

Fact Sheet 2: Understanding Condensation

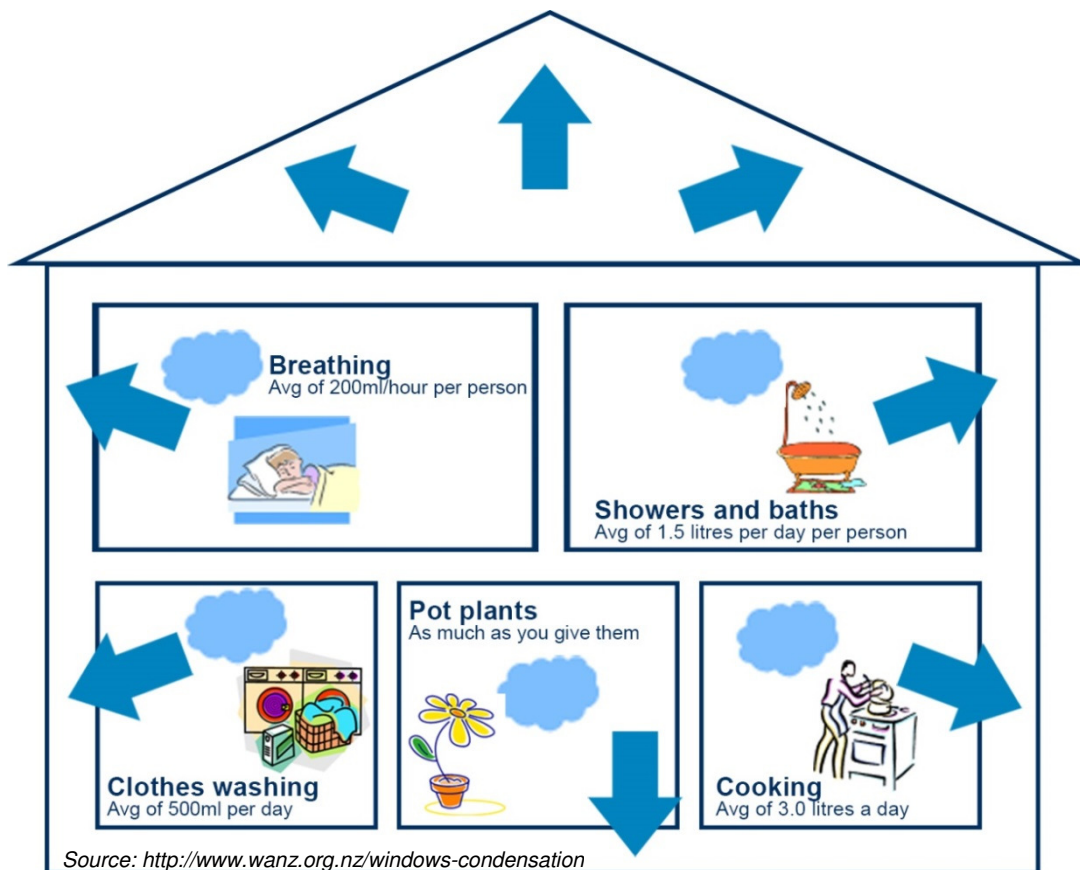
What is condensation?

Ever wondered why on cold mornings you see water droplets on your window? In winter, our heating systems usually mean it's more humid indoors. Warm air holds more moisture than cold air. At night, if the indoor temperature cools down below a given point, the air inside cannot hold as much water vapour. The vapour condenses to a liquid, becoming visible on cold, non-absorbent surfaces like windows.

What causes condensation?

Indoor moisture causes condensation in your home. The moisture comes from daily activity inside your home including cooking, showering, clothes washing or even breathing. When less air enters the home from the outside, the condensation will be more likely to occur.

Where does the moisture come from?



Dew Point

Condensation occurs when relative humidity is too high, at what is known as the Dew Point. Dew point can be affected by even a slight drop in temperature, if the moisture content in the air is high enough.

While condensation is obvious on window glazing and metal frames, it is also absorbed into other parts of a building and into soft furnishings like sofas, curtains, carpets and bed linen. This compromises air quality and can encourage mould to grow, with an impact on the health of occupants.

Fact Sheet 2: Understanding Condensation (Cont'd)

Activity within the home is a major contributor to moisture levels. Cooking, showering, watering plants and even breathing will create moisture. The use of clothes dryers and certain heaters can also add a significant amount of moisture. Without adequate ventilation, moisture can be trapped, increasing relative humidity and the likelihood of condensation forming.

To reduce condensation it is important to maintain a steady temperature in the room and ensure adequate ventilation to remove excess moisture.

Reducing Condensation

Double glazing

The air cavity between two layers of glazing acts as an insulation barrier, also known as a thermal “break”. This air gap helps to keep the inside surface of the window closer to the room temperature. Maintaining a temperature difference between the inside of the home and outside can reduce the likelihood of reaching the dew point, when condensation occurs. Some replacement double glazed units have an inert gas such as argon inside the air gap, to increase the level of insulation. Magnetite uses optical grade acrylic glazing, with draught seals and window frames that limit heat transfer, to improve the insulation performance of the window. This reduces the likelihood of condensation forming on the glazing surface.

Thermally efficient window frames

Heat transfer (conduction) through a window frame can also lead to condensation. In winter, steel or aluminium frames will readily transfer heat from inside to the outdoors and will not hold the heat for long as timber or uPVC, so they will feel colder to touch. As a consequence, when the warm moist air inside comes in contact with a colder aluminium window frame, it will condense. Magnetite uses uPVC subframes to limit the transfer of heat transfer through frames and improve the insulation of the whole window.

Ventilation

Ventilation allows air to circulate, reducing zones of high moisture which in turn reduces condensation and helps maintain a healthier indoor environment. Ensuring that vents in bathrooms and kitchens are clean and working properly will help extract steam. If your home has poor ventilation and opening windows for fresh air is not an option, then a dehumidifier will help reduce the moisture in the air. It is also important to ensure gas heaters are properly flued and to be aware that certain window furnishings will affect air exchange around a window which can increase condensation.

