

of moisture into the air daily. Each shower adds 1/2 lb of water, weekly laundry adds 30 lb, and human occupancy releases 6 to 8 lb. Some studies show that a family of four can easily release more than 18 gallons of water per week into a typical household.

What is the Maximum Safe Humidity Level For Your Home?

Your home must maintain a certain level of humidity for comfort and health reasons. The easiest way to test this humidity level is through the use of a psychrometer. The following table shows the maximum safe humidity levels for a home heated to 70°F. Lower humidity levels are required for higher indoor temperatures.

Humidity levels above these form condensation on glass.

Outside Air Temperature (°F)	Recommended Maximum Indoor Humidity For a Household Heated to 70°F
-20° or below	Not over 15%
-20° to -10°	Not over 20%
-10° to 0°	Not over 25%
0° to 10°	Not over 30%
10° to 20°	Not over 35%
20° to 40°	Not over 40%

University of MN Engineering Laboratories

Other Sources:
MN Department of Public Service. May 1995. Windows & Doors.

How Do I Control The Humidity?

Sometimes persistent humidity problems are difficult to solve. You may have to call a qualified expert for advice and direction. They will make recommendations based on an overall evaluation that includes the number and type of windows, the type of glazing system in those windows, the heating system, type of insulation and vapor barrier, and/or the type of soil and quality of exterior drainage. They may suggest such measures as exterior air vents for your furnace or additional exhaust fans. These measures can get costly and you should go through the following checklist to see how you may be able to solve your high humidity levels.

Nine Ways To Reduce Household Humidity Levels.

1. Shut off all household humidifier units (*including the furnace humidifier*).
2. Ventilate regularly. Air out the entire house for a few minutes each day. Ventilate kitchen, laundry and bathrooms during use.
3. Run exhaust fans longer and more often.
4. Open the fireplace damper.
5. Be sure attic and basement crawl space louvers are large enough and open.
6. Add a basement dehumidifier.
7. Adequately vent humidity producers such as clothes dryers and all gas burners to the outdoors.
8. Open draperies and blinds so air is able to circulate next to the window.
9. Bay/Bow: place a small fan in the window to circulate air.



**Save America's Energy
With Lindsay Windows**

Humidity and Condensation

**Thank you for purchasing Lindsay
high efficient vinyl windows.**



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Condensation on Windows

Thank you for purchasing one of the best energy performing windows on the market. These windows use the best energy performing glass spacer and insulating glass. Here are some explanations and helpful things to do to control condensation while remaining comfortable.

Definition:

Humidity is a term used to describe water moisture that is suspended in the air. Humidity occurs naturally and varies with temperature.

Condensation is a formation of water that occurs on or around an object. It is caused when warm moist air (humidity) comes in contact with a cold surface.

Warm air can “hold” more moisture than cold air. When warm air comes in contact with a cold surface, the warm air can no longer retain its moisture. Small water droplets will begin forming on the cold surface (fogging). If the surface is cold enough, these droplets will freeze, creating a white frosty glaze (frosting). If the water remains a liquid, the small droplets will begin to form larger drops. On a tilted or vertical surface these drops will eventually roll off into the surrounding environment. This runoff is the real problem created by condensation. It can stain wood, remove wallpaper, and

deteriorate plaster and drywall. Damage to these surfaces may lead to expensive repairs. Fortunately, if moisture gets on vinyl, it will not rot or cause mold. You can simply wipe it off.

My New Windows Have Condensation.

My Old Windows Didn't.

You probably replaced your old windows because they were drafty. Slight gaps and cracks around the sashes and frames allowed air to travel freely between the outside and inside. This air movement actually prevented condensation in two ways. Primarily, the warm moist air was able to escape from the house without resting on a cold surface. Second, enough cold air was allowed to enter the home to create a thick blanket of cold air across the window. This layer was thick enough to prevent the warm moist air from touching the cold window surface.

Your new windows improve the energy efficiency of your home, lower your energy bills, and add to your comfort by blocking air movement through your windows. Blocking this movement, however, may raise the humidity levels in your home, causing condensation.



My New Windows Are Causing Condensation.

New windows do not cause condensation. Condensation is created from high indoor humidity and low outdoor temperatures. Since we cannot control the outside temperature, our windows use no metal in our glass spacer, and allow for higher humidity in homes than conventional windows with metal spacers.

In today's modern building and construction, we continually search for a “tighter” home that retains our winter heat and summer cooling. Vapor barriers, high performance doors and windows, tile, and plastic wall coverings all conspire to keep whatever air is inside...inside. The more energy efficient the glass, the more likely it is to have condensation on the outside of the glass. One problem is the control of moisture (humidity) in the air. The “tighter” the home, the less likely excess moisture will escape.

What Causes High Indoor Humidity Levels?

Simply said, moisture is caused by everyday living. Dishwashers, clothes washers, furnaces, humidifiers, cooking, and showering are all major contributors to humidity. Cooking for a family of four releases 4.5 lb