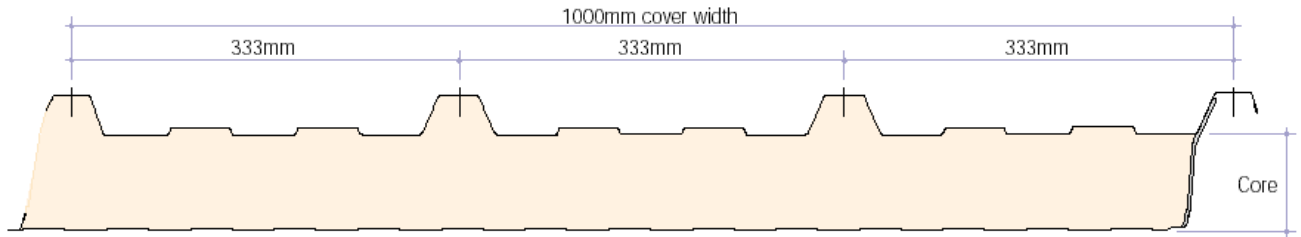


Product Data Sheet



Product: KS1000 RW EcoSafe

Trapezoidal roof panel with Loss Prevention Certification (LPCB) certified to LPS 1181 Grade EXT – B and FM approval to FMRC 4880 Class 1 Fire classification, unlimited height for roof applications.

APPLICATION

The KS1000 RW EcoSafe Insulated Roof Panel is a through fixed roof panel, which can be used for all building applications, where the roof slope is 4° or more.

AVAILABLE LENGTHS

Standard lengths 1.8 to 12 metres. 12 to 22.1 metres can be supplied but may be subject to a transport surcharge. 22.1 to 29.3m can be supplied subject to transport restrictions. Panels less than 1.8m long, which require a cut back can be provided, but will be charged at full 1.8m price, plus cutting cost.

DIMENSIONS & WEIGHT

Core Thickness (mm)	40	50	60	70	80	100	120
Overall Thickness (mm)	75	85	95	105	115	135	155
Weight kg/m² 0.5/0.4 steel	9.9	10.3	10.7	11.0	11.5	12.3	13.1
Weight kg/m² 0.63/0.4 steel	11.8	12.2	12.6	12.9	13.4	14.2	15.0
Weight kg/m² 0.9/0.5 alum.	5.6	6.0	6.4	6.7	7.2	8.0	8.8

PANEL END CUT BACK

All panels are normally produced with a minimum cut back of 20mm. Cut backs up to 175mm can also be manufactured. If flush ended panels (no cut back) are required they can be manufactured with one end flush and a 20mm cut back on the opposite end, based on panels exceeding 1.8m in length. The recommended cut back for panel end lapping is 150mm. Panels less than 1.8m long, which require a cut back can be provided, but will be charged at full 1.8m price, plus cutting cost.

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

Product Data Sheet



MATERIALS - STEEL

Substrate

Kingspan XL Forte, Kingspan Spectrum, Kingspan Aquasafe, and Kingspan Cleansafe: S220GD+ZA hot-dip zinc/aluminium Galvan coated steel to BS EN10214: 1992 Standard external sheet thickness 0.5mm, 0.7mm available on request, standard internal sheet thickness 0.4mm.

Bright White Polyester: Material Hot dip zinc coated to BS EN 10326: 2004, Standard internal steel thickness 0.4mm.

Coatings - External Weather Sheet

Kingspan XL Forte: High performance coating applied to the weather side of the panel. Designed to achieve high levels of durability and colour stability, is highly resistant to damage in transit and on-site.

Reverse side of sheet coated with a light grey polyester coating.

Kingspan Spectrum: High performance coating applied to the weather side of the panel.

Designed to achieve high levels of durability and colour stability, is highly resistant to damage in transit and on-site.

Reverse side of sheet coated with a light grey polyester coating.

Coatings - Internal Liner Sheet

Bright White Polyester: The coating has been developed for use for the internal lining of insulated panels. Standard colour is "bright white" with an easily cleaned surface.

Kingspan Aquasafe 200 coating – The coating has been developed for use for the internal lining of panel to suit high humidity internal environments (class 5 as defined by the Building regulations)

Kingspan Cleansafe 150. The coating has been developed for use for the internal lining of the panel where a high level of cleanliness and hygiene is required, and the panels are to be cleaned down on a regular basis.

INSULATION CORE

Polyisocyanurate (PIR): EcoSafe LPCB certificated PIR formulation. Receiving BREEAM Credit (Pollution 4: Insulant GWP) 2006 credit.

ENVIRONMENTAL

Kingspan KS1000 RW Insulated roof panels have a Green Guide A + rating as per the BRE Global "The Green Guide To Specification", Green Guide 2008 ratings.

SEALS

Factory Applied Side & End Lap Protection

If Specifiers require additional under lap corrosion protection, this can be factory applied at extra cost.

PERFORMANCE

Thermal Insulation

Core Thickness (mm)	40	50	60	70	80	100	120
U value (W/m ² K)	0.46	0.38	0.35	0.30	0.25	0.20	0.16

Thermal Insulation

Kingspan KS1000 RW Roof Panels have a Thermal Transmittance (U value), calculated using the method required by the Building Regulations Part L2 (England & Wales) and Building Standards Section 6 (Scotland),

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.

Product Data Sheet



Fire

The external and internal faces of the panel to be Class 0 in accordance with the Building Regulations when tested to BS476: Parts 6: 1989 and Part 7: 1987.

The panel must be rated SAA when tested to BS476: Part 3: 1975.

The system has passed all the requirements of LPS1181: 2003: Part 1: Issue 1, ceiling lining tests.

Acoustic

Sound Reduction Index (SRI)

Frequency Hz	63	125	250	500	1k	2k	4k	8k	RW
SRI dB	20	18	20	24	20	29	39	47	25

Air Leakage

Overall air leakage for complete envelope less than 10m³/m²/hr at 50Pa.

QUALITY & DURABILITY

Kingspan Insulated Panels are manufactured from the highest quality materials, using state of the art production equipment to rigorous quality control standards, complying with ISO9001 standard, ensuring long term reliability and service life. The panel has also been manufactured under Environmental Management System Certification ISO 14001:2004.

GUARANTEES

Kingspan TOTAL Panel Guarantee on the structural and thermal performance up to 25years and coating guarantee up to 30years.

PACKING

Standard Packing

KS1000 RW panels are stacked weather sheet to weather sheet (to minimise pack height).

The top, bottom, sides and ends are protected with foam and timber packing and the entire pack is wrapped in plastic.

Core Thickness (mm)	40	50	60	70	80	100	120
No. of panels in pack	17	15	13	11	11	7	5

Sea Freight

Fully timber crated packs are available on projects requiring delivery by sea freight shipping, at additional cost. Alternatively, steel containers can be used. Special loading charges apply.

DELIVERY

All deliveries (unless indicated otherwise) are by road transport to project site. Off loading is the responsibility of the client.

SITE INSTALLATION PROCEDURE

Site assembly instructions are available from the Kingspan Envirocare Technical Services.

Product Data Sheet



STRUCTURAL

Unfactored load/span table (use calculated design wind load values unfactored).

Single Span Condition										
Panel Thickness mm	Load Type	Uniformly distributed loads kN/m ²								
		Span L in metres								
		1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	
40	Downwards	3.25	2.28	1.80	1.31	1.04				
	Suction	3.80	3.20	2.82	2.21	1.86				
50	Downwards	3.85	2.77	2.22	1.67	1.35	1.03	0.84		
	Suction	4.49	3.85	3.34	2.78	2.36	1.94	1.68		
60	Downwards	4.41	3.25	2.64	2.03	1.67	1.30	1.07	0.84	
	Suction	5.15	4.48	3.87	3.25	2.77	2.28	1.99	1.70	
70	Downwards	4.92	3.68	3.02	2.35	1.95	1.54	1.28	1.01	
	Suction	5.81	5.11	4.40	3.68	3.14	2.59	2.26	1.93	
80	Downwards	5.42	4.12	3.40	2.68	2.24	1.80	1.51	1.22	
	Suction	6.44	5.72	4.92	4.12	3.51	2.90	2.53	2.16	
100	Downwards	6.32	4.90	4.10	3.30	2.80	2.29	1.95	1.61	
	Suction	7.60	6.85	5.94	5.03	4.29	3.55	3.10	2.65	
120	Downwards	7.05	5.74	4.74	3.96	3.34	2.83	2.40	2.05	
	Suction	8.71	7.73	6.76	6.01	5.02	4.25	3.65	3.17	

Double Span Condition									
Panel Thickness mm	Load Type	Uniformly distributed loads kN/m ²							
		Span L in metres							
		1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
40	Downwards	2.96	2.33	1.99	1.65	1.44	1.23	1.10	0.96
	Suction	3.11	2.50	2.18	1.85	1.66	1.46	1.33	1.19
50	Downwards	3.16	2.50	2.15	1.79	1.57	1.35	1.20	1.05
	Suction	3.34	2.70	2.36	2.01	1.80	1.59	1.46	1.32
60	Downwards	3.34	2.66	2.29	1.91	1.68	1.45	1.30	1.14
	Suction	3.54	2.88	2.52	2.16	1.94	1.72	1.57	1.42
70	Downwards	3.49	2.79	2.40	2.01	1.77	1.53	1.36	1.20
	Suction	3.74	3.06	2.69	2.31	2.08	1.85	1.70	1.54
80	Downwards	3.65	2.92	2.52	2.12	1.87	1.61	1.44	1.27
	Suction	3.92	3.22	2.83	2.44	2.20	1.96	1.80	1.64
100	Downwards	3.92	3.16	2.73	2.30	2.03	1.76	1.58	1.39
	Suction	4.23	3.50	3.09	2.68	2.42	2.16	1.99	1.81
120	Downwards	4.35	3.64	3.09	2.67	2.33	2.05	1.82	1.63
	Suction	4.69	4.00	3.47	3.06	2.74	2.47	2.25	2.07

Notes:

- Values have been calculated using the limit state method described in the "European Recommendations for the Design of Sandwich Panels" (ECCS document No.115 2001), taking imposed loads, temperature and creep into account.
- For each value individual and combined load cases with appropriate load factors and temperatures have been considered.
- The Table is for medium and light coloured panels, as recommended by Kingspan for roofs.
- The following deflection limits have been used:
Downward loading L/200
Suction loading L/150
- For intermediate values linear interpolation may be used.
- The actual wind suction load resisted by the panel is dependant on the number of fasteners used and the material of the purlin. The fastener calculation should be carried out in accordance with the appropriate standard. For further advice please contact Kingspan Envirocare Technical Services.
- The allowable steelwork tolerance between bearing planes of adjacent purlins is ±5mm.