



Advice
condensation

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Turkington
Windows & Conservatories





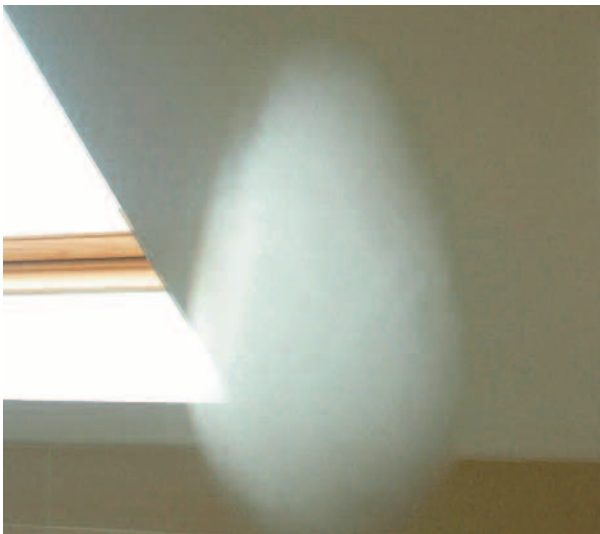
Advice condensation

What is condensation?

Condensation is the conversion of water vapour into water droplets.

When moisture-saturated air comes into contact with a colder surface, the air sheds some of its moisture in the form of a mist, which eventually forms larger droplets - condensation.

An example of this is when a person breathes onto a mirror. Condensation forms because the exhaled air is warm and moisture-saturated. When it comes into contact with the colder mirror, moisture is shed on the surface, forming a condensation mist.



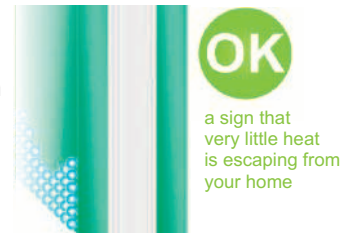
Types of Condensation

There are three types of condensation associated with double glazing units - not all of them indicate a problem.

If you have condensation on your glass, it is important that you identify where the condensation is forming.

Condensation forms on the exterior surface

On frosty mornings, 'dew' may form on the outer surface of glass units which have good insulation. This is because heat from the interior is not reaching the outer pane.



Condensation forms in the cavity between the panes

This is a sign that the edge seal on a double glazing unit has been broken. The unit is said to have 'broken-down' and cannot be repaired. Possible causes of this are given on the next page.



Condensation forms on the room side surface of the glass

This is not a fault with the glass. It may have arisen because the room temperature is too low or there is insufficient ventilation in the room. Advice is given on the next page.





Advice condensation

What causes condensation in my house?

Every day we produce litres of water vapour through breathing, boiling kettles, doing laundry and washing. In the winter, we sensibly make our homes as draught-free as possible and try to use our heating more efficiently by only turning it on when we need it, in the rooms where we need it.

All of these factors increase the likelihood of condensation forming on colder surfaces, such as window glass, tiles or external walls.

How can I reduce condensation in my house?

Improving ventilation and increasing room temperature will reduce condensation.

Modern windows have trickle-vents to allow continuous ventilation, without too much heat loss.

Improving the insulation in your home will help to increase the room air temperature. Installing highly efficient glazing such as **icosave®** from GlasSeal can halve the amount of heat lost through windows and doors compared with standard double glazing.

The provision of mechanical ventilation in kitchens and bathrooms is essential. Prevent moisture from these rooms reaching the rest of the house by closing doors.

At night, blinds and close fitting curtains can prevent air circulating near windows. In the morning, retract all curtains and blinds completely and open the window to allow a complete change of air in the room.

New buildings continue to 'dry-out' for months after completion and may need additional ventilation/extraction.

If condensation persists, the use of a dehumidifier will help to remove moisture from the air and reduce condensation.

What do I do if I think my glazing has broken down?

First check that your window/door frames have been properly maintained - the most likely cause of double glazing unit failure is collection of rain water inside the window frame, submerging the bottom edge of the glass.

Drainage holes can get blocked, and gaskets and beads can get damaged and worn, leading to rain water entering the framing system and collecting there. A tell-tale sign may be some fungal/moss type growth on the frame.

If there is no apparent damage to your frame, contact the company who installed your windows or doors and inform them that the glass unit has moisture inside it. They should then contact the manufacturer of the glass unit to discuss replacement of the glass under warranty, if applicable.



Advice condensation

External condensation

External condensation (dew) can occasionally occur on highly insulating glass units in temperate climates. Such occurrences will normally only happen on cloud-free nights when there is little or no wind and usually when a warm front follows a dry spell.

The combination of several factors, namely external air temperature, localised micro climate and thermal transmittance of the glazing itself may contribute to the formation of external condensation. As a consequence of variable temperatures and localised conditions, it is possible to experience a situation whereby both clear and 'misted' windows can exist at the same time in close proximity.

This phenomenon is influenced by the thermal insulation of the glazing. Single glazing offers poor thermal insulation therefore heat escaping from inside a room readily passes through the glass to the outside environment. As a result of this lost heat the external surface temperature of single glazing is generally higher than the 'dew-point' temperature of the outside air, thus prohibiting the formation of condensation on that surface. Even with older or less energy efficient double glazing enough heat may still escape through the glass to warm the outer pane sufficiently to preclude the formation of condensation in most circumstances.

Current building regulations require installation of energy efficient LOW E glazing in both new and replacement window contracts. Low E glass reflects heat back into the room and as such the quantity of the heat passing through the glazing is reduced. Consequently the external pane of highly efficient low emissivity double glazing is not warmed by escaping heat (which instead is retained within the room) and therefore presents a colder surface on the outer glass pane to the external environment.

In such cases, and in situations where the external glass surface temperature is lower than the 'dew-point' of the air,

(and when weather conditions are comparable to those mentioned previously) condensation can form on the external glass surface.

Whilst the conditions that cause external condensation are known, it is unpredictable and difficult to quantify. Energy efficient Low E glazing does not discourage the formation of external condensation because it is designed to retain heat inside the household - Low E glazing is legislated under current building regulations. Instances of external condensation are relatively rare and in all cases it will be a transient effect. When it does occur Condensation on the glazing will usually dissipate within a short period of time in much the same way as morning dew.

Condensation inside a double-glazed unit

Double-glazed units are usually guaranteed for a period of 10years, however after this period of time the unit can start to deteriorate and lose its effectiveness and eventually may also mist up.

Steamed or misted up windows can be caused by condensation within the double glazed unit. This happens when the glass units fail allowing moisture to build up between the panes of glass. The moisture itself can be hard to spot at first, however it builds up eventually condensing into water inside the sealed unit. Since the unit has lost its air tight seal it will also mean that your windows are no longer as energy efficient and will lose heat.

The energy efficiency of double-glazing today is far superior to the majority of older glass units which were fitted before 2002. Glass Technology has improved significantly and today's energy efficient glass units are more than twice as efficient as standard double glazing. If you are looking for a really cost effective way of saving home energy then re-glazing your old inefficient glass could be the answer. We can provide individual energy use simulations which show exactly how much new glass could save you every year.