**Status of Compliance Documents**

Compliance Documents are prepared by the Department of Building and Housing in accordance with section 22 of the Building Act 2004. A Compliance Document is for use in establishing compliance with the New Zealand Building Code.

A person who complies with a Compliance Document will be treated as having complied with the provisions of the Building Code to which the Compliance Document relates. However, a Compliance Document is only one method of complying with the Building Code. There may be alternative ways to comply.

Users should make themselves familiar with the preface to the New Zealand Building Code Handbook, which describes the status of Compliance Documents and explains alternative methods of achieving compliance.

Defined words (italicised in the text) and classified uses are explained in Clauses A1 of the Building Code and in the Definitions at the start of this Compliance Document.

### F4: Document History

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Note: Page numbers relate to the document at the time of Amendment and may not match page numbers in current document.

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**Document Status**

The most recent version of this document, as detailed in the Document History, is approved by the Chief Executive of the Department of Building and Housing. It is effective from 21 June 2007 and supersedes all previous versions of this document.

People using this Compliance Document should check for amendments on a regular basis. The Department of Building and Housing may amend any part of any Compliance Document at any time. Up-to-date versions of Compliance Documents are available from www.dbh.govt.nz
New Zealand Building Code
Clause F4 Safety from Falling

The mandatory provisions for building work are contained in the New Zealand Building Code (NZBC), which comprises the First Schedule to the Building Regulations 1992. The relevant NZBC Clause for Safety from Falling is F4.

FIRST SCHEDULE--continued

Clause F4–SAFETY FROM FALLING

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**OBJECTIVE**

F4.1 The objective of this provision is to safeguard people from injury caused by falling.

**FUNCTIONAL REQUIREMENT**

F4.2 Buildings shall be constructed to reduce the likelihood of accidental fall.

**PERFORMANCE**

F4.3.1 Where people could fall 1 metre or more from an opening in the external envelope or floor of a building, or from a sudden change of level within or associated with a building, a barrier shall be provided.

F4.3.2 Roofs with permanent access shall have barriers provided.

F4.3.3 Swimming pools having a depth of water exceeding 400mm, shall have barriers provided.

F4.3.4 Barriers shall:

(a) Be continuous and extend for the full extent of the hazard,

(b) Be of appropriate height,

(c) Be constructed with adequate rigidity,

(d) Be of adequate strength to withstand the foreseeable impact of people and, where appropriate, the static pressure of people pressing against them.

(e) Be constructed to prevent people from falling through them, and

Performance F4.3.1 shall not apply where such a barrier would be incompatible with the intended use of an area, or to temporary barriers on construction sites where the possible fall is less than 3 metres, or to buildings providing pedestrian access or not present where the route served presents similar natural hazards.

Performance F4.3.3 shall not apply to any pool exempted under section 5 of the Fencing of Swimming Pools Act 1987.
## FIRST SCHEDULE—continued

**Provisions**

(f) In the case of a swimming pool, restrict the access of children under 6 years of age to the pool or the immediate pool area.

(g) Restrict the passage of children under 6 years of age when provided to guard a change of level in areas likely to be frequented by them.

(h) Be constructed so that they are not readily able to be used as seats.

**F4.3.5** Barriers to swimming pools shall have in addition to performance F4.3.4:

(a) All gates and doors fitted with latching devices not readily operated by children, and constructed to automatically close and latch when released from any stationary position 150 mm or more from the closed and secured position, but excluding sliding and sliding-folding doors that give access to the immediate pool surround from a building that forms part of the barrier, and

(b) No permanent objects on the outside of the barrier that could provide a climbing step.

**Limits on application**

Performance F4.3.4 (f) shall not apply to any pool exempted under section 5 of the Fencing of Swimming Pools Act 1987.

Performance F4.3.4(h) does not apply to Housing.
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References

For the purposes of New Zealand Building Code compliance, the acceptable New Zealand and other Standards, and other documents referred to in this Compliance Document (primary reference documents) shall be the editions, along with their specific amendments, listed below. Where the primary reference documents refer to other Standards or other documents (secondary reference documents), which in turn may also refer to other Standards or other documents, and so on (lower order reference documents), then the applicable version of these secondary and lower order reference documents shall be the version in effect at the date this Compliance Document was published.

New Zealand Legislation
Fencing of Swimming Pools Act 1987

Where quoted
AS1 1.2.7
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Definitions

This is an abbreviated list of definitions for words or terms particularly relevant to this Compliance Document. The definitions for any other italicised words may be found in the New Zealand Building Code Handbook.

Balustrade The infill parts of a barrier (typically between floor and top rail).

Building has the meaning ascribed to it by sections 8 and 9 of the Building Act 2004.

Construct in relation to a building, includes to build, erect, prefabricate, and relocate; and construction has a corresponding meaning.

Handrail A rail to provide support to, or assist with the movement of, a person.

Household unit

a) means any building or group of buildings, or part of a building or group of buildings, that is:
   i) used, or intended to be used, only or mainly for residential purposes; and
   ii) occupied, or intended to be occupied, exclusively as the home or residence of not more than one household; but
b) does not include a hostel, boarding house or other specialised accommodation.

Intended use in relation to a building:

a) includes any or all of the following:
   i) Any reasonably foreseeable occasional other use that is not incompatible with the intended use; and
   ii) Normal maintenance; and
   iii) Activities taken in response to fire or any other reasonably foreseeable emergency
b) but does not include any other maintenance and repairs or rebuilding.

Nosing The rounded projecting edge of a stair tread.

Pitch line The line joining the leading edge or nosings (if any) of successive stair treads within a single flight of stairs.

Theatre A place of assembly intended for the production and viewing of performing arts, and consisting of an auditorium and stage with provision for raising and suspending stage scenery above and clear of the working area.
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Verification Method F4/VM1

No specific test methods have been adopted for verifying compliance with the Performance of NZBC F4.
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Acceptable Solution F4/AS1

1.0 Barriers in Buildings

1.1 Barrier heights

1.1.1 Minimum barrier heights are given in Table 1.

 COMMENT: Refer to NZBC Clause D1 for handrails on stairs. Handrails can be constructed as an integral part of a barrier.

1.2 Barrier construction

1.2.1 In housing and other areas likely to be frequented by children under 6 years of age:

a) Figures 1-4 show acceptable barrier constructions

b) Openings anywhere over the full height of the barrier shall be such a size that a 100 mm diameter sphere cannot pass through them, and

c) The triangular opening formed by the riser, tread, and bottom rail of the barrier on a stair shall be of such a size that a 150 mm diameter sphere cannot pass through it (see Figure 4).

 COMMENT: 1. Buildings classified as housing are always likely to be frequented by children under 6 years of age. However, "Likely to be frequented" in regard to other buildings means something more than that children under 6 will be present from time to time. There should be an expectation that small children will be present on a regular basis (see Determination No. 2001/9 on www.dbh.govt.nz). Different parts of a building may have different barrier requirements, such as shopping malls where children under 6 are likely to frequent the public areas, but not the areas used for food preparation or the handling of stock.

2. The Clause F4.3.4(g) requirement that barriers restrict the passage of children under 6 years of age does not mean that all children under 6 must be unable to climb them. The Acceptable Solutions given here will prevent almost all children up to the age of 3 years from climbing. They can also be used as a guide for alternative designs.

3. Barriers with full height vertical members are the hardest for children to climb. Horizontal or near horizontal rails can easily be climbed by 2 year olds if the rails extend the full height of a barrier, even if the barrier includes a 200 mm wide top rail or if it slopes inwards at 15°.

Table 1: Minimum Barrier Heights

<table>
<thead>
<tr>
<th>Building type</th>
<th>Location</th>
<th>Barrier height (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached dwellings and within household units of multi-unit dwellings</td>
<td>Stairs and ramps and their landings</td>
<td>900</td>
</tr>
<tr>
<td></td>
<td>Balconies and decks, and edges of internal floors or mezzanine floors</td>
<td>1000</td>
</tr>
<tr>
<td>All other buildings, and common areas of multi-unit dwellings</td>
<td>Stairs or ramps</td>
<td>900</td>
</tr>
<tr>
<td></td>
<td>Barriers within 530 mm of the front of fixed seating</td>
<td>800</td>
</tr>
<tr>
<td></td>
<td>All other locations</td>
<td>1100</td>
</tr>
</tbody>
</table>

 Note:
1. Heights are measured vertically from finished floor level (ignoring carpet or vinyl, or similar thickness coverings) on floors, landings and ramps. On stairs the height is measured vertically from the pitch line or stair nosings.
2. A landing is a platform with the sole function of providing access.
3. Clause F4.3.1 has a limit on its application that may exclude the need for barriers in certain locations such as working wharves and loading docks.
4. An 800 mm high barrier in front of fixed seating would be appropriate in cinemas, theatres, and stadiums.
Figure 1: Barriers in areas likely to be frequented by children under 6 years of age – mesh and composite
Figure 2: Barriers in areas likely to be frequented by children under 6 years of age – parallel members

Paragraph 1.2.1 a)
Figure 3: Barriers in areas likely to be frequented by children under 6 years of age
- glass or other solid material
Paragraph 1.2.1 a)

Figure 4: Stair barrier in an area likely to be frequented by children under 6 years of age
Paragraph 1.2.1 a)

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1.2.2 In areas used exclusively for emergency or maintenance purposes in buildings, and in other buildings not frequented by children, barriers may have openings with maximum dimensions of either:
   a) 300 mm horizontally between vertical balustrade members, or
   b) 460 mm vertically between longitudinal rails.

1.2.3 Barriers in buildings other than housing having a parapet or horizontal rail form of construction shall have the dimensions given in Figure 5.

1.2.4 Where the height of fall from the deck on a house is less than 1 m, a fixed seat may be constructed on the deck as shown in Figure 6(a). Where the height of fall from the deck is more than 1 m, a fixed seat shall be constructed as in Figure 6(b).

1.2.5 When a barrier is provided on a retaining wall, it shall comply with Paragraphs 1.1 and 1.2.

1.2.6 Construction site barriers shall have:
   a) one or more intermediate horizontal rails in addition to the top rail and a maximum vertical opening between rails of 460 mm, or
   b) a top rail at a height of 1000 mm and a toeboard that extends at least 225 mm above the platform, and
   c) barrier rails at a maximum distance of 200 mm horizontally from the platform edge.

**COMMENT:**
NZBC Clause F4.2 refers to the ‘likelihood’ of accidental fall. Not all retaining walls are in a location where people are likely to fall from them. Therefore, the need for a barrier (and the type of barrier) on a particular retaining wall can be judged in terms of the likelihood of people being present at the top of that wall (see Determination No. 99/012 on www.dbh.govt.nz)
Figure 6: Fixed seat on a deck to housing

Paragraph 3.0

(a) Solid construction, vertical slats not less than 100 mm max.

(b) No openings under seat that a 100 mm diameter sphere can pass through.
Scaffolding cross-bracing between standards with a single lift may be used as a top rail for construction site barriers provided:

a) The braces cross at a height of between 1000 mm and 1100 mm above the platform, and

b) The platform is decked to within 200 mm of a vertical plane through the cross-bracing.

1.2.7 The Schedule to the Fencing of Swimming Pools Act 1987 is a means of establishing compliance with NZBC Clause F4.

2.0 Opening windows

2.1 Paragraphs 2.1.1 to 2.1.4 apply where the possible height of fall from an open window is more than 1000 mm. The height of fall shall be measured from the inside floor level adjacent to the window. If a fixed window seat is provided, the sill height shall be measured from the seat.

2.1.1 In housing and areas of other buildings likely to be frequented by children under 6 years of age, a window with an opening width of less than 1000 mm shall have either:

a) the lower edge of the opening at least 760 mm above floor level, or

b) a restrictor fitted to limit the maximum opening so that a 100 mm diameter sphere cannot pass through it, or

c) a 760 mm high barrier protecting the opening of solid construction or with vertical members its full height.

2.1.2 In housing and areas of other buildings likely to be frequented by children under 6 years of age, a window with an opening width of more than 1000 mm shall have either:

a) the lower edge of the opening at a height above floor level as given for barriers in Table 1, or

b) a barrier of the same height protecting the opening complying with Paragraph 1.2.1.

2.1.3 In areas of buildings not likely to be frequented by children under 6 years of age, a window with an opening width of less than 1000 mm shall have either:

a) the lower edge of the opening at a height of at least 760 mm above floor level, or

b) a restrictor fitted to limit the maximum dimension of the opening to 460 mm.

2.1.4 In areas of buildings not likely to be frequented by children under 6 years of age, a window with an opening width of more than 1000 mm shall have either:

a) the lower edge of the opening at a height of at least 1100 mm above floor level, or

b) a 1100 mm high barrier protecting the opening complying with Paragraph 1.2.2.
Archived
Index F4/VM1 & AS1

All references to Verification Methods and Acceptable Solutions are preceded by VM or AS respectively.

Barriers
- construction: AS1 1.0, Figures 1-4
- heights: AS1 1.1, Table 1
- parapet and rail barriers: AS1 1.2.3, Figure 5
- scaffolding: AS1 1.2.6
- stair barriers: AS1 Figure 4

Children
- AS1 1.2.1, Figures 1-4

Construction site barriers
- AS1 1.2.6

Low-risk areas
- AS1 1.2.2

Opening windows
- AS1 2.0

Retaining walls
- AS1 1.2.5

Seats on decks
- AS1 1.2.4, Figure 6

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