



# Condensation

## **The facts about window & door condensation and what can be done about it:**

- During winter months, homeowners often encounter condensation on the windows in their homes. The goal of this letter is to define the problem, the causes, and the solutions to this bothersome and ever-present problem.
- Of course, windows don't manufacture water. If you were out in the desert, you would want a canteen with you, not a window. But people seem to believe that windows do manufacture water. They call up window contractors and say, "My windows are all wet, and it must be the fault of the window." Well, not quite.... Water on windows is condensation, and it can be a problem. However, it's not a window problem, and the solution does not come from the windows.
- If you are troubled during the fall and winter by condensation on the windows of your home, you aren't alone. It is a common problem in cold climates. The typical family produces a lot of moisture indoors (washing, showering, cooking, just breathing, etc.) and it can be difficult to reduce it.
- Understanding the causes of the problem is the first step in solving it. Condensation and ice form on windows because the window surface is below the dew point for the air near the window, so some of the moisture in the air condenses on the glass. The higher the relative humidity of the air near the window, the higher the temperature of the dew point.

## **Here are answers to your questions about condensation, indoor humidity and exterior condensation:**

- Condensation is moisture that suddenly appears in cold weather on the interior or exterior of windows and patio door glass, drips on the floor or freezes on the glass.

- Seasonally, it can be an annoying problem. It may seem natural to blame the windows and/or doors. Interior condensation is really an indication of excess humidity in the home.
- Windows serve as visible areas for moisture to condense, warning you that there is too much moisture inside your home. Windows & Doors do not cause condensation.
- Exterior condensation, on the other hand is a form of dew-the glass simply provides a surface on which the moisture can condense.
- The important thing to realize is excessive humidity is causing window & door condensation.

## Questions & Answers

### 1) Does Condensation occur in winter?

Condensation is mostly common in winter, but it can occur whenever water vapour in the air comes in contact with a surface temperature lower than the dew point (the temperature at which air becomes saturated and produces dew). In rare instances, during spring & fall (and occasionally, during hot, humid summer days), exterior condensation can also form on windows. This is usually a good indicator of the presence of energy efficient windows.

### 2) Is this a sign of poor-quality windows or construction of my house?

No, it is a sign of higher quality construction of windows, doors and your home construction. The newer home designs do not allow air and moisture escape or infiltration as the older homes, so it is very important to watch the humidity levels in the house.

### 3) How does indoor humidity affect window condensation?

Excessive humidity is the cause of most window condensation. As the outside temperature drops, the window glass temperature also drops. When moist air comes in contact with the cold glass pane, the moisture condenses and forms water droplets. Determining when the condensation will occur and preventing depends on the energy efficiency of the window, the relative indoor humidity of the home, and the exterior and interior temperature.

### 4) Can excess condensation damage windows?

Excess window condensation can cause paint to peel from the sash of wood windows. Excess moisture can also damage the wood window frame on a wood window. Normally it does not affect vinyl or aluminum windows.

## 5) Is exterior condensation anything to worry about?

Dew on windows is a natural atmospheric phenomenon, and it **doesn't** mean your windows are leaking air or malfunctioning in any way. In fact, exterior condensation is a sign of energy efficiency, since it means the outside pane is thoroughly insulated from the heat indoors. Depending on where you live, it may occur just a handful of times per season.

## 6) Are there any cases where window condensation is only temporary?

- **New Construction:** Wood, plaster, cement and other building materials used in new construction and remodelling produce a great deal of moisture. When the heating season starts, this moisture will gradually flow out into the air in the home. It will usually disappear during the first heating season and not cause any further trouble,
- **Heating Season:** At the beginning of the heating season, there may be a certain amount of temporary condensation. During the humid summer months, your house can absorb some moisture. After the first few weeks of heating, this moisture should dissipate.
- **Preceding Temperature Shifts:** Sharp, quick drops in temperature can also create temporary condensation problems during the heating season.

## 7) How else can I reduce indoor humidity?

- Vent all gas appliances, clothes dryers and exhaust fans to the outside. Your attic and crawl space should also be ventilated. Cover the earth in the crawl space with a good vapour barrier.
- When cooking, make sure to run the exhaust fans in the kitchen. When you bathe or shower, run the fans in the bathroom until your mirror is clear.
- Avoid storing firewood in your house.
- If your home is extremely "tight" it may be helpful to install an air-to-air heat exchanger. As the outside air temperature drops, you should also decrease the humidity level within your home. The bottom line: Maintain as high a relative humidity level as you can for comfort, then reduce the humidity level when condensation occurs. In many homes this simply means turning off your humidifiers in the winter.

## 8) Does the amount of condensation depend on the window type?

Sometimes. Recessed windows like bow and bay windows usually experience more condensation than other window styles. This is because air circulated around those window types is usually more restricted, and since they hang away from the insulated house wall, bays and bows could be a few degrees cooler in temperature. Placing a common electric fan near the window to produce air circulation may also be helpful.

### **9) Do drapes and shades affect window condensation?**

Drapes and other window coverings can contribute to a condensation problem by restricting the flow of warm room air over the glass surface. Therefore, indoor condensation is more likely to occur when the drapes are closed or the shades are pulled down.

### **10) Why wasn't it always there?**

Old drafty windows allow moisture to escape through inefficient seals and cracks. Today's technology produced more energy efficient, "tighter" homes. This is great for keeping your home more comfortable, quieter, and clean, BUT by sealing your home you are also keeping moisture in. In today's homes it is very easy to build up extremely high levels of humidity.

### **11) When should I be concerned?**

If you find condensation between the two or three layers of glass in an insulated window, the airtight seal has probably been broken and the glass will need to be replaced. See Fancy Windows Warranty at <https://www.fancywindows.com/Warranty.html>

For more information about condensation please visit the following sites:

1. NFRC (National Fenestration Rating Council)
  - o <http://www.nfrc.org/>
2. WDMA (Window & Door Manufacturers Association)
  - o <https://www.wdma.com/>

## **Service Calls**

Our dealers and representatives are committed to providing the best after sales service where and when it is really needed. We are, however, too frequently required to make calls for reasons beyond our controls and responsibility. Condensation is always due to higher than recommended inside humidity levels in relation to colder outside temperature. Before requesting a service call, please review our warranty and this letter. It may help to avoid the minimum charge of \$180.00 (per hour). We thank you for your cooperation.

# Window Convection & Drafts

At Fancy Windows we take great pride in providing our customers with the service and information they need to understand and care for the products they have purchased. We are always available to assist you, and we want to produce you the best customer service available. The following information is designed to address some common questions and concerns.

***Drafty Windows:*** Windows can be drafty for a variety of reasons such as cracked caulk, improper window locking, interlocks that are not lined up to seal properly, damaged or missing weather stripping, and poor insulation within the interior walls. These types of problems are easy to remedy.

***Convection:*** However, windows may seem “drafty” for another reason; namely a process known in physics as convection. Convection can lead you to believe that your windows are drafty. Convection occurs when air gives up its heat to the cooler glass and sinks towards the floor. This movement sucks new, warmer air towards the glass that is in turn cooled, creating a draft. What you are experiencing is the process of warm air forcing colder air to move due to differing density properties. Heated air circulates through the home. When it reaches window glass it effectively pushes the existing cold air off of the glass. Convection is actually proof that your new windows are working well and energy efficient.

***Tips to Reduce Convection:***

1. Leave your blinds or window treatments open about 1/4 inch, so that heated air can reach the glass.
2. Make sure that your heat register exchanges are not obstructed by couches or other furniture.