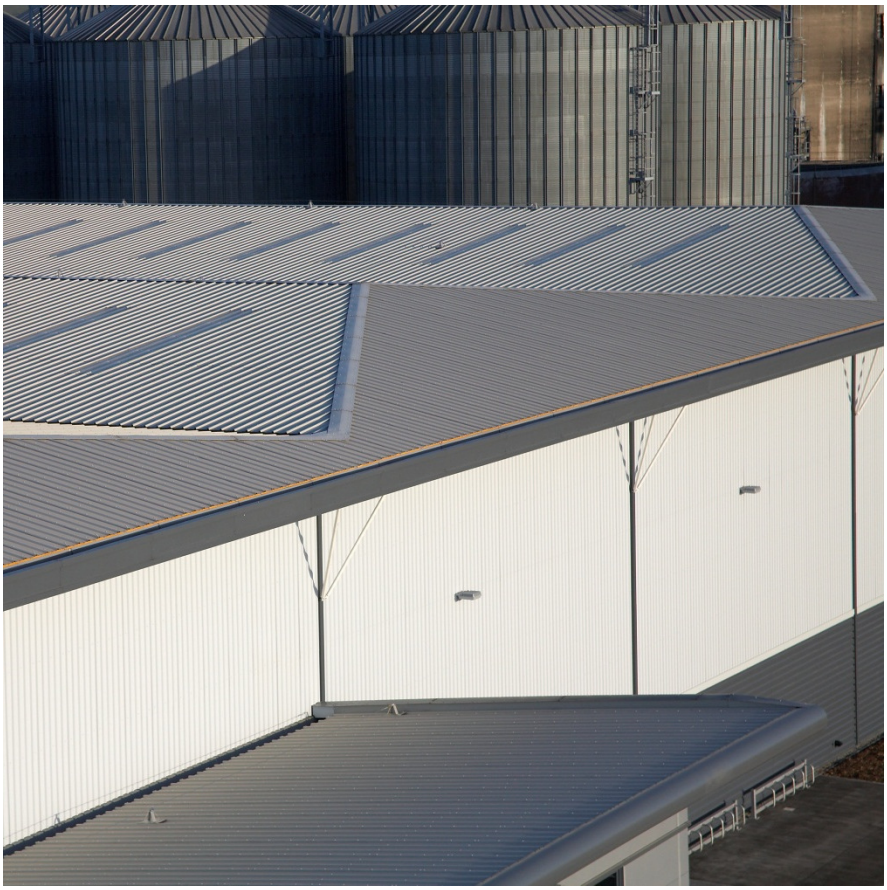
Insulated Panel Systems

United Kingdom

Trapezoidal Insulated Roof Panel KS1000 RW Data Sheet



KS1000 RW
Trapezoidal

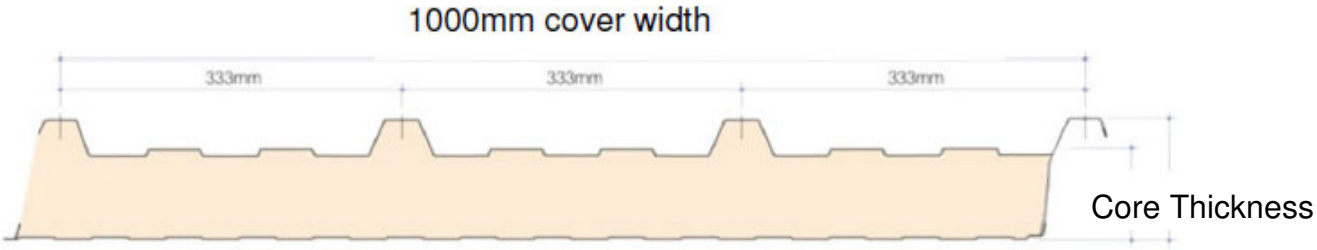
Applications

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	1.8 – 14.5m
Longer Lengths (non-standard)	14.5- 29.3m
Shorter Lengths (non-standard)	Below 1.8m

Note: 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	53	60	73	80	100	115	120	137	150
Overall Thickness (mm)	71	84	91	104	111	131	146	151	168	181
U-value (W/m²K)*	0.46	0.38	0.35	0.28	0.25	0.20	0.18	0.16	0.15	0.14
Weight kg/m² 0.5/0.4 Steel	9.9	10.4	10.7	11.2	11.5	12.3	12.8	13.1	13.7	14.2
Weight kg/m² 0.7/0.5 Alum	5.5	6.0	6.3	6.8	7.1	7.9	8.5	8.7	9.4	9.9

The KS1000 RW 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 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 LPS1181: 2005: Part 1: Issue 1.2, 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. Reaction to fire classification according to BS EN 13501-1:2007+A1:2009: B-s1d0.

LPS 1181 : Issue 1.2
Cert No: 260a & 186a

Environmental

Kingspan Insulated Panels produced in the UK are certified to BES 6001 (Framework Standard for the Responsible Sourcing of Construction Products) 'Very Good'. Kingspan Insulated Panels directly contribute to BREEAM/LEED credits.

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*, Kingspan AQUA*safe*55 and Kingspan CLEAN*safe*: Metallic protected steel to BS EN 10346:2015.thickness 0.5mm.
  CLEAN*safe* 15: Metallic protected steel to BS EN10346:2015.thickness 0.4mm.
- Stainless Steel: Austenitic Grade 316 stainless steel to BS EN 10088: Part 2: 2014, thickness 0.4mm.
- Aluminium: Please contact Kingspan envirocare 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

- Kingspan CLEAN*safe* 15: 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 AQUA*safe*: The coating has been developed for use as the internal lining of insulated panels to suit high humidity internal environments.
- Kingspan AQUA*safe* 55: The coating has been developed for use as the internal lining of insulated panels to swimming pool internal environments.
- Kingspan CLEAN*safe* 120: 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 Endlap	150mm
Class A Endlap	75mm
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 and 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, 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. The KS1000 RW roof panels are CE marked to BS EN 14509: 2013.

CE

Warranty

Kingspan Panel Warranty covering the following subject to project specific information:

- 25 year thermal performance warranty;
- 25 year structural performance warranty;
- Up to 40 year external coating warranty.

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

Note: 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 envirocare Technical Services.

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Structural Tables

Unfactored load/span table (to be compared against calculated design wind load values unfactored)

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

Single Span

Core Thickness (mm)	Load Type	Uniformly distributed imposed load, kN/m²							
		Span, m							
		1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
40	Pressure	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
53	Pressure	3.27	2.80	2.43	2.04	1.63	1.31	1.06	0.86
	Suction	4.46	3.87	3.39	2.9	2.58	2.15	1.80	1.53
60	Pressure	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
73	Pressure	4.19	3.67	3.23	2.87	2.38	1.97	1.64	1.37
	Suction	5.80	5.12	4.55	3.88	3.23	2.73	2.34	2.04
80	Pressure	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
91	Pressure	5.00	4.43	3.94	3.53	3.11	2.62	2.22	1.88
	Suction	7.03	6.27	5.43	4.43	3.69	3.12	2.68	2.33
100	Pressure	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	Pressure	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	Pressure	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	Pressure	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	Pressure	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

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Double Span

Core Thickness (mm)	Load Type	Uniformly distributed imposed load, kN/m^2							
		Span, m							
		1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
40	Pressure	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
53	Pressure	3.02	2.46	2.05	1.74	1.50	1.30	1.15	1.02
	Suction	3.43	2.86	2.43	2.11	1.86	1.66	1.49	1.35
60	Pressure	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
73	Pressure	3.38	2.77	2.33	1.99	1.72	1.50	1.33	1.18
	Suction	3.63	3.04	2.61	2.27	2.01	1.80	1.63	1.48
80	Pressure	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
91	Pressure	3.70	3.05	2.57	2.20	1.91	1.68	1.49	1.33
	Suction	3.67	3.09	2.66	2.32	2.06	1.85	1.68	1.53
100	Pressure	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	Pressure	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	Pressure	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	Pressure	4.44	3.70	3.14	2.70	2.36	2.08	1.85	1.66
	Suction	385	3.27	2.83	2.48	2.21	1.99	1.81	1.66
150	Pressure	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 coloured panels.
2. The following deflection limits have been used:
    - Pressure loading L/200
    - Suction loading L/150
3. All panel thickness have been calculated with a minimum support width of 50mm. larger support widths are possible.
4. The actual wind suction resisted by the panel is dependent upon the number of fasteners and the material of the supporting element.
5. The fastener calculation should be carried out in accordance with the appropriate standards.
6. For intermediate values linear interpolation may be used.
7. The allowable steelwork tolerance between bearing planes of adjacent supports is +/- 5mm

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