

## Windows

**Double Glazing** - Using double glazing helps keep the surface of the inside glass warmer and so reduces the likelihood of condensation forming on the windows. Remember that moisture is still present.



**Thermally Efficient Window Frames** - Like double glazing, thermally efficient window frames help prevent the transfer of heat energy through window frames and therefore help reduce the incidence of condensation on windows. Thermally efficient window frames should only be used with double glazing.

## Summary

1. Windows do not cause condensation.
2. Relative Humidity is a measure of the moisture in the air.
3. Dew Point is the temperature at which condensation forms.
4. Moisture in the air comes from us breathing, from using water, unflued gas heaters and from drying building materials. Levels of moisture in the air can also vary depending on your geographical location.
5. High humidity can promote mould growth and deterioration in the home.
6. You can reduce humidity and, therefore, condensation by having adequate ventilation. This includes keeping windows and vents open, and using ventilation fans.
7. Windows with double glazing (IGUs) and thermally efficient window frames will help minimise the appearance of condensation.
8. Dehumidifiers will help reduce inside air relative humidity and reduce condensation.
9. HVAC systems will help control ventilation, relative humidity and temperature, and reduce condensation.

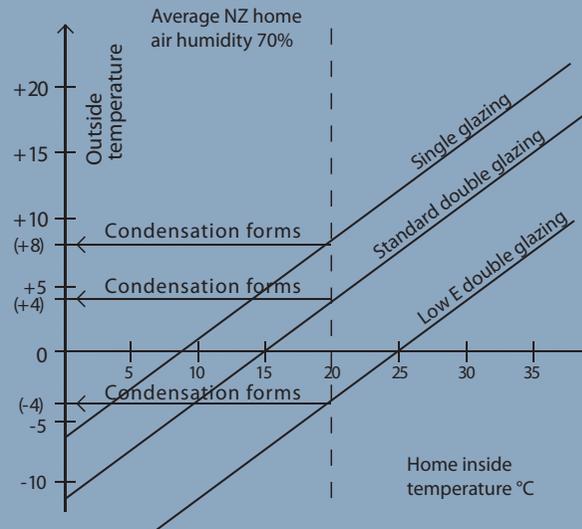
for more information visit  
[www.wanz.co.nz](http://www.wanz.co.nz)

The Window Association of New Zealand is the commercially neutral meeting place for everybody involved in any aspect of the New Zealand window industry. Like most other industries worldwide, our New Zealand window industry is fiercely competitive and that competition aims to deliver the very best deals to customers.

Customers depend on the Window Association of New Zealand to establish standards, which are appropriate to New Zealand conditions, by which they can judge the quality of the goods and services they are being offered.

Household Activity	Average moisture added to the indoor air
Cooking	3.0 litres day
Clothes washing	500 ml per day
Showers and baths	1.5 litres per day per person
Dishes	1.0 litre per day
Clothes drying (unvented)	5.0 litres per load
Gas heater (unflued)	1.0 litre per hour
Breathing	200ml per hour per person
Pot plants	As much as you give them

### PREDICTED CONDENSATION



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## The Window Association guideline to understanding:



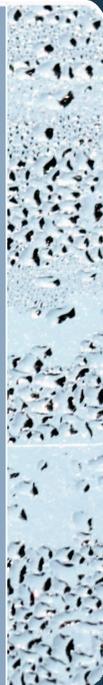
# CONDENSATION



## What is Condensation?

It is quite likely you already know what condensation is. Getting up in the morning you may have seen the water droplets covering the inside of your windows. Although windows may seem like the culprit, they are actually not the cause of condensation. Condensation is due to you and your family's activity within your home. Given the right conditions condensation will form on any surface, but it is often more visible on windows. That dampness could be right through your home.

The air inside your home contains moisture. When the indoor temperature cools down the air cannot hold as much water vapour. The result is that the water vapour condenses as a liquid becoming visible particularly on cold non absorbent surfaces such as windows. Unseen moisture penetrates your carpets, fabrics and any other absorbent surface often making them feel cold and damp.



## Where Does the Moisture Come From?

Us - our every breath when sleeping or awake, puts moisture into the air. On a cold morning, you can actually see the moisture appear right in front of you, when you breathe.

Water vapour also comes from using water, such as when cooking, showering and growing indoor plants.

Use of clothes dryers and unflued gas heaters can create a significant amount of moisture inside the home.

New houses will have a higher level of internal moisture as framing timber, concrete floor slabs and other building materials can take many months to stabilise.

Even your geographical location and climate can have an effect on condensation. New Zealand humidity levels vary across the country.

## Condensation in More Detail

We can use measurements to pinpoint the exact time condensation will appear. The two common terms we use are "Relative Humidity" and "Dew Point".

### Relative Humidity

Relative Humidity (RH) is how we can measure the moisture in the air. For example, a room humidity of 80% RH means the ability of the air to hold water is 80% loaded. 100% is saturation point. The higher the temperature, the greater the amount of moisture the air can hold as water vapour. The lower the temperature, the less the amount of moisture the air can hold. So the moisture is released at a temperature we call the Dew Point.



### Dew Point

Dew Point is the temperature at which the air becomes cool enough that the moisture in the air is released. The air can only hold a certain amount of moisture. The cooler the air gets, the capacity for it to hold water in the form of vapour reduces, and it has to let the water go. If touching a cooler surface, the water vapour appears as condensation. In the home this often means water appearing on windows, mirrors and walls, as well as disappearing into the furnishings and carpet. Our website contains more information about Dew Point and how to accurately predict when condensation will form (see back panel).

### The Effects of Condensation

High humidity promotes mould growth on walls, ceilings and materials, such as curtains and carpets. This mould growth and moisture is a major cause of deterioration in homes and buildings.



## Reducing Condensation

As condensation is a living conditions issue, simply installing new windows will not fix the problem. There are a variety of methods to help minimise the chance for condensation:

### Ventilation

Ventilation can help reduce moisture and condensation, keeping your home drier, healthier and more comfortable. Keeping windows open, even if only by a little for some of the daytime, can help reduce condensation.



Some window types can be supplied incorporating passive ventilation which allows you to lock your windows without stopping ongoing ventilation.

Ventilation is especially important in newer homes, because they tend to be more airtight, providing less natural airflow.

When cooking, drying laundry, or showering, make sure you let the water vapour escape outside. You can do this by opening windows or vents, or turning on a ventilation fan.

Dehumidifiers are useful as their sole purpose is to reduce moisture in the air. A dehumidifier draws in the moisture laden air from around the room, extracts the water and deposits it into an inbuilt container. You can easily dispose of this water by removing and emptying the container.

There are several types of domestic ventilation system available. They work by replacing the moisture-laden air in your home with air that may be drier – potentially reducing condensation and improving air quality as a result. Some systems have built in electric heaters that can also warm your home.

