TECHNICAL UPDATE

VAPOUR CONTROL LAYERS: WHAT ARE THEY AND WHAT DO WE REQUIRE?

This technical document provides additional guidance relating to the use of vapour control layers (VCLs) in construction.

Executive summary

VCLs 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.

How can you prevent interstitial condensation?

The most effective way to prevent interstitial condensation is to use a VCL. A VCL essentially prevents warm moist air getting into the structure or the cold side of the insulation/structure.

Where should they be specified?

<u>Framed structures</u>

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 should have a minimum vapour resistance of 250 MNs/g.

The VCL may take the form of:

- A vapour control plasterboard comprising a metallised polyester film bonded to the back face of the plasterboard. Vapour control plasterboard should only be used subject to a condensation risk analysis demonstrating the suitability of the wall build up. It should also not be used if there are service voids proposed or electrical or other wall mounted fittings where there is a high risk that follow on trades could puncture the VCL and allow paths for water vapour to get into the wall construction.
- A minimum 125 micron thick (500 gauge) polythene sheet.
- A third-party approved proprietary vapour control membrane product.

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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.

Warranty position

The above article should provide some background information on what a VCL is for and where they should be used. If a proprietary vapour control membrane product is proposed, the developer should carefully review the third party accreditation to ensure it is suitable for use and forward it to the warranty surveyor as early as possible.

Every care was taken to ensure information in this article was correct at the time of writing (September 2021). 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 LABC Warranty technical guidance please refer to your risk management surveyor and the latest version of the LABC Warranty Technical Manual.