



Acceptable Solutions F9/AS1 and F9/AS2

For New Zealand Building Code Clause F9
Means of Restricting Access to Residential Pools





**MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT**
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New Zealand Government

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Status of Acceptable Solutions

Acceptable Solutions are prepared by the Ministry of Business, Innovation and Employment in accordance with section 22 of the Building Act 2004. Acceptable Solutions are for use in establishing compliance with the New Zealand Building Code.

A person who complies with an Acceptable Solution will be treated as having complied with the provisions of the Building Code to which the Acceptable Solution relates. However, using an Acceptable Solution 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 Acceptable Solutions and explains alternative methods of achieving compliance.

Defined words (italicised in the text) and classified uses are explained in Clauses A1 and A2 of the Building Code and in the Definitions at the start of this document.

Document Status

The most recent version of this document, as detailed in the Document History, is approved by the Chief Executive of the Ministry of Business, Innovation and Employment. It is effective from 27 April 2017.

People using this document should check for amendments on a regular basis. The Ministry of Business, Innovation and Employment may amend any part of any Acceptable Solution at any time. Up-to-date versions of Acceptable Solutions are available from www.building.govt.nz

Document History

| Status | Date | Alterations |
|---------------|---------------|-------------|
| First Edition | 27 April 2017 | |

Background

Until 1 January 2017, the safety of young children around swimming pools and some other pools was subject to the Fencing of Swimming Pools Act 1987. However, the fencing of pools was building work and was therefore subject to the New Zealand Building Code. Clause F4 'Safety from Falling' of the Building Code contained specific performance requirements for pool barriers and the Schedule to the Fencing of Swimming Pools Act was referenced as a means of compliance with Clause F4.

The Building (Pools) Amendment Act 2016, which was passed in October 2016, revoked the Fencing of Swimming Pools Act and incorporated child safety provisions for residential swimming pools into the Building Act 2004. It also added a new clause to the Building Code: Clause F9 'Means of Restricting Access to Residential Pools'. Residential pools that are subject to child safety provisions are defined in Section 7 of the Building Act. Refer also to the Definitions section of this document.

Most building work requires a building consent and the construction of a residential pool barrier is building work. Building work not requiring a building consent is listed in Schedule 1 of the Building Act. Clause 21A of Schedule 1 now includes:

Installation of a safety cover as a means of restricting access to a small heated pool that is a residential pool

The Building Act 2004 can be seen at:

www.legislation.govt.nz/act/public/2004/0072/latest/whole.html

The provisions of the Building Act that apply to residential pools constructed, erected or installed before 1 January 2017 are contained in section 450B.

Clause F9 of the Building Code relates directly to section 162C(1) of the Building Act which requires all residential pools to have a pool barrier to restrict access by unsupervised children under 5 years of age. Section 162C(1) applies to pools constructed prior to 1 January 2017 as well as to pools constructed after that date in compliance with Clause F9. Barriers need to be maintained so that they continue to be effective.

Clause F9—Means of restricting access to residential pools

This Clause is extracted from the New Zealand Building Code contained in the First Schedule of the Building Regulations 1992.

CLAUSE F9—MEANS OF RESTRICTING ACCESS TO RESIDENTIAL POOLS

Provisions

OBJECTIVE

F9.1 The objective of this provision is to prevent injury or death to young children involving *residential pools*.

FUNCTIONAL REQUIREMENT

F9.2 *Residential pools* with a maximum depth of water of 400 mm or more that are filled or partly filled with water must have means of restricting access that prevents unsupervised access by a child under 5 years of age.

PERFORMANCE

F9.3.1 *Residential pools* must have or be provided with physical barriers that restrict access to the *pool* or the *immediate pool area* by unsupervised young children (ie, under 5 years of age).

F9.3.2 Barriers must either—

(a) surround the *pool* (and may enclose the whole or part of the *immediate pool area*); or

(b) in the case of a *small heated pool*, cover the *pool* itself.

F9.3.3 A barrier surrounding a *pool* must have no permanent objects or projections on the outside that could assist children in negotiating the barrier.

Any gates must—

(a) open away from the *pool*; and

(b) not be able to be readily opened by children; and

(c) automatically return to the closed position after use.

F9.3.4 Where a *building* forms all or part of an *immediate pool area* barrier,—

(a) doors between the *building* and the *immediate pool area* must not be able to be readily opened by children, and must either—

(i) emit an audible warning when the door is open; or

(ii) close automatically after use:

Limits on application

In the case of a *small heated pool*, the means of restricting access referred to in Performance F9.3.1 need only restrict access to the *pool* when the *pool* is not in use.

Performance F9.3.2(b) applies only to those *small heated pools* where the top surface of every wall of the *pool* is at all points not less than 760 mm above the adjacent floor or ground and the walls of the *pool* inhibit climbing.

Schedule 1 clause F9: inserted, on 1 January 2017, by section 20 of the Building (Pools) Amendment Act 2016 (2016 No 71).

Clause F9—Means of restricting access to residential pools (continued)

CLAUSE F9—MEANS OF RESTRICTING ACCESS TO RESIDENTIAL POOLS (continued)

Provisions

(b) windows opening from a building into the *immediate pool area* must be constructed or positioned to restrict the passage of children.

F9.3.5 Where a cover is provided as a barrier to a *small heated pool*, it must—

- (a) restrict the entry of children when closed; and
- (b) be able to withstand a reasonably foreseeable load; and
- (c) be able to be readily returned to the closed position; and
- (d) have signage indicating its child safety features.

Limits on application

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References

For the purposes of New Zealand Building Code (NZBC) compliance, the Standards and documents referenced in these Acceptable Solutions (primary reference documents) must be the editions, along with their specific amendments, listed below. Where these primary reference documents cite other Standards or documents (secondary citations), which in turn may also cite other Standards or documents, and so on (lower-order citations), then the version that is cited must be used, or if no specific version is cited then the version that is current when the citing document is published must be used.

| | Where quoted |
|---|---------------------------------|
| Ministry of Business, Innovation and Employment Acceptable Solution F4/AS1 Safety from falling; third edition, amendment 1 Acceptable Solution F8/AS1 Signs; second edition, amendment 3 | AS1 2.5.1 AS1 4.2.2, AS2 2.5 |
| Standards New Zealand NZS 8500:2006 Safety barriers and fences around swimming pools, spas and hot tubs | AS1 2.4.1 |

Definitions

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

| | |
|-------------------------|--|
| Abode or place of abode | <p>a) Means any place used predominantly as a place of residence or <i>abode</i>, including any appurtenances belonging to or enjoyed with the place; and</p> <p>b) Includes –</p> <ul style="list-style-type: none"> i) a hotel, motel, inn, hostel, or boarding house; ii) a convalescent home, nursing home, or hospice; iii) a rest home or retirement village; iv) a camping ground; v) any similar place. |
| Building | Has the meaning ascribed to it by sections 8 and 9 of the Building Act 2004. |
| Household unit | <p>(a) Means a <i>building</i> or group of <i>buildings</i>, or part of a <i>building</i> or group of <i>buildings</i>, that is—</p> <ul style="list-style-type: none"> (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 1 household; but <p>(b) Does not include a hostel, boarding house, or other specialised accommodation.</p> |
| Immediate pool area | Means the land in or on which the <i>pool</i> is situated and so much of the surrounding area as is used for activities carried out in relation to or involving the <i>pool</i> . |
| Pool | <p>a) Means –</p> <ul style="list-style-type: none"> i) any excavation or structure of a kind normally used for swimming, paddling, or bathing; or ii) any product (other than an ordinary home bath) that is designed or modified to be used for swimming, wading, paddling, or bathing; but <p>b) Does not include an artificial lake.</p> |
| Residential pool | <p>Means a <i>pool</i> that is –</p> <ul style="list-style-type: none"> a) in a place of <i>abode</i>; or b) in or on land that also contains an <i>abode</i>; or c) in or on land that is adjacent to other land that contains an <i>abode</i> if the <i>pool</i> is used in conjunction with that other land or <i>abode</i>. |
| Small heated pool | <p>Means a heated <i>pool</i> (such as a spa <i>pool</i> or hot tub) that –</p> <ul style="list-style-type: none"> a) has a water surface area of 5 m² or less; and b) is designed for therapeutic or recreational use. |



F9/AS1 Residential Pool Barriers

1.0 Scope

This Acceptable Solution provides a means for restricting the unsupervised access of children under 5 years of age to *residential pools*. It describes acceptable methods of *construction* for barriers surrounding *pools* as well as the *construction* and operation of doors, gates and windows that provide access to an *immediate pool area*.

2.0 Barriers surrounding the immediate pool area

2.1 Pool barriers

2.1.1 A *pool barrier* can be a fence but may also take other forms of *construction*, such as a concrete block wall. The wall of a house or other *building* may form part of the barrier to an *immediate pool area* or may enclose the whole *immediate pool area* (such as with an indoor *pool*).

Comment:

Activities that may be carried out in the immediate pool area are those that involve the pool or are in relation to it. However, an activity may also be carried out independently of the use of the pool. For example, a barbeque and outdoor furniture could be located in the immediate pool area but not a clothes line or vegetable garden.

The use of the immediate pool area as a means of accessing the house from the property boundary or to gain access to other parts of the property from the house would in most cases conflict with the definition of immediate pool area.

2.1.2 *Pool barriers* not on a property boundary shall have a height of not less than 1200 mm from the finished floor or ground level outside the *pool barrier*.

2.1.3 *Pool barriers* shall not be angled more than 15° from vertical and may only slope away from the *pool*. Any rails, rods or wires forming a part of a *pool barrier* that are not themselves vertical shall be at least 900 mm apart vertically to restrict climbing. There shall

be no openings in the *pool barrier* that a 100 mm diameter sphere could pass through.

2.1.4 Figure 1 shows acceptable ways of constructing *pool barriers* that are not on a property boundary.

2.1.5 Steel wire mesh with square openings may be used as an alternative to the solid panel shown in (e) in Figure 1 provided the openings do not have a side dimension greater than 13 mm. Panels with steel wire mesh having openings measuring between 13 mm and 35 mm on a side shall be not less than 1800 mm high but may have a gap at the base of not more than 100 mm.

2.1.6 There shall be no ground features or objects outside a *pool barrier* within 1200 mm of the top of the barrier that would assist a child in climbing. Figure 2 gives acceptable methods for evaluating this requirement.

2.1.7 Any projections or indentions on the outside face of a *pool barrier* shall not have a horizontal projection from the face of the *pool barrier* greater than 10 mm unless they are at least 900 mm apart vertically.

2.2 Pool barrier on a property boundary

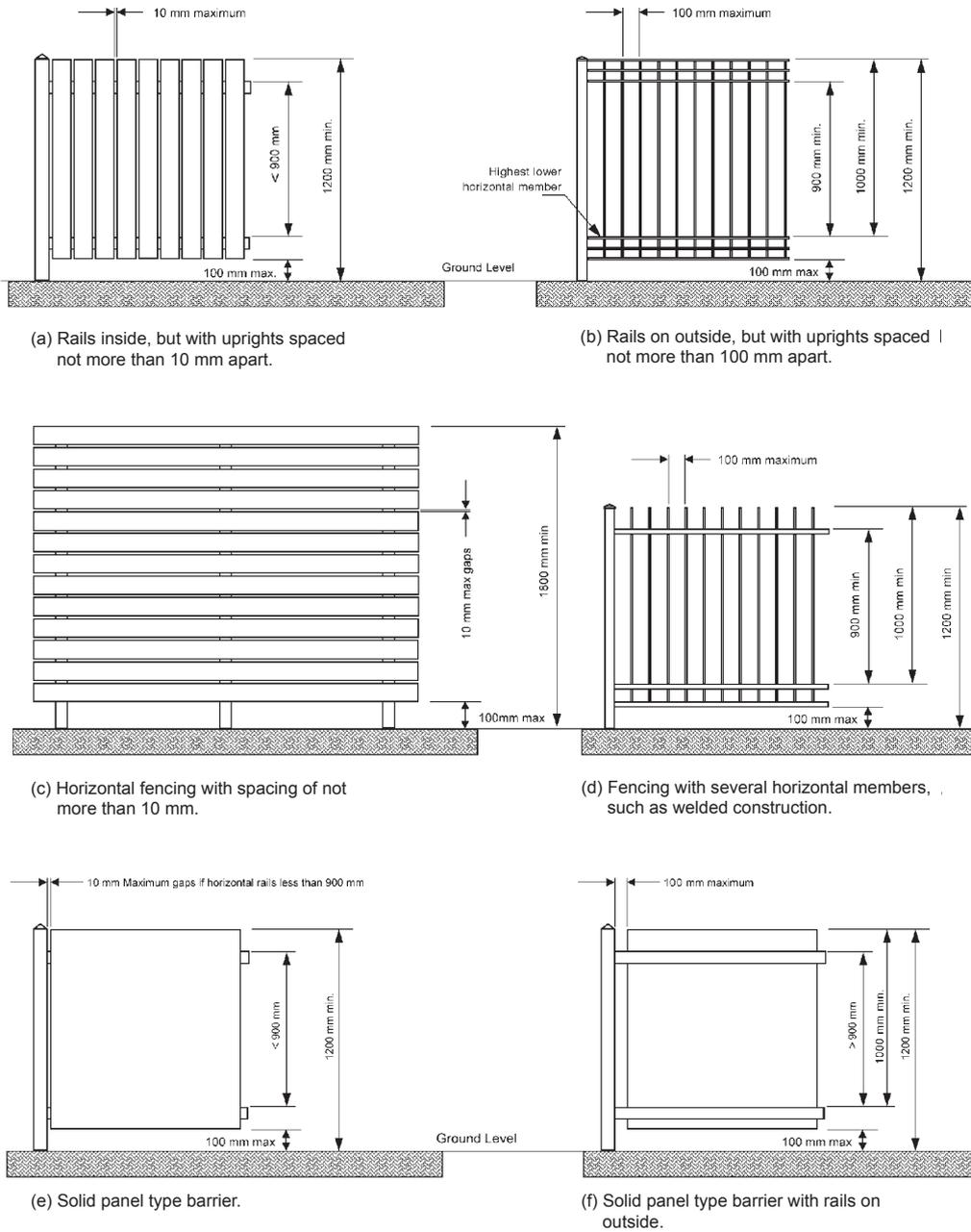
2.2.1 If a *pool barrier* is located on a property boundary, it shall:

- Be not less than 1800 mm high, measured from the ground level on the *pool side*, and
- Have no openings that a 100 mm diameter sphere could pass through, and
- Be located not less than 1000 mm horizontally from the water's edge, and
- Have a 900 mm high zone on the *pool side* of the barrier that begins not more than 150 mm from the top and is constructed as specified in Paragraphs 2.1.3 and 2.1.7, to restrict climbing by children.

Comment:

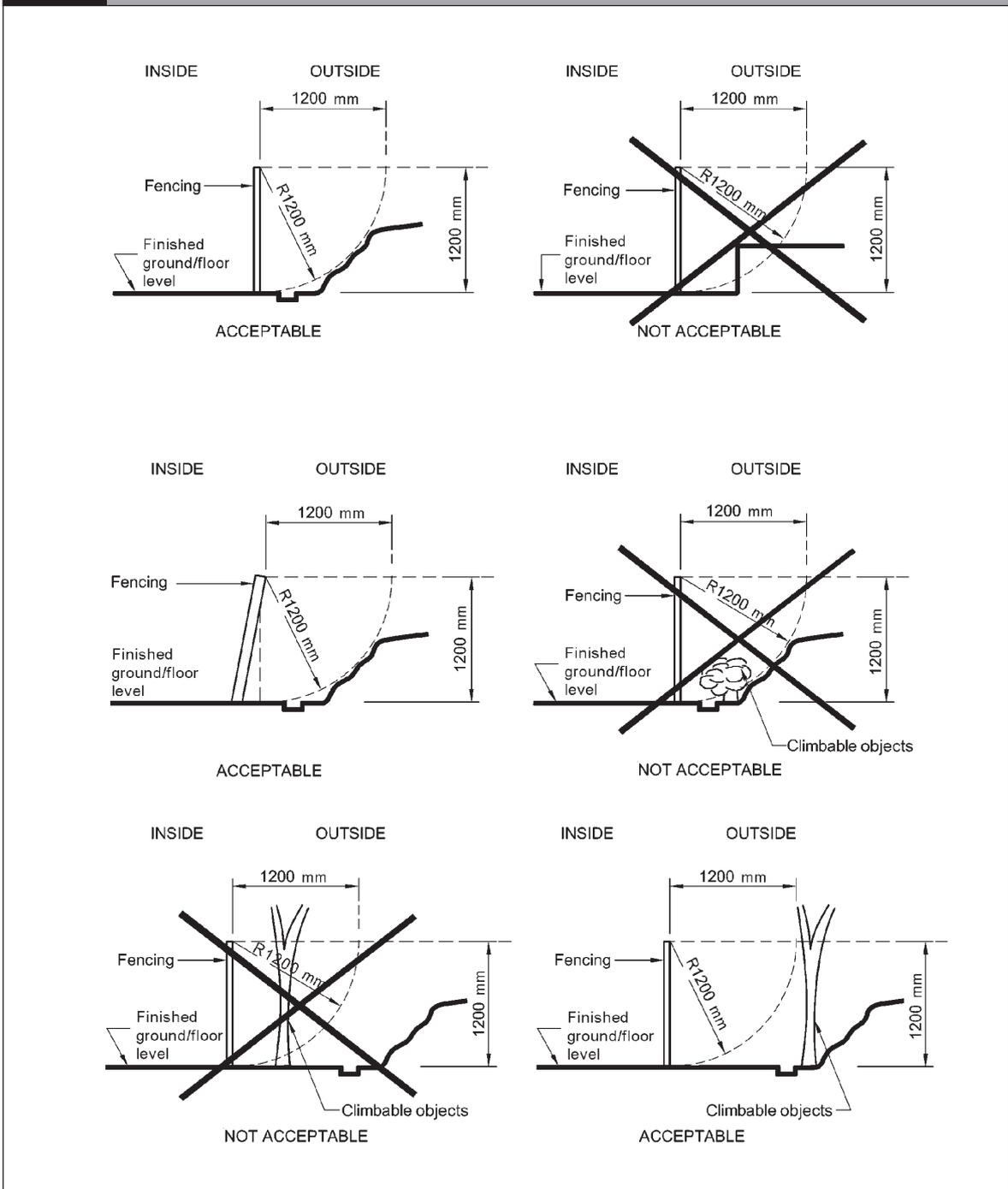
Should a child gain access to the top of the barrier from the outside, this construction method will prevent them from climbing down into the pool area.

Figure 1: Acceptable pool barriers
Paragraphs 2.1.4, 2.1.5



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Figure 2: Determining pool barrier height
Paragraph 2.1.6



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2.3 Pool wall as a barrier

2.3.1 The outside face of a *pool* wall is an acceptable barrier if it is no less than 1200 mm high and complies with Paragraphs 2.1.6 and 2.1.7. Any ladder or other means of providing access to the *pool* shall have an enclosing barrier and gate complying with 2.1 and 3.1.

Comment:

When the top of a pool wall is 1000 mm or more from the surrounding ground, Clause F4 'Safety from Falling' of the Building Code may apply if there is a potential hazard from falling over or off the top of the wall. Determinations 2010/085 and 2010/097 are applicable to this situation. See: www.building.govt.nz/determinations-view-past-determinations

2.4 Strength of pool barriers

2.4.1 NZS 8500 Appendices C, D, E & F are acceptable methods for assessing the strength of *pool* barriers.

Comment:

Wind force may be greater than the force specified in these Appendices, depending on the method of construction. Refer to B1/VM1 for design wind loads.

2.5 Balconies projecting into the immediate pool area

2.5.1 When the floor of a balcony is more than 2400 mm vertically above the *immediate pool area*, a barrier complying with Clause F4 may be used instead of a Clause F9 barrier provided that there are no projections within 1200 mm below the top of it (such as a wall or landscaping feature) that could assist a child to climb down.

3.0 Gates in pool barriers

3.1 Gate construction

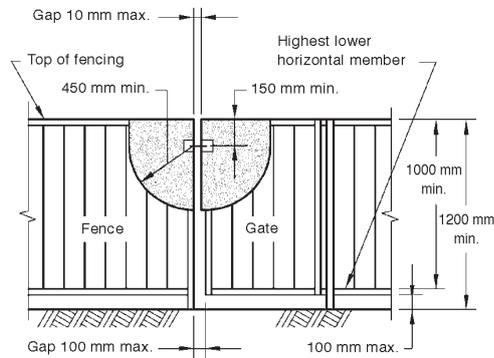
3.1.1 A gate in a *pool* barrier shall:

- a) Be hinged, and
- b) Be at least 1200 mm high, and
- c) Comply with Paragraphs 2.1.2 to 2.1.7 above, and
- d) Open away from the *pool*, and
- e) Swing clear of any obstruction that might hold it open, and
- f) Have a self-closing device that will return the gate to the closed and latched position from any position with a stationary start, and
- g) Have hinges arranged such that when the gate is lifted up or pulled down:
 - i) the latching device will not release, and
 - ii) the gate will not come off its hinges, and
 - iii) the ground clearance under the gate will not allow the passage of a 100 mm diameter sphere.

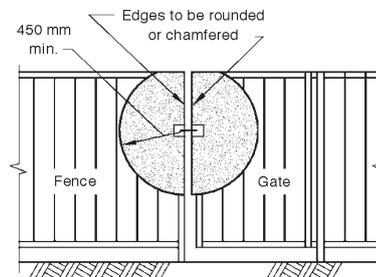
3.1.2 A latch on a gate in *pool* barrier shall:

- a) Automatically operate on the closing of the gate such that a manual operation is required to release it, and
- b) Be positioned so that it cannot be reached by a child from outside the *pool* area. Figure 3 gives acceptable means of preventing a child reaching the latch, and
- c) Not be capable of being released from outside the *pool* area by the insertion of a thin implement through any gaps.

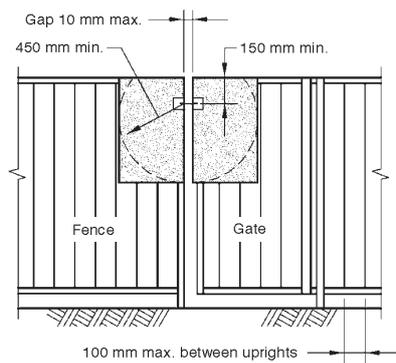
Figure 3: Acceptable means of protecting a latch as viewed from the pool side
Paragraph 3.1.2



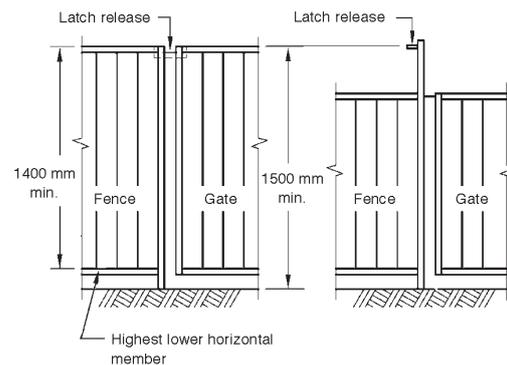
(a) Basic requirements



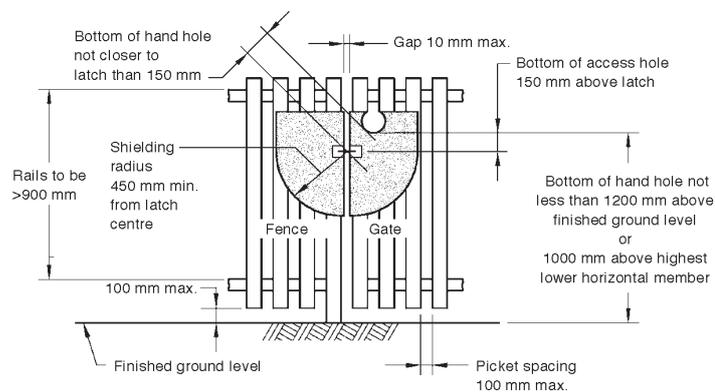
(b) Latch more than 150 mm below top of fence (shielding is centred on latch)



(c) Shield larger than minimum size



(d) Shield not required for latch or release located at 1500 mm or higher.



(e) Hand hole provided in fence or gate

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4.0 Building wall forming the pool barrier

4.1 Windows in the building wall

4.1.1 Where there is an window that can open above and within 2400 mm vertically of the *immediate pool area* the window shall have either:

- a) The lower edge of the opening no less than 1000 mm above the floor inside the *building* with no projections underneath of more than 10 mm, or
- b) A restrictor limiting the size of the opening such that a 100 mm diameter sphere cannot pass through, or
- c) A permanently fixed screen over the opening that a 100 mm diameter sphere cannot pass through.

4.2 Doors in the building wall

4.2.1 Doors in a *building* wall that provide access into the *immediate pool area* shall be single leaf doors that are not more than 1000 mm in width. These doors shall be side hinged or sliding.

4.2.2 Doors in a *building* wall providing access into the *immediate pool area* shall have:

- a) Either a self-closing device or an audible alarm, and
- b) A self-latching device that automatically operates on the closing of the door and that must be released manually, and
- c) The release for the latching device located not less than 1500 mm above the inside floor, and
- d) A sign which shall be:
 - i) fixed adjacent to the inside door handle at a height between 1200 mm and 1500 mm stating: 'SWIMMING POOL. CLOSE THE DOOR.', and
 - ii) composed of black letters of minimum height 5 mm complying with Paragraphs 2.2 and 3.2.2 of F8/AS1.

Comment:

- a) Doors will usually require two-handed operation, one to release the high level latch and the other to operate the door handle lock set.
- b) Doors described in Paragraphs 4.2.1 and 4.2.2 enable the barrier to the pool to remain effective except when the doors are briefly used for access.
- c) Signs on pool doors are a requirement under Clause F8 'Signs', which does not apply to detached dwellings or to household units in multi-unit dwellings (such as apartment units). However, homeowners may choose to fit signs to their pool access doors as a reminder for visitors.

4.2.3 For hinged doors that open towards the pool, a self-closing device shall return the door to the closed and latched position from any position when the door is stationary. For all other doors, a self-closing device shall return the door to the closed and latched position when the door is stationary and 150 mm or further from the closed and latched position.

4.2.4 A door alarm shall:

- a) Produce an alarm tone of 75dBAL₁₀ when measured at a distance of 3000 mm that commences 7 seconds after the door's self-latching device is released, and
- b) Automatically return to a state of readiness when the door is closed and latched, and
- c) Have a low battery charge warning that may be visual or audible.

4.2.5 Door alarms may be provided with a deactivation switch placed not less than 1500 mm above floor level that silences the alarm for not more than 15 seconds.

Comment:

A deactivation switch can be useful when maintenance materials or pool furniture needs to be moved through a door.

F9/AS2 Covers for small heated pools

1.0 Scope

This Acceptable Solution applies to covers for *small heated pools* with a water surface area of 5 m² or less and with walls that are 760 mm above the adjacent floor or ground. To comply with this Acceptable Solution, a cover must be able to be readily returned to the closed position by an adult.

2.0 Small heated pools and covers

2.1 Pool walls

2.1.1 The top surface of the *pool* wall shall be at all points not less than 760 mm above the adjacent floor or ground and the *pool* wall shall be vertical or slope outwards at not more than 15° from vertical.

2.1.2 There shall be:

- a) No external objects or projections within 760 mm of the top edge that could assist climbing. Figure 1 provides the acceptable methods for evaluating this requirement when 'R760' is substituted for 'R1200', and
- b) No projections or indentations on the *pool* wall itself greater than 10 mm horizontally from the plane of the wall.

2.2 Strength of covers

2.2.1 Covers shall be capable of supporting a vertical point load of 200 N (20 kg) when imposed over an area of 120 mm diameter at the centre of the cover.

2.3 Top surface of cover

2.3.1 The top surface of a cover shall be *constructed* with a slope from the centre to the outside edges (to prevent water ponding on the cover).

2.4 Cover fastenings

2.4.1 Covers shall be held in place with straps fitted with lockable snap fasteners having a minimum width of 33 mm on their main body.

2.4.2 Fastenings using metal padlocks may be used instead of lockable snap fasteners.

Comment:

Security against unauthorised use by adults can be an issue with small heated pools in some locations so that padlocks can be a more practical means of securing a cover.

2.4.3 Hold-down straps and fasteners shall be capable of maintaining the cover in place so that there is no opening that a 100 mm sphere could pass through when a 100 N (10 kg) force is applied to the cover in any direction and at any location.

Comment:

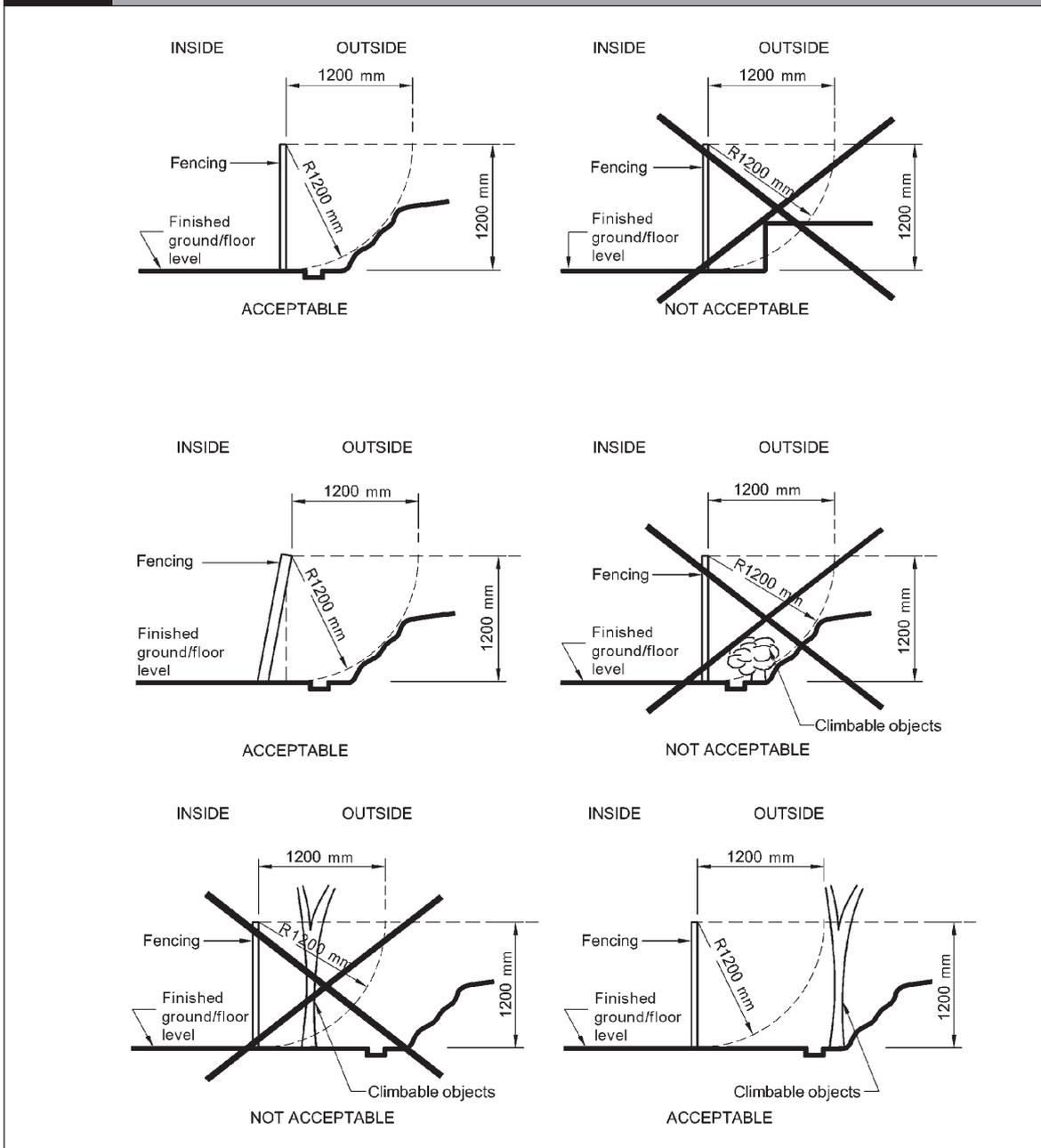
Covers and fasteners need regular maintenance, particularly if exposed to UV light which affects straps and plastic fasteners.

2.5 Signage

2.5.1 Signs complying with Paragraphs 2.2 and 3.2.2 of F8/AS1 containing the text below with black letters not less than 5 mm in height shall be fixed on two opposite sides of the cover:

'WARNING: This spa pool cover must be kept locked except when under adult supervision'.

Figure 1: Determining wall height of a small heated pool (Note: 'R760' is to be substituted for 'R1200') Paragraph 2.1.2



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