CertainTeed

# CertainTeed Windows
# Condensation

**Everyday indoor condensation is no cause for concern.**

Congratulations on your purchase of high-quality vinyl windows. With these advanced windows installed in your home, you can now look forward to many years of beauty, ease of operation, and thermal efficiency.

People who are not accustomed to the superior efficiency of vinyl windows sometimes express concern about condensation - the fog or moisture that can appear on your windows during the colder months.

This does not indicate a problem with either the construction or installation of your windows. Quite the contrary, it indicates that your vinyl windows are performing well. Any other type of window - wood or aluminum - is much more likely to cause condensation problems.

You're holding in the precious warm air like never before. But you're holding in humidity like never before as well. And that's really what this sheet is about - controlling the humidity in your home.

**Condensation is caused by household humidity.**

Basically, condensation occurs when humid air comes into contact with a surface that is cooler than the air itself. This happens most often in winter, when your doors and windows are kept closed, holding in the moisture-filled air.

Condensation may appear as a thin film of dew or frost on your windows. This is normal, and will not damage your new vinyl windows or any other part of your home.

However, if you see excessive amounts of condensation, such as beads of water flowing down your windows or walls, it's the sign of a problem - excessive household humidity.

**There are many sources of household humidity.**

The humidity that leads to condensation is a normal product of everyday life. According to studies, a family of four can release up to twenty pounds of moisture - two and a half gallons of water - into the air every day, just through the daily routines of cooking, showering, cleaning, and breathing. Therefore, the more activity in your home, the more likely you are to see condensation.

Other major contributors to household humidity include: humidifiers, water pans on radiators or wood stoves, kerosene heaters, drying laundry, and house plants. The construction of your home - the kind and amount of ventilation, the presence or absence of a basement - even the soil type and drainage patterns of the land on which it is built can add humidity as well.

In many cases, you can reduce humidity simply by being aware of the sources and reducing your daily use - for example, boil less and bake more when cooking and take shorter showers.

**Recommended household humidity levels.**

To test for humidity in your home, use an accurate instrument, such as a sling psychrometer. Keep in mind that these recommended levels are based on 70-degree indoor temperature; higher temperatures require lower humidity levels.

| Outside temperature | Relative household humidity at 70º F |
|---|---|
| -20º or below | Not more than 15% |
| -20º to -10º | Not more than 20% |
| 10º to 0º | Not more than 25% |
| 0º to 10º | Not more than 30% |
| 10º to 20º | Not more than 35% |
| 20º to 40º | Not more than 40% |

**Here's what you can do to reduce the humidity that causes condensation.**

Fan it out: When using your bathrooms, kitchen, or laundry room, turn on any built-in fans. It may also be a good idea to install an exhaust fan in your attic to draw moist air out of your house.

Dry it Out: Use a dehumidifier to remove excessive moisture from the air. Also, discontinue the use of any humidifiers, or the placement of water pans on your radiators or wood stove.

Air it Out: Every day, open a door or window for a few minutes to air out your home. Opening fireplace dampers and basement or attic

## Condensation - (continued)

louvers will also allow moist air to escape.

Move it Out: In cold weather, move your house plants to the sunroom or other seldom-used room.

Seal it Out: Waterproof your basement floors and walls using a moisture-sealing paint, available at most hardware stores.

### Some problems may require professional assistance.

If your home still contains excessive humidity after you've tried the above steps, you may have a more serious problem. Solutions vary sometimes, because so many different activities and conditions can contribute to humidity.

Therefore, you may wish to seek professional assistance. Start with your architect or heating contractor. They are familiar with such problems, and may be able to offer further advice and suggest inexpensive solutions.

### Enjoy the comfort and savings of your new windows.

By installing energy-efficient vinyl windows, you have done your home and your family a tremendous favor. One that will result in greater comfort and significant energy savings.

As with most home improvements, you may need to make some adjustments in order to enjoy the full benefits of your vinyl windows. In the case of ordinary condensation, that simply means reducing the sources of excess humidity in your home, particularly during the colder seasons.

### Outdoor Condensation*

Condensation on the outdoor surface of an insulating unit is not an indication that the glass or insulating unit is defective. Under the right set of atmospheric conditions it is possible to get condensation on the exterior glass surface of an insulating glass unit. Specifically, the following conditions:

Glass temperature below dew point temperature

Clear night sky

Still Air

High relative humidity

Well insulated glazings

Exposed to these conditions, the exterior surface of the glass can radiate heat away to the night sky such that the glass temperature falls below the dew point of the ambient air. When this occurs, moisture from the air condenses on the glass surface. Only when the glass temperature rises above the dew point will the condensation evaporate back into the air. Dew formation on grass, car hoods and roofs, and building roofs and walls is common and accepted as a fact of nature.

The presence of moisture indicates that a specific set atmospheric conditions exist and that the insulating glass is indeed doing its job -- that of insulating the building from the environment. In this case, that insulation capability is what retards the flow of building heat through the glass and prevents warming of the exterior above the dew point.

If exterior condensation occurs on insulating glass, there is little or nothing that can be done to prevent its reoccurrence. Draperies should be open to allow as much heat transfer though the glass as possible,. Trees or buildings can block the radiation view to the sky. Shrubbery immediately adjacent to the glass can increase the local humidity and may need to be moved. The exterior surface of the glass will warm and the condensation will evaporate when either the heat loss to the sky is blocked (i.e. clouds), the wind picks up, or sunlight is absorbed on the glass surface.

*Source: Cardinal Glass

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