

Glass guarding and restrictors to low level windows above ground floor level in dwellings**Purpose**

BCA technical guidance notes are for the benefit of its members and the construction industry, to provide information, promote good practice and encourage consistency of interpretation for the benefit of our clients. They are advisory in nature, and in all cases the responsibility for determining compliance with the Building Regulations remains with the building control body concerned.

This guidance note is based upon information available at the time of issue and may be subject to change. The Approved Documents should be consulted for full details in any particular case.

Introduction

Part N of the Building Regulations seeks to ensure that where people are likely to come into contact with glass it is unlikely to cause injury or the glazing will resist impact or be shielded or protected from impact.

However, glass is increasingly being used in locations that require it to act as guarding from falling. In these cases the glazing needs to comply with the requirement and guidance in Part K2 of the Building Regulations – protection from falling (more than 600mm).

Key Issues

Where balconies, landings and stairs within a dwelling require guarding, any glazing used as part or all of that guarding should not only comply with the requirements of Part N but also the requirements of Part K. As in all parts of the Regulations, the most onerous requirement would apply. The Approved Document to Part K provides guidance on the height above floor level at which guarding should be provided and any glazing acting as guarding should be designed to resist the forces and impact as laid down in BS 6399 and BS 6180, even where the glass is in a critical location as defined in the Approved Document to Part N. Therefore, glazing that protects people from falling must meet these requirements.

Balconies, Landings and Stairs.

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Fixed low level glazing.

Where the design incorporates low level glazing (less than 800mm above internal floor level) such as a window, that is fixed (not openable), that glazing and the framing will need to function as guarding where the drop exceeds 600mm. Subsequently the glass should be designed to resist the forces referred to in the BS's as listed above. Alternatively, suitable guarding, that resists the forces referred to in the above BS's and complies with Part K with respect to height and climbability must be provided.

See Diagrams 1,2 & 3.

Window openings in external walls with cill heights between 300mm & 800mm above finished floor level.

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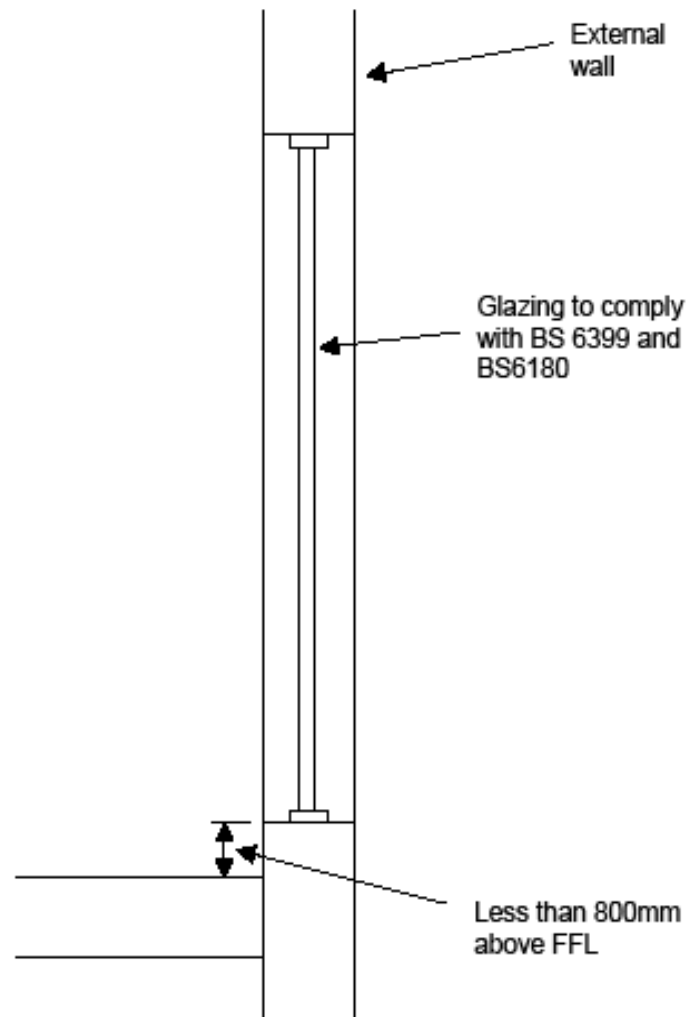
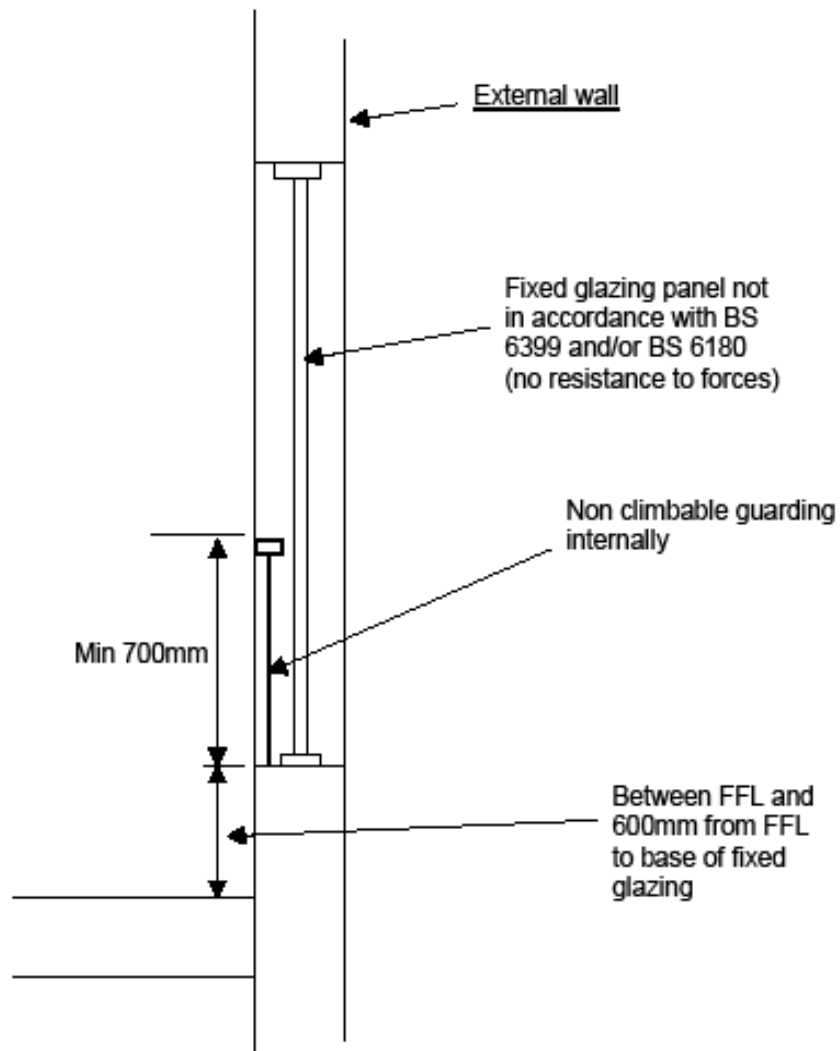
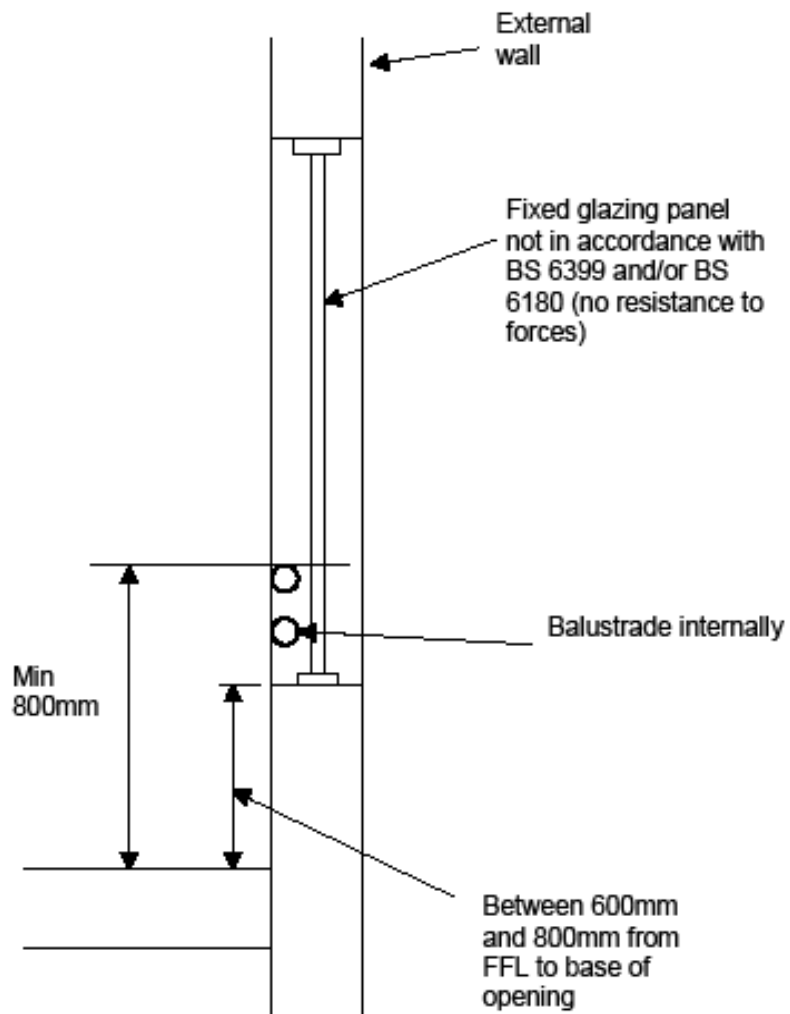


Diagram 1 – Fixed Glazing Acting As Guarding



**Diagram 2 – Fixed Glazing Not Required To Act As Guarding
(Cill Under 600mm Above FFL)**



**Diagram 3 – Fixed Glazing Not Required To Act As Guarding
(Cill Over 600mm Above FFL)**

Openable low level glazing.

Where the design incorporates low level glazing (less than 800mm above internal floor level) that is not fixed (e.g. an openable window) the glazing will still need to act as guarding where the drop exceeds 600mm AND the window must be prevented from opening more than 100mm in order to comply with Part K. This means that restrictor devices that are commonly fitted to windows would not be suitable because they can be released (by a key or manually) to allow the window to open more than 100mm. In this position people (including children) would not be afforded the protection from falling that they can expect from the requirement to Part K. Therefore, suitable guarding, that resists the forces referred to in the above BS's and complies with Part K with respect to height and climbability, must be provided (such as vertical ballustrading).

Alternatively, "permanent" restrictors (those that cannot be released and would not allow an opening where a 100mm sphere could pass through) may be suitable. This type of restrictor would also need to be capable of resisting the loads detailed in BS 6399 and BS 6180 along with the glass, glazing and window structure. However, they may affect the minimum purge ventilation requirement under the guidance in the Approved Document to Part F. That guidance requires a minimum of 1/20th floor area of the room served in openable window (height x width of opening part where the window opens 30 degrees or more). Where the window opens between 15 and 30 degrees that area needs to be doubled (i.e. 1/10th floor area of room served). Therefore, it may not be a feasible alternative.

See Diagram 4.

Openable low level glazing as escape windows.

Openable low level glazing as Escape windows.

Where low level windows are also designed as escape windows, "permanent" restrictors would not be suitable as they would prevent the window opening wide enough to allow escape. Low level windows fitted with restrictors that can be easily released, would be acceptable but only where suitable guarding is also provided. To be suitable for means of escape, the top of the guarding should be between 800mm and 1100mm above the floor level and the minimum dimension (450mm) and area of the opening (0.3m²) should be measured from the top of the guarding up to the top of the opening.

See Diagram 5.

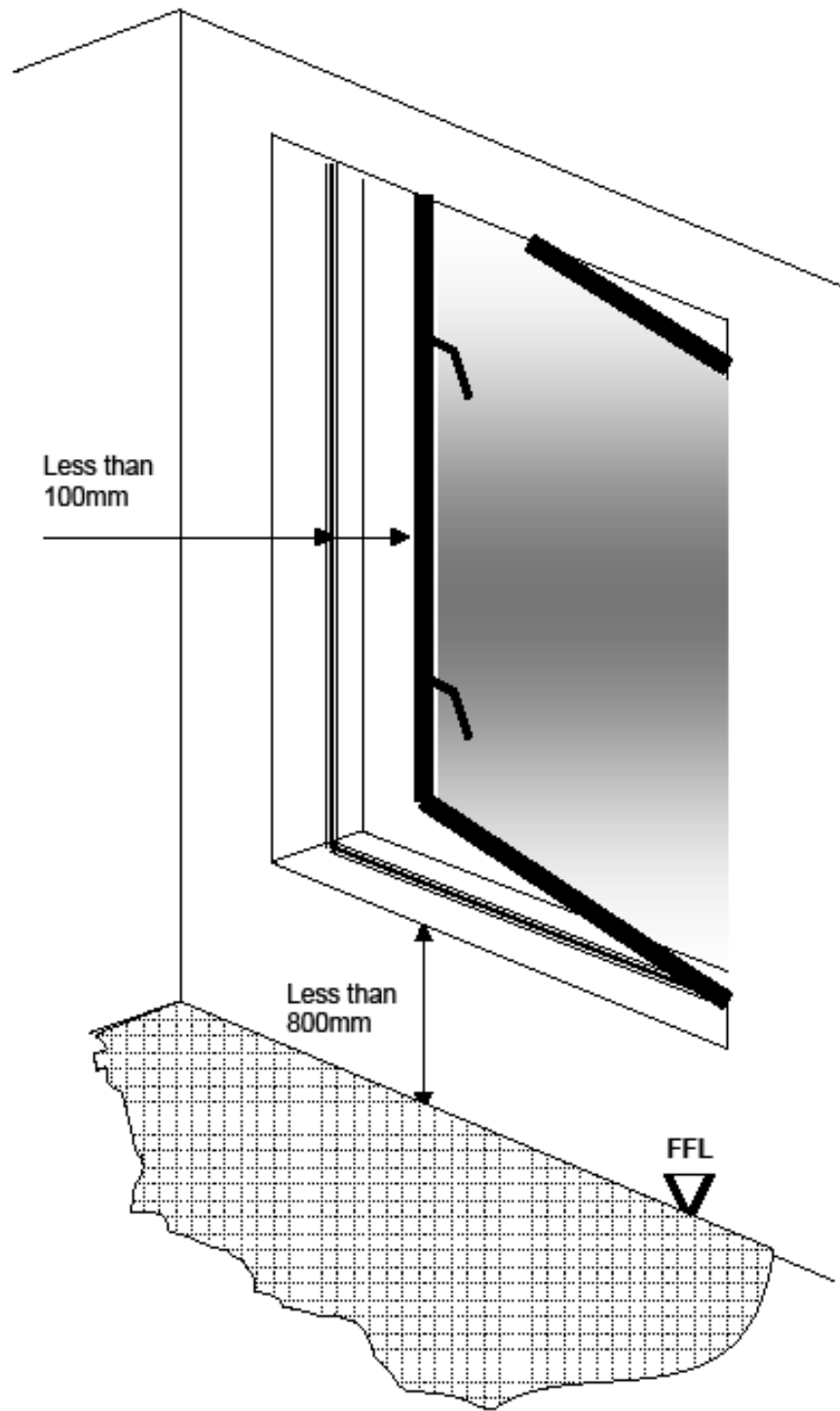


Diagram 4 – Openable Glazing Required To Act As Guarding

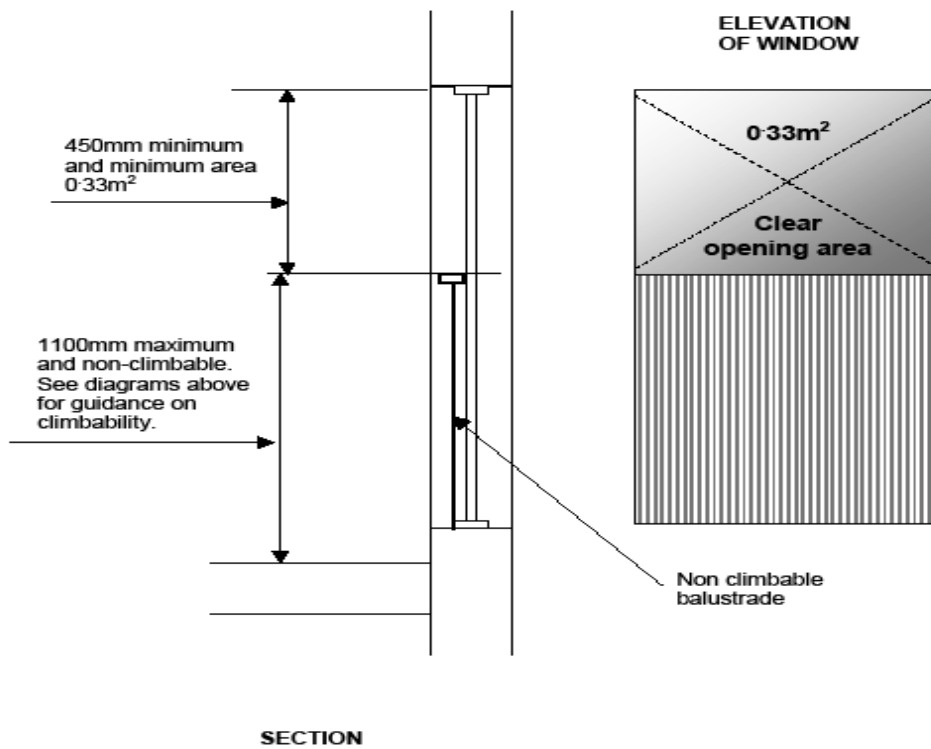


Diagram 5 - Escape Window With Suitable Guarding