

Windows Condensation

Window condensation is the result of excess humidity in your home. The glass only provides a cold surface on which humidity can visibility condense. The fog on your windows is a form of condensation; so is the water that forms on the outside of a glass of iced tea in the summer and on the bathroom mirrors and walls after someone takes a hot shower.

Condensation usually occurs first on windows because glass surfaces have the lowest temperature of any of the interior surfaces in the house. When the warm moist air comes into contact with the cooler glass surfaces, the moisture condenses. The important thing your foggy windows are trying to tell you is you need to reduce indoor humidity before it causes hidden, costly problems elsewhere in your home. Problems like peeling paint, rotting wood, buckling floors, insulation deterioration, mildew, even moisture spots on ceilings and walls.

Foggy windows are the indicators, the warning signs, that humidity could be damaging your home.

As a general rule, condensation on your window glass is most often the result of excess humidity or poor air circulation and is NOT a window problem. Humidity and temperature changes both inside and outside your home are the primary contributors to the magnitude of condensation problems.

Does Condensation Occur More Often In Particular Climates or Type of Homes?

Absolutely! Condensation is more apt to occur in climates where the average January temperature is 0°C or colder because there will be greater extremes between indoor and outdoor temperatures affecting the glass surfaces in the home.

During the summer and fall, all parts of a house pick up moisture from damp air. In the fall, when the windows are closed and heat is turned on, this moisture will pass into the air of the house and for a week or two there is likely to be condensation.

During the first year after construction or remodeling, it is likely a house will have more condensation present because of the massive amount of moisture in the building materials used. Building materials need about one year to dry out, so excessive condensation can be expected in the first heating season.

Even after the first year, if the humidity level is too high, condensation may still be a problem because today's homes are much "tighter" (in the interests of energy

efficiency) than older homes. New materials and techniques in weather-stripping, insulation, vapor barriers, etc., which are intended to keep out the cold air, also lock moisture inside. As a result, moisture created by bathrooms, kitchens, laundries and occupants no longer flow to the outside, unless mechanically ventilated.

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Are there cases where window condensation is only temporary?

Yes, there are primarily three: New Construction or remodeling; the beginning of each heating season; Quick changes in temperature.

Wood, plaster, cement, and other building materials used in new construction and remodeling produce a great deal of moisture. During the heating season, there may be a certain amount of temporary condensation. During the humid summer your house will have absorbed some moisture. After the first few weeks of heating it will dry out, and you'll have fewer condensation troubles.

Sharp, quick drops in temperature can also create temporary condensation problems during the heating season.

Why, if my old windows did not have condensation do my new windows have it now?

One of the reasons you probably replaced your old windows was because they were drafty, and when the wind wasn't blowing in, those slight cracks allowed the excessive humidity within your house to escape to the outdoors. Now that your windows are tight, that excess humidity that is in your house is unable to escape, and therefore, it is showing itself on the glass. This is your first indication that you have too much humidity in your home.

Medical authorities indicate that the level of humidity indoors should not be below 15%. It is generally acknowledged that the humidity in houses with a good vapour barrier should not exceed 40%, in older homes without a vapour barrier, 35%. The table beside shows suggested levels of relative humidity for inside the home for varying outside temperatures.

Outside Air Temperature	Relative Humidity with inside Temperature of 20°C (68°F)
-30°C or below	Not over 15%
-30°C or -24°C	Not over 20%
-24°C or -18°C	Not over 25%
-18°C or -12°C	Not over 30%
-12°C or -6°C	Not over 35%
-6°C to 0	Not over 40%

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The following is a short action list for reduction of condensation on your window glass:

- ✔ Choose the warmest option of triple pane with at least one lite of Low E glass when purchasing new sealed units or windows.
- ✔ Open your doors for a brief time each day to allow humid air to escape and drier air to enter. Turn down the humidity setting on the thermostat.
- ✔ Set your furnace fan on continuous operation.
- ✔ Raise or open blinds and drapes to facilitate air movement, and remove insect screens
- ✔ Ensure the heat ducts and registers are open and directed towards windows.
- ✔ Run kitchen and bathroom exhaust fans.
- ✔ Ensure adequate ventilation for both fresh & exhaust air movement.
- ✔ Ensure attic vents are open and unobstructed.
- ✔ If there are a large number of plants keep them in one sunny room and avoid over-watering.