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PANELRIB® 1110

Design and Installation Guide



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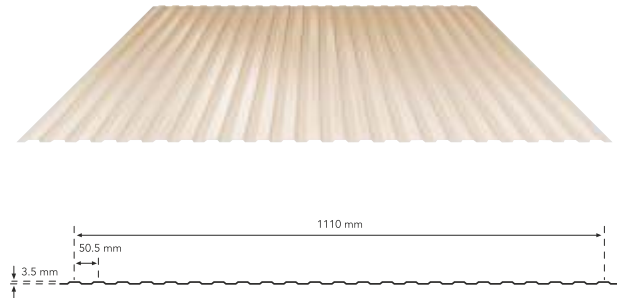
PANELRIB® 1110 is an attractive, slightly fluted wall and ceiling cladding for exterior and interior use on straight or curved surfaces. Its elegant appearance makes it suitable for many applications where a flat sheet would not normally be considered. These include ceilings, partition facings, screens, garage doors, fascias and barge boards.

PANELRIB® 1110 is manufactured from high strength steel and has longitudinal flutes that provide rigidity and strength along the length of the sheet, while retaining full flexibility across the width. It can be used with the flutes vertically or horizontally. However, PANELRIB® 1110 is not intended as a roofing material.

For exterior and interior walls and on straight or curved surfaces with horizontal or vertical flutes, PANELRIB® 1110 is easy to fix.

Profile

PANELRIB® is a 1110 mm wide coverage profile with nominal 3.5 mm deep rib with pitch of nominal 50.5 mm centre to centre distance.



COLORBOND® steel with THERMATECH™ Technology

COLORBOND® steel with THERMATECH™ technology reflects more of the sun's heat, allowing both roofs and buildings stay cooler in summer. In moderate to hot climates, compared to roofing materials of similar colour with low solar reflectance, COLORBOND® steel with THERMATECH™ can reduce annual cooling and energy consumption by up to 15%* and also reduces peak roof temperature by up to 6°C**.

Material Specifications:

ZINCALUME® steel resin coated, minimum metallic coating mass is AZ150 (150g/m²), minimum yield strengths of G550 (550MPa) complies with AS1397 or IS15961.

COLORBOND® XRW is pre-painted steel for exterior roofing and walling. Its minimum metallic coating mass is AZ150 (150g/m²), minimum yield strengths is G550 (550 MPa), with Super Durable Polyester exterior paint system, total 25um DFT on topside and 10um DFT on reverse side complying with AS/NZS 2728- type 4 or IS15965- class 3.

COLORBOND® Ultra is pre-painted steel for severe coastal or industrial environments. Its minimum metallic coating mass is AZ200 (200g/m²), minimum yield strengths is G550 (550MPa), with Super Durable Polyester exterior paint system, total 25um DFT on topside and 15um DFT on reverse side complying with AS/NZS 2728- type 4 or IS15965- class 3.

(Please contact Tata BlueScope Steel office for COLORBOND® spectrum series (metallic finish) and COLORBOND® XPD (PVDF) specification)

*Depending on level of insulation, colour, building shape, orientation and function.

**Depending on the colour.

Length

Sheets are supplied custom cut to length.

Tolerances

Length: + 0 mm, - 15 mm

Width: + 0 mm, - 4 mm

Masses

Maximum Support Spacing (in millimetres)

The maximum recommended support spacings are based on tests conducted in accordance with AS1562.1-1992, AS4040.1-1992 and AS4040.2-1992. Wall Span considers resistance to wind pressure only. The pressure considered (in accordance with IS 875.3) is based on buildings up to 10m height, Zone 3 (Basic wind speed $V_b = 47\text{m/s}$), Class A, Terrain category 3, $k_1 = 1.0$, $k_2 = 0.91$, $k_3 = 1.0$, with the following assumptions made:

PANELRIB® 1110				
BMT*	TCT*	Product	kg/m	kg/m ²
0.42	0.47	ZINCALUME® steel	4.21	3.80
0.42	0.47	COLORBOND® steel	4.29	3.86
0.45	0.50	ZINCALUME® steel	4.50	4.05
0.45	0.50	COLORBOND® steel	4.58	4.14

* Dimensions are in mm

Walls:

$C_{pe} = - 0.80$ (internal cladding spans)

$C_{pe} = - 1.20$ (single and end cladding spans)

$C_{pi} = + 0.2$

These spacings may vary for particular projects,

Maximum Support Spacings (mm)		
Total Coated Thickness (mm)		
Type of span	0.47	0.50
Walls		
Single Span	900	1000
End Span	900	1000
Internal Span	1150	1150
Overhang		

• For walls, the data are based on pressure (see pressure table)
 • Tables are based on supports of 1 mm BMT
 • Please contact Tata BlueScope Steel Office before adopting for design

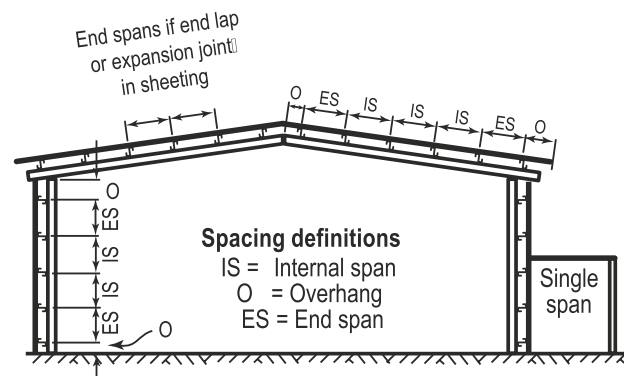
depending on specific structural characteristics.

Limit State Load Tables

PANELRIB® 1110 offers full benefits of latest methods for modelling wind pressures. The wind pressure capacity table is determined by full scale tests conducted at BlueScope Steel's NATA-registered testing laboratory, using the direct pressure-testing rig. Tests were 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 Pressures for

Non-cyclonic Regions.

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



PANELRIB® 1110: Limit state wind pressure capacities (kPa)

Span Type	Fasteners per sheet per support		Span (mm)												
			600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
PANELRIB® 1110 - 0.40 mm Base Metal Thickness (0.45 mm Total Coated Thickness)															
SINGLE	5	Serviceability	3.23	2.71	2.21	1.75	1.32	0.95	0.66	0.44	0.29	0.19	0.14	0.13	0.12
		Strength*	13.00	11.50	10.05	8.70	7.45	6.35	5.50	4.80	4.35	4.05	3.85	3.75	3.65
	11	Serviceability	2.71	2.28	1.87	1.48	1.12	0.81	0.57	0.37	0.24	0.16	0.11	0.08	0.07
		Strength*	15.80	14.45	13.15	11.90	10.80	9.70	8.80	8.05	7.45	6.90	6.50	6.10	5.75
END	5	Serviceability	4.45	3.77	3.12	2.50	1.94	1.45	1.05	0.75	0.54	0.40	0.32	0.26	0.24
		Strength*	9.35	8.35	7.40	6.45	5.60	4.85	4.25	3.75	3.40	3.20	3.05	2.90	2.85
	11	Serviceability	3.70	3.13	2.57	2.04	1.57	1.15	0.82	0.57	0.41	0.31	0.25	0.23	0.23
		Strength*	12.75	11.90	11.05	10.25	9.50	8.80	8.15	7.55	7.00	6.55	6.10	5.70	5.30
INTERNAL	5	Serviceability	4.28	3.64	3.02	2.43	1.90	1.43	1.05	0.76	0.56	0.42	0.34	0.29	0.25
		Strength*	12.70	11.50	10.35	9.25	8.20	7.30	6.55	5.95	5.45	5.10	4.80	4.60	4.40
	11	Serviceability	3.16	2.67	2.20	1.76	1.36	1.00	0.73	0.52	0.38	0.30	0.25	0.24	0.24
		Strength*	13.60	12.50	11.50	10.50	9.55	8.70	8.00	7.40	6.90	6.50	6.20	5.90	5.65
PANELRIB® 1110 - 0.45 mm Base Metal Thickness (0.50 mm Total Coated Thickness)															
SINGLE	5	Serviceability	3.65	3.07	2.51	1.99	1.51	1.09	0.76	0.51	0.34	0.23	0.17	0.15	0.14
		Strength*	14.20	12.70	11.25	9.85	8.60	7.50	6.60	5.90	5.35	5.00	4.75	4.60	4.45
	11	Serviceability	2.80	2.37	1.96	1.57	1.21	0.90	0.65	0.45	0.31	0.22	0.15	0.11	0.09
		Strength*	16.70	15.55	14.40	13.30	12.30	11.30	10.45	9.70	9.00	8.40	7.85	7.30	6.85
END	5	Serviceability	5.31	4.47	3.65	2.88	2.19	1.58	1.10	0.74	0.50	0.36	0.29	0.26	0.26
		Strength*	10.95	9.75	8.60	7.50	6.50	5.60	4.90	4.35	3.95	3.70	3.55	3.40	3.35
	11	Serviceability	4.26	3.60	2.96	2.35	1.81	1.33	0.95	0.66	0.47	0.35	0.29	0.26	0.26
		Strength*	13.50	12.65	11.85	11.05	10.30	9.60	8.90	8.30	7.70	7.20	6.65	6.20	5.70
INTERNAL	5	Serviceability	5.55	4.67	3.82	3.01	2.28	1.65	1.15	0.78	0.53	0.38	0.31	0.29	0.29
		Strength*	12.50	11.05	9.60	8.30	7.10	6.05	5.20	4.55	4.15	3.85	3.75	3.65	3.65
	11	Serviceability	3.59	3.02	2.48	1.96	1.50	1.09	0.77	0.53	0.37	0.27	0.22	0.20	0.20
		Strength*	14.50	13.50	12.60	11.70	10.80	10.00	9.30	8.70	8.15	7.65	7.20	6.80	6.40

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

*Please contact Tata BlueScope Steel office before adopting for design

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 your nearest Tata BlueScope Steel office.



Adverse Conditions

If this product is to be used in marine, severe industrial or unusually corrosive environments, ask for advice from your nearest Tata BlueScope Steel office.

Metal & Timber Compatibility

Lead, copper, stainless 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 nearest Tata BlueScope Steel office.

Maintenance

Optimum product life will be achieved if all external surfaces are washed regularly.

Areas not cleaned by natural rainfall (such as the top portion of walls sheltered by eaves) should be washed down every six months.

Storage and Handling

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

Handle the product carefully to avoid damage:

- Don't drag the product over rough surfaces or against each other
- Don't drag tools over the product
- Protect the product 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 COLORBOND® steel and 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.

Ask for advice from your nearest Tata BlueScope Steel Products office on designs to be used in cyclonic areas.



Installation

PANELRIB® 1110 steel cladding can be attached to the frame with the flutes either vertically or horizontally. When fixing with flutes horizontally, ensure that the top sheet overlaps the sheet below.

If end laps are necessary because of very long runs, allow at least 75 mm lap.

For sheets fixed on external applications where sealing is required, seal end laps with a suitable sealant.

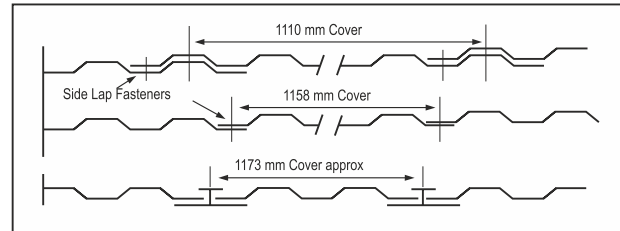
Location of Fasteners

A fastener should be located either at the side lap or adjacent to it. For a quality finish, fasteners at the ends of PANELRIB® 1110 sheets, including end laps, should be located at every second valley. At intermediate supports, four fasteners should be used. They should be equidistant across the sheet.

For internal applications not subject to wind loads, the number of fasteners may be reduced by 50%, except for ceiling applications.

Side Lapping

Three types of side lapping methods are used: the overlapping flute, the butt joint and the edge lap joint. When using the overlapping or edge lap joint methods, side lap fasteners are required at 200-300 mm centres.



Fasteners without insulation			
Support Details	Numbers of Fasteners		Valley Fixing
	Per Sheet/support	Per sq. mt.	Wall Application only
Steel up to 2.00 mm BMT	6	8.5*	8 - 18 x 12 Metal Tek's, Hex Head
Timber - Softwood			8 - 15 x 20, Type 17 HG, Hex Head
Timber - Hardwood			8 - 15 x 20, Type 17 HG, Hex Head

Note:

- All screws are self drilling, self tapping with EPDM sealing washer unless otherwise noted
- The number of screws per support are per Sq.m. and are only for guidance, based on support spaced at 1 m and wall spaced at 0.6m
- HG refers to Hi-Grips
- * - the screw quantity is based on an average number of screws
- Please refer to the above data for guidance purpose only. You may contact Tata BlueScope Steel office for further information





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Benefits

- Slightly fluted panel gives an attractive look
- Lightest wall cladding for interior and exterior application
- Its long, straight lengths minimise fixing costs
- Provides easy solution for false ceiling and wall partition
- Panels can be installed in horizontal as well as in vertical direction
- Manufactured from high strength ZINCALUME® steel or COLORBOND® steel

Product Descriptions

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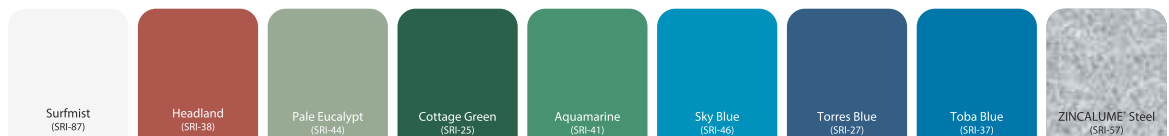
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