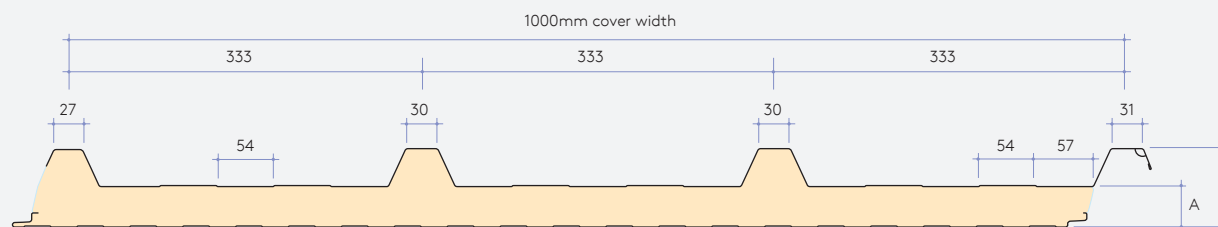


# K-Clad Roof Panel (KS1000 KC) Data Sheet

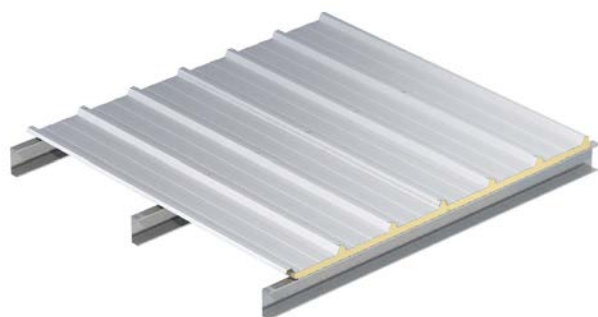


## Product overview

Kingspan K-Clad is a viable alternative to the traditional construction methods of non-Section J buildings, out performing built-up systems in areas such as thermal comfort, temperature and heat gain control, condensation control, spanning capability, build speed and durability, while providing a metal finished internal ceiling.



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)	30
B – Overall Thickness (mm)	65
Weight kg/m <sup>2</sup> 0.4mm Ext. Steel / 0.4 Int. Steel	9.50

## Application

K-Clad is designed for a variety of applications such as large-scale logistics facilities, distribution buildings, storage of temperature sensitive goods and agricultural construction.

Thanks to the prefabricated nature of the insulated panels, they are quicker to install than traditional roof structures, making the roof instantly wind and water-tight and significantly reducing construction risks.

## Insulation Core

The core of the KS1000 KC 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 <sup>2</sup> K/W)	
	Heat Flow Out (Winter)	Heat Flow In (Summer)
30	1.65	1.58

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. K-Clad is manufactured, tested and packaged in conformance with AS/NZS 4859.1 :2018

## Declared Thermal Performance

Declared Thermal Conductivity (λ-Value) 0.023 W/m.K at 23°C		
Panel Nominal Thickness (mm)	Product R-Value (m <sup>2</sup> K/W)	Product U-Value (W/m <sup>2</sup> K)
30	1.44	0.69

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

# K-Clad Roof Panel (KS1000 KC) Data Sheet



## 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 K-Clad Roof Panel meets the requirements of the BCA Specification C1.10 AS 5637.1 as a Group 2 product, when tested to ISO 9705.

## Acoustic Performance

For sound transmission reduction, Kingspan panels typically have a single figure weighted sound reduction index (SRI) of  $R_w = 24$ dB. 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
$R_w$	24

## Product Tolerances

Length	<6m	6-12m	>12m
Length	±4mm	±6mm	±8mm
Width	±3mm	±3mm	±3mm

## Available Lengths

Standard Lengths	2.0m – 12.0m
Longer Lengths*	Up to 15m
Shorter Lengths*	0.5m – 1.99m
Transported by Rail	11.8m
Export of Australia	11.8m

Notes: \* Additional costs and transport restrictions will apply for non-standard lengths. Please confirm availability with your Area Sales Manager.

## Panel Cut Backs

Minimum Cut Back	50mm
End Lap	150mm
Eaves Cut Back	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.

## Seals

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

## Biological

Kingspan roof 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 to health.

## Quality & Durability

Kingspan K-Clad roof 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).

## 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.

# K-Clad Roof Panel (KS1000 KC) Data Sheet



## Materials

### Exterior Weather Sheet

Substrate to be minimum 0.4mm thick coated steel to AS 1397.

### Internal Liner Sheet

Substrate to be minimum 0.4mm thick coated steel to AS 1397.

- **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



# K-Clad Roof Panel (KS1000 KC) 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:

1. The published span table is calculated using methods described in BS EN 14509:2013, taking imposed load (excluding snow), temperature and creep 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.
2. Uniform distributed load given in the span table refers to the wind load acting on the panel.
3. Values have been calculated for light coloured panels.
4. 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.
5. Deflection limit for pressure loading is L/200 and suction loading is L/150.
6. The allowable steelwork tolerance between bearing planes of adjacent supports is  $\pm 5$  mm.
7. 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.
8. Span table values have been calculated based on a support width of 60 mm.
9. When installed as per Kingspan recommendations, the panels are accessible for short term maintenance access with imposed load allowance of 0.25 kPa or 1.1 kN as specified in AS/NZS 1170.1:2002.

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

Single Span Condition							
Load Type	Span, L (m)						
	1.0	1.2	1.4	1.6	1.8	2.0	2.2
<b>Uniformly distributed loads (kN/m<sup>2</sup>)</b>							
Ultimate Limit State (ULS)							
Pressure	6.30	4.65	3.60	2.92	2.32	1.95	1.57
Suction	8.40	6.45	5.22	4.29	3.57	3.00	2.61
Serviceability Limit State (SLS)							
Pressure	8.10	6.18	4.38	3.20	2.37	1.85	1.42
Suction	9.50	6.50	4.60	3.35	2.60	2.03	1.62
Double Span Condition							
Load Type	Span, L (m)						
	1.0	1.2	1.4	1.6	1.8	2.0	2.2
<b>Uniformly distributed loads (kN/m<sup>2</sup>)</b>							
Ultimate Limit State (ULS)							
Pressure	6.30	4.65	3.60	2.92	2.32	1.95	1.57
Suction	8.40	6.45	5.22	4.29	3.57	3.00	2.61
Serviceability Limit State (SLS)							
Pressure	6.48	4.68	3.49	2.81	2.28	1.91	1.60
Suction	4.76	3.50	2.74	2.20	1.78	1.53	1.53

External Temperature: 55° summer, 0° winter (based on light colour)