



Kalzip

Kalzip VCL - Vapour control layer

Technical Information

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Introduction

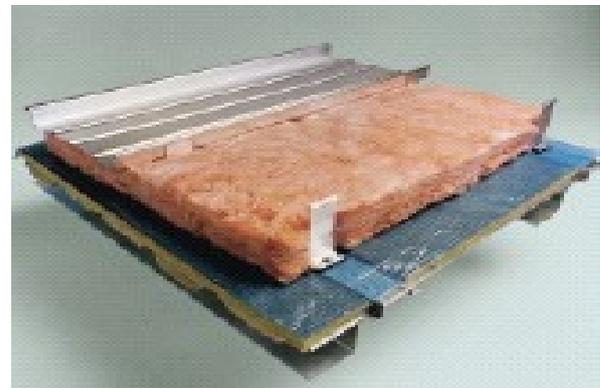
It is good practice to enhance the performance of a roofing system by incorporating a high performance vapour control layer.

A vapour control layer will restrict the movement of water vapour from inside the building into the roof construction, thereby minimising the risk of condensation and also assist in limiting air permeation through the system.

The vapour control layer should always be installed on the warm side of the construction and should be continuous across its surface. It must be fully sealed at all laps, perimeters and penetrations in order to ensure its effectiveness.

The type of vapour control layer to be specified would be dependent upon the use of the building and therefore the condensation risk.

Air-tightness of a building is covered under the Building Regulations for England and Wales



Approved Document L, and the Building Regulations for Scotland Technical Standard Part J, and using a vapour control layer can be used to enhance the performance of the roofing system.

Specification

The vapour control layer for the Kalzip Roofing System is to be Kalzip VCL or Foil supplied by Kalzip Limited. The vapour control layer is to be lapped by a minimum of 50 mm and sealed with one or two layers of Kalzip VCL sealant tape. See attached table, **Recommended Kalzip vapour control layer for Kalzip roofing and cladding systems.**

Storage and handling

The rolls of Kalzip VCL vapour control layer material must be handled carefully to avoid puncturing and to prevent damage and must not be stored on end. For long-term storage the rolls should be protected from ultra-violet light indoors and under non-translucent covers.

Installation

The Kalzip VCL vapour control layer should be laid dry and should be completely sealed around all roof perimeter edges and upstands of roof penetrations. The vapour control layer should be lapped a minimum of 50 mm and continuously sealed with the Kalzip VCL sealing tape.

Kalzip Liner Roof System and Kalzip Liner-Deck Roof System

- Side lap joints in the Kalzip VCL vapour control layer should be in the same direction as the roof slope and coincide with a "crown" of the Kalzip trapezoidal liner or liner-deck sheet in order to offer a continuous bearing surface to maintain the integrity of the joint. The vapour control layer should preferably be laid into the prevailing wind.

Kalzip Deck Roof System

- Side lap joints in the Kalzip VCL vapour control layer should be in the same direction as the structural decking (i.e. running rafter to rafter, transverse to the Kalzip standing seam outer sheet) and coincide with a "crown" of the Kalzip trapezoidal structural decking sheet in order to offer a continuous bearing surface to maintain the integrity of the joint. Laying of the vapour control layer should commence at the eaves working up to the ridge to ensure that the overlap is pointing down-slope. The vapour control layer should preferably be laid into the prevailing wind.

As joints in the vapour control layer are to be fully supported i.e. by the "crown" of the liner, liner-deck or structural decking sheet, it is recommended that the same criteria is also adopted for end lap joints of the vapour control layer. A continuous bearing surface can be achieved by installing a metal strip spanning the "trough" of the trapezoidal sheet at the vapour control layer end-lap position.

Where self-tapping or rivet fasteners are used the holes for the Kalzip Clip fixings should be drilled and any swarf removed prior to laying the vapour control layer. In order to save the vapour control layer from damage by foot traffic during the construction stage and from becoming wet due to adverse weather conditions, only that amount of roofing that can be successfully completed in a short period of time should be laid with the vapour control layer.

Supervision

Adequate supervision is to be maintained during the laying of the vapour control layer to ensure its integrity. Damage to the Kalzip VCL vapour control layer is to be repaired with the Kalzip VCL sealing tape.

The success of the roof system to prevent condensation occurring relies heavily on the expectation that the vapour control layer will sustain no damage and that all laps, edges and penetrations are properly sealed. Therefore, great care must be employed during storage, handling and installation stages of the vapour control layer in order that it is fit for purpose.

Recommended Kalzip vapour control layer for Kalzip roofing and cladding systems

Humidity Class ³	Typical Building Type	Kalzip VCL ¹		
		Liner/Decking Configuration		
		Solid Liner	Perforated Liner Sheet & Solid or Perforated Decking	
1	Very Low	Storage areas	Kalzip VCL with one row of Kalzip VCL sealing tape ²	Kalzip VCL with one row of Kalzip VCL sealing tape
2	Low	Offices, shops	Kalzip VCL with one row of Kalzip VCL sealing tape	Kalzip VCL with one row of Kalzip VCL sealing tape
3	Medium	Dwellings with low occupancy	Kalzip VCL with one row of Kalzip VCL sealing tape	Kalzip VCL Foil with one row of Kalzip VCL sealing tape
4	High	Dwellings with high occupancy, sports halls, kitchens, canteens: buildings heated with unflued gas heaters	Kalzip VCL Foil with one row of Kalzip VCL sealing tape	Kalzip VCL Foil with one row of Kalzip VCL sealing tape
5	Very High	Special Buildings, e.g. laundry, brewery, swimming pool	Kalzip VCL Foil sealed with two rows of Kalzip VCL Sealant Tape	Kalzip VCL Foil sealed with two rows of Kalzip VCL Sealant Tape

Notes:

1. The Kalzip VCL must be fully sealed at all side and end laps, penetrations and perimeter details to ensure the required level of air-tightness for the building envelope.
2. On humidity class 1 (very low) buildings where there is limited flashing details and penetrations it may be feasible to omit the Kalzip VCL. The Kalzip liner sheet should be fully sealed at all side and end laps, penetrations and perimeter in this instance.
3. Humidity Class of buildings taken from **BS EN ISO 13788:2002 – Hygrothermal performance of building components and building elements – Internal surface temperature to avoid critical surface humidity and interstitial condensation – Calculation methods.**