

Highseal Manufacturing Company

Quality windows, doors and conservatories to the trade

Visual Quality Standards and Guidelines for Transparent Insulating Glass Units

Highseal Manufacturing works to the GGF guidelines for Appearance/Visual Quality Specifications for Insulation Glass Units. These guidelines are recognised and respected within the glass industry.

How to do a professional check?

Both panes of the sealed units should be viewed at right angles to the glass from the room side, standing a distance of no less than 2 metres away; but for toughened, laminated or coated glasses stand no less than 3 metres away. You must look through the glass, not directly at it. Do so in natural daylight and not in direct sunlight. The area to be viewed is the normal vision area with the exception of a 50mm band around the perimeter of the unit.

What to expect:

Flat transparent glass, including laminated or toughened (tempered) glass is acceptable if the following neither obtrusive nor bunched:

- Bubbles or blisters
- Hairlines or blobs
- Fine scratches not more than 25mm long
- Minute embedded particles

Special Glass Types

Toughened glass may show visual distortions which are accentuated by reflections in double glazing. Such surface colorations and patterns do not indicate a change in physical performance.

Laminated glass may have a few more blemishes due to it being made of several layers.

Low emissivity coating may produce transient visual effects. In oblique lighting the coating may look like a transparent film. When light coloured objects such as net curtains are placed close to glazing they will appear slightly darker.

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The above does not apply to patterned glass as its manufacturing process is different. Imperfections such as seeds and bubbles are deemed acceptable.

Primary Sealant (PIB) (Polyisobutylene)

The primary sealant is typically extruded onto both sides of the spacer. The extrusion rate of hot sealant may vary, causing the amount and width of the primary sealant to vary. The placement of the spacer may also contribute to non-uniformity when the spacer is pressed to the glass in the fabricating process. Selecting a spacer of similar colour to the IGU sealants may minimise visual objections related to dissimilar colours.

The primary sealant may also be applied manually (it comes in a string form and is applied by hand), which may influence the uniformity of the applied sealant. It should ideally be continuous with no skips. Primary sealants may show above the spacer and be visible in the vision area of the IGU.

Double Reflection

This occurs in certain light conditions. It is caused by multiple surface reflections in double glazing which may vary from pane to pane.

Brewster's Fringes – The Rainbow Effect

Small transitory rainbow effects are sometimes produced by the glass deflecting light. Their appearance is due to high quality flat glass sheets being placed parallel to each other. This is an optical phenomenon.

Condensation

Indoor Condensation:

The principal cause of condensation on glass on the inside of a building is a high internal humidity level coupled with a low outside temperature which cools the inside surface to below the dew point. Bathrooms, kitchen and other areas when humidity levels are high are particularly susceptible to this problem.

In order to control this form of condensation, condensation should be given to improving the heating and ventilation in these areas. However, another way to reduce the problem is to use high performance windows containing an enhanced thermally insulation glass.

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Outdoor Condensation:

Condensation forms on the outdoor surface of glass when its temperature drops below the outdoor dew point temperature. External condensation only occurs in certain climatic conditions with high humidity levels and/or particularly cold weather. It is possible that, external condensation will appear on some windows but not on others. This is due to localised atmospheric conditions such as shelter from nearby trees or buildings, variable air currents and wind speeds and varying levels of nearby vegetation.

Insulating units containing an energy efficient, low-emissivity glass have enhanced thermal insulation properties thanks to high performance transparent coating that reflects heat back into the room. As a result the outer pane of glass does not get warmed by heat escaping from inside the building through the glass and remains cooler in comparison to less thermally efficient windows.

Please note that condensation on the outdoor surface of such high performance windows is in no way an indication of a defective unit. Indeed, this can be seen as a positive indication that the enhanced thermally insulation units are actively reducing heat loss through the glass.

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