Approved Document O guarding considerations

(November 2024) (Second issue - supersedes January 2023)

Scope

Following on from the publication of Approved Document O in England and the subsequent FAQ from DLUHC, there are still a number of questions regarding what NHBC would consider an acceptable guarding solution which meets the requirements of Approved Document O and other Building Regulations. This document gives a brief overview on the considerations when looking at guarding requirements for windows that are used to remove excess heat.

Windows may have to meet a range of building regulations to be acceptable and each window should be looked at on a caseby- case basis.

This document covers windows which are subject to Requirement K2: Protection from falling, Requirement O1(2)(a) and Requirement B1 where windows for means of escape are used.

This document is limited to window sizes of between 1050mm and 1250mm in height and where there is a change in floor level between inside and outside of more than 600mm.

Documents considered

An exhaustive list of documents is available in the bibliography

Considerations

All guarding designs should meet the requirements of Approved Document K e.g. that the guarding should be designed to ensure a 100mm sphere cannot pass through any opening in the guarding. Depending on how the guarding is designed and constructed, it may be necessary for designers and builders to consider the size of gap between the guarding and cill.

Where no windows are used as part of the overheating strategy

Where the overheating strategy does not rely on openable windows the increased guarding heights in Approved Document O would not be applicable. This is in accordance with the guidance issued by DLUHC in the ADO FAQ (Q18) which states *'Where a window is not used as part of the overheating strategy the minimum guarding heights of Approved Document K should be followed. The homeowner should be informed, as part of providing information about the overheating strategy, of any windows that are not intended to be open as part of the strategy and therefore are not built to the guarding standards of Approved Document O'*.

Windows used for means of escape and overheating

Windows used for means of escape and overheating should have fixed guarding that meets the requirements of Approved Document K and O. Approved Document O requires an increased guarding height of 1.1m, whereas the maximum height to the bottom of the openable area of an escape window in Approved Document B is 1.1m. The Approved Document O FAQ (Q16) released by DLUHC introduces a build tolerance on the guarding height of +0/-100mm, as such NHBC will accept fixed guarding within this tolerance (Figure 1). NHBC will not accept guarding which exceeds 1.1m where the window is intended to be used for means of escape.

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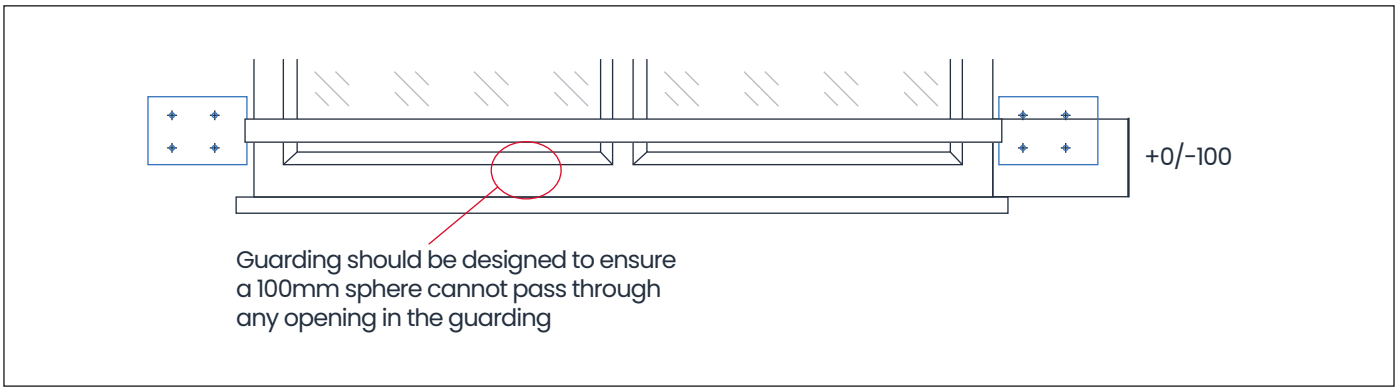

Figure 1: +0/-100mm on site build tolerance for overheating and means of escape windows (the guarding should be designed to ensure a 100mm sphere cannot pass through any opening in the guarding. Depending on how the guarding is designed and constructed, it may be necessary for designers and builders to consider the size of gap between the guarding and cill.)

Window restrictors fitted to window openings which are beneath the required guarding height of Approved Document O, are not an acceptable alternative where the window is used for means of escape.

Windows used solely for overheating

Where windows are used solely for overheating and means of escape is provided by another means, the additional guarding requirements in Approved Document O are applicable. Suitable solutions may include fixed guarding which resists the forces in Approved Document K, permanent window restrictors (i.e not capable of being over ridden) designed to ensure a 100mm sphere cannot pass with suitably designed glazing in accordance with Approved Document K and BCA Technical Guidance Note 16. However, consideration should be given to the restricted opening sizes, when reviewing the overheating and ventilation strategies in accordance with Approved Document O and Approved Document F, respectively.

Can a window transom be used to meet the guarding requirements for Approved Document O

Where Approved Document O requires increased guarding heights in excess of Approved Document K, this could be achieved with increased transom heights in windows. This may be acceptable subject to the window being suitably designed as guarding to resist the forces in Approved Document K. Also see BCA Technical Guidance Note 16 for guidance on the suitability of low-level glazing.

Reviewing of design submissions to NHBC and the height of guarding for overheating and means of escape windows

DLUHC's FAQ document states *'Some build tolerance is acceptable when building a window that is a means of escape, with an opening at a height of 1100mm above the floor'*. As such the guarding should be designed to meet the 1.1m height, NHBC will accept the +0/-100mm build tolerances on site. Where designs are submitted to NHBC for review, NHBC will not accept guarding solutions where the guarding height is annotated on the design as less than 1.1m, however, the build tolerance maybe annotated on the drawing to communicate this to on site operatives as this will help ensure that the guarding is not in excess of 1.1m.

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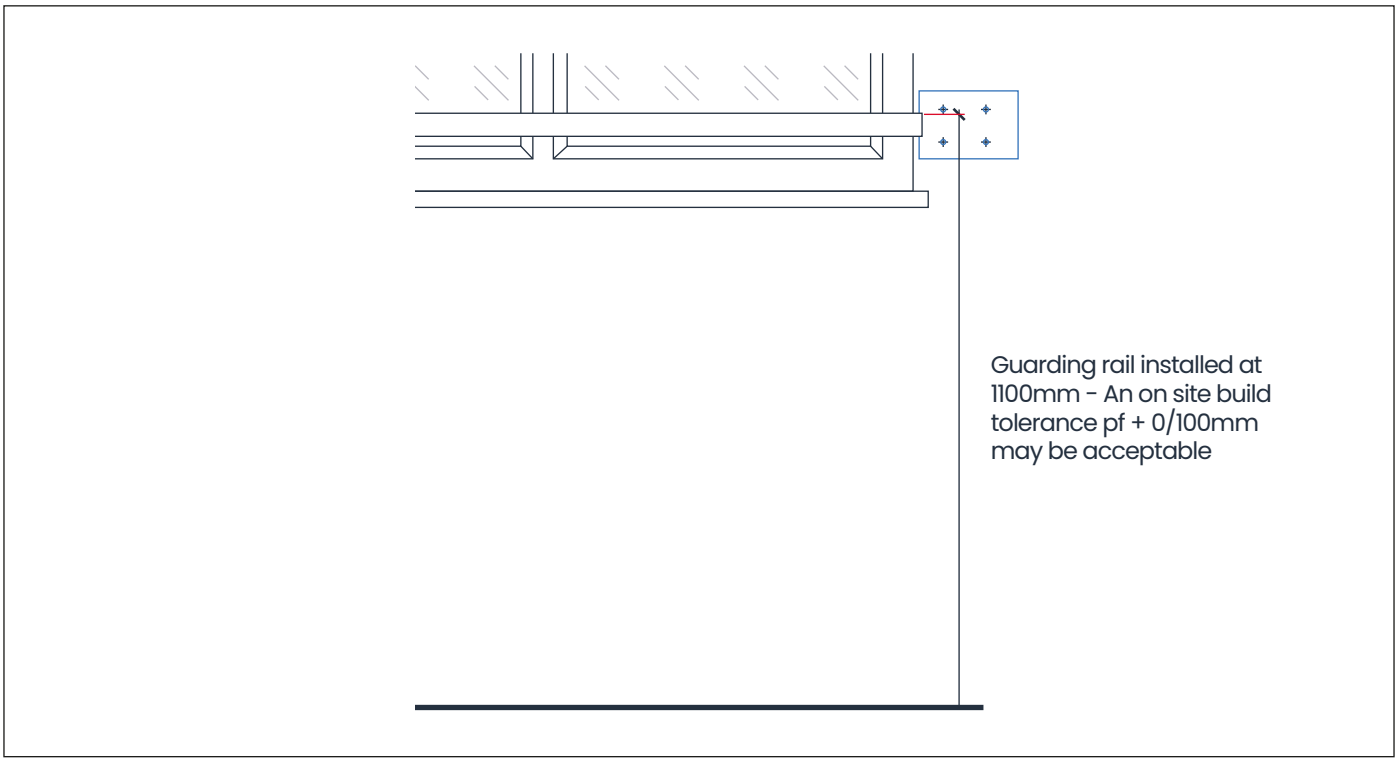

Figure 2: Example of how build tolerance may be shown on plan for overheating windows also used for means of escape.

Opening widths of Overheating windows

Approved Document O paragraph 3.9 a. states 'Window handles on windows that open outwards are not more than 650mm from the inside face of the wall when the window is at its maximum openable angle'. ADO FAQ (Q15) provides further guidance on this and states 'The 650mm standard is the dimension that should be used to calculate the safe opening angle of a window. This opening angle should be used in the equivalent area calculations. It is not necessary to use a physical restrictor to meet this standard.' In accordance with the guidance from DLUHC, NHBC will not require a physical restriction, however any overheating strategy should have this as a maximum limit in accordance with the DLUHC guidance.

Bibliography

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