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VISTA® WINDOW COMPANY

CORPORATE HEADQUARTERS:
3850 Elm Road NE • Warren, OH 44483
330.259.4700
vistawindowco.com

Condensation:

Your Questions Answered

What causes condensation?

Under the right conditions, condensation can occur both inside and outside your home. The source of condensation, or "sweating", on windows and mirrors inside a home is caused by humidity, or invisible water vapor, present in virtually all air. When this water vapor comes in contact with a surface, which is at a temperature below what is called the "dew point," the vapor turns to visible droplets of liquid, or condenses, on the cooler surface. This often happens to bathroom mirrors and walls after someone has taken a hot shower. Condensation can occur on windows during the winter if the inside humidity level is high enough and in summer, when outside air is very humid and inside temperatures are kept relatively cool.

Do thermally efficient windows prevent condensation?

There is no such thing as a condensation-free window. Even walls will "sweat" under conditions of high humidity. Remember that windows do not cause condensation; they simply prevent the moisture from escaping to the outside and serve as a highly visible surface where condensation can be easily noticed. If inside glass surfaces on double- or triple-glazed windows show excessive condensation, you can be reasonably sure that moisture is also collecting in your walls and ceilings. When outside condensation occurs, this does not mean your insulating glass unit is defective. In fact, it shows that the unit is doing its job - insulating the building from the environment.

What is summer condensation?

Summer condensation occurs when the outside window surface is cooler than the dew point temperature of the outside air. In cases where the inside temperature is below the outside temperature, a Low-E coating will allow the outside glass temperature to drop to about the same as that of an inefficient window. In cases where the outside air is colder than the inside temperature, a Low-E coating allows the outside glass to get even colder. Therefore, under the right conditions, windows with Low-E coatings can develop more summer condensation than inefficient windows.*

**Based on information found on www.rlcengineering.com/win_cond.htm.*

What can I do to help with condensation?

Most everyday activities produce water vapor. One shower produces a 1/2 pint of water vapor, a houseplant generates 1 pint of water vapor a day and one person's breathing produces 3 pints of water vapor per day. Although it's an uphill battle, there are a few things you can do to help control moisture levels in your home.

What can I do to help with condensation?

continued

- Use kitchen and bathroom exhaust fans
- If you have a humidifier, set it to correct outside temperature
- Properly vent clothes dryers, gas appliances, stoves, etc.
- Make sure attic, basement and crawl spaces are well-ventilated and free from obstructions
- Don't store firewood inside - a cord of wood can release 60 gallons of water
- Crack a window in the bathroom, kitchen and laundry room during and after use
- Do not completely cover the window with drapes or blinds; leave a small open area for air circulation
- Install energy-efficient windows

Do I need to control the humidity in my home?

Controlling the amount of moisture in the air, or humidity, is the most effective way to reduce condensation. The amount of moisture in the air is indicated by the "relative humidity" of the air. Relative humidity is the percentage of moisture in the air compared to the maximum amount it can hold. Temperature also effects how much moisture air can hold. At 100% relative humidity, air at 60 degrees will hold three times as much water vapor as air at 30 degrees Fahrenheit. As temperatures drop during the winter, the air can not hold as much moisture as before and condensation will occur unless the relative humidity level is lowered. *The chart below illustrates the maximum recommended levels of moisture in interior air for different outside temperatures.*

Outside Air Temperature	Inside Air Temperature
-20°F or Below	Not Over 15%
-20°F to -10°F	Not Over 20%
-10°F to 0°F	Not Over 25%
0°F to 10°F	Not Over 30%
10°F to 20°F	Not Over 35%
20°F to 40°F	Not Over 40%

Based on engineering studies conducted at The University of Minnesota Laboratories.

- *Based on engineering studies at 70° F conducted at the University of Minnesota Laboratories.*
- *Relative humidity levels above these are not recommended at the low outside temperatures indicated, unless special provisions are taken in building construction.*
- *If higher relative humidity levels are required because of special interior environmental conditions, the window manufacturer should be consulted.*