

Your comprehensive guide to:

Condensation & Mould Growth

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Condensation & Mould Growth

Causes and Cures

Condensation occurs when water vapour in the air inside the property condenses on a cold surface. It can occur at any time of the year and is seen as misting or water droplets on windows, walls, tiled areas, concrete floors and toilet cisterns. The appearance of condensation and mould growth is a sign that the building or room in question is not being adequately heated and ventilated.

A wall may be cold and attract condensation for several reasons

- Walls of rear extensions in older houses are more exposed and so may be colder.
- It may only be a 4 inch thick brick wall, especially where an old external toilet or coal house has been incorporated into the main house.
- It may be facing north or the room may be inadequately heated or not heated at all.
- Trees, shrubs, alleyways or an adjacent building may shade the room or walls, preventing the sun from heating it up.
- A leak from a gutter or pipe may make part of a wall colder, locate the leak and repair it.
- If the house is new, it may still be drying out.

Mould growth

Mould spores are always in the air and growth occurs when mould spores germinate on contact with surfaces that are damp through condensation or rain water penetration. The mould takes the appearance of small black (most common), grey or green spots on the wall or other surfaces. Mould is most commonly seen around window reveals, on external walls and at high level in external corners.



Water vapour

Water vapour is created by normal, everyday living in your house such as breathing, perspiration, washing, cooking, bathing, drying clothes, and burning fuel, such as gas or paraffin. The average family produces 20 pints (5 gallons or approximately 12L) of moisture every day. Think of it as two and a half builders buckets full of water and you will see the scale of the problem that the property has to cope with.

You can reduce this by:

- Keeping lids on pans when cooking, keeping the kitchen door closed and leaving the window open/extract fan on.
- Drying clothes outside or piping the tumble dryer's moist exhaust air to the outside.
- Not drying your clothes indoors on airers or over radiators.
- Running the cold water for a bath before the hot water. Leave the bathroom door closed whilst the bath is filling to reduce the spread of steam. When you have finished, open the window until the last beads of moisture have disappeared from the windows and walls. If there is an extract fan in this room, leave the window closed and leave the fan running. If you have central heating, make sure that the air temperature in this room is not less than 21C. This is particularly important for people under 5 and over 60, or who have a long-standing illness.
- Not using liquid paraffin or bottled gas room heaters. These produce 8 pints (5L) of water vapour for every gallon of fuel burned. The water will end up condensing on your walls and windows.

Ventilation

This is the normal escape route for moist air. As the air in your property circulates, it draws moist air to the outside through open windows, doors, trickle vents, extractor fans, airbricks and chimneys and is replaced by fresh air. Outside air is always drier than the air inside your house. If this exchange of air is poor or prevented, the air in the house becomes saturated and water vapour will condense on the nearest surface at or below dew point temperature. To allow fresh air to circulate you should consider some of these:

- Fit extractor fans to shower rooms, bathrooms and kitchens. Bathrooms require an extract rate of not less than 80 litres per second and kitchens 60 litres per second. There are extract fan systems available that can remove most of the heat from the extracted air and blow it back into the room (Mechanical ventilation with heat recovery).
- Open all windows until the condensation disappears.
- Ensure that trickle vents are open in double glazed windows.
- Keep bathroom and kitchen doors shut to help prevent moist air circulating to the rest of the home.
- Avoid still air pockets - areas between furniture and external walls and behind heavy curtains will encourage condensation to form, because there is no circulation of warm air to warm the wall and furniture. If it is not possible to put the furniture against an inside wall, leave a gap of at least 3" to 4" (75mm to 100mm). Do not overfill wardrobes, cupboards and chests of drawers.
- Do not put your mattress directly on the floor.
- Provide heating in the affected rooms.
- If you have a hot water storage tank in a cupboard with a feed and expansion tank above it, make sure the feed and expansion tank has a tight fitting (but not air tight) lid.

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- If you have nowhere to dry your clothes, take them to the launderette and dry them there. Failing this put them in the bathroom, turn on the heating, open the window or turn on the extract fan and close the door.
- Open windows when ironing.

Heating

Warm air can hold more moisture than cold air so if your house is heated adequately you are less likely to suffer from condensation. Warm air cooling in the night will still result in condensation, especially on or around windows during cold weather. Most of this will evaporate as heating is turned on again in the morning and windows are opened.

If you suffer from condensation and mould growth during the winter, it is important to understand why and what you can do to prevent, or at least, reduce it.

Your walls store heat. The amount of heat stored will depend upon how heavy the materials are, their insulation standards and the period for which it has been heated.

As the external air cools down, heat is lost from the structure to the outside atmosphere. If the heat is not replaced quickly enough by the heating system, your walls will continue to cool until they fall below the “dew point temperature”.

At this stage, you will notice that condensation will begin to occur. The formation of condensation cools the wall further, resulting in even more condensation occurring. This will continue happening until you do something about it.

You may notice that:

- Your house, clothing and bedding will feel cold and damp. There will be a musty, damp smell. You may see mould growth on furniture, external walls, in cupboards, drawers, on or around windows and on your clothing or bedding. Wallpaper may peel off around windows or other areas.
- It takes a long time before your heating begins to take effect, your walls stay cold to the touch and you will not feel properly warm as a result.

The cure to this problem is to put more heat in until the wall is warmed to a temperature above dew point (don't forget ventilation).

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What more can I do?

Do not wait until it starts to turn cold before putting your heating system on. Leaving the heating off until the weather turns cold will result in the walls losing all their stored heat. It will then take a lot longer for the heating system to warm them up sufficiently for you to feel comfortable.

Set the main thermostat to a temperature of not less than 21C. If you have thermostatic radiator valves in your bedrooms, bathrooms etc, adjust these to achieve a temperature of not less than 18C (aim for 21-22C in living rooms).

Economy 7 or night storage heaters: it is important to listen to the weather forecasts at night and adjust the input control to take account of the temperatures for the next day.

Do not over-ventilate by leaving your windows wide open all day in cold weather - your walls will lose all of the heat stored in them.

Do open the windows wide for a short period of time in the morning and then close them up, leaving a small gap at any time that you see condensation forming on the glass.

Do mop up any water that accumulates on the window glass or window cills. Wring the cloth out in the toilet or washbasin, don't leave it wet on the cills. This will provide a moisture reservoir for future condensation.

Do not put your heating on for short periods of time (one hour or less) - this will actually ensure that the problem becomes worse. The air absorbs water vapour more quickly than the walls can warm up. When the heating is turned off, the air cools very quickly and condensation rapidly occurs, cooling the walls further.

Do put the heating on for at least 3 hours at a time. Set your timer to come on at 4 or 5 a.m (when the air is coldest) and to go off an hour after you leave for work. During the day, set it to come on at least an hour before you come home from work and to go off at least an hour after you go to bed.

If you are at home all day, put the heating on for not less than 3 hours at a time or leave the heating on full time, but at a lower temperature.

In extremely cold weather, it is a good idea to leave your heating on at a low level whether you are at home or not.

In 99.9% of cases, the cure for condensation and mould growth is heating and ventilating properly.

