



**CENSOLUTIONS**

### **Exterior Condensation on Sealed Units**

Enquiries have been received relating to complaints by end-users who, when their new windows have been fitted (more notably with energy efficient coated glass'), have complained that condensation often forms on the exterior glass surface, especially in the early morning. This obviously leads to great concern as it is a new phenomenon to them and they suspect it is related to a 'product fault'.

This feature actually emphasises that the glass and window system is working better than their old glazing system and is insulating their property extremely well.

Potential reasons for this occurrence are:

1. Moisture will normally condensate on any cold surface (e.g. car windscreens in early mornings).
2. The atmospheric moisture content is sufficiently high to allow condensation to form.
3. The atmospheric temperature is sufficiently low that the moisture in the air is at or near saturation point and is therefore being encouraged to condensate. Fog is an example where moisture forms small droplets in cold air.
4. Atmospheric pressure will also have an effect on the ability of air to 'hold' moisture.
5. The increased insulation offered by the energy efficient glass on the inside pane of the unit prevents or reduces the passage of heat to the outside pane.
6. The exterior pane can therefore have a surface temperature low enough to allow condensation to form on it.
7. The greater the efficiency of the sealed unit then the greater the risk of condensation on the exterior pane.
8. This condensation can be exacerbated when the room is unheated; reducing the surface temperature still further.
9. Heated rooms will therefore be less likely to experience this condensation as will south facing aspects that are more likely to have been warmed by solar gain.

Although this phenomena is disconcerting to the end user it is actually emphasising that the increased efficiency of the modern coated glass is doing the job well and saving the householders money in lower heating bills.

One consideration to alleviate this problem could be to coat the glass with a proprietary surfactant (as used on car windscreens). This will cause the moisture droplets to join together and allow them to run down the pane. Alternatively increasing the interior temperature (increasing slightly the temperature of the exterior glass) may reduce the level of condensation.

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