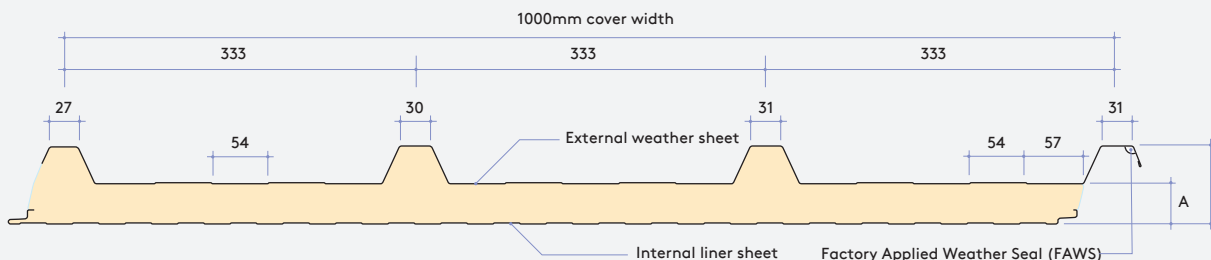


Trapezoidal Wall Panel (KS1000 RW) Data Sheet



Product overview

KS1000 RW is a through-fix, trapezoidal profiled insulated wall panel. This system provides a superior alternative when compared to traditional multi-part site assembled systems. Suitable for both vertical and horizontal applications, our panels are quicker to install, require less manual labour and are designed to meet thermal building regulation compliance. This product is also supplied with a Factory Applied Weather Seal (FAWS).



Note: Dimensions are nominal. Actual dimensions will vary due to manufacturing tolerances. Precise dimensions must always be measured from actual samples. All dimensions in millimetres.



Panel Properties

A – Core Thickness (mm)	40	60	70	100	120
B – Overall dimension (mm)	75	95	105	135	155
Weight kg/m ²					
0.5mm Ext. Steel / 0.4 Int. Steel	9.9	10.7	11.1	12.3	13.1

Application

The Kingspan Trapezoidal wall panel system is suitable for most new build and refurbishment building applications as an external facade 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.

Insulation Core

The core of the KS1000 RW panel is an environmentally sustainable 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 core is auto adhesively bonded to the external and internal faces during manufacture providing strength and rigidity to the panels.

Thermal Performance

Panel Nominal Thickness (mm)	Total R-Value (m ² K/W)	
	Heat Flow Out (Winter)	Heat Flow In (Summer)
40	2.16	1.99
60	3.16	2.92
70	3.68	3.39
100	5.17	4.77
120	6.14	5.67

The R-Values shown are 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. KS1000 RW is manufactured, tested and packaged in conformance with AS/NZS 4859.1:2018

Trapezoidal Wall Panel (KS1000 RW) Data Sheet



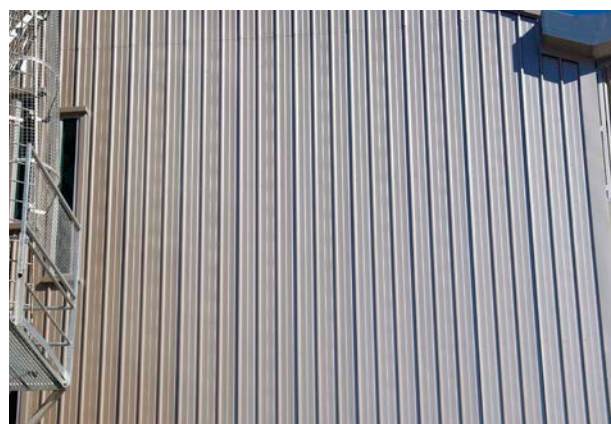
Declared Thermal Performance

Declared Thermal Conductivity (λ Value) 0.023 W/m.K at 23°C
(Insulant Thickness 40mm)

Declared Thermal Conductivity (λ Value) 0.022 W/m.K at 23°C
(Insulant Thickness \leq 60mm)

Panel Nominal Thickness (mm)	Product R-Value (m ² K/W)	Product U-Value (W/m ² K)
40	1.91	0.52
60	2.87	0.35
70	3.36	0.30
100	4.79	0.21
120	5.73	0.17

Declared Product R-Value is calculated in accordance with AS/NZS 4859.1:2018 as required for compliance to the National Construction Code 2019.



Dandirri Contact Centre

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 Trapezoidal wall panel system (KS1000 RW) meets the requirements of the BCA Specification C1.10 as a Group 2 product, when tested to ISO 9705.

Kingspan panels achieved the following Fire Resistance Level (FRL) results:

Thickness (mm)	FRL
40	-/144/18
100	-/241/43

Installation as outlined in the Firewall Model specifications

FM Approval

The Kingspan Trapezoidal Wall panel systems (KS1000 RW) are available with FM Global FMRC 4880 Approved Unlimited Height and FM Global 4881 Approved Class 1 Exterior Wall System Certifications

Acoustic Performance

For a sound transmission reduction, Kingspan panels have a weighted sound reduction index (SRI) of RW =24-26. For specific acoustic information 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

Product Tolerances

Length	<6m	6-12m	>12m
Length	±4mm	±6mm	±8mm
Width	±3mm	±3mm	±3mm
Thickness	40mm	60mm-100mm	
Thickness	±2mm	+3mm/-2mm	
Squareness	±0.5%mm of width	±0.5%mm of width	

Trapezoidal Wall Panel (KS1000 RW) Data Sheet



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.

Panel Cut Backs

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

Notes:* For panels that exceed 13.7m and/or for cut backs larger than 150mm the core material and the steel at the cut back will not be removed and will have to be carried out on site by the installer.

Environmental

Kingspan has undertaken a Life Cycle Assessment of the Trapezoidal wall system (KS1000 RW), and have published an Environmental Product Declaration (EPD) on their performance. The result documents that the KS1000 RW insulated panels are listed as a Type 3 Ecolabel with the Australian EPD Programme.

Biological

Kingspan Trapezoidal wall systems 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.

Quality & Durability

Kingspan Trapezoidal 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).

Seals

All panel joints have a factory applied weather seal fitted on the under side of the sidelap to automatically seal the joint between panels.

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 KS1000 RW in accordance with the requirements of the BCA B1.2 for low-high-low performance requirements. For further details please contact Kingspan Technical Services.

Site Installation Procedure

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

Materials

Exterior Weather Sheet

Substrate to be minimum 0.5mm thick coated steel to AS 1397.

Internal Liner Sheet

Substrate to be minimum 0.4mm thick 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.
- AQUAsafe – The Kingspan AQUAsafe range has been specifically developed for applications that require long term corrosion resistance and durability, in facilities such as washrooms/fabric manufacturing, agricultural and livestock facilities.
- AQUAsafe55 – The Kingspan AQUAsafe55 range has been specially developed for swimming pools and leisure centres that require long term corrosion resistance and durability.
- Other finishes are available on a project specific basis.

Accreditations



Trapezoidal Wall Panel (KS1000 RW) Data Sheet



Spans

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

NOTES:

- The published span table is calculated using methods described in BS EN 14509:2013, taking imposed load and temperature into account. Values are assessed for compliance with the loading requirements of AS/NZS 1170.0:2002, AS/NZS 1170.1:2002 and AS/NZS 1170.2:2011.
- Uniform distributed load given in the span table refers to the wind load acting on the panel.
- Values have been calculated for light coloured panels.
- 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 ± 5 mm.
- The wind suction load resisted by the panel is also dependant on the number and type of fasteners used, and the supporting element. For further information contact Kingspan Technical Services.
- Span table values have been calculated based on a support width of 60 mm.

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Span Table – External Sheet 0.5mm Steel/Internal Sheet 0.4mm

Single Span Condition												
Panel Thickness mm	Load Type	Span, L (m)										
		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												
40	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		
60	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	2.13	2.33	1.80	1.43	1.17	0.97	0.82
70	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
100	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
120	Pressure	13.44	10.38	8.37	6.78	5.55	4.59	3.81	3.21	2.73	2.34	2.04
	Suction	18.75	14.40	10.50	6.90	4.89	3.60	2.79	2.25	1.83	1.53	1.29
Serviceability Limit State												
40	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		
60	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
70	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
100	Pressure	15.80	12.02	9.48	7.55	6.05	4.95	4.08	3.30	2.54	2.03	1.64
	Suction	18.60	14.20	9.80	6.51	4.59	3.41	2.62	2.11	1.72	1.43	1.20
120	Pressure	17.00	13.00	10.52	8.55	7.00	5.75	4.80	4.10	3.45	2.87	2.38
	Suction	21.00	16.30	12.92	8.71	6.06	4.52	3.53	2.81	2.30	1.91	1.61
Double Span Condition												
Panel Thickness mm	Load Type	Span, L (m)										
		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												
40	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			
60	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	2.13	2.33	1.80	1.43	1.17	0.97	
70	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
100	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
120	Pressure	13.44	10.38	8.37	6.78	5.55	4.59	3.81	3.21	2.73	2.34	2.04
	Suction	18.75	14.40	10.50	6.90	4.89	3.60	2.79	2.25	1.83	1.53	1.29
Serviceability Limit State												
40	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			
60	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	
70	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
100	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
120	Pressure	9.10	5.65	4.05	3.06	2.41	2.00	1.68	1.46	1.26	1.12	0.99
	Suction	7.13	4.40	3.06	2.30	1.82	1.48	1.26	1.07	0.94	0.82	0.73