



Northern Express Glass Ltd. Professional Visual Inspection



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CMS 3044

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How to do a professional check.

Stand in a room or area no less than 3 metre (2 metres if composite doors) away from the panes and look directly through them. For toughened, laminated or coated glasses the distance should be no less than 3 metres. Do so as close to natural daylight as possible but not in direct sunlight and with no visible moisture on the surface of the glass. The area to be viewed is the normal vision area with the exception of a 50mm (30mm if composite doors) wide band around the perimeter of the D/G Unit.

What to expect.

Flat transparent glass, including laminated, toughened, or coated glasses will be deemed acceptable if the following visual and inspection criteria explained in this document are neither obstructive or bunched. The obtrusiveness of imperfections is judged by looking through the glass, not at it, under as close to natural daylight as possible.

Toughened Glass.

When the thermally toughened glass is viewed by reflection, the effect of the toughening process may be seen under certain light conditions. The visibility of surface colouration or patterns does not indicate deterioration in the physical performance of the toughened process; distortion will be accentuated when the glass is viewed in reflection and at tight angles when incorporated in double glazed units.

Laminated Glass.

Laminated glass does not usually affect the visual quality of the glass incorporated in the double glazed unit. However, some minor faults may increase because of the glass being made up of several layers in the laminating process.

Coated Glass - Low Emissivity.

Low-E coating may produce transient visual effects. In certain lighting conditions the coating may look like a transparent film or produce haze - (Cloudy look to the surface). When light coloured objects such as net curtains are placed close to the glazing they will look slightly darker.

Size Tolerance.

Objective = Unit must fit into Door or Window Frame.

Glass size tolerance on width and height = +/- 2mm

Unit thickness tolerance = +/- 1mm.

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.

Brewsters Fringes - The Rainbow Effect.

Small transitory rainbow effects are sometimes produced by the glass reflection of light. Their appearance is due to high quality flat glass sheets being placed parallel to each other.

Glass Quality.

Objective = Good visual product when glazed into Doors or Windows

Visual Tolerance = Both panes of the sealed unit must be viewed at right angles to the glass.

Distance of Inspection = Standing at a distance of not less than 3 metres (2 metres if composite doors)

Conditions of Inspection = Close to natural daylight (Or natural daylight) not in direct sunlight.

Special Criteria = The area to be viewed is the normal vision area with the exception of a 50mm (30mm if composite doors) wide band around the perimeter of the D/G Unit.

Acceptable Criteria

- Fine scratches that are not visible from the inspection distance.
- Fine process marks that are not visible from the inspection distance.
- Small glass particles that are not visible from the inspection distance.
- Slight production distortion on toughened glass.
- Fine marking on the spacer bar not visible when glazed.
- Small amount of desiccant beads that have become loose in the cavity.
- Small amounts of butyl protruding from the initial butyl line inside the unit cavity not visible when glazed.
- Small shelling of the glass around the glass edge within the unit sightline that is deemed acceptable and will not cause the unit to fracture or vent.

Patterned Glass.

The above does not apply to patterned glass as its manufacturing process is different.

Initial Seal - Butyl.

Objective = Maintaining the integrity and long life of the D/G Unit.

Visual Tolerance = Good equal butyl sightline continuous around the spacer frame.

Acceptable Criteria

- Small amounts of butyl protruding in the unit cavity in the unit corners and around the desiccant in-feed holes located 35mm normally on one corner.
- Butyl line must be continuous around the perimeter of the spacer bar on both sides.
- Small amounts of butyl that are on the spacer bar face inside the unit cavity that are not visible when the D/G unit has been glazed.

Secondary Sealants.

Objective = Maintaining the integrity and long life of the D/G unit.

Visual Tolerance = Good equal cover around the unit sightline with a good sound seal giving the double glazed unit a tidy finish.

Sealant Depth Tolerance - Rigid Bar = 4mm +2mm/- 1mm

Sealant Depth Tolerance - Warm Edge = 7mm +/- 2mm

Acceptable Criteria

- Good equal seal on width & height around the unit sightline.
- Small amount of up-stands of seal at the unit corners that will not hinder in the glazing process of the D/G unit.
- Fine sealant production marks on the outer surface of D/G Units
- No holes in sealant through to the spacer bar with limited blebs and bubbles in the sealant.

- Small amounts of enclosed desiccant beads inside the unit cavity.
- All units stamped with the BS EN identification number.

Spacer Bar.

Objective = To achieve a good equal sightline around the D/G unit

Visual Tolerance = Spacer must be clean and straight with a minimum of spacer bar showing when glazed into the door or window.

Spacer bar assembly tolerance = 4mm + 2mm / -1mm Rigid Bar

Acceptable Criteria

- Small butyl particles/marks on the spacer bar inside unit cavity that will not be visible when the double glazed unit is glazed.
- Small butyl marks protruding from then initial butyl seal in the unit corners and in the area of the desiccant feed holes.
- Light damage to the spacer bar.
- Small amounts of desiccant beads visible around the desiccant in feed holes .

Adhesive Lead.

Objective = To give the D/G unit a decorative appearance.

Visual Tolerance = The lead should be straight and have well finished joints.

Lead adhesive symmetry tolerance = leaded centres with design +1mm / -1mm .

Acceptable Criteria

- Smaller/ lesser scratches and scuffs within the leaded design.
- Smaller / lesser process marks / light roller machine marks.
- The lead on the outer surface goes through a period of natural oxidisation all the above criteria will disperse.

Decorative Bevels.

Objective = To give the D/G unit a decorative appearance.

Visual Tolerance = The bevel should be in line and have good symmetry - the bevel should be free from heavy glue.

Bevel Symmetry Tolerance = Bevel centres within the design +2mm / -2mm.

Acceptable Criteria

- Very fine light scratches that are not visible from the inspection criteria of 2 metres.
- Lesser small amount of air bubbles within the bevel adhesive that are not visible from the inspection criteria

Adhesive Film

Objective = To give the D/G unit a decorative appearance.

Visual Tolerance = The colour film should be a close colour match.

The film should be free of heavy scratches and should not contain gaps within the design and bunched air bubbles within the coloured film.

Acceptable Criteria

- Very fine scratches from cleaning and glass washing prior to assembly.
- Slight variation in colour match from the film supplier.
- Lesser amounts of air spots within the finished unit design.

