Product Specification Sheet

Roofing

Metric

Volcore

HARD FACTS

Project:
La Trobe University

Architect:
Warren & Mahoney

Profile:
Metric

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

Volcore Core

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

Volcore Metric is a roofing solution that meets performance requirements for weatherproofing, structural strength, thermal performance and fire performance for all building types and classes.

Thermal Performance

PRODUCT MATERIAL PROPERTIES					TOTAL SYSTEM R-VALUES	
Panel Nominal Thickness (mm)	**Product U-Value (W/m^2K) at 23°C**	**Product R-Value (m^2K/W) at 23°C**	**Product R-Value (m^2K/W) at 15°C**	**Product R-Value (m^2K/W) at 0°C**	**Heat Flow Out (Winter)**	**Heat Flow In (Summer)**
75	0.54	1.85	1.95	2.00	2.10	2.00
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)
- Lengths available up to 13.5m
- Warranties up to to 36 years
- All in one roof & ceiling system
- Fast to install
- Diminishes thermal bridging
- Resilient material for a changing climate
- Extremely thermally efficient (Product R-Values up to 5.0 (23 degrees))
- Robust and durable building envelope

* 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

Colorbond® VIPCC PANEL CERTIFICATION SCHEME

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. 1 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^2 / s^2 x 1000)
NCC compliant C1.9 (e)	Non-Combustible

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

Weather Proofing

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

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

Acoustics

CRITERIA	RW	RW + CTR
ASKIN Volcore Panel 75mm	28	25
* ASKIN Volcore Panel 100mm	29	–
* ASKIN Volcore Panel 120mm	30	–
* ASKIN Volcore Panel 150mm	31	–
* ASKIN Volcore Panel 200mm	33	–

* Values from third party professional opinion report

Physical Properties

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

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Manufacturing Tolerances

CRITERIA	MANUFACTURED	TOLERANCE
Length	2,000mm to 13,500mm	+5 / -0mm
Width	Standard as 1,000mm	+/- 1mm
Thicknesses	75mm up to maximum 200mm	+/- 1mm

ASKIN Volcore Metric Panel 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

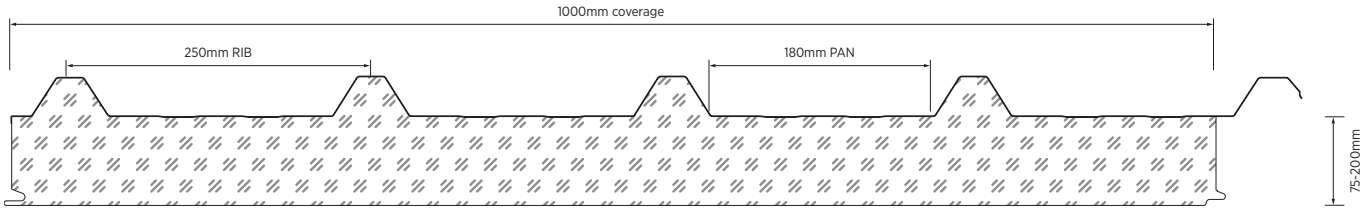
As an insulation product Volcore is efficient in its use of resources. Coupled with the high insulation, this means that the energy savings from using Volcore will amount to many times the energy required to produce the material.

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

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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^2)

PANEL THICKNESS (mm)	75	100	120	150	175	200
Weight (kg / m²) for 0.5 / 0.6	18.5	21.2	23.4	26.7	29.5	32.2
Weight (kg / m²) for 0.6 / 0.6	19.4	22.2	24.2	27.7	30.5	33.2

AS/NZS 2728 Paint Coating. AS 1397 Substrate System

Span Table: ULS Allowable Pressure (kPa)

PANEL	PANEL SPAN (m)							
THICKNESS (mm)	1.2m	1.5m	1.8m	2.0m	2.2m	2.4m	3.0m	3.6m
75	3.23	2.91	2.59	2.37	2.16	1.95	1.57	1.20
100	3.69	3.31	2.94	2.69	2.44	2.19	1.74	1.29
120	–	–	–	2.71	2.49	2.27	1.82	1.37
140	–	–	–	2.74	2.54	2.35	1.90	1.44
150	–	–	–	2.75	2.57	2.38	1.93	1.48
200	–	–	–	2.80	2.69	2.58	2.12	1.67

Span Table: SLS Allowable Pressure applied Externally (kPa)

PANEL	PANEL SPAN (m)							
THICKNESS (mm)	1.2m	1.5m	1.8m	2.0m	2.2m	2.4m	3.0m	3.6m
75	1.42	1.29	1.16	1.07	0.99	0.90	0.80	0.69
100	1.96	1.73	1.50	1.34	1.19	1.04	0.94	0.85
120	–	–	–	1.49	1.31	1.14	1.04	0.94
140	–	–	–	1.64	1.44	1.24	1.13	1.03
150	–	–	–	1.71	1.50	1.29	1.18	1.07
200	–	–	–	2.08	1.81	1.55	1.42	1.30

Span Table: SLS Allowable Pressure applied Internally (kPa)

PANEL	PANEL SPAN (m)							
THICKNESS (mm)	1.2m	1.5m	1.8m	2.0m	2.2m	2.4m	3.0m	3.6m
75	-2.39	-2.10	-1.82	-1.63	-1.43	-1.24	-1.13	-1.02
100	-2.65	-2.31	-1.98	-1.76	-1.54	-1.31	-1.25	-1.18
120	–	–	–	-1.93	-1.72	-1.52	-1.38	-1.24
140	–	–	–	-2.10	-1.91	-1.73	-1.51	-1.29
150	–	–	–	-2.18	-2.01	-1.83	-1.57	-1.32
200	–	–	–	-2.60	-2.48	-2.35	-1.90	-1.45

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.

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