Permalite Aluminium Building Solutions

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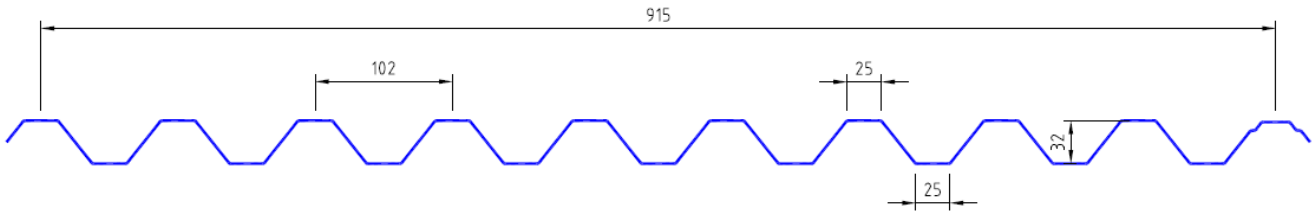
Permalite® VRib® Data Sheet

13th December, 2016



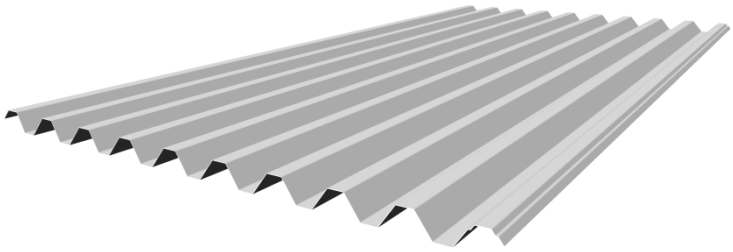
VRIB® PROFILE DIMENSIONS

Product Description and Features

The wide cover width of Permalite® VRib®, in conjunction with its symmetrical profile, provides a roofing sheet which can be used effectively on walls also. A distinctive capillary drain in the rib overlap ensures weather security.
As well as providing a neat, balanced appearance on buildings, this profile is also effectively used as insulation jacketing in power stations and chemical processing plants.
Other features include:

- Can be used for both roofing and walling applications
- Available in a wide variety of colours
- May be used in roof pitches as low as 3 degree (1 in 19)
- Spring curve to a radius as low as 18m

Thickness range (BMT):	0.70mm, 0.90mm & 1.2mm
Length Range:	0.85m to 23.0m
Pan Cross Section area:	16,342mm²/metre sheet width
Tolerances:	Length +0mm, -15mm
	Width ±4mm
Finishes:	Mill, Stucco Embossed, Painted



Colour Availability

The following Permalite® standard polyester paint colours are applied to the coiled sheet by reverse roller coating and heat curing on BlueScope paint lines employing the latest painting technology.

Enduro Green	Glacier White	Moonshadow	Sahara	Gull Grey	Slate Grey	Obelisk Grey

Other colours/ fluorocarbon paints are available upon request and subject to MOQ's.

Design and Installation

Permalite® VRib® limit state wind pressure capacities are based on data in accordance with AS 1562.1:1992 Design and installation of sheet roof and wall cladding: Metal, and AS 4040.1:1992 Methods of testing sheet roof and wall cladding – Resistance to concentrated loads. The wind loadings used in conjunction with these tables are to be determined in accordance with AS/NZS 1170.2:2002 Structural design actions – Wind actions.

These tables and all installation data/details can be found in the Permalite® Aluminium Roofing Solutions manual, available for download at www.permalite.com.au.

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Profile Properties

Thickness (mm)	kg/m² Cover width (Mill finish)	kg/m Length (Mill finish)	m²/tonne (Mill finish)	Section Modulus about principal axis ($x10^3mm^3$)		2nd Moment of area about principal axis ($x10^3mm^4$)	
				Z_x	Z_y	I_x	I_y
0.70	2.529	2.314	395	7.693	140	127.1	67710
0.90	3.252	2.976	308	9.89	180	163.5	87050
1.20	4.336	3.967	231	13.19	240	217.9	116100

Material Specification

Permalite® VRib® is produced from marine grade aluminium 5251 and 5052 H38 temper to AS/NZS 1734:1997 Aluminium and aluminium alloys – Flat sheet, coiled sheet and plate.

Chemical Composition of 5251 and 5052 (% max except where range is given)

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others	
									Each	Total
5251	0.40	0.50	0.15	0.10-0.50	1.70-2.40	0.15	0.15	0.15	0.05	0.15
5052	0.25	0.40	0.10	0.10	2.20-2.80	0.15-0.35	0.10	0.15	0.05	0.15

Characteristics of 5251 & 5052

Corrosion Resistance: Excellent
Anodising: Fair (finish cannot be guaranteed to meet the requirements of AS 1231:2000 Aluminium and Aluminium Alloys – Anodised Coatings for Architectural Applications)
Formability: Very Good
Machinability: Fair
Weldability: Very Good
Brazeability: Poor

Alloy Mechanical Properties

The following properties are typical of mill finish, unpainted sheet.

Alloy	5251	5052
Temper	H38	H38
Minimum Yield Strength (Mpa)	225	220
Ultimate Tensile Strength (MPa)	260	270
Elongation (0.70 BMT)	3%	3%
Elongation (0.90 BMT)	4%	4%
Elongation (1.20 BMT)	4%	4%

Thermal Properties

Coefficient of thermal expansion: 23.9 x 10^{-6} per ºC (approximately 1.17mm/m over 50ºC temperature change).