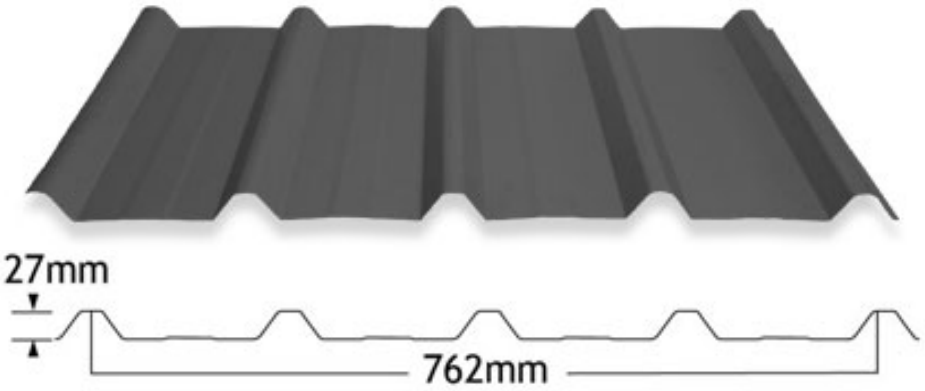
QUEENSLAND
SHEET METAL

FIVE RIB
TECHNICAL MANUAL

Five Rib Sheeting



Queensland Sheet Metal Five Rib sheeting is a great option for many roofing and walling needs. Made for a wide range of applications across domestic and commercial projects, five rib roof sheeting has a range of great benefits. It is made to last and is well known in the roofing industry for its versatility and reliability. It is tough, cost-effective and superb for design purposes. Our five rib sheeting is available in a wide range of Colorbond® colours as well as Zincalume®.

Features & Benefits

- 762mm cover and 27mm rib height
- Available in 0.42bmt and 0.48bmt
- Hi-tensile steel - strong and lightweight
- 2° minimum pitch
- Cut to length
- Versatility - suitable for commercial/industrial and residential roofing and wall cladding

Materials

Zincalume® - Aluminium/zinc alloy-coated steel complying with AS1397 G550, AZ150 Metallic coating.

Colorbond® - Hot dipped Zincalume® steel coil with AZ150 coating manufactured to AS1397:2011.

Magnaflow - Hot dipped zinc/aluminium/magnesium alloy-coated steel, 240gm/m^2 coating manufactured to AS1397:2011.

Sheeting max (kg/m2 of roof area)		
	Zincalume®	Colorbond®
0.42mm BMT	4.28	4.35
0.48mm BMT	4.86	4.93

Testing

Queensland Sheet Metal Five Rib sheeting was assessed for structural suitability to suit non-cyclonic roof and wall cladding requirements for residential and commerical/industrial building purposes. The steel used was also independently laboratory tested to comply with the AS/NZ2728:2013 performance requirements. Suitable for ISO9223:2012. Atmospheric Classifications C1 - C3.

Adverse Conditions

Queensland Sheet Metal Five Rib sheeting will give excellent durability in almost all locations. It is however important to choose the correct coating for each application environment as shown in the table below. Durability recommendations do vary based on the application of the product, in roofing or walling installations. Please read the tables below carefully.

Suitability of coating type	Roof sheeting - site exposure condition				Wall cladding - distance from marine environment
	Mild (ISO Category 1-2)	Moderate (ISO Category 2)	Marine (ISO Category 3)	Severe Marine (ISO Category 4)	
	■	■			>1km
UniCote	■	■	■		>1km
Magnaflow	■	■	■	■	*

* Severe marine begins 100 - 400m from the coast and may extend inland depending on local conditions.

These are general guidelines only. Building location, design and aspect need to be taken into account. To ensure warranty will be given, check with Queensland Sheet Metal before using in these areas.

Incompatible Metals

When different types of metals come into contact with each other, and particularly when water is present, chemical reactions take place. When metals that are more resistant to corrosion touch metals that are less resistant, that contact will eat away the metal that is lower down the pecking order of 'The Galvanic Hierarchy'.

To avoid accelerated corrosion the following precautions should be observed:

- Avoid discharges of water from brass or copper pipes on to Colorbond®.
- Do not use non-galvanised steel, copper, brass, lead, stainless steel or monel metal in direct contact with Colorbond®.
- Do not use lead flashings in contact with Colorbond® products. Soft edge aluminium or notching of flashings are the best solutions.
- Tanalised timber contains copper, so must not be used in direct contact with Colorbond® products. Use PVC tape or similar barrier to isolate potential problem points of contact between materials.

Spans

Spans (mm) determined by wind speed					
BMT	Application	Span Type	Wind Classification		
			N1	N2	N3
0.42	Roofing	Internal	1700	1700	1700
		Double	1350	1350	1350
		End	1350	1350	1350
	Walling	Internal	3000	3000	2700
		Double	2900	2250	1950
		End	2900	2250	1950
0.48	Roofing	Internal	2300	2300	2300
		Double	1700	1700	1700
		End	1700	1700	1700
	Walling	Internal	3000	3000	3000
		Double	3000	2700	2550
		End	3000	2700	2550

Table is based on tests to AS1562.1 (1992) and AS4040.0&2 (1992) and wind loading to AS4055(2012). Internal spans must have both end spans 20% shorter. Sheets are to be fastened on each rib with 6.2x50mm screws (AS3566 ST5.5 hexagonal washer head) to minimum steel thickness of 1.5mm (g550). Where other supports are used perform separate design assessment in accordance with AS4600 (2005) to ensure adequate connection capacity.

Pressures

Wind Pressure Limit State Capacities – 3 Fasteners per Sheet										
BMT	Type	Limit State	Span (mm)								
			600	900	1200	1500	1800	2100	2400	2700	3000
0.42	Internal	Serviceability	5.40	5.40	3.75	2.76	2.10	1.64	1.29	1.01	0.80
		Strength	8.60	7.17	5.75	5.24	4.74	4.09	3.52	3.07	2.69
	Double	Serviceability	4.10	4.10	2.34	1.55	1.13	0.88	0.72	0.61	0.53
		Strength	6.24	6.24	4.81	4.00	3.49	3.14	2.88	2.69	2.53
	End	Serviceability	4.10	1.40	2.34	1.55	1.13	0.88	0.72	0.61	0.53
		Strength	6.24	6.24	4.81	4.00	3.49	3.14	2.88	2.69	2.53
0.48	Internal	Serviceability	7.28	5.86	4.44	3.11	2.37	1.91	1.61	1.40	1.25
		Strength	9.42	8.51	7.60	6.60	5.60	4.70	3.70	2.70	1.80
	Double	Serviceability	4.54	4.54	3.52	2.70	2.05	1.55	1.15	0.83	0.56
		Strength	8.10	8.10	7.46	6.38	5.37	4.50	3.70	2.73	1.75
	End	Serviceability	4.54	4.54	3.52	2.70	2.05	1.55	1.15	0.83	0.56
		Strength	8.10	8.10	7.46	6.38	5.37	4.50	3.70	2.73	1.75

Table is based on tests to AS1562.1 (1992) and AS4040.0&2 (1992) and is intended for use in conjunction with AS1170.2(2011). Internal spans must have both end spans 20% shorter. Sheets are to be fastened on each rib with 6.2x50mm screws (AS3566 ST5.5 hexagonal washer head) to minimum steel thickness of 1.5mm (g550). Where other supports are used perform separate design assessment in accordance with AS4600 (2005) to ensure adequate connection capacity.

Water Carrying Capacity

Minimum Roof Slope (degrees)												
Rainfall intensity (mm/hr)	Total roof run length (m)											Max roof run length (m) at min slope
	30	40	50	60	70	80	90	100	110	120	130	
150	-	-	-	-	-	-	-	2.0	2.3	2.9	3.6	105
175	-	-	-	-	-	2.0	2.0	2.7	3.5	4.3	5.2	90
200	-	-	-	-	-	2.1	2.9	3.8	4.8	5.9	7.1	78
225	-	-	-	-	2.0	2.9	3.9	5.1	6.3	7.7	9.2	70
250	-	-	-	2.0	2.7	3.8	5.1	6.5	8.0	9.7	12	63
275	-	-	-	2.3	3.5	4.8	6.3	8.0	9.9	12	15	57
300	-	-	2.0	2.9	4.3	5.9	7.7	9.7	12	15	17	52
325	-	-	2.2	3.6	5.2	7.1	9.2	12	15	17	20	48
350	-	-	2.7	4.3	6.2	8.3	11	14	17	20	24	45
375	-	2.0	3.2	5.1	7.2	9.7	13	16	19	23	-	42
400	2.0	2.1	3.8	5.9	8.3	12	15	18	22	-	-	39

Note: Depth of flow in pan = 60% height of underlap (agreed industry standard).

Foot Traffic

Foot traffic limits for Queensland Sheet Metal Five Rib sheeting are shown for normal maintenance foot traffic only.

Normal - based on traditional expectations, with moderate maintenance foot traffic using designated foot paths.

Foot traffic limited spans (mm)		
BMT	**Span type**	**Maximum span (mm)**
0.42	Internal	1700
	Double	1350
	End	1350
0.48	Internal	2300
	Double	1700
	End	1700

Table is based on tests to AS1562.1 (1992) and AS4040.0&1 (1992) for normal maintenance foot traffic only.

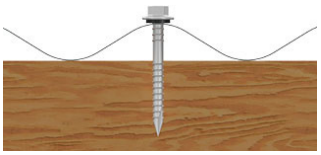
Fasteners

Fastener Selection

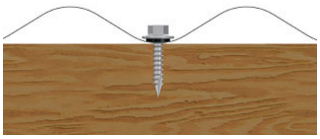
They are to be hexagon headed and must be used with sealing washers for both roofing and walling.

Five Rib roofing screws - Non-cyclonic pierce fixing		
Type	**Fixing to timber**	**Fixing to steel**
Crest fixed	12 x 65 T17	13 x 50 Zip
Valley fixed	12 x 25 T17	10 x 16 SDS

Crest fixed into timber



Valley fixed into timber



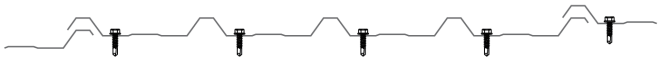
Crest fixed into steel

Valley fixed into steel

Fastener Locations

Roofing: One fixing per crest

Walling: One fixing per pan, fasten adjacent to the overlapping rib



Installation

It's easy to install five rib roof sheeting and it's appropriate for a wide range of industries and applications across Brisbane. To make the job even easier, here are a few helpful tips:

- Five rib sheeting should be laid facing the prevailing wind.
- Ensure that each sheet has a good, accurate join to the previously laid roof sheet.
- Look out for gaps; ensure each sheet is carefully laid.
- Five rib sheets need to be laid with appropriate support spacing to ensure a strong join.
- Do not bend or otherwise stretch sheeting, which may allow in water and wind.
- Ensure sheeting is weather proofed and properly sealed. Also ensure the overlaps are secure, particularly during roofing work.
- Flashing turn downs on five rib sheeting should be notched tightly around the rib to ensure maximum weather tightness.
- Pan fixing for five rib is only recommended for applications such as carports or patios, when weather tight roofing is not essential.
- Side lap fasteners need to be secured in the mid-span when spans exceed 900mm for roofing or 1200mm for walling.
- Secure with appropriate fasteners as per descriptions below.
- At the end of the roof sheets, the pans should be turned up at the crest of the roofing and down into the gutter.

Ordering

- Queensland Sheet Metal Five Rib sheeting is ordered to length.
- Manufacturing tolerance on the length is 0+ - 15mm.
- Delivery can usually be made within 24-48 hours of payment depending on location, quantity and availability.
- Please ensure lengths are within the limit of local Transport Authority regulations.
- Be sure that a suitable arrangement has been made for truck unloading as this is the responsibility of the receiver.
- Packs should be kept dry and stored above ground level.

Maintenance

Your Queensland Sheet Metal Five Rib sheeting will last a very long time with some simple precautions.

- Ensure that your sheets are kept clean. Dirt and other materials contain chemical contaminants and corrosive agents. Clean the roofing regularly to reduce the risk of rust and surface deterioration.
- If your roofing insulation is getting old it may cause condensation which leads to interior rust and holes in the roof. Inspect your roof insulation seasonally to ensure that it's in good condition. If the insulation looks shabby or out of shape, it needs to be replaced.
- Five rib sheeting should be stored in a dry place, out of the weather. Cover sheeting securely with a tarpaulin to reduce exposure to the wind and rain.
- Roofing screws can also be a source of problems. These important components need to be secured, airtight, and kept tightly fixed to the roof. If they come loose, they can deliver water directly to the roof and the ceiling. Regular inspections will help prevent problems from this source.

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