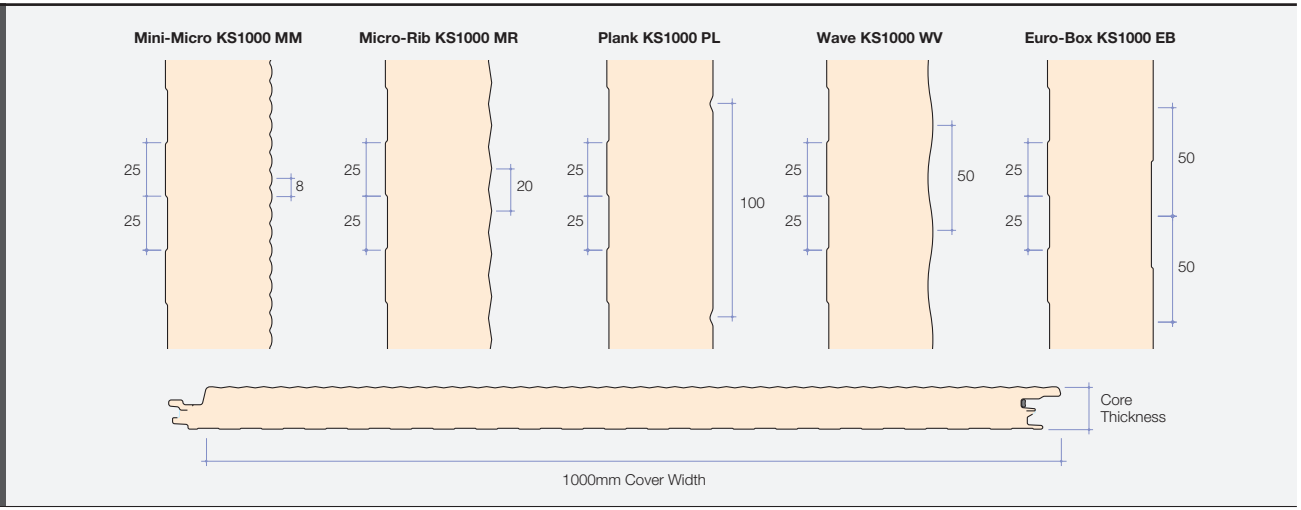
Insulated Roof & Wall Panels

Architectural Wall Panels Data Sheet

Kingspan
Insulated Panels

Product overview

Available in a range of locally manufactured profiles and four alternative colour palettes, Kingspan's wall portfolio combines aesthetics with performance. Specifically engineered joint details ensure an absolute weather tight building envelope. They are suitable across a broad number of applications and environments adding texture and depth to the building envelope.



Application

Kingspan architectural wall panel systems are suitable for most building applications as an external façade element in either horizontal or vertical applications. A choice of exterior and interior finishes caters for a range of colours and coatings in standard and high humidity environments.

Panel Properties and Thermal Performance

Core Thickness (mm)	50	80	100	140
R-value (m^2K/W)	2.65	4.15	5.15	7.15
U-value (W/m^2K)	0.38	0.24	0.19	0.14
Weight Kg/m^2 – 0.5mm Ext. Steel/0.4 Int. Steel	11.2	12.4	13.2	14.8

Available Lengths

Standard Lengths	2.0m – 13.7m
Longer Lengths*	13.7m – 16.1m
Shorter Lengths*	0.5m – 1.99m
Transported by Rail	12.0m
Export of Australia	11.8m

Notes: * Additional costs and transport restrictions will apply for non–standard lengths.

Insulation Core

The core of the KS1000AWP panel range is an environmentally sustainable with a ECOsafe and FIREsafe Polyisocyanurate(PIR) insulation which is not-deleterious with zero Ozone Depletion Potential. The rigid PIR insulation is closed cell and CFC/HCFC-free.

The auto adhesive properties of the core bond to the external and internal faces, providing strength and rigidity to the panels.

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Product Tolerances	AWP
Length	±5mm
Width	±2mm
Thickness	±2mm
Squareness	±3mm
Flatness	±2mm

Biological

Kingspan insulated wall panels are normally immune to attack from mould, fungi, mildew, and vermin. No urea formaldehyde is used is the construction, and the panels are not considered deleterious.

Environmental

Kingspan has undertaken a Life Cycle Assessment of the KS1000AWP, and have published an Environmental Product Declaration (EPD) on their performance. The results document that the Architectural Wall Panels are listed as a Type 3 Ecolabel with the Australian EPD Programme. The KS1000AWP is certified with Ecospecifer Global Green Tag as a Greentag Gold Plus with a GreenRate Level A rating.

FM Approval

Kingspan Architectural Wall (KS1000AWP) systems are available with FM Global FMRC 4880 Approved Unlimited Height and FM Global 4881 Approved Class 1 Exterior Wall System Certifications.

Fire Performance

Kingspan products have an extensive fire testing background, which covers both insurance and regulatory areas. When tested to AS/NZS 1530.3 for fire hazards, Kingspan panels achieved the fire hazard results as outlined in the below table.

Ignitability Index	**0**
Spread of Flame Index (SFI)	0
Heat Evolved Index	0
Smoke Development Index (SDI)	2

The Kingspan Architectural Wall Systems meet the requirements of the BCA Specification C1.10a as a Group 2 product, when tested to ISO9705.

When tested to AS1530.4 Kingspan panels achieved the following Fire Resistance Level (FRL) results:

Product	**Thickness (mm)**	**Wall**
KS1000AWP	80mm	-/60/28
KS1000AWP	100mm	-/132/28

Summary of FRL performance of Kingspan Products: Structural Adequacy/ Integrity/Insulation

It must be noted that standard Kingspan Insulation details need to be supplemented by the detailing (especially for panel joints), as listed in the firewall model specifications series which can be provided on request. This is essential for achieving the above fire resistance levels.

Acoustic Performance

For sound transmission reduction, Kingspan panels typically have a single figure weighted sound reduction index (SRI) of Rw = 24dB. For specific acoustic solutions contact Kingspan Technical Services.

Frequency (Hz)	**SRI (dB)**
63	13
125	17
250	21
500	26
1000	26
2000	26
4000	42
8000	52
Rw	24

Quality & Durability

Kingspan KS1000AWP panels are manufactured from the highest quality materials, using state of the art production equipment to rigorous quality standards, ensuring long-term reliability and service life. The manufacturing plant where the products are made is fully compliant with ISO 9001(Quality), ISO 14001(Environmental) and OHSAS 18001 (Health and Safety).

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Cyclonic Applications

A significant part of the Australian coastline is deemed to be in a cyclonic region. As a result of this Kingspan have carried testing out on the KS1000AWP in accordance with the requirements of the BCA B1.2 for low-high-low performance requirements.
For further details please contact Kingspan Technical Services for project specific details.

Seals

All panel joints have a factory applied weather seal fitted into the panel groove to automatically seal the joint between panels.

Site Installation Procedure

Site assembly instructions are available from Kingspan Technical Services. Kingspan recommend that the appointed contractor attend the appropriate product installationtraining course prior to installation, which is provided by Kingspan Field Services.

Materials

Exterior Weather Sheet

- Substrate to be minimum 0.5mm thick Zincalume AM100/ AM150 coated steel to AS1397.

Internal Liner Sheet

Substrate to be minimum 0.4mm thick steel coated steel to AS1397.

- CleanSafe15 – The coating has been developed for use as the internal lining of insulated panels. Standard colour is “bright White” with an easily cleaned surface.
- Other finishes are available on a project specific bases.

Accreditations

Certified System Quality ISO 9001 SAI GLOBAL

Certified System Environment ISO 14001 SAI GLOBAL

Certified System Health & Safety OHSAS 18001 SAI GLOBAL

FM APPROVED

AUSTRALASIA EPD® y S-P-00847

FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia

green building council australia MEMBER 2016-2017

Bendigo TAFE

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Spans

Span capability of composite systems can depend on a number of external factors. The following table is based on light colour selections. For darker colours contact Kingspan Technical Services.

NOTES:

1. Values have been calculated using the methods described in EN14509:2006 titled "Self-supporting double skin metal faced insulating panels(light coloured)- Factory made product specifications", Taking imposed loads (excluding snow), temperature and creep into account.
2. The serviceability limit state is defined by local buckling, bending or crushing failure at an intermediate support or the exceedance of a specified deflection limit.
3. A deflection limit of L/100 was used.
4. The allowable steelwork tolerance between bearing planes of adjacent supports is +/- 5mm.
5. The actual wind suction load resisted by the panel is dependant on the number of fasteners used and the support width as well as the fastener material. This table is based on a support width of 60mm.
6. The fastener calculation should be carried out in accordance with the appropriate standards. For further advice please contact Kingspan Technical Services.
7. Load span tables for the panel specifications not shown are available from Kingspan Technical Services.

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Structural Load/Span Table Ext Sheet: .05mm Steel/Inner Sheet 0.4mm

Single Span Condition

Panel Thickness mm	Load Type	Span L in metres										
		2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
		Uniformly distributed loads kN/m²										
		Ultimate Limit State										
50mm	Pressure	4.45	3.56	2.97	2.42							
	Suction	3.74	2.39	1.66	1.22							
80mm	Pressure	7.04	5.63	4.69	3.68	2.82	2.23	1.80				
	Suction	6.03	3.86	2.68	1.97	1.51	1.19	0.96				
100mm	Pressure	8.70	6.96	5.80	4.46	3.42	2.70	2.19	1.81	1.52	1.29	
	Suction	7.59	4.86	3.37	2.48	1.90	1.50	1.12	1.00	0.84	0.72	
140mm	Pressure	8.84	7.07	5.89	5.05	4.41	3.49	2.83	2.34	1.96	1.67	1.44
	Suction	8.84	6.85	4.76	3.49	2.68	2.11	1.71	1.42	1.19	1.01	0.87
		Serviceability Limit State										
50mm	Pressure	3.80	2.23	1.49	0.99							
	Suction	3.26	1.90	1.15	0.65							
80mm	Pressure	7.10	4.69	3.22	2.27	1.64	1.22	0.92				
	Suction	6.50	4.19	2.79	1.92	1.35	0.96	0.70				
100mm	Pressure	8.97	6.15	4.36	3.17	2.35	1.78	1.37	1.07	0.85	0.68	
	Suction	8.37	5.63	3.91	2.78	2.02	1.49	1.12	0.85	0.66	0.50	
140mm	Pressure	11.40	8.24	6.14	4.68	3.62	2.85	2.27	1.82	1.48	1.22	1.01
	Suction	10.87	7.75	5.70	4.28	3.27	2.53	1.98	1.57	1.26	1.01	0.82

Double Span Condition

Panel Thickness mm	Load Type	Span L in metres										
		2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
		Uniformly distributed loads kN/m²										
		Ultimate Limit State										
50mm	Pressure	4.45	3.56	2.97	2.42	1.86						
	Suction	3.74	2.39	1.66	1.22	0.94						
80mm	Pressure	7.04	5.63	4.69	3.68	2.82	2.23	1.80	1.49			
	Suction	6.03	3.86	2.68	1.97	1.51	1.19	0.96	0.80			
100mm	Pressure	8.70	6.96	5.80	4.46	3.42	2.70	2.19	1.81	1.52		
	Suction	7.59	4.86	3.37	2.48	1.90	1.50	1.21	1.00	0.84		
140mm	Pressure	8.84	7.07	5.89	5.05	4.41	3.49	2.83	2.34	1.96	1.67	1.44
	Suction	8.84	6.85	4.76	3.49	2.68	2.11	1.71	1.42	1.19	1.01	0.87
		Serviceability Limit State										
50mm	Pressure	3.41	1.91	1.22	0.85	0.63						
	Suction	3.85	2.80	1.67	1.10	0.78						
80mm	Pressure	5.77	3.58	2.19	1.48	1.07	0.81	0.64	0.51			
	Suction	5.47	4.31	3.30	2.16	1.48	1.07	0.81	0.63			
100mm	Pressure	6.31	4.94	3.02	2.00	1.42	1.06	0.83	0.66	0.54		
	Suction	5.98	4.69	3.87	3.00	2.07	1.47	1.09	0.84	0.67		
140mm	Pressure	6.15	4.80	3.92	3.32	2.30	1.67	1.27	1.00	0.81	0.67	0.56
	Suction	5.80	4.52	3.70	3.13	2.72	2.41	1.93	1.45	1.12	0.90	0.73

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