

Glass barriers (balustrades) Including pool glass barriers

Information regarding the Building Code of Australia (2016) and relevant Australian Standards.

The following information may assist with understanding the requirements of the NCC 2016 Building Code of Australia (BCA) Volume Two (housing provisions), when using glass in a barrier (including a balustrade). This information should be used as a guide only. It does not replace the need for advice from your glazier or engineer, specific to your situation.

Building Code of Australia

The BCA considers a balustrade as a form of barrier. A continuous barrier must be provided along the side of any roof to which general access is provided, any stairway, ramp, floor, corridor, hallway, balcony, deck, verandah, mezzanine, access bridge or the like, and any delineated path of access to a building, if the trafficable surface is 1m or more above the surface beneath.

Part 3.9.2 of the BCA contains the requirements for barriers and handrails (including glass) in Class 1 dwellings. A glass barrier must also comply with Australian Standard 1288 (AS1288).

Australian Standard 1288

Glass balustrade panels are identified as -

- a) *Structural balustrade panels*, where the glass forms a structural component of the balustrade, or
- b) *Infill balustrade panels*, where the glass acts as an infill panel only and the structural support is provided by another material (eg metal frame).

Glass that is relied upon to provide a structural component to a balustrade generally requires a handrail. There are three handrail types mentioned in AS1288:

- a) *Load-supporting handrails* The handrail is mechanically fixed to the structure, independent of the glass, but the glass can be connected to it. The handrail supports the load. This type of handrail is normally used with *infill balustrade panels*.
- b) *Non-load-supporting handrails* Either the top edge of the glass acts as the handrail or the glass supports a handrail that is fixed to the glass and relies on the glass for structural support. The glass supports the load. This type of handrail is normally used with *structural balustrade panels*.
- c) *Interlinking handrail* The handrail is non-load-supporting, and must be connected to the adjacent panels of glass, or the building. The adjacent panels must be at least 100mm wide and three or more panels of glass form the balustrade. If one of the panels fails, then the remaining two panels **and** the handrail must be capable of resisting the load. The handrail must be selected and designed with this support capability in mind. This type of handrail is normally used with *structural balustrade panels*.

Section 7 of AS1288 provides the only 'deemed to comply' solutions for balustrades (or swimming pool barriers) using glass. Any glass barrier not specifically detailed in Section 7 would require design in accordance with Section 3, and provide specific structural certification. This certification must include the design, manufacture, and installation of all glass, framing, spigots, supports, and associated fixings used in the specific barrier project.

Point fixings and spigot fixings are a common method of attaching *structural balustrade panels* (eg stairs and swimming pool barriers). They are not included in Section 7 of the standard and require certification to AS1288 in every instance.

A glass balustrade forming a *barrier* could be either -

- a) An infill panel of glass, with thickness selected in accordance with table 7.3 of AS1288 and incorporating a *load supporting handrail*, or
- b) A structural panel of glass, with thickness selected in accordance with table 7.1 / 7.2 of AS1288 and incorporating an *interlinking handrail* or *load supporting handrail*.

Any other balustrade (or swimming pool barrier) incorporating glass unless specifically detailed in Section 7 of AS1288, would require site specific design in accordance with Section 3 of AS1288, and provide specific structural certification. This certification must include the design, manufacture, and installation of all glass, framing, spigots, supports, and associated fixings used in the specific balustrade project.

Note: a simple channel over the top of the glass would not be capable of resisting loads as required by AS1288 or AS1170, and cannot therefore be used as a *load supporting handrail* or an *interlinking handrail*.

Certification

Irrespective of whether compliance with AS 1288 is achieved through either Section 3 or Section 7, certification is required.

The certificate must include:

- the date the certificate was issued
- the address of the subject property
- the qualifications/experience of the person signing the certificate
- the items/system certified
- a statement confirming that the installed system complies with the BCA, AS1288, AS1170.1, and any other relevant Australian Standards applicable

Glass as a pool barrier (fence)

If glass is to be used as part of a swimming pool barrier (fence), it must meet AS 1926.1 pool fencing requirements and be designed and certified to comply with AS1288.

If the glass pool fence also constitutes a barrier as required by Part 3.9.2 of the BCA, it must comply with either Section 3 or Section 7 of AS1288 as described earlier. In all instances certification is required as detailed above.