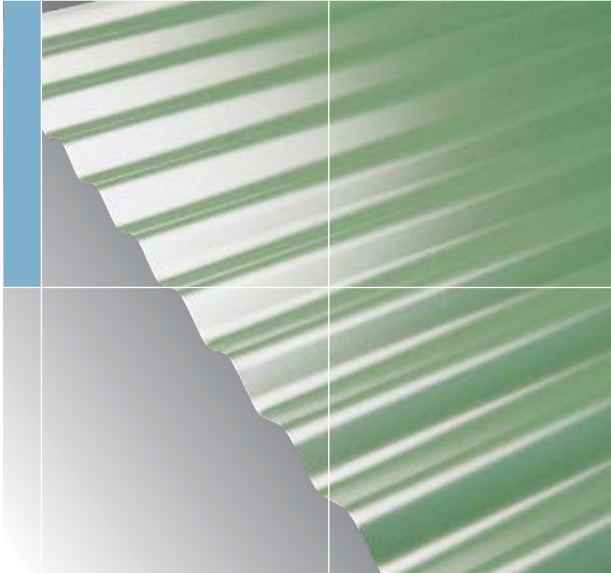


Custom Orb

Traditional corrugated
steel cladding



- CUSTOM ORB® is the famous LYSAGHT® corrugated profile ideal for traditional or contemporary design
- Long and wide
- Strong, lightweight and economical
- It can be fixed quickly and easily
- Steel roof or wall cladding that simply offers outstanding value

LYSAGHT

Lysaght Custom Orb®

Traditional corrugated steel cladding

CUSTOM ORB is the famous LYSAGHT® corrugated profile, equally at home with traditional and contemporary design. It is a long, wide, strong, lightweight and economical profile which can be quickly and easily aligned. Add up these features and you have a steel roof or wall cladding that simply offers outstanding value.

Simple, low-cost fixing

CUSTOM ORB can be fixed with hex head screws which is fast and simple. The standard overlap is one and a half corrugations.

Curving

CUSTOM ORB is not intended for machine curving. For bullnosing use CUSTOM BLUE ORB®. For water tanks use AQUAPLATE® steel.

Colours

CUSTOM ORB is available in an attractive range of colours in COLORBOND® factory pre-painted steel and in unpainted ZINCALUME® aluminium/zinc alloy coated steel.

ZINCALUME® steel provides a minimum of twice the life of conventional galvanised steel in the same environment.

Standard COLORBOND® is available in a full range of 20 contemporary colours suitable for all building projects, but COLORBOND® METALLIC finish provides superior aesthetic qualities, and COLORBOND® ULTRA finish is intended for severe coastal or industrial environments.

Minimum roof pitch

A special anti-capillary forming in the side lap allow you to use CUSTOM ORB on roof pitches as low as 5 degrees (1 in 12). Sheet lengths of up to 24m can be used before an expansion joint is required.

Lysaght Custom Orb®

is versatile and economical

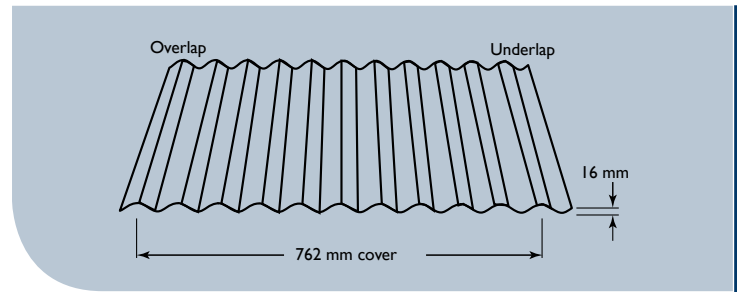
Masses

	BMT (mm)	kg/m	kg/m ²	m ² /t
ZINCALUME®	0.42	3.26	4.28	234
COLORBOND®	0.42	3.32	4.35	230
ZINCALUME®	0.48	3.70	4.86	206
COLORBOND®	0.48	3.76	4.93	203

Material specifications

- ZINCALUME® aluminium/zinc alloy-coated steel complying with AS-1397—2001 G550, AZ150 (550MPa minimum yield stress, 150g/m² minimum coating mass); or
- Stainless steel standard grade designation is AISI/ASTM Type 430; UNS No. S43000

The base metal thickness is 0.42 or 0.48mm. The COLORBOND® prepainted steel complies with AS/NZS2728:1997.



Lengths

Sheets are supplied custom cut.

Tolerances

Length: + 10mm, - 10mm

Width: + 4mm, - 4mm

Walking on roofs

Generally, 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.

Maximum Support Spacings

The maximum recommended support spacings are based on testing in accordance with AS1562.1-1992, AS4040.1-1992 and AS4040.2-1992.

Roof spans consider both resistance to wind pressure and light roof traffic (traffic arising from incidental maintenance). Wall spans consider resistance to wind pressure only.

The pressure considered is based on buildings up to 10m high in Region B, Terrain Category 3, $M_s=0.85$, $M_i=1.0$, $M_t=1.0$ with the following assumptions made:

Roofs:

$C_{pe}=+0.20$, $C_{pe}=-0.90$, $K_f=2.0$ for single and end spans, $K_f=1.5$ for internal spans.

Walls:

$C_{pe}=+0.20$, $C_{pe}=-0.65$, $K_f=2.0$ for single spans, $K_f=1.5$ for internal spans.

These spacings may vary by serviceability and strength limit states for particular projects.

Maximum support spacings (mm)

Type of span	BMT (mm)	0.42	0.48
Roofs			
Single span		700	800
End span		900	1300
Internal span		1200	1700
Unstiffened eaves overhang		200	250
Stiffened eaves overhang		300	350
Walls			
Single span		1800	1800
End span		2500	2700
Internal span		2700	2700
Overhang		200	250

• For roofs: the data are based on foot-traffic loading.

• For walls: the data are based on pressures (see wind pressures table).

• Table data are based on supports of 1mm BMT.



Installation

Fastening sheets to supports

CUSTOM ORB is pierce-fixed to steel or timber supports. This means that fastener screws pass through the sheeting.

To maximise watertightness, always place roof screws through the crests. For walling, you may use either crest- or valley-fixing.

Always drive the screws perpendicular to the sheeting, and in the centre of the corrugation or rib.

Don't place fasteners less than 25mm from the ends of sheets.

Side-laps

CUSTOM ORB standard lap is 1.5 corrugations. It is generally considered good practice to use fasteners along side-laps however, when cladding is supported as indicated in maximum support spacings, side-lap fasteners are not usually needed.

End lapping

End-laps are not usually necessary because CUSTOM ORB is available in long lengths. If end-laps are used, complete each run of sheets from gutter to ridge. Seal end lap at both ends with a 3mm bead of neutral cure silicone sealant.

For roofs, allow a minimum end-lap of 200mm for pitches of 5 to 15 degrees, and 150mm for pitches above 15 degrees. For walls, allow minimum end-laps of 100mm.

Where you intend to end-lap CUSTOM ORB and CUSTOM BLUE ORB®, order them at the same time to ensure a good fit.

Ends of sheets

It is usual to allow roof sheets to overlap into gutters by about 50mm. The valleys of sheets should be turned-down at lower ends, and turned-up at upper ends. Use five fasteners at the ends of sheets.

Laying procedure

For maximum weather-tightness, start laying sheets from the end of the building that will be in the lee of the worst-anticipated or prevailing weather.

Lay sheets toward prevailing weather. It is much easier and safer to turn sheets on the ground than up on the roof. Before lifting sheets on to the roof, check that they are the correct way up and the overlapping side is towards the edge of the roof from which installation will start. Place bundles of sheets over or near firm supports, not at mid span of roof members.

Fasteners without insulation

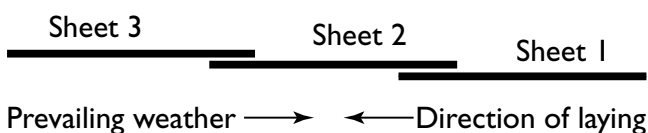
	Fixing to steel up to 0.75 mm BMT	Fixing to steel 0.75 to 3 mm BMT	Fixing to timber
Crest fixed	Self drilling, self tapping screws with hex. washer head and EPDM seal and shank guard 13-13 x 41 OR Type 17 screws with hex. washer-head EPDM seal & Shankguard 12-11 x 40	Self drilling, self tapping screws with hex. washer head and EPDM seal and shank guard 12-14 x 35	Type 17 screws with hex. washer-head & EPDM seal SOFTWOOD: 12-11 x 50 with Higrup & Shankguard HARDWOOD: 12-11 x 40 with Shankguard
Valley fixed	Self drilling, self tapping screws with hex. washer head and EPDM seal and shank guard 10-16 x 16 OR Type 17 screws with hex. washer-head & EPDM seal 10-12 x 20	Self drilling, self tapping screws with hex. washer head and EPDM seal and shank guard 10-16 x 16	Type 17 screws with hex. washer-head & EPDM seal SOFTWOOD: 10-12 x 30 HARDWOOD: 10-12 x 20
Side lap & accessories	Needle point stitching screws with hex. washer-head & EPDM seal: 10-12 x 20 OR Sealed blind rivets: 4.8 mm diameter aluminium		

Sheet coverage

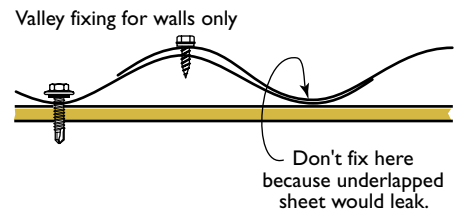
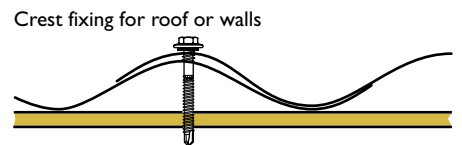
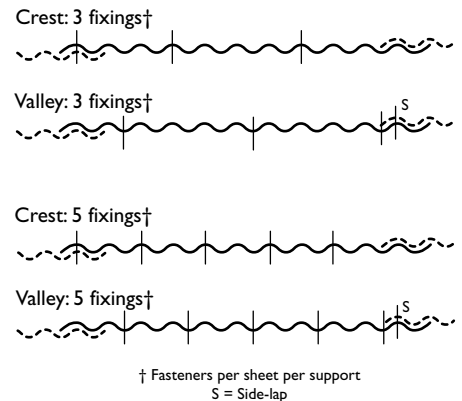
Width of roof (m)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	30	40	50
Number of sheets																					
608 mm cover	5	7	9	10	12	14	15	17	19	20	22	24	25	27	28	30	32	33	50	66	83
762 mm cover	4	6	7	8	10	11	12	14	15	16	18	19	20	21	23	24	25	27	40	53	66

Maximum roof lengths for drainage measured from ridge to gutter (m)

Penetrations will alter the flow of water on a roof. For assistance in design of roofs with penetrations, please seek advice from our information line.



Peak rainfall intensity mm/hr	Roof slope					
	1°	2°	3°	5°	7.5°	10°
100	-	-	-	29	34	38
150	-	-	-	20	23	25
200	-	-	-	15	17	19
250	-	-	-	12	14	15
300	-	-	-	10	11	13
400	-	-	-	7	8	10
500	-	-	-	6	7	8





The Perfect finishing touch

LYSAGHT rainwater goods

Whether you're renovating a classic Australian house or searching for a distinctive look for a new home, add the perfect finishing touch to your CUSTOM ORB roof with our extensive range of rainwater goods. LYSAGHT rainwater goods provide the perfect finishing touch.

Our rainwater goods are manufactured from ZINCALUME steel with COLORBOND® prepainted steel available, so they'll stand up to years of the harshest Australian climate.

The choice of colours and styles is extensive, covering everything you could need from gutters and downpipes, to fascia, flashings and cappings, as well as fasteners and fixing clips.

Gutters and downpipes

We manufacture the perfect guttering system for your home, whatever the style. You can choose from QUAD, TRIMLINE®, SHEERLINE®, EMLINE® or a number of other designs.

All designs can be complemented with our complete range of square and round downpipes and rainwater accessories.

To ensure quick and easy installation there is also a full range of matching fixing clips.

Fascia

LYSAGHT NOVALINE® fascia is attractive and easy to install. It is strong, lightweight and can be used as a complete system. Special clips are also available to fix QUAD and TRIMLINE® gutters to the fascia.

Flashings and cappings

We supply flashings and cappings standard or custom made. The finish can be plain ZINCALUME steel or COLORBOND® steel.

Mix and match

The wide choice of COLORBOND® steel colours and LYSAGHT profiles allows you to mix and match with ease.

One call gets it all

We provide everything you need, with one phone call, one order and no running around. So for your next project, it makes sense to insist on steel sheeting and rainwater goods from BlueScope Lysaght.

Why you should always insist on LYSAGHT

When you specify LYSAGHT products you have the added advantage of dealing with a company whose expertise and experience with steel stretches back for well over a century. A company with a reputation for consistently producing top quality products.

Our products are backed by a performance warranty for up to 25 years. The BlueScope Lysaght warranty guarantees in writing that your products will perform exactly to specifications when installed in accordance with our recommendations.

LYSAGHT CUSTOM ORB®: Limit State wind pressure capacities (kPa)

Span type	Fasteners per sheet per support		Span (mm)								
			600	900	1200	1500	1800	2100	2400	2700	
Base metal thickness 0.42 mm											
SINGLE	3	Serviceability	1.91	1.46	1.08	0.77	0.49	-	-	-	
		Strength*	12.00	8.60	5.80	4.65	4.50	-	-	-	
	5	Serviceability	5.39	3.20	1.75	0.94	0.45	-	-	-	
		Strength*	12.00	12.00	10.15	8.10	7.40	-	-	-	
END	3	Serviceability	1.66	1.40	1.18	1.00	0.83	0.67	0.52	0.38	
		Strength*	9.15	7.55	5.90	4.50	3.40	2.70	2.30	2.00	
	5	Serviceability	6.08	4.27	2.79	1.59	1.02	0.65	0.42	0.30	
		Strength*	12.00	12.00	9.90	7.55	5.75	4.50	3.60	3.05	
INTERNAL	3	Serviceability	1.91	1.67	1.45	1.23	1.03	0.85	0.69	0.56	
		Strength*	11.35	9.25	7.45	6.00	4.85	3.90	3.20	2.70	
	5	Serviceability	7.00	4.92	3.32	2.21	1.49	1.05	0.78	0.59	
		Strength*	12.00	12.00	12.00	10.80	8.85	7.10	5.65	4.50	
	Base metal thickness 0.48 mm										
	SINGLE	3	Serviceability	2.12	1.47	1.03	0.77	0.60	-	-	-
Strength*			12.00	9.80	6.55	5.30	5.10	-	-	-	
5		Serviceability	7.48	3.74	2.23	1.26	0.57	-	-	-	
		Strength*	12.00	12.00	10.75	8.65	8.10	-	-	-	
END	3	Serviceability	1.92	1.66	1.48	1.35	1.19	1.01	0.81	0.60	
		Strength*	11.70	9.05	6.80	4.95	4.10	3.45	3.00	2.65	
	5	Serviceability	8.00	4.75	2.86	1.97	1.39	0.97	0.66	0.44	
		Strength*	12.00	12.00	12.00	10.60	8.00	6.20	5.00	4.25	
INTERNAL	3	Serviceability	1.98	1.96	1.84	1.62	1.36	1.07	0.82	0.62	
		Strength*	12.00	10.15	8.50	7.10	5.70	4.55	3.60	2.90	
	5	Serviceability	9.00	5.42	4.34	3.31	2.37	1.57	0.95	0.54	
		Strength*	12.00	12.00	12.00	12.00	11.00	8.65	6.75	5.25	

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

Limit states wind pressures

CUSTOM ORB® offers the full benefits of the latest methods for modelling wind pressures. The Wind Pressure capacity table is determined by full scale tests conducted at BlueScope Lysaght's NATA-registered testing laboratory, using the direct pressure-testing rig.

Testing was conducted in accordance with AS 1562.1—1992 Design and Installation of Sheet Roof and Wall Cladding—Metal, and AS 4040.2—1992 Resistance to Wind Pressure for Non-cyclonic Regions.

The pressure capacities for serviceability are based on a deflection limit of $(\text{span}/120) + (\text{maximum fastener pitch}/30)$.

The pressure capacities for strength have been determined by testing the cladding to failure (ultimate capacity). These pressures are applicable when the cladding is fixed to a minimum of 1.0mm, G550 steel. For material less than 1.0mm thick, seek advice from our information line.

Adverse conditions

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

Metal & timber compatibility

Lead, copper, bare steel and green or some chemically-treated timbers are not compatible with this product; thus don't allow any contact of the product with those materials, nor discharge of rainwater from them onto the product. If there are doubts about the compatibility of products being used, ask for advice from our information line.

Maintenance

Optimum product life will be achieved if all external surfaces 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

Handling Safety - Lysaght 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 of the ground. If stacked or bundled product becomes wet, separate it, wipe it with a clean cloth and stack it to dry thoroughly.

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

Cutting

For cutting thin metal on site, we recommend a circular saw with a metal-cutting blade because it produces fewer damaging hot metal particles and leaves less resultant burr than a carborundum disc.

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.

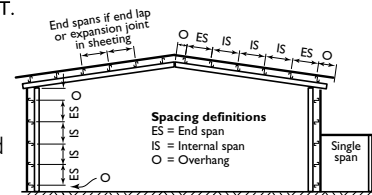
Sealed joints

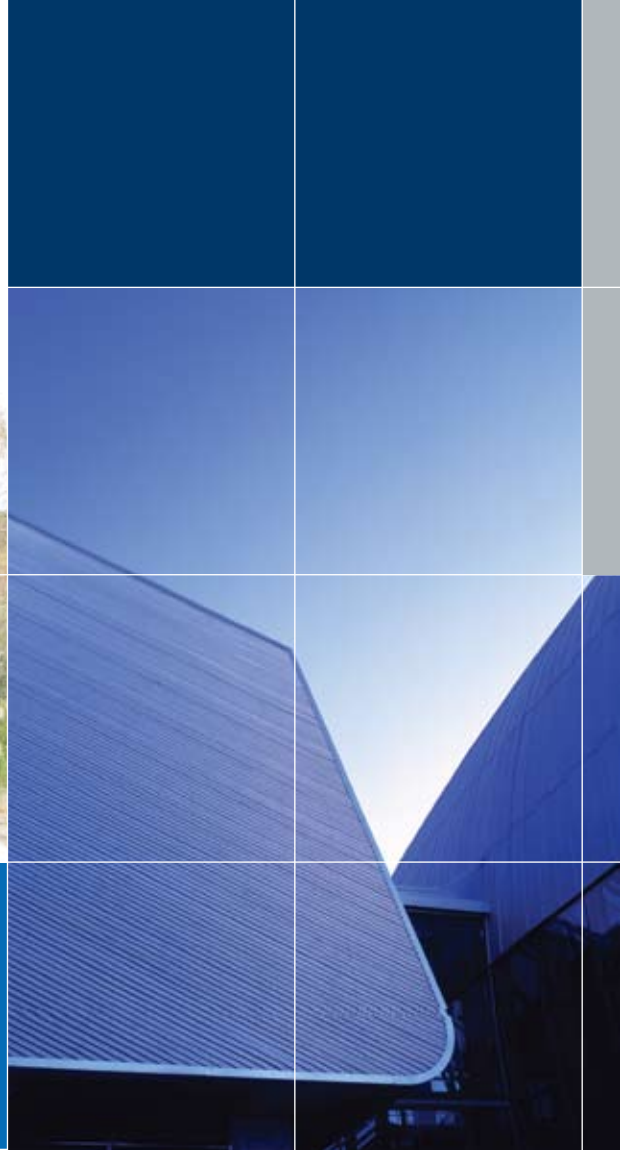
For sealed joints use screws or rivets and neutral-cure silicone sealant branded as suitable for use with galvanised or ZINCALUME® steel.

Non-cyclonic areas

The information in this brochure is suitable for use only in areas where a tropical cyclone is unlikely to occur as defined in AS 1170.2—2002.

For information on the use of LYSAGHT products in cyclonic conditions, refer to the Design Capacities for Cyclonic Areas brochure (formerly Cyclonic Area Design Manual) which is available by ringing Steel Direct on 1800 641 417 or on our website: www.lysaght.com.





New COLORBOND steel with Thermatech™ technology

The next generation COLORBOND® steel incorporates Thermatech™ technology, which provides a new level of thermal protection by absorbing less heat. Average reduction in solar absorption across all colours is 5%.

Now 14 of the 20 COLORBOND® steel colours are 'medium to light' under the BASIX colour classification, which means reflective foil at the roof is not required. It also means a drop of R0.5 for roof insulation.

Disclaimer, warranties and limitation of liability

This publication is intended to be an aid for all trades and professionals involved with specifying and installing LYSAGHT products and not to be a substitute for professional judgement.

Terms and conditions of sale available at local BlueScope Lysaght sales offices.

Except to the extent to which liability may not lawfully be excluded or limited, BlueScope Steel Limited will not be under or incur any liability to you for any direct or indirect loss or damage (including, without limitation, consequential loss or damage such as loss of profit or anticipated profit, loss of use, damage to goodwill and loss due to delay) however caused (including, without limitation, breach of contract, negligence and/or breach of statute), which you may suffer or incur in connection with this publication.

© Copyright BlueScope Steel Limited September 1, 2008

www.lysaght.com

Information, brochures and your local distributor

1800 641 417

Please check the latest information which is always available at www.lysaght.com

LYSAGHT, CUSTOM ORB, NOVALINE, TRIMLINE, Thermatech™, SHEERLINE, COLORBOND and ZINCALUME are registered trademarks of

BlueScope Steel Limited, ABN 16 000 011 058. The LYSAGHT® range of products is exclusively made by BlueScope Steel Limited trading as BlueScope Lysaght. Printed by BMP10M0908

