

Your guide to

Condensation in your roof space

This guide aims to help you understand and control condensation in your roof space.



About condensation in your roof space

Condensation is caused when water vapour comes into contact with cold surfaces and condenses to form dampness or water droplets.

Air can contain varying amounts 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 same amount of water vapour. The excess water vapour is released and forms condensation.

Water vapour is invisible in air and is formed when you breathe and when you carry out normal daily activities in the home. It's also formed as the materials used in your home's construction dry out.

Condensation in the roof space

Condensation isn't normally a building fault. It can occur in a new home because building materials, such as mortar and plaster, contain a lot of moisture. Water vapour is formed as the materials dry out when the home is lived in and heated. This is a slow process that takes some time to complete.

Normal daily activities in the living area of the home (such as taking showers and baths, washing and drying clothes, cooking and boiling kettles) produce warm air containing a large amount of water vapour. If the warm air can't escape through an open window or air vent, it moves around until it finds a cold surface (which could be in the roof space) where it cools and forms condensation.

Insulation laid on top of the ceiling in the roof space is an effective way of conserving energy and helps to keep the home warm. The amount of insulation that's required to meet modern standards greatly reduces the amount of heat that enters the roof space from the rooms below. This can increase the risk of condensation because the surfaces in the roof remain cold.

Most cases of condensation in roof spaces are temporary. It occurs when the weather is cold, or when it changes between warm and cold, or when there is a big temperature drop between day and night.

Reducing condensation

Water vapour can pass through most building materials and will enter the roof space through the plasterboard ceilings. A greater amount can enter through air gaps in ceilings, such as around cables, pipes, loft hatches and downlighters.

You're unlikely to prevent condensation in the roof space completely, but you should aim to reduce it to a level so that it doesn't cause problems. Therefore, it's important to control the build-up of water vapour in the living area of the home. The following advice should help you to achieve this.

Produce less moisture

- Put lids on saucepans while you're cooking to reduce the amount of steam.
- Avoid drying laundry on a clothes airer or radiator. If you need to dry clothes indoors, open the window and close the

door of the room where the clothes are drying, so that moisture can escape outside rather than circulate around your home.

- If you use a vented tumble drier, make sure it's properly vented to an open window or through an outside wall.

Stop moisture spreading

- While cooking, bathing or washing, use an extractor fan and/or open a window, and keep the door closed. Keep the extractor fan on and/or the window open for about 20 minutes after you have finished (with the door closed).
- When condensation appears, wipe it away.
- Leave trickle vents (slotted vents in the window frames) open when rooms are occupied – even in the winter when your heating is on. These vents provide constant ventilation which removes water vapour.
- Don't leave the loft hatch open for long periods.

Ventilate the roof

Once water vapour has entered the roof space, the usual and most practical way of removing it is by ventilation.

Both Building Regulations and NHBC require ventilation to be provided in roof spaces. In many pitched roofs, a ventilation slot is built in along two opposite eaves so that air can flow across the roof space. Therefore, it's important that the ventilation slots aren't blocked.

The roof space isn't intended to be a storage area, so if you do put items up there you could restrict the air flow. The stored items may also become damaged by the condensation.

In some roofs, ventilation isn't needed because the underlay (the material seen on the roof slopes from within the roof space) is water vapour permeable. This type of roof allows water vapour to pass through the underlay to the outside of the structure, instead of forming as condensation on the surfaces within the roof space. However, condensation can sometimes still occur in this type of roof during cold weather while the building is drying out.

Need more advice?

If you have a severe case of condensation in your roof space, which doesn't improve by following the guidance

