

Condensation, damp and mould



There are three ways that your home can become damp. This factsheet looks at each in turn and suggests ways to prevent them.

1) Condensation

Condensation is the most common cause of damp. When moist air reaches cool surfaces – such as walls, ceilings, windows and pipes – it turns back into water (condenses) making those surfaces damp. Damp surfaces are the perfect breeding ground for mould.

We produce a lot of moisture through our everyday activities at home, such as showering, cooking, drying laundry and even just breathing (see diagram).

Condensation occurs due to one or more of the following:

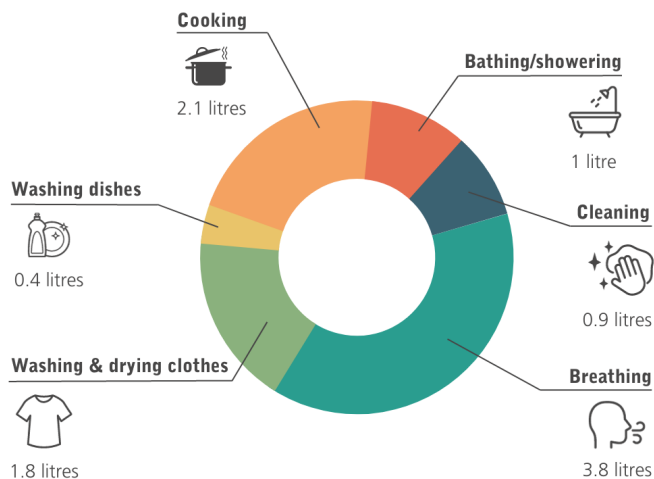
- Inadequate ventilation.
- Excessive moisture being produced through over-occupancy, cooking and drying clothes inside.
- Missing or incomplete insulation resulting in cold spots.
- Inadequate heating resulting in lower surface temperatures.

Mould caused by condensation damp is characterised by black dots, like on this window recess.

Two immediate solutions to condensation are, firstly, to produce as little moisture as possible – for example, by keeping lids on pans and drying clothes outside – and, secondly, to make sure that any moist air you do produce can leave your home through vents, extractor fans and open windows.

Following the advice in the checklist overleaf will help you do this.

An average household produces around 10 litres of moisture a day through regular activities.



Typical moisture production for a family of four (litre/day). Nicol, F. and Rudge, J. eds., 2005. Cutting the cost of cold: Affordable warmth for healthier homes. Routledge.



Penetrating damp can cause paint to flake. It can be caused by structural issues like cracked masonry or leaking guttering

2) Penetrating damp

The second most likely cause of damp is penetrating damp. This is where moisture comes through the walls, roof, floor, doors or windows. Penetrating damp may get worse when it rains, especially if it's windy at the same time.

The common causes of penetrating damp are related to the fabric of the building. This includes damaged roof tiles or felt, defective flashing around chimneys, cracks in the render or pointing between bricks, defective guttering, rotting wood or gaps around doors or window frames, and high external ground levels forcing water through the wall.

Be aware that identifying the cause can be difficult because water can travel horizontally as well as vertically, so the damp patch may not be where the water is coming into your house. If you can't find the cause of the damp, ask a damp specialist to do a survey of your property.

The solutions to penetrating damp are likely to be structural. This may include sealing cracks or gaps in the outside of the walls or roof with appropriate materials, replacing damaged roof tiles, felt and flashings, clearing and repairing guttering, or lowering any high external ground levels, where possible. Sometimes these are DIY jobs, though in other cases you may need a professional builder, roofer or damp specialist.

NB. Regular building maintenance is recommended to reduce the risk of penetrating damp occurring.

Rising damp

The most common cause of rising damp is a defective damp-proof course or the absence of one. A damp-proof course is a horizontal barrier, typically of plastic or bitumen, installed in the walls of a building to prevent moisture from rising through them. Some houses did not have damp-proof courses put in when they were built. In other cases, the damp-proof course may have been damaged by subsequent building work. And it is also possible that the ground outside has been raised to a level above the damp-proof course, for example, when a patio was laid down.

It is often the case that damp is misdiagnosed as rising damp, when it is actually penetrating damp or even condensation. Make sure that you get advice from a specialist who has experience working with buildings of the same age as yours.

NB. Older buildings weren't built with damp proof courses but were constructed of permeable building materials which allowed rising moisture to pass through them and evaporate. When these buildings are modified with impermeable materials, such as adding a concrete floor, this can lead to increased moisture levels in the wall and issues with rising damp.

While rising damp is the least likely cause of damp, the solutions to it are often the most complex. It may involve significant building works, such as installing a damp-proof course, digging a drainage channel around the house, or replacing modern cement renders or plasters with vapour-permeable materials such as lime. In all cases, you will need advice from a specialist.

Mould

A damp home is a breeding ground for mould. Mould spores occur naturally in the air and they quickly multiply once they find a damp surface.

If you don't treat and clean it, it will grow and spread to other areas. Mould spores can exist in walls up to a meter around the visible patch.





Checklist for reducing condensation

The majority of damp issues are caused by condensation and can be rectified by **doing things differently** in your home. This check list will help you understand what changes you need to make.

HEATING

- ☐ Make sure that the heating is working well. It may need a service or repair, or radiators may need bleeding.
- ☐ During colder times of year, turn your heating on regularly. This doesn't mean all day, every day, but often enough to keep the home dry. **If you can't afford this, then make sure you do as many of the things below as possible ...**

VENTILATION

- ☐ Regularly open external doors and windows throughout the home.
- ☐ Open the kitchen and bathroom windows to allow the steam created by cooking, showering or having a bath to leave the building.
- ☐ Check your existing extractor fans are clean and working correctly. Make sure they turn on automatically or are turned on every time steam is being produced.
- ☐ Make sure trickle vents on windows are kept open. Or permanently leave bathroom and kitchen windows slightly open (using the security latch).
- ☐ Make sure that the vents and airbricks aren't blocked or covered up. If the vent has a cover, move it to the open position.
- ☐ If you notice mould behind sofas or other furniture, move them away from the walls to allow air to circulate around the back.
- ☐ If there are lots of people or pets in a small space, increase the ventilation; we produce a lot of moisture just by breathing!
- ☐ Use a humidity meter (also called a hygrometer) to find out which rooms need to be ventilated regularly. For more on hygrometers, see overleaf.

REDUCING MOIST AIR

- ☐ When cooking, keep lids on pans to trap the steam in the pot. This also reduces the cooking time.
- ☐ Keeping doors closed will stop the moisture from moving around the home, especially your bathroom and kitchen doors when you're showering or cooking.
- ☐ If you can, avoid drying laundry inside.
- ☐ If it's not possible to dry laundry outside, use the spin cycle on the washing machine twice. Use a tumble dryer that has a vent outside the home, or hang the washing in a room with the internal door closed and a window open.
- ☐ Make sure clothes are completely dry before putting them in wardrobes and drawers.
- ☐ Do not use portable gas heaters indoors as they make the air very moist.
- ☐ In severe cases, use a dehumidifier (see box overleaf).

▶▶▶ TREATMENT FOR MOULD

- ☐ Treat the visible mould with a spray containing bleach and allow to dry, then repeat.
- ☐ To kill the invisible mould spores, treat an area at least 1m wider than the mould patch with a spray containing bleach.
- ☐ Repeat the treatment every time it reappears. It can be frustrating and time consuming, but it will be worth it to stop the mould getting worse.
- ☐ Dispose of furniture, soft furnishings and wallpaper that are too badly affected for treatment to be effective.



Hygrometers

Hygrometers measure how much vapour is in the air, this is known as the relative humidity (RH) level. It is recommended to keep RH levels in the home between 40-60%, there is a risk of mould growth when RH goes above 60%.

Hygrometers can help monitor this and keep RH as safe levels. They can be bought for as little as £8.00 and can also be used to show what causes humidity in your home to rise (drying laundry inside, cooking etc) and what causes it to fall (opening windows, turning on extractor fans etc).

Dehumidifiers

Dehumidifiers reduce the amount of moisture in the air. They can help resolve condensation issues in your home, especially if you can't follow all of the actions on the checklist.

- Set your dehumidifier to under 60% humidity, if possible.
- On warm, dry days, opening a window will be just as effective as running a dehumidifier.
- In the room where the dehumidifier is on, keep doors and windows closed so it will work more efficiently.
- Buy a dehumidifier that will remove at least 5 litres of water every 24 hours. Avoid smaller, cheaper models. Decent models start at around £100.
- A good dehumidifier costs around 17p per hour to run (based on a price for electricity of 27p per kWh, November 2023).



Check list for homeowners, housing providers and landlords

- ❑ **Insulate** the property. This can increase the inside temperature so the air can hold more moisture before it condenses and you'll be less likely to have damp and mould. For more on insulating your property, see our factsheets on loft, cavity wall, solid wall and floor insulation, all at www.cse.org.uk/advice-leaflets
- ❑ Ensure there are **extractor fans** in the kitchen and bathroom. Ideally these should be mechanical extract ventilators, which run at a low level all the time and respond to higher humidity levels. For more information on increasing ventilation in your property, systems see our factsheet on ventilation.
- ❑ Install **trickle vents** on the windows if the current windows do not have them.
- ❑ Make sure there is a **kitchen and bathroom door** that can be shut to stop the moist air getting into the rest of the house. Also check there is a gap of around 1cm below all other internal doors to allow air to circulate around the house.
- ❑ Ensure that the **heating system** is serviced regularly and necessary repairs are made.
- ❑ Where possible, provide **outdoor space** for drying clothes.

NB Sometimes non-permeable building materials such as gypsum plaster or cement render have been used on older properties preventing moisture from escaping through the wall. Replacing this with a breathable material like lime render can help regulate moisture levels although it is an expensive and disruptive solution.



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We're a charity (298740) supporting people and organisations across the UK to tackle the climate emergency and end the suffering caused by cold homes.

Our Home Energy Team offers free advice on domestic energy use to people in central southern and southwest England.

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See all our energy advice pages at
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