

Windows Sweating?

The word "moisture" refers to water vapor mixed with air. Most of the moisture generated in the home is dissipated by the movement of moisture-laden air out of the home. As homes become more energy-efficient, the number of paths of escape are reduced, and dealing with moisture becomes more important.

During the heating season, the indoor humidity level should hover around 30 percent to 40 percent. When indoor humidity exceeds 40 percent during cold weather, moisture problems begin to appear. One symptom of a high humidity level is condensation forming on cold surfaces. High levels of humidity are often the result of too much moisture vapor generated indoors.

HEATING AND VENTILATION magazine provides builders with reference data on sources of water vapor. For instance, cooking for a family of four adds 4.5 pounds of moisture a day to a house. Each shower contributes half a pound; a weekly laundry, 30 pounds; human occupancy contributes 6 to 3 pounds per day; dish washing 1.2 pounds, etc. So you see that the modern living of a family of four can easily release 150 pounds, or more than 18 gallons of water per week into the air in your home! All of this moisture MUST eventually escape from your home.

Window Condensation:

Condensation will occur whenever the window surface is cool enough to allow moisture in the air to condense on it, which is why some condensation can be expected in the winter - condensation should be controlled as much as possible since it can damage the window's components, cause the wood to rot and saturate the wall insulation reducing its effectiveness.

(An example of condensation: A glass of ice water sweats because the warm air that surrounds the glass meets the cold surface and causes....you guessed it, condensation) Moisture on the inside of the storm window (or outside pane). Indicates that the prime window is allowing air and moisture to leak out to the storm window where it condenses. Stopping these air leaks with caulk and weather stripping will stop the condensation and ultimately save your window.

It is also important to understand that too little humidity is bad for your house. Manufacturers claiming that low humidity (15 percent) is best for windows may be covering for a poor quality product. Good windows should not have excessive condensation at normal humidity levels (30 percent to 40 percent).

Moisture on the inside of a window pane:

This is a sign that airborne water is trapped in the house due to poor air circulation and exchange.

Moisture between single pane windows and exterior storms:

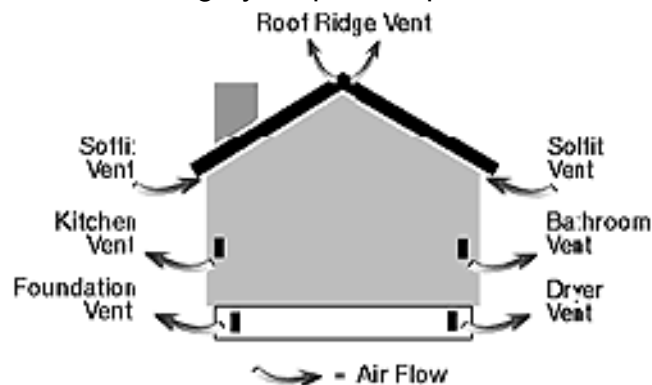
Storm window frames are made with a breathing hole that permits condensation to escape. These breathing holes often become plugged or puttied shut over time. When

this happens, moist air becomes trapped and condensation appears. To fix the problem, unplug the holes.

Steps to Reduce Excessive Humidity:

Recognize that the best way to stop condensation is to reduce the moisture in the inside air. Here are a few tips:

- Vent gas burners and clothes dryers to the outside. Dryer and kitchen range exhaust fans should never be vented to the attic.
- Install exhaust fans in the kitchen, bathrooms, and laundry rooms.
- Controlling or covering other sources of humidity (radiator water pans, fish tanks, large numbers of plants, etc.).
- Installing a dehumidifier.
- Opening fireplace damper.
- Ventilating the crawl space or basement: Install foundation vents or leave a basement window cracked in the fall or early winter to ventilate your basement or crawlspace.
- Another positive measure is to connect a small duct from the outdoors to the return side of a forced-air heating system, so that fresh air is drawn into the house whenever the system is operating. A damper placed in this duct will allow the home owner to control incoming air.
- A simpler method is to simply crack a window somewhere in the home.
- Ventilating the attic: Because of vapor pressure, the moist warm air from your home can go right through your ceiling into your attic. If your attic is not ventilated, the humid air will condense on the cold underside of your roof. This condensation can start to rot the roof boards, cause ice dams, or drip down onto the ceiling below and damage your plaster, paint, and attic insulation.



- Wall Insulation: To prevent or reduce condensation problems inside your walls and protect your insulation, the side of the insulation exposed to high vapor pressure (warm side in winter) must be covered with material that will impede the natural drive of moisture to flow through the inside surfaces of exterior walls, toward the lower vapor pressure outside. To be effective, such a material must have a high resistance to moisture flow. The material is usually called "vapor retarder."