

## WHAT CREATES CONDENSATION?

### Water vapour content in the air

This is produced by normal living activities such as washing, cooking, bathing, etc., and can be controlled using extractor fans, cowlings, and ventilation at appropriate places.

### Inside room temperature

This can be controlled to some extent, thereby maintaining a higher surface temperature of items in the room, and by increasing the air temperature to enable it to hold more water vapour without condensing.

### Coldest surface in the home

Modern aids to home comfort have created rooms which are warmer, but which often have less ventilation and fewer air changes. The result is that the water vapour produced by normal living activities, is no longer able to escape up the chimney or through door jambs, window joints and other outlets.

In certain circumstances, all these aids to comfort combine to create ideal conditions for the formation of condensation, which could form on the coldest surfaces within the home.

### What is the coldest part of a Rockdoor.

Thermally efficient PVC-U skins, a 50mm thick sash, S-Glaze, performance gaskets, Multi chamber PVC-U door frame and high-density polyurethane foam work together to achieve industry leading thermal performance ratings.

However, there are areas on a Rockdoor that when the outside temperatures are low can be colder than other areas, especially if the internal temperatures are also low.

These areas are the locking cylinder, the hinges, Aluminium thresholds, and the area where the aluminium reinforcement is inside the door (around the perimeter).

If the conditions for condensation are present, it can start to appear on the above parts of the door.

## Examples of where water vapour comes from

**Breathing:** Two sleeping adults produce approximately 1 litre of moisture in 8 hours, which is absorbed as water vapour into the atmosphere.

**Cooking:** Steam clouds can be seen near saucepans and kettles, and then seem to disappear. The clouds have been absorbed into the atmosphere. The heat source itself may be a source of water vapour, e.g. an average gas cooker could produce approximately 1 litre of moisture per hour.

**Washing up:** Vapour clouds given off by hot water are rapidly absorbed into the atmosphere. Bathing, laundry, and wet outer clothing: these are often major sources of water vapour in the home.

**Heaters:** A flueless gas heater can produce up to 350cc of moisture per hour. Paraffin heaters produce 4 litres of moisture for every 3.5 litres of fuel burned.

**Indoor plants:** A frequently unrecognised but nevertheless significant source of water vapour.

**New property/building work:** The bricks, timber, concrete, and other materials in an average 3-bedroomed house absorb about 7,000 litres of water during construction. Much of this is dissipated into the indoor atmosphere during the drying out period.

## How do you reduce the condensation in the home?

- It is important to remove excess moisture by ventilating rooms.
- A room can be ventilated without making draughts or causing it to become cold. One way to do this is to open the window slightly or use the trickle vent if fitted.
- By opening windows or ventilating your home it may appear that you are losing some heat, but what you are doing is allowing warm moisture laden air to escape and permitting cool dry air to enter your home. Dry cool air is cheaper to heat than warm moist air.
- Provide natural ventilation through an opening section of the window, through a proprietary ventilating unit, or through an airbrick. Check that trickle vents are in the open position.
- Where there is no open fire, or where existing flues have been blocked off (and cannot be unblocked), ensure that wall vents are fitted and kept clear.

## How do you reduce the condensation in the home continued.

- Open at least one window in each room for some part of the day to permit a change of air. Ensure permanent ventilation of all rooms where gas and oil heaters are used. NOTE: This is a statutory requirement which will be monitored by the heating engineer.
- Fix hoods over cookers and other equipment producing steam and ventilate them to the outside air.
- Ensure that bathrooms and kitchens are ventilated in accordance with National Standards.
- Draught proof internal doors and keep them closed, to prevent transfer of air with high water vapour content from the main moisture producing rooms –kitchens, bathrooms, and drying rooms. It should be borne in mind that water vapour does not remain in the room where it is first generated but tends to migrate to other parts of the home generally where the rooms are colder.
- Increase slightly the air temperature within the room where the condensation occurs.
- In cold weather, keep some form of heating on permanently in the room where the condensation occurs.
- In winter months to help with atmospheric moisture control the introduction of a dehumidifier will help maintain a healthy living space and help reduce the chances of condensation forming on cooler surfaces.

## Summary

Whilst we pride ourselves on creating a thermally efficient industry leading door, it is important we raise awareness to customers on the issues experienced by all window and door manufacturers. The nature of modern-day living has created cosy warm homes where moist damp air is stored, but it is this damp air that manifests itself as condensation unless the air is dealt with and removed from the property. This issue is highlighted by the government's building regulations that now stipulate the use of trickle vents on all newly installed windows, both in new build house and replacement windows.