

# DampAid UK - Avoiding Condensation Problems

Have you ever noticed water droplets on your window or black staining on your walls? Have you ever wondered why the moisture returns around your windows after you have wiped it away? This type of moisture is from the interior air and is commonly referred to as condensation.

## What is condensation and how does it form in my home?

Condensation occurs in your home when moist air comes into contact with a surface which is at a lower temperature. Moist air contains water vapour — commonly referred to as humidity. Indoors, we can increase humidity through our activities and lifestyle. If a surface in your home is cold enough, the air in the immediate vicinity of the surface will be cooled sometimes causing the moisture in the air to condense or change into a liquid on the surface.

Condensation forms first on the coldest surfaces of a room, usually on glass surfaces of windows and doors. These surfaces are typically cooled by lower exterior temperatures during the winter months much more so than during the summer. For example, if it is cold enough outside and/or warm and humid enough inside, condensation may occur on or around your windows resulting in fogging, water or ice on the windows themselves or even a puddle of water on the window frame or sill. Other examples of condensation in your home can include damp spots or mildew/mould on outside walls, in corners and on ceilings. Areas of your home with poor air circulation, such as behind furniture or in a cupboard or fitted

wardrobe, can also be susceptible to condensation.



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A small amount of condensation appearing on a surface may not necessarily be a problem, depending on the amount of moisture that forms, how long it stays, and whether it accumulates on surfaces that can be damaged by water. Condensation can be short-term during a severe cold spell, or occur in a localized area such as kitchen, bathroom or laundry room. In many instances, condensation moisture simply evaporates back into the air once the surfaces warm up or the moisture source is reduced. An example of this is moisture that condenses on a bathroom window during a shower and quickly disappears shortly after the shower is turned off. However, as a general rule, steps should be taken to avoid condensation problems wherever possible as moisture can lead to damage.

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## Why must I avoid condensation problems?

Condensation can cause serious damage to the interior and structural elements of your home or building. If condensation occurs frequently enough and for prolonged periods of time, materials in contact with the moisture may be damaged. Drywall and wood finishes around windows are two examples of materials in your home that can readily absorb moisture and become damaged if they remain wet for a sustained period of time. If left unchecked, condensation problems can cause:

- crumbling or soft spots in walls.
- decay in wood framing or corrosion of steel framing
- peeling paint
- damage to the insulation inside the walls, and
- mould and mildew problems in your home.

Most importantly, taking preventative steps to avoid condensation from occurring in your home will help prevent avoidable and expensive problems in the future and lead to better living conditions for the occupants.



Condensation has led to mould Growth in a corner.

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## Sources of moisture in the home

We add to humidity levels in our home through our activities and lifestyle. Water vapour is added to the air in large quantities by our breathing and perspiration, cooking, bathing, cleaning, drying clothes indoors and other daily activities.

### How we produce humidity in our homes

- A family of four can add moisture to the air equivalent to 30 to 40 litres of water per week
- Showering, cooking, bathing and washing can add 15 to 20 litres per week
- Drying clothes indoors can add 10 to 15 litres per week



Evidence of problems resulting from condensation can be seen on the interior window sill.

## How do I avoid condensation problems?

There are number of steps that you can take to prevent condensation problems from occurring in your home.

### 1) Reduce the amount of moisture or humidity generated in your home

- Do not regularly hang clothes to dry indoors.

Wherever possible, dry your clothes in a dryer with an outside vent. Alternatively, place clothes in one room with the door closed and the window open to allow moisture to vent outside

- While cooking, put lids on pans. They will also boil faster!
- Try to have shorter showers. You will save the energy required to heat the water and conserve on water.
- Ensure the lint trap in your tumble dryer is clean. The lint trap should be inspected and cleaned before each use.
- Keep bathroom & kitchen doors closed and open window to allow the moisture laden air to vent outside and not into the rest of the property.

### 2) Promote good air circulation in your home

- Open blinds and curtains so that air can circulate freely over the windows.
- Direct heat towards exterior walls and windows.
- Where condensation on window sills is a persistent problem, remove any objects on the window sill such as books, photographs, and ornaments as they prevent air from circulating and removing the moisture.
- Move furniture such as beds, wardrobes, sofas and cupboards so they are not touching outside walls. This will improve air circulation around the cooler outside wall and reduce condensation potential.

### 3) Promote good ventilation in your home

- Use the kitchen extractor fan to remove humidity generated by cooking. Note: the fan should be vented to the outside.



Use your kitchen extractor fan to remove humidity generated by cooking. The fan should be vented to the outside.

Use bathroom fans and humidistats (if you have them) while bathing or showering. Some bathroom extractor fans are connected to a humidistat that can be preset to ventilate the room when the humidity reaches a certain level, and keep the fan running until the humidity is below that set point. It is important that humidistats be set to the appropriate level and not turned to "off". If the bathroom does not have a humidistat, the extractor fan should be left running for a period of time after bathing or showering to remove the excess moisture from the bathroom. The exhaust fan should be vented to the outside.

- Open windows periodically and ensure that fresh air intake vents are not blocked.
- Make sure exterior vent hoods for your dryer, bathroom and kitchen vents are unobstructed and operating freely. Clothes dryers that take longer to dry than usual, and kitchen or bathroom fans that seem to not move the air could be signs of some obstruction in the duct or the outlet. Keeping vent hoods and lint traps clear will also reduce the amount of energy required to dry the clothes, thus reducing utility bills. Qualified professionals should be used to carry out this maintenance item.
- Consider upgrading your kitchen or bathroom fans. If you feel that your kitchen or bathroom fans

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make noise, but don't seem to do anything, you may be right. Some older or cheaper units may not work effectively and tend to be noisy. A simple upgrade is relatively inexpensive and will often dramatically improve performance.

Look for units with high air movement measured in cubic feet per minute (cf/m) or litre per second (L/s), and a low noise rating measured in decibels (dB).



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In most cases you can address high humidity and condensation through reducing the amount of humidity generated in your home. Ventilation may only reduce humidity levels if the air introduced into the room is drier than the interior air. When ventilation is not effective at lowering the humidity sufficiently, you may need to incorporate the use of a dehumidifier to further reduce humidity levels. However, this should be considered as a last resort after you have taken necessary steps to reduce the amount of humidity generated in your home. Also, dehumidifiers require electricity to operate and, therefore, may be an expensive option for you to pursue.

## Dealing with persistent condensation problems

Condensation is usually a localized problem that you can address by taking the steps

described above to reduce the humidity or to promote good air circulation and ventilation in your home.

Symptoms related to *persistent condensation* problems include:

- windows that continue to have water droplets or that fog up, frost or get ice build-up, even after you have taken necessary steps to lower humidity levels and prevent condensation in your home
- black staining on the inside of exterior walls, mainly in corners and near the floor.
- damp or moist basement walls or floors

With persistent condensation problems it may be necessary to bring warm air to cold surfaces, either by changing the building's heating patterns or by providing dedicated heat sources to problem areas. Blowing warm air at problem areas has the additional effect of encouraging evaporation at the problem location.

In some cases the solution may be to insulate surfaces against cold temperatures, either by installing cavity wall insulation or dry lining. These solutions however, must be carried out by qualified professionals.

## ACTION PLAN TIPS

- Take steps to avoid condensation problems in your home:
  - Reduce the amount of moisture or humidity generated in your home. For example, do not hang clothes to dry indoors and take shorter showers.
  - Promote good air circulation in your home. For example, open blinds and curtains and move furniture so that it is not touching an outside wall.
  - Promote good ventilation in your home. For example, use

kitchen and bathroom extractor fans and humidistats. Consider upgrading your extractor fans if they are poor performers.

- Open windows to allow moist air to vent outside.