Protective Barriers

The prime function of a protective barrier (barrier) is to prevent persons or objects from passing through or toppling over onto an adjacent lower level. Sections 36 and 37 of the Building (Construction) Regulation (B(C)R) and regulation 3A of the Building (Planning) Regulations require barriers to be provided at the edge of a balcony, verandah, floor, roof, staircase, landing or projection, and at every opening placed on an external wall above ground floor of any building. Sections 9 and 38 of the B(C)R prescribe the design and construction requirements of the barriers. This practice note provides guidance on compliance with these statutory requirements.

Design Requirements

2. A barrier must be designed and constructed so as to prevent a person or object from falling, rolling, sliding or slipping through the gap of the barrier, and to prevent a person from climbing over the barrier. In all circumstances, a barrier should have a height of not less than 1.1 m. The lowest 150 mm of the barrier should be built solid (except for staircases enclosed with walls and without open stair-well[1]). Any gap or opening in the barrier should be so constructed as to inhibit the passage of particles more than 100 mm in their smallest dimension.

3. The height of a barrier should be measured from the finished floor level of the surface adjoining the barrier where people could step on (adjoining floor level). In this connection, the top of a curb or step next to a barrier would not be regarded as an adjoining floor level if the curb or step is higher than 500 mm or its protruding width[2] is less than 75 mm. For railing type barrier on a curb of less than 500 mm high, the top of the lowest horizontal rail[3] should be not more than 250 mm above the adjoining floor level.

4. As regards a place of public entertainment, in addition to those requirements as mentioned in paragraphs 2 and 3 above, the barrier provided at the outer edge of any upper tier should be constructed so that any horizontal surface is inclined towards the seating at an angle of 30 degrees and is concave in section; or provided in such other manner as will allow only small articles to be placed on such barrier and will ensure that articles are not liable to fall to any tier or area below.

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1 Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineer APP-119 is relevant.

2 The protruding width is measured horizontally from the inner finished surface of the barrier to the inner side of the finished curb or step. The measurement of the protruding width excludes the splayed portion of the curb or step steeper than 45 degrees relative to the horizontal plane.

3 If the railing type barrier just has vertical balustrades without the bottom rail, the curb should be not less than 250 mm high with protruding width less than 75 mm.

5. The structural details of barriers should be submitted to the Building Authority for approval. The structural design should comply with the requirements stipulated in the relevant codes of practice and the barriers should be designed to resist the imposed loads as prescribed in section 9 of the B(C)R.

6. While the above requirements do not apply to an inaccessible roof or an inaccessible area of a building, which is intended to be only accessible to personnel for maintenance or repair works, authorized persons should still observe the Code of Practice on Access for External Maintenance 2021 as well as section 6 of the Occupational Safety and Health Regulation on safety provisions to be provided to these areas.

Glass Barriers

7. The design and construction of barriers involving the use of glass and the typical clamping details for free-standing glass barriers are stipulated in the Code of Practice for Structural Use of Glass 2018. For barriers involving the use of tempered glass, structural sealant and spider fixing, requirements stipulated in Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) APP-37 should also be followed. For essential information in the plan submission, reference can be made to paragraph 2 of PNAP ADV-33.

Site Supervision

8. The construction of barriers should be supervised by a suitably qualified person to ensure that the works are carried out in accordance with the plans approved and the required standards are complied with.

Minor Works Relating to Protective Barrier

9. Under the Minor Works Control System, certain minor building works relating to erection, alteration, repair, replacement or removal of protective barrier are designated as minor works, which may be carried out under the simplified requirements as an alternative to obtaining prior approval and consent under the Buildings Ordinance. Reference can be made to Schedule 1 of the Building (Minor Works) Regulation and PNAP APP-147 regarding the list of minor works items and the simplified requirements respectively.

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