

Roof & Building Leak Detection & Prevention

GUIDANCE & INFORMATION NOTE NO. 12

CONDENSATION



Condensation is a natural phenomena 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 comes into contact with 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 comes into contact with 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 can 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.



ERC offer a range of services, including

- Electronic Integrity/Leak Testing.
- Building Envelope Leak Investigations.
- Thermal Imaging.
- Roof & Floor Dewatering.
- Expert Witness.
- Roof Surveys, Defect & Maintenance Schedules.

i ERC is an independent specialist Roofing Consultancy and Testing Services Company. ERC work predominantly throughout the UK* providing specialist specific and/or combination testing regimes to quickly and accurately determine the causes of leaks through any part of the building façade and to identify areas of retained/entrapped water within the construction to main and roofing contractors, building owners and developers in both the commercial and domestic markets. **for inquiries about procuring our services outside the UK please contact head office.*

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