



Kingspan Architectural Wall Panel Product Data Sheet

KS1000 AWP
Architectural Wall Panel



Kingspan Architectural Wall Panel

KS1000 AWP Product Data Sheet

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 a weather tight and airtight building envelope. They are suitable across a broad number of applications and environments adding strength, thermal and fire performance, as well as texture and depth to the building envelope.

Applications

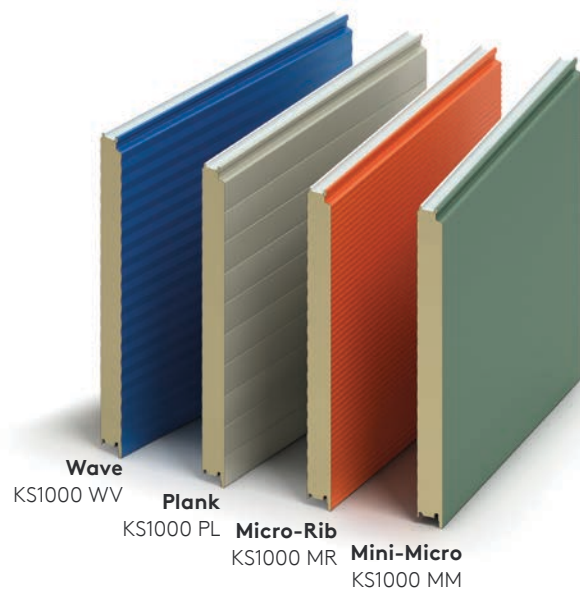
Kingspan architectural wall panel systems are suitable as an external façade element in either horizontal or vertical applications. The steel exterior and interior lining is available in a range of coatings and colours for standard, coastal and high humidity environments.

Manufacture

Panels are manufactured in a Kingspan-owned facility in Sydney, Australia. Lead times are typically 5-6 weeks for stocked coatings and colours. Non stocked coatings/colours require extra lead time.

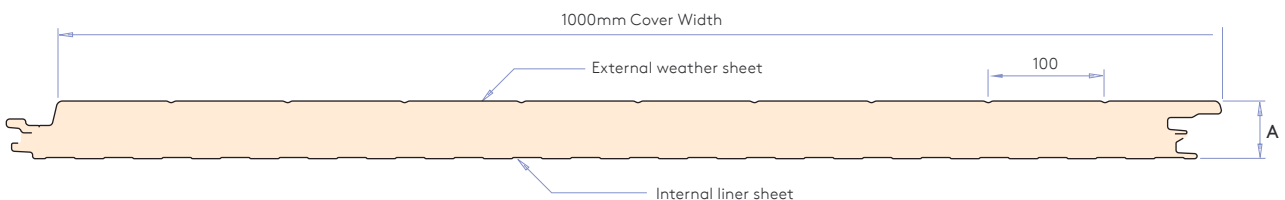
Available Lengths

Standard lengths are from 2m to 11.8m. These panels cannot be end lapped. Where joints are required vertical top hats are available.



Panel Performance

A - Core Thickness (mm)	50	80	100	140
R Value (m ² .K/W)	2.65	4.15	5.15	7.15
Weight kg/m ² 0.5/0.4 steel	11.20	12.40	13.20	14.80



Panel shown is KS1000 PL (Plank)

NZBC Compliance

The KS1000 AWP panel has been used around New Zealand, on many building types for in excess of 15 years.

When designed, used, installed and maintained in accordance with Kingspan standard details, the KS1000 AWP panel is compliant with the following clauses on the NZBC:

- B1 Structure
- B2 Durability
- C Fire
- E2 External Water
- H1 Energy Efficiency



Materials

Exterior Weather Sheet:

- 0.5mm thick Zinalume G300S AZ150 coated steel to AS1397
- Colours as per the Kingspan Australian colour guide available in hard copy and on the website

Insulation Core:

- Polyisocyanurate (PIR), with zero Ozone Depletion Potential (Zero ODP).
- PIR foam is a thermosetting material. It does not melt, flow or drip when exposed to fire. It will form a strong char that helps protect the foam core and prevent flame spread within the panels.

Internal Liner Sheet:

- 0.4mm thick Zinalume G300S AZ100 coated steel to AS1397
- Rib Profile
- Colour: Standard White Liner
 - other colours available on extended lead time and price
 - AQUAsafe (white) stocked in limited quantities for high humidity environments

Ancillaries:

Kingspan also provides preformed corners, top hats, butyl tapes, panel bearers, and other ancillary items.

Acoustic Performance

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

Frequency (Hz)	125	250	500	1000	2000	4000	R _w
SRI (dB)	17	21	26	26	26	42	24

Fire Performance

The KS1000 AWP panel has been rigorously tested to both NZ and international building standards and the standards expected of the insurance industry.

Internal Surface Finish (NZBC C.4.17.1)

Standard Details Group 2S	Firewall Details Group 1S
------------------------------	------------------------------

External Radiation (NZBC C.5.8)

Total Heat THRR	Peak Heat PHRR	>1m from boundary	<1m from boundary
5 MJ/m ²	24 kW/m ²	✓	✓

Foam Plastic Core (NZBC C.4.17.2)

Core meets the requirements of AS1366.2

Firewall

Various tested Firewall solutions are available. All of these solutions require a specific construction to match the tested performance. Contact Kingspan with your specific requirements and we will provide an appropriate solution.

Insurance

Kingspan KS1000 AWP panels are approved* by FM Global to the following Approval Standards:

- **FM4880 - Class 1** Internal wall and ceiling panels without height restriction
- **FM4881 - Class 1** External Wall Panel System without height restriction



*1000mm cover width only.

Sprinkler Code NZS 4541:2013

The Sprinkler Standard NZS 4541:2013 contains levels of sprinkler protection required for buildings constructed with "Approved" and "Not Approved" panels - refer to section 213 and Appendix K.

Kingspan KS1000 AWP PIR-cored panels are classed as "Approved" as they have FM Global approval.



Product Selection Assistance

Sales representatives are available nationwide to answer queries on product options, assist with detailing, spans, colour swatches and other queries. They can also provide early stage budget estimates and co-ordinate the provision of project specifications.

Technical Assistance

Our technical team is available to provide specific advice on panel spans, product specifications, standard and bespoke detailing, panel optimisation, fire wall options, project specific acoustic solutions, panel guarantees, thermal condensation risk calculation along with general building science cladding advice.

Kingspan Technical Services can provide 'side by side' assistance with regard to project detailing, attending design meetings, providing training and undertaking site visits when required.

Guarantees

Kingspan will provide product guarantees on an individual project basis.

Guarantees are typically up to 15 years in a non marine/ geothermal environment. All guarantees are subject to a maintenance regime. Specialist coatings are available for marine and other more corrosive areas.

Environmental

Kingspan has undertaken a Life Cycle assessment of our wall panels and have published an Environmental Product Declaration (EPD) on their performance. The result shows that the Australian made panels are consistent with the Green Guide A+ rating achieved by the UK sourced materials.



Biological

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

Quality and Durability

KS1000AWP architectural panels are manufactured to ISO 9001 standards from the highest quality materials, using state of the art production equipment to rigorous quality control standards, ensuring long term reliability and service life.

Delivery & Packing

Standard Packing

Protective film is applied to the external face.

Kingspan wall panels are stacked horizontally.

The number of panels in each pack depends on panel thickness.

Delivery

All deliveries (unless indicated otherwise) are by road transport to project site by flat bed truck for off-loading by crane or fork hoist.

Off-loading is the responsibility of the installer.

Handling guidelines are available from Kingspan Technical Services.

Site Installation Procedure

A site assembly instruction brochure is available from Kingspan Technical Services.



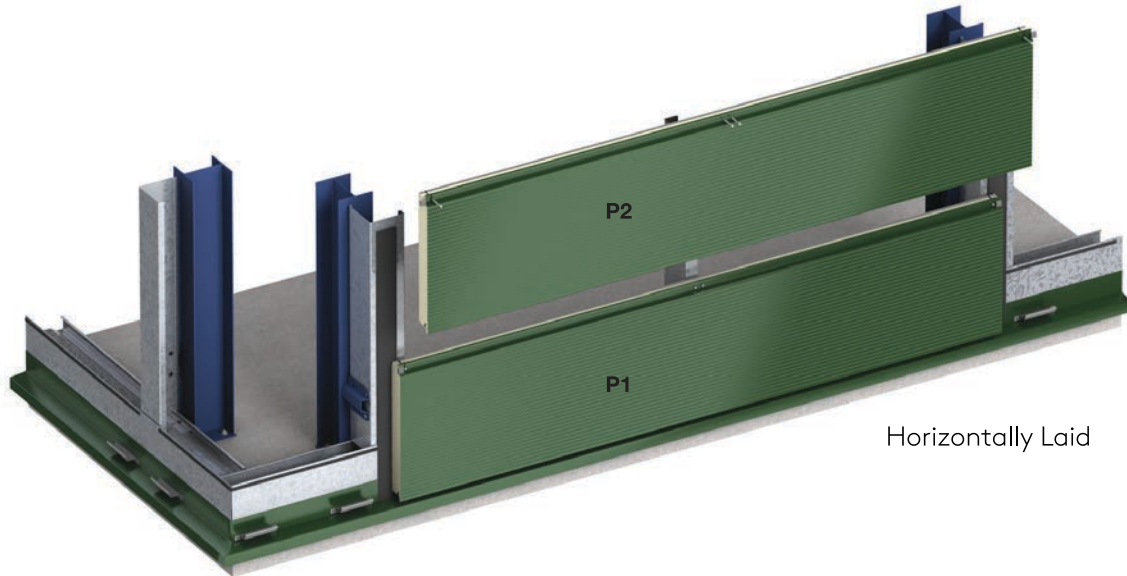
Spotlight Retail Store, Christchurch

New build • Wall: KS1000 AWP • Roof: KS1000 RW



Kingspan Architectural Wall Panel

KS1000 AWP Installation



Horizontally Laid



Vertically Laid

Kingspan Architectural Wall Panel

KS1000 AWP Span Tables

Wall Span Tables

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

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 (ULS)												
50	Pressure	4.45	3.56	2.97	2.42							
	Suction	3.74	2.39	1.66	1.22							
80	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				
100	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	1.21	1.00	0.84	0.72	
140	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 (SLS)												
50	Pressure	3.80	2.32	1.49	0.99							
	Suction	3.26	1.90	1.15	0.65							
80	Pressure	7.04	4.69	3.22	2.27	1.64	1.22	0.92				
	Suction	6.03	3.86	2.68	1.92	1.35	0.96	0.70				
100	Pressure	8.70	6.96	4.36	3.17	2.35	1.78	1.37	1.07	0.85	0.68	
	Suction	7.59	4.86	3.37	2.48	1.90	1.50	1.12	0.85	0.66	0.50	
140	Pressure	8.84	7.07	5.89	5.05	3.62	2.85	2.27	1.82	1.48	1.22	1.01
	Suction	8.84	6.85	3.49	3.49	2.68	2.11	1.71	1.42	1.19	1.01	0.87

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	5.9	
Uniformly distributed loads kN/m²											
Ultimate Limit State (ULS)											
50	Pressure	4.45	3.56	2.97	2.42	1.86					
	Suction	3.74	2.36	1.66	1.22	0.94					
80	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		
100	Pressure	8.70	6.96	5.80	4.46	3.42	2.70	2.19	1.81	1.52	Exceeds maximum container length (11.8m)
	Suction	7.59	4.86	3.37	2.48	1.90	1.50	1.21	1.00	0.84	
140	Pressure	8.84	7.07	5.89	5.05	4.41	3.49	2.83	2.34	1.96	
	Suction	8.84	6.85	4.76	3.49	2.68	2.11	1.71	1.42	1.19	
Serviceability Limit State (SLS)											
50	Pressure	3.41	1.91	1.22	0.85	0.63					
	Suction	3.74	2.39	1.66	1.10	0.78					
80	Pressure	5.77	3.58	2.19	1.48	1.07	0.81	0.64	0.51		Exceeds maximum container length (11.8m)
	Suction	5.47	3.86	2.68	1.97	1.48	1.07	0.81	0.63		
100	Pressure	6.31	4.94	3.02	2.00	1.42	1.06	0.83	0.66	0.54	
	Suction	5.98	4.69	3.37	2.48	1.90	1.50	0.09	0.84	0.67	
140	Pressure	6.15	4.80	3.92	3.32	2.30	1.67	1.27	1.00	0.81	
	Suction	5.80	4.52	3.70	3.13	2.68	2.11	1.71	1.42	1.12	

Notes:

- Values have been calculated in accordance with AS/NZS 1170.0, and also take into account the methods described in EN 14509:2006 titled 'Self-supporting double skin metal face insulating panels (Medium coloured) - Factory made products - Specifications', taking imposed loads and temperature into account.
- 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.
- A deflection limit of L/100 was used.
- The allowable steelwork tolerance between bearing panels of adjacent supports is +/- 5mm or L/600, whichever is the less.
- 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.
- The fastener calculation should be carried out in accordance with the appropriate standards. For further advice please contact Kingspan Technical Services.
- Load span tables for the panel specifications not shown are available from Kingspan Technical Services.

Kingspan Architectural Wall Panel

KS1000 AWP Case Studies

Yealand Estate Winery, Blenheim

New build • Wall: KS1000 AWP • Roof: KS1000 CR



Central Police Station, Christchurch

New build • Wall: KS1000 AWP • Roof: KS1000 RW



Fisher & Paykel, Auckland

New build • Wall: KS1000 AWP



Ecosciences, Australia

New build • Wall: KS1000 AWP • Roof: KS1000 RW



Burger King, Christchurch

New build • Wall: KS1000 AWP



Katsumata Centre, Geelong, Australia

New build • Wall: KS1000 AWP



New Zealand

Kingspan Limited

97 Montreal Street, Christchurch 8023

Tel: 0800 12 12 80 | +64 (0) 3 260 5530

info@kingspanpanels.co.nz

www.kingspanpanels.co.nz

For the product offering in other markets please contact your local sales representative or visit www.kingspanpanels.com

Care has been taken to ensure that the contents of this publication are accurate, but Kingspan Limited and its subsidiary companies do not accept responsibility for errors or for information that is found to be misleading. Suggestions for, or description of, the end use or application of products or methods of working are for information only and Kingspan Limited and its subsidiaries accept no liability in respect thereof.

Q4 2020

