

Building Construction**GLAZING****GLASS IN GENERAL**

This guide deals with the use of safety glass, fire-resisting glass and obscure glass in new and existing buildings. When specifying glass, regard must be paid to the relevant codes of practice and manufacturers' recommendations. Particular attention must be given to CP 152 and amendment 2102, which classifies the use of glass in risk areas and also Approved Document N Building Regs. 1991. The minimum thickness of glass to be used in glazing must not be less than 6mm.

When remodelling or refurbishing a building/area, consideration must be given to the upgrading of the existing glazing to conform to the Building Regulations and the Workplace Regulations.

SAFETY GLASS

Various types of safety glass are covered in BS 6262, but we are interested in only two, namely, heat treated safety glass, also known as toughened or tempered safety glass, and laminated safety glass which consists of two sheets of glass stuck to a central sheet of plastic.

Toughened glass is less likely to break under impact and can be detected by wearing Polaroid spectacles. The advantage with toughened glass is that when it is fractured it disintegrates into small comparatively harmless pieces. However, each pane has to be cut to size and then toughened and unfortunately about one week is required for manufacture and delivery. On the other hand, laminated glass can be cut to size locally and delivered from stock.

Laminated glass is preferred which accords with 'Secure by Design' and should be used in all new works, extensions and, as far as rebate depths will allow, in reglazing contracts. Toughened glass should not be used at high level and this includes roof lights, where falling glass could cause injury. There have been instances of toughened glass remaining in large granulated pieces and in such locations laminated glass must be used, or polycarbonate sheets in the case of low-level overhead glazing with our agreement. In the case of breakages in existing buildings, laminated glass may be used to replace toughened glass in any location, providing it bears a permanent etched inscription so that it may be checked when fixed in position.

Safety glass must always be used both inside the building and in external walls in the

following locations, unless the fire officer specifically asks for fire resisting glass:-

- All glazing in doors and glazing alongside and above doors.
- All glazing below 800mm.
- All glazing in gymnasias, halls and other areas where physical education is likely to take place.
- Glazing in walls where a particular hazard exists.

Laminated glass must always be used for glazing in windows and doors to any room where floor or wall safes are fitted or where high security is required.

All safety glass should be marked with a registered safety glazing mark. Toughened glass manufactured to its final size can be marked in the factory, but careful checking is required for laminated glass which is often cut to size by local glaziers who cut off the manufacturer's mark and do not re-mark smaller panes as they do not have their own registered mark.

FIRE RESISTING GLASS

In certain locations glass must be fire resisting and the fire officer's advice must take precedence over the foregoing rules for safety glass. BRE Digest 155 and WFP/40 together with PD6512: Part 3 1987 explain the use of fire resisting glass.

NOTE: Ordinary Georgian Wired glass is not a safety glass and the wire is there to hold the glass together should it shatter when subjected to heat. The wire does not prevent dangerous splinters flying and it should only be used when fire-resisting glazing is essential

In locations where both fire resisting and safety glass is required the glazing should be of Georgian Safety Wired Glass. This product is similar to ordinary Georgian wired glass, but has a specially developed thicker wire mesh which allows it to perform in both situations.

All glass is a major weakness in any barrier to fire, heat or smoke and for this reason it should be avoided whenever possible. However, if vision panels in fire-resisting doors are required they should be of 6mm safety wired glass in a pane size not exceeding .065m².

In existing buildings certain internal doors and screens are required to be fire resisting and are glazed with Georgian wired glass. In the event of breakage, it is essential to re-glaze with Georgian safety wired glass.

TRANSLUCENT GLAZING

Translucent glasses transmit light with varying diffusion giving partial obscuration. Whilst many patterns are available, it is important that the type specified is readily available for replacement, is available in safety glass form, gives good obscuration

when the interior of the building is lit, is easy to clean and install. The glass that best suits these requirements is white laminate and this should be used in all locations where visual privacy is required.

DOUBLE GLAZING

This is now standard for all our projects unless otherwise briefed. Invariably the window manufacturers assembly line is set up for double glazed units and single glazing becomes a 'special' at no reduction in cost.

The benefits of double glazing are:-

- Increases energy conservation.
- Increases security.
- Reduces condensation and damage to adjacent surfaces.
- Increases sound insulation.

The use of double-glazing should be incorporated into thermally broken, drained and ventilated frames. Units to have a 1.6mm laminated outer leaf, a 16mm Argon gas filled cavity with 6.4mm laminated Pilkington K glass, or approved substitute, as the inner leaf. The laminated outerleaf is to conform to 'Secure by Design' advice. If finance dictates then the inner leaf may be substituted for 6mm toughened Pilkington K glass or equal substitute, except for high level glazing and roof lights where laminated must be used for both leaves. Replacement double glazed units can now be provided within 24 hours.

GUARDING AND MANIFESTATION

Guarding can be used as an alternative to safety glass giving protection to the glazed area by a screen or railing which does not allow a sphere of 75mm dia. to pass through and touch the glass. The guarding should also be robust and difficult to climb.

Manifestation is a term used for denoting large areas of glazing where there is risk of people accidentally walking into the glazing. Manifestation can be met in many ways, for example by the use of stick-on coloured lines, logos or patterns. Etched patterns are the preferred solution. Reference should be made to the relevant BS and Regulations for details.

TRIPLE GLAZING

Currently being evaluated.

<< Previous Page

Next Page >>