Product Specification Sheet

FRL Systems

Volcore Panel FRL

HARD FACTS

Project:
Our Lady of Mercy

Builder:
Clarke Hopkins Clarke

Profile:
Flat

Skins:
Colorbond®
Steel Studio

Volcore Core - Internal & External Applications

ASKIN Volcore Panel is a non-combustible material under the provisions of the NCC 2022 C2D10(6)(g) , the Australian requirement for non-combustible external walls for Construction Types A and B.

Volcore Panel is an architectural 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				
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**
100	0.40	2.50	2.60	2.70
120	0.33	3.00	3.10	3.25
150	0.26	3.75	3.90	4.05

Declared Product R-Value is calculated in accordance with AS/NZS 4859.1:2018 as required for compliance to the National Construction Code 2022.

Thermal Performance Total System R-Values

TOTAL SYSTEM R-VALUES		TOTAL SYSTEM R-VALUES	
Heat Flow Out (Winter)	**Heat Flow In (Summer)**	**Heat Flow Out (Winter)**	**Heat Flow In (Summer)**
2.70	2.60	2.70	2.60
3.30	3.10	3.30	3.10
4.00	3.80	4.00	3.80

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

Features & Benefits

- Non-combustible material C2D10(6)(g)
- Lengths available up to 11.5m
- Warranties up to 15years
- FM Approved
- Fast to install
- Up to -/240/210 FRL
- Resilient material for a changing climate
- Thermally efficient (Product R-Values up to 3.75 (23 degrees))
- Horizontal and vertical applications

Volcore is a non-combustible insulation material tested to AS 1530.1 and ideal for commercial and industrial applications requiring type A & B construction.

Volcore Panel FRL has achieved high performance requirements of FM Approval for exterior wall systems.

Fire Performance

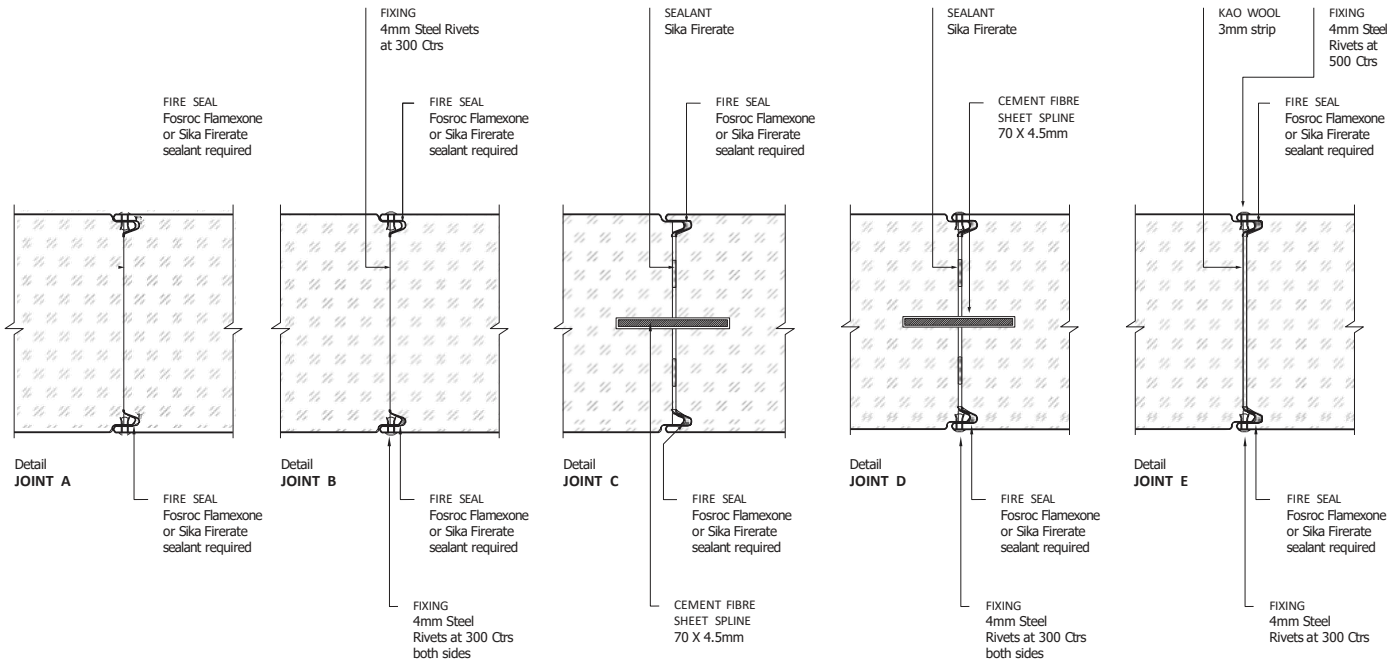
CRITERIA	PERFORMANCE
AS 1530.3: 1999 (Test for Flammability of materials)	Flame Spread 0 Smoke Dev. 1 Heat Evolved 0 Ignition 0
AS 5637.1: 2015 Compliance to C2D11 AS ISO 9705: 2003 (R 2016)	Group 1, SMOGRA =1.5 (m^2/ s^2 x 1000)
NCC compliant C2D10(6)(g)	Non-Combustible
Factory Mutual (FM Global)	FM Approved 4880 (Unlimited Height), 4881

ASKIN Volcore Panel FRL has met the performance requirements for the NCC Specification C2D2 Fire-resisting construction. Testing to the requirements of AS1530.4:2014, Volcore Panel FRL has met the requirements for Integrity and Insulation.

Fire Resistance Levels

CRITERIA	PERFORMANCE
AS 1530.4 (Report – FAS-190117 R3.0)	100mm Vertical wall -/60/60 Ref Detail Joint A
AS1530.4 (Report – FAS210329 R1.5)	150mm Vertical wall -/120/120 Ref Detail Joint B
AS1530.4 (Report – FAS210329 R1.5	150mm Vertical wall -/120/120 Ref Detail Joint C
AS1530.4 (Report - FAS210329 R1.5)	150mm Horizontal wall -/240/120 Ref Detail Joint D
AS1530.4 (Report – FAS210329 R1.5	150mm Ceiling Ceiling -/240/210 Ref Detail Joint E
AS1530.4 (Report – FAS210329 R1.5	Wall Penetrations up to -/180/180
AS1530.4:2014 (Report – FRT220221 R1.0)	Ceiling Penetrations up to -/240/240

JOINT DETAILS



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Weather Proofing

Volcore Panel FRL has met the performance requirements of weatherproofing by testing to AS 4284:2008, as required by the verification method NCC 2022 F3V1.

CRITERIA	PERFORMANCE
AS 4284:2008 Water Ingress Test	NCC Compliant to F3P1 and F1P4 as per F3V1

Acoustics

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

CRITERIA	RW	RW + CTR
*ASKIN Volcore Panel 100mm	29	–
*ASKIN Volcore Panel 120mm	30	–
*ASKIN Volcore Panel 150mm	31	–

*Values from third party professional opinion report

Physical Properties

CRITERIA	PERFORMANCE
Core Density	110kg/m³ +/- 10%
Recyclable	100% Recyclable
Workability	Good – Mineral Fibres. Handle with care.

Manufacturing Tolerances

CRITERIA	MANUFACTURED	TOLERANCE
Length	2,000mm to 13,500mm	+/- 5mm
Width	Standard as 1,000mm (1,200mm subject to MOQ)	+/- 2mm
Thicknesses	100mm up to maximum 150mm	+/- 2mm

Installation Tolerances

ASKIN Volcore Panel FRL comes in a range of vertical and horizontal wall applications and ceiling systems. Long panels or panels passing structural elements can be butt jointed with negative detail joiners or top hat sections. Please contact your ASKIN representative for more information.

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.

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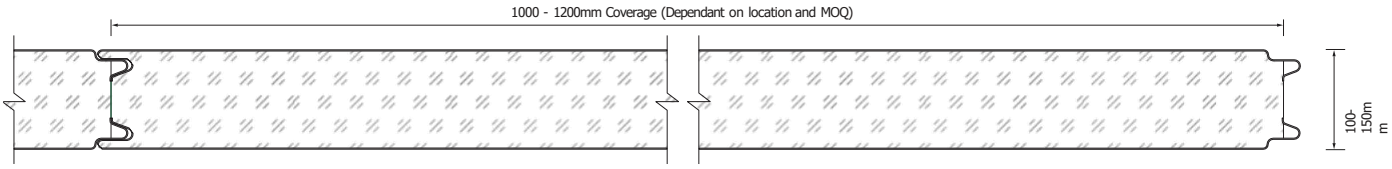
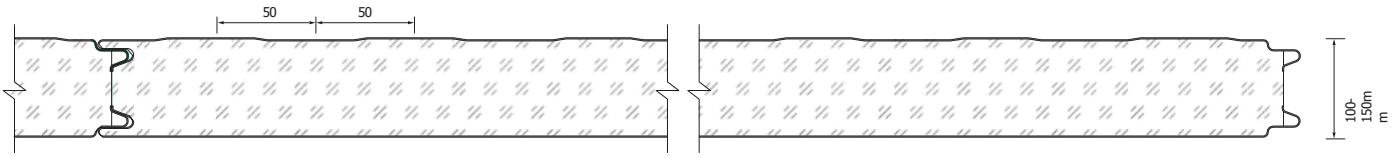
Internal & External Wall & Facade Profile Combination

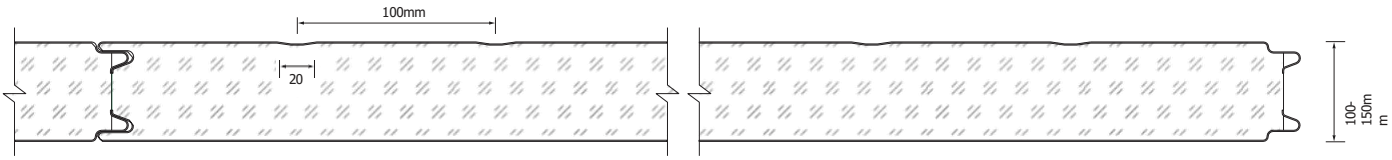
EXTERNAL PROFILES



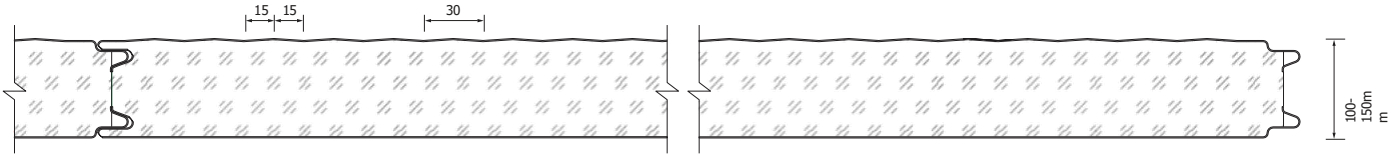
FLAT / Internal FLAT Profile



MESA / Internal FLAT Profile



RIB / Internal FLAT Profile



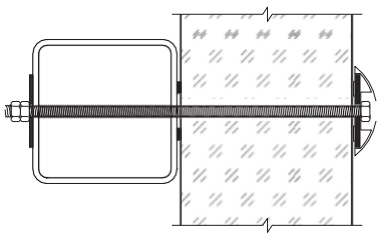
SILKLINE / Internal FLAT Profile

Profile Options

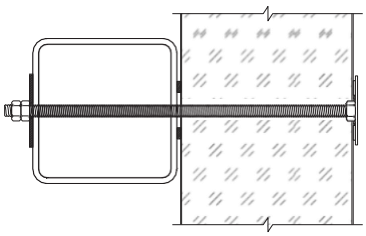
External Surface Profiles	FLAT	FLAT	FLAT	FLAT	MESA (50mm)	MESA (50mm)	RIB (100mm)	RIB (100mm)	RIB (100mm)	RIB (100mm)	Silkline	Silkline
Internal Surface Profiles	FLAT	MESA (50mm)	RIB (100mm)	Silkline	FLAT	Silkline	FLAT	MESA (50mm)	RIB (100mm)	Silkline	FLAT	RIB (100mm)

Note: Other profile combinations available dependant on application.

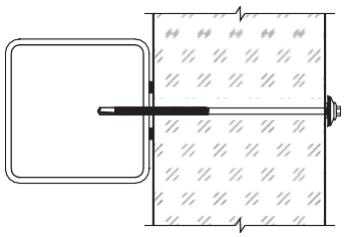
CONNECTION DETAILS



Threaded Rod Mushroom Head
Connection Detail - Section View



Threaded Rod Flat Plate
Connection Detail - Section View



14 Gauge Tek Screw
Connection Detail - Section View

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FRL Span Tables

VERTICAL WALL SYSTEM (PANEL JOINT A)			
Volcore Panel Thickness	100mm	120mm	150mm
Fire Resistant Level (FRL)	0/60/60	0/60/60	0/60/60
Max Span between structural support fixings	3m	3m	3m
Maximum Wall Height (Single Panel)	12m	12m	13.5m
Maximum Wall Height (Multiple Panels)	Unlimited	Unlimited	Unlimited
Maximum Wall Length	Unlimited	Unlimited	Unlimited
Perimeter rivet spacings (mm)	150	150	150

150mm VERTICAL WALL SYSTEM (PANEL JOINT B & PANEL JOINT C)			
Volcore Panel Thickness	150mm	150mm	150mm
Fire Resistant Level (FRL)	0/60/60	0/90/90	0/120/120
Max Span between structural support fixings	7.5m	6m	3m
Maximum Wall Height (Single Panel)	13.5m	13.5m	13.5m
Maximum Wall Height (Multiple Panels)	Unlimited	Unlimited	Unlimited
Maximum Wall Length	Unlimited	Unlimited	Unlimited
Perimeter rivet spacings (mm)	100	100	150

150mm HORIZONTAL WALL SYSTEM (PANEL JOINT D)		
Volcore Panel Thickness	150mm	150mm
Fire Resistant Level (FRL)	0/120/120	0/240/120
Max Span between structural support fixings	7.5m	3m
Maximum Wall Length (Single Panel)	13.5m	13.5m
Maximum Wall Length (Multiple Panels)	Unlimited	Unlimited
Maximum Wall Height	Unlimited	Unlimited
Perimeter rivet spacings (mm)	100	150

150mm CEILING SYSTEM (PANEL JOINT E)					
Volcore Panel Thickness	150mm	150mm	150mm	150mm	150mm
Fire Resistant Level (FRL)	0/30/30	0/60/60	0/90/90	0/120/120	0/240/210
Max Span between structural support fixings	7m	4.8m	3.9m	3.5m	3m
Maximum Ceiling Length (Single Panel)	13.5m	13.5m	13.5m	13.5m	13.5m
Maximum Ceiling Length (Multiple Panels)	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Maximum Ceiling Width	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Perimeter rivet spacings exposed side (mm)	75	75	100	100	150
Perimeter rivet spacings unexposed side (mm)	125	150	200	250	250

Notes:
Tables must be read in conjunction with relevant fire test reports and assessments for each specific system. Panels charts include direction of fire rating to be in both directions. Span charts are listing maximum lengths are compliant to fire ratings only, additional loads anticipated from wind loads or other may result in reductions to maximum allowable spans. Structure has not been included in the tables, however to achieve the FRL system a fire rated support structure is required. Structural support fixings are either 10mm galv. threaded rod or 14g Tek screw with flat 25/32mm washers 2 to 3 per panel.

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0.6mm (or 0.7mm) External Face Skin with 0.6mm Internal Face Skin

Standard Steel Specification

EXTERNAL SKIN MATERIAL – 0.6 or 0.7mm Thick G300S AM100 high performance steel with pre-painted superior polyester finish coat of 25 microns.

INTERNAL SKIN MATERIAL – 0.6mm Thick G300S Z275 pre-painted Colorbond® Intramax® steel with superior polyester finish coat of 25 microns. Colorbond® Intramax® steel is specifically designed for temperature controlled environments.

Panel Weight (m^2)

PANEL THICKNESS (mm)	100	120	150
Weight (kg / m^2) for 0.6 / 0.6	21.2	23.4	26.7
Weight (kg / m^2) for 0.7 / 0.6	22.0	24.2	27.5

AS/NZS 2728 Paint Coating. AS 1397 Substrate System

Span Table: ULS Allowable Pressure (kPa)

PANEL	PANEL SPAN (m)						
THICKNESS (mm)	2.0m	2.4m	3.0m	3.6m	4.0m	5.0m	6.0m
100	3.16	2.74	2.10	1.46	1.04	0.72	0.41
120	3.84	3.32	2.53	1.75	1.23	0.87	0.52
150	4.86	4.19	3.19	2.18	1.51	1.10	0.69

Span Table: SLS Allowable Pressure applied Externally (kPa)

PANEL	PANEL SPAN (m)						
THICKNESS (mm)	2.0m	2.4m	3.0m	3.6m	4.0m	5.0m	6.0m
100	1.50	1.35	1.12	0.88	0.73	0.53	0.33
120	1.55	1.40	1.17	0.94	0.78	0.56	0.34
150	1.63	1.48	1.25	1.02	0.87	0.61	0.36

Span Table: SLS Allowable Pressure applied Internally (kPa)

PANEL	PANEL SPAN (m)						
THICKNESS (mm)	2.0m	2.4m	3.0m	3.6m	4.0m	5.0m	6.0m
100	-1.23	-1.16	-1.04	-0.93	-0.86	-0.61	-0.36
120	-1.24	-1.17	-1.06	-0.95	-0.88	-0.69	-0.50
150	-1.25	-1.18	-1.08	-0.98	-0.91	-0.81	-0.71

Span Table: Wind Classification (AS 4055)

PANEL	PANEL SPAN (m)						
THICKNESS (mm)	2.0m	2.4m	3.0m	3.6m	4.0m	5.0m	6.0m
100	N4w	N3w	N3w	N3w	N2w	N1w	-
120	N4w	N3w	N3w	N3w	N2w	N2w	-
150	N2w	N3w	N3w	N3w	N3w	N2w	-

Notes:
1. Wind Classifications for ultimate strength and serviceability pressures from the net pressure coefficients given in AS 4055 Clause 3.2.
2. Panels are installed over minimum 3-supports (double-span).

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/150. Thermal deflection and required stress relief cuts should be considered for controlled environments by a suitably competent person. See ASKIN connection details for fire rated stress relief cuts.

Panel is assumed to be fixed from outside into a suitable structure inside. Fire rated walls and ceilings are non-load carrying and no permanent loads should be applied. Nylon Mushroom head with M10 HDG Nut, Structure-side M10 HDG Nut with 63mm dia. x 3mm steel washer. Maximum fixing spacing to be 875mm. For FM approval requirements, please refer to specific test certificates available for download on our website. 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).

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