

— YOUR GUIDE TO —

COMMON HOUSEHOLD CONDENSATION



UNDERSTANDING COMMON HOUSEHOLD CONDENSATION

Common household condensation or “sweating” on windows is caused by excess humidity or water vapour in a home. When water vapour in the air comes in contact with a cold surface such as a mirror or glass window, it turns into water droplets called condensation. All homes have occasional condensation, such as a little fogging on the windows, but this is no cause for concern.

On the other hand, excessive window condensation, frost, peeling paint, even moisture spots on ceilings and walls can be signs of excessive condensation and potentially damaging problems in your home. We tend to notice condensation on windows and mirrors first because moisture doesn't penetrate these surfaces. Yet they are not the problem, simply the indicators that you need to reduce the indoor humidity of your home.



FACT: WINDOWS DO NOT CAUSE CONDENSATION

You may be wondering why your new energy-efficient replacement windows show more condensation than your old drafty ones. It's simple – your old windows were not airtight and allowed humidity to escape. Now that your new windows create a tighter seal, the

extra moisture in your home is unable to escape, therefore making you more aware of excess humidity. Windows do not cause condensation; instead they prevent humidity from escaping and provide an easy surface for condensation to collect.

SOURCES OF HUMIDITY

All air contains a certain amount of moisture, even indoors. Indoor humidity is generated by many household items and activities, such as your heating system, humidifiers, cooking and showers. In fact, every activity that involves water, even mopping the floors, contributes moisture to the air.

Climate conditions can also contribute to condensation. For example, on cold winter days the moisture in the warm, interior air of your home can condense on the typically colder glass surfaces of your windows and patio doors.

It is typical to experience condensation at the start of each heating season. During the humid summer months your home absorbs moisture and then perspires when you turn

on the heat. This is only temporary. After the first few weeks of heating your home should dry out – reducing, if not eliminating, condensation.

You'll notice the same scenario during remodeling or building projects. Due to the high levels of moisture in wood, plaster and other building materials, your home will temporarily sweat during the first few weeks of the heating season.

Another factor in the condensation equation is progress. With today's high-performance insulation, moisture-barrier materials and airtight construction, we all enjoy a more thermally efficient home – one that blocks the cold out, yet traps the moisture in, producing higher humidity levels and more condensation.

REDUCING HUMIDITY IN YOUR HOME

The best way to reduce condensation is by eliminating excessive humidity. The following table illustrates the recommended maximum indoor relative humidity based upon varying outdoor air temperatures with an indoor air temperature of 21°C.¹

By managing excessive humidity in your home you may very well eliminate most, if not all, of your condensation problems.

OUTDOOR AIR TEMPERATURE	INDOOR RELATIVE HUMIDITY (%RH)
-7° to 4°C	≤ 40%
-12° to -7°C	≤ 35%
-18° to -12°C	≤ 30%
-23° to -18°C	≤ 25%
-29° to -23°C	≤ 20%
Below -29°C	≤ 15%

(Indoor humidity can be measured with a humidistat or psychrometer.)

SIX WAYS TO CONTROL INDOOR HUMIDITY

1. Make sure all sources of ventilation to the outside are functional, and use kitchen, bathroom and laundry room exhaust fans during and after humidity-producing activities to vent excess moisture.
2. Air out your home periodically. Opening the windows for just a few minutes a day lets the stale, moist air escape and the fresh, dry air enter.
3. Check your humidifier settings. Use the humidity comfort levels provided in the table above to correctly set and balance the humidity in your home.
4. Be sure that all louvers in the attic or basement are open and large enough. You can even open your fireplace dampers to allow excess moisture to escape.
5. If you have a large amount of houseplants, try to concentrate them in one area and avoid over-watering.
6. If troublesome condensation persists, see your heating contractor about an outside air intake for your furnace, venting of gas burning heaters and appliances, or installation of ventilating fans.

RESOLVING CONDENSATION PROBLEMS

Condensation can be very difficult to control. There are many factors that affect condensation, such as the number and type of windows in your home, the heating system, the type of insulation and vapour barrier, and even the type of soil and quality of drainage. If you still have condensation problems after following the simple preventative steps mentioned in this booklet, you may need to consult a professional heating contractor or a qualified expert.



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¹www.fgiaonline.org/pages/understanding-indoor-condensation (accessed 1-2-23).

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