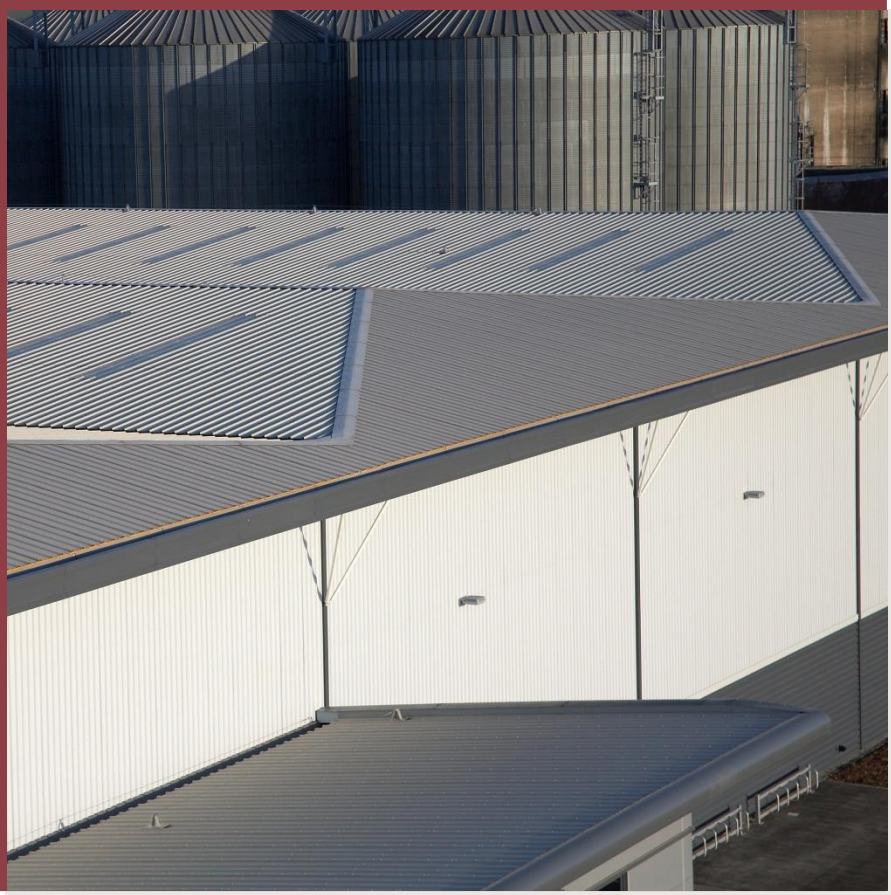
Insulated Roof & Wall Panels

Product Data Sheet



Trapezoidal Insulated Roof Panel
KS1000 RW

Kingspan®
Insulated Panels

KS1000 RW Trapezoidal

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Applications

The KS1000 RW is a through-fix trapezoidal profiled insulated roof panel which can be used for building applications with roof pitches of 4° or more after deflection.

Available Lengths

Standard Lengths	1.8m - 12m
Longer Lengths (non-standard)	12m – 29.3m
Shorter Lengths (non-standard)	Below 1.8m

Notes:
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)	40	50	60	70	80	100	115	120	137	150
Overall Thickness (mm)	71	81	91	101	111	131	146	151	168	181
U-value (W/m²K)	0.46	0.38	0.35	0.30	0.25	0.20	0.18	0.16	0.15	0.14
Weight kg/m² 0.5/0.4 Steel	9.9	10.3	10.7	11.0	11.5	12.3	12.8	13.1	13.7	14.2
Weight kg/m² 0.7/0.5 Alum	5.5	5.9	6.3	6.7	7.1	7.9	8.5	8.7	9.4	9.9

Notes:
The U-values have been 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 RW insulated roof panels are manufactured with an ECO*safe* and FIRE*safe* 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 FIRE*safe* 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 and FM approval to FMRC 4880 & 4471 Class 1 fire classification, unlimited height, for roof applications.

Environmental

This ECO*safe* system achieves a Green Guide A+ rating as per the BRE Global "The Green Guide to Specification", Green Guide 2008 ratings. Green Guide element no. 812550001.

Air Leakage

An air leakage rate of $3m^3/hr/m^2$ 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	18	20	24	20	29	39	47

* Frequency

The KS1000 RW insulated roof panel has a single figure weighted sound reduction Rw = 25dB.

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 Spectrum, Kingspan AQUA*safe* and Kingspan CLEAN*safe*: 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.
- Bright White Polyester: Hot dip zinc coated to BS EN 10346: 2009, Standard internal steel thickness 0.4mm.
- Stainless Steel: Austenitic Grade 304 stainless steel to BS EN 10088: Part 2: 2005, thickness 0.4mm.
- Aluminium: Please contact Kingspan Technical Services.

Coatings - External Weather Sheet

- Kingspan XL Forté: Consists of a multi-layer organic coating, embossed with a traditional leather-grain finish.
- Kingspan Spectrum: Consists of a coated semi-gloss finish with slight granular effect.

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.
- Stainless Steel: The stainless steel liner has been developed for use as the internal lining of insulated panels in buildings with a very aggressive/corrosive internal environment.

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Panel End Cut Back

Standard Cut Back Eaves	75mm
Standard Cut Back End Lap	150mm
Minimum Cut Back	20mm
Maximum Cut Back	300mm

Product Tolerance

Cut to Length	-5mm +5mm
Cover Width	-2mm +2mm
Thickness	-2mm +2mm
End Square	-3mm +3mm

Handing

The KS1000 RW insulated roof panel can be manufactured in both left to right handed (LH) and right to left handed (RH).

Seals

Factory applied side & end lap weather seals.

Quality & Durability

KS1000 RW insulated roof panels are manufactured from the highest quality materials, using state of the art production equipment to rigorous quality control standards; ensuring long term reliability and service life. The panels are fully compliant with ISO 9001 (Quality), ISO 14001 (Environmental) and OHSAS 18001 (Health and Safety).

Guarantee

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

Packing

KS1000 RW 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)	40	50	60	70-80	100-120	137-150
No. of panels in Pack	17	15	13	11	7	6

Notes:
Applies to UK pack sizes. Please contact Kingspan Technical Services for export information.

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 Technical Services.

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Structural Tables

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

External Sheet: 0.5mm (steel), Inner Sheet 0.4mm (steel)

Single Span Condition

Panel Thickness (mm)	Load Types	Uniformly Distributed Loads kN/m² Span L in Metres							
		1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
40	Downwards	2.68	2.26	1.93	1.50	1.17	0.91	0.71	0.56
	Suction	3.63	3.09	2.67	2.33	1.92	1.57	1.30	1.09
50	Downwards	3.14	2.68	2.31	1.91	1.52	1.21	0.97	0.78
	Suction	4.27	3.69	3.22	2.83	2.42	2.01	1.69	1.42
60	Downwards	3.60	3.11	2.71	2.34	1.89	1.54	1.26	1.03
	Suction	4.92	4.29	3.78	3.35	2.85	2.41	2.07	1.78
70	Downwards	4.04	3.53	3.10	2.74	2.27	1.87	1.55	1.29
	Suction	5.60	4.93	4.37	3.77	3.13	2.65	2.27	1.97
80	Downwards	4.52	3.98	3.52	3.13	2.67	2.22	1.86	1.56
	Suction	6.27	5.56	4.96	4.12	3.43	2.90	2.49	2.16
100	Downwards	5.42	4.83	4.32	3.87	3.49	2.96	2.52	2.15
	Suction	7.65	6.81	5.84	4.77	3.97	3.37	2.89	2.52
115	Downwards	6.11	5.48	4.93	4.44	4.01	3.52	3.03	2.61
	Suction	8.42	7.49	6.36	5.20	4.34	3.68	3.17	2.75
120	Downwards	6.33	5.68	5.12	4.62	4.18	3.71	3.20	2.77
	Suction	8.42	7.49	6.59	5.39	4.50	3.82	3.28	2.86
137	Downwards	7.08	6.39	5.78	5.24	4.76	4.32	3.80	3.31
	Suction	8.42	7.50	6.76	5.86	4.90	4.16	3.58	3.11
150	Downwards	7.64	6.93	6.29	5.71	5.19	4.73	4.27	3.74
	Suction	8.43	7.50	6.76	6.15	5.20	4.41	3.80	3.31

Double Span Condition

Panel Thickness (mm)	Load Types	Uniformly Distributed Loads kN/m² Span L in Metres							
		1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
40	Downwards	2.68	2.24	1.85	1.56	1.34	1.16	1.02	0.90
	Suction	3.27	2.71	2.29	1.98	1.74	1.54	1.38	1.25
50	Downwards	2.96	2.41	2.00	1.70	1.46	1.27	1.12	0.99
	Suction	3.40	2.82	2.40	2.08	1.83	1.63	1.47	1.33
60	Downwards	3.15	2.58	2.15	1.83	1.58	1.38	1.22	1.08
	Suction	3.50	2.92	2.50	2.17	1.91	1.71	1.54	1.40
70	Downwards	3.33	2.73	2.29	1.95	1.69	1.47	1.30	1.16
	Suction	3.60	3.02	2.59	2.25	1.99	1.78	1.61	1.47
80	Downwards	3.51	2.88	2.42	2.07	1.79	1.57	1.39	1.24
	Suction	3.68	3.09	2.65	2.32	2.05	1.84	1.66	1.52
100	Downwards	3.85	3.18	2.69	2.30	2.00	1.76	1.56	1.40
	Suction	3.78	3.19	2.75	2.41	2.14	1.92	1.74	1.59
115	Downwards	4.09	3.40	2.87	2.47	2.15	1.89	1.68	1.50
	Suction	3.83	3.24	2.80	2.46	2.18	1.96	1.78	1.63
120	Downwards	4.17	3.46	2.93	2.52	2.19	1.93	1.72	1.54
	Suction	3.83	3.25	2.80	2.46	2.19	1.97	1.79	1.63
137	Downwards	4.44	3.70	3.14	2.70	2.36	2.08	1.85	1.66
	Suction	3.85	3.27	2.83	2.48	2.21	1.99	1.81	1.66
150	Downwards	4.63	3.86	3.28	2.83	2.47	2.18	1.94	1.74
	Suction	3.84	3.26	2.82	2.48	2.21	1.99	1.81	1.66

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. For intermediate values, linear interpolation may be used.
4. All panel thicknesses have been calculated with a minimum support width of 50mm. Larger support widths are possible.
5. The actual wind suction load resisted by the panel is dependent on the number of fasteners used and the support thickness as well as the fastener material.
6. The fastener calculation should be carried out in accordance with the appropriate standards. For further advice please contact Kingspan Technical Services.
7. The allowable steelwork tolerance between bearing planes of adjacent supports is +/- 5mm.

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