

Roof & Building Leak Detection & Prevention

GUIDANCE & INFORMATION NOTE NO. 13

CONDENSATION



Condensation is a natural phenomenon that sometimes cannot be avoided within a roof whether it be a flat roof with a single ply waterproofing or a pitched roof with a natural slate.

Condensation is caused when moist air meets cold surfaces and condenses. Air, depending on its vapour content, pressure and temperature can only contain a finite amount of water vapour; warm air can hold more water vapour than cold air. When warm air meets a colder surface, it cools down and can't retain the all of the water vapour. The excess water vapour is released and forms condensation.

Water vapour is formed by activities in a dwelling irrespective of the internal use. Some internal environments produce more water vapour than others, for example, bathrooms and kitchens produce more water vapour than living rooms or hallways.

When the vapour content of air becomes saturated (cannot hold any more vapour) condensation can occur if there is a change in the pressure or temperature. As the warm moist permeates through walls or roofs it cools and condensation can form.

Most condensation in roof spaces is temporary and is not detrimental to the building. However, sometimes the condensate can accumulate and cause mold growth or even 'leaks' into the building as the condensate drips into it.

Condensation cannot be completely prevented but it can be controlled so that it is not detrimental.

There are Statutory Requirements within the Building Regulations to control the risk of condensation, for example, by provision of ventilation or attaining certain levels of insulation.

In many pitched roofs condensation is controlled by ventilation between opposite eaves.

In many flat roofs condensation is controlled by incorporating a vapour impermeable layer within the construction, a vapour control layer; this is located on the warm side of the insulation. The thickness of insulation also affects the risk of condensation; a thin layer of insulation may be more susceptible to condensation occurring within it than a thick layer of insulation.

Due to construction defects condensation can be detrimental. Ascertaining this can be difficult and remedials to prevent further condensation can be disruptive and expensive.

It is imperative to adequately control the risk of condensation at the Design and Specification stage.



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- Electronic Leak Testing • Leak Investigations
- Floor & Roof Vacuum Dewatering.
- Thermal Imaging. • Expert Witness.

I TJC is an independent specialist Roofing Consultancy and Testing Services Company. We work throughout the UK providing non-destructive electronic leak testing, building envelope leak investigations, independent, specialist roofing technical advisory services to main and roofing contractors, building owners and developers in both the commercial and domestic markets. The company offers an extensive range of testing and investigative surveys that can quickly and accurately identify water entry pathways into and areas of entrapped water within a flat roof construction.

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