

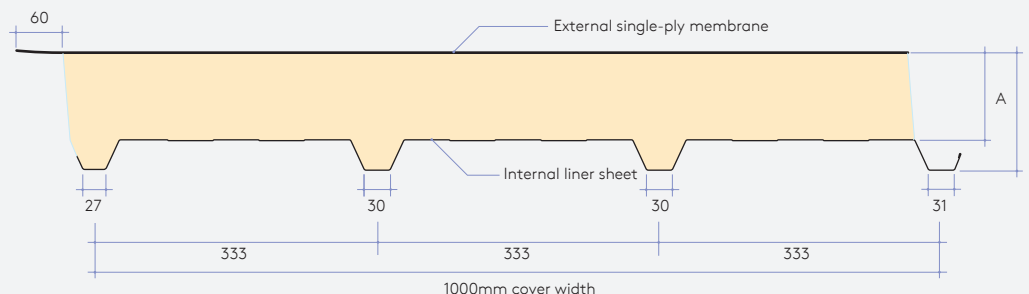
K-Dek (KS1000 KD) Data Sheet



Product overview

Kingspan K-Dek is a single component factory pre-engineered roof-deck comprising a high performance single-ply membrane with insulation and a trapezoidal steel deck.

It provides fast build, single-fix installation with a unique selfcoring 'one-step fix' fastener solution.



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)	70	100
B – Overall dimension (mm)	105	135
Weight kg/m ²	7.8	9.00
External membrane / 0.5mm Int Steel		

Application

Kingspan KS1000 KD (K-Dek) is suitable for flat and pitched roofs above 1:80(0.72°) after deflection, except where there is a requirement for a low temperature controlled environment or a high humidity environment.

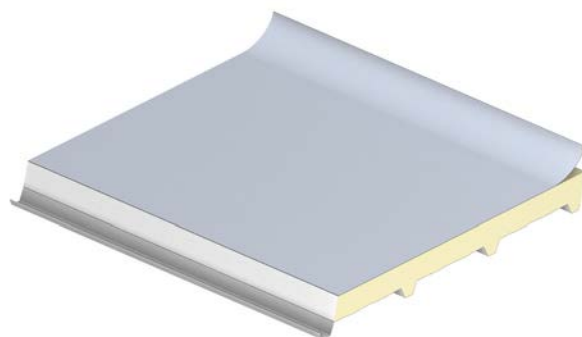
Insulation Core

The core of the KS1000 KD 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.

Thermal Performance

Panel Nominal Thickness (mm)	Total R-Value (m ² K/W)	
	Heat Flow Out (Winter)	Heat Flow In (Summer)
70	3.62	3.39
100	5.16	4.81

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



Declared Thermal Performance

Declared Thermal Conductivity (λ Value) 0.022 W/m.K at 23°C

Panel Nominal Thickness (mm)	Product R-Value (m ² K/W)	Product U-Value (W/m ² K)
70	3.31	0.30
100	4.79	0.21

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

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

Acoustic Performance

Kingspan K-Dek has a single figure weighted sound reduction index (SRI) of $R_w = 23$ dB. For specific acoustic solutions, please contact Kingspan Technical Services.

Sound Reduction Index (SRI)

Frequency (Hz)	SRI (dB)
125	17.9
250	18.1
500	17.4
1000	23.2
2000	30.4
4000	40.3

Product Tolerances

Cut to Length	-0.05%	+0.1%
Liner Sheet Length	-0.1%	+0.1%
Cover Width	0mm	+3mm
Thickness	-2mm	+2mm
End Square	-3mm	+3mm

Available Lengths

Standard Lengths	2.0m – 13.7m
Shorter Lengths*	0.5m – 1.99m
Transported by Rail	12.0m
Export from Australia	11.8m

Notes: * Additional costs and transport restrictions will apply for non-standard lengths.

Environmental

Kingspan has undertaken a Life Cycle Assessment of the KS1000 KD roof panels, and have published an Environmental Product Declaration (EPD) on their performance. The results document that the Kingspan KS1000 KD roof panels are listed as a Type 3 Ecolabel with the Australian EPD Programme.

Biological

Kingspan 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 to health.

Quality & Durability

Kingspan KS1000 KD 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 attends the product installation training course prior to installation which is provided by Kingspan Field Services.

Materials

Exterior Weather Membrane

- High performance TPO single ply membrane
- Membrane: 1.2mm thickness
- Available colours: Light Grey RAL 7042

Internal Liner

- Substrate to be minimum 0.5mm thick coated steel to AS1397.
- Standard Colour: Off-White
- Other finishes are available on a project specific basis.

Accreditations



Captains Club Hotel – Bournemouth

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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 panels. For darker colours contact Kingspan Technical Services.

NOTES:

1. The published span table is assessed for compliance with the loading requirements specified in 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. Fastener calculations based upon minimum 1.2 mm thick steel purlins, grade not less than G380.
4. Deflection limit for pressure loading is L/200 and suction loading is L/150.
5. The allowable steelwork tolerance between bearing planes of adjacent supports is ± 5 mm.
6. 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.
7. Span table values have been calculated based on a support width of 60 mm.

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Span Table – External membrane /Internal sheet 0.5mm

Single Span Condition							
Load Type	Span L in metres						
	0.6	0.8	1.0	1.2	1.4	1.6	1.8
Uniformly distributed loads kN/m ²							
Ultimate Limit State							
Pressure	14.96	8.36	5.31	3.65	2.64	2.00	1.55
Suction							
One Fastener	6.22	4.69	3.78	3.16	2.48	1.92	1.53
Two Fasteners	12.34	7.37	4.74	3.33	2.48	1.92	1.53
Three Fasteners	13.01	7.37	4.74	3.33	2.48	1.92	1.53
Serviceability Limit State							
Pressure	-	6.72	3.39	1.92	1.17	0.75	0.49
Suction	-	-	6.34	3.71	2.28	1.63	1.18

Double Span Condition							
Load Type	Span L in metres						
	0.6	0.8	1.0	1.2	1.4	1.6	1.8
Uniformly distributed loads kN/m ²							
Ultimate Limit State							
Pressure	8.70	5.48	3.75	2.73	2.06	1.61	1.28
Suction							
One Fastener	2.55	1.94	1.57	1.33	1.16	1.02	0.92
Two Fasteners	5.00	3.78	3.04	2.55	2.20	1.94	1.74
Three Fasteners	7.45	5.61	4.51	3.78	2.87	2.22	1.77
Serviceability Limit State							
Pressure	-	-	8.31	4.76	2.96	1.95	1.34
Suction	-	-	-	8.79	5.58	3.77	2.68