Government of Western Australia
Department of Mines, Industry Regulation and Safety

Building and Energy Western Australia

Industry Bulletin 150

Barrier design and installation – understanding your responsibilities

This industry bulletin provides an overview of information required for the design and construction of barriers to prevent falls (often referred to as balustrades) and to highlight the responsibilities of the parties contributing to the required information.

A general inspection (investigation) report carried out by Building and Energy identified instances of inadequate information being provided for barriers, including a lack of evidence of suitability. Inadequacies related to both the design and construction stages when detailing the proposed materials, assembly, installation and resistance to actions of barrier systems.

Information required for the design and construction of barriers

The design and construction of barriers is required to comply with the relevant Performance Requirements of the National Construction Code (NCC). This includes structural provisions and fall prevention provisions which safeguard people from injury. Should a barrier system fail to satisfy these provisions the consequences have potential for significant injury include the loss of life.

To demonstrate compliance with the applicable building standards, the items identified in the table below should be provided in documentation.

DESIGN
REQUIRED INFORMATION
The location of barrier, including identification of building elements, supporting the barrier. This is to ensure compatibility and verify the suitability of the proposed fixings, for example ensuring there is sufficient offset from edge of slab for fixings.
Critical dimensions relating to the heights, openings and climbability.
Detail of the installation and materials proposed, including relevant Australian Standards applicable to the material and design.
Information and documentary evidence, demonstrating the barriers resistance to actions appropriate for the use and location of the building (design criteria). The design criteria should be determined by a professional engineer or appropriately qualified person and include but is not limited to: • imposed actions for barriers determined in accordance with AS/NZS 1170.1 being dependent on the type of occupancy/uses for the part of a building in which the barrier is located; and • wind actions, as appropriate and as they apply to each barrier on the building being determined in accordance with AS/NZS 1170.2 or AS 4055. Wind actions should take into account the barrier's location noting that those located on the corner of the building, or at higher levels, will generally receive higher loads.
CONSTRUCTION
REQUIRED INFORMATION
Detail of the installed materials and installation fixings, including relevant Australian Standards applicable to the material and design.
Documentary evidence demonstrating the barrier meets the NCC requirements, including the design criteria. This includes full detailing of the barrier system demonstrating its suitability and compatibility for the subject building.

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A barrier system refers to the complete system comprising of posts, top and bottom rail, infill such as balusters or glass, base plates and hardware necessary to secure the system to the substrate.

The design and construction of barriers must not compromise the way in which other building elements such as waterproof membranes, reinforcement, etc. perform and must holistically comply with the NCC. This must be detailed and monitored accordingly during the design and construction.

Responsibilities

Building legislation in Western Australia places responsibilities on registered building surveyors to determine and, on the relevant builder to ensure, compliance with the applicable building standards; generally being the Building Code which is Volumes One and Two of the NCC. It is therefore important that building surveyors and builders understand their registration obligations and compliance responsibilities when applying the NCC, as well as procuring and supervising a barrier installation.

It is also the responsibly of those involved in the process of designing, procuring and installing barriers to understand their responsibilities in obtaining and providing information to demonstrate compliant barriers. The responsibilities of all relevant parties contributing to the design and/or construction of a barrier, are generally:

- Design responsibilities: To produce and collate design documents demonstrating that barriers comply with the NCC. Design documents may include plans and specifications as well as other technical documents that demonstrate evidence of suitability.
  Note: In circumstances where the supplier of the barrier is unknown at design stage, the design team will need to otherwise demonstrate to the Building Surveyor that the design of the barrier(s) meets the Performance Requirements of the NCC.
- Construction responsibilities: To ensure that construction works achieve compliance with the NCC by being carried out in accordance with the plans and specifications as specified in the relevant certificate of design compliance, including the design detail and evidence of suitability provided for the barrier.

Note: Where a barrier supplier is appointed post design stage, the barrier supplier will need to obtain relevant design details pertaining to the barrier produced by the design team to demonstrate a solution capable of being installed in the appropriate manner and provide evidence that the barrier supplied meets the NCC requirements.

The relevant parties may include building designers, structural engineers, barrier suppliers and installers.

For the purpose of this industry bulletin, a barrier supplier is a company/person who supplies barrier components i.e. Fixings and frames and/or complete barrier systems.

Design and construction of a compliant barrier requires collaboration between all relevant parties to verify that the building elements supporting the barrier can accommodate for the barrier to be installed in an appropriate manner such that it is able to meet the requirement of the NCC including satisfying the design criteria.

Complying with the NCC

Compliance with the NCC is achieved by complying with the Governing Requirements of the NCC; and the Performance Requirements.

The rules for applying the NCC are provided in Section A Governing Requirements of the NCC. Part A5 sets out the documentary evidence needed to show that the NCC requirements are met and that the solution is ‘fit for purpose’. The Australian Building Codes Board have produced a handbook to assist NCC users in understanding and applying the evidence of suitability provisions of the NCC

The Australian Building Codes Board, Handbook – Evidence of Suitability states:

Determining the appropriate form of documentary evidence to be used, and obtaining that evidence, is only part of achieving compliance with the NCC. Having appropriate documentary evidence for a specific component is of no relevance if a different, non-conforming component is procured and installed. All parties that have a role in the product supply chain should ensure that their obligations or duties to check and assure that the right products are used, and are used correctly, are met.

The NCC is freely available online and additional information with respect to understanding and complying with the NCC can be obtained from the Australian Building Codes Board website. This includes the Handbook - Evidence of Suitability, which provides guidance on the NCC evidence of suitability provisions and includes a framework and decision flow chart to assist in the correct use.

Industry Bulletin 144 'Technical documents' is also published to remind Building Surveyors of their responsibilities when including technical documents with a certificate of design compliance and a certificate of construction compliance.

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