

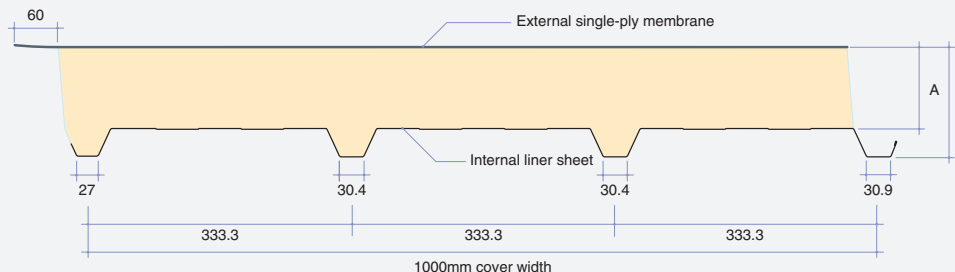
Insulated Roof & Wall Panels

K-Dek Data Sheet

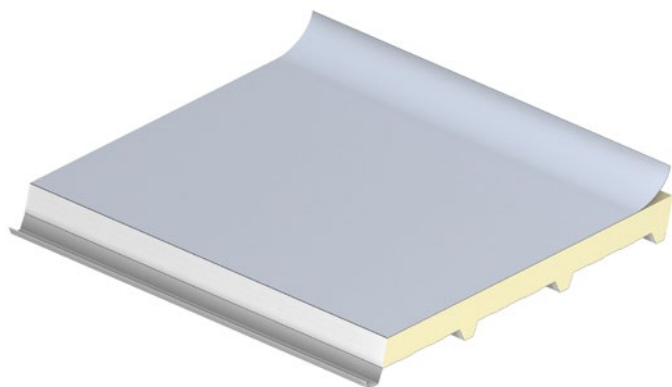


Product overview

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 structural deck. It provides fast build, single-fix installation with a unique self-coring '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.



Application

Kingspan KS1000KD (K-Dek) is a single component, factory pre-engineered roof deck, manufactured with a high performance single ply membrane, with insulation and a trapezoidal steel deck. It is suitable for flat and pitched roofs above 1:80(0.720) after deflection. It can be used for all building applications except where there is a requirement for a low temperature controlled environment or a high humidity environment.

Panel Properties and Thermal Performance

A – Core Thickness (mm)	100
B – Overall dimensions (mm)	135
R-value (m ² K/W)	5.27
U-value (W/m ² K)	0.19
Weight Kg/m ² – External membrane / Inner sheet 0.5mm Steel	9.00

Available Lengths

Standard Lengths	2.0m – 13.7m
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 KS1000KD 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.

Insulated Roof & Wall Panels

Product Tolerances	K-Dek	
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

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.

Environmental

Kingspan has undertaken a Life Cycle Assessment of the KS1000KD roof panels, and have published an Environmental Product Declaration (EPD) on their performance. The results document that the Kingspan KS1000KD roof panels are listed as a Type 3 Ecolabel with the Australian EPD Programme. The Kingspan KS1000KD roof panels are certified with Ecospecifer Global Green Tag as a Greentag Gold Plus with a GreenRate Level A rating.

K-Dek 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

Kingspan K-Dek (KS1000 KD) insulant core is an FM Global certified formulation. Steel liner has a Class 1 surface spread of flame to BS 476-7.

Acoustic Performance

Kingspan K-Dek has a single figure weighted sound reduction index (SRI) of $R_w = 23\text{dB}$. 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



Quality & Durability

Kingspan KS1000KD 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 appropriate product installation training course prior to installation which is provided by Kingspan Field Services.

Materials

Exterior Weather Membrane

- High performance PVC or TPO single ply membrane.
- Membrane : Standard external membrane thickness of 1.5mm, 1.8mm or 2.0mm

Internal Deck

- Substrate to be minimum 0.5mm thick Zincalume AM100/AM150 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.

Insulated Roof & Wall Panels

K-Dek Data Sheet



Accreditations



Quality
ISO 9001



Environment
ISO 14001



Health & Safety
OHSAS 18001



Captains Club Hotel – Bournemouth

Insulated Roof & Wall Panels

NOTES:

1. 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.
2. Fastener calculations based upon minimum 1.2mm thick steel purlins, grade not less than G380.
3. The following deflection limits have been used:
Downward loading $l/250$
Suction loading $l/150$
4. The table is based on a support width of 50mm.
5. The allowable steelwork tolerance between bearing planes of adjacent supports is +/- 5mm or L/600, whichever is greater.
6. Load /span tables for panel specifications not shown are available from Kingspan Technical Services.

Care has been taken to ensure that the contents of this publication are accurate, but Kingspan Insulated Panels Pty Ltd and its subsidiary companies do not accept responsibility for errors or for information that is found to be misleading. Suggestions for, or descriptions of, the end use or application of products or methods of working are for information only and Kingspan Insulated Panels Pty Ltd and its subsidiaries accept no liability in respect thereof.

Australia

Kingspan Insulated Panels Pty Ltd

38-52 Dunheved Circuit, St Marys
NSW 2760 Australia
Tel +61 (02) 8889 3000
Fax +61 (02) 8889 3099
Email info@kingspanpanels.com.au
Web kingspanpanels.com.au

K-Dek Data Sheet



Structural Load/Span Table – Ext membrane l/Inner Sheet 0.5mm

Single Span Condition							
Load Type	Uniformly distributed loads kN/m ² – Span L in metres						
	0.6	0.8	1.0	1.2	1.4	1.6	1.8
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	Uniformly distributed loads kN/m ² – Span L in metres						
	0.6	0.8	1.0	1.2	1.4	1.6	1.8
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