

Insulated Roof & Wall Panels

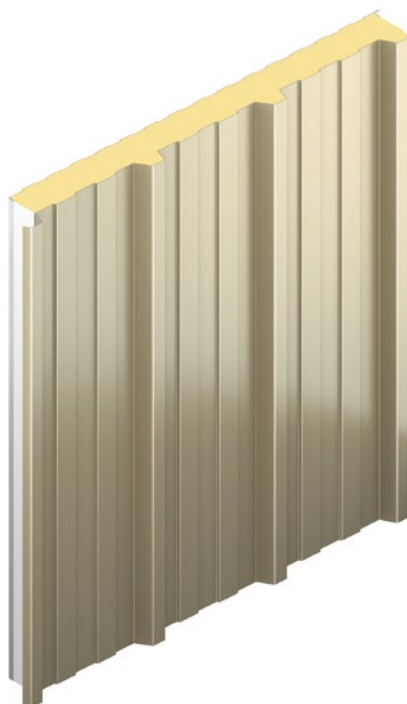
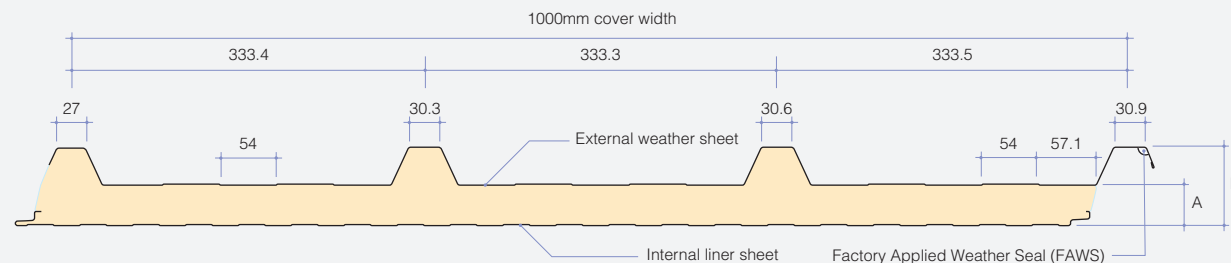
Trapezoidal Wall Panel (KS1000 RW) Data Sheet



Product overview

The Trapezoidal wall panel (KS1000 RW) is a through fixed system which can be installed vertically or horizontally depending on the desired aesthetics.

FAWS (Factory Applied Weather Seal) is now standard on this product.



Application

The Kingspan Trapezoidal wall panel system is suitable for most new build and refurbishment 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 finishes in standard and high humidity environments.

Panel Properties and Thermal Performance

Core Thickness (mm)	40	60	70	100
Overall dimension (mm)	75	95	105	135
R Value (m ² K/W)	2.35	3.37	3.88	5.36
U Value (W/m ² K)	0.43	0.30	0.26	0.19
Weight Kg/m ² – 0.5/0.4 Steel	9.9	10.7	11.1	12.3
External 0.5 mm/ Inner sheet 0.4mm Steel				

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 KS1000RW Wall 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	RW		
	<6m	6-12m	>12m
Length	±4mm	±6mm	±8mm
Width	±3mm	±3mm	±3mm
Thickness	<50mm	50-100m	100m+
Thickness	±2mm	+3mm/-2mm	±3mm
Squareness	±0.5%mm of width	±0.5%mm of width	±0.5%mm of width

Biological

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

Environmental

Kingspan has undertaken a Life Cycle Assessment of the KS1000RW Wall panels, and have published an Environmental Product Declaration (EPD) on their performance. The results document that the KS1000RW Wall insulated panels are listed as a Type 3 Ecolabel with the Australian EPD Programme. The KS1000RW is certified with Ecospecifer Global Green Tag as a Greentag Gold Plus with a GreenRate Level A rating.

FM Approval

Kingspan KS1000RW Wall 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

Panel Cut Backs

Minimum Cut Back	50mm
End Lap Horizontally Laid	75mm
End Lap Vertically Laid	75mm
Maximum Cut Back*	200mm

Note* It's important to note that the cut core and steel will not be removed and will have to be carried out on site by the installer for cut backs larger than 150mm.

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

The Kingspan Trapezoidal wall system (KS1000RW Wall) meets 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
KS1000RW	40mm	-/144/18
KS1000RW	100mm	-/241/43

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.

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Quality & Durability

Kingspan KS1000RW Wall 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 product is made is fully compliant with ISO 9001(Quality), ISO 14001(Environmental) and OHSAS 18001 (Health and Safety).

CodeMark Certification

The KS1000RW Wall is CodeMark certified to comply with various sections of the Building Code of Australia. For further details please refer to the CodeMark Certificate which can be found on the ABCB website. Please see: www.abcb.gov.au/Product-Certification/CodeMark-Certification-Scheme.

Cyclonic Applications

A significant part of the Australian coastline is deemed to be in cyclonic regions. As a result of this, Kingspan have carried out testing on the KS1000RW 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.

Site Installation Procedure

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

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Materials

Exterior Weather Sheet

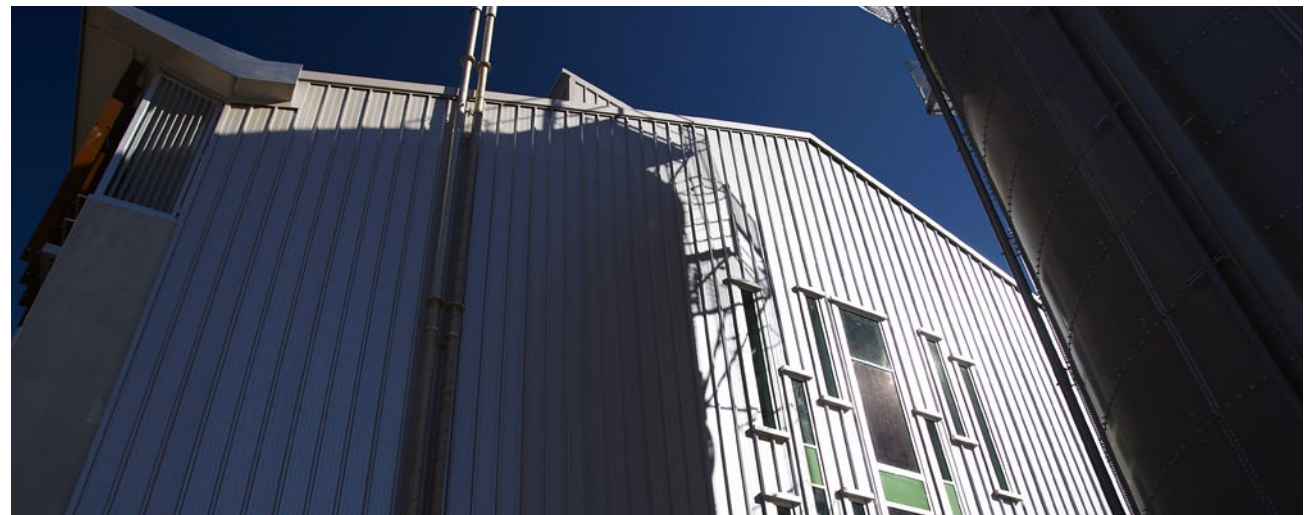
- Substrate to be minimum 0.5mm thick Zinalume AM100/AM150 coated steel to AS1397.

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



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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:

- 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.
- 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.
- Deflection limit for pressure and suction loading is L/100.
- The allowable steelwork tolerance between bearing planes of adjacent supports is +/- 5mm.
- 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.

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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										
		1.0	1.4	1.8	2.2	2.6	3.0	3.4	3.8	4.2	4.6	5.0
Uniformly distributed loads kN/m ²												
Ultimate Limit State												
40mm	Pressure	8.85	5.65	3.93	2.87	2.17	1.69	1.35	1.10	0.92		
	Suction	10.83	6.86	4.76	3.47	2.45	1.82	1.40	1.12	0.91		
60mm	Pressure	10.83	7.47	5.47	4.14	3.21	2.55	2.06	1.70	1.42	1.20	1.03
	Suction	13.95	9.57	6.85	4.45	3.13	2.33	1.80	1.43	1.17	0.97	0.82
70mm	Pressure	11.48	8.14	6.10	4.69	3.68	2.95	2.40	1.99	1.67	1.42	1.22
	Suction	14.53	10.24	7.53	4.90	3.45	2.57	1.99	1.58	1.29	1.07	0.91
100mm	Pressure	13.43	10.15	7.97	6.34	5.10	4.16	3.43	2.87	2.43	2.08	1.79
	Suction	16.26	12.25	9.56	6.24	4.40	3.28	2.54	2.02	1.65	1.37	1.16
Serviceability Limit State												
40mm	Pressure	-	11.35	6.42	3.94	2.57	1.74	1.23	0.89	0.66		
	Suction	-	10.76	5.95	3.57	2.27	1.50	1.03	0.72	0.52		
60mm	Pressure	-	15.33	9.32	6.08	4.15	2.94	2.13	1.59	1.21	0.93	0.73
	Suction	-	14.73	8.82	5.66	3.80	2.64	1.88	1.38	1.02	0.78	0.60
70mm	Pressure	-	14.30	10.52	7.05	4.93	3.56	2.64	2.00	1.54	1.21	0.96
	Suction	-	13.70	10.02	6.62	4.57	3.25	2.37	1.78	1.34	1.04	0.81
100mm	Pressure	-	-	14.12	9.94	7.25	5.43	4.15	3.23	2.54	2.03	1.64
	Suction	-	-	13.62	9.49	6.86	5.09	3.85	2.96	2.30	1.82	1.45
Double Span Condition												
Panel Thickness mm	Load Type	Span L in metres										
		1.0	1.4	1.8	2.2	2.6	3.0	3.4	3.8	4.2	4.6	5.0
Uniformly distributed loads kN/m ²												
Ultimate Limit State												
40mm	Pressure	8.85	5.65	3.93	2.87	2.17	1.69	1.35	1.10			
	Suction	10.83	6.86	4.76	3.47	2.45	1.82	1.40	1.12			
60mm	Pressure	10.83	7.47	5.47	4.14	3.21	2.55	2.06	1.70	1.42	1.20	
	Suction	13.95	9.57	6.85	4.45	3.13	2.33	1.80	1.43	1.17	0.97	
70mm	Pressure	11.48	8.14	6.10	4.69	3.68	2.95	2.40	1.99	1.67	1.42	1.22
	Suction	14.53	10.24	7.53	4.90	3.45	2.57	1.99	1.58	1.29	1.07	0.91
100mm	Pressure	13.43	10.15	7.97	6.34	5.10	4.16	3.43	2.87	2.43	2.08	1.79
	Suction	16.26	12.25	9.56	6.24	4.40	3.28	2.54	2.02	1.65	1.37	1.16
Serviceability Limit State												
40mm	Pressure	7.00	4.02	2.69	1.96	1.51	1.20	0.99	0.83			
	Suction	4.96	2.75	1.82	1.32	1.01	0.81	0.66	0.56			
60mm	Pressure	7.72	4.56	3.11	2.31	1.80	1.46	1.21	1.03	0.84	0.67	
	Suction	5.73	3.26	2.18	1.60	1.25	1.01	0.84	0.72	0.62	0.54	
70mm	Pressure	7.68	4.57	3.13	2.33	1.83	1.48	1.24	1.05	0.87	0.72	0.61
	Suction	6.06	3.48	2.34	1.72	1.35	1.09	0.91	0.78	0.68	0.59	0.50
100mm	Pressure	7.55	4.59	3.19	2.40	1.90	1.55	1.31	1.12	0.97	0.86	0.68
	Suction	7.04	4.15	2.82	2.09	1.64	1.34	1.13	0.97	0.84	0.74	0.66