



# WINDOW CARE MANUAL AND CONDENSATION GUIDE

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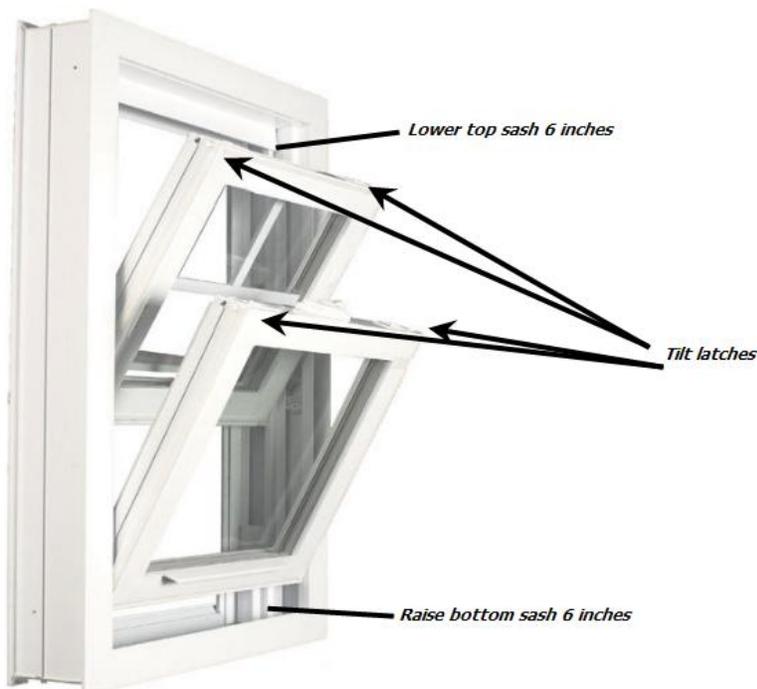


## **HOW TO TILT VINYL DOUBLE HUNG WINDOWS**

- STEP 1      Unlock sash by turning lock counter clock-wise.
- STEP 2      Raise bottom sash approximately 2-3 inches.
- STEP 3      Lower top sash at least 6 inches. (make sure you will be able to reach to tilt latches once the bottom sash is tilted in)
- STEP 4      At the top corners of the sashes are the tilt latches. Slide latch buttons inwards towards each other\* at the same time and gently pull towards yourself and sash will tilt into tilt position. Repeat with top sash.

*\*when tilting sash be sure to hold evenly. Do not hold on only one side as this may cause sash to pop out of the shoe.*

- STEP 5      When done simply rotate top sash back into original position and with slight pressure sash will snap back into place. Repeat for bottom sash.



**NEVER USE EXCESSIVE FORCE WHEN OPERATING ANY PART OF THE WINDOW**



## **CARE & CLEANING OF VINYL DOUBLE HUNG WINDOWS**

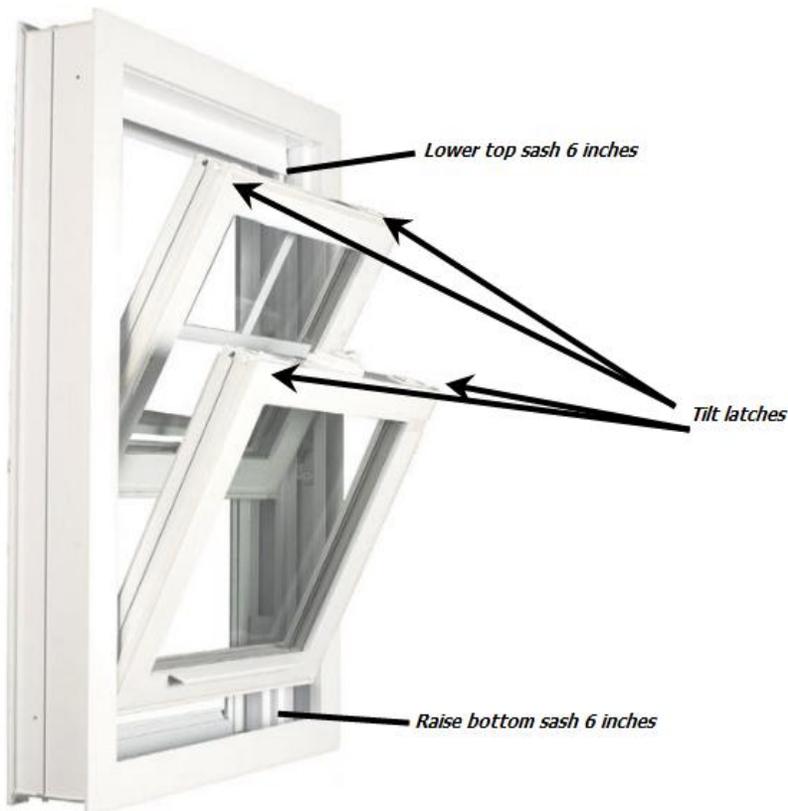
### **CLEANING:**

Use instructions for tilting in of windows to clean outside of windows.

Glass cleaners (Windex, etc.) work well for both glass and vinyl. For most stains, an all purpose cleaner such as Murphy's Oil Soap or Fantastik will work well. Soft Scrub works on minor scrapes or scratches.

Do not use any solvents, acids or abrasives on the vinyl.

Keep balances, weather stripping, hardware and window tracks clear of debris and dirt. Keep weep holes (if applicable) open and clear of obstruction.





# **CONDENSATION**

QUESTIONS

&

ANSWERS

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# **CONDENSATION QUESTIONS & ANSWERS**

## **What is condensation?**

Condensation is the fog that suddenly appears in cold weather on the glass of windows and sliding doors. It can block out the view, drip on the floor, freeze on glass...it's annoying. **It's natural to blame the window...but you shouldn't.**

## **What Causes Window Condensation?**

Window condensation is the result of excess humidity in your home. The glass only provides a cold surface on which humidity can visibly condense. The fog on your windows is a form of condensation: so is the water that forms on the outside of a glass of iced tea in the summer and on the bathroom mirrors and walls after someone takes a hot shower. Condensation usually occurs first on windows because glass surfaces have the lowest temperature of any of the interior surfaces in the house. When the warm moist air comes into contact with the cooler glass surfaces, the moisture condenses.

The important thing is your foggy windows and sliding doors are trying to tell you to reduce the indoor humidity before it causes hidden, costly problems elsewhere in your home. Problems like peeling paint, rotting wood, buckling floors, insulation deterioration, mildew, even moisture spots on ceilings and walls.

FOGGY WINDOWS ARE THE INDICATORS, THE WARNING SIGNS THAT HUMIDITY COULD BE DAMAGING YOUR HOME.

## **How Can My Home Have Indoor Humidity?**

Humidity is water vapor, or moisture in the air. All air contains a certain amount of moisture, even indoors.

## **Where does the moisture come from?**

There are many things that generate indoor moisture: humidifiers, heating systems and even plants. Cooking three meals a day adds four or five pints of water to the air. Each shower contributes ½ pint. In fact, every activity that uses water (dishwashing, mopping floors, laundry) adds moisture to the air.

MORE WATER VAPOR IN THE IAR MAEANS A HIGHER INDOOR HUMIDITY. HIGH INDOOR HUMIDITY MEANS CONDENSATION.

## **How Much Indoor Humidity Is Too Much?**

The householder can use the windows as a guide to the proper humidity level within the house. IF OBJECTIONABLE CONDENSATION OCCURS ON THE INSIDE SURFACE OF THE WINDOWS THE HUMIDITY LEVEL IS TOO HIGH. To avoid excessive condensation, the following winter humidity's are recommended in the house:

<b>Outside Temperature</b>	<b>Inside Relative Humidity</b>
-20 F	15 to 20%
-10 F	15 to 20%
0 F	20 to 25%
+10 F	25 to 30%
+20 F	30 to 35%

(The indoor humidity can be checked with a sling psychrometer or a humistat)

## **Will Reducing the Humidity In My Home During Winter Help Control Condensation?**

Eliminate the excessive humidity and you will eliminate most possibly all the condensation.

## **How Can I Reduce The Humidity In My Home?**

Control the sources of moisture and increase ventilation.

As a temporary solution to an acute problem, open a window in each room for just a few minutes. Opening windows allows the stale humid air to escape and fresh dry air to enter. After a shower, open the bathroom window or turn on an exhaust fan so steam can go outside instead of remaining in the house.

Vent all gas burners, clothes dryers, etc. to the outdoors. Install kitchen and bathroom exhaust fans. If there are a large number of plants in the house during winter, concentrate them in one sunny room and avoid over-watering.

Keep basements as dry as possible by waterproofing floors and walls. Run a dehumidifier if necessary. Make sure attics vents are open and unobstructed.

Opening the windows slightly throughout the house for a brief time each day will go far toward allowing humid air to escape and drier air to enter. The heat loss will be minimal.

## **Does Condensation Occur More Often In particular Climates or Types of Homes?**

Yes, there are primarily three:

- New Construction or remodeling
- The beginning of the heating season
- Quick changes in temperature

Wood, plaster, cement and other building materials used in new construction and remodeling produce a great deal of moisture. During the heating season, there may be a certain amount of temporary condensation. During the humid summer, your house will have absorbed some moisture. After the first few weeks of heating it will dry out, and you'll have fewer condensation troubles. Sharp, quick drops in temperature can also create temporary condensation problems during the heating season.

## **Are There Any Cases Where Window Condensation Is Only Temporary?**

Yes, there are primarily three:

- New Construction or remodeling
- The beginning of the heating season
- Quick changes in temperature

Wood, plaster, cement and other building materials used in new construction and remodeling produce a great deal of moisture. During the heating season, there may be a certain amount of temporary condensation. During the humid summer, your house will have absorbed some moisture. After the first few weeks of heating it will dry out, and you'll have fewer condensation troubles. Sharp, quick drops in temperature can also create temporary condensation problems during the heating season.

## **WHY DO MY NEW WINDOWS HAVE CONDENSATION WHEN MY OLD WINDOWS DIDN'T?**

One of the reasons you probably replaced your old windows was because they were drafty and when the wind wasn't blowing those slight cracks allowed the excessive humidity within your house to escape to the outdoors. Now that your windows are tight the excess humidity that is in your house is unable to escape and is now showing itself on the glass. This is the first indication that you have too much humidity in your home.

## **YOU SAY I SHOULD HAVE LESS HUMIDITY, BUT I HAVE BEEN TOLD THAT MORE HUMIDITY IS HEALTHIER?**

At one time it was believed that humidifiers helped people stay healthy during the winter months. Recent tests have shown that for usually healthy people, this is not the case. In fact, humidifiers may actually cause health problems.

Additionally, the Association of Home Appliance Manufacturers makes no medical claims for humidifiers because an Association spokesman said: "We do not have evidence of medical benefits". However, the Association said "Manufacturers do maintain that humidifiers help plants and furniture only".

### **Does The Amount of Condensation Depend On The Window Type?**

Sometimes. Recessed windows like bay or bow 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. To diminish excessive condensation, the smart installer will insulate under the seat and head of the unit. As a secondary measure, placing a common electric fan near the window to produce air circulation may also be helpful.

### **Do Drapes and Window Shades Cause Window Condensation?**

Drapes and other window coverings don't cause window condensation, but they can contribute to the problem by restricting the flow of warm room air over the glass surface. Therefore, condensation is more apt to occur when drapes are closed and shades are pulled down. Today's healthier insulated drapes and tighter shades can contribute to the problem even more.

### **Remember...Windows Do Not Cause Condensation:**

Therefore, there cannot be a window which eliminate condensation. However, certain material used in the manufacture of windows will be more condensation free than others.

THE FOLLOWING SOURCES WERE USED: The Condensation Problem---HERE ARE THE CAUSES AND CURES, Canadian Builder VolXIII, No 7, Condensation Problems In Your House: Prevention and Solution. U.A. Dept. of Agriculture Forest Service, Agriculture Information Bulletin No 373. Technical Bulletinn #1—Ethyl Corp. The Condensation Answer Book, Anderson

## **WINDOWS DON'T MANUFACTURE WATER**

### **Everything you need to know about condensation—and everything you need to do about it.**

Of course windows don't manufacture water. If you were out in the desert, you'd want a canteen, not a window.

But people seem to believe that windows manufacture water. They call up window contractors and say, "My windows are all wet, and it's all the fault of the windows." Well, not quite.

Water on windows is condensation—and it can be a problem, and it has a solution. But it's not a window problem, and the solution doesn't come from the windows.

What causes window condensation? What can you, the homeowner do about it? More and more homeowners are concerned about growing condensation problems...and they are growing.

There are several explanations for this last remark. And for the most part, they can be traced to "progress". For example, the "tight" construction of newer homes...and increasing use of modern labor-saving appliances...certain building materials...smaller homes...more gas furnaces...more showers.

A little fog on the corners of your windows shouldn't bother you. And it probably doesn't. But "problem" condensation—fog or frost that covers whole windows—definitely bothers you. And it should. The visible effects are just the tip of the iceberg...what is happening elsewhere in your home? Take your attic. Excess moisture may be freezing in the insulation where it will later melt and damage your plaster. Or perhaps it's forcing its way through your siding, where it will form blisters under the exterior paint, or it may be promoting mildew in your home.

The culprit is too much water vapor. Not the window, not the insulation, not the pains. The only answer is to get rid of excess water vapor. Water vapor, or humidity, is one of the visible components of air. This humidity tries to flow toward drier air, since this air has a lower vapor pressure. In other words, the higher vapor pressure in moister air forces the moisture to areas which are drier.

In cold weather, the air outside is generally drier than that within a warm house. What happens then, is that the moisture is forced to the outdoors. The most obvious indication of this is condensation on your windows: the moisture comes in contact with the cold surface of the window but cannot get through the glass. It therefore condenses to form either frost or water (depending on whether the temperature of the glass surface is below or above 32 degrees).

The tight construction of modern homes traps the moisture in many ways. Certain varnishes, paints, tiles, plastics and acrylics—which are increasingly used in construction today—do not allow moisture penetration. Thus the moisture created by kitchens, laundries, bathing and human bodies (as well as cat, dog and other pet bodies) can't flow easily to the outside. And insulation and construction materials that are designed to keep cold air outside also keep moisture inside, further increasing the moisture level in your home. Going a step further, houses are generally smaller today, which means an even greater concentration of trapped water vapor.

It's all well and good to have an understanding of what causes excess moisture and condensation. But by now you are probably saying, "OK, fine...but what can I DO about it?"

The answer is simple: Control humidity in your home. Before continuing, it's a good idea to know just what "relative humidity" is. It is the percentage of moisture in the air in relation to (or relative to) complete saturation. When air will hold no more moisture, it is said to be saturated. (if it were raining out, for example, the relative humidity would be 100%)

There are maximum safe humidity's for your home. If these humidity levels are maintained, you can avoid excessive condensation. The following table shows relative humidity for a 70 degree F indoor air temperature. Lower humidity would be required for higher indoor temperatures.

<b>Outside Air Temperature</b>	<b>Recommended Relative Humidity</b>
-20 degree F or below	not more than 15%
-20 degree F to -10 degree F	not more than 20%
-10 degree F to 0 degree F	not more than 25%
0 degree F to 10 degree F	not more than 30%
10 degree F to 20 degree F	not more than 35%
20 degree F to 40 degree F	not more than 40%

Your home's relative humidity can be tested by buying an inexpensive humidistat which registers the inside humidity much like a dial-type thermometer.