

permalite

ALUMINIUM ROOFING PANELS The durable solution
to the toughest conditions

ALSULLATE-125®



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1.0 ALSULATE-125[®] Aluminium Insulated Roofing System

At last there is a roofing panel which combines the corrosion resistance of aluminium with the exceptional insulation properties of a sandwich panel: introducing new ALSULATE-125[®] panel from Lysaght.

ALSULATE-125[®] insulated sandwich panel system is a roofing system with both insulative and structural advantages. The clever sandwich design incorporates both roofing and a prefinished ceiling using 5251 H38 Marine grade aluminium to provide outstanding watertightness, durability and stunning aesthetics. A variety of flashings and ridge covers cap off the roof design.

The self-mating easily installed roof panels provide insulation ratings of R3.4 Winter and R3.3 Summer and free span capacities of up to 6.4m. ALSULATE-125[®] insulated roof panels provide a clean crisp uninterrupted ceiling finish, reducing the number of unsightly support beams normally associated with traditional roofing methods. ALSULATE-125[®] insulated roof panels are easily incorporated into all forms of construction with the added benefit of meeting the building regulations insulation requirements. With its unrivalled sustainability and durability credentials, ALSULATE-125[®] panels makes it easy to specify roofing for your next project.

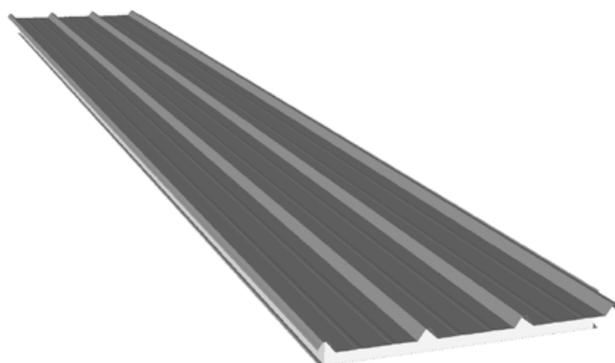
Aluminium's formability, high strength-to-weight ratio, corrosion resistance and ease of recycling, makes it the ideal material for a wide range of building applications. It is almost uniquely suited for projects in harsh industrial and marine environments.

Aluminium is a long lasting, durable, lightweight alternative to other cladding materials particularly in corrosive environments. Aluminium provides high thermal insulation and minimal maintenance to remain corrosion-free. It is easier to transport and erect because it is significantly lighter than many alternate cladding materials.

The outstanding benefit of PERMALITE[®] Aluminium Roofing Products is their long-term durability in aggressive environments. Roofs made from PERMALITE[®] products have been installed in Australia since the 1960s. This proven track record in Australia's harshest conditions means you can be assured of an effective roof life significantly longer than for most other roofing materials.

Choosing the optimum material for your next project should take into account the full lifetime of the material. This will include construction, use, maintenance and disposal. Materials which can be recycled easily and economically and which do not require landfill disposal should be preferred.

This booklet is a guide to the installation of aluminium ALSULATE-125[®] roofing and walling manufactured by Lysaght and should be read in conjunction with the PERMALITE[®] Aluminium Roofing Solutions manual. [Available at www.permalite.com.au]. We intend that it be used by all trades and professions involved with specifying and applying the ALSULATE-125[®] range of products.



Reference to this document will allow you to maximise the benefits of ALSULATE-125[®] panels in your next project. We refer only to genuine PERMALITE[®] aluminium roofing and walling manufactured by us and marketed under our brand names.

Our recommendations should only be used for our products because they are based on comprehensive testing of our profiles, Base Metal Thicknesses (BMT) and material finishes. Our products are engineered to perform according to our specifications only if they are used in the appropriate conditions and installed to the recommendations in this manual and our other publications. Where we recommend use of third party materials, ensure you check the qualities and capabilities of those products with the relevant manufacturer before use.

1.1 The benefits of ALSULATE-125[®] panels include

- Marine Grade Aluminium linings combine with a EPS core to provide an extremely lightweight structural component reducing material handling costs on site.
- The insulated R values of ALSULATE-125[®] insulated panels of R3.4 Winter and R3.3 Summer will reduce heating / cooling costs and noise levels as well as increasing thermal comfort levels within the building.
- Long span capacities allow for reduction in support members allowing for structural savings.
- The Integrated prefinished ceiling lining provides project labour, time and material savings.
- Marine grade aluminium linings offer long term low maintenance durability in a wide range of corrosive environments.
- A full range of marine grade aluminium flashings and accessories combined with 304SS screw fixings ensures project durability for the long term.
- PERMALITE[®] positive fixing system provides time proven security against wind uplift whilst enhancing watertightness.
- The trapezoidal outer cladding profile not only provides for a dynamic aesthetic but allows for roof pitches as low as 1 degree.

2.0 Design Information

2.1 Material Specification

Table 2.1: Alloy Mechanical Properties (Sheeting)

Alloy	5251/ 5052 Marine Grade
Temper/ Hardness	H38
Min. Tensile Strength	260 MPa
Min. 0.2% Proof Stress in Tension	220 MPa
Elongation 0.7mm Thickness	3%
Panel Properties	
Coverage (mm)	1000mm
Weight (kg/lm)	6.423 kg/lm
Min. Recommended Roof Pitch	1.0 degrees (no end lap)
	3.0 degrees (end lapped sheets)
Sheet Lengths	Max. 14m
	Min. 2m

2.1.1 Colours



GULL GREY™
(Upper sheet)

*GLACIER WHITE™
(Lower sheet)

* Brochures colours are only approximate - refer to painted colour chip for actual colour.

Other colours are available for projects but are subject to minimum order quantity and longer lead times when ordered with our ALSULATE-125® panel.

2.2 Thermal Protection

Long continuous sheet lengths require careful consideration of thermal behaviour. Although aluminium has twice the coefficient of expansion of steel (24×10^6 compared to 12×10^6 @ 20°C) the effect of this is often over-estimated especially for sandwich panel construction.

Usually aluminium cladding is fixed to a steel structure which, under the same thermal influence, also expands or contracts. The combination of these factors results in a low relative expansion between the aluminium cladding and the steel structure. It has been observed in practice that the theoretical expansion of an aluminium roof, relative to the steel structure on which it is fixed, is reduced by up to 50%. The insulative properties of the ALSULATE-125® system will further reduce this differential expansion.

Note: As an approximation, aluminium expands 1.2mm/m over 50° temperature change.

2.3 Thermal Expansion of Materials

The changes in length depend on the material type and its corresponding coefficient. The change in length can be calculated using the following equation:

$EL(\text{mm}) = (\text{Length m}) \times (\text{TC}) \times (\alpha)$ where:

EL = increase in length (mm)

Length = original length (m)

TC = change in temperature (C°)

α = expansion coefficient of 0.024

The ALSULATE-125® system considers this movement by utilising the time proven PERMALITE® Positive Fix System outlined in section 7.3 of this document.

Table 2.2: EPS Foam Core Properties

Physical Property	Unit	Class						Test Method
		L	SL	S	M	H	VH	
Compressive stress at 10% deformation min.	kPa	50	70	85	105	135	165	AS2498.3
Cross - breaking strength; min.	kPa	95	135	165	200	269	320	AS2498.4
Rate of water vapour transmission; max. - measured parallel to rise at 23°C	$\mu\text{g}/\text{m}^2\text{s}$	710	630	580	520	460	400	AS2498.5
Dimensional stability of length; max.: at 70°, dry conditions: 7 days	per cent	1.0	1.0	1.0	1.0	1.0	1.0	AS2498.6
Thermal resistance (min.) at a mean temperature of 25°C (50mm sample)	$\text{m}^2\text{K}/\text{W}$	1	1.13	1.17	1.20	1.25	1.28	AS/NZS 4859.1
Flame propagation characteristics:								
- median flame duration; max.	seconds	2.0	2.0	2.0	2.0	2.0	2.0	AS2122.1
- eighth value; max.	seconds	3.0	3.0	3.0	3.0	3.0	3.0	
- median volume retained;	per cent	15	18	22	30	40	50	
- eighth value; min.	per cent	12	15	19	27	37	47	

2.4 Maximum Span Capacity & Rainwater Drainage Tables

Span capacity tables are set out in Table 2.3 in accordance with: Wind actions: AS/NZS 1170.2:2011 - Clauses 5.3, 5.4 and D4; AS 4055-2012.

Imposed load on roof: AS/NZS 1170.1:2002 – Clause 3.5: 1.1 kN (110kg) per panel, concentrated load for typical foot-traffic.

2.4.1 Fixing Detail (Cyclonic and Non Cyclonic)

1. Fixed to support member with 14g self-drilling screws with Aluminium formed washers at every crest.
2. Typically 3-off screws to each panel, at each support.
3. Depth of penetration into supporting members shall be at least 3 threads.
4. BMT thickness included in Table 2.3 assume G450 steel or 5052 H36 Aluminium.
5. G300 HRC sections over 3mm may be substituted for G450 sections.

2.4.2 Panel Overhang

1. Maximum span overhang in direction of panel length = 25% of allowable span. (Up to 1m maximum.)
2. Maximum side overhang in direction of panel width = 450mm

Notes applicable to Span Tables:

1. Performance of the installed ALSULATE-125® structural insulated roof panels due to thermal expansion and contraction shall be verified by the architect or building designer based on local weather and climate.

Table 2.3: Span Capacity Tables

Wind Class in accordance with AS4055-2012	Support members minimum thickness (BMT mm)	ALSULATE-125® Maximum Single Span (mm)	
		Fully Enclosed Structure	One-Side Open
N1	Steel 1.5mm Aluminium 3mm	6439	6009
N2		6439	6009
N3		5534	5153
N4		4782	4485
C1	Steel 1.9mm Aluminium Not Suitable	4630	4630
C2		3785	3785
C3		3112	3112

Table 2.4: Alsulate Rainwater Capacities

Maximum lengths for drainage (m)

Intensity (mm/hr)	Roof Slope (degrees)								
	1°	2°	3°	5°	7.5°	10°	15°	20°	25°
100	106	132	154	192	229	264	292	324	352
150	71	88	103	128	153	176	194	216	235
200	53	66	77	96	115	132	146	162	176
250	42	53	62	77	92	105	117	130	141
300	35	44	51	64	76	88	97	108	117
333	32	40	46	58	69	79	88	97	106
500	21	26	31	38	46	53	58	65	70

* Special care must be taken at low pitch to ensure water ponding does not occur as this will impact rainwater capacity.

2.5 Timber and Metal Compatibility

Under no circumstances should galvanised steel, ZINCALUME® steel, lead, copper, brass, or copper alloys be placed in contact with aluminium, nor should you permit water run off from these materials to discharge onto aluminium sheets.

Care must be taken to avoid contact with building materials such as unseasoned or chemically treated timber, lime cement, concrete, mortar or plaster during construction and to provide impermeable barriers against long term contact.

In most situations the face of a dissimilar metal or timber support, against which the sheeting is fastened, is to be painted with chromate based primers/bitumous paint or good quality (and appropriate width) adhesive PVC tape.

Under severe marine and/or aggressive industrial environments Denso tape or closed cell polyethylene tape should be used to completely fill the sheet/structure interface to avoid moisture retention by capillary action. Lysaght will provide advice in such situations.

If there are doubts about the compatibility of other products being used, seek advice from our technical representative.

See tables below for direct contact and rainwater discharge compatibility issues.

Figure 2.1: Intermaterial preparation measures

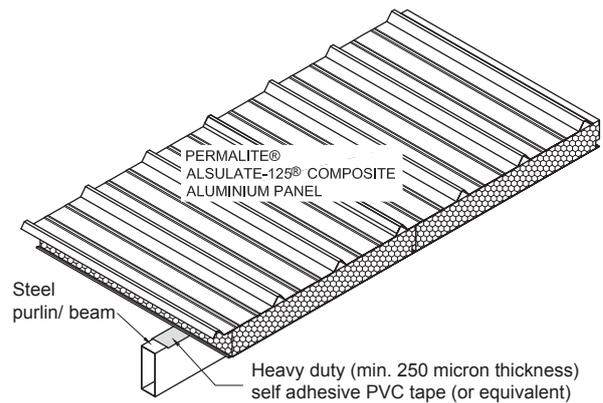


Table 2.5: Compatibility of direct contact between metals or alloys

Roof Drainage System Components & Any Cladding Material	Accessories or Fastener or (Upper Surface)								
	ZINCALUME®	Galvanised Steel	Zinc	COLORBOND® Including Ultra & Metallic	COLORBOND® Stainless	Stainless Steel (2)	Aluminium Alloys	Copper & Copper Alloys (1)	Lead
Aluminium Alloys	No (4)	No	Yes	No	No	Yes	Yes	No	No
ZINCALUME® steel (4)	Yes	Yes	Yes	Yes	No	No	No	No	No
Galvanised steel (4)	Yes	Yes	Yes	Yes	No	No	No	No	No
Zinc	Yes	Yes	Yes	Yes	No	No	Yes	No	No
COLORBOND® steel (Plus Ultra & Metallic)	Yes	Yes	Yes	Yes	No	No	No	No	No
COLORBOND® Stainless	No	No	No	No	Yes	Yes	No	No	No
Stainless steel	No	No	No	No	Yes	Yes	No	No	No
Copper & Copper Alloys (1)	No	No	No	No	No	No	No	Yes	No
Lead	No	No	No	No	No	No	No	Yes	Yes

(1) Monel - copper/nickel alloy

(2) For further guidance refer to AS/NZS 3500.3:2003

(3) Fixings only

(4) Our experience is that these materials are not compatible in extremely corrosive environments, so our advice differs from AS/NZS 3500.3:2003

Table 2.6: Acceptability of drainage from an upper surface to a lower metal surface

Lower Roof Drainage System Material	Upper Cladding or Roof Drainage System Material									
	ZINCALUME®	Galvanised Steel	Zinc	COLORBOND® Including Ultra & Metallic	COLORBOND® Stainless	Stainless Steel	Aluminium Alloys	Copper & Copper Alloys (1)	Lead	Glazed Tiles, Glass & Plastic
Aluminium Alloys	No	No	Yes(2)	Yes	Yes	Yes	Yes	No	No	Yes
ZINCALUME® steel	Yes	Yes	Yes	Yes	Yes	Yes	Yes(3)	No	No	Yes
Galvanised steel	No	Yes	Yes	No	No	No	No	No	Yes	No
Zinc	No	Yes	Yes	No	No	No	No	No	Yes	No
COLORBOND® steel (Plus Ultra & Metallic)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
COLORBOND® Stainless	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Stainless steel	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Copper & Copper Alloys (1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lead	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(1) Monel - copper/nickel alloy

(2) For further guidance refer to AS/NZS 3500.3:2003

(3) Our experience is that these materials are not compatible in extremely corrosive environments, so our advice differs from AS/NZS 3500.3:2003

3.0 General Rainwater System Design Recommendations

Roof drainage systems may be affected by a number of variables and must be designed by a suitable qualified trade or professional. For further information please refer to the PERMALITE® Aluminium Roofing Solutions manual. (Available at www.permalite.com.au)

3.1 Installation Details

3.1.1 General Information

ALSULATE-125® insulated roof panels should always have the roof pans turned up to full rib height at the top end of the panel and turned down approx. 20mm into the gutter:

3.1.2 Safety

It is most important for safety reasons that during sheet laying walking on the roof is reduced to an absolute minimum and along the purlins only. It is also recommended to wear gloves when handling ALSULATE-125® insulated roof panels.

3.1.3 Preparation

Before commencing to lay the sheet, consideration should be given to the installation of gutter and eave flashings, insulation and the location of roof penetrations such as vents, skylights etc. A pencil of any colour may be used except black or so-called lead pencils. Don't use black pencils to mark roofing or walling because the graphite content can create an electric cell when wet and thus cause deterioration of the finish. You can also use a string line with chalk dust or a fine, felt-tipped marker.

3.1.4 Squareness

Check the roof or wall structure for squareness before commencing to lay sheet. Sheet must be laid square to the ridge wherever practical. Out-of-square which exceeds 100mm over the sheet length should be corrected by trimming the edge of the sheet laid against the out-of-square edge. Any sag of purlins should be corrected before commencement, particularly on low-pitch roofs to avoid water "ponding".

3.1.5 Purlin Isolation

In most situations the face of a dissimilar metal or timber support, against which the sheeting is fastened, is to be isolated with good quality (and appropriate width) adhesive PVC tape.

Figure 3.1: Remove polystyrene from the gutter cut-back



4.0 Sheet Installation

Carefully LIFT the first panel onto the padded work platform with the ceiling facing upwards. Remove the polystyrene from the 60mm gutter cutback using a paint scraper (Figure 3.1), then turn the panel over:

ALSULATE-125® panels should be laid from left to right (as viewed from the gutter end) and from the eave toward the ridge (consideration should be given to cutting back the overlap edge on the 1st sheet if required to simplify flashing details as per figure 4.1).

If the panel width requires cutting ensure you are cutting off the male joint and leave the female joint intact. Aluminium is best cut with a wax-lubricated fine tooth circular saw. (Figure 4.2)

Figure 4.1: Cut off overlap

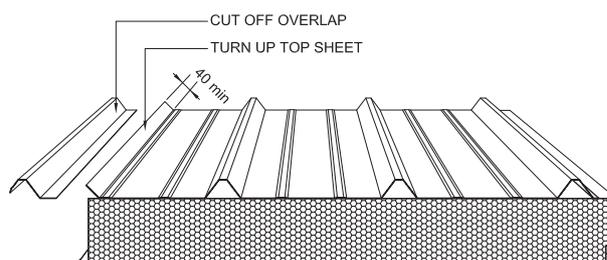


Figure 4.2: Use a wax lubricated fine tooth circular saw



4.1 Turn Up The Edge Of The Top Skin

Turn up all roof pans at the top end of the panel using a turn up tool. (Figure 4.3)

Turn down all the roof pans at the gutter end using a turn down tool. (Figure 4.4)

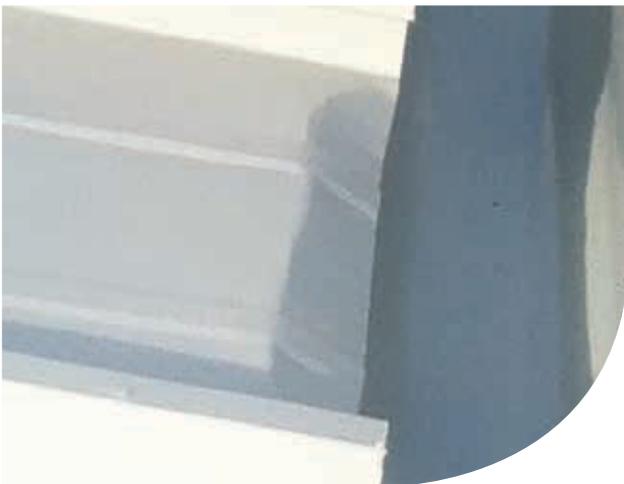
Place a soft cover over the top of the support beam(s) or wall plate(s) where the first panel will be installed to avoid damaging the panel surface.

Lift the panel into place ensuring the gutter/ cut back end is positioned at the lower end of the building and the male/ cut edge of the panel is positioned over the external edge of the structure. Square off the first panel and ensure the correct eave overhang measurements are achieved.

Figure 4.3: Turn up all roof pans at the top end of the panel using the turn up tool



Figure 4.4: Turn down all the roof pans at the gutter end using the turn down tool



4.2 Fixing

Prior to fixing the panel, move the soft covers along the support beam(s) or wall plate(s) to where the next panel will be installed to avoid panel damage. Secure the panel to the supporting beam(s) or wall(s) by screwing through every rib with RA195 14-12x195mm Hex head stainless steel screws with 16mm aluminium bonded washer and RA023 aluminium formed washers. (Figure. 4.5)

Note: expansion fixing requirements for roof runs over 9m is set out at Section 7.3.

Figure 4.5: RA195 14-12x195mm hex head stainless steel screw with 16mm aluminium bonded washer and RA023 aluminium formed washer

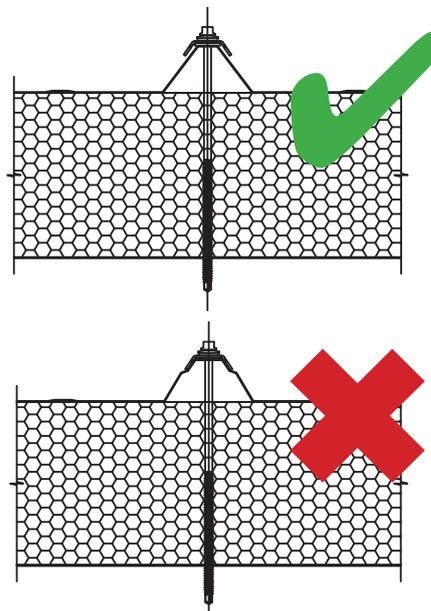


Figure 4.6: Screw installation

Under no circumstances should the screw be over tightened to the point where the formed washer, or the bonded washer or the sheeting under the screw head, commence to distort.



Figure 4.7: Avoid overtightening screws



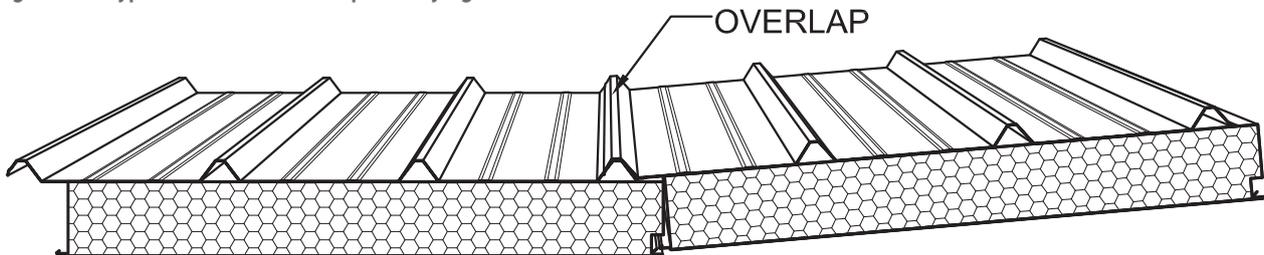
5.0 Prepare The Remaining Panels As Per Previous Steps

To install the second panel, position the panel into place with the overlap, then lower and push into the previously installed panel engaging the male and female joint. (Figure 5.1, 5.3 & 5.4) The ceiling connections should be neat with a consistent join line.

Fix panels in place following previous steps. Ensure panels are held tight together whilst fixing to maintain the neat consistent join line.

Using RA018 12g x 20 Hex Head stainless steel stitching screws with bonded aluminium washer, secure the overlap of the top skin. The fasteners are placed in the centre of the rib crest and at equal spacing's between purlins but not exceeding 500mm. (Figure 5.2) When installing the fasteners, place one foot on the overlapping ribs to ensure they are firmly together.

Figure 5.1: Typical ALSULATE-125® panel laying detail



Note: Panels should interlock with general ease, if you have any concerns/difficulties connecting the panels call your local sales representative immediately before proceeding.

Figure 5.2: Typical side lap details

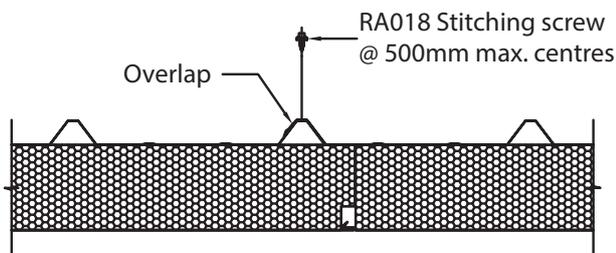


Figure 5.3 ALSULATE-125® panels before joining



Figure 5.4 ALSULATE-125® panels after joining



6.0 Last Panel Installation

Install remaining panels following previous steps.

If your last panel requires cutting follow previous steps ensuring to cut off the opposite side you previously cut, and turn up the cut edge of the top sheet. (Figure 6.1)

After all panels are fitted install flashings, gutter, downpipe etc.

Common flashings and fixing details are shown in Section 8.

Figure 6.1 Turn up the edge of the top skin

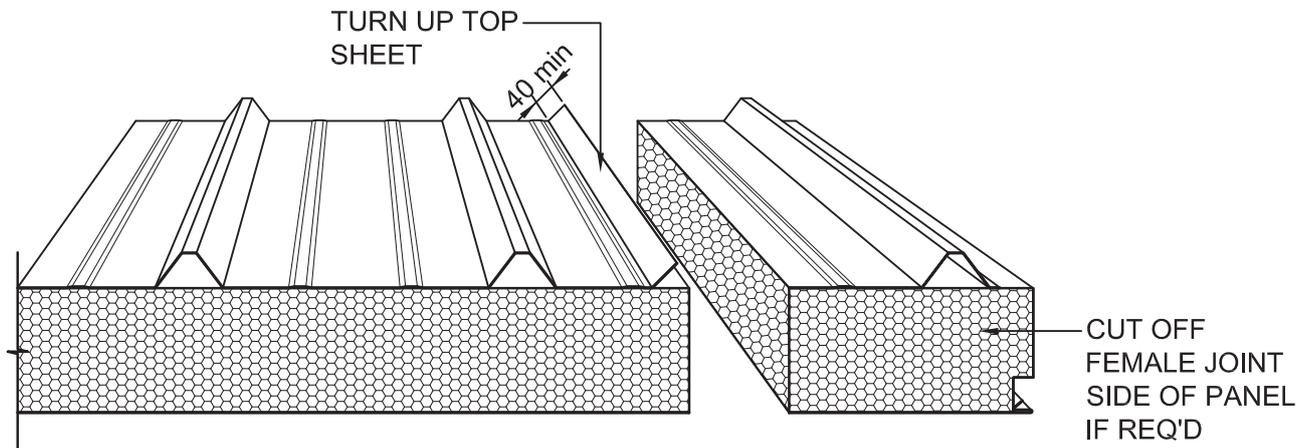


Figure 6.2: Z Flashing with gutter clips



7.0 Other Installation Information

7.1 Post Painting

Manual post painting is generally not recommended. Where there is no other option, we advise the following:

Flashings which are to be painted by the installer should first be washed with household detergent and dried. The flashing is then painted with an etch primer and finally brush painted with the colour coat.

Standard colours may be obtained on enquiry to major paint manufacturers. Touch up of scratched pre-painted sheet should be by brush only. Spray paints may fade prematurely.

7.2 Sealants

Silicone sealants used with aluminium sheeting must be neutral cure, however in some roofing applications a non-curing sealant may be required (Please refer to Lysaght for advice).

Neutral-cure silicone sealants have good adhesion to the clean surface of all our roofing and walling and are water resistant and non-corrosive.

7.3 Expansion Fixing Considerations

The PERMALITE® Positive Fix System provides for thermal expansion of the roofing sheet by "hard" fixing at the top of the sheet slope with "expansion" fixing being used to accommodate expansion towards the lower end of the sheet slope. For both types of fastening the screw should be screwed down until it presses on the washer with a medium pressure as shown at Figure 4.6.

7.4 Types of Pierced Fixings

7.4.1 Hard Fixing

"Hard" fixing is used where sheet lengths are such that thermal expansion is not a significant issue i.e. 9m or less.

A 6mm to 6.5mm diameter hole should be drilled through the upper sheet, EPS Foam and ceiling sheet prior to installation of the RA195 / RA023 fastener assembly. Pilot holes may also be needed into support members as per Table 7.1.

7.4.2 Expansion Fixing

For roof lengths in excess of 9m, "Hard" fixing is used for the first 9m from the ridge or skillion head. Expansion fixing is used for the remainder of the sheet length and follows the same procedure as hard fixing with the exception that the hole in the rib crest is slotted after drilling the tapping hole, using tool RA165. (Figure 7.1) A 10mm hole is then drilled through the ceiling sheet. (On large projects contact your Lysaght sales representative regarding use of this tool RA165).

Note that for expansion fixing, a rubber washer with an elongated hole and Teflon facing on one side is used. This washer must be installed with the Teflon side facing up toward the head of the screw.

Wall sheets should be rib hard fixed in the same way as roof cladding.

Long lengths of flashings may be "Hard" fixed. However in regions of high temperature variations it is advisable to consider expanding sheeting holes to 7mm for flashings in both roofing and wall sheeting applications.

Figure 7.1 PERMALITE® positive fix fastening system

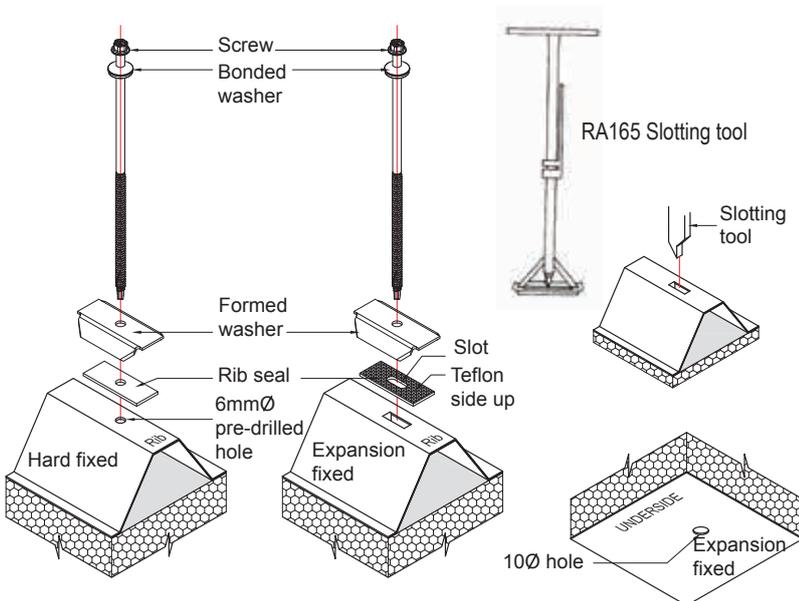


Table 7.1 Pilot hole diameter (mm) - Support structure metal thickness

	Fastener	Aluminium	Steel		Timber	
		>3.0 to 6.0mm	0.42 to 1.49mm	1.5-5mm		5.0-15mm
304 Grade Stainless Steel	RA195 14-12 x195 Teks® self drilling screw	Self-Drilling	Not Suitable	Self-Drilling	5.7	Not Suitable

7.5 End Laps

For roof runs beyond economical transport lengths, i.e. 13m, the unique properties of aluminium allow panels to be end lapped to form longer in-line roof runs.

Overlapping roof sheets should be ordered with a 200mm "gutter cut back" with the sheet junction occurring directly over a support member.

When end laps are used, the lower sheets are fixed first without holes being drilled for fasteners to the purlin at the top of the sheet slope. When the next sheet up the roof slope is laid the sheet is first temporarily positioned in place. Where the sheet overlaps the previously laid sheet, the end of the top sheet is lifted and the rib crest slotted using special slotting tool RA165. The top sheet is lowered and a 5mm pilot hole drilled at the centre of the top sheet slot, through the lower rib and panel into the purlin. This hole through the bottom sheet only is then expanded to 8mm with the fastener subsequently being installed. This methodology ensures the top sheet is expansion fixed and the lower sheet is hard fixed. Note: the overlapping sheets should not be rib crest slotted together.

Figure 7.2: Typical end lap detail

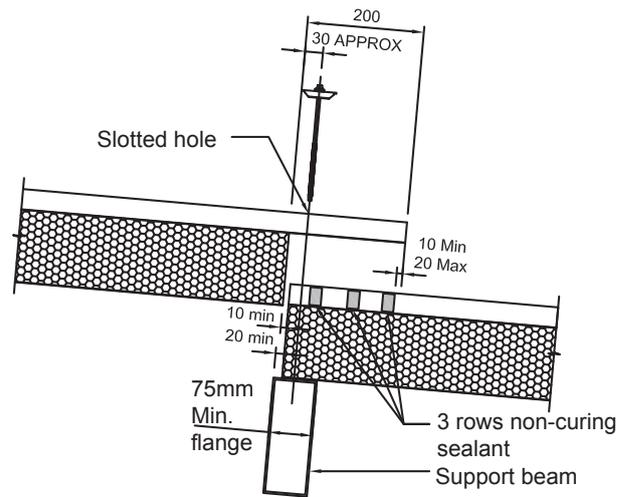
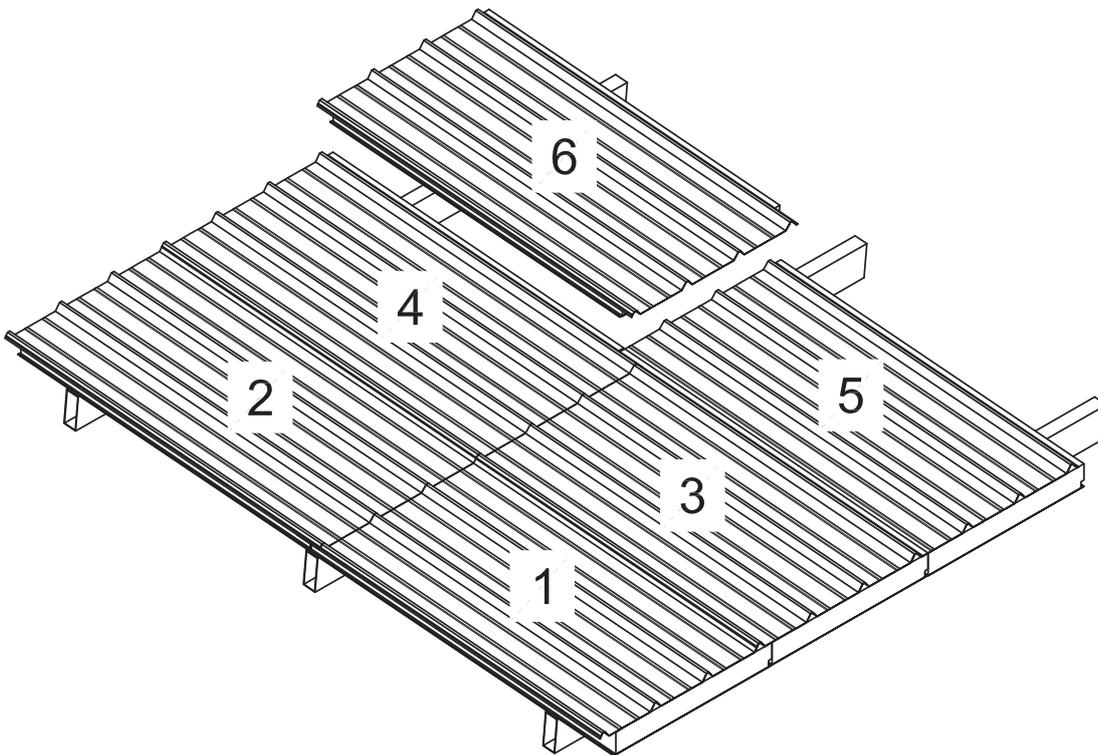


Figure 7.3: Typical ALSULATE-125® order of laying panels



8.0 ALSULATE-125® System Components

8.1 Sheeting

The 1m cover width panel provides an economical cover solution.

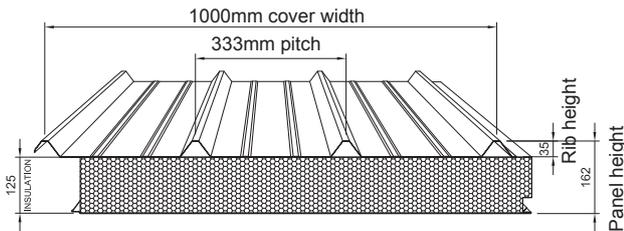
It is manufactured from 5251 H38 Marine grade 0.7mm thick aluminium top and bottom skins with a 125mm EPS foam core.

The outer profiled skin is available in GULL GREY®.

The prefinished internal skin is provided with an attractive smooth finish in GLACIER WHITE®

Customised colours are also available to suit your project needs, subject to minimum order quantities and extended lead times.

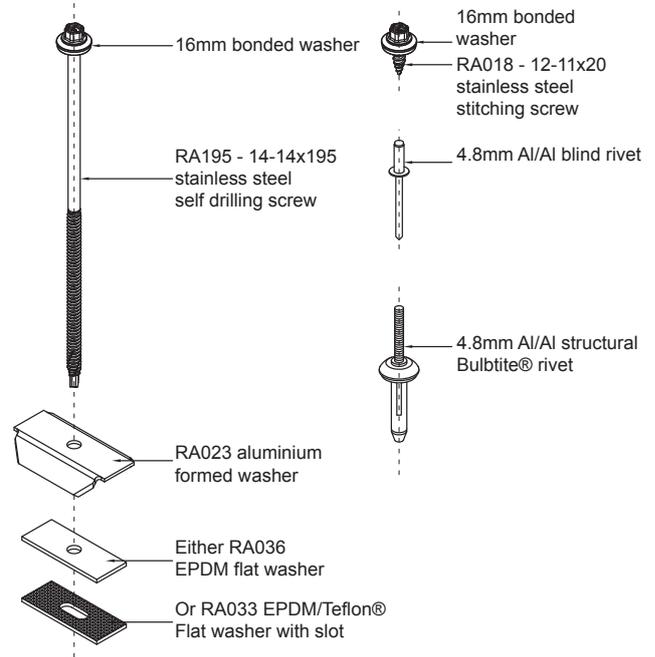
Figure 8.1: Typical ALSULATE-125® detail



8.2 Fixings

RA195mm x 14g 304SS screws together with aluminium washers and EPDM the seal combine to ensure maximum performance in corrosive environments.

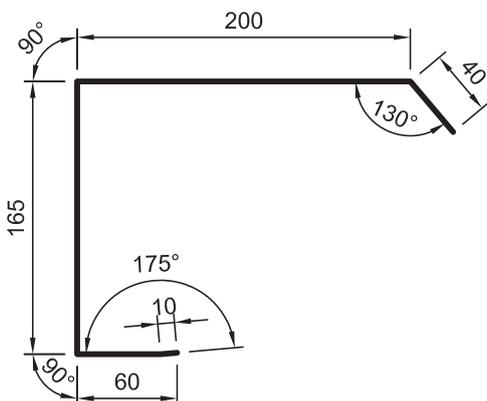
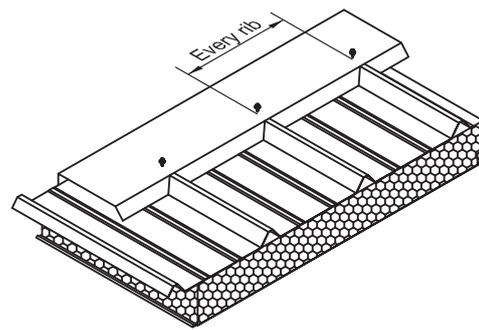
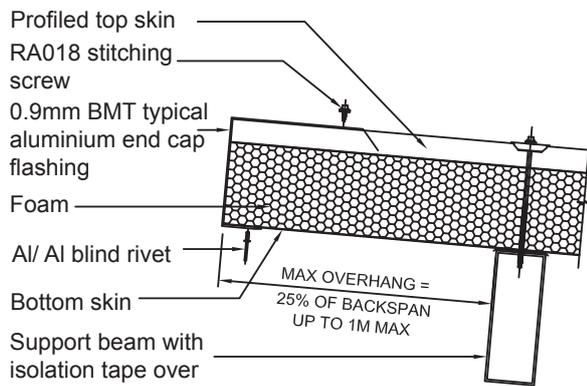
Figure 8.2: Typical ALSULATE-125® panel fixings



8.3 Skillion Ridge End Flashing

Fixed with stitching screws @ max 333mm centres (every rib) to topside, and All aluminium blind rivets @ 400mm centres to underside.

Figure 8.3: Skillion ridge end flashing

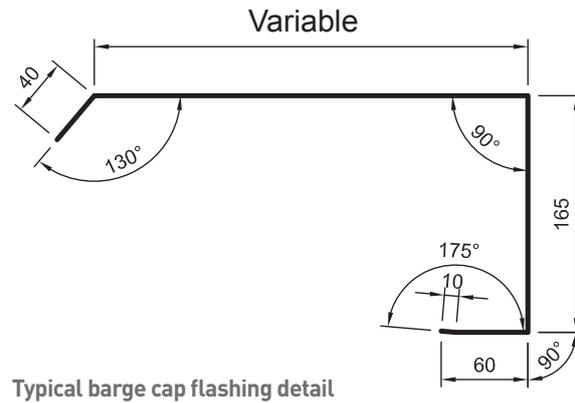
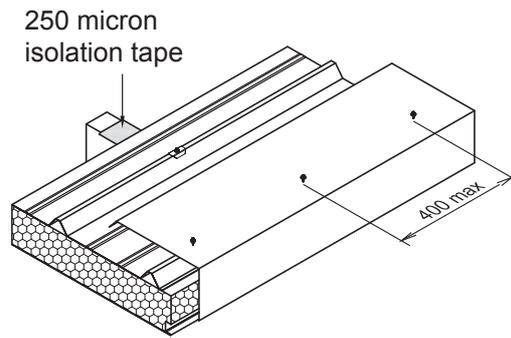
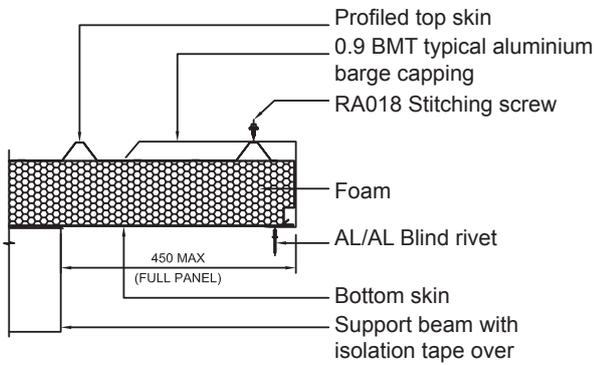


Typical end cap flashing detail

8.4 Barge Capping

Fixed with RA018 12 x 20mm stitching screws @ 400mm centres topside, and all aluminium blind rivets @ 400mm centres underside.

Figure 8.4: Typical barge cap flashing detail with overhang

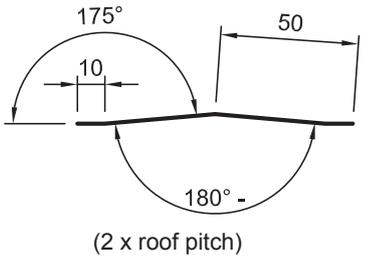
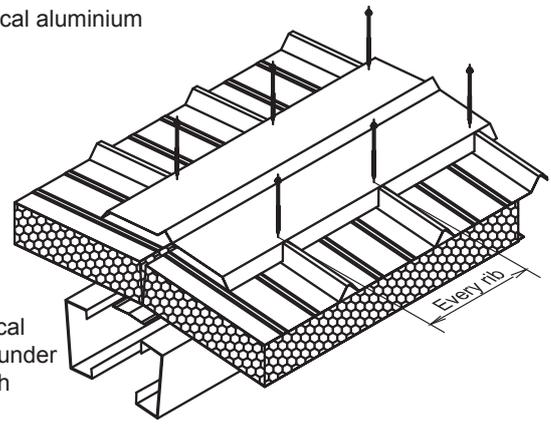
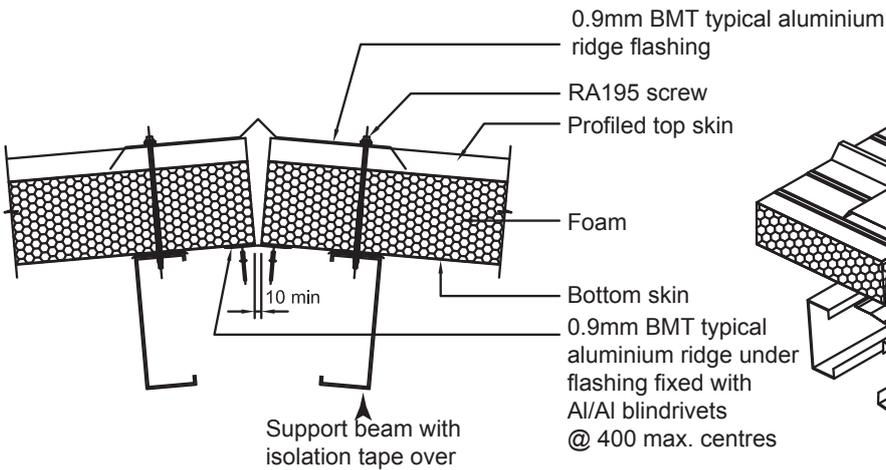


Typical barge cap flashing detail

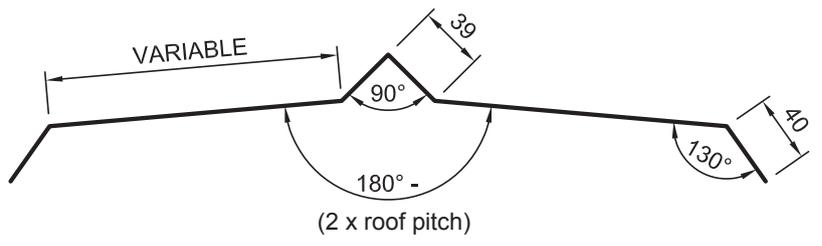
8.5 Ridge Flashing

Fixed with RA195mm x 14g 304SS screws combined with aluminium washers and EPDM seal every rib topside into ridge supports.

Figure 8.5: Typical aluminium ridge flashing detail



Typical aluminium ridge under flashing detail



Typical aluminium ridge flashing detail

8.6 Gutter Connection Detail

Fixed with all aluminium blind rivets two off @ every pan top sheet, with neutral cure silicone sealant.

Figure 8.6: Typical gutter details

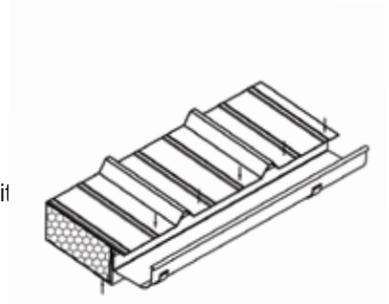
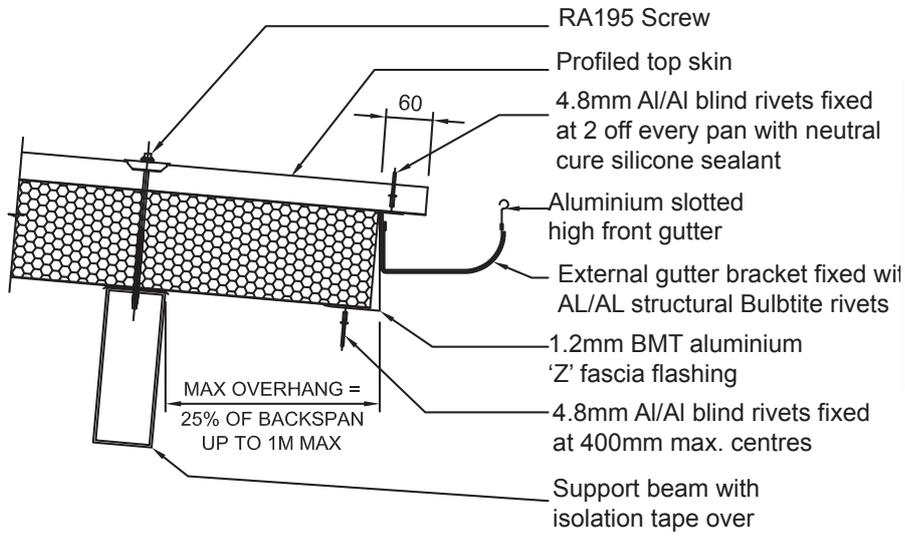
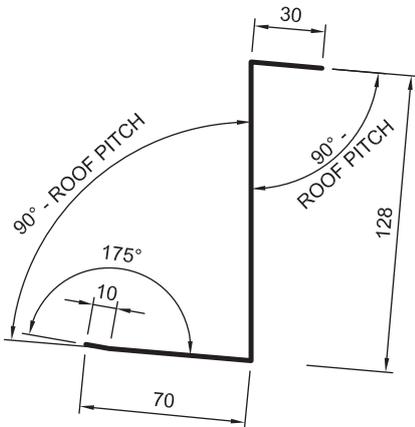


Figure 8.7: Typical Z-fascia detail



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