

The Lysaght logo is positioned in the top right corner. It features the word "LYSAGHT" in a bold, white, sans-serif font. A white swoosh underline is positioned beneath the letters "A", "G", and "H". The background of the top section is a dark blue with a faint, intricate technical drawing or blueprint pattern.

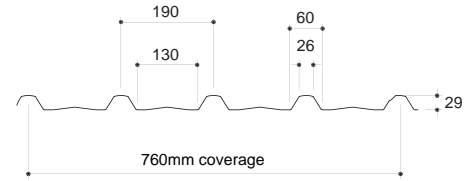
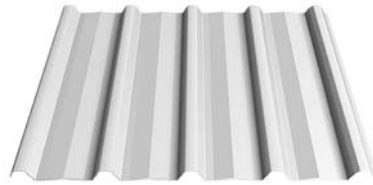
**LYSAGHT**

The central part of the image is dominated by a close-up, perspective view of the Lysaght Trimdek product. It shows a series of parallel, ribbed steel panels that create a strong sense of depth and texture. The lighting is dramatic, highlighting the ridges and casting shadows in the grooves. A white diagonal line cuts across the image from the top right towards the bottom left, separating the product image from the blue graphic area on the right.

**LYSAGHT® TRIMDEK®**

A large, triangular graphic element in shades of blue is located on the right side of the page. It contains a faint, light-colored technical drawing or blueprint, which is partially obscured by the blue gradient. The drawing shows various geometric shapes and lines, typical of architectural or engineering plans.

Versatile and Economical  
Steel Cladding



LYSAGHT® TRIMDEK® steel cladding is a subtle square-fluted roofing and walling profile. The fluting in the pans provides strength and long spanning capabilities, making it one of the most economical LYSAGHT® roofing profiles.

It has bold, widely spaced ribs and is available in long length, governed only by transportation considerations. Due to its strength, spanning ability, lightness and rigidity, wide support spacings can be used with safety.

LYSAGHT® TRIMDEK® cladding can be curved by crimp curving process. It is available in both convex and concave shapes to provide versatility and creativity to building designs. The minimum radius of curvature must be at least 450mm for convex, and 550mm for concave to the underside or pan of sheet.

Performance of the profile is tested and proven by NATA registered laboratory at BlueScope Lysaght Technology, Sydney, Australia, and CSIRO Australia (Commonwealth Scientific and Industrial Research Organisation).

Typical applications include:  
Roof, Wall, Feature Wall, Internal Ceiling, Fencing, Soffit, and Fascia.

## PHYSICAL PROPERTIES

	STANDARD	NON-STANDARD
Base Metal Thickness (BMT)	0.42mm	0.48mm
Total Coated Thickness (TCT):		
ZINCALUME® Steel	0.47mm	0.53mm
COLORBOND® ULTRA Steel	0.48mm	0.54mm
Mass per Unit Area – ZINCALUME Steel (kg/m <sup>2</sup> )	4.29	4.87
Mass per Unit Area – COLORBOND ULTRA Steel (kg/m <sup>2</sup> )	4.36	4.95
Effective Cover Width	760mm	760mm
Rib Depth	29mm	29mm
Minimum Recommended Roof Pitch / Slope:		
Sheet length without end lap		3°
Sheet length with end lap		5°
Grade of Steel	G550 (550N/mm <sup>2</sup> yield strength)	
Tolerances	Length +0, -15mm    Width ± 2mm	
Packing	In strapped bundles of 1 tonne maximum mass	
Custom Cut Lengths	Any measurement to a maximum transportable length	
Coating Class:		
ZINCALUME® steel	AZ150	
COLORBOND® ULTRA steel	AZ200	
Finishes	ZINCALUME® steel	
	COLORBOND® ULTRA steel	

Note: For non-standard orders, a minimum order quantity and delivery lead time is applicable. Please refer to our sales representative or customer service officers for more information.



Scan for online resources

## PRODUCT BENEFITS

- Conforms to International Building Codes and Standards.
- Excellent wind resistance.
- Excellent spanning capacity.
- Lightweight.
- Superior against severe rainfall intensity.
- First class resistance against corrosion, discolouration, and tropical dirt staining.
- Requires no or minimal maintenance.
- Genuine Material Warranty.
- New improved technology to BlueScope Steel's proprietary pre-painted steel enhances aesthetics and longer product lifespan.

## PERFORMANCE

**TABLE 1: MAXIMUM ALLOWABLE SUPPORT SPACING – NON-CYCLONIC AREAS**

Type of Span	STANDARD (0.42mm BMT)	NON-STANDARD (0.48mm BMT)
<b>Roofs</b> (mm)		
Single Span	1100	1600
End Span	1300	1850
Internal Span	1900	2600
Overhang – Unstiffened	150	200
Overhang – Stiffened	300	350
<b>Walls</b> (mm)		
Single Span	2100	2100
End Span	2900	3000
Internal Span	2800	3000
Overhang	150	200

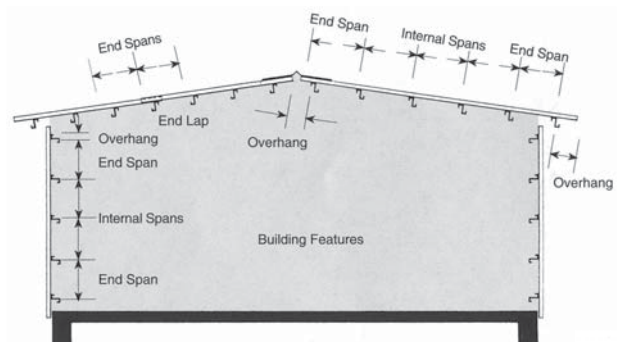
Note: Span is subject to designed live loads and verifications.

### SUPPORT SPACINGS FOR NON-CYCLONIC AREAS

The maximum support spacings shown in Table 1 are based on testing in accordance with AS1562.1:1992, “**Design and Installation of Sheet Roof and Wall Cladding – Part 1: Metal**” and AS4040.1:1992 “**Methods of Testing Sheet Roof and Cladding Method 1: Resistance to Concentrated Loads**”. These roof support spacings are the maximum recommended for adequate performance of the roof cladding under foot traffic loading.

The maximum wall spacings are based on wind pressure calculation with reference to AS 1170.2:2011. The pressure considered is based on buildings up to 10m high in Region B, Terrain Category 3,  $M_s = 0.85$ .  $M_s = 1.0$  with the assumption of  $C_{pi} = +0.20$ ,  $C_{pe} = -0.65$ ,  $K_1 = 2.0$ .

These spacings may be reduced by the Serviceability and Strength Limit States for the particular project under consideration.



**TABLE 2: WIND CAPACITIES (kPa) – LIMIT STATE FORMAT (NON-CYCLONIC)**

STANDARD (0.42mm BMT)										
TYPE OF SPAN	LIMIT STATE	Span (mm)								
		600	900	1200	1500	1800	2100	2400	2700	3000
Single	Serviceability	4.98	3.91	2.83	1.87	1.16	0.75	0.53	-	-
	Strength	11.40	9.30	7.15	5.30	4.00	3.75	3.10	-	-
End	Serviceability	4.18	3.63	3.08	2.55	2.06	1.62	1.22	0.85	0.50
	Strength	7.05	6.50	5.90	5.35	4.80	4.20	3.65	3.05	2.50
Internal	Serviceability	5.05	4.18	3.42	2.83	2.36	1.94	1.56	1.23	0.97
	Strength	10.50	8.85	7.25	5.85	4.80	4.03	3.65	3.40	3.20

NON-STANDARD (0.48mm BMT)										
TYPE OF SPAN	LIMIT STATE	Span (mm)								
		600	900	1200	1500	1800	2100	2400	2700	3000
Single	Serviceability	7.27	5.06	3.34	2.06	1.15	0.71	0.50	0.42	0.19
	Strength	15.05	12.90	10.70	8.60	6.80	5.25	4.00	2.95	2.24
End	Serviceability	6.29	5.13	3.96	2.93	2.13	1.54	1.12	0.82	0.52
	Strength	10.40	8.90	7.30	5.90	4.80	4.10	3.60	3.25	2.25
Internal	Serviceability	7.37	5.96	4.66	3.54	2.72	2.22	1.92	1.64	0.95
	Strength	11.00	9.50	8.15	6.95	6.00	5.30	4.80	4.30	2.42

\* Any support spacing greater than the recommended data as shown<sup>3</sup> in the maximum support spacing table, no foot-traffic load is allowed.

\*\* A capacity reduction factor of  $\phi = 0.9$  has been applied to strength capacities. Supports must be not less than 1mm BMT.

### LIMIT STATE WIND PRESSURES (NON-CYCLONIC AREAS)

The wind pressure capacities are based on tests conducted at NATA registered testing laboratory at BlueScope Lysaght Technology Centre in Chester Hill, Sydney, Australia. Testing was conducted in accordance with AS1562.1:1992, “**Design and Installation of Sheet Roof and Wall Cladding**”, and AS4040.2:1992, “**Resistance to Wind Pressure for Non-Cyclonic Regions**”.

Table 2 provides pressure versus span graphs for Serviceability and Strength Limit State Design. Serviceability Limit State is based on a deflection limit of:  $(\text{span}/120) + (P/30)$ , there P is the maximum fastener pitch.

The pressure capacities for Strength Limit State have been determined by testing the cladding to failure (ultimate capacity). These pressures are applicable when the cladding is fixed to minimum material thickness of 1.0mm. To obtain the design capacity of the sheeting, a capacity reduction factor of 0.90 should be applied.

A non-cyclonic area is defined as one in which a tropical cyclone is unlikely to occur in accordance with AS1170.2:1989, “**SAA Loading Code, Part 2: Wind Loads**”.

**TABLE 3: MAXIMUM ROOF RUN (IN METRES) FOR ROOF SLOPES AND RAINFALL INTENSITIES**

RAINFALL INTENSITY (mm/hour)	PITCH OF ROOF / SLOPE			
	3°	5°	7.5°	10°
200	129	160	191	220
250	103	128	163	176
300	86	107	127	146
400	64	80	96	110

### RAINWATER RUN-OFF FOR LYSAGHT® TRIMDEK® PROFILE

The drainage or run-off capacity of the roof sheeting is another limitation on the total length of roof run that must be considered in roof design and construction. As a guide, Table 3 lists the maximum recommended length of roof run for LYSAGHT® TRIMDEK® Profile at the roof slopes and rainfall intensities shown. These are based on CSIRO Australia (Commonwealth Scientific and Industrial Research Organisation) and BlueScope Lysaght Technology Centre’s calculation of the behaviour of LYSAGHT® roofing profiles under peak rainfall conditions.

The roof run is the total length of roof sheeting draining rainwater in one direction including any end laps, expansion joints or steps that may be present in the roof.

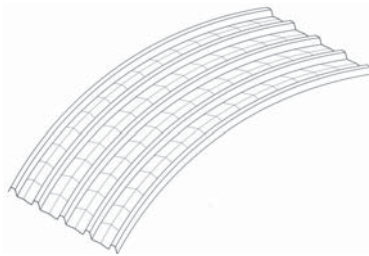
# CRIMP CURVED LYSAGHT® TRIMDEK® PROFILE

Sheet Profile	Min Radius (mm)	Max Radius (mm)
<b>Concave Crimp Curve</b>		
(Standard) 0.42mm BMT	550	2000
(Non-Standard) 0.53mm BMT	560	2000
<b>Convex Crimp Curve</b>		
(Standard) 0.42mm BMT	450	2000
(Non-Standard) 0.53mm BMT	470	2000

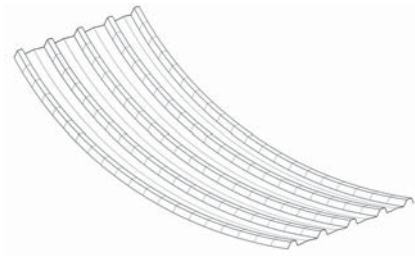
## CRIMP CURVED ROOF

Crimp curved LYSAGHT® TRIMDEK® steel cladding is designed to provide versatility and creativity to bring new and refreshing designs to commercial, industrial, civic, and domestic buildings. This design freedom has resulted in significant cost savings in construction, mainly due to: -

- Less supporting framework required for fascia, parapets, and roofs.
- Simplified and reduced work involved in installation of fascia cladding.
- Reduction or elimination of many flashings and cappings.
- Less cladding material required to cover a given curve.



LYSAGHT® TRIMDEK® Profile – Convex Crimp Curve



LYSAGHT® TRIMDEK® Profile – Concave Crimp Curve

## SUPPORT SPACINGS FOR CRIMP CURVED LYSAGHT® TRIMDEK® PROFILE (NON-CYCLONIC AREAS)

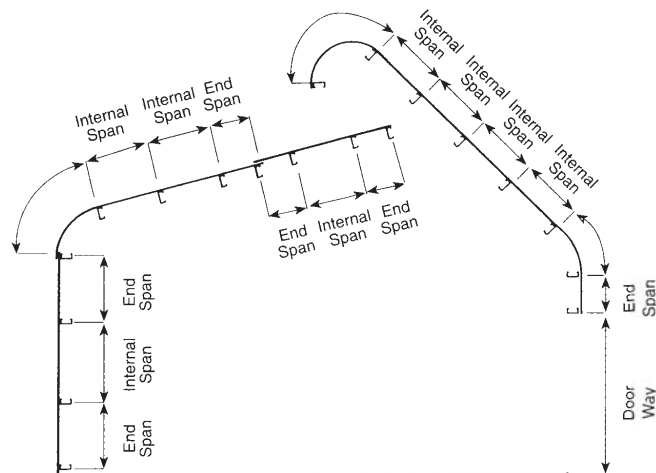
### STRAIGHT PORTION OF CRIMP CURVED LYSAGHT® TRIMDEK® PROFILE:

- Maximum allowable spacings for the straight portion of crimp curved LYSAGHT® TRIMDEK® profile should follow the recommendations given in Table 1.
- End spans refer to the spacing between the first and second supports from any free end of a sheet, except where that end of the sheet is crimp curved.
- The spacing between the supports either side of an end lap should be that as recommended for end spans in Table 1.

### CRIMP CURVED PORTION OF CRIMP CURVED LYSAGHT® TRIMDEK® PROFILE:

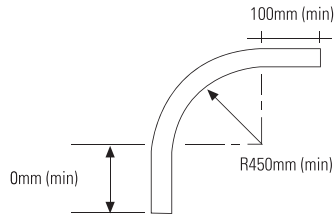
This will depend on the radius of curvature, but the following guidelines are recommended: -

- For sheets curved to a radius of curvature not more than 3000mm, supports should be placed at centres not greater than 2100mm measuring around the arc of the curve.
- Where a curve of small included angle occurs (up to approximately 15°, for example at a ridge), support spacing should not exceed 1200mm.



## REQUIREMENTS FOR CRIMP CURVED LYSAGHT® TRIMDEK® PROFILE

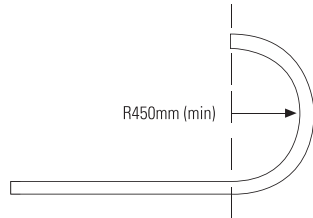
- Minimum curvature radius for convex is 450mm and 550mm for concave to the underside or pan of sheet, minimum straight length of sheet at one end of curve is 180mm.



- Maximum length of sheet that can be crimp curved for ridge application is approximately 12000mm. The curve can be convex or concave.



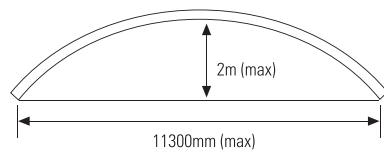
- The sheet can be crimp curved to three quarters of a full circle but to facilitate side lapping, semi-circle maximum is recommended.



- When both ends are crimp curved, the maximum recommended straight distance between the two curves should be 6000mm.



- For easy transportation and maximum protection for crimp curved sheets, the maximum height and length of the sheeting should be 2000mm and 11300mm respectively.



- For lengths exceeding 12000mm, please consult BlueScope Lysaght Singapore for more information.

\*\* Alternatively, for crimp-less profile, please ask for our LYSAGHT® SELECT SEAM® profile, LYSAGHT® LOCKED SEAM® profile.

## REDUCTION OF 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. 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.

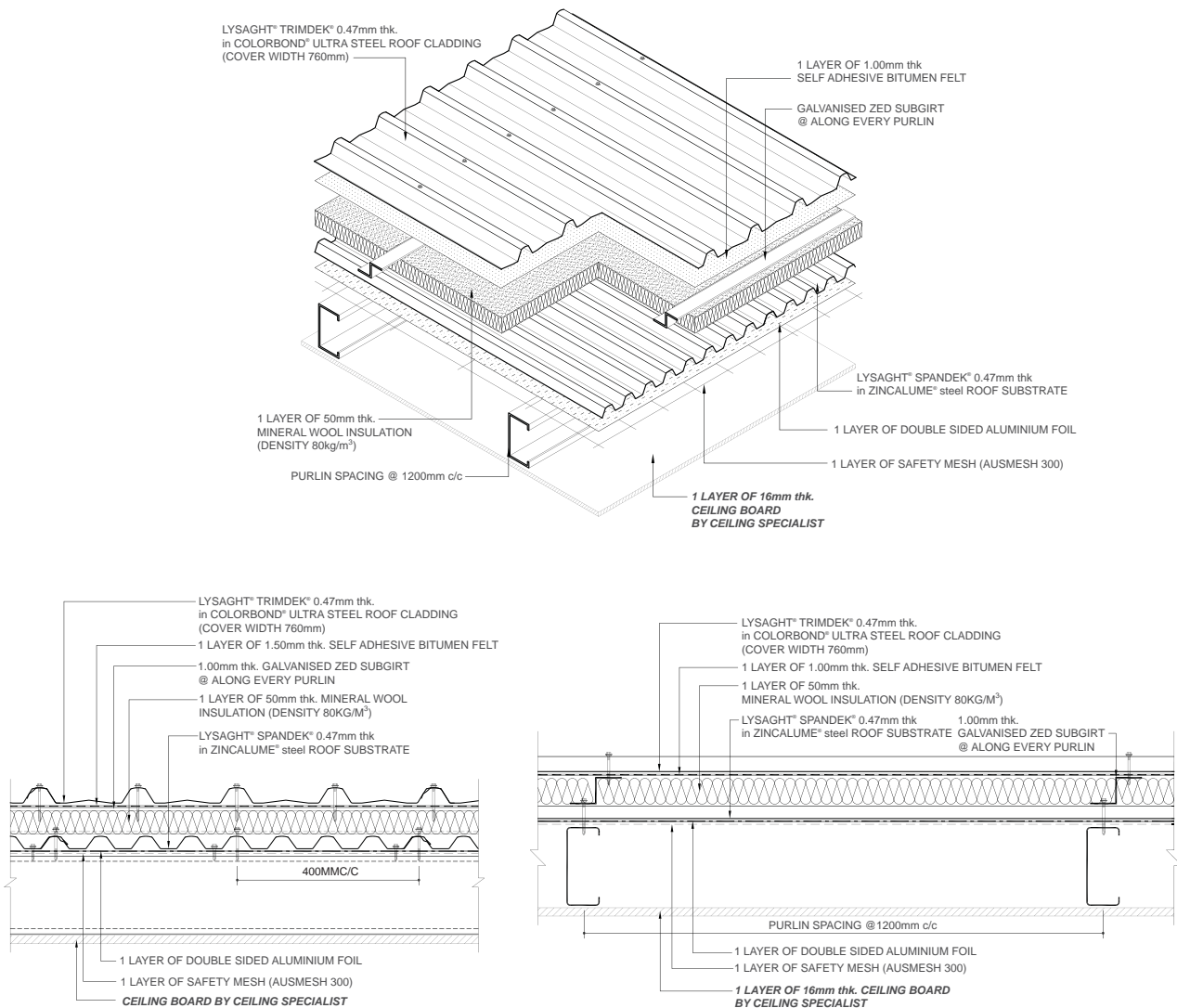
As a result of laboratory measurement of airborne sound transmission loss of BlueScope Lysaght Acoustic Roof System, PSB Corporation (Testing Group) has rated the roof system as having a Sound Transmission Class 51 (STC 51). The test was conducted in accordance with ASTM E90-97.

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

## HEAT CONTROL

The effective method to control heat is to lay the reflective foil laminate over the supports before laying the sheeting or insulation blanket. The insulation blanket over the foil laminate in conjunction with vapour barrier allows condensation control. An insulation blanket is often provided to improve heat insulation to the overall roof system.

## ACOUSTIC ROOF SYSTEM



# FASTENING METHOD & TYPE OF FASTENERS

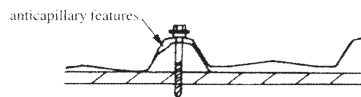
## PIERCE FIXING CONCEPT

Pierce-fixing is the method of fixing sheets using fasteners which pass through the sheet. This method is different from concealed fixing.

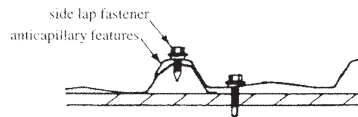
The screws can be placed through the crests or in the valleys. LYSAGHT® TRIMDEK® steel roof cladding must be crest fixed to a support. However, wall cladding can be either crested or valley fixed.

The selection of appropriate fasteners will ensure optimum performance of your COLORBOND® or ZINCALUME® steel cladding. Fasteners used must have a coating system to meet either AS3566 Class 3 or AS3566 Class 4 standards.

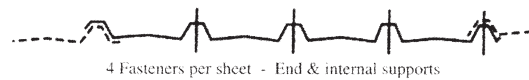
Crest fixing to steel support for roofing & walling



Valley fixing to steel support for walling only



Crest fastener location  
(normal applications in non-cyclonic areas)



Valley fastener location  
(normal applications in non-cyclonic areas)



## RECOMMENDED FASTENERS FOR WALLING APPLICATIONS

No. 12-14 x 20mm: Hex head self-drilling and tapping screw with bonded washer (for application directly to support, without insulation).

## RECOMMENDED FASTENERS FOR ROOFING APPLICATIONS

	STEEL SUPPORTS THICKNESS		TIMBER SUPPORTS GRADE	
	UP TO 4.5mm	EXCEEDS 4.5mm	HARDWOOD	SOFTWOOD
Directly to Support	No. 12-14 x 55mm Hex head self-drilling and tapping screw with bonded washer	Tek 5 No. 12-14 x 68mm Hex head self-drilling and tapping screw with bonded washer	No. 12-11 x 65mm Hex head Type 17 self-drilling screw with bonded washer	No. 14-10 x 75mm Hex head Type 17 self-drilling screw with bonded washer
With Insulation Blanket	Increase to min. 65mm long screw	Tek 5 No. 12-24 x 68mm Hex head self-drilling and tapping screw with bonded washer	No. 14-10 x 75mm Hex head Type 17 self-drilling screw with bonded washer	No. 14-10 x 75mm Hex head Type 17 self-drilling screw with bonded washer

### For Roof Applications

#### Identification of Fastener

The format of the number code is:

**12** - **14** x **55**  
 Screw gauge (Thread outside diameter)    Thread pitch (Thread per inch)    Overall length of the screw measured from under the head (mm)

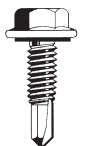


### For Wall Applications

#### Identification of Fastener

The format of the number code is:

**12** - **14** x **20**  
 Screw gauge (Thread outside diameter)    Thread pitch (Thread per inch)    Overall length of the screw measured from under the head (mm)

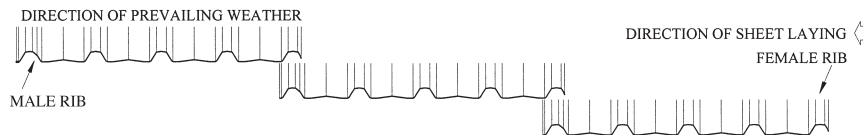




1. When lifting roofing sheets onto roof frames for installation, make sure all male and/or female ribs face the same direction. If not, sheets will have to be turned end-for-end during fixing.
2. The first sheet of LYSAGHT® TRIMDEK® profile must be positioned with care before fastening with hex head self-tapping screws to ensure that it lies straight and square.
3. When the first sheet of LYSAGHT® TRIMDEK® is fastened into position, a string line can be stretched across the lower end of the roof alignment. The line will then be used as a guide for the subsequent installation of roof panels.
4. Position and fasten the next roofing sheet to each support on the male rib of the installed sheet. Place the second sheet over the second run of the roofing sheets and fasten the sheets together before proceeding to the next sheet.
5. Make sure the side lapping is installed correctly. The side rib with the longitudinal anti capillary flute (male rib) is supposed to be covered by the side rib without a longitudinal flute (female rib).
6. Each sheet should be fully fastened before proceeding to the next sheet. The side lap with preceding sheet should be fastened last.
7. In the case that two or more shorter sheets are installed to provide full-length coverage due to handling or transport considerations, lay each complete line of sheets in turn from gutter / eaves to ridge, as shown in the diagram.



Fixing of walling applications is similar to roofing.



\* Please refer to "Guidelines for Specification and Installation of LYSAGHT® Roofing and Walling Solutions" for detailed information on installation method, tips for inspection and compatibility notes.



## REMINDER!

If you are working at height 2 metres and above, you must wear a safety harness with a shock absorbing twin tail lanyard attached to either a life line or an anchorage point.

In addition, the use of Ausmesh 300 is recommended to assist in the prevention of falls during roof sheet laying. Contact BlueScope Lysaght Singapore for more information on Ausmesh 300.

# COLORBOND® STEEL AND ZINCALUME® STEEL

## 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®

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 a BlueScope's material warranty\*  
Singapore: 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®

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\*  
Singapore: 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 and conditions 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.

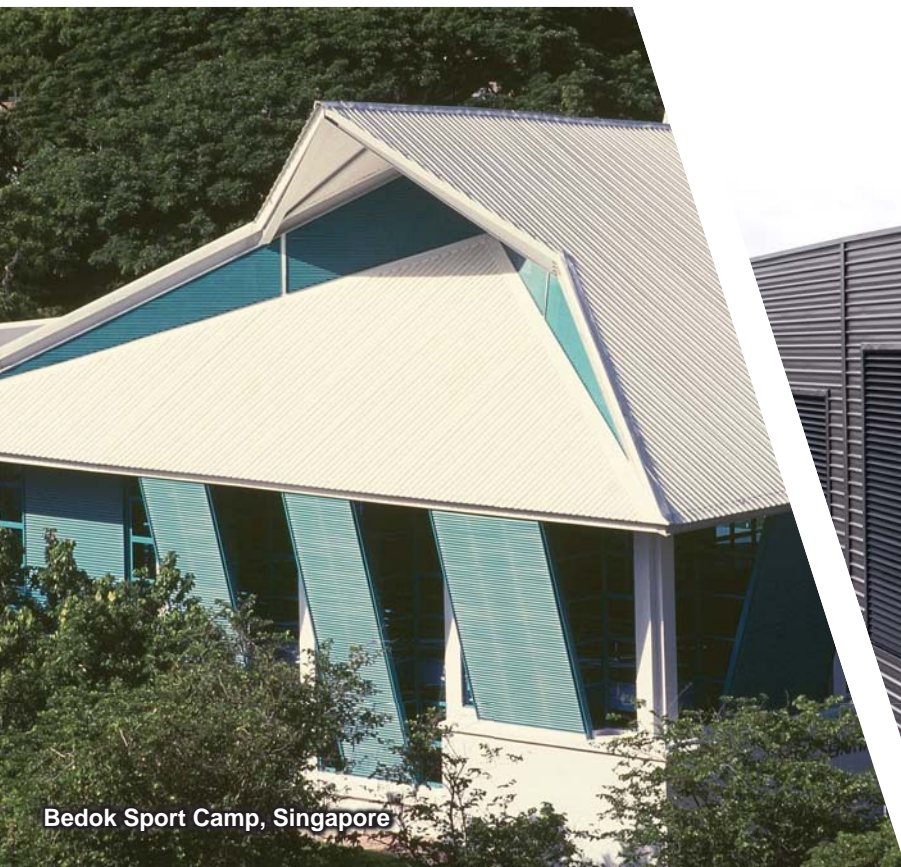
There are different internal and external environments affecting the longevity of COLORBOND® steel and ZINCALUME® steel, hence feel free to consult our material experts for more specialized recommendations.

#### 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



Bedok Sport Camp, Singapore



Jaguar and Land Rover Service Center, Brunei



Medan Niaga Satok, Sarawak



COATING



COLOUR CHOICES



DESIGN FLEXIBILITY



DURABILITY / SECURITY



HI-TECH PRODUCTION



RECYCLING



TERMITE PROOF



THERMAL EFFICIENCY



WARRANTY



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Find us on     Lysaght Singapore



**Colorbond® Zinalume®**

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\* Warranty terms and conditions apply.

June 2023