

Determination 2024/015

**Compliance with Building Code Clause F9.3.1 of part
of a swimming pool barrier constructed on a property
boundary and a pool cover**

19 Valhalla Drive, Richmond, Nelson

Summary

This determination considers whether a section of a residential pool barrier located on a property boundary complies with Building Code Clause F9.3.1. The determination looks at whether the barrier in combination with a pool cover can comply as an alternative solution.



The legislation discussed in this determination is contained in Appendix A. In this determination, unless otherwise stated, references to “sections” are to sections of the Building Act 2004 (“the Act”) and references to “clauses” are to clauses in Schedule 1 (“the Building Code”) of the Building Regulations 1992.

The Act and the Building Code are available at www.legislation.govt.nz. Information about the legislation, as well as past determinations, compliance documents (eg, Acceptable Solutions) and guidance issued by the Ministry, is available at www.building.govt.nz.

1. The matter to be determined

- 1.1. This is a determination made under due authorisation by me, Peta Hird, Principal Advisor Determinations, Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry.¹
- 1.2. The parties to the determination are:
 - 1.2.1. M Woodhouse, M R Woodhouse and C&F Trustees 2012 Limited, the owners of the property at 19 Valhalla Drive, Richmond, Nelson (“the owners”) who applied for this determination
 - 1.2.2. Tasman District Council (“the authority”), carrying out its duties as a territorial authority or building consent authority.
- 1.3. This determination arises from a failed inspection by the authority of a barrier to a residential pool.² The authority considers that the section of boundary fence forming part of the pool barrier does not comply with Clause F9. The owner contends that in combination with an automatic pool cover it is compliant.
- 1.4. The matter to be determined, under section 177(1)(a), is whether the section of the pool barrier constructed on the property boundary, in combination with a pool cover, complies with Building Code Clause F9.3.1.
- 1.5. The scope of the matter is limited to the compliance of the section of the boundary fence (“the boundary fence”) described in paragraphs 2.3 and 2.4 in conjunction with the use of a pool cover. I have not considered the compliance of any other part of the pool barrier or any other aspects of the Act or Building Code. I also do not consider the authority’s decisions to issue the building consent and any associated amendments and the code compliance certificate.
- 1.6. In considering this matter, I had regard to the purposes and principles of the Act, as set out in sections 3 and 4, particularly 3(a) and the performance standards for buildings to ensure that “people who use buildings can do so safely without

¹ The Building Act 2004, section 185(1)(a) provides the Chief Executive of the Ministry with the power to make determinations.

² Section 162D requires inspections of residential pools at least once every three years to ensure ongoing compliance of pool barriers to the extent required by section 162C.

endangering their health...". I also had regard to the purpose of the Special provisions for residential pools.³

2. Background and building work

- 2.1. The property is in a residential area on a downhill gently sloping section, with its lowest point towards the northern boundary, where a boundary fence is located (see Figure 1).
- 2.2. In December 2017 the owners applied to the authority for a building consent to "construct a new garage with changing room and swimming pool", which was issued on 29 August 2018.⁴ An amendment to the Building Consent was subsequently issued on 30 November 2018 involving alterations to the decks and fencing around the pool area. A code compliance certificate was issued on 13 August 2020.

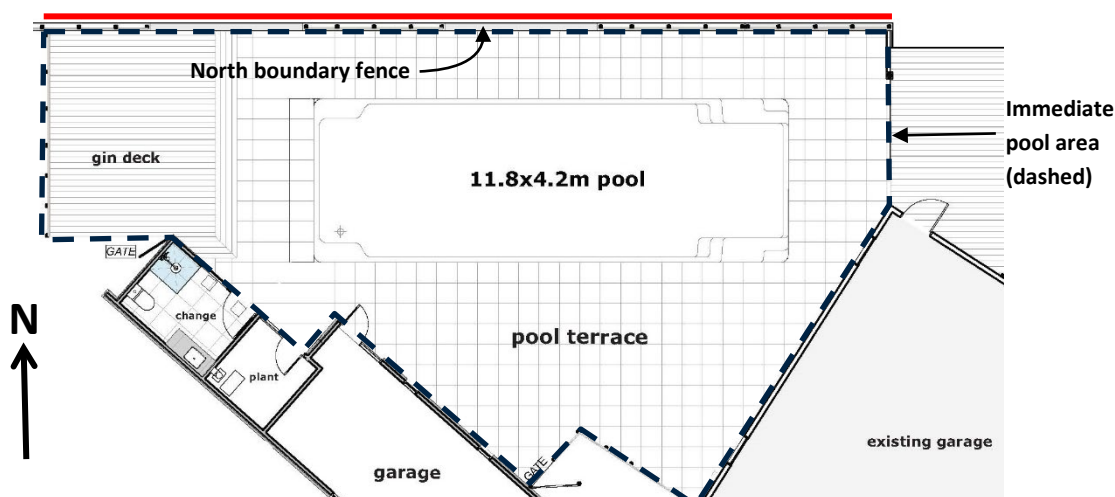


Figure 2: immediate pool area and location of boundary fence

- 2.3. The section of the boundary fence that forms the part of the pool barrier that is the subject of this determination is constructed from a mixture of materials. The base consists of 7.5mm fibre-cement board nailed to timber framing with a plaster finish, forming a wall approximately 160mm thick. Atop this plaster wall, 40mm x 40mm cedar rails are screw-fixed to 50mm x 50mm posts (see Figure 3). The gaps between slats measure 30mm.

³ Section 162A provides that the purpose of the provisions is to prevent drowning of, and injury to, young children by restricting unsupervised access to residential pools by children under five years of age.

⁴ BC180782

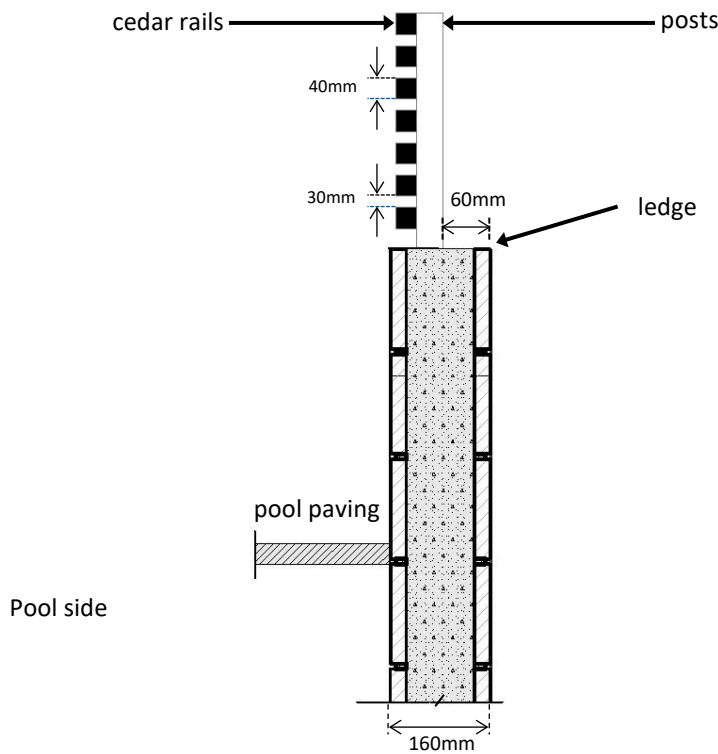


Figure 3: cross-section of the boundary fence

2.4. The total height of the boundary fence steps up from 1090mm at the east end to 1500mm at the west end (see Figures 4 and 5). The plaster wall varies in height from 290mm and 690mm above the pavers to 1090mm. The sections of cedar fencing atop the plaster fence vary from 400mm to 800mm (see Figure 4). The gin deck at the west end of the pool area is raised 200mm above the level of the pavers. The height of the boundary fence at this point is 1300mm above the deck.



Figure 4: the boundary fence

- 2.5. The pool has been fitted with a pool cover, which completely covers the surface area of the pool. It is made from a combination of vinyl and polyester mesh. It uses stainless steel cables running through a track installed under the lip of the pool edge that holds the cover in place. The pool cover has been installed with a “keyswitch with slip clutch”⁵, meaning that a control key is inserted and turned to cover and uncover the pool. The owners advised the pool cover “can be shown to meet ASTM F1346-91”.⁶
- 2.6. Sometime in 2022, the neighbouring property constructed a planter box on the against the boundary wall (see Figure 5).
- 2.7. The height of the top of the boundary fence to the level of the planter box on the neighbour’s also varies along its length. At its lowest point the top of the boundary fence is 1700mm above the planter, and the top of the plaster wall is 1300mm.



Figure 5: The boundary fence viewed from the neighbouring property, looking east

- 2.8. I note that although there has been a change on the neighbour’s side of the boundary fence with the addition of planter boxes, the boundary fence itself remains otherwise unaltered since the issuing of the Code Compliance Certificate.

⁵ The pool cover unit is customizable in terms of controls and features.

⁶ American Society for Testing and Materials ASTM F1346-91(2003) Standard Performance Specification for Safety Covers and Labelling requirements for all Covers for Swimming Pools, Spas and Hot Tubs. Performance requirements of this standard include static loading, perimeter deflection, surface drainage and opening tests.

2.9. On 11 April 2023 the authority carried out an inspection of the pool barrier, which failed on several aspects. The relevant aspects for the purpose of this determination are:

2.9.1. the boundary fence being less than 1.8m inside the pool area

2.9.2. no 900mm clear zone from the top of the pool barrier.

2.10. The owners subsequently applied to the Ministry for a determination.

3. Submissions

The owners

3.1. The owners' submissions are as follows:

3.1.1. No changes were made to the barrier since the issuing of the building consent and the subsequent code compliance certificate.

3.1.2. The compliance requirement in Clause F9.3.1 is to 'restrict access' to the pool area by unsupervised children, not to 'prevent access'. This means the requirement is not to construct a barrier to keep all young children out but to construct a barrier that "most children under the age of five years will be unable to get over to get over or through...".

3.1.3. As for compliance with the Acceptable Solution F9/AS1⁷ which requires barriers on a property boundary to be no less than 1800mm high from the ground level on the pool side, neither the F9/AS1 definitions nor the Building Code include a definition of 'ground level', but various dictionaries define the 'ground' as 'the solid surface of the earth'.

3.1.4. The boundary fence meets the 1800mm height requirements because the height requirement applies from the natural ground level, which is the surface of the earth, and this is the same on both sides of the boundary.⁸

3.1.5. If the height of the boundary fence is measured from the finished floor level, it would "require us to build a fence significantly exceeding the maximum permitted without neighbours (sic) consent".

3.1.6. The owner also contended that there are additional means for restricting access:

⁷ Acceptable Solution F9/AS1 *Means of restricting access to residential pools*

⁸ Section B Drawing 401 Rev K, dated 28 November 2018, shows sloping ground between the pool and north boundary fence with deck above.

- i. The site is elevated, and owners are able to monitor and supervise the surrounding property.
 - ii. The boundary fence measures more than 1800mm on the neighbour's side of the fence.
 - iii. There is a locked pool cover strong enough to carry an adult's weight, let alone a child under five.
- 3.2. Following the initial application, the Ministry requested further information from the owner in relation to the height of the boundary fence. The owners responded in an email dated 26 January 2024, stating they now conceded that "our existing boundary fence does not meet the requirements [of NZS 8500:2006⁹ or F9/AS1]" and now seek to establish compliance by other means.
- 3.3. The owners proposed the following:
 - 3.3.1. The pool barrier was deemed compliant when the building consent was issued, and when it was inspected upon completion and issued with a code compliance certificate.
 - 3.3.2. The pool cover achieves compliance with the performance requirements of the Building Code. New Zealand Standard 8500:2006¹⁰ states that an automatic pool cover that complies ASTM F1345-91 meets the requirements of the NZ standard.
 - 3.3.3. With respect to past determinations involving pool covers, while "reference to an automatic pool cover alone has not been acceptable as a means of compliance... our automatic pool cover, that complies with ASTM F1346-91, combined with the consented pool barrier fence [should] be accepted as an alternative means of compliance" [owners' emphasis]
- 3.4. At the Ministry's request a copy of the user manual for the pool cover was provided, which stated:

ASTM (American Society for Testing and Materials) Designation: F1346-91...
[product name] cover have been manufactured and are in full compliance with
ASTM 1346-91
...
[product name] meets ASTM F 1346-91 Class PCS when used as instructed.

The authority

- 3.5. The authority did not offer submissions as to how it considered the boundary fence did not comply in conjunction with an automatic pool cover, other than advising

⁹ NZS 8500:2006 *Safety barriers and Fences around Swimming pools, spas and hot tubs*

¹⁰ NZS 8500:2006, at 2.3.2(f)

that at the time the code compliance certificate was issued on 13 August 2020, the planter and horizontal wire plant support system were not in place.

- 3.6. The authority also provided a photo of the current aerial view, which shows the presence of a planter along the entire length of the boundary fence .

4. Discussion

- 4.1. The matter to be determined, is whether the section of the pool barrier constructed on the property boundary, in combination with a pool cover, complies with Building Code Clause F9.3.1.

Legislation

- 4.2. Section 17 of the Act provides that “all building work must comply with the building code to the extent required by this Act...”. Section 162C(1) of the Act states “every residential pool that is filled or partly filled with water must have physical barriers that restrict access to the pool by unsupervised children under 5 years of age.” Subsection (2) sets out various ways for pool barriers to comply:

(2) The means of restricting access referred to in subsection (1) must comply with the requirements of the building code—

(a) that are in force; or

(b) that were in force when the pool was constructed, erected, or installed (after 1 September 1987) and in respect of which a building consent, code compliance certificate, or certificate of acceptance was issued (in relation to the means of restricting access to the pool).

- 4.3. Given the date of construction, the relevant clause of the Building Code is clause F9 – *Means of restricting access to residential pools*, with the relevant performance clauses being F9.3.1 and F9.3.3.

Clause F9—Means of restricting access to residential pools

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).

...

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

4.4. I note that where pool barriers are constructed entirely within a pool owner's property, a pool owner can manage the ongoing compliance of the barrier. However, where part of the barrier is on a property boundary this is not the case. For example, an owner cannot prevent the owner of the neighbouring property from changing the ground level next to the barrier or building or placing structures or objects right up to the barrier. A barrier on a property boundary that was compliant when it was built may cease to be compliant through the actions of a neighbour, which are beyond the pool owner's control. The pool owner remains responsible (under section 162C(4)(a)) for the ongoing compliance of the barrier over the lifetime of the pool.

Compliance by way of the Acceptable Solution

4.5. One way of achieving compliance with Clause F9 is by way of the Acceptable Solution F9/AS1. Paragraph 2 relates to barriers surrounding the immediate pool area and has additional requirements for pool barriers that are located on a property boundary.¹¹ The relevant paragraphs are set out in appendix B.

The height of the boundary fence

4.7. The criteria in paragraph 2.2 of F9/AS1 for pool barriers on property boundaries address the fact that owners of residential pools cannot control what occurs on an adjacent property.

4.8. Paragraph 2.2.1 of F9/AS1 includes criteria on the pool side of the barrier to prevent young children from accessing a pool area from the neighbour's side of a pool barrier on a boundary. These include the requirement in paragraph 2.2.1(d) for the barrier to be constructed in a way that would restrict a young child from climbing down on the pool side of the barrier. I note this applies even if there appears to be no way for a young child to access the top of the barrier from the neighbouring property.

4.9. Paragraph 2.2.1(a) of F9/AS1 prescribes a height of 1800mm measured from the ground level on the pool side. The owner contests that as "ground level" is not defined in the Building Code nor F9/AS1, it must be taken to mean the surface of the earth as opposed to the "finished floor level".

4.10. In my view, if this were the case, the purpose of the prescribed height in F9/AS1 would be frustrated as an owner could build up the finished floor level as high as desired and a child that gains the top of the barrier from outside is then easily able

¹¹ F9/AS1 is silent as to the use of a pool cover, so I have only assessed the boundary fence using F9/AS1.

to enter the pool area. Therefore, I consider the term 'ground level' in paragraph 2.2.1(a) to mean the effective height of the fence, measuring from the top of the fence to, in this case, the level of the paving in the pool area.

- 4.11. The height of the boundary fence varies between 1090mm and 1500. Given the effective height of the barrier is less than 1800mm on the pool side, it does not meet paragraph 2.2.1(a).

The 900mm zone

- 4.12. One of the criteria in paragraph 2.2.1(d) is that the pool barrier on a property boundary should have a zone 900mm in height (no more than 150mm from the top) that is constructed in accordance with paragraphs 2.1.3 and 2.1.7 of the Acceptable Solution. Paragraph 2.1.3 states

... 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...

- 4.13. The timber portion of the boundary fence, with horizontal slats 30mm apart, extends down 400mm and 800mm at different sections along the fence (see Figures 3 and 6). This does not meet the criteria in paragraph 2.1.3 of F9/AS1.



Figure 6: Side view of boundary fence

- 4.14. The boundary fence was not constructed in accordance with F9/AS1 2.1.3 and 2.2.1(d) and so does not comply with clause F9 by way of the Acceptable Solution.

Compliance as an alternative solution

- 4.15. The owners' view is that the pool cover, which complies with ASTM F 1346-91, in conjunction with the boundary fence would comply with F9.3.1 as an alternative solution.
- 4.16. Clause F9 of the Building Code is performance-based, allowing flexibility in achieving compliance through various methods. Pool owners are not obligated to construct pool barriers in accordance with Acceptable Solution F9/AS1 and a building consent authority cannot reject a pool barrier design solely because it differs from the Acceptable Solution.¹² An 'alternative solution' can demonstrate compliance with the Building Code. In such cases, the building consent authority must assess the barrier directly against the performance criteria outlined in Clause F9.
- 4.17. When evaluating an alternative solution, considering the principles that underpin the prescriptive criteria in the relevant Acceptable Solution can be beneficial. A design that is an alternative solution may incorporate different features that achieve the same outcome.

Compliance of the boundary fence as an alternative solution

- 4.18. The design of compliant pool barriers that are on or near a property boundary take into account that the pool owner has no control over what happens on the adjacent property that impacts on the performance of the barrier.
- 4.19. In this instance the neighbours have built garden planters along the length of the northern boundary wall. Consequently, at its lowest point, the height of the top of boundary fence from the planter is 1700mm, and the top of the plaster wall is approximately 1300mm.
- 4.20. Figures 5 and 6 indicate that vegetation has been planted not far from the plaster wall, and there is a structure to support the young vegetation made up of metal stakes with rows of wire between. While the support structure is set back from the boundary fence, and so adds horizontal distance, in my opinion it may still assist a child in negotiating the barrier by providing a foothold that is above the level of the planter box.
- 4.21. The ledge at the top of the plaster wall and the 30mm gaps between the wooden slats can also be utilized as hand- and footholds, enabling a child to get to the top of the fence and navigate down the pool side.

¹² I note that the authority's inspection of 11 April 2023 appears to be an assessment of compliance against the Acceptable Solution F9/AS1, rather than the performance criteria in clause F9.

4.22. Having concluded the boundary fence on its own does not comply, I must now consider whether the boundary fence in combination with the pool cover cumulatively achieves the performance criteria set out in F9.3.1.

Compliance of the boundary fence and pool cover together

4.23. The owner's submission refers to NZS 8500:2006 and considers that the pool cover meets the requirements of the standard. Although this standard may be given some weight, it is not cited in F9/AS1 and has not been deemed to comply under section 19(1) of the Act.

4.24. Several previous determinations¹³ have found pool covers without any other physical barrier to the pool do not comply with Clause F9. This is because a person must take active steps of closing the pool cover to ensure compliance.

4.25. One of the key features of using a pool cover to restrict access to unsupervised young children is that its effectiveness depends on human behaviour. The use of a solution that must be repeatedly reinstated through the actions of a person to maintain compliance, is not consistent with the scheme of the Building Act and Building Code.¹⁴

4.26. In *Rowe v Marlborough District Council*¹⁵, which considered Determination 2020/026 on appeal, the court confirmed that "the Building Act "clearly only deals with 'building work'...the Building Act is not concerned with how [buildings] are used and does not regulate behaviour."

4.27. While that case concerned a pool cover without any other physical barrier, I consider the comment is relevant to the use of pool covers generally for the purpose of restricting access to the pool by unsupervised young children. Reliance on the behaviour of people to reinstate the cover is not adequate in terms of meeting the performance requirements of the Building Code in relation to restricting access to the pool by unsupervised young children.

4.28. For the pool cover in this case, the owner must take the positive step of always remembering to turn the key to close the pool cover whenever there is no supervising person in the pool area (even temporarily), whereas with a compliant boundary barrier this action is required. In my view, this means that the pool cover does not fully mitigate the failure of the barrier to achieve the performance criteria set out in F9.3.1 as compliance relies on the pool cover being closed at any point in time that a child may gain entry to the immediate pool area via the boundary fence.

4.29. For the reasons above, I conclude the boundary fence in conjunction with the pool cover does not comply with Clause F9 as an alternative solution.

¹³ Determinations 2018/005 and 2020/004.

¹⁴ Determination 2020/026 at 5.2.12.

¹⁵ *Rowe v Marlborough District Council* [2022] NZDC 18505, at [71]

Conclusion

- 4.30. The existing section of pool barrier constructed on the northern boundary, does not comply with the performance requirements in clause F9.3.1, even when considered in combination with the use of a pool cover.
- 4.31. It is not for me to say how the pool barrier could be made compliant. That is a matter for the owners to proposed and the authority to consider.

5. Decision

- 5.1. In accordance with section 188 of the Building Act 2004, I determine that the section of pool barrier constructed on the north boundary in combination with the use of the pool cover does not comply with Clause F9.3.1 of the Building Code.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 9 April 2024.

Peta Hird

Principal Advisor Determinations

APPENDIX A: Building Act 2004

3 Purposes

This Act has the following purposes:

- (a) to provide for the regulation of building work, the establishment of a licensing regime for building practitioners, and the setting of performance standards for buildings to ensure that—
 - (i) people who use buildings can do so safely and without endangering their health; and

...

4 Principles to be applied in performing functions or duties, or exercising powers, under this Act

...

- (2) In achieving the purpose of this Act, a person to whom this section applies must take into account the following principles that are relevant to the performance of functions or duties imposed, or the exercise of powers conferred, on that person by this Act:

...

- (b) the need to ensure that any harmful effect on human health resulting from the use of particular building methods or products or of a particular building design, or from building work, is prevented or minimised:
- (f) the importance of standards of building design and construction in achieving compliance with the building code:

162C Residential pools must have means of restricting access

- (1) Every residential pool that is filled or partly filled with water must have physical barriers that restrict access to the pool by unsupervised children under 5 years of age.
- (2) The means of restricting access referred to in subsection (1) must comply with the requirements of the building code—
 - (a) that are in force; or
 - (b) that were in force when the pool was constructed, erected, or installed (after 1 September 1987) and in respect of which a building consent, code compliance certificate, or certificate of acceptance was issued (in relation to the means of restricting access to the pool).
- (3) In the case of a small, heated pool, the means of restricting access referred to in subsection (1) need only restrict access to the pool when the pool is not in use.
- (4) The following persons must ensure compliance with this section:
 - (a) the owner of the pool:
 - (b) the pool operator:
 - (c) the owner of the land on which the pool is situated:

- (d) the occupier of the property in or on which the pool is situated:
- (e) if the pool is subject to a hire purchase agreement (as that term is defined in the Income Tax Act 2007), the purchaser of the pool:
- (f) if the pool is on premises that are not subject to a tenancy under the Residential Tenancies Act 1986 but the pool is subject to a lease or is part of premises subject to a lease, the lessee of the pool or the premises.

162D Periodic inspections of residential pools

- (1) Every territorial authority must ensure that the following residential pools within its jurisdiction are inspected at least once every 3 years, within 6 months before or after the pool's anniversary date, to determine whether the pool has barriers that comply with the requirements of section 162C:
 - (a) residential pools other than small, heated pools:
 - (b) small heated pools that have barriers that are not exempt, in terms of Schedule 1, from the requirement to have a building consent.
- (2) A territorial authority may accept a certificate of periodic inspection from an independently qualified pool inspector for the purpose of subsection (1) in lieu of carrying out an inspection under section 222.
- (3) If a territorial authority decides not to accept a certificate of periodic inspection from an independently qualified pool inspector under subsection (2), the territorial authority must, within 7 working days of making that decision, give notice to the chief executive of the decision and the reasons for the decision.
- (4) If an independently qualified pool inspector inspects a pool for the purpose of this section and decides that the pool does not have barriers that comply with the requirements of section 162C (subject to any waiver or modification granted under section 67A or 188), the inspector must, within 3 working days of the date of inspection, give written notice to the relevant territorial authority of the decision, attaching any information that the chief executive requires to accompany the notice.
- (5) In this section,—
 - anniversary date*, in relation to a pool, means—
 - (a) the date of issue of the code compliance certificate or the certificate of acceptance in respect of the pool; or
 - (b) in the case of a pool that did not require a building consent,—
 - (i) the date on which notice was given under section 7 of the Fencing of Swimming Pools Act 1987; or
 - (ii) if subparagraph (i) does not apply, the date on which the existence of the pool came to the knowledge of the territorial authority
 - certificate of periodic inspection* means a certificate that—
 - (a) is issued by an independently qualified pool inspector; and
 - (b) is in the prescribed form (if any); and
 - (c) certifies that a pool has barriers that comply with the requirements of section 162C (subject to any waiver or modification granted under section 67A or 188).

APPENDIX B: Extract from F9/AS1

2.1 Pool barriers

...

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 part of a pool barrier that are not themselves vertical shall be at least 900mm apart vertically to restrict climbing...

...

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.

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:

a) Be not less than 1800 mm high, measured from the ground level on the *pool* side, and

...

d) 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.