

Insulated Roof & Wall Panels

Product Data Sheet



Roof Tile Effect Insulated Panel
KS1000 RT

KS1000 RT Roof Tile

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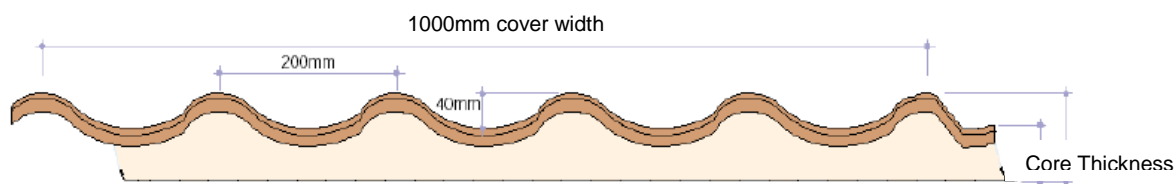
Applications

KS1000 RT looks like a traditional tiled roof but it is a modern Kingspan insulated panel with a shaped exterior that performs better than any tiling system. The insulation is built-in and can be used for any domestic or commercial building with a roof pitch of 12° or more after deflection. The traditional look hides a sophisticated system that is easy to construct and complies with all contemporary building standards.

Available Lengths

Standard Lengths	2.1 – 11.5m
Longer Lengths (non-standard)	11.5 – 15.7m
Shorter Lengths (non-standard)	Below 2.1m

Note: Panel lengths are based on tile module of 325mm plus 150mm for cutbacks of 160mm or 100mm for 100mm cutbacks. Additional costs and transport restrictions may apply for non-standard lengths. All lengths may change for export (outside of the UK).



Dimensions, Weight & Thermal Performance

Core Thickness (mm)	45	60	80	100
Overall Thickness (mm)	85	100	120	140
U-value (W/m ² K)	0.45	0.32	0.25	0.20
Weight kg/m ² 0.5/0.4 Steel	10.7	11.3	12.2	13.1

The KS1000 RT insulated 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).

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Insulation Core

KS1000 RT insulated roof panels are manufactured with an ECOsafe and FIREsafe polyisocyanurate (PIR) core.

Fire

The external and internal faces of the panel to be Class 0 in accordance with the Building Regulations when tested to BS 476: Part 6: 2009 and Part 7: 1997. The panel is rated SAA when tested to BS 476: Part 3: 2004.

This FIREsafe system has passed all the requirements of LPS 1181: 2005: Part 1: Issue 1.1, ceiling lining tests by the Loss Prevention Certification Board (LPCB) certified to LPS 1181 Grade EXT – B.



Environmental

This ECOsafe system may achieve a Green Guide A+ rating and is subject to project specific assessments.

Air Leakage

An air leakage rate of 3m³/hr/m² at 50Pa or less can be achieved when using Kingspan insulated roof and wall panels.

Acoustic

Sound Reduction Index (SRI)

Hz*	63	125	250	500	1K	2K	4K	8K
SRI (dB)	20	19	21	22	22	32	38	44

* Frequency

The KS1000 RT insulated roof panel has a single figure weighted sound reduction $R_w = 25\text{dB}$.

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.

Materials

Substrate

- Kingspan XL Forté, Kingspan AQUAsafe, and Kingspan CLEANsafe: Material S220GD+ZA hot-dip zinc/aluminium Galfan coated steel to BS EN 10346: 2009 Standard external sheet thickness 0.5mm, standard internal sheet thickness 0.4mm.
- Polyurethane & Bright White Polyester: Hot dip zinc coated to BS EN 10346: 2009, Standard internal steel thickness 0.4mm, Stucco embossed.

Coatings - External Weather Sheet

- Kingspan XL Forté: Consists of a multi-layer organic coating, embossed with a traditional leather-grain finish.
- Polyurethane Coating: High performance polymer coating applied to the weather side of the panel. Designed to achieve excellent endurance characteristics.

Coatings - Internal Liner Sheet

- Bright White Polyester: The coating has been developed for use as the internal lining of insulated panels. Standard colour is "bright white" with an easily cleaned surface.
- Kingspan AQUAsafe: The coating has been developed for use as the internal lining of insulated panels to suit high humidity internal environments (class 5 as defined by the Building Regulations).
- Kingspan CLEANsafe: The coating has been developed for use as the internal lining of insulated panels where a high level of cleanliness and hygiene is required, and the panels are to be cleaned down on a regular basis.

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Panel End Cut Back

Standard Cut Back	160mm
Cut Back for up to 6.275m lengths	100mm

Note: We do not recommend end lapping KS1000 RT panels.

Product Tolerance

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

Handing

The KS1000 RT insulated roof panel can be manufactured in left to right handed (LH) only.

Quality & Durability

KS1000 RT insulated roof panels are manufactured from the highest quality materials, using state of the art production equipment to rigorous quality control standards, complying with BS EN ISO 9001 standard, ensuring long term reliability and service life. The panels are also being manufactured under Environmental Management System Certification BS EN ISO 14001. Compliant to BS OHSAS 18001 Occupational Health and Safety.

Guarantee

Kingspan Total Panel Guarantee covering the structural and thermal performance for a period of up to 25 years and Kingspan Coating Guarantee for a period of up to 40 years (subject to project specific information).

Packing

KS1000 RT insulated roof 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)	45	60	80	100
No. of panels in Pack	10	8	8	6

Note: Applies to UK pack sizes. Please contact Kingspan Technical Services for export information. Quantities are reduced for exceptionally long panels.

Sea Freight

Fully timber crated packs are available on projects requiring delivery by sea freight shipping, at additional costs. 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 Kingspan envirocare Technical Services.

Structural Tables

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

Outer Sheet 0.5mm (Steel), Inner Sheet 0.4mm (Steel)

Single Span Condition

Panel Thickness (mm)	Load Types	Uniformly distributed loads kN/m ² Span L in metres										
		1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
45	Downwards	4.33	2.92	1.98	1.37	0.96	0.69	-	-	-	-	-
	Suction	4.47	3.12	2.31	1.78	1.42	1.16	-	-	-	-	-
60	Downwards	5.34	3.68	2.68	2.00	1.45	1.06	0.79	0.58	-	-	-
	Suction	5.49	3.83	2.83	2.18	1.74	1.42	1.19	1.01	-	-	-
80	Downwards	6.68	4.61	2.36	2.55	1.99	1.59	1.30	1.01	0.77	0.60	-
	Suction	6.86	4.79	3.54	2.73	2.17	1.77	1.48	1.25	1.08	0.94	-
100	Downwards	8.03	5.54	4.04	3.07	2.40	1.92	1.57	1.30	1.09	0.93	0.79
	Suction	8.22	5.74	4.24	3.26	2.60	2.12	1.77	1.50	1.29	1.12	0.99

Double Span Condition

Panel Thickness (mm)	Load Types	Uniformly distributed loads kN/m ² Span L in metres										
		1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
45	Downwards	4.33	2.98	2.17	1.64	1.28	1.02	0.83	0.68	0.57	-	-
	Suction	4.47	3.12	2.31	1.78	1.42	1.16	0.97	0.83	0.71	-	-
60	Downwards	5.34	3.68	2.68	2.03	1.59	1.27	1.03	0.85	0.72	-	-
	Suction	5.49	3.83	2.83	2.18	1.74	1.42	1.19	1.01	0.87	-	-
80	Downwards	6.68	4.61	3.36	2.55	1.99	1.59	1.30	1.07	0.90	0.76	0.65
	Suction	6.86	4.79	3.54	2.73	2.17	1.77	1.48	1.25	1.08	0.94	0.83
100	Downwards	8.03	5.54	4.04	3.07	2.40	1.92	1.57	1.30	1.09	0.93	0.79
	Suction	8.22	5.74	4.24	3.26	2.60	2.12	1.77	1.50	1.29	1.12	0.99

Notes:

1. Values have been calculated using the method described in BS EN 14509: 2013, for medium and light coloured panels.
2. Deflection limit for: downward loading is L/200 and suction loading is L/150.
3. The actual wind suction load resisted by the panel is dependent on the number of fasteners used and the purlin thickness as well as the fastener material.
4. The fastener calculation should be carried out in accordance with the appropriate standards. For further advice please contact Kingspan envirocare Technical Services.
5. The allowable steelwork tolerance between bearing planes of adjacent supports is +/- 5mm.
6. Load span tables for the panel specifications not shown are available from Kingspan envirocare Technical Services.

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