

**Fabrications, Safety
& Lighting Solutions**

**Product
Data Sheet**



Kingspan Day-Lite Vault
KS1000 DLVLT

Kingspan Day-Lite Vault

Product Data Sheet

Applications

Designed to be an integral part of the Topdek roof deck system, Kingspan Day-Lite Vault is a translucent polycarbonate barrel vault rooflight for flat or low-pitch roofs, offering a standard U-value of 1.1W/m²K.

Kingspan Day-Lite Vault rooflight is supplied in three main components:

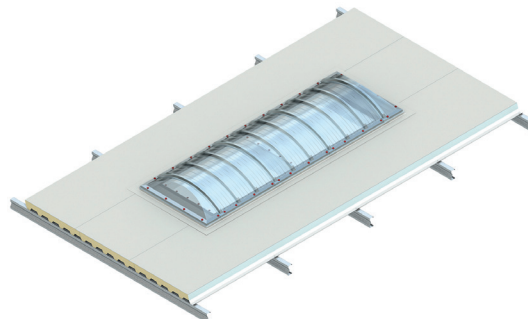
- Factory assembled unit (FAU);
- Barrel vaults;
- End caps.

Insulated / non-insulated kerb profiles and associated ancillaries are also required but are not supplied as standard. These items can be ordered and supplied by Kingspan upon request, please contact the Kingspan Technical Services Department for more information.

Kingspan Day-Lite Vault is suitable for all building applications with flat or pitched roofs above 0.72° after deflection, except where the occupants or processes add significant quantities of water to the air, or where there are internal environments with low temperatures. The rooflight system is suitable for use in temperatures of between -10°C and +40°C.

Notes:

For more information on the Topdek roof deck system please refer to the Topdek product data sheet or contact the Kingspan Technical Services Department.



Available Lengths

The FAU is manufactured to order, and is available in lengths of 6m maximum. Barrel vaults are available in 1m lengths. Any specified length can be achieved with a continuous run of FAU, barrel vault and end cap assemblies.

Dimensions, Weight & Performance

Product Reference	Height Above Panel (mm)	Weight (kg/m ²)†	U-value (W/m ² K)	Light Transmission (%)*	Solar Heat Gain Coefficient
KS1000 DLVLT	300	variable	1.1**	41	0.41

Notes:

† Weight is dependent upon the Topdek roof deck thickness specified. Please refer to the product data sheet for more information.

The U-value has been calculated using the method required by the appropriate National Building Regulations.

* Based on a clear polycarbonate finish. Light transmission, according to BS EN 410, is as measured on 600mm x 600mm samples.

** Standard U-value is shown above. Standalone U-value of FAU is 1.35W/m²K.

Solar Heat Gain Coefficient (SHGC), according to BS EN 410, is the total solar energy that enters the interior of a building. Please contact the Kingspan Technical Services Department for more information.

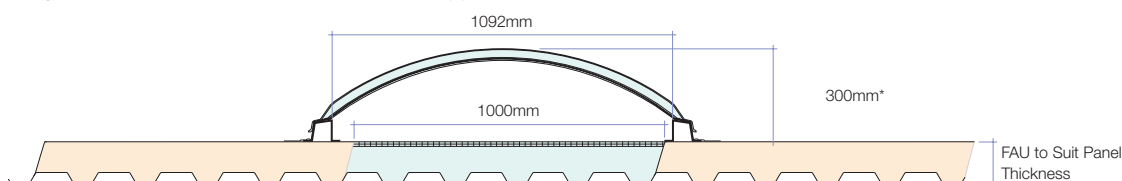
Weight

KS1000 TD Panel Depth (mm)	34	71	91	100	120
Weight (kg/lm)***	8.1	8.7	9.1	9.2	9.6

Notes:

*** Weight does not include kerb profile or end caps.

Kingspan Day-Lite Vault, KS1000 DLVLT - Application with KS1000 TD

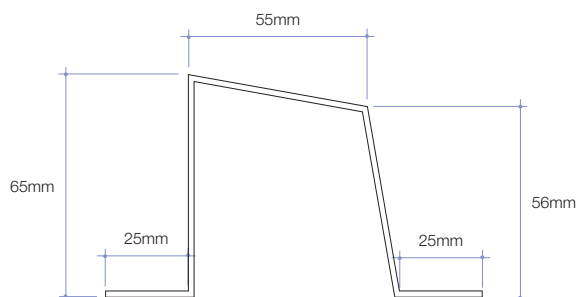


* Based on standard kerb profile.

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Standard Kerb Profile



Fire

Kingspan Day-Lite products fully satisfy the internal and external requirements of the National Building Regulations achieving:

- Euro Class B (internal);
- National Class AA and Euro Class BROOF(t4) (external).

All products achieve a minimum classification of B-s2,d0 when tested to EN 13501-1: 2007.

For more information on fire performance please contact the Kingspan Technical Services Department.

Properties

- Weighted sound reduction: 22dB(A).
- H&S classification: Class B - Non-Fragility to ACR[M]001: 2014.
- Building air leakage: Less than 1.5m³/m²/hr at 600Pa for complete envelope.

Air Permeability & Weather Performance

	Standard	Result Classification
Air Permeability	BS EN 12152	Class AE (>600Pa)
Watertightness	BS EN 14963	Pass

Biological

Kingspan Day-Lite Vault rooflights are resistant to attack from mould, fungi, mildew and vermin. No urea formaldehyde is used in the construction, and the panels are not considered deleterious.

Materials

External Weather Face

Clear polycarbonate formed barrel with co-extruded UV protection.

Core - Spacer

The core (air gap) is formed using high density PET spacers. The spacers are located at the purlins, to be specified for each panel.

Internal Face

Clear profiled polycarbonate sheet to match Topdek insulated roof deck profile.

FAU

- 1mm profiled polycarbonate internal liner deck.
- High density polyethylene foam spacers (to suit purlin spacings).
- 16mm multiwall polycarbonate sheet.
- Polycarbonate is supplied with a protective film which must be removed on site.

Barrel Vault and End Cap

- 2mm thermoformed polycarbonate.
- Polycarbonate is supplied with a protective film which must be removed on site.

Kerb Profile

- 1.8mm folded galvanised steel S450 GD.

Fillers & Seals

Factory-applied breather tape reduces the risk of condensation and prevents ingress of moisture and insects during transportation and delivery, keeping rooflights clean and optimising performance. If these tapes become damaged, or if panels are cut to length on site, they should be renewed prior to installation.

Side Laps

Two runs of PE foam tape are factory applied to the side laps of the Kingspan Day-Lite Vault FAU.

End Laps

All external end laps are 60mm and weather sealed along the full width using one unbroken run of 6mm x 5mm butyl rubber sealant.

Fixing Detail

Self-drilling and tapping fixings with washers (poppy red). For all fixing details please contact the Kingspan Technical Services Department.

Product Tolerance - FAU

Cut to Length	-5mm	+5mm
Squareness	-5mm	+5mm
Cover Width	-4mm	+4mm

Product Tolerance - Barrel Vault

Cut to Length	-2mm	+2mm
Squareness	-3mm	+3mm
Cover Width	-3mm	+3mm

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Handling

The FAU is installed in conjunction with Topdek roof deck, and therefore handling (both left to right handed and right to left handed) for both roof panels and rooflights must be specified at time of order. End caps are handed; the lower end cap is to be installed first (prior to the barrel vaults) with the upper end cap installed last to complete the assembled rooflight sequence. Please note that barrel vaults are not handed, but have an underlap and overlap.

Quality & Durability

Kingspan Day-Lite Vault is 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. Kingspan Day-Lite Vault is fully compliant with ISO 9001 (Quality), ISO 14001 (Environmental) and OHSAS 18001 (Health & Safety).

The polycarbonate material is treated with a barrier to prevent stress cracking when subjected to stress and temperature when in contact with PVC materials.

Guarantee

The Kingspan Guarantee covers the structural and thermal performance for a period of up to 25 years.

Packing

Kingspan Day-Lite Vault FAUs 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. Barrel vaults and end caps are stacked into each other with foam spacers.

Safe Storage

To ensure that Kingspan Day-Lite Vault rooflights remain in prime condition while stored on site, the following precautions should be taken.

At ground level:

- Allocate a safe, trade-free area;
- Prevent personnel from walking over packs;
- All packs must be kept in packaging and covered with a non-transparent waterproof sheet, to protect from direct sunlight and water ingress, at all times prior to installation (at both ground and roof level);
- Store Kingspan Day-Lite Vault on a slight slope, ensuring any penetrating rainwater drains off.

At roof level:

- Prior to and during installation, securely tie Kingspan Day-Lite Vault packs to the roof structure to prevent movement;
- Keep Kingspan Day-Lite Vault covered to prevent penetration from rainwater.

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 Field Services Department.

Notes:

Barrel vaults are to be installed immediately after installation of the FAU.

Like most daylight solutions, it is common for some condensation to form within Kingspan Day-Lite products during the construction phase, in particular as a result of a rise in humidity levels following the pouring of concrete slabs.

Condensation will typically disappear following a full annual temperature cycle, but can be kept to a minimum by following Kingspan's recommendations for safe storage of polycarbonate products on site, ensuring breather tapes are kept in place and undamaged, maintaining air tightness and allowing the building to dry out thoroughly. For more information please contact the Kingspan Technical Services Department.

Cleaning

Periodic cleaning, using the correct procedure, is recommended to prolong service life. For small surfaces, gently wash sheet with a solution of mild soap and lukewarm water using a soft, grid-free cloth or sponge to loosen any dirt or grime. Do not use any corrosive materials or chemicals.

Structural Tables - Kingspan Day-Lite Vault with Standard Kerb Profile

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

Double Span Condition

Load Type	Maximum Allowable Load (kN/m ²)			
	Purlin Span (m)			
	1.2	1.4	1.6	1.8
Suction	1.30	1.12	0.98	0.86

Notes:

1. Values are based on the use of a standard Kingspan kerb profile. Alternative kerb configurations would result in different performance characteristics.
2. Minimum purlin thickness: 1.4mm.
3. Yield strength of kerb: 450N/mm².
4. Thickness of kerb: 1.8mm.
5. Values are based on two fasteners at intermediate positions and one fastener at end positions on the kerb profile. Fastener type: Without washer (12mm head).
6. Linear interpolation may be used to determine intermediate values.
7. Project-specific calculations are required for values outside of those stated herein.

Kingspan Limited

Sherburn, Malton, North Yorkshire, YO17 8PQ

t: +44 (0) 1944 712444 f: +44 (0) 1944 710830 www.kingspanpanels.co.uk

Carrickmacross Road, Kingscourt, Co Cavan, Ireland

t: +353 (0) 42 96 98500 f: +353 (0) 42 96 98572 www.kingspanpanels.ie

For the product offering in other markets please contact your local sales representative or visit www.kingspanpanels.com

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