Fact Card 12 – Fire Door Glazing

Giving the fact about glazing of 30-minute fire doors (FD-30)

Timber doors may include glazed apertures, either as a design feature or in order to comply with Building Regulations.

However, when the door is a fire door, all the elements of the glazed aperture must, when used together, be capable of withstanding the fire. They must not reduce the overall effectiveness of the door in holding back a fire. This fact card is intended to provide some basic essential information on the correct way to specify and use glazed apertures in 30-minute fire doors (FD 30). It tells you what to look for and how to ensure that you are using the correct life-protecting materials.

Fire Doors

Most fire doors manufactured in the UK are manufactured as fire door leaves. Before they are installed, many will be modified in some way, whether by the addition of a door frame, the insertion of a glazed aperture or other types of apertures, (e.g. for hardware, air transfer grilles, and letter plates) or, ideally, conversion into a complete fire doorset.

Glazed apertures provide added safety in everyday use and in the event of a fire they aid detection of fire and smoke, whilst providing visibility to potential escape routes.

The size and positioning of apertures is very important, as this will ultimately have a bearing upon the behaviour of the fire door assembly in the event of a fire.

Under the BWF-Fire Door Alliance Scheme, apertures are permitted to be cut by companies licensed and certificated to undertake such work. These doors carry an additional label showing the certification number of the company carrying out the work, see figure 1 to view an example of this. Doors glazed by the door manufacturer will also be labelled to show it was factory glazed.

Cutting apertures for glazing and other apertures in a fire door on site is not permitted, even by an approved aperture cutter, under the BWF-Fire Door Alliance Scheme.

The BWF recommends that fire doors should only be glazed by certificated members of the BWF-Fire Door Alliance Scheme or by companies or individuals certificated to do so, in order to maintain the door's full certification.

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Key Elements

The following elements are essential for the success of any properly installed glazed aperture in a 30-minute (FD 30) fire door assembly.

Apertures - only certain door types are designed to perform with glazed apertures. Make sure that any aperture has been properly formed, either by the original door manufacturer, or by one of their approved "aperture cutters or Licenced Processors".

If the aperture is cut in an unsuitable door type, or by someone who does not recognise the correct procedure and materials, the whole fire resistant property of the door leaf may be affected and the door's certification will be nullified.

Depending on the door construction, an aperture liner of wood or intumescent material may be needed.

If a door is suitable for glazed apertures, the door manufacturer should indicate the relevant:

- Aperture size
- Type of apertures
- No of apertures
- Glazing systems
- Location of apertures

In every case, the door manufacturer must be able to supply evidence that they hold test certification for an aperture in the specific door design.
If this cannot be provided, there is no proof that the installation would work in a fire, and the inspecting authority may refuse to accept it.

Glass - a specialist fire glass must be used.
There are four quite separate types of fire glass, each of which performs in its own individual way. Never assume that a glazing system which has been tested or certificated for one specific glass may be suitable for a different glass, unless the manufacturer can provide their own test evidence or certification.

The fire glass types are:

- Embedded wired glass
- Specially tempered/toughened glass (this needs precisely detailed edge cover and clearances)
- Special glass composition-borosilicate, ceramic etc.
- Laminated glass with reactive fire resisting interlayer(s)

The door manufacturer should specify:

- Type of glass
- Special glazing requirements, especially edge detail
- Thickness cover/clearances, setting block types
- Aspect ratio
- Suitability for door type
- Maximum dimensions of glass

As with apertures, the door manufacturer must be able to supply test evidence to support the specification.

Beads and Fixings - the correct beads and their fixings are vital in retaining the fire glass in place for the whole of the required time period.

Attention must be paid especially to:

- Bead material: If timber beads are used, it is particularly important to use the correct species
- Bead size and shape: There must be enough material to char throughout the whole fire test (although angled beads are shown in the figure 2 , some glass types will permit the use of flat timber beads)
- Frequency, size and type of bead fixings: screws, pins or brads
- Angle of fixing: see figure 2
- Glass edge cover and clearances

Glazing seals - Whatever glazing medium is used it must hold test certification for the particular panel size and application within the door design and be appropriate and compatible with the chosen glass type.

The seals between the glass and beads on each side may take the form of:

- Pre-formed rigid or flexible strips
- Pre-formed channels to wrap around the edge of the glass
- Gun-able mastic compounds

The BWF Fire Door Alliance "Find a Supplier" facility on our web site provides a list of fully certificated manufacturer and supplier members of the scheme.

For more detailed information on a specific door or glazing, please contact the door manufacturer or glass manufacturer, who will hold full details of test certification.

Glazing in Fire Doors for Periods of 60 Minutes and Above

The use of vision panels in 60-minute timber fire doors (FD60) is a completely separate, (and much more complex) subject. It requires different glass types, glazing methods and bead sizes.
Contact the door manufacturers or glass manufacturers or glass manufacturers who offer FD60, FD90 & FD120 products for specific details.

More detailed information about fire-resistant glazing can be found in the "Fire Glazing – Best Practice Guide" produced by the Glass and Glazing Federation. Contact the GGF at https://www.ggf.org.uk/publications/fire-resistantglazing-publications/

Figure 1:

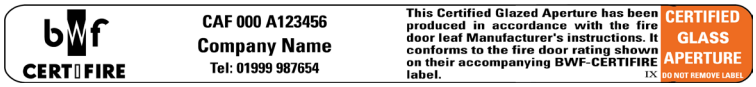
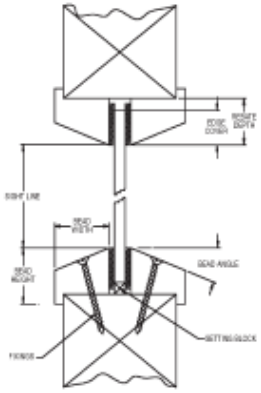


Figure 2:



Typical FD 30 fire door glazing components

Disclaimer:

Note: Whilst every effort has been made to ensure the accuracy of advice given, the BWF cannot accept liability for loss or damage arising from the use of the information supplied in this publication.

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