

**Product Specification Sheet**

**Roofing**

# Metric Acoustic



**HARD FACTS**

**Project:**  
La Trobe University

**Architect:**  
Warren & Mahoney

**Profile:**  
Metric

**Skins:**  
External Colorbond Surfmist, Internal Colorbond Thredbo White (Perforated)

## Volcore Core

Volcore Metric Acoustic Roofing Panel utilises non-combustible mineral wool core sandwiched between two layers of steel. Mineral wool insulated sandwich roof panel is the perfect choice for buildings that require high sound insulation, having fire risk requirements.

Volcore Metric Acoustic is a roofing solution that meets performance requirements for weatherproofing, structural strength, thermal performance and fire performance for all building types and classes. Volcore Mineral Wool core is a superior acoustic solution for Noise Reduction Coefficient and Weighted Sound Absorption Coefficient requirements.

## Thermal Performance

PRODUCT MATERIAL PROPERTIES					TOTAL SYSTEM R-VALUES	
Panel Nominal Thickness (mm)	Product U-Value (W/m <sup>2</sup> K) at 23°C	Product R-Value (m <sup>2</sup> K/W) at 23°C	Product R-Value (m <sup>2</sup> K/W) at 15°C	Product R-Value (m <sup>2</sup> K/W) at 0°C	Heat Flow Out (Winter)	Heat Flow In (Summer)
100	0.40	2.50	2.60	2.70	2.70	2.70
120	0.33	3.00	3.10	3.25	3.40	3.20
150	0.26	3.75	3.90	4.05	4.00	3.90
175	0.22	4.40	4.55	4.75	4.70	4.50
200*	0.20	5.00	5.20	5.40	5.50	5.40

Total R-Values for the building element as required by the Energy Provisions of the National Construction Code, calculated in accordance with AS/ NZS 4859.2:2018. ASKIN Volcore is manufactured, tested and packaged in conformance with AS/NZS 4859.1:2018

Declared Product R-Value is calculated in accordance with AS/NZS 4859.1:2018 as required for compliance to the National Construction Code 2019.  
\* 200mm Volcore thermal computation based on theoretical assumptions of AS 4859.1

## Features & Benefits

- ▲ Non-combustible material (C1.9 e)
- ▲ All in one roof & ceiling system
- ▲ Reduce noise and improve sound quality
- ▲ Lengths available up to 13.5m
- ▲ Fast to install
- ▲ Extremely thermally efficient (Product R-Values up to 5.0 (23 degrees))
- ▲ Warranties up to 36 years
- ▲ Diminishes thermal bridging
- ▲ Perforated internal liner

\* All information correct at time of printing. Check with your ASKIN representative for latest information. Call 13 000 ASKIN, or email [contact@askin.net.au](mailto:contact@askin.net.au) © ASKIN October, 2022.



Volcore is a non-combustible insulation material tested to AS 1530.1 and ideal for commercial and industrial applications. The mineral wool core has excellent fire resistance and does not contribute to spread of fire.

### Fire Performance

CRITERIA	PERFORMANCE
AS 1530.3: 1999 (Test for Flammability of materials)	Flame Spread 0 Smoke Dev. 2 Heat Evolved 0 Ignition 0
AS 5637.1: 2015 Compliance to C1.10 AS ISO 9705: 2003 (R 2016)	Group 1, SMOGRA = 1.5 (m <sup>2</sup> / s <sup>2</sup> x 1000)
NCC compliant C1.9 (e)	Non-Combustible

### Weather Proofing

Volcore Metric Acoustic panel has met the performance requirements of weatherproofing per AS 1562.1:2018, as required by NCC 2019 F1.5.

CRITERIA	PERFORMANCE
AS 1562.1:2018	NCC Compliant to F1.5

### Maximum Roof Length (m) for Drainage (AS1562.1, 3.3.1)

PEAK RAINFALL INTENSITY (mm/hr)	ROOF SLOPE (DEGREES)			
	3	5	7.5	10
100	410	504	600	683
150	273	336	400	455
200	205	252	300	341
250	164	201	240	273
300	136	168	200	227
400	102	126	150	170
500	82	100	120	136

Refer to ASKIN roof standard details for best installation practice. Minimum pitch of 3 degrees. (2 degrees with special design). Step joints required for larger roofs with multiple panels. SA HB39:2015 Installation code for metal roofing and wall cladding. Appendix B.

### Minimum Pitch

PITCH	SEALANT	END LAPS	DIMENSION
3 degrees to 6 degrees	Butyl tape	Standard cut back for gutter	75mm
>6 degrees	Polyurethane	Standard end lap joint	200mm
		Standard expansion joint	200mm

### Acoustics

ASKIN Panel achieves the following ratings for panel tested in accordance with AS 1191-2002 and assessed against AS/NZS ISO 717.1: 2004

CRITERIA	RW
ASKIN Volcore 100mm	31
ASKIN Volcore 150mm	31

### Calculated Acoustic Ratings

ACOUSTIC PARAMETER	CALCULATED RATING	STANDARD
Airborne Sound Insulation	Rw = 31 dB	AS 1191-2002 Acoustics – Method for laboratory measurements of airborne sound insulation of building elements for the test method. AS/NZS ISO 717.1:2004 Acoustics – Rating of sound insulation in buildings and of building elements, Part 1: Airborne sound insulation for the calculation of the single figure result.
Noise Reduction Coefficient	NRC = 1.0	AS ISO 11654-2002(R2016) Acoustics – Rating of sound absorption – materials and systems for calculation of the single figure rating. ISO 354 Acoustics – Measurement of sound absorption in a reverberation room OR AS 1045 Measurement of sound absorption in a reverberation room for the test method.
Weighted Sound Absorption Coefficient	aw = 1.0	AS ISO 11654-2002(R2016) Acoustics – Rating of sound absorption – materials and systems for calculation of the single figure rating. AS ISO 354-2006 Acoustics – Measurement of sound absorption in a reverberation room for the test method.

estimation based off 150mm panel

Volcore Metric Acoustic are composite Sound Absorbent Panels, constructed of two steel skins, of which the internal sheet is perforated and laminated to noncombustible high-density mineral wool fibre core. Additional to the main advantages such as high fire resistance, thermal insulation and absolute waterproof protection, sound absorption is achieved.

### Calculated Octave Band Absorption Coefficients

MEASUREMENT BAND	ABSORPTION COEFFICIENT
125 Hz	0.75
250 Hz	1.0
500 Hz	1.0
1 kHz	1.0
2 kHz	0.95
4 k Hz	0.9

### Physical Properties

CRITERIA	PERFORMANCE
Core Density	110 kg/m <sup>3</sup> +/- 10%
Recyclable	100% Recyclable
Workability	Good – Mineral Fibres. Handle with care.

### Manufacturing Tolerances

CRITERIA	MANUFACTURED	TOLERANCE
Length	2,000mm to 13,500mm	+5 / -0mm
Width	Standard as 1,000mm	+/- 1mm
Thicknesses	100mm up to maximum 200mm	+/- 1mm

ASKIN Volcore Metric Acoustic is a fully mechanically fixed system through the 5 ribs to structural members. The panels must be installed to the performance requirements of the National Construction Code and Australian Standards. Please contact your ASKIN representative for more information.

### Installation Tolerances

PANEL LENGTH	INSTALLATION TOLERANCE
0mm to 4,000mm	+2 / -1mm
+4,000mm	+3 / -1mm
Panel Joints	+2 / -2mm

\* ASKIN recommend the use of clamps for ensuring minimum variable tolerance.

### Colour Range

A full range of colours are available depending on Minimum Order Quantities and warranties. Please contact your ASKIN representative as each project needs clarification on Solar Absorbance as stated in the NCC.

### Environment

#### Resource Efficiency

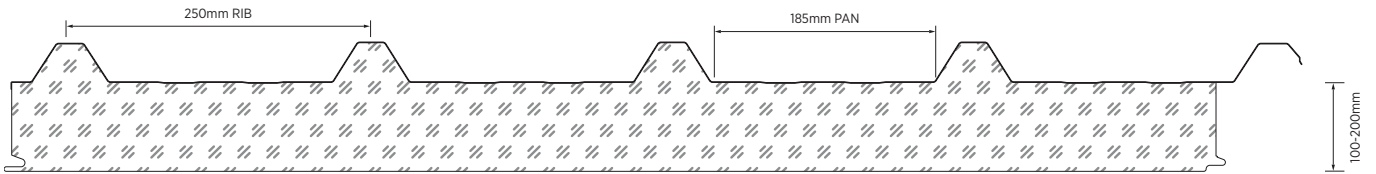
As an insulation product Volcore is efficient in its use of resources. Coupled with the high insulation, this means that the energy savings from using Volcore will amount to many times the energy required to produce the material.

#### Zero ODP

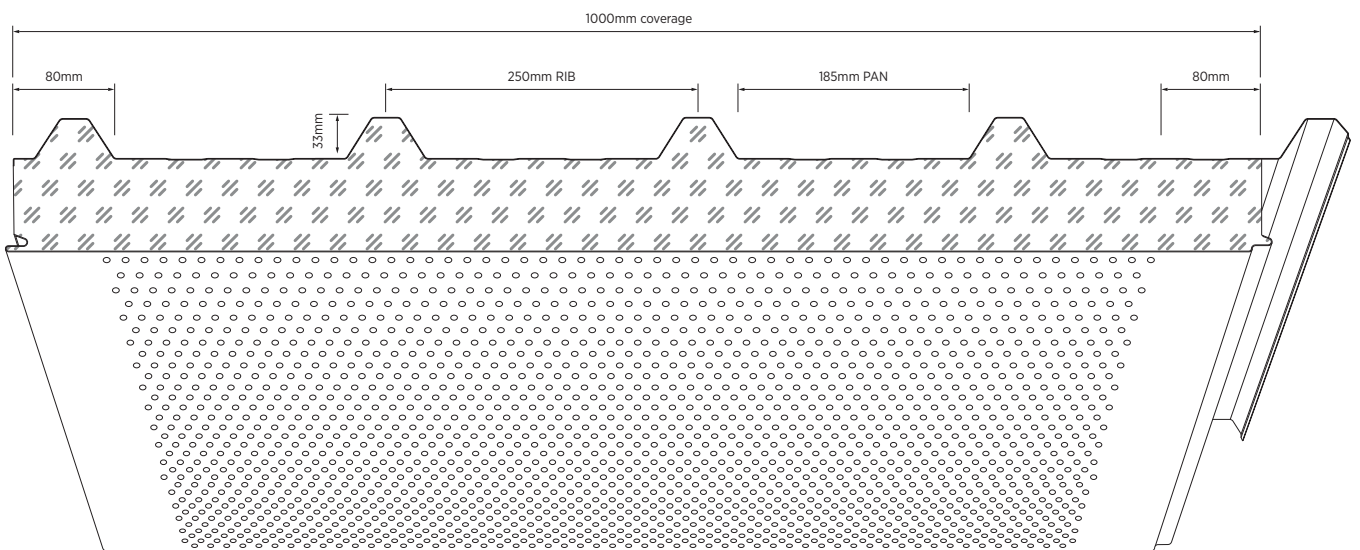
Volcore insulation manufacturing does not use Ozone Depleting Substances such as CFCs, HCFCs or HFCs.

## Roofing Profile Combination

### ROOFING PROFILES



METRIC ROOF / RIB or FLAT Profile



### HARD FACTS

- Project:** La Trobe University
- Architect:** Warren & Mahoney
- Profile:** Metric
- Skins:** External Colorbond Surfemist, Internal Colorbond Thredbo White (Perforated)

## 0.5mm External Face Skin with 0.6mm Internal Face Skin

### Standard Steel Specification

**EXTERNAL SKIN MATERIAL** – 0.5 or 0.6mm Thick G300S AM100 high performance steel with pre-painted superior polyester finish coat of 25 microns. Other high performance products, Colorbond® Ultra, Colorbond® stainless steel are available to suit project specific applications.

**INTERNAL SKIN MATERIAL** – 0.6mm Thick G300S Z275 pre-painted Colorbond® Intramax® steel with superior polyester finish coat of 25 microns. A range of substrates and colours are available subject to application and MOQ, of which include standard Colorbond® range.

### Panel Weight (m<sup>2</sup>)

PANEL THICKNESS (mm)	100	120	150	175	200
Weight (kg / m <sup>2</sup> ) for 0.5 / 0.6	19.6	21.8	25.1	27.9	30.6
Weight (kg / m <sup>2</sup> ) for 0.6 / 0.6	20.6	22.8	26.1	28.9	31.6

AS/NZS 2728 Paint Coating. AS 1397 Substrate System

### Span Table: ULS Allowable Pressure (kPa)

PANEL THICKNESS (mm)	PANEL SPAN (m)						
	1.2m	1.5m	1.8m	2.0m	2.4m	2.7m	3.0m
100	4.29	3.73	3.18	2.54	2.07	1.71	1.35
120	4.42	3.87	3.31	2.68	2.21	1.85	1.49
150	4.63	4.07	3.52	2.89	2.41	2.05	1.70
175	4.80	4.25	3.69	3.07	2.59	2.23	1.87
200	4.97	4.42	3.86	3.24	2.76	2.40	2.04

### Span Table: SLS Allowable Pressure applied Externally (kPa)

PANEL THICKNESS (mm)	PANEL SPAN (m)						
	1.2m	1.5m	1.8m	2.0m	2.4m	2.7m	3.0m
100	2.46	2.17	1.88	1.68	1.32	1.05	0.78
120	2.46	2.17	1.88	1.69	1.33	1.06	0.79
150	2.47	2.18	1.89	1.70	1.33	1.06	0.79
175	2.47	2.18	1.89	1.70	1.34	1.07	0.80
200	2.47	2.19	1.90	1.71	1.35	1.07	0.80

### Span Table: SLS Allowable Pressure applied Internally (kPa)

PANEL THICKNESS (mm)	PANEL SPAN (m)						
	1.2m	1.5m	1.8m	2.0m	2.4m	2.7m	3.0m
100	-2.73	-2.43	-2.13	-1.93	-1.66	-1.46	-1.26
120	-2.73	-2.44	-2.15	-1.95	-1.69	-1.49	-1.29
150	-2.74	-2.46	-2.17	-1.99	-1.72	-1.53	-1.33
175	-2.74	-2.47	-2.20	-2.01	-1.75	-1.56	-1.37
200	-2.75	-2.48	-2.22	-2.04	-1.79	-1.59	-1.40

Uniformly distributed ultimate limit state short term Wind load as derived from AS1170.2. Capacities derived from NATA approved structural testing in accordance with AS4040.2. Serviceability limit state deflection limited to span/200. Contact ASKIN for span/150 specific data. See ASKIN connection details for specialised applications such as controlled environment and fire rated construction.

Panel is assumed to be fixed from outside into a suitable structure inside. Fixings, number and type should be considered by a suitably competent person. Loadings published here assume one 14g fixing with 25mm bonded washer, or equivalent or better, per rib, per line of fixings. ASKIN is not claiming contribution to bracing or diaphragm action of the roof cladding system as per AS1562.1. Loadings noted within span tables do not include the self-weight of the panel. Self-weight will need to be applied when panel is used in a horizontal application (i.e. a roof or a ceiling). Roof accessibility imposed loading is in line with R2(b)(iii) as per section 3.5.1 of AS1170.1.