

Insulated Roof & Wall Panels

Product Data Sheet



Architectural Wall Panel Range

KS600-1000 CW, CX, EB, FL, FL-S, LV, MM, MR, PL, TL, WV

AWP Range

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Architectural Wall Panel (AWP) Range

The Architectural Wall Panel range is available in eleven distinct profiles; far more than the two or three styles previously available to architects on the market.

KS1000 CW (Curvewall)



Curvewall is only available in Kingspan Spectrum Silver in 1000mm cover width.

KS600-1000 CX (Convex)



Convex is available in Kingspan Spectrum and Kingspan XL Forté finishes with cover widths of 600-1000mm in increments of 66.66mm.

KS600-1000 EB (Euro-Box)



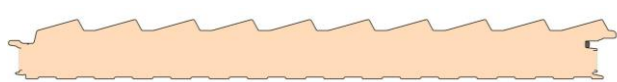
Euro-Box is available in Kingspan Spectrum and Kingspan XL Forté finishes with cover widths of 600-1000mm in increments of 100mm.

KS600-1000 FL / FL-S (Flat / Flat-Stucco)



Flat is available in Kingspan XL Forté only and Flat-Stucco is available in Kingspan Spectrum only. Both options are available in cover widths of 600-1000mm in increments of as low as 1mm.

KS1000 LV (Louvre)



Louvre is available in a 1000mm cover width. Its standard colours are Metallic Silver, Obsidian and Onyx from the Kingspan Spectrum range and Goosewing Grey and Bottle Green from the Kingspan XL Forté range.

KS600-1000 MM (Mini-Micro)



Mini-Micro is available in Kingspan Spectrum and Kingspan XL Forté finishes with cover widths of 600-1000mm in increments of 8.33mm.

KS600-1000 MR (Micro-Rib)



Micro-Rib is available in Kingspan Spectrum and Kingspan XL Forté finishes with cover widths of 600-1000mm in increments of 20mm.

KS600-1000 PL (Plank)



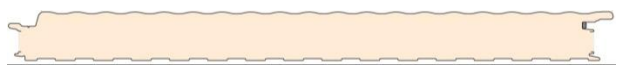
Plank is available in both Kingspan Spectrum and Kingspan XL Forté finishes with cover widths of 600-1000mm in increments of 100mm.

KS1000 TL (Tramline)



Tramline is available in both Kingspan Spectrum and Kingspan XL Forté in 1000mm cover width.

KS600-1000 WV (Wave)



Wave is available in Kingspan Spectrum and Kingspan XL Forté finishes with cover widths of 600-1000mm in increments of 100mm.

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Applications

Architectural Wall Panels are a range of secret-fix wall panel systems that offer unprecedented freedom of design and top-of-the-range performance to architects. The wide range of profiles allows architects to look beyond traditional insulated panel designs to create buildings with more inspiring façades within the same cost bracket. The AWP range is available in eleven distinct profiles, is available in a variety of panel widths and can be installed both horizontally and vertically.

Available Lengths

Standard Lengths	1.8 - 12m
Longer Lengths (non-standard)	12 - 17m
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)	45	60	70	80	100	120	140	150
U-value (W/m ² K)*	0.52	0.35	0.30	0.26	0.21	0.18	0.15	0.14
Weight kg/m ² 0.5/0.4 Steel*	9.7	10.3	10.7	11.1	11.9	12.7	13.5	13.9
KS1000 CW U-value (W/m ² K)	0.43	0.29	0.26	0.23	0.19	0.16	0.14	-
KS1000 CW Weight kg/m ²	11.8	12.4	12.8	13.2	14.0	14.8	15.6	-
KS1000 LV U-value (W/m ² K)	0.49	0.33	0.28	0.25	0.20	0.17	0.15	-
KS1000 LV Weight kg/m ²	12.4	13.0	13.4	13.8	14.6	15.4	16.2	-

The AWP range has a Thermal Transmittance (U value), calculated using the method required by the Building Regulations Part L2 (England & Wales) and Building Standards Section 6 (Scotland).

* Excluding Curvewall and Louvre. These profiles are listed separately above.

AWP Range

Insulation Core

KS1000 AWP insulated wall 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. This ECOsafe PIR insulation core system has passed all the requirements of;

- LPS1181: 2014: Part 1: Issue 1.2, series of fire growth tests for LPCB approval and is certified to LPS 1181 Grade EXT-B.
- FM approval to FMRC 4880 & 4881 Class 1 fire classification, unlimited height*
- Reaction to fire classification according to BS EN 13501-1:2007+A1:2009: B-s1,d0.

*FM approval to 900mm & 1000mm only



Environmental

This ECOsafe PIR insulation core system can achieve a Green Guide A+ rating as per the BRE Global "The Green Guide to Specification**". The system has an approved environmental profile with a BRE Ecopoints score of 0.497 Cradle to Grave over 60 year study period.

**Applies to 600, 900 & 1000mm cover widths only. Other sizes 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 providing the entire building envelope is constructed using Kingspan insulated roof, wall and facades panels.

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Acoustic

Sound Reduction Index (SRI)

Hz*	63	125	250	500	1K	2K	4K	8K
SRI (dB)	20	15	17	23	18	25	40	46

* Frequency (Steel panels only)

The AWP range has a single figure weighted sound reduction $R_w = 24$ dB.

Materials

Substrate

- Kingspan XL Forté, Kingspan Spectrum, Kingspan AQUAsafe, Kingspan AQUAsafe55 and Kingspan CLEANsafe: Metallic protected steel to BS EN 10346:2009.thickness 0.5mm.
CLEANsafe 15: Metallic protected steel to BS EN10346:2009.thickness 0.4mm
- Stainless Steel: Austenitic Grade 304 stainless steel to BS EN 10088: Part 2: 2014, thickness 0.4mm.
- Aluminium: Please contact Kingspan envirocare Technical Services for details.

Coatings - External Weather Sheet

- Kingspan XL Forté: Consists of 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

- CLEANsafe 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 AQUAsafe: The coating has been developed for use as the internal lining of insulated panels to suit high humidity internal environments .
- Kingspan AQUAsafe 55: The coating has been developed for use as the internal lining of insulated panels to swimming pool internal environments.
- Kingspan CLEANsafe 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.

AWP Range

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 Tolerance

Length	-5mm +5mm
Width	-2mm +2mm
Thickness	-2mm +2mm
Squareness	-3mm +3mm
Flatness (per metre)	-2mm +2mm

Seals

Factory applied side joint seals. All side joints have a factory applied seal fitted into the groove to automatically seal the joint between panels.

Quality & Durability

The AWP range is 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 panels are manufactured under ISO 50001:2011 – Energy Management System. The KS1000 AWP insulated wall panels are CE marked to BS EN 14509: 2013.

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Guarantee

Kingspan Ultimate Panel Guarantee covering the following subject to project specific information:

- 25 year thermal performance guarantee;
- 25 year structural performance guarantee;
- Up to 30 year external coating guarantee.

Packing

The AWP range panels are stacked with weather sheet upward. Removable hot melt adhesive is laid between each panel. The top, bottom, sides and ends are protected with polystyrene and timber packing and the entire pack is wrapped in polythene. The number of panels in each pack depends on panel thickness/length.

Core Thickness (mm)	45	60	70	80	100	120	140	150
No. of Panels in Pack	25	18	16	13	11	9	6	5

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. Kingspan recommend that the appointed cladding sub-contractor attends the appropriate product installation training course at our offices in Holywell prior to commencing installation on site.

KS1000 AWP MR**(Not applicable for FL/FL-S, for span information on these profiles contact Kingspan Envirocare Technical Services 0800 587 0090)**

External sheet 0.5mm (steel), Internal sheet 0.4mm (steel)

(Unfactored Load/Span tables (to be compared against calculated design wind load values unfactored))

Single Span

Core Thickness (mm)	Load Type	Uniformly distributed imposed load, kN/m ²										
		Span, m										
		2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0
45	Pressure	2.40	2.09	1.72	1.43	1.20	1.01	0.85	0.73	-	-	-
	Suction	2.17	1.74	1.41	1.14	0.93	0.77	0.62	0.49	-	-	-
60	Pressure	3.20	2.91	2.67	2.35	2.00	1.71	1.47	1.27	1.10	0.96	0.84
	Suction	3.20	2.85	2.40	2.02	1.69	1.42	1.20	1.02	0.87	0.74	0.63
70	Pressure	3.73	3.39	3.11	2.87	2.59	2.23	1.93	1.68	1.46	1.28	1.13
	Suction	3.73	3.33	2.80	2.38	2.06	1.79	1.57	1.39	1.21	1.04	0.90
80	Pressure	4.27	3.88	3.56	3.28	3.05	2.78	2.42	2.12	1.86	1.63	1.44
	Suction	4.27	3.83	3.22	2.74	2.37	2.06	1.81	1.60	1.43	1.28	1.16
100	Pressure	5.33	4.85	4.44	4.10	3.81	3.56	3.33	3.07	2.72	2.41	2.15
	Suction	5.33	4.82	4.05	3.45	2.98	2.59	2.28	2.02	1.80	1.62	1.46
120	Pressure	6.40	5.82	5.33	4.92	4.57	4.27	4.00	3.76	3.56	3.26	2.92
	Suction	6.40	5.79	4.87	4.15	3.57	3.11	2.74	2.42	2.16	1.94	1.75
140	Pressure	6.40	5.82	5.33	4.92	4.57	4.27	4.00	3.76	3.56	3.37	3.20
	Suction	6.40	5.82	5.33	4.84	4.17	3.63	3.19	2.83	2.52	2.26	2.04
150	Pressure	6.40	5.82	5.33	4.92	4.57	4.27	4.00	3.76	3.56	3.37	3.20
	Suction	6.40	5.82	5.33	4.92	4.47	3.89	3.42	3.03	2.70	2.43	2.19

Double Span

Core Thickness (mm)	Load Type	Uniformly distributed imposed load, kN/m ²										
		Span, m										
		2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0
45	Pressure	2.40	2.18	2.00	1.85	1.66	1.40	1.20	1.04	0.91	0.80	0.72
	Suction	2.40	2.12	1.79	1.52	1.31	1.14	1.00	0.89	0.79	0.71	0.64
60	Pressure	3.20	2.91	2.67	2.46	2.29	1.98	1.68	1.45	1.26	1.11	0.98
	Suction	3.20	2.85	2.40	2.04	1.76	1.53	1.35	1.19	1.07	0.96	0.86
70	Pressure	3.73	3.39	3.11	2.87	2.66	2.41	2.04	1.75	1.52	1.34	1.18
	Suction	3.63	3.28	2.80	2.38	2.06	1.79	1.57	1.39	1.24	1.12	1.01
80	Pressure	4.06	3.66	3.33	3.05	2.82	2.62	2.40	2.05	1.78	1.55	1.37
	Suction	3.86	3.49	3.18	2.74	2.37	2.06	1.81	1.60	1.43	1.28	1.16
100	Pressure	4.56	4.11	3.73	3.42	3.16	2.93	2.74	2.57	2.31	2.01	1.77
	Suction	4.34	3.91	3.55	3.26	2.98	2.59	2.28	2.02	1.80	1.62	1.46
120	Pressure	4.58	4.12	3.74	3.43	3.16	2.94	2.74	2.57	2.42	2.29	2.17
	Suction	4.34	3.90	3.54	3.25	3.00	2.79	2.61	2.42	2.16	1.94	1.75
140	Pressure	4.60	4.14	3.76	3.44	3.17	2.94	2.74	2.57	2.42	2.28	2.17
	Suction	4.33	3.89	3.54	3.24	2.99	2.78	2.59	2.43	2.29	2.17	2.04
150	Pressure	4.61	4.14	3.76	3.44	3.17	2.94	2.74	2.57	2.42	2.28	2.16
	Suction	4.33	3.89	3.53	3.23	2.98	2.77	2.59	2.43	2.28	2.16	2.05

1. Values have been calculated using the method described in BS EN 14509 2013, for dark coloured panels
2. The following deflection limits have been used:
 - a. Pressure loading L/100
 - b. Suction loading L/100
3. All panel thicknesses 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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