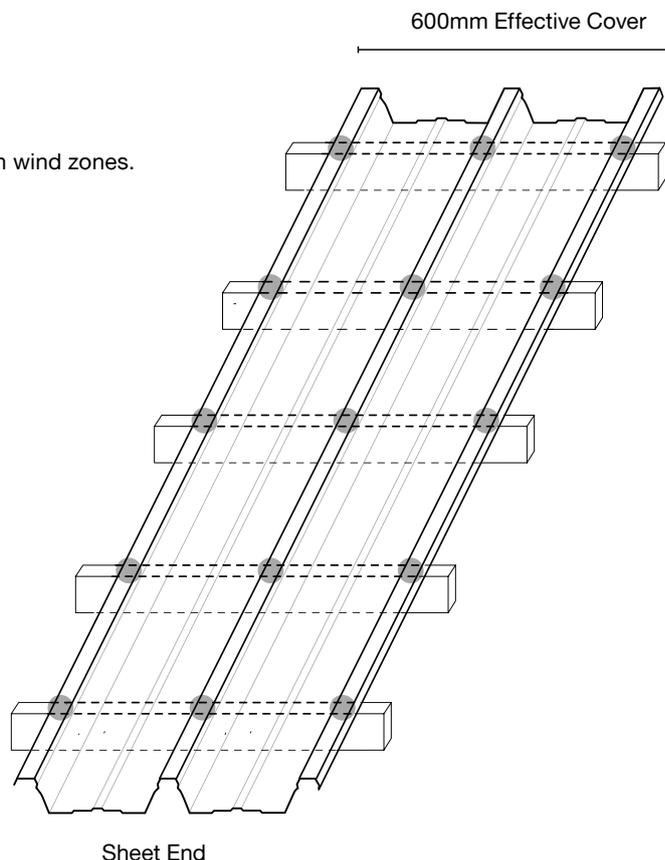
All primary fasteners to have a minimum embedment into structural timber of 30mm. Adjust fastener length for both timber and steel fixings when necessary for battens etc. When using load spreading profile washers for roofing fix ridging, roof flashings etc, use a 25mm Aluminium embossed washer and appropriate screw.

All fixings and fasteners are to be of an approved type, compatible with all materials, the environment and meeting the requirements of the NZ Building Code. Installation is to be in accordance with the NZ Metal Roof and Wall Cladding Code of Practice or manufacturer's instructions. Fix every crest to: Ridge, Hip, Valley, Gutter and Periphery area. Underlay as per the project specification is to be used.

PurlinDek® 600 Sheet Fixings

Fastner layout for low, moderate and high wind zones.

PurlinDek® sheet must be fixed on every crown at each purlin.



Translucent Sheeting

Visible light and solar transmission

Weight	Opal	
	Light	Solar
1800g/m ² (1.1mm)	70%	52%
2400g/m ² (1.5mm)	58%	49%
3660g/m ² (2.5mm)	47%	40%

Light and Solar transmission information is issued as a guide only and based on interpretation of natural exposure testing. Full test information is available from Alsynite Technical Catalogue see www.alsynite.co.nz

For Availability & Pricing Information: Contact your Streamline Carports Sales Team 0800 CARPORTS





**A superior building material,
with strength & durability to
withstand NZ's conditions.**

0800 CARPORTS
streamlinecarports.kiwi

OFFICE: 911 Tremain Avenue, Roslyn, Palmerston North 4414
EMAIL: carports@streamline.kiwi