

Insulating Glass Units 10 Year Warranty

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- 1 If within five years from date of despatch from our works, the unbroken double glazed unit is, through faulty manufacture, affected by material visual obscuration because of condensation or dust collection within the double glazed unit, we will, subject to compliance with our claims procedure supply a replacement unit. This warranty does not cover consequential damage or loss arising from the glazing of a replacement unit except insofar as the restoration of such damage or loss falls within the rights of the owner/ occupiers common law or statute.
- 2 Any claim under this warranty is subject to our representative being afforded reasonable opportunity to inspect the unit concerned before deglazing. If on inspection it is determined that the unit was not of faulty manufacture, you may be required to pay the cost of inspection.
- 3 If a replacement unit is supplied it will be our standard type of product at the time of replacement, and it will be delivered to our customer's

normal place of business. This warranty applies to replacement units up to the limit of the warranty period covering original unit or up to twelve months from the date of the replacement, whichever is later.

- 4 This warranty applies only to the manufacturers units installed in normal building service conditions within the United Kingdom and the Republic of Ireland.
- 5 This warranty excludes: Units which have not been handled, stored, installed and maintained completely in accordance with the glazing instructions laid down in the Glass and Glazing Federation glazing manual, and the frame is not to the recommended dimensions. Units used in service conditions such as (but without limitation) use in transport vehicles, ships or temperature cabinets or use at altitude over 800 metres or transportation of units over such elevation unless the warranty has been specifically extended in writing to cover the relevant special service. Units displaying the optical phenomenon, occasionally known as "Brewsters Fringes". Units being installed in

timber frames with a moisture content of more than 19%. The units failure due to frames and unit perimeter sealing compound not being maintained in good condition.

- 6 This warranty is not meant to be part of any contract of sale but is meant to offer its recipient rights additional to those given to him by any contract of sale at common law. Accordingly, although the scope of this warranty itself is limited by the terms of paragraphs 1 – 5, so that any persons to whom it is offered must accept it on those terms or reject it entirely, any limitations imposed by those paragraphs alone are not meant to take away any rights enjoyed or reduce any obligation owed independently of this warranty.



Visual Quality Standard for installed insulating glass units constructed from flat transparent glass – GGF guides

- 1 Transparent glass used in the manufacture of insulating glass units is identical to that used traditionally for single glass and will, therefore, have a similar level of quality.
- 2 Both panes of the sealed unit shall be viewed at right angles to the glass from the room side at a distance of 2 metres in natural daylight and not in direct sunlight (3 metres distance for toughened glass). The area to be viewed is the normal vision area, with the exception of a 50mm wide band around the perimeter of the unit.
- 3 Flat transparent glass, including laminated or toughened (tempered) glass shall be deemed acceptable if the following phenomena are neither obtrusive nor bunched: Totally enclosed seeds, bubbles or blisters, hairlines or blobs; fine scratches not more than 25mm long; minute embedded particles.

Obtrusiveness of blemishes shall be judged by looking through the glass, not at it, under lighting conditions as described in section 2.
- 4 When thermally toughened (tempered) glass is viewed by reflection, the effect of the toughening process may be seen under certain lighting conditions. The visibility of surface coloration or patterns does not indicate deterioration in the physical performance of the toughened glass. Because of the nature of the toughening process, distortion will be accentuated when the glass is viewed in reflection or incorporated in insulating glass units.

5 Visible double reflection can occur under certain lighting aspect conditions, especially when viewed from an angle. This is an optical phenomenon arising from multiple surface reflections in sealed units.

6 The manufacture of flat laminated glass does not usually affect the visual quality of the glass incorporated in insulating glass units. However, the faults generally accepted in paragraph 6 may be increased in number by the fact that several layers of glass are used in the production of laminated glass. When viewed under certain light conditions, insulating glass units incorporating clear or tinted flat laminated glass, may show a distortion effect caused by reflection on the multiple surfaces of the component of the laminated glass.

7 Brewsters Fringes

The appearance of the optical phenomenon known as Brewsters Fringes is not a defect in the glass and can occur with any glass of high optical and surface quality. This phenomenon is a result of the high quality now being achieved world wide by modern methods of glass manufacture.

Brewsters Fringes occur if wave lengths of light meet up with each other when they are exactly 180° out of phase, an example of the phenomenon known to physicists as the interference of light. The effect is similar to, although usually much smaller than the fringes sometimes seen in toughened glass windscreens.

In the case of insulating glass installations, Brewsters Fringes only occur when the surfaces of the glass are flat and the two panes of glass are parallel to each other, i.e. when the light

transmission properties of the installation are of a very high order.

The fringe effect appears when incident light from the sun meets light reflected from one of the surfaces of the insulating glass in such a way that they are 180° out of phase and cancel each other out, thereby giving rise to a fringe effect, small in area on the glass when viewed from a particular angle. Alternatively, different parts of the incident solar radiation may be refracted through the glass and end up being 180° out of phase.

This phenomenon is not a defect of the product, being dependent upon the laws of physics and not on the quality of the insulating glass. In fact, it arises because modern glass made by the float process is flat, and therefore, free of the distortion inherent in sheet glass.

The occurrence of Brewsters Fringes is in its nature rather like (though very much more rare than) the fact that under certain conditions, the observer will see a reflection of himself in any window or door – and no-one could claim that this was a defect of glass.

NOTE: PATTERNED GLASS –

The above criteria do not apply to Patterned Glass as, due to the method of manufacture, imperfections such as seeds and bubbles are deemed to be perfectly acceptable.

