

Guidance for assessment of structural glass barrier and safety glass markings

Frameless cantilevered glass balustrades

Frameless cantilevered glass balustrades need to meet the provisions of Building Code clauses B1 (structure), B2 (Durability), F2 (hazardous materials) and F4 (Safety from falling).

Codewords issue 25 provides guidance on how to address code clause B1 performance criteria B1.3.4, where allowance must be made for the consequence of failure. Particular care should be taken when designing glass balustrades which are cantilevered from the base where the consequence of failure could result in injury or worse.

Interestingly, in Australia, there have been several deaths as a result of glass barriers failing and AS1288 (2006) made frameless glass barriers non-compliant where a fall of more than 1m existed. An interlinked handrail or similar alternative solution must be used.

MBIE's guidance document for designing barriers describes cantilevered glass barriers as requiring an interconnecting rail unless the glass is less than 5m from ground level. The intent of this height requirement is to address concerns about toughened glass particles falling from a great height and injuring someone below. It does **not** address the possibility of that failure affecting someone leaning on the barrier when it fails.

The consequence of failure must be addressed from above and below the barrier; designers must not be using the 5m height restriction as the only trigger to assess this aspect of the performance criteria.

Some possible options that may address this are interconnected laminated glass, fully framed systems, or top capping, tying the panels together (specific design). Whatever the solution, the processor will need to assess each design on its merits taking into account the site specific details.

Producer Statements for design provided for barrier design need to cover B1 (structure) and B2 (durability). It is also important to ensure the scope of the design is well described to verify its use and location. NZS/AS1170 lists different requirements dependent on the location of the barrier; as an example, a barrier installed inside a dwelling needs to be designed to withstand a horizontal load of 0.35kN/m as opposed to a barrier in a shopping mall which would need to withstand 3.0kN/m. For residential dwellings there are different requirements between internal and external barriers so it is very important the design matches these requirements.

Safety Glass markings

AS/NZS4223 and NZS2208 require all panels to be legibly permanently marked with the following:

- the name or registered trademark of the manufacturer or supplier
- the standard to which the glazing material has been tested, e.g. AS/NZS 2208
- a letter or code to indicate plant of manufacture or supply
- the type of safety glazing material as indicated by the relevant test standard (Refer AS/NZS 2208) e.g.:-
 - T for Toughened Glass
 - L for Laminated Glass
- the grade of the glass; e.g.:-
 - A for grade A
 - B for grade B;
 - Etc

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- a number to indicate the nominal thickness for standard glazing material in millimetres; or a number to indicate the minimum thickness for non-standard glazing material to the nearest tenth of a millimetre.



A typical mark showing it is safety glass. The licence number is for third-party certification

Removable stickers are not permitted.