

Question

What are vapour control layers (VCLs) and what do we require?

Consideration

VCL's are often specified in construction projects in a variety of scenarios, however, their use is often misunderstood and their importance is often understated. This technical document will provide background information on what a VCL is for and where they should be used.

What is a VCL?

A VCL is a membrane used throughout construction projects and it is designed to protect building elements from degradation by restricting the movement of water vapour from inside a building to within the building structure (interstitial condensation). A VCL therefore helps prevent interstitial condensation.

What is interstitial condensation?

Condensation will occur where the water vapour in warm air inside the property condenses into liquid form – this occurs when there is a temperature difference between the air and the surface it lands on. Condensation which occurs within elements of the building fabric is called interstitial condensation and it can occur within walls, pitched and flat roofs.

Where should they be specified?

Framed structures

For framed structures such as timber frame and light gauge steel frame systems, a VCL should be used on or near the warm side of the insulation.

The VCL may take the form of:

- A vapour control plasterboard comprising a metallised polyester film bonded to the back face of the plasterboard
- A minimum 125 micron thick (500 gauge) polythene sheet
- A third-party approved proprietary vapour control membrane product.

Pitched Roofs

For pitched roofs, a VCL should be used on the warm side of the insulation for both warm and cold roofs.

Flat roofs

For flat roofs, a VCL should be used on the warm side of the insulation for warm deck flat roofs Cold deck flat roofs are not recommended and an alternative form of flat roof should be adopted.

The above is not an exhaustive list of every situation where a VCL is required, however it should provide some guidance for the most common locations for a VCL to be located.

Different types of VCLs

We've recently seen a surge in proprietary vapour control membrane products used on site, the developer should ensure they hold third party accreditation from a UKAS accredited body and this should be forwarded to the Warranty Surveyor as early as possible to confirm acceptance. They often have differing and confusing names, properties and certifications, so ensure they are reviewed very closely.

Answer

In summary, a VCL is a membrane used throughout construction projects and it is designed to protect building elements from degradation by restricting the movement of water vapour from inside a building to within the building structure.

VCL's should primarily be specified in framed structures, pitched roofs and flat roofs and they may take the form of:

- A vapour control plasterboard comprising a metallised polyester film bonded to the back face of the plasterboard
- A minimum 125 micron thick (500 gauge) polythene sheet
- A third-party approved proprietary vapour control membrane product

Every care was taken to ensure the information in this article was correct at the time of publication (September 2023). Guidance provided does not replace the reader's professional judgement and any construction project should comply with the relevant Building Regulations or applicable technical standards. For the most up to date Premier Guarantee technical guidance please refer to your Risk Management Surveyor and the latest version of the [Premier Guarantee Technical Manual](#).