Lysaght Custom Blue Orb®

Corrugated steel cladding for curving and bullnosing

The gently curving shape of the classic Australian roof is reflected in some of today's most adventurous and dramatic designs.

The profile that allows the finest expression of that style is the famous LYSAGHT CUSTOM BLUE ORB®.

CUSTOM BLUE ORB is the corrugated profile for curving, equally at home with traditional and contemporary design. It is the perfect match to harmonise with our well-known, traditional LYSAGHT CUSTOM ORB.

Simple, low-cost fixing

Long, curved lengths of CUSTOM BLUE ORB can be easily placed and aligned. Fixing with hexagon screws is simple and fast.

For straight lengths, use CUSTOM ORB®.

Colours

CUSTOM BLUE ORB is available in an attractive range of colours in COLORBOND® prepainted steel, and in unpainted ZINCALUME® or galvanised steels.

Curving

From the traditional bullnosed verandah, to the double curves and complex shapes of modern homes and offices, we offer a full range of curving styles to suit almost any building.

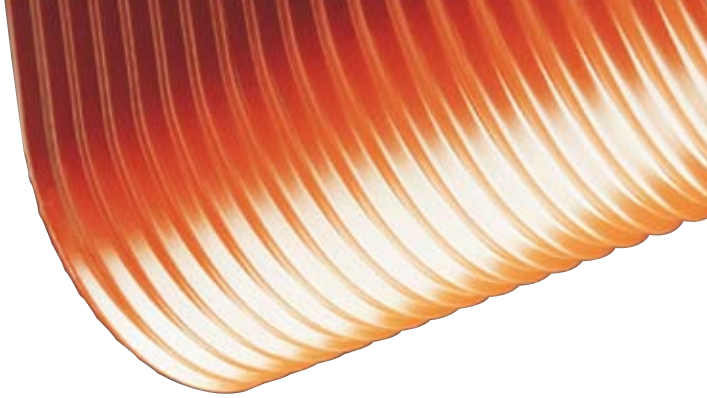
The extra ductility of CUSTOM BLUE ORB allows easy curving without distortion of its profile, and without damage to the finish.

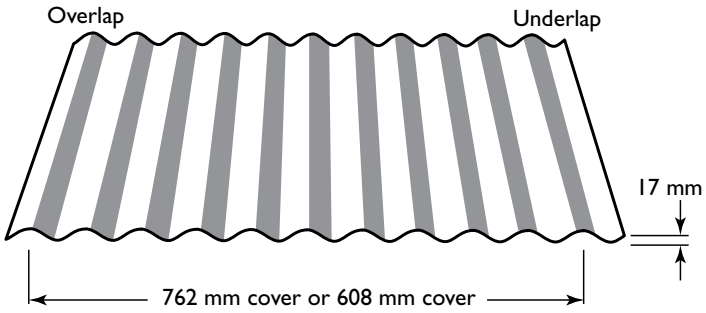
Tank making

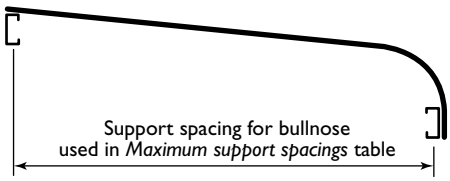
Use AQUAPLATE® steel for water tanks.

Roofing & Walling Products
Structural Products
Rainwater Products
Fencing Products
House Framing Products
Customer Support
Home Improvements

LYSAGHT CUSTOM BLUE ORB®







Masses

BMT	kg/m	kg/m²	m²/t
0.60 ZINCALUME®	4.59	6.02	166
0.60 COLORBOND®	4.64	6.09	164
0.80 ZINCALUME®	6.06	7.96	126
0.80 COLORBOND®	6.12	8.03	125

Materials

The base materials are ZINCALUME® or galvanised steels.

AQUAPLATE® polymer-coated steel is used for water tanks.

Material specifications

CUSTOM BLUE ORB is made from:

- ZINCALUME® aluminium/zinc alloy-coated steel complying with AS 1397—2001 G300, AZ150 (300 MPa minimum yield stress, 150 g/m² minimum coating mass);
- ZINCFORM® zinc coated (galvanised) steel complying with AS 1397—2001 G300, Z600 (300 MPa minimum yield stress, 600 g/m² minimum coating mass);

All the materials cover either 608 mm or 762 mm.

The base metal thickness is 0.60 or 0.80 mm.

The COLORBOND® prepainted steel complies with AS/NZS 2728:1997.

Lengths

Sheets are supplied custom cut.

Tolerances

Length: + 0 mm, – 15 mm
Width: + 4 mm, – 4 mm
Straight vertical min. (SV) = 100 mm
(50 mm in Dubbo, 80 mm in Victoria)
Radius min. (R) = 300 mm
(See Page 3 for definitions of SV and R.)

Minimum roof pitch

Long lengths and a special anti-capillary form in the side lap allow you to use CUSTOM BLUE ORB on roof pitches as low as 5 degrees (1 in 12).

Use with CUSTOM ORB

On most jobs one sheet will cover from ridge to gutter without end-laps. Where there are long straight lengths, you may like to use CUSTOM ORB for the straight sections.

If you have a design where CUSTOM BLUE ORB laps with CUSTOM ORB, both should be ordered together so that they will match perfectly.

Curving radii

The minimum curving radius is 300 mm (400 mm in Victoria). At the end of a curve, there must be a straight vertical section of at least 100 mm (50 mm in Dubbo, 80 mm in Victoria) (Figure on Page 3).

Curved flashings

Curved flashings and cappings are made in fibreglass, plastic and steel in standard COLORBOND® colours.

Straight flashings and cappings are also made to match. Different states stock different materials and different lengths—ask your local supplier.

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.

Turning-up CUSTOM BLUE ORB

With pliers, multi-grips or a shifting spanner closed down to approximately 2mm, grip the valley corrugations 20mm in from the end of the sheet and turn up as far as possible. Be careful not to tear the sheet.

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	Roof slope					
intensity mm/hr	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

Maximum support spacings

The maximum recommended support spacings are based on testing in accordance with AS1562.1-1992, AS4040.0-1992 and AS4040.1-1992.

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.

Maximum support spacings (mm)

	BMT (mm)	
Type of span	0.60	0.80
Roofs including bullnosed roofs		
Single span	1600	1800
End span	1600	1800
Internal span	1800	2600
Unstiffened eaves overhang	200	400
Stiffened eaves overhang	300	600
Walls		
Single span	2400	2400
End span	3000	3200
Internal span	3300	3600
Overhang	200	400

- 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.

Custom Blue Orb: Limit state wind pressure capacities (kPa)

Span type	Fasteners per sheet per support		Span (mm) 600	900	1200	1500	1800	2100	2400	2700	3000	3300	3600
Base metal thickness 0.6 mm													
SINGLE	3	Serviceability	3.32	2.58	1.94	1.48	1.08	0.73	0.39				
		Strength*	12.00	10.55	7.25	5.85	5.05	4.55	4.30				
	5	Serviceability	10.50	6.03	2.62	1.30	0.62	0.36	0.32				
		Strength*	12.00	12.00	12.00	10.00	8.35	7.25	6.35				
END	3	Serviceability	2.85	2.41	1.99	1.62	1.29	1.01	0.78	0.58	0.41	0.26	
		Strength*	12.00	12.00	9.10	6.75	5.25	3.60	4.05	3.60	3.15	2.70	
	5	Serviceability	11.00	7.72	4.80	2.62	1.40	0.89	0.73	0.58	0.41	0.23	
		Strength*	12.00	12.00	12.00	9.05	7.35	6.55	6.20	5.70	5.05	4.30	
INTERNAL	3	Serviceability	3.05	2.55	2.11	1.75	1.48	1.25	1.05	0.84	0.63	0.42	0.21
		Strength*	12.00	12.00	9.15	6.80	5.65	5.15	4.95	4.55	4.00	3.30	2.60
	5	Serviceability	10.94	7.43	4.51	2.59	1.55	1.07	0.88	0.72	0.54	0.37	0.19
		Strength*	12.00	12.00	12.00	9.95	8.30	7.70	7.45	7.00	6.25	5.35	4.40
Base metal thickness 0.8 mm													
SINGLE	3	Serviceability	5.26	3.92	2.80	2.08	1.49	0.99	0.53				
		Strength*	12.00	12.00	9.15	7.45	6.30	5.50	4.95				
	5	Serviceability	12.00	8.63	3.44	1.54	0.64	0.40	0.50				
		Strength*	12.00	12.00	12.00	11.50	9.70	8.55	7.70				
END	3	Serviceability	5.91	4.61	3.43	2.46	1.77	1.31	1.00	0.75	0.54	0.36	
		Strength*	12.00	12.00	11.50	8.55	6.80	6.00	5.45	4.80	4.00	3.15	
	5	Serviceability	12.00	9.67	5.86	3.06	1.60	1.10	1.01	0.86	0.62	0.33	
		Strength*	12.00	12.00	12.00	12.00	9.85	8.80	8.25	7.00	6.20	4.85	
INTERNAL	3	Serviceability	5.49	4.53	3.66	2.94	2.38	1.93	1.56	1.24	0.96	0.70	0.46
		Strength*	12.00	12.00	12.00	9.00	7.25	6.35	5.85	5.25	4.65	3.95	3.20
	5	Serviceability	12.00	12.00	6.86	3.23	1.61	1.45	1.37	1.36	1.15	0.80	0.40
		Strength*	12.00	12.00	12.00	12.00	12.00	10.45	9.05	7.40	6.30	5.65	5.20

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

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

Roofs:

Cpi=+0.20, Cpe=-0.90, Kl=2.0 for single and end spans, Kl=1.5 for internal spans.

Walls:

Cpi=+0.20, Cpe=-0.65, Kl=2.0 for single and end spans, Kl=1.5 for internal spans.

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

Limit states wind pressures

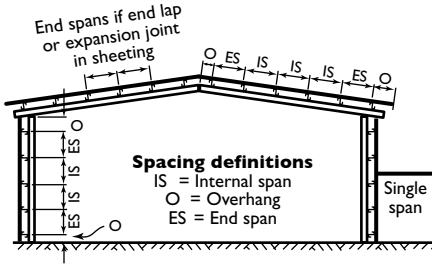
CUSTOM BLUE ORB offers the full benefits of the latest methods for modelling wind pressures. The wind pressure capacity table is determined by full scale tests conducted at BlueScope Lysaght's NATA-registered testing laboratory, using the direct pressure-testing rig.

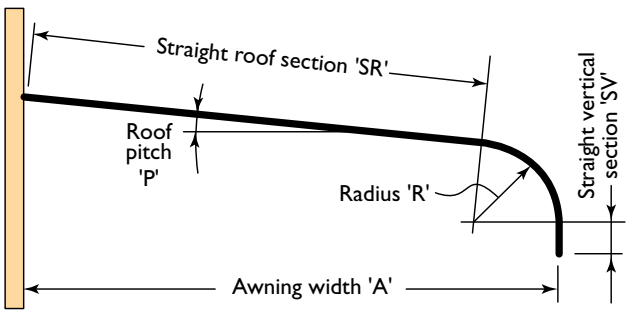
Testing was conducted in accordance with AS 1562.1—1992 Design and installation of sheet roof and wall cladding—Metal, and AS 4040.2—1992 Resistance to Wind Pressure for Non-cyclonic Regions.

The pressure capacities for serviceability are based on a deflection limit of (span/120) + (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 1.0 mm, G550 steel.

For material less than 1.0 mm thick, seek advice from our information line.





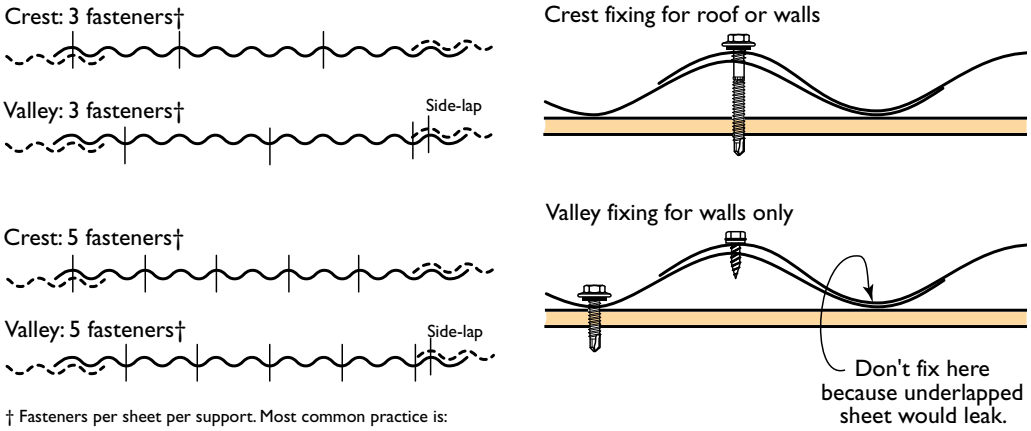
$$\left.\begin{array}{r}\text{Span to be used in determining}\\ \text{wind pressure capacities of bullnoses}\end{array}\right\} = SR + (arc\ of\ radius\ R)$$

$$= \frac{A - R(1 - \sin P)}{\cos P} + \frac{R\pi(90 - P)}{180}$$

Installation

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 13-13 x 41 OR Self drilling self tapping screws with hex. washer-head EPDM seal & *Shankguard* 12-11 x 40	Self drilling self tapping screws with hex. washer-head EPDM seal & *shank guard* 12-14 x 35	Self drilling self tapping screws with hex. washer-head & EPDM seal SOFTWOOD: 12-11 x 50 with *Higrip & shank guard* HARDWOOD: 12-11 x 40 with *shank guard*
Valley fixed	Self drilling self tapping screws with hex. washer-head & EPDM seal 10-16 x 16 OR Self drilling self tapping screws with hex. washer-head & EPDM seal 10-12 x 20	Self drilling self tapping screws with hex. washer-head & EPDM seal 10-16 x 16	Self drilling self tapping screws for wood with hex. washer-head & EPDM seal SOFTWOOD: 10-12 x 30 HARDWOOD: 10-12 x 20
Side lap & accessories	Self drilling needle point stitching screws with hex. slot-head & EPDM seal: 8-15 x 15 OR Self drilling screws with hex. washer-head & EPDM seal: 10-16 x 16 OR Sealed blind rivets: 4.8 mm diameter aluminium		



† Fasteners per sheet per support. Most common practice is: 3 fasteners for internal spans and 5 fasteners for single and end spans.

Fastening sheets to supports

CUSTOM BLUE ORB (and CUSTOM ORB) are pierce-fixed to timber or steel supports. This means that fastener screws pass through the sheeting.

You can place screws through the crests or in the valleys. 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 25 mm from the ends of sheets.

Side-laps

CUSTOM BLUE ORB is overlapped at the sides not less than 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 for strength.

End lapping

End-laps are not usually necessary because CUSTOM BLUE ORB is available in long lengths.

If you want end-laps, seek advice from our information line on the sequence of laying and the amount of overlap.

If you intend to end-lap CUSTOM ORB and CUSTOM BLUE ORB, order the sheets at the same time and tell us you intend to lap them, to ensure a good fit of the profiles.

Ends of sheets

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

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.

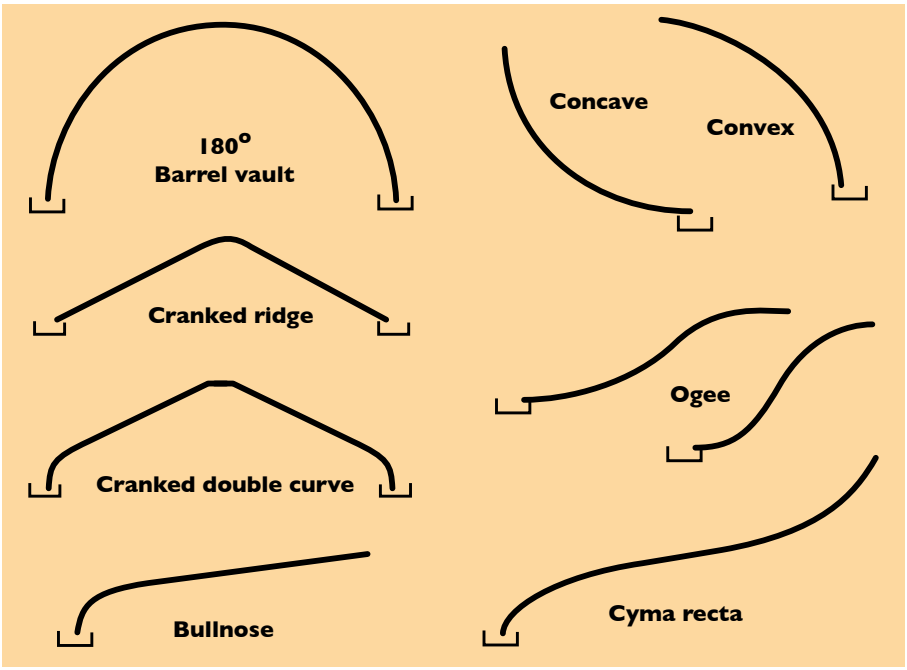
Place bundles of sheets over or near firm supports, not at mid span of roof members.

To align the first bullnosed sheet use a level on the gutter-end.

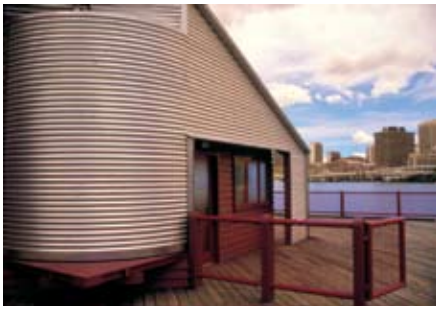
Sheet coverage

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	4	6	7	8	10	11	12	14	15	16	18	19	20	21	23	24	25	27	40	53	66

Classic Australia



The finest expression of the classic is our famous
LYSAGHT CUSTOM BLUE ORB



Lysaght Custom Blue Orb®

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 timber 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.

Storage and handling

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 does 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.

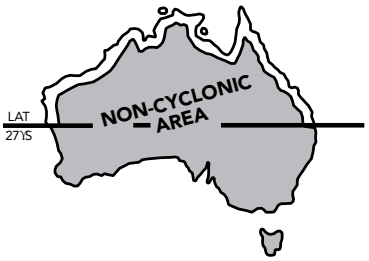
Sealed joints

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—1989 SAA Loading Code, Part 2: Wind Loads.

Ask for advice from our information service on designs to be used in cyclonic areas.



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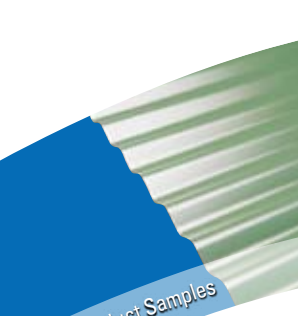

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