

## 1. Purpose

The purpose of this practice note is to provide guidance in respect to pools involving safety from falling.

## 2. Legislation

When considering fencing around swimming pools, Council must consider both the New Zealand Building Act 2004 (the Act) and the Building Code (the Code).

### New Zealand Building Code

There are two main code clauses that apply to residential pools; F4 Safety from Falling and F9 Means of Restricting Access to Residential Pools.

### F4 Safety from Falling

F4 requires that any structure from which a person can fall 1.0m or more must have a barrier affixed to it to prevent people from falling and injuring themselves.

When the top of the swimming pool wall is 1.0m or more from the adjacent ground, and there is a risk of a child or adult falling from or over it, the focus should be on reducing the likelihood of accidental fall.

## 3. Safety concerns

When the top of the pool wall is 1.2m or higher it will comply as a physical barrier that restrict access to the pool or the immediate pool area by unsupervised children under 5 years of age as per clause F9.3.2. However, as the top of the pool wall is over 1.0m from the adjacent ground and access to the top of the pool wall is possible either from the pool itself by climbing onto the wall or by reaching it by a floating device, it must also comply with F4.3.1 to prevent people from falling from the pool edge to the ground below.



## 4. Compliance path

When considering the compliance path to F4 with regards to infinity edge pools or those with a lip that can be readily walked along, the key questions are: -

- Is the fall height >1.2m?
- What is the width of the pool wall?
- Can a person pull themselves up out of the water and sit on the pool wall?
- Can a person on a floatation device be washed over the edge of the pool?
- Can a person within the immediate pool area (IPA) get access to and walk along the edge of the pool wall?

In the case of an infinity edge pool or a pool with a lip that **cannot** be readily walked along and where the fall height is less than or equal to 1.2m in order to comply with F9 to prevent children under 5 years of age accessing the pool, Council will consider a modification on the grounds that a barrier would be incompatible with the use of the pool.

However, a barrier or some other means of arresting the fall is required where the: -

- pool wall and subsequent fall height is >1.2m
- width of the pool wall is >200mm; or
- access via the IPA onto the wall is unrestricted

The following are scenarios and practical solutions that can be applied in order to reduce the risk of accidental fall or breaking the fall to safeguard against injury

Scenario	Fall height	Protection measures
Pool wall has a lip or edge <200mm and <b>cannot</b> be accessed from within the IPA	1.2m	apply for modification to clause F4.3.1
Pool wall has a lip or edge <200mm	>1.2m	Install a barrier to meet requirements of F4 or provide other means to break the fall “apply for a modification to clause F4.3.1”
Pool wall has a lip or edge >200mm	1.2m	Form minimum <i>30-degree slope</i> on pool edge (sloping inward) and “apply for a modification to clause F4.3.1” or install a barrier to meet requirements of F4
Pool wall has a lip or edge >200mm	>1.2m	Install a barrier to meet requirements of F4 or Provide other means to break the fall and “apply for a modification to clause F4.3.1”

As an alternative to installing a conventionally designed vertical barrier that complies with F4, designers can apply for a modification of the Building Code and install a fall arresting structure as in a horizontal net or a horizontal barrier to break the fall and safeguard against serious injury.

The horizontal net or horizontal barrier must be located no more than 1.2m below the pool edge and extend out no less than 1.2m horizontally. It is preferred that this barrier slope upwards to help retain a fallen person until they are assisted to safety. (See *Figure 1*)

Note: The total fall height to ground from a pool edge that is greater than 1.2m from ground level, and the associated maximum fall possible from the surface of the fall arrestor, will be assessed on a case by case basis as alternative solutions. It is likely that as the total height increases, that the horizontal arrestor length will increase in line with the risks associated with falling from that!

At ground level, the land should be close to level for at least 1.2m (case by case) beyond the extent of the horizontal arresting device. This is to allow for possible fall from that arrestor to ground, and preventing that fall from continuing e.g. by not landing on, and continuing to fall down natural ground slopes etc.

The horizontal net or horizontal barrier must be designed to comply with B1 for adequate strength to withstand the foreseeable impact of people falling onto it.

Under F9, there must be no climbable features or objects within 1.2m of the top of the pool barrier or net and no projections or indentations that would assist a child in climbing into the pool. Where a fall arresting net is closer than 1.2m to the ground or a climbable object, the net must be 1.2m from the top of the pool edge to maintain F9 compliance should the net be accessed by unsupervised children under the age of 5.”

In order to exercise any of the above options with the exception to installing a vertical barrier, an applicant **must apply** for a modification to clause F4.3.1 under s.67 of the Building Act 2004 and provide **justification** to show that the objective and functional requirements can still be met. The Council may apply conditions to a modification; each application will be considered on a case-by-case basis.

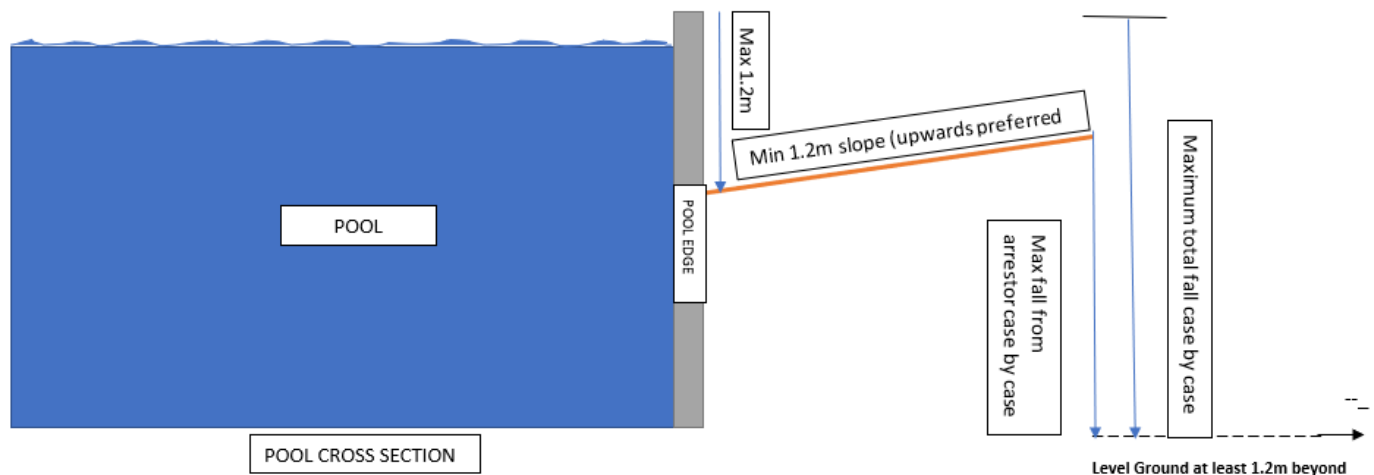


Figure 1.

## 5. References

New Zealand Building Act 2004 (section 67)  
 New Zealand Building Code clause F4 Safety from Falling and F4/AS1  
 New Zealand Building Code clause F9 restricting access to residential pools and F9/AS1

**Determination 2001/002** the Ministry agreed that where there is a fall of several metres installing a horizontal safety net, positioned to catch the person if they fell, would meet the intent of F4. In this instance the safety net must be incorporated into the design; located no more than 1.0m below the pool edge and extend out no less than 1.0m horizontally.

**Determination 2010/085** the Ministry accepted that a horizontal rail set below and on the outer edge of the pool would act as a horizontal barrier and meet the objectives of F4.