

Why Does Condensation Form on My Windows?

Fog, water droplets, or frost on the interior or exterior of windows and doors is condensation. Condensation forms on surfaces when the humidity in the air is too high and surface temperatures are too low. Think of how “steamed up” bathroom mirror is after a hot shower, or how water beads on a drinking glass filled with iced tea on a hot summer day.

Interior Condensation

Condensation can be an annoying problem. While it may seem natural to blame the windows and/or doors, interior condensation is really an indication of excess humidity in the home. It is an indication that your high performance, energy-efficient windows are doing their job.

Modern homes are better sealed against air leakage and natural ventilation to the outdoors is reduced. Energy efficient building designs, techniques and products keep cold air outside and also keep warm, moist air inside. High performance windows and good insulation provide a barrier to the air exchange of your home, and along with additional water vapor from breathing, cooking, showering, etc., homes now have a high relative indoor humidity level, which can result in interior condensation. Older homes were less energy-efficient and allowed the excess moisture to escape through cracks and leaks, resulting in little or no condensation but much greater heat loss.



8 Tips for Reducing or Eliminating Interior Condensation on Your Windows.

1. Open a window or door daily to air out your house.
2. Turn off all humidifying devices and make sure that your clothes dryer is vented to the outside.
3. Install and use a dehumidifier.
4. Use exhaust fans and proper venting in rooms with high moisture levels such as the kitchen, laundry room and bathroom. Exhaust fans should be used during every shower or bath, and run for at least 15 minutes after.
5. Keep drapes and blinds open as much as possible to allow air circulation against the windows.
6. Plants can contribute to condensation — they add moisture to the air. Consider moving plants away from your windows.
7. Do not hang wet clothes to dry inside.
8. Opt for better insulated windows — the higher the R-value of a window, the better it can handle humidity. For example, triple glaze windows are less likely to form condensation than double glaze.

Exterior Condensation

Condensation on the outside of windows generally occurs in the summer months. It is caused by three main conditions: high outdoor humidity, little or no wind, and a clear night sky. It forms in the same way as interior condensation when the temperature of the glass falls below the dew point of the outside air (as opposed to inside air in interior condensation).

Not all exterior surfaces are at the same temperature at any given time. The external temperature of windows can be affected by factors such as sunlight warming some areas more than others, localized air currents, objects that block the sun, and so on. This can result in condensation forming on the surface of some windows but not others.

Exterior condensation is a natural occurrence and there is not much that can be done to combat this phenomenon. Opening window coverings at night to warm up exterior glass or removing shrubs or other plants near windows to promote air circulation may help in reducing exterior condensation. This moisture evaporates quickly when the outdoor temperature rises, and does not mean that your windows are malfunctioning in any way. In fact, this means that your energy efficient windows are performing as they should.



Temporary Condensation

Condensation can also occur in newly constructed houses. Wood, plaster, cement and other building materials used in new construction and renovations produce a lot of moisture. When the house is heated during the first cold season, this moisture will gradually flow out into the air in the home, thereby raising the relative humidity of the house. The moisture from these materials usually dissipates during the first year and is not a cause for further concern.

Please note: If you find condensation between the panes in an insulated glass unit, the airtight seal may have failed and require replacement.

Check out these links for more information about moisture problems in houses:

Moisture Problems - Natural Resources Canada

Exterior and Interior Condensation on Windows
Fenestration Association of BC

Avoiding Condensation Problems

Homeowners Protection Office - Branch of BC Housing

Questions About Windows & Condensation?

National Fenestration Rating Council