



Condensation

WHAT IS CONDENSATION?

Condensation is the word used to describe what occurs when water vapour in the air is changed into liquid water on a cool surface. Air can hold only a certain amount of water vapour at any given temperature. If the temperature of the air is lowered by a surface that is cooler than the air's maximum water-vapour holding capacity, condensation will occur.

WHAT CAUSES CONDENSATION ON MY WINDOWS?

Condensation occurs when warm, humid air strikes a cold surface. When the temperature outside drops, condensation will almost always appear on your windows first because the glass is the coldest indoor surface. When condensation occurs on your windows, the immediate thought is that the window performance is inadequate. In reality the culprit is not improperly installed or leaky windows! Window condensation is the result of excess humidity in your home. When the warm moist air comes into contact with the cooler glass surfaces, the moisture condenses.

The important thing is, your foggy windows are trying to tell you to reduce indoor humidity before it causes hidden problems in your house, such as mildew, deteriorating insulation, peeling paint, and rotten wood.

WHERE DOES THE HUMIDITY COME FROM?

The main source of humidity in a typical home is regular household activities, which vary with the living habits of the family. Typically 7 to 9 litres of moisture per day is introduced into a house with four occupants under normal living conditions, which can rise to 18 to 23 litres on wash days. This happens through such activities such as washing, cooking meals, bathing, household plants, as well as improperly drained or unprotected crawl space.

WHY DO ONLY SOME OF MY WINDOWS SHOW CONDENSATION?

Windows that are covered by blinds or drapes have less warm air circulation and therefore will have colder glass surfaces. Inadequate air movement in a room may also be a factor. As well some rooms have a higher humidity than others (i.e. bathroom or kitchen).

HOW MUCH HUMIDITY IS TOO MUCH?

The table below shows the maximum recommended relative humidity for different outside temperatures. The chart shows that as the outside temperature drops, the relative humidity must also drop to minimize condensation. The indoor humidity can be checked with a sling psychrometer or humidistat but you can simply use the windows as a guide to the proper humidity levels within the house.

<i>Outside Air temperature in degrees Celsius</i>	<i>Relative humidity within inside air temperature of 20 degrees Celsius.</i>
-30 or below	not over 15%
-30 to -24	not over 20%
-24 to -12	not over 25%
-12 to -6	not over 30%
-6 to 0	not over 40%

You can combat condensation when buying new windows by including such options as Low E glass, argon, or triple-glazing. These options help make the glass surface warmer.