



LYSAGHT



LYSAGHT® ENSEAM™

Strikingly Beautiful
Cladding for Contemporary
Architectural Designs



Sleek and aesthetically pleasing standing seam roof profiles from LYSAGHT® roofing and walling solutions are known for form and function attributes.

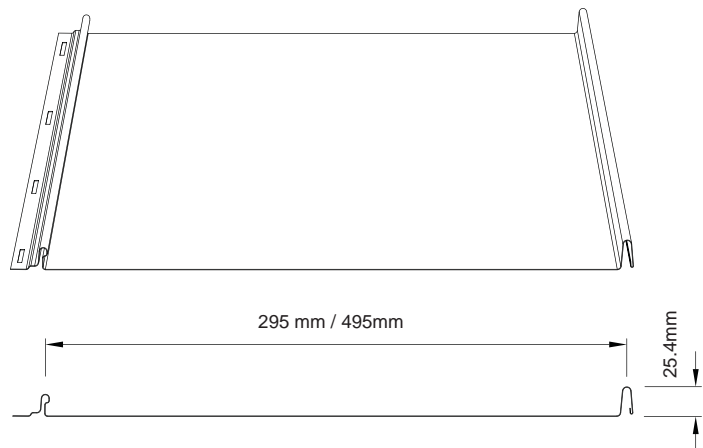
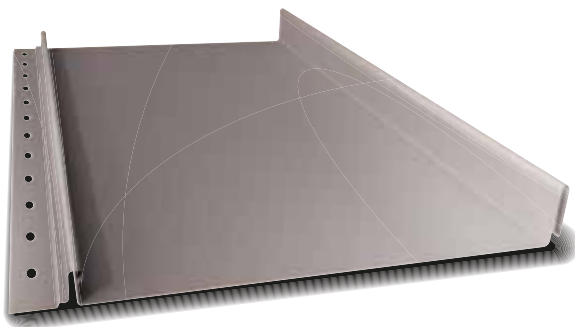
Being an economical version of standing seam roof and its non-industrial appearance has made countless popular applications in residential, institutional and commercial roofing projects. Minimum accessories are needed to install the roofing sheets with ease.

LYSAGHT® ENSEAM™ roof profile is an extremely high-performance snap-on profile with the aesthetics of a traditional standing seam panel. Its specially designed “snap-on” side joint delivers excellent seal. At seam

height of 25.4mm, it does not require a preformed batten which makes it easy to install and fix.

LYSAGHT® ENSEAM™ may be utilized in roofing, walling and fascia applications. Its simplicity only allows application in non-curved roofs. The simplicity of the pan design combined with in-line tension levelling provides superior flatness and allows for greater workability on site.

Manufactured from BlueScope's proprietary COLORBOND® steel, its strength to weight ratio, durability and superb weather resistance delivers improved performance.



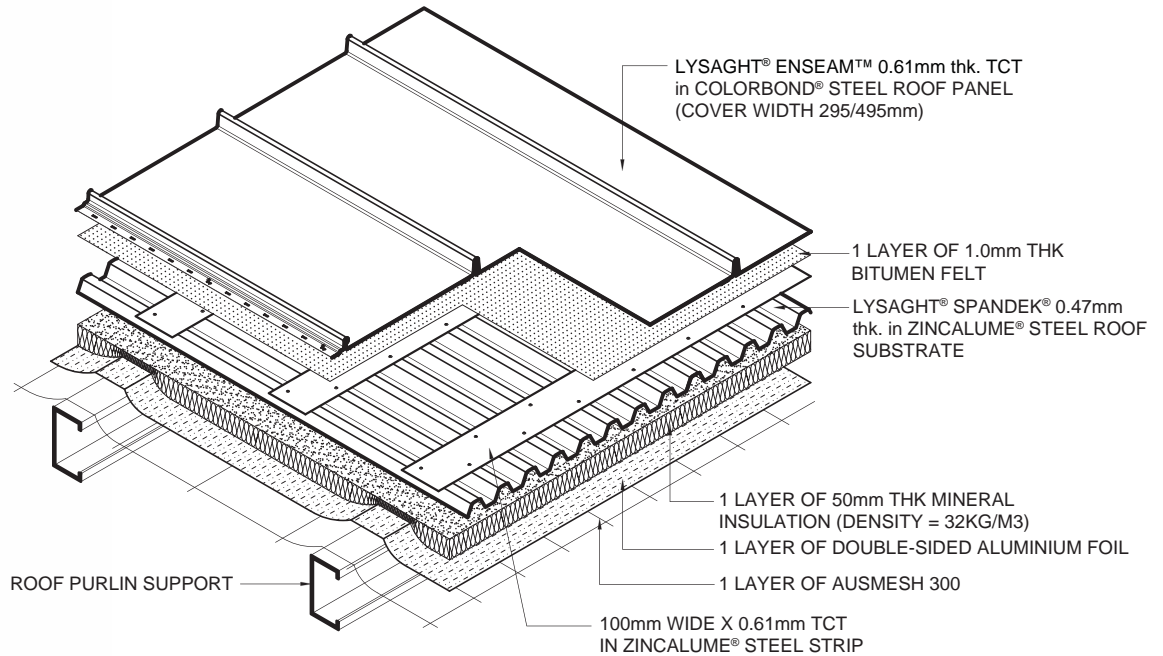
PHYSICAL PROPERTIES

	STANDARD
Base Metal Thickness (mm)	0.55
Total Coated Thickness (mm)	0.61
Mass per Unit Area – COLORBOND® Steel (kg/m ²)	295mm – 6.25 495mm – 5.56
Mass per Unit Area – ZINCALUME® Steel (kg/m ²)	295mm – 6.15 495mm – 5.48
Coating Class (min)	AZ200
Grade of Steel (MPa)	G300 (300MPa minimum yield stress)
Effective Cover Width	295 & 495mm (Non-standard width is available upon request)
Rib Depth	25.4mm
Min Recommended Roof Pitch/ Slope	7.5°
Custom Cut Lengths	Factory sheets cut to order subject to maximum transportable length. Long length is available for roll on site.

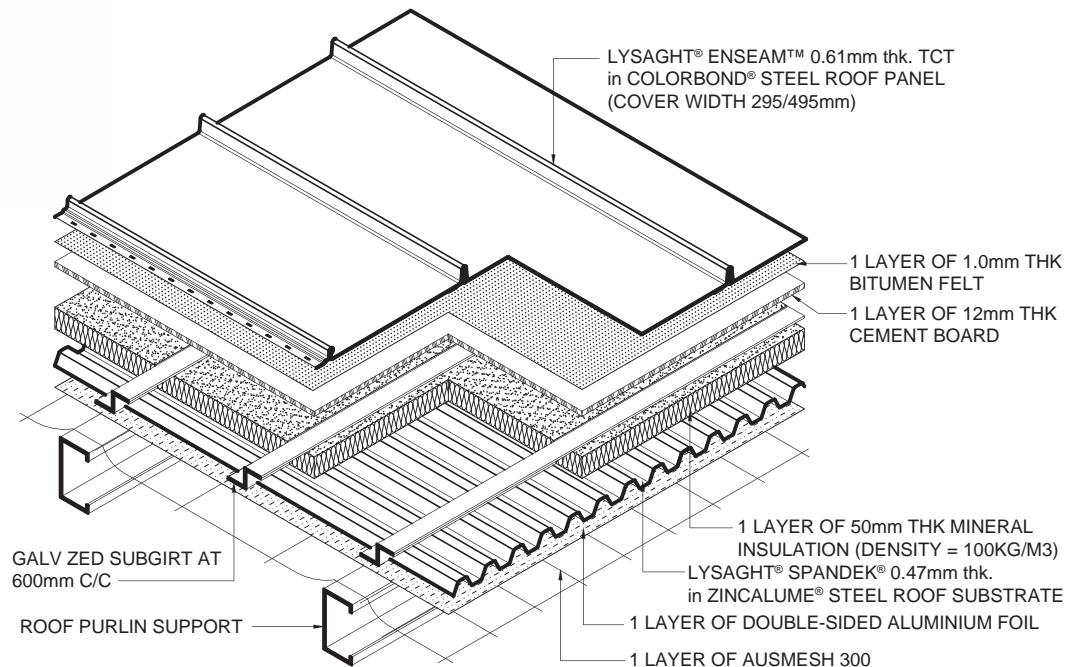
ACOUSTIC ROOF SYSTEM

The illustration below shows a typical built-up of LYSAGHT® ENSEAM™ based on certified sound transmission performance. Depending on your needs, we offer STC 41, STC 45 and STC 51 roof built ups.

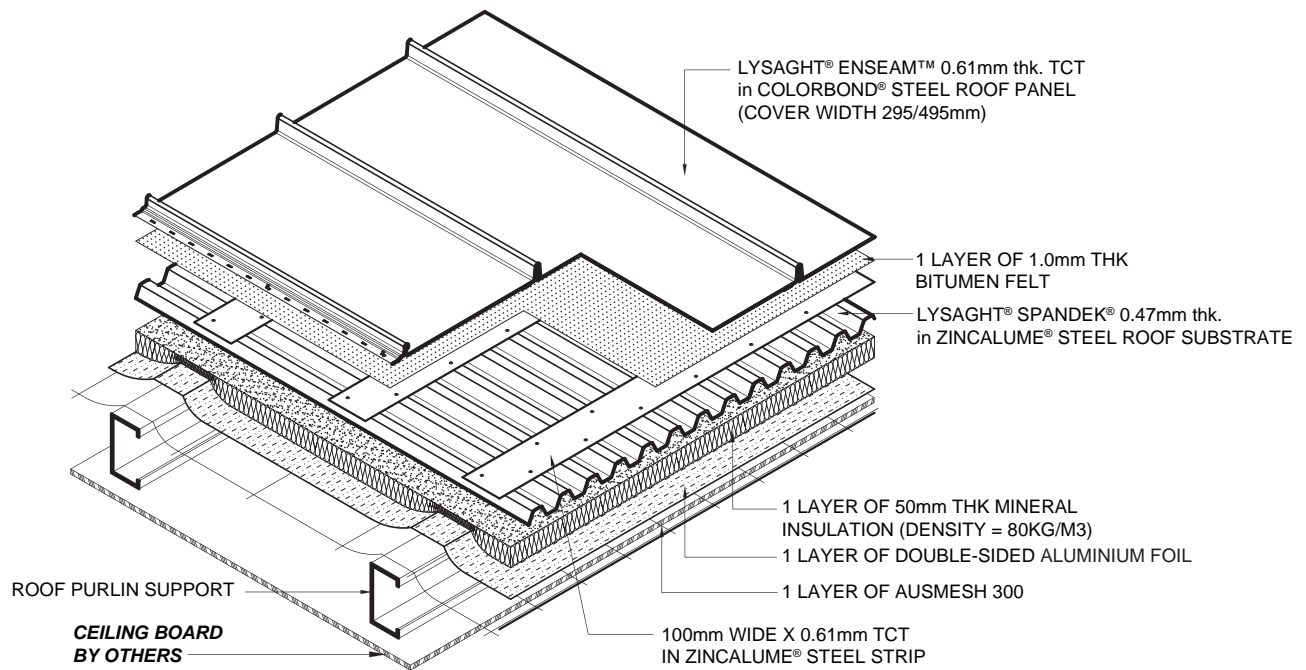
STC 41 Built-up System



STC 45 Built-up System



STC 51 Built-up System



METHOD STATEMENT AND GENERAL NOTES

WALKING ON ROOFS

Keep your weight evenly distributed over the soles of both feet to avoid concentrating your weight on either heels or toes. Always wear smooth soft-soled shoes, avoid ribbed soles that pick up and hold small stones, swarf and other objects.

ADVERSE CONDITIONS

If this product is to be used in marine, severe industrial, or unusually corrosive environments, ask for advice from Lysaght representative.

METAL & TIMBER COMPATIBILITY

Lead, copper, free carbon, bare steel and green or some other chemically treated timbers are not compatible with this product. Don't allow any contact of the product with those materials, nor discharge of rainwater from them onto the product. Supporting members should be coated to avoid problems with underside condensation. If there are doubts about the compatibility of other products being used, ask for advice from our Lysaght representative.

MAINTENANCE

Optimum product life will be achieved if all external roofs and walls are washed regularly. Areas not cleaned by natural rainfall (such as the tops of walls sheltered by eaves) should be washed down every six months.

SAFETY, STORAGE AND HANDLING

LSYAGHT's product may be sharp and heavy. It is recommended that heavy-duty cut resistant gloves and appropriate manual handling techniques or a lifting plan be used when handling material.

Keep the product dry and clear off the ground. If stacked or bundled product becomes wet, separate it, wipe it with a clean cloth to dry thoroughly.

Handle materials carefully to avoid damage: don't drag materials over rough surfaces or each other; don't drag tools over material; protect from swarf.

CUTTING

For cutting thin metal on site, we recommend a nibbler or electric shearer because it produces fewer damaging hot metal particles and leaves less resultant burr than a carborundum disc does.

Cut materials over the ground and not over other materials. Sweep all metallic swarf and other debris from roof areas and gutters at the end of each day and at the completion of the installation. Failure to do so can lead to surface staining when the metal particles rust.

SEALED JOINTS

For sealed joints use screws or rivets and neutral-cure silicone sealant branded as suitable for use with galvanized or ZINCALUME® steel.

END LAPS

LYSAGHT® ENSEAM™ is designed to minimize water penetration, and therefore, highly not recommended for end-lapping.

CONDENSATION, NOISE AND INSULATION

Insulation to meet the Noise Criteria can be incorporated into the roof system. Please consult Lysaght representative for further clarification.

SUBSTRATE

LYSAGHT® ENSEAM™ roof profile cannot span between spaced support and therefore require panels to be laid over solid substrates, such as LYSAGHT® SPANDEK® substrate or LYSAGHT® TRIMDEK® substrate with a Total Coated Thickness (TCT) of 0.47mm in ZINCALUME® steel.

HEAT CONTROL

The effective method to control the heat is to drape a membrane of the reflective foil lamination over the support before laying the sheeting or insulation blanket. The laminate can also provide a vapour barrier to minimise condensation. The insulation blanket is often provided for additional heat insulation to overall system.

RAIN NOISE

To reduce rain noise on metal roof sheeting, a self-adhesive bitumen felt is placed underneath the roof sheeting to dampen the rain induced vibration at point of impact as shown in Figure 1. This is followed by installation of a solid roof substrate such as LYSAGHT® SPANDEK® substrate or LYSAGHT® TRIMDEK® substrate. An insulation mineral wool blanket will then be placed in between the metal roof substrate and a layer of double-sided aluminium foil. Noise will be further reduced by the transmission loss through the mineral wool blanket to achieve a significant marked noise reduction.

Note: When using an insulation mineral wool blanket, care should be taken to ensure that it is fully protected from moisture.

INSTALLATION

PREPARATION

Before starting work ensure that:

- The supports for your cladding are truly in the same plane;
- The minimum roof slopes conform to our recommendations; and

Make any necessary adjustments before you start laying sheets, because they will be difficult to rectify later.

ORIENT SHEETS BEFORE LIFTING

It is easier and safer to turn sheets on the ground than up on the roof, so before lifting sheets on to the roof, check the correct overlapping side is towards the edge of the roof which the installation will start.

Place bundles of sheet on or near to the firm supports, but not at the mid span.

STEPS OF INSTALLATION

1. Lay and fix all necessary build-up components according to design requirement such as Ausmesh, aluminium foil, mineral wool etc.
2. Place and fix substrate to the support and install steel strip on to the substrate.
3. Lay the bitumen felt before install the sheet.
4. Position the first sheet to align with the building edge.
5. Screw fix the underlap edge to the support as shown in Figure 1. Place the screws to the centre of the slotted holes to allow for expansion and contraction.
6. Align and engage the next sheet as shown in Figure 2 and then screw fix as per step 5.
7. Repeat for the roof/ wall run (wall fixing detail as shown in Figure 3).
8. Complete flashings and detailing according to NS BlueScope Lysaght recommendation.

Figure 1: Standard fixing details

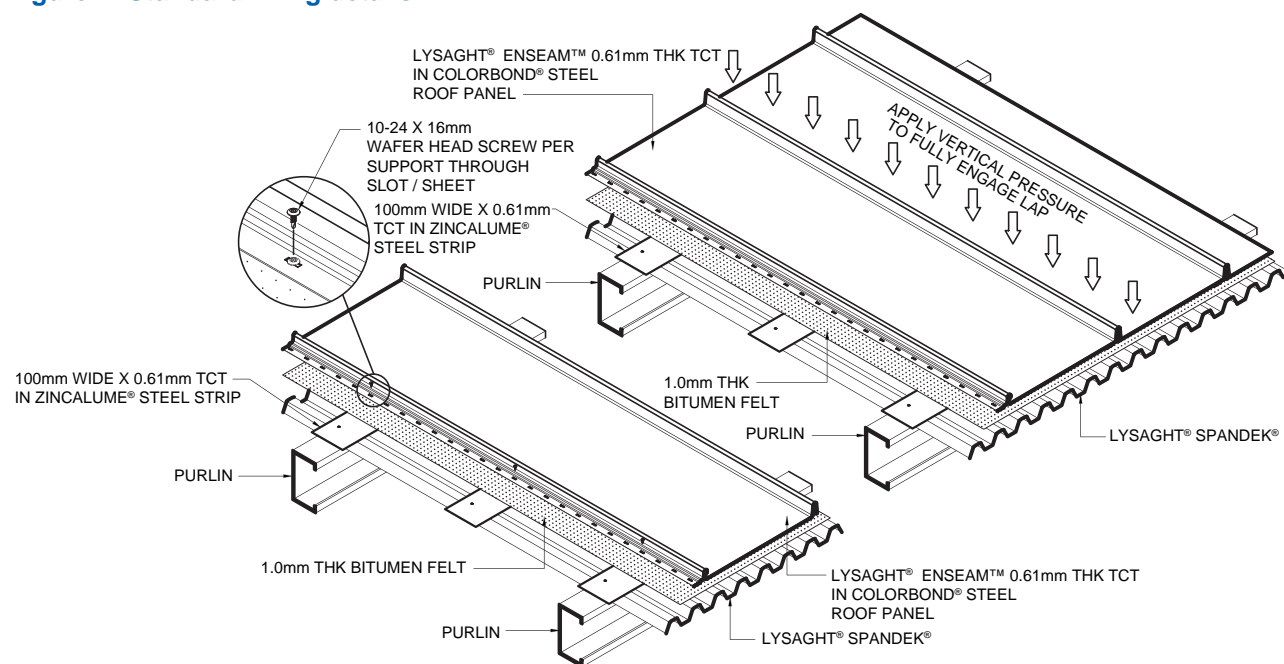


Figure 2: Standard lap engagement procedure

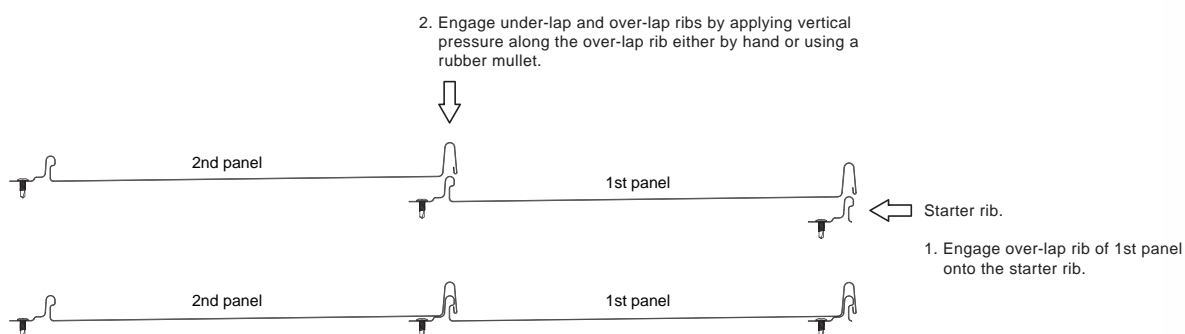
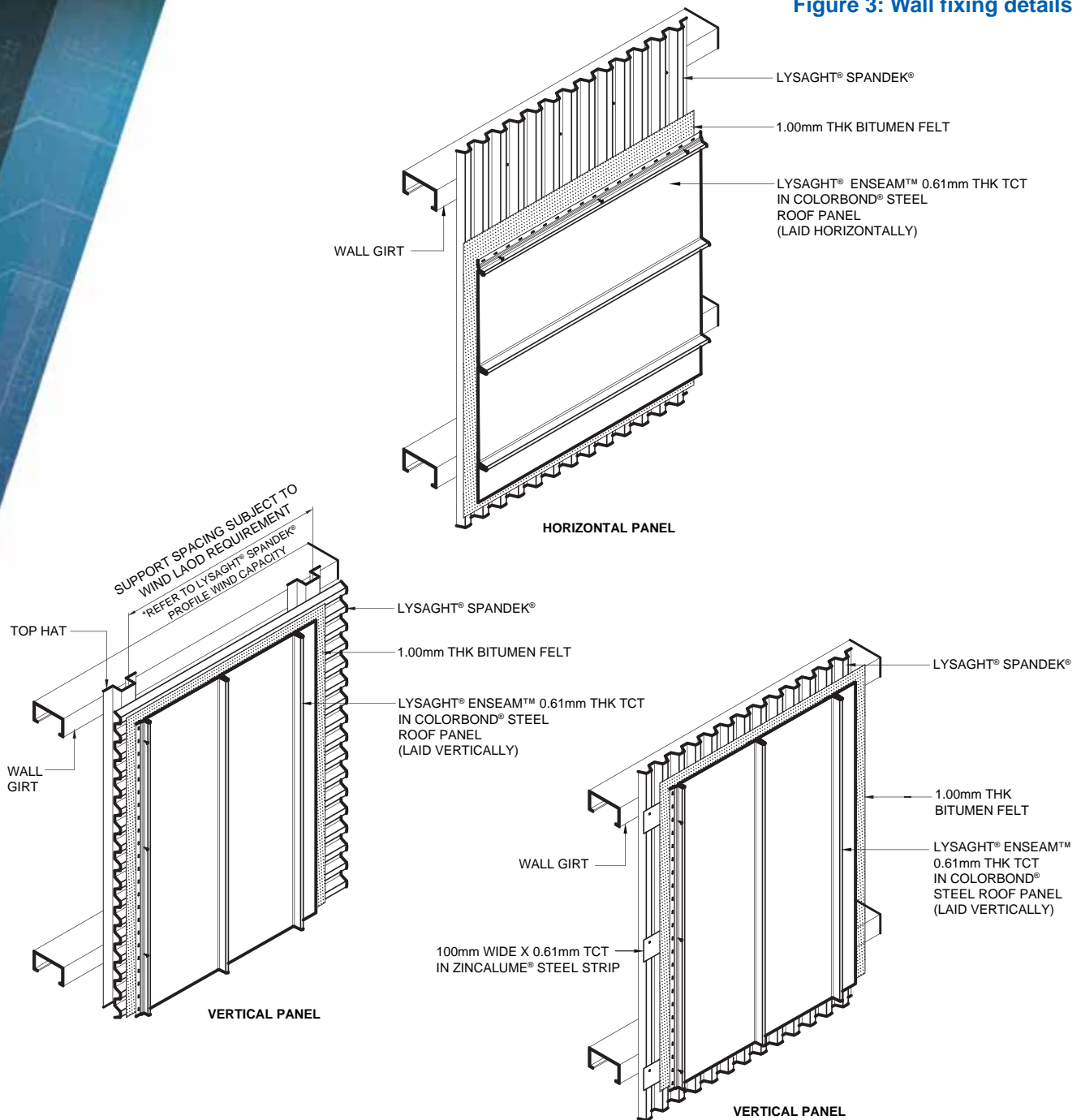


Figure 3: Wall fixing details



OIL CANNING

The appearance of flatness depends on the distribution of the stresses across the surface of the metal sheet. These stresses will change as temperature changes. The ability of a metal to transfer the effect of these stresses across the surface without buckling or distorting out of plan, will determine the level of "oil canning" that will occur.

"Oil canning" is a metaphorical term used to describe the tendency of flat surfaces to show variations in reflectivity. For example, a curved mirror will show a stretched and distorted image of a person standing in front of it. A metal surface too, will distort the reflection of light if minor variations in and out of a level plane exist. The appearance of flatness is very much dependent on surface reflectivity. It is also caused by mill tolerances, variations in the substrate/decking and purlin alignment. Some paint finishes and metals that have high gloss index will exhibit highly apparent distortion. The visual effects of oil canning can be exacerbated by different light conditions and orientation. Darker colours visually accentuate oil canning to a greater extent than the lighter, more neutral colours.

There are several precautions that can be taken to reduce the oil canning effect. One is to use thicker material, because thicker metal tends to oil-can less than thinner metal. An alternative is to specify LYSAGHT® ENSEAM™ trays with stiffening ribs in the pan of the panels.

Oil canning is an inherent characteristic and not a defect of a standing seam profile. It is therefore not a cause for panel rejection.



STRONG BRANDS, QUALITY MATERIALS

LYSAGHT® products are made of highest quality material, namely COLORBOND® steel and ZINCALUME® steel which are the leading materials for external cladding application. COLORBOND® steel and ZINCALUME® steel have been used on countless buildings to portray modern architecture works of art, ranges from the classic roofing to advance façade for industrial, commercial and residential buildings.



COLORBOND® steel is a pre-painted finished product with ZINCALUME® steel substrate to deliver both superior corrosion resistance and excellent colour performance.

It comes with the THERMATECH® solar reflectance technology and Clean technology to minimize tropical dirt staining while lowering urban heat island effect, delivering longevity and minimal maintenance to your external cladding.

COLORBOND® steel is backed by BlueScope's material warranty*
Up to 10* Years of warranty

Product Attributes

- Pre-painted finish on top of ZINCALUME® steel substrate to deliver superior corrosion resistance.
- Superior primer technology which prevents paint delamination.
- Proprietary super polyester paint system proven to provide excellent colour performance.
- Clean technology incorporated to resist against tropical dirt staining.
- THERMATECH® solar reflectance technology to allow for lower temperature cladding.
- Wide varieties of colours and finishes to cater for your building design needs.



ZINCALUME® steel is a metallic coated steel product composed of 55% aluminium, 43.5% zinc and 1.5% silicon (aluminium-zinc alloy coating) that can provide superior corrosion resistance for your external cladding, with expected lifespan that's four times the life of generic alternatives (GI).

ZINCALUME® steel is backed by BlueScope's material warranty*
Up to 10* Years of warranty

Product Attributes

- Superior corrosion resistance due to the minimum coating class of AZ150.
- Initial resistance to surface marking and wet storage corrosion due to the proprietary clear resin coating.
- Better aesthetics compared to generic alternatives (Al-Zn) due to less surface darkening, afforded by the proprietary clear resin coating.
- Lightweight and thermally efficient compared to conventional roofing materials (e.g. concrete and clay tiles)
- Excellent flexibility in design as steel can be bent and curved to form truly unique designs.

* Warranty terms & warranty apply

This material warranty may vary to buildings nearer to marine or industrial environment and is subjected to prior agreement by BlueScope. For full terms and conditions and to determine the eligibility of your project for the warranty, please contact your Key Account Manager.

There are different internal and external environments affecting the longevity of COLORBOND® steel and ZINCALUME® steel, hence feel free to consult our material experts for more specialized recommendations.

Examples of recommendations:

- Direct contact between COLORBOND® steel or ZINCALUME® steel with copper, lead and stainless steel should be avoided.

If condensation on the reverse side of roofing sheet is likely, vapour barrier should be installed to shield COLORBOND® steel or ZINCALUME® steel from prolonged exposure to the condensation (moisture).

REFERENCES



Broken Hill health Centre



Mercy College Markay Library



Residential Project in Australia





COATING



COLOUR CHOICES



DESIGN FLEXIBILITY



DURABILITY / SECURITY



HI-TECH PRODUCTION



RECYCLING



TERMITE PROOF



THERMAL EFFICIENCY



WARRANTY



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