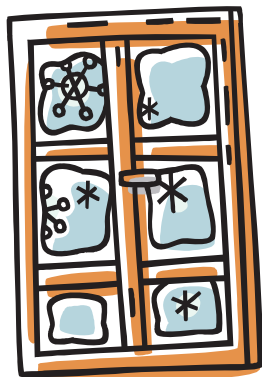


Every winter more and more homeowners experience condensation on their windows, even new, highly-efficient multi-pane windows. Fog, frost, and water that forms on windows can be irritating to see, cause expensive damage and may even be hazardous to your health. ***Sweating windows serve as a danger signal, showing when indoor moisture is trying to get out.***

IT'S NOT THE WINDOWS - IT'S THE HUMIDITY!



What is condensation? When there is excess moisture in the air, condensation is the result of water changing from a gas (water vapor) to a liquid. Water vapor turns to liquid water when it comes in contact with a cold surface. The warmer the air, the more water vapor the air can hold. In any given room, the air in the center of the room is the warmest. As this air circulates toward the cooler window, the air temperature drops. As the temperature drops, the air can no longer hold all the moisture it held when it was warmer air. That water vapor condenses into liquid water on the glass surface of the door or window.

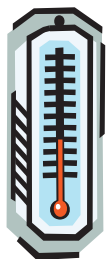
This occurs most often in the winter months as the temperature difference between outdoors and indoors is greater.

If condensation is an ongoing issue in your home, you probably have excess moisture in your air. Window condensation is easy to see because it blocks your view. But, its very likely that you have condensation on other surfaces, like your walls and floor. This can lead to serious problems like mold, wood rot, and peeling paint. Condensation can be especially problematic after a remodeling project, as more energy-efficient construction and materials traps moisture inside the home.

This guide will help you in identifying sources of excess moisture and offer suggestions to reduce that moisture. Following these steps should help reduce any condensation in your home.

Recommended Humidity for Your Home and Climate

Some humidity is necessary for everyday comfort, but authorities agree with Professor C.P. Yaglou of the Harvard School of Public Health that any inside relative humidity higher than 40% is undesirable, both for your health and the paint, insulation and structural members of your home. The table below shows the maximum safe humidity levels for your home.



Outdoor Air Temperature	Indoor Relative Humidity for 70° Indoor Air Temperature
-20° F	15% to 20% humidity
-10° F	20% to 25% humidity
0° F	25% to 30% humidity
+10° F	30% to 35% humidity
+20° F	35% to 40% humidity

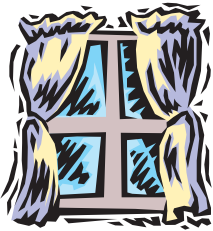
Reducing humidity in your home to these levels will cure troublesome condensation on windows, in most cases. Remember, too, that these relative humidities are for 70° F indoor air temperatures. For higher temperatures, lower humidities are required.

How to Reduce Humidity

There are only a few ways to reduce excess humidity in your home. First, providing adequate **Winter Ventilation**, because outside air usually contains less water vapor, it will dilute the humidity of inside air. The process of **Heating** your home will reduce the relative humidity, providing that it is DRY heat. But the most important step to reducing indoor humidity is **Controlling Sources of Humidity**.

CONTROLLING SOURCES OF HUMIDITY

Here is a list of the most common causes of excess moisture in the home and some simple solutions to reduce humidity.



Heavy Drapes

open drapes at least half way during the day. Open windows for five minutes to allow air exchange.



Laundry

equip laundry area with an exhaust fan. Dryer should vent to the outdoors.



Dishwashing

vent dishwashers to the outdoors. When washing dishes by hand, don't leave water running.



Cooking

run the vent hood over the stove. Put lids on pots while cooking.



Showers & Baths

use properly vented exhaust fans during and after showers and baths. Don't leave water running to "warm up" for too long.



House Plants

install and use ceiling fans to increase air circulation. Move plants closer to center of the room.



Damp Basements

turn off humidifiers and run a dehumidifier in the basement. There is often one attached to the furnace.



Cold, Drafty Windows

purchase and install highly-efficient Energy Star® rated windows with Low E glass.

The only way to stop condensation is to reduce the moisture in the air in your home. Living in lower humidities and identifying and controlling moisture sources are the best ways to reduce condensation.

Sources: Better Business Bureau of Pittsburgh
University of Minnesota Engineering Laboratories
C.P. Yaglou, Harvard School of Public Health
Tim Carter, askthebuilder.com

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