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Paragraph taken from Pilkington website

## Why have I got external condensation on my windows?



We receive a lot of enquiries about the appearance of external condensation particularly in the Spring and Autumn.

External condensation is a natural phenomenon and predictable event caused by the outer pane of the glazing being colder than the glass that it replaced. Fitting modern low-emissivity (low-e) glazing can increase the chances of external condensation but this is not a fault in the glass or the windows. With single glazing and older style double glazing a larger proportion of heat was lost to the outside through the glass but nowadays, modern low-e glazed windows help to keep more of the heat inside and the outer pane is not heated as much.

Now for the science part; moisture condenses out of the air onto a cold surface that is said to be below the dew point. The dew point varies with the air temperature and the amount of moisture it contains. In Spring and Autumn in particular, the glass temperature can fall to a low level during the night and the dew point can be comparatively high in these seasons. The glass is more often likely to be below the dew point in these conditions and the moisture condenses onto the surface.

In order to comply with the latest Building Regulations we are all obliged to fit more thermally efficient windows in our homes. (There are only a few exceptions to the regulations and they tend to apply to unheated spaces or listed buildings, that would suffer external condensation to the same extent anyway). The trend is to use a glass product that has lower U-values and provides better thermal insulation; the lower the U-value, the lower the outer pane temperature is likely to be but the bigger the risk of condensation is on the external surface. In northern European countries where they use triple glazing with very low U-values, the phenomenon is understood and accepted. The householders are focused on saving energy and maintaining a comfortable internal environment. Overall though, in many cases the condensation does not last long and a little heat from the sun warms the outer glass enough to evaporate the moisture, a gentle breeze or wind will also do the same job.

You may notice that not all the panes are affected by early morning condensation even in the same window. Even subtle differences in orientation and the position of objects outside the window can change the surface temperature of the glass to the point that one pane suffers, and another does not. Any object (be it an overhang, canopy, tree etc.) blocking off the window to a clear night sky may also have the effect reducing the occurrences.

A plus point to this phenomenon, is the knowledge that your windows are keeping the heat in as they are designed to do thus proving that you have a superior insulating glass product! The presence of external condensation in a particular season does not mean that the glass will suffer the same throughout the year. Any occurrence is beyond the control of the window supplier and is a natural result of the environmental conditions.