

# The Causes of External Condensation on Windows

Technical  
Guide

Transient condensation does not present a problem and is a healthy sign that the glass is preventing heat loss. However, some customers can become alarmed or concerned, and believe that a faulty product has been installed. This document provides explanations that can be used to explain condensation to concerned customers.

## Why does condensation from outside of my windows?

Water condenses on the outside surface of glass when its temperature drops below the external dew point temperature. For domestic glazing, the effect of this may have been less pronounced in the past. Inefficient sealed units, single glass and even double glazing let heat escape from the inside of the house to the outside, slightly heating the outer leaf. When this happens, condensation does not form.

Glass technology has progressed, and Low E (or similar units) are up to 5 times more energy-efficient than single glazing and 50% more efficient than conventional low-E glasses such as Pilkington K.

Triple glazing means insulation units can now be 10 times better than single glass units- with zero heat loss. This means that the outer leaf remains cold, and, during colder months condensation and even ice may form on the outside of your windows.

## What causes a 'border' effect on my windows?

Sealed units are most efficient at the centre because at the edges of a sealed unit, the spacer bar and window frame conduct a little more heat. Warm-edge spacer bars and thermal frame inserts can offset this, but the extra transmission of heat radiated from the frame is still sufficient to create a warmer edge, presenting a condensation-free border.

## Why aren't all my newly installed windows affected by condensation?

Many factors contribute to whether condensation occurs on windows- even if they are all newly installed. Trees, shrubs, and overhangs can act as a barrier to the cold night's sky, while some windows remain in the shade for longer periods when the sun rises. This creates a 'microclimate effect' and is responsible for differing effects on sealed units.

## Why can I see small marks, clear patches or even circles in the condensation?

Small marks, clear patches and circles in condensation does not mean the glass is faulty. They are surface effects caused by the equipment encountered during the manufacturing process, such as microscopic layers of film residue from cork pads, suction cups, and even fingerprints. They are external effects that disappear over time and do not impact performance.