

Controlling condensation in your home



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WHAT IS CONDENSATION?

Condensation is just water, pure and simple

ICE



WATER



STEAM



GOING



GOING



GONE

Water can be a solid (ice), liquid or gas (steam or water vapour). To go from one form to another you must add or take away heat.

If you boil a kettle the water quickly turns to vapour, but if you leave water in the open air for a long time it will slowly vaporize. You can't see it but it is still in the air. Water vapour in the air is called humidity. The more water vapour there is in the air, the higher the humidity.

Air can only hold a certain amount of water vapour. The warmer the air is the more it can hold. If warm air holding a lot of water vapour is cooled down, it can no longer hold the water vapour and some turns back to liquid water. That is CONDENSATION.

Air is cooled down when it meets a cold surface.

A cold glass of water will quickly gain condensation on the outside of the glass and even leave rings of it on the table.





This can happen on any cold surface for example:

A window pane can be very cold and condensation is often easy to see there.

A toilet cistern containing cold water often gets wet with condensation.

Cold water pipes can get so wet with condensation people sometimes mistake it for a leak.

A cold wall cools the air next to it and can become wet with condensation. This is usually seen as wide patches, often peppered with mould growth. It is hardly ever water coming through the window or wall. (Water coming through the wall shows smaller damp patches with tidemark and is called “damp” or “penetrating damp”).

Imagine a typical room in your home. If the air in your room is warm, it may hold as much as 4 pints of water (turned to vapour). If the air is cold, it may only hold 1 or 2 pints. Now imagine pouring 2 or 3 pints of water all over the wall. This is exactly what happens every time a room full of warm moist air cools down on cold walls.

WHERE DOES THE WATER COME FROM?

Everybody and everything that lives puts moisture into the air as we breathe or perspire.

An adult breathes out about a pint of water into the air overnight while asleep.

Drying clothes or hair puts much more into the air.

Portable gas or paraffin heaters produce a gallon of water (as vapour) for every gallon of fuel they burn.



SOURCES OF CONDENSATION



How much moisture is produced (in a day) by typical household activities?

Clothes washing

1 pint



Bath and personal washing

2 pints



Four people sleeping 8 hours

3 pints



Paraffin heater for 5 hours

3 pints



Two people active for 16 hours

4 pints



Cooking by gas
for 3 hours

6 pints



Clothes drying in un-vented tumble dryer

10 pints

Total 29 pints

HOW TO STOP IT

WATER VAPOUR + COLD SURFACE CONDENSATION

To get rid of condensation we need to get rid of the water vapour or warm up the surfaces (or a bit of both). There is no easy answer, but there are several things we can do to help reduce the problem.



WATER VAPOUR

PUT LESS WATER INTO THE AIR

When cooking, put lids on pans once they are boiling and turn the heat down

You only need a gentle heat to keep it simmering (saving you fuel). Once the water is boiling it can't get any hotter so the food won't cook any quicker in the pan that is boiling furiously – any extra heat just turns more water into steam, filling the air with water vapour faster.

Drying clothes outside if possible

If you can't do this, try to dry them in one room that is normally kept quite warm and follow the tips below on how to stop the water vapour spreading.

If you use a tumble dryer, always vent it to the outside air

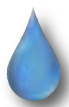
If you have a 'condensing' type of tumble dryer with no vent hose, try to follow the tips below on how to stop the water vapour spreading.

Empty the bath when you have finished with the water

The longer the water stays there, the more water vapour gets into the air.

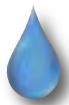
Don't run the shower for longer than you need to

The hot spray can put a lot of water vapour into the air.



Don't use portable gas or paraffin heaters

They produce a gallon of water. They produce dangerous fumes (carbon monoxide) if you don't make sure they have enough ventilation. They are also one of the most expensive ways of heating. If you have central heating you could heat several rooms for the cost of heating one room using bottle gas. The section at the end of this booklet on 'Costs of Heating' can help you choose the best fuel to use.



Dry the air

Water vapour can be taken out of the air using a 'house dryer' or dehumidifier. They use some electricity (about 2-3p per hour while running) though they give out about 1 and a half units of heat for each unit of electricity they use. They do not give out enough heat to be used seriously as a heater and it is still a more expensive form of heat than most other fuels (except bottle gas and on-peak electric heaters)



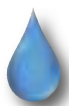
STOP WATER VAPOUR SPREADING

It helps to understand how water vapour behaves in the air

Although you can't see it, water vapour spreads through the air from rooms where there is a lot of moisture to areas where there is less moisture. So if you leave your kitchen or bathroom door open, water vapour from cooking or bathing spreads into the rest of your home.

When it meets a cold surface it will turn into condensation, whichever room it is in.

But you can stop water vapour spreading in your home:



Shut doors

Keep the kitchen and bathroom doors shut, especially during and shortly after cooking and bathing. If you are drying washing indoors shut the door to the room where the washing is drying until it is dry.



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LET WATER VAPOUR OUT



Ventilate

Let the water vapour escape from the kitchen or bathroom (or room where washing is drying) through a window or extractor fan instead. The key is to control the air flow rather than suffer uncontrolled draughts, be sure there is enough fresh air getting into your home from any fires or boilers to burn safely.



Open windows

Only open windows a little way about an inch or two (2-5cm) otherwise a lot of heat will be lost and the wall surfaces may get cold. Close the window half an hour to an hour after cooking or bathing.



Use extractor fans

Extractor fans and cooking hoods suck the water vapour out from near the source. They only use a little electricity which costs less than the heat lost by leaving the windows open. The best type is one with a humidistat control that only switches on when the air holds a lot of water vapour. We will not always be able to fit fans in all homes but is usually happy to give permission for tenants to install fans.

You should always ask for permission – fans could effect the safe ventilation to fires.

If you use a dehumidifier (house dryer) keep the internal door open so the water vapour can spread towards the dehumidifier. You shouldn't need to open the windows to let water vapour out, but make sure there is enough fresh air getting into your home for any fires or boilers to burn safely.

COLD SURFACES

Whenever it is colder outside than inside your home some heat will be lost through the walls, roof etc, and they will be cooler than the air in the room.

To make the surface warmer we can –

- insulate the surfaces
- add more heat
- or a bit of both



Insulate walls

As part of our ongoing maintenance programme Westcountry proposes to add wall insulation to all Westcountry homes where it is practical to do so, but some walls can not or should not be filled with insulation. The inner surface of a wall can be made a bit warmer by using insulation lining (such as 'Kotina') when redecorating, but be sure it is treated to reduce fire risk.

All new housing built by Westcountry Housing will have loft insulation installed in accordance with current building regulations to ensure properties are energy efficient and insulated to the very highest standards.

For more than 5 years we have invested annually in our existing housing stock, which has been subject to an ongoing programme of upgrading to 'top up' existing loft insulation to bring these properties into line with the most modern requirements, working with Government agencies to make best use of grant funding to supplement these schemes.

It is also important to keep the loft space above the insulation layer well ventilated to minimise the risk of condensation forming in this area, you should not therefore use the loft space for storage of materials or personal belongings as this could inhibit air circulation and result in dampness problems.

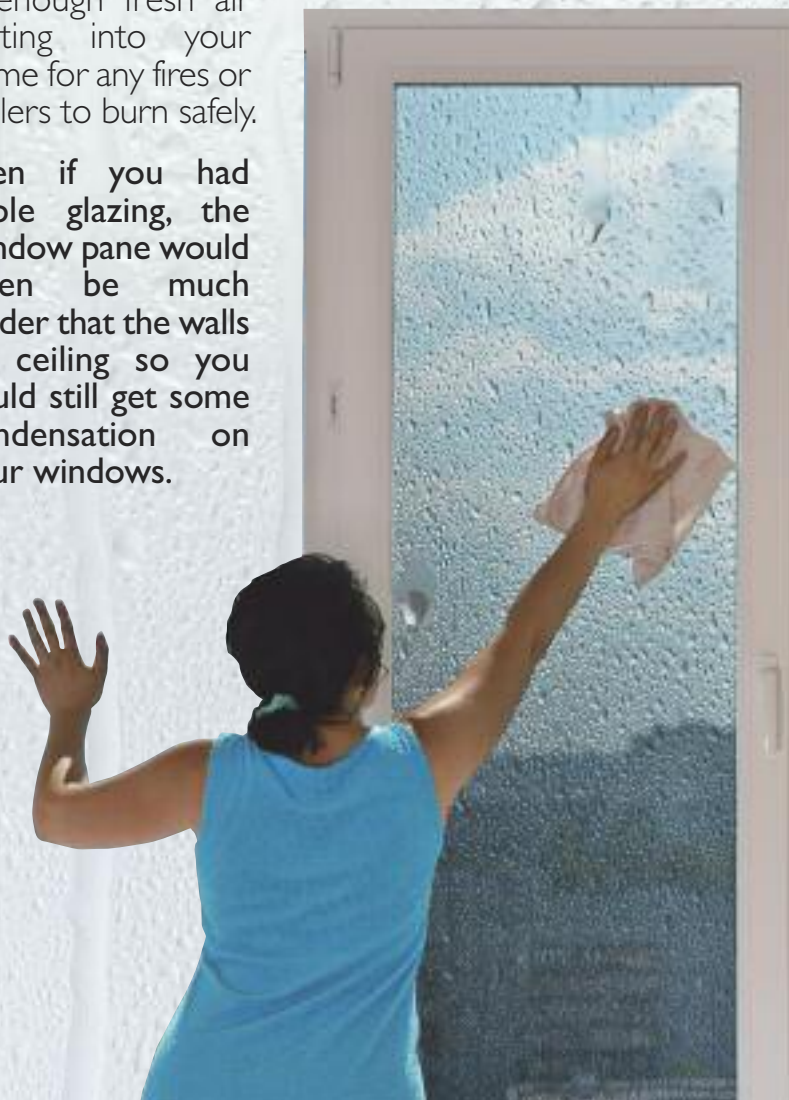


Insulate windows

Double glazing is now always used when we replace windows, but this is very costly so the money has to be targeted at the worst windows first. It saves some energy and makes the room more comfortable, but if you are looking at the best way to save fuel bills with a limited pot of money double glazing comes fairly low on the list.


Westcountry will, in most cases, give permission for tenants to fit their own secondary glazing, but make sure there is enough fresh air getting into your home for any fires or boilers to burn safely.

Even if you had triple glazing, the window pane would often be much colder than the walls or ceiling so you could still get some condensation on your windows.




4

USE SOME HEATING




Apply more heat

No matter how much insulation your walls or roof have, the surfaces won't get warm unless you use some heat. Keeping your heating on low all the time during the cold period should stop the walls getting too cold.



Heat more evenly

Try to avoid suddenly heating a room from cold for a short time – if the walls don't get time to warm up but the air does (so the air holds more water vapour) you will almost certainly get condensation.



Experiment

You will need to experiment a bit to find out how much heat is needed. Fuel costs money and few people can afford high heating bills. On the other hand, some heat is needed to combat condensation. You need to try changing how much heat you use (and when you use it) until you strike the right balance for your home between affordable bills, comfort and stopping condensation.




Keep furniture away from outside walls

The wall behind the wardrobe will be cooler and air won't flow so well. Any condensation that forms there will not dry off quickly so mould often grows behind or in the furniture. Try to put the furniture against internal walls or party walls. If you can't do that, leave a gap behind the furniture.



Mop up condensation

Almost every home has some condensation, particularly on the windows in the cold weather. The best way to stop the problem becoming too big is to wipe the windows and mop up any puddles or drips of condensation. Dry the cloth outside or wring it into the sink and treat it like wet washing, otherwise the water from the cloth will just turn back into water vapour in your home and condense on the windows again.



Wipe off and treat any mould growth

If you do get mould growing, wipe it off and treat it with bleach or purpose made mould killer (from most DIY shops). The more mould there is, the more easily it can be spread. **Be careful to avoid bleach or mould killers coming in contact with eyes or exposed skin. Wear suitable protective clothing (rubber gloves). Read and follow the precautions on the bottle.**



CONDENSATION

A SUMMARY



Put less water into the air

Put lids on pans once they are boiling and turn the heat down

Dry clothes outside if possible

If you use a tumble drier, always vent it to the outside air

Empty the bath when you have finished with the water

Don't run the shower for longer than you need to

Don't use portable gas or paraffin heaters

Dry the air using a dehumidifier



Stop water vapour spreading


Shut kitchen and bathroom doors and doors where washing is drying



Let vapour out

Open windows a little (in wet rooms)

Use extractor fans, but make sure there is enough fresh air getting into the house for any fires or boilers to burn safely




Use some Heating

Apply more heat

Heat more evenly

Experiment to see what works best

Ask for heating advice



Other tips

Keep furniture away from outside walls

Mop up condensation

Wipe off and treat any mould growth