Architectural Wall Panel
Product Data Sheet

Kingspan®

Product Data Sheet
Architectural Wall Panel

Available in a range of locally manufactured profiles, 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.

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.

Environmental
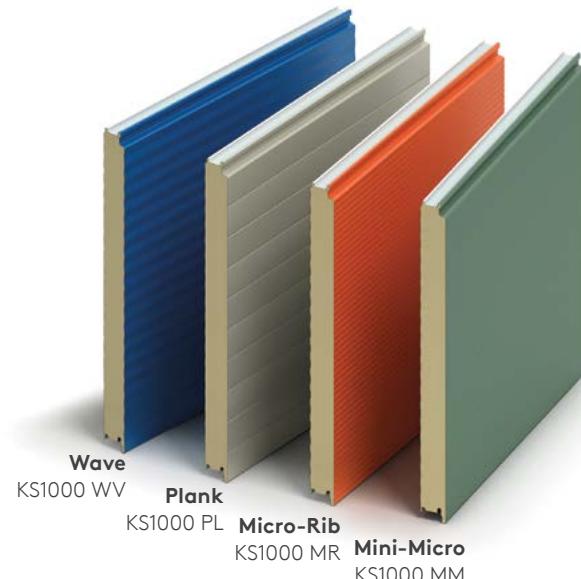
Kingspan Insulated Panels manufacturing facility in Australia sources 100% certified renewable electricity and procures steel that is made from 15-25% recycled content.

100% We buy GreenPower®

AUSTRALASIA EPD®
ENVIRONMENTAL PRODUCT DECLARATION
S-P-00847
Certified name:
Architectural Wall Panel

Architectural Wall Panels have an Environmental Product Declaration in accordance with the requirements of ISO 14025 and EN 15804: 2012 + A2: 2019 for 50mm to 140mm thicknesses.

Architectural Wall Panels are certified with a Global GreenTag GreenRate™ Level A certification to Version 4.0 of the Global GreenTag International Product Certification Standard, under the certified name 'Kingspan Wall Panels'.

A GreenRate Level A certification is the highest-ranking level in GreenTag's GreenRate program. As a result, Architectural Wall Panels receive the maximum recognition by the New Zealand Green Building Council's Green Star® building rating tools scheme.

GLOBAL GREEN TAG CERTIFIED
CERT TM
GreenRate | Level A
trust brands™

NZGBC
TE KAUNIHERA HANGANGA TAUTAIAO
Member 2023–2024

Wave KS1000 WV
Plank KS1000 PL
Micro-Rib KS1000 MR
Mini-Micro KS1000 MM

Cover Widths

Architectural Wall Panels are available in a choice of standard and non-standard cover widths.

Standard cover width	1000 mm
Non-standard cover width	900 mm

The table below provides clarification as to the availability of specific Architectural Wall Panel profiles depending on panel cover width.

Architectural Wall Panel Profile	Panel Cover Width (mm)	
	900	1000
Micro-Rib (MR)	✓	✓
Mini-Micro (MM)	✓	✓
Plank (PL)	—	✓
Wave (WV)	✓	✓

Fixing Method

Secret-fix.
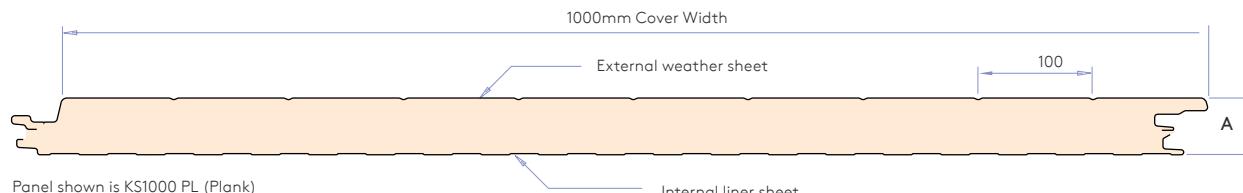
Panel Performance

A - Core Thickness (mm)	50	80	100	140
Material R value (m².K/W)*	2.34	3.84	4.82	6.76
Installed R value (m².K/W)**	2.46	3.96	4.94	6.88
Weight kg/m² 0.55/0.4 steel ***	10.5	11.8	12.0	13.7

* Material R value = the aged thermal value @ 15°C, as independently tested and calculated to AS/NZS4859 parts 1&2: 2018. Note this is for the product only before installation.

** Installed R value = the thermal resistance of the installed product and includes air films as per NZS 4214

*** other steel thicknesses both external and internal are available and could alter the weight

1000mm Cover Width

External weather sheet

100

A

Internal liner sheet

Panel shown is KS1000 PL (Plank)

Materials

Exterior Weather Sheet:

- Zincalume G300S AM100 (standard environment) or AM150 (high performance environment) coated steel in accordance with AS1397:2021

- Paint coating in accordance with AS/NZS 2728:2013

- Colours as per the Kingspan Colour brochure available on the website. Steel colour swatches are available on request.

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:

- Zincalume G300S AM100 (standard environment) coated steel in accordance with AS1397:2021

- Paint coating in accordance with AS/NZS 2728:2013

- 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.

Taiora QE II Recreation and Sports Centre, Christchurch

New build ● Wall: Architectural Wall Panel **● Roof:** KS1000RW Trapezoidal Roof Panel, KS1100RL Roofliner Panel with Membrane

Acoustic Performance

Architectural Wall Panels have a single figure weighted sound reduction index of R_w = 24–26dB*. Results are based on panels with a similar profile and core material.

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	Rw
SRI (dB)	20	18	20	24	20	29	39	46	**24**

* Please contact Technical Services for project specific support and product specification where Rw = 26dB is required.

Masterspec

Masterspec CBI 4257KA.

masterspec partner

The Architectural Wall Panel is listed in Masterspec's product database and online specifications tool.

NZBC Compliance

The Architectural Wall Panel has been used around New Zealand, on many building types for in excess of 15 years.

CodeMark »»»
CM20114

Architectural Wall Panels hold a CodeMark Certificate of Conformity stating the provisions of the Building Regulations (New Zealand) the product conforms to.

CodeMark Certificate of Conformity is certified under the name Kingspan Insulated Panels Architectural Wall Panels (AWP) and Evolution (EVO).
Certificate number: CM20114.

For further details please contact the Kingspan Technical Service Department or alternatively refer to the MBiE - Product Certificate Register and search for 'Kingspan KS1000AWP'.

When designed, used, installed and maintained in accordance with Kingspan standard details, the Architectural Wall Panel is compliant with the following clauses on the NZBC:

B1 Structure — B1.3.1; B1.3.2; B1.3.3(a, f, g, h, j); B1.3.4

B2 Durability — B2.3.1(b)

C3 Fire Affecting Areas Beyond the Fire Source — C3.4(a); C3.5; C3.7

E2 External Moisture — (contributes to) E2.3.2; E2.3.7

E3 Internal Moisture — E3.3.5

F2 Hazardous Building Materials — F2.3.1

H1 Energy Efficiency — (contributes to) H1.3.1

Codemark Certification demonstrates compliance to the NZBC equivalent of an Acceptable Solution. Some specialist buildings may fall partially or wholly outside of the scope of the Codemark Certificate, should this occur then please contact Kingspan Technical for assistance in demonstrating NZBC compliance via an Alternative Solution.

Comvita, Bay of Plenty

New build ● Wall: Architectural Wall Panel ● **Roof:** KS1000RW Trapezoidal Roof Panel

Fire Performance

The Architectural Wall 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) (to ISO 9705)	
Standard Details	
Group 2S	

External Radiation (NZBC C.5.8) (to ISO 5660-1)	
Building Code Document	Cladding Material Type
NZBC Acceptable Solutions C/AS1 Table 5.1	< 100kW/m² and < 25 MJ/m²
NZBC Acceptable Solutions C/AS2 Table C1.3	Type A

Foam Plastic Core (NZBC C.4.17.2)
Core meets the requirements of AS 1366.2

Insurance

Kingspan Architectural Wall Panel panels are approved by FM Global to the following Approval Standards:

■ **FM4880 - Class 1** Internal wall and ceiling panels without height restriction (50, 80, 100 and 140 mm thicknesses and 1000 mm widths only)
(certified name: KS1000AWP)

◇ **FM APPROVED**

■ **FM4881 - Class 1** External Wall Panel System without height restriction (50, 80, 100 and 140 mm thicknesses and 1000 mm widths only)
(certified name: KS1000AWP)

Insurer approvals are large scale testing regimes that provide objective third party testing, which is underpinned by quarterly, half-yearly and yearly factory surveillance audits (depending on the region) to verify compliance. Insurer approvals are subject to panel thickness, width, orientation, method of assembly, steel coating and manufacturing facility. Please contact Kingspan for project specific details.

Sprinkler Code NZS 4541:2020

The Sprinkler Standard NZS 4541:2020 contains levels of sprinkler protection required for buildings constructed with "Approved" and "Not Approved" panels - refer to clause 2.12 and Appendix K.

Kingspan's PIR-cored Architectural Wall 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.

Product Tolerances

Length < 3 m	±5 mm
Length > 3 m	±10 mm
Cover Width	±2 mm
Thickness < 100 mm	±2 mm
Thickness > 100 mm	±2%
Squareness	≤0.6% of width
Flatness*	
L = 200 mm	0.6 mm
L = 400 mm	1.0 mm
L > 700 mm	1.5 mm
Bowing	2 mm per metre length up to maximum 20 mm

*Flatness shall be measured at least 100 mm from the edge of panel and 200 mm from the end of the panel.

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

Architectural Wall Panels are manufactured from the highest quality materials using state-of-the-art production equipment to rigorous quality control standards, complying with ISO 9001 standard, ensuring long-term reliability and service life. The panels are also being manufactured under Environmental Management System Certification ISO 14001 and Occupational Health and Safety Certification ISO 45001.

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.
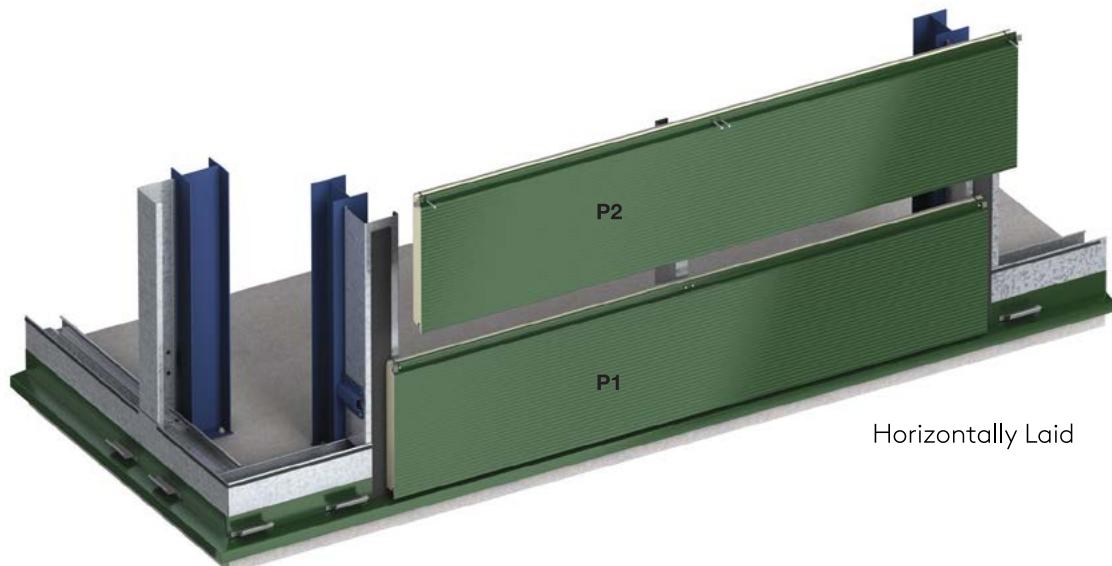
Makino Aquatic Centre, Feilding

New build ● Wall: Architectural Wall Panel ● Roof: KS1000RW Trapezoidal Roof Panel

Installation
Architectural Wall Panel

Horizontally Laid

Vertically Laid

Span Tables
Architectural Wall Panel

Notes

1. 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 (Light coloured) - Factory made products - 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. Deflection limit of L/100 was used.

4. The allowable steelwork tolerance between bearing panels of adjacent supports is +/- 5mm or L/600, whichever is the least.

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. For FM approved applications, a maximum span of 2000mm applies.

8. Load span tables for other panel specifications not shown are available from Kingspan Technical Services.

9. The effects of temperature have been included based external surface temperatures of +65degC Summer -5degC Winter and Internal Temperatures of 25degC Summer +18degC Winter. Buildings held at lower internal temperatures will require specific calculations.

10. Panel cantilevers require specific calculations.

11. Penetrations through the panels greater than 300mm dia will require additional structural support.

Spotlight Retail Store, Christchurch

New build ● Wall: Architectural Wall Panel ● **Roof:** KS1000 RW

Span Tables — Wall Application
Single Span Condition

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.

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

Please refer to notes on page 7.

Span Tables — Wall Application
Double Span Condition

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.

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					Exceeds maximum container length (11.8m)
	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	
	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					Exceeds maximum container length (11.8m)
	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		
	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	

Please refer to notes on page 7.

Contact Details

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