

22 April 2014

Ms Emma Lindsey
Coroners Registrar
Coroners Court of Victoria
Level 11, 222 Exhibition Street
MELBOURNE VIC 3000



Dear Ms Lindsey

Investigation into the death of Mohamed Abdelmegeed - Court Ref: COR 2010 004545

I refer to your letter dated 24 January 2014 requiring the Victorian Building Authority (VBA) to respond to the Coroner's recommendation in relation to the above-mentioned matter.

The recommendation requires the Building Commissioner to review the 'legislative framework for swimming pools with a view to undertake any necessary reforms to ensure that pool barriers for older pools are updated to the most recent standard for pool standards.'

The VBA has no authority to undertake any legislative reforms. The Department of Transport, Planning and Local Infrastructure (DTPLI) is the responsible government authority to initiate reform of the legislative framework to require existing swimming pool barriers be upgraded to the most recent standard. I understand that the DTPLI will provide a response to your recommendations.

The VBA will cooperate and work with the DTPLI should the DTPLI seek the VBA's assistance in respect to the Coroner's recommendations.

For your reference, I have set out below the current relevant legislative requirements -

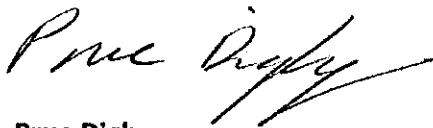
- A swimming pool is defined as '*any excavation or structure containing water to a depth greater than 300 mm and used primarily for swimming, wading, paddling or the like, including a bathing or wading pool, or spa pool.*'
- The installation of a swimming pool or spa and associated safety barriers requires the issue of a building permit before work commences.
- Any alteration or replacement of the pool barriers would also require a building permit.
- Building permits are issued by either a Municipal building surveyor or a private building surveyor.
- The relevant building surveyor (RBS) will assess the design documentation for compliance with the Regulations and appropriate Australian standards and then issue a building permit if satisfied the design will comply.

- The RBS is then required to undertake mandatory inspections to ensure the pool and barriers are constructed correctly.
- Ongoing maintenance of a pool and barrier does not require a building permit, however, the *Building Regulations 2006* (the Regulations) require the owner/occupier to ensure the barriers are in place and in working order.
- In 1997 all existing swimming pools and spas were required to be provided with safety barriers in accordance with the Regulations.
- Municipal Councils are responsible under section 212 of the *Building Act 1993* (the Act) for the administration and enforcement of the Regulations in their municipal district.
- If the Council is made aware of a non-compliant pool, the Municipal Building Surveyor (MBS) would inspect the property and issue an appropriate notice, if considered necessary, to gain compliance.

I also advise the Victorian Building Authority has a community brochure and a Practice Note for practitioners on the requirements for pools and barriers. These are constantly being updated as the need arises and I attach the latest versions for your information.

I trust that this information is of assistance to you and if you require any clarification please do not hesitate to contact Dennis Hogan on 9618 9345 or by email dennis.hogan@vba.vic.gov.au

Yours faithfully,



Prue Digby
Chief Executive Officer

About...

Swimming pools, spas and their safety barriers

There are matters of common interest raised with the Victorian Building Authority (VBA) from time-to-time about the building of swimming pools and spas and their safety barriers. To ensure consistent information and awareness, we provide this advice and information on common interest matters.

If you need more information to help you better understand any of these matters, please contact the VBA.

You can also read the VBA's technical information about swimming pools, spas and their safety barriers.

Introduction

The VBA is the regulator of building and plumbing and is therefore responsible for ensuring a safe built environment in this state, including swimming pools and spas and their safety barriers and fences.

Requirements

When is a safety barrier needed for a pool or spa?

In Victoria, swimming pools and spas with a water depth of more than 300mm (30cm)¹ must have safety barriers around them. This is to restrict access of young children to the pool area. Property owners and occupants are responsible for making sure pool barriers are maintained, repaired and kept in working order.

In addition, the pool's water reticulation and filtration system must minimise the risk of injury or trapping

¹ Applies to swimming pools and spas associated with Class 1, 2 and 3 buildings and Class 4 part of a building or a children's service

of any person using the pool and provide for safe operation of skimmer boxes and outlet systems.

The pool area on a property must be a separate, defined area with access not directly available from any other building including a dwelling (house) or outbuilding. The Australian building standard we use in Victoria defines it as "the area that contains the pool and is enclosed by a barrier".²

Generally, barriers are required for:

- In-ground pools and spas
- Above-ground pools and spa pools including inflatable pools holding more than 300mm (30cm) of water
- Indoor pools and spas
- Bathing and wading pools containing more than 300mm (30cm) of water
- Spas and swimming spas (including portable spas)

Barriers aren't required for:

- Bird baths
- Fountains
- Water supply/storage tanks
- Fish ponds
- Dams
- Baths used for personal hygiene and emptied after each use
- Pools or spas not containing a depth of water greater than 300mm (30cm)
- Inflatable swimming pools (typically toddler or wading pools) not containing a depth of water greater than 300mm (30cm)
- Spas inside a building used for personal hygiene (a spa bath in a bathroom that's emptied after each use)



² Refer to Australian Standard (AS) 1926.1

About... Swimming pools and spas and their safety barriers

Process

Swimming pool, spa and barrier building permits

You must have a building permit before you install a new pool or spa, start construction on a new pool, spa or barrier or make alterations to a pool, spa or barrier (if not maintenance related). A pool or spa building permit must include details of the barrier and be issued as one permit.

The property owner will need a registered building surveyor (private or municipal) to issue the building permit. Once engaged, the building surveyor is used for the life of the project, so we'll call them the Relevant Building Surveyor (RBS).

What has to be in the permit?

Pool designers need to include detailed drawings and specifications of the proposed pool and barrier (refer to [Part 3 of the Regulations](#)). They should not use general notes such as, "Pool barrier to be constructed in accordance with AS1926.1-2012, AS1926.2-2007 and AS1926.3-2010" that rely on the RBS or builder to guess the compliance level. This type of statement doesn't give enough information for the RBS to issue a building permit. Detailed drawings and specifications will be particular to the site where the swimming pool or spa and the barrier are to be constructed.

Because the RBS is the only person allowed to issue the building permit for that job, they have total discretion as to what documents they need to satisfy themselves that the work will comply with the standards and regulations we use in Victoria.³

Details of the water reticulation and filtration system also need to be included in the building permit. The pool designer needs to talk to the RBS to find out exactly what information and details they want included.

³ Building Act 1993, Building Regulations 2006 and the National Construction Code

As a guide, the minimum information needed is:

- Diagrams of the recirculation and filtration system showing connection of common lines.
- Detailed drawings of active main drain/outlet point covers.
- Section through the skimmer box.
- For spas, drawings showing the location of suction points (suction points can't be less than 600mm (60cm) apart).

Note: Outlet covers marked as tested in accordance with AS1926-2010 Part 3 satisfy the requirements for hair, body, or physical entrapment, and structural integrity will not require further design by a hydraulic specialist

The RBS can refuse to issue a building permit if enough information isn't provided.

What happens once the permit is issued?

Building work on new pools, spas and their barriers must start within 12 months of the date the building permit was issued⁴. However, the RBS who issued the permit can also write a specific date by which work must start. For example, the permit may have been issued on 17 April 2013, but the RBS can write "work must start by 17 April 2014".

A timeframe for when work must be completed must be included in the building permit. For example, "the construction of the swimming pool and associated barrier will be completed within six months of the start of the building work".

VBA recommends that the RBS places a condition on the building permit requiring the person in charge of building work (either the property owner or the builder) to notify them when work starts. The RBS can then nominate the date by which they want

⁴ See regulation 315(1)(a)(ii)

the work finished. Where a building permit has been issued for a project which includes a pool and barrier as well as other work (such as a new house or additions to a house on the one building permit), requirements for the pool and barrier to be completed within six months of construction starting on them still applies.

Example

Permit issue date: 01/01/2013

Commencement and completion

This building work must commence by: 01/01/2014

This building work must be completed by: 01/01/2015 in the case of the dwelling and within six months of construction commencing on the swimming pool and associated barrier.

Condition(s):

This permit is subject to the following conditions – The owner, builder or person in charge of building work must notify the RBS that construction of the swimming pool and associated barrier has commenced.

Extensions to permits

If the builder or property owner has started building work but don't believe they'll be able to finish within the set timeframe, they can seek an extension to the permit period – it is at the RBS's discretion⁵.

If an extension is being given, the RBS will need to consider if a temporary barrier should be put around the swimming pool or spa. The RBS should inspect the temporary fence after it has been installed. For more details on temporary pool barriers see page 3.

What happens if the permit lapses?

If a building permit lapses for a swimming pool and barrier, the RBS:

⁵ See regulation 315 (4)

About... Swimming pools and spas and their safety barriers

- will talk to the owner and registered builder to find out what stage the work has reached
- inspect the property
- decide on a course of action.

If work on the pool and barrier are completed when the permit lapses, the RBS will do a final inspection. At this stage, the RBS has a couple of options available. They can issue a certificate of final inspection, issue a minor works order if there are still some non-compliant aspects, or issue a building notice and building order on more significant non-compliant work. The latter two of these means a final certificate of inspection will not be issued at this time.

Where work has started but not been finished when the permit lapses, a new building permit (and building permit levy) will be required before any further work can be done on the site.

If the builder continues working without a new permit, the RBS can issue a stop-work order.

If the owner doesn't apply for a new building permit for the work immediately, the RBS can issue a building notice⁶.

If the building work is unsafe or dangerous, an emergency order⁷ may be issued. This would require the owner or registered builder to make the building work or the site safe – it can only be issued by the municipal building surveyor (the building surveyor of the council where the property is located).

Where work hasn't started when the permit lapses, the RBS should:

- take notes and photos for their file.
- send a letter to the owner and registered builder advising that the

permit has lapsed, a new permit and building permit levy will be required, and no work on the swimming pool and safety barrier may proceed until the new permit is issued.

Final inspection and completion

Once the building work is completed the person in charge of the building work must notify the RBS. The RBS will do a final inspection of the completed swimming pool or spa and safety barrier work. They need to be satisfied the work has been built according to the building permit. At the final inspection the RBS can ask for evidence of testing or ask for tests to be done to ensure the drainage system operates correctly, the barrier construction meets the structural design and that the gate or door operates properly (refer to the Technical version of this information sheet for more details).



Site safety

Site safety should always be a priority during construction. There are three specific safety issues that need to be addressed when building a pool or spa and barrier, but overall site safety specific to the location should always be a priority.

Before the permit is issued

Before the building permit is issued the RBS should specify any precautions the owner or registered builder has to take during construction⁸. This may include protection of any adjoining properties, members of the community and any dwelling occupants during the construction of the pool. You can read more about protection work in VBA practice note [2006-20](#) and [2007-58](#).

After excavation work

Once excavation work for the pool is

finished, there is a potential for ground water or rainwater to fill the hole. Any amount of water can be a drowning hazard.

Where building sites are accessible from the street (such as a public reserve, another allotment or occupied house), the RBS can⁹ stipulate safety precautions are put in place to prevent anyone not working on the site from gaining access. To do this the RBS can issue a direction¹⁰ to the builder or owner to do additional work to make the site safe, or issue a building order for minor work.

⁶ A building notice is issued when a person is not complying with the *Building Act 1993* and/or the *Building Regulations 2006*

⁷ Where the works are deemed a danger to life or property and immediate action must be taken

⁸ Consider the requirements of regulations 602, 603, 604 and 605

⁹ See regulation 604(3)

¹⁰ The direction is pursuant to Section 37 of the *Building Act 1993*

About... Swimming pools and spas and their safety barriers

Temporary barriers

During construction, if the new pool is filled with water more than 300mm (30cm) deep it is categorised as a functioning pool and must have a temporary safety barrier placed around it. The temporary barrier must remain in place until a permanent barrier is installed.

Should a temporary barrier be removed before a permanent barrier is installed, the RBS or the municipal building surveyor can use the enforcement process under the Building Act and Regulations through the use of [notices and orders](#).

A temporary barrier should be installed if:

- The pool is prefabricated and filled on installation (for example, a fiberglass pool).
- The pool is in-ground and not self-draining. If the pool won't be maintained during construction rainwater can accumulate in the bottom (for example, concrete block or concrete sprayed pools).
- The pool is in-ground and needs to be filled on installation (for example, vinyl lined pools).
- The property where the pool is being built includes a dwelling that is occupied.

All other types of pools or spas shouldn't be filled with water before the RBS certifies that the permanent barrier is compliant (for example, above ground pools, inflatable pools, wading pools, portable spas). The RBS can ask for drawings on the building permit showing what precautions will be taken during construction. They can include a condition in the permit that requires the owner or builder to erect a compliant temporary pool barrier. This is especially important if the property owner is engaging separate pool and fencing contractors.

Maintaining temporary barriers – whose responsibility is it?

Maintaining the barrier during construction depends on who (if anyone) is living at the property and who's responsible for the building site.

Property owner not living on site

When the builder responsible for the work has vacant possession¹¹, they must maintain the temporary pool barrier.

Property owner is living on site

If there is anyone living at the property during the construction work, the builder who is responsible for the construction of the pool is responsible for maintaining the temporary pool barrier while they're on site. The occupant is responsible for maintaining the temporary barrier when the builder isn't on the site.

Property owner is an owner-builder sub-contracting pool construction

Because an owner-builder is the contractor responsible for the work and site safety, they're responsible for installing and maintaining the temporary barrier until the permanent barrier is installed and the RBS has issued a certificate of final inspection.

Further information about water safety can be found at www.watersafety.vic.gov.au



If a temporary fence isn't installed, a building or emergency order can be issued by the RBS.



An example of a compliant temporary barrier that meets regulations

¹¹ Vacant possession is defined as no person living on the property

Swimming Pools and Spas and Safety

GENERAL REGULATORY REQUIREMENTS

Reference to the Building Code of Australia in this Practice Note means Volumes One and Two of the National Construction Code series. This Practice Note applies to swimming pools, spas and safety barriers constructed from 1 May 2013

(1) SUMMARY

All swimming pools and spas with a depth of water more than 300 mm (referred to as "pool" throughout this document) associated with Class 1, 2 and 3 buildings and a Class 4 part of a building or a children's service must have safety barriers to restrict access of children under the age of five to the pool area. It is the responsibility of owners and occupiers of a property to ensure that a pool and associated barriers are maintained and in good working order.

In addition, a water reticulation and filtration system which is provided to a pool must minimise the risk of entrapment or injury of people using the pool and provide for the safe operation of skimmer boxes and outlet systems.

On 1 May 2013 Volume Two of the BCA referenced AS1926.1–2012, AS1926.2–2007 and AS1926.3–2010. Parts 1 and 2 comprise the requirements for pool barriers while Part 3 relates to water recirculation and filtration systems. AS1926.1–2012 clarifies the requirements for boundary fencing which is part of the barrier

In addition, AS1926.1–2012 incorporates the requirement which has been applied through the BCA since 2010, which prohibits the use of child-resistant door sets in barriers for an outdoor pool.

Volume One of the BCA also references AS1926.1–2012, AS1926.2–2007 and AS1926.3–2010 for the construction of swimming pool safety barriers where a swimming pool is associated with a Class 2, Class 3, and Class 4 part.

Volume One of the BCA also contains a Victorian variation that retains the previous editions AS1926.1–1993 and AS1926.2–1995 in relation to a swimming pool associated with a children's service. Designers, building surveyors and other industry practitioners should obtain a copy of AS1926 as this Practice Note does not replace the Standard, but it clarifies some issues with pools and their associated barriers.

2) KEY DEFINITIONS

Some new key definitions are introduced by AS1926.1–2012 as outlined below:

Barrier height (replaces fencing height): The height of the barrier perpendicular to the finished ground level. Designers will need to consider any step, landing, finished ground level, retaining wall or other climbable object abutting (or adjacent to) a barrier so that the effective height of 1200 mm is not reduced when measured from the outside of the pool area.

Practice Note 05-2014

Boundary Barrier:

A dividing barrier between two adjoining properties.

Finished Ground Level:

Ground level or other permanent stable surface.

Non-climbable zone (NCZ):

A zone on a barrier and in the space adjacent to a barrier, running the full length of a barrier including a gate, that is intended to restrict climbing of the barrier by young children.

Pool area:

The area that contains the pool and is enclosed by a barrier.

Young child:

A child under the age of five years.

The definition of swimming pool is:

Swimming pool

Any excavation or structure containing water to a depth greater than 300 mm and used primarily for swimming, wading, paddling or the like, including a bathing or wading pool, or spa pool.

3) WHEN IS A BARRIER REQUIRED

Generally barriers are required for:

- In-ground pools and spa pools
- Above-ground, including inflatable pools holding more than 300 mm of water
- Indoor pools and spa pools
- Bathing and wading pools containing more than 300 mm of water
- Spas and swim spas (including portable spas)
- Jacuzzis
- Hot tubs.

Barriers are not required for structures not used principally for swimming, paddling or wading, such as:

- Bird baths
- Fountains
- Water supply/storage tanks
- Fish ponds

- Dams
- Baths used for personal hygiene and emptied after each use
- Pools or spas not containing a depth of water greater than 300 mm
- Inflatable swimming pools (typically toddler or wading pools) not containing a depth of water greater than 300 mm
- Spas inside a building used for personal hygiene, such as a spa bath in a bathroom or ensuite and emptied after each use.

4) BUILDING A SWIMMING POOL, SPA AND BARRIER REQUIRES A BUILDING PERMIT

The Building Act 1993 and the Building Regulations 2006 require that a building permit must be obtained when proposing to build or alter a pool and associated barrier.

An application for a building permit for a pool must include details of the barrier as part of the building permit for the pool. The building permit must be issued as one building permit for the barrier and pool and not as a staged building permit.

5) BUILDING PERMIT DOCUMENTATION FOR BARRIERS

When applying for a building permit, the designers of the pool will need to include detailed drawings and specifications of the proposed pool and barrier in accordance with Part 3 of the Regulations. (refer to Practice Note 2013-63).

It is not appropriate that designers only use general notes such as: "Pool barrier to be constructed in accordance with *AS1926.1-2012, AS1926.2-2007 and AS1926.3-2010*".

Such statements do not provide sufficient detail for the RBS to issue a building permit or for the builder to construct the barrier correctly. Designers should not rely on the RBS or the builder to "guess" the compliance level they are trying to achieve.

Practice Note 05-2014

6) BUILDING PERMIT DOCUMENTATION FOR WATER RETICULATION

AS1926.3-2010 Water recirculation and filtration systems was introduced into the BCA 2011 on 1 May 2011. The details of the recirculation and filtration system need to be provided as part of the application for a building permit.

As the only person who is allowed to issue the building permit, the RBS has discretion as to what documentation he/she needs to satisfy him/herself that the building work will comply with the Building Act, Building Regulations, BCA and the relevant standards.

As the type and design of pools can vary the RBS may require specific documentation from the applicant as part of a building permit application to show compliance with AS 1926.3:

The minimum documentation required includes:

- Schematics of the recirculation and filtration system showing connection of common lines;
- Detailed drawings of active main drain/outlet point covers;

(Note: Outlet covers marked as tested in accordance with Appendix A, satisfy the requirements for hair entrapment, body entrapment, physical entrapment, and structural integrity will not require further design by a hydraulic specialist)

- Section through the skimmer box;
- For spas, drawings showing the location of suction points to ensure they are not less than 600 mm apart;

The RBS may refuse to issue a building permit if not enough information is provided to ensure that the swimming pool or spa will comply with AS 1926.3 - 2010.

7) COMMENCEMENT AND COMPLETION DATES

Regulation 315 specifies the commencement and completion dates required to be nominated on the building permit for building work. In the

case of construction of a new pool and associated barrier, regulation 315(1)(a)(ii) requires the work must commence within 12 months of the date of issue of the building permit. In this instance the building permit can specify a date by when works must commence.

However, for completion of the building work to construct a pool and associated barrier, a specific date will not be known until construction of the pool or barrier commences in accordance with regulation 315(1)(b)(i).

Therefore the building permit must contain a statement such as: "The construction of the swimming pool and associated barrier must be completed within 6 months of construction commencing on the swimming pool and associated barrier."

In these circumstances the RBS should place a condition on the building permit requiring the owner, builder or person in charge of building work to notify the RBS that construction of the pool and associated barrier has commenced. The RBS is then in a position to nominate the date by which the work must be completed and notify the owner and builder of such date.

Where a building permit has been issued which includes a pool and barrier as well as other building work, the requirements for the pool and barrier to be completed within 6 months of construction commencing on the pool and barrier still apply.

Example Permit Wording

Where a building permit has been issued for a "dwelling, swimming pool and associated barrier", the following would apply:

"Permit issue date: 01/01/2013.

Commencement And Completion:
This building work must commence by:
01/01/2014

Practice Note 05-2014

This building work must be completed by: 01/01/2015 in the case of the dwelling and, within 6 months of construction commencing on the swimming pool and associated barrier in the case of the swimming pool and associated barrier.

Condition(s):

This permit is subject to the following conditions

– The owner, builder or person in charge of building work must notify the RBS that construction of the swimming pool and associated barrier has commenced.”

The RBS can, in accordance with regulation 315(4), extend the period within which any building work is required to be completed prior to the lapse of the permit if the relevant building surveyor considers that the extent of the building work warrants an extension. In considering a request for an extension to the completion date for a swimming pool and associated barrier, the RBS should consider the use of an appropriate and suitable temporary barrier if the swimming pool is an open excavation or has been filled with water. A temporary pool barrier erected prior to the installation of a permanent barrier as detailed on the building permit must comply with the height, opening, NCZ and impact requirements of AS1926.1 and 1926.2.

It is recommended that the RBS should inspect the temporary fence once it has been installed. The RBS could include the inspection of the temporary fence as one of the inspections required as part of the permit and also include a condition on the permit which requires the person in charge of installing the pool to notify the RBS when the temporary fence has been installed.

8) SITE SAFETY BEFORE AND DURING CONSTRUCTION

Site safety needs to be considered when constructing a pool in relation to the risk of a

person falling from a height or a young child drowning.

Three stages need to be considered when constructing a pool:

- Prior to the issue of the building permit; and
- After excavation work; and
- When the pool is filled with water to a depth greater than 300mm.

Prior to the issue of the building permit the RBS must consider the requirements of regulations 602, 603, 604 and 605 to determine any proposed precautions required to protect the adjoining property, the public and any dwelling occupants during the construction of the pool. (Refer to Practice Note 2006-20 Protection works process and Practice Note 2007-58 Protection of public).

Once construction has commenced, a pool excavation which can become partly filled with ground water or rainwater can potentially be dangerous, creating a potential drowning hazard, especially for young children.

Where such works are inadequately protected and are accessible from a street, public reserve, another allotment or an occupied dwelling, the RBS may consider using the power provided under regulation 604(3) to require safety precautions to ensure the safety of the public or a building occupant who is a young child and prevent them from gaining access. The RBS could do this by issuing a direction as to work pursuant to section 37 of the Act or a building order for minor work if the RBS considers that the work required is of a minor nature.

A swimming pool that is filled with water during construction to a depth of water greater than 300mm is functionally a swimming pool and therefore requires a barrier, which may be a temporary barrier. In instances where the pool may be filled with water to a depth greater than 300mm before providing a permanent barrier, the RBS must consider appropriate safety

Practice Note 05-2014

precautions. The RBS should require drawings showing safety precautions during construction and include a permit condition to provide a temporary pool barrier which complies with the relevant standards.

This will be important should the owner elect to engage separate pool and fencing contractors. Should a temporary barrier be removed before a compliant permanent barrier is erected, the RBS or the Municipal Building Surveyor (MBS) can utilise the enforcement process through the use of notices and orders.

As noted above, a temporary pool barrier must comply with AS 1926.1 and AS 1926.2 to restrict the access of young children. A temporary barrier must not provide or permit access to the pool area.

Instances where the pool should have a temporary pool barrier if a permanent barrier is not installed immediately are:

- prefabricated pools which are filled on installation (i.e. Fibreglass pool or the like),
- in situ in-ground pools which are not self-draining and will not be maintained during construction allowing rainwater to accumulate in the pool (i.e. concrete block or concrete sprayed pools or the like)
- in situ in-ground pools where the pool needs to be filled on installation (i.e. vinyl lined pools or the like)
- where the dwelling is occupied during construction.

For all other pools, the pool should not be filled with water prior to the RBS certifying that the permanent barrier complies with the Building Regulations. In cases where the pool will not be filled to a depth greater than 300mm during construction and the property is not occupied during construction, site fencing should be required to restrict access by the public at the property boundary.

Responsibility to maintain a temporary barrier

Regulation 1220 requires that the occupier of a property containing a pool which is functionally a pool and filled to a depth of water greater than 300mm must maintain the effectiveness of the barrier.

During construction work where the pool should have a temporary barrier, the responsibility of maintaining the barrier depends on the occupancy of the site and the responsibility for the building work:

- for the construction or renovation of a dwelling which includes the construction of a pool, when the builder has vacant possession, the builder who is responsible for the building work is responsible for maintaining the effectiveness of a temporary pool barrier;
- where the dwelling occupant is in residence during the construction work, the builder who is responsible for the installation/construction of the pool is responsible for maintaining the effectiveness of a temporary pool barrier. (i.e. Fibre glass pool installed by builder and pool is filled with water. The pool builder erects the temporary barrier and maintains it while he is on site.) The occupant is responsible for maintaining the effectiveness of the temporary barrier (after the builder has left the site.;
- where the owner is an owner builder who is sub-contracting the construction of the pool to a builder, the owner is responsible for maintaining the effectiveness of the temporary pool barrier until the permanent barrier is installed and the RBS issues a certificate of final inspection for the permanent pool barrier.

9) LAPSED PERMITS

Where a building permit for a swimming pool has lapsed, the RBS must take appropriate action to ensure any danger due to incomplete work is addressed. The RBS should inspect the property and engage with the owner and builder to determine what stage the building

Practice Note 05-2014

work has reached. This will help in determining an appropriate course of action for the RBS.

9.1 Building work complete

Where the swimming pool and the permanent barrier have been completed in accordance with the building permit, a final inspection can be undertaken. Any minor non-compliant work can be made to comply by the issue of a minor works order. If the building work fully complies, a certificate of final inspection can be issued.

9.2 Building work not complete

Where the swimming pool and the permanent barrier have not been completed, a new building permit and building permit levy will be required prior to any work continuing on the site. A stop work order may be required where the builder continues working. If the work is a danger, an emergency order may be required to remove the danger and can only be issued by the MBS. If the owner does not apply for a new building permit for the work promptly, a building notice may be issued.

9.3 Building work not commenced

Where work has not commenced, the RBS should take notes for their file and may include photos of the site verifying this. A letter should be sent to the owner and builder advising that the permit has lapsed, a new permit and building permit levy will be required and no work on the swimming pool and safety barrier may proceed.

The above is a guide only to suggest a process the RBS should follow where the permit has lapsed, because work did not commence within 12 months of the permit being issued or was not completed within 6 months after construction commenced. The RBS also has a duty to include the date a permit lapsed in the monthly levy report to the Building Commission.

Regulation 1220 requires that the occupier of an allotment or building containing a swimming pool or spa must:

10.1 maintain and ensure that the swimming pool barrier, door, gate lock, latch, catch, bolt or fly screen restricting access to the swimming pool or spa is maintained and operating effectively at all times; and

10.2 ensure that any gate or door forming part of a swimming pool or spa barrier or fence that provides access to the swimming pool or spa is in the closed position except when a person is in the act of entering or leaving the swimming pool or spa.

11 APPLYING THE BUILDING CODE OF AUSTRALIA AND AS1926.1 – 2012 TO NEW POOLS AND BARRIERS

11.1 Energy efficiency for swimming pools
BCA 2012 Volume One J7.3 and J7.4 and BCA 2012 Volume Two Part 3.12.5.7 introduced energy efficiency requirements for swimming pools and spas. The BCA requires that heating of pools other than a spa pool must be by a solar heater and cannot be boosted by electric resistance heating. Therefore, boosting of the swimming pool solar heater may be by a gas heater or heat pump or both.

Should solar heating not be able to be provided to a proposed swimming pool, an alternative solution may be formulated to meet the performance requirements JP1, JP2, JP3 or P2.6.2. or an application may be made to the Building Appeals Board to modify the regulations.

Heating of a spa pool that shares a reticulation system with a swimming pool can be heated by one or a combination of the following methods - a solar heater, a gas heater or a heat pump.

11.2 Child-resistant doorsets must not be used in barriers for outdoor pools

10 SWIMMING POOL AND SPA MAINTENANCE

Practice Note 05-2014

AS 1926 -2012 .1 clause 2.7 specifies that child-resistant doorsets can only be installed for access to indoor pools and the indoor part of an indoor/ outdoor pool.

Therefore, doors from a building to an outside pool must not be used to allow direct access to the pool area - a separate barrier between the building and the pool area is required. However, walls of buildings and child-resistant windows can still be used as part of the barrier.

11.3 Indoor pools

Designers need to be aware that for indoor pools the standard also provides that a door forming part of the barrier must not open towards the pool. The design drawings will need to clearly show details of the pool barrier, child-resistant doorsets and the swing direction of doors as part of the building permit application.

Pools are considered to be indoors when they are fully enclosed by walls on all sides and roofed, and access to the pool is from within the building. For indoor pools, a side-hung door within the dwelling may be used. The door forming part of a barrier for the indoor pool must swing away from the pool area when opening. It must also be self-closing and self-latching in accordance with the requirements of AS1926.1-2012 and have a NCZ 1 located to the outside of the door. A self-closing and self-latching sliding door may also be used.

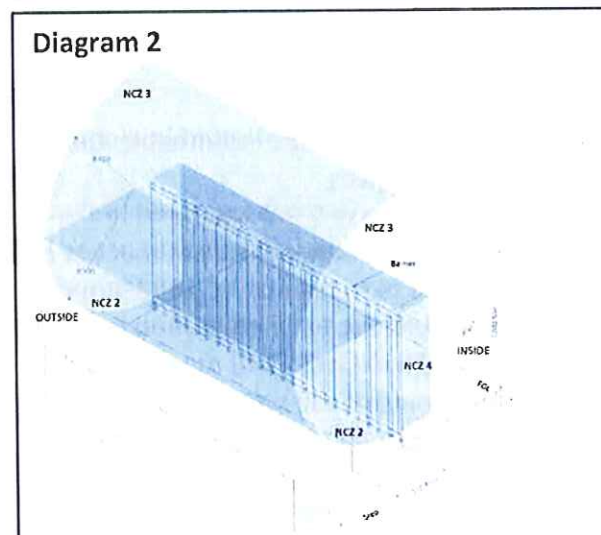
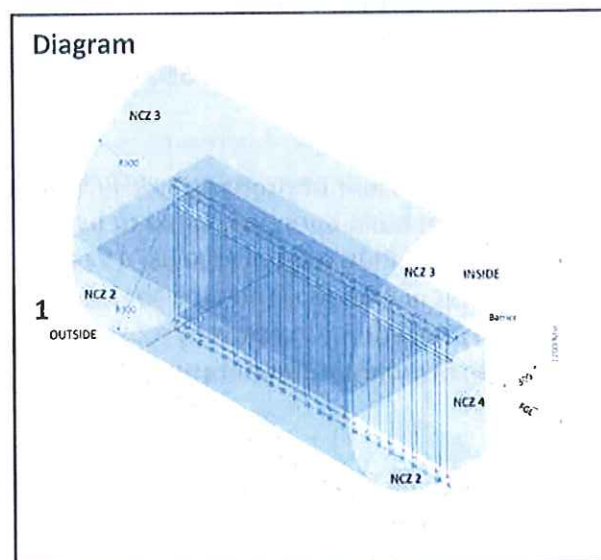
Pools under verandahs or within an enclosure that is open to the elements on any side (not including windows in walls) are considered to be outdoor pools, and child-resistant doorsets must not be used for access.

Electronic doors to indoor pool enclosures must even in the event of total power and battery failure be adequately self-closing and self-latching.

11.4 Non-climbable zones (NCZ)

AS1926.1-2012 has introduced five (5) "non-climbable zones" (NCZ). NCZ 1-4 apply to an

internal barrier where the barrier height is less than 1800 mm. NCZ 1 is a vertical plane on the outside face of the barrier. An internal barrier (a barrier other than a boundary barrier) that is 1800 mm or greater in height does not require NCZ and may be climbable on both sides. (diagram 1)



11.5 Steps abutting fencing

In certain circumstances a step, object or level change may be adjacent to barriers and may still be outside the NCZ. For instance, as NCZ can be taken from the top of the pool barrier at a height of 1200 mm in a 900 mm arc on the outside of the barrier, there is effectively 300 mm left below the non-climbable zone. It is important to interpret this correctly. The 1.2 m

Practice Note 05-2014

barrier height is measured from any point from the top of the barrier to the finished ground level on the outside of the barrier.

A step, object or level change that abuts the fence is considered to be the finished ground level and therefore the 1.2 m must be measured to this point. Clause 2.3.1 of the Standard requires that steps, objects or level changes must be set back a minimum of 500 mm from the barrier.) (Diagram 2)

11.6 Total enclosure of property not sufficient
Designers and building surveyors need to be aware of the definition of pool area. AS 1926.1-2012 defines pool area as: "The area that contains the pool and is enclosed by a barrier". Therefore, the whole allotment cannot be a pool area.

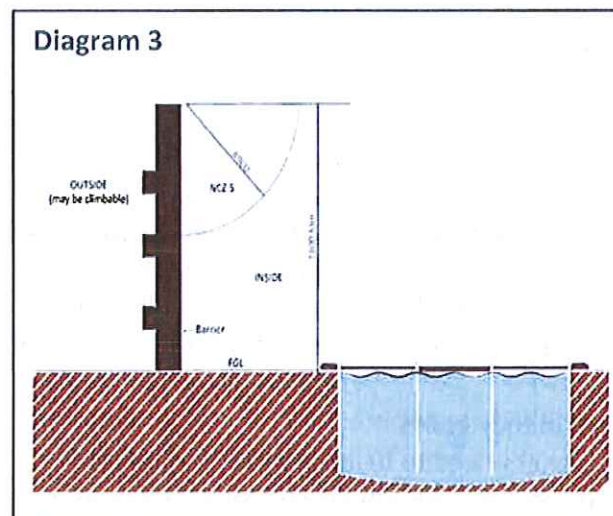
The pool area must be a separate, defined area on the allotment and access to it must not be directly available from any other building, including any dwelling and outbuilding on the allotment.

11.7 Adjoining properties – climbable elements and boundary fences

AS 1926 -2012 clause 2.2.4 has clarified the requirements for boundary fences that act as pool barriers. The barrier must be 1800 mm or greater in height above finished ground level on the inside and have NCZ (NCZ 5) measure from the top of the inside of the barrier. The outside of the barrier can be climbable. (Diagram 3)

The location of the NCZ inside the pool area means that it can be maintained by the pool owner or occupier. Attention also needs to be given to the intersection of a 1.2m high internal barrier with a boundary fence. Where the top rail or surface of the intersecting 1.2m internal barrier has a width of 50 mm or less, it may encroach into the NCZ provided it intersects the boundary fence at an angle in plan, of between 45° and 135° to the 1800 mm boundary barrier.

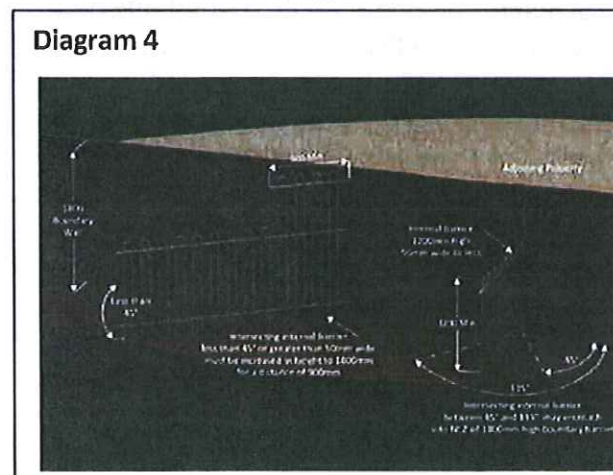
Where the top surface or rail of an intersecting



internal barrier exceeds 50 mm, it is a climbable object within the 900 mm NCZ on the boundary barrier.

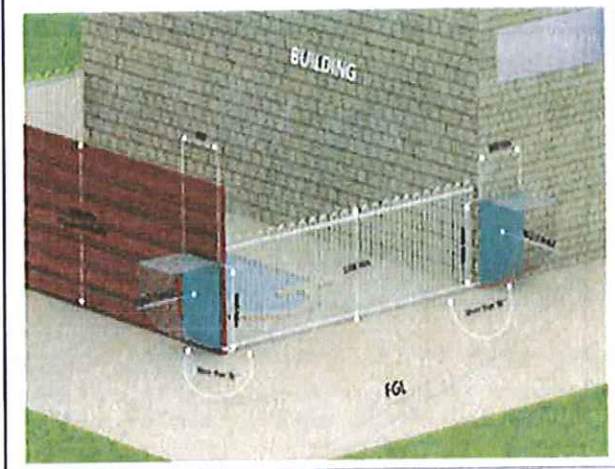
In this instance the height of the lower barrier must be increased to a minimum of 1800 mm and extend not less than 900 mm from the intersection of the boundary fence. (Diagram 4)

11.8 Internal intersecting Barriers



Where a barrier is less than 1800 mm in height and it intersects an 1800 mm high barrier at an angle greater than 90°, the NCZ 1 (the vertical plane on the outside face of a barrier) and NCZ 2 (the 900 mm radius down from the top of NCZ 1) on the lower barrier are required to extend a minimum of 900 mm beyond that intersection. (Diagram 5)

Diagram 5



11.9 Glass barriers

AS1926.1 now includes provisions (clause 2.3.3) for glass barriers and glass gates with top and bottom pivot style hinges. Glass in barriers must comply with the provisions of Australian Standard AS1288.

11.10 Garages and other Class 10a buildings forming part of a pool barrier

The use of automatic closing roller doors or bolting of rollers doors in the closed position of garages or other Class 10a buildings are not appropriate solutions for non-compliance with AS1926.1. The temptation for owners to “unbolt” the roller door is too great and is an unacceptable risk. AS 1926.1 2012 requires that the barrier must be a permanent structure. The definition of permanent structure is “A barrier or part of a barrier which cannot be removed without the use of tools”.

The door needs to be permanently fixed in the closed position through the appropriate use of fasteners that can only be removed by the use of a tool such as a screwdriver, spanner or drill. A side-hung door that would typically allow access to the garage from the yard must also not be used as part of the barrier. A separate barrier must be installed around a garage or shed door.

11.11 Gazebos, pool houses, and parts of Class 1 structures within the pool area or forming part of the barrier

Owners, designers and building surveyors will need to carefully consider the location of these structures. The risk is that a child may be hidden by or within a structure is considerable, reducing the ability to adequately supervise children within the pool area.

Where a structure is totally enclosed by the pool barrier, consideration of the use and design of the structure needs to be undertaken to determine compliance with the requirements of AS1926.1. AS 1926.1 - 2012 prohibits the use of a child resistant door set that opens into an outdoor pool area. A separate barrier must be provided that separates the door of the building from the pool area. Enclosed pool buildings that may contain kitchens, playrooms, change rooms, or entertainment rooms are habitable rooms that form part of the main building and may compromise the safety of children in the pool area by reducing or prohibiting visual supervision of the whole pool area.

An open-sided gazebo or other open shade structures supported by posts only are not considered to substantially reduce visibility within the pool and may be constructed, wholly or partially within the pool area without being separated by a barrier.

12) DESIGN AND CONSTRUCTION CONSIDERATIONS

12.1 Single footing for fence posts to maintain the gate and latch operation

A common problem with pool barriers is that the posts supporting the gate and the latches tend to spread over time. This has the effect of not allowing the gate to latch properly and in some circumstances, causes it to swing freely between the posts.

It is recommended that the footings for fence posts supporting the gate and latches are poured “monolithically”, or as one footing across the opening. This ensures that the posts

Practice Note 05-2014

are “connected”. As the ground moves, the posts should move together, reducing the likelihood of them “spreading”, and ensuring that the gate will continue to be self-latching.

12.2 Perforated material or mesh

A barrier within the property consisting of perforated or mesh materials with apertures of the mesh not greater than 13mm (measured horizontally across the widest part) must be a minimum of 1200 mm in height and shall have a NCZ of not less than 900 mm.

Barriers using material with apertures more than 13mm but not greater than 100mm (measured horizontally across the widest part) must have a minimum height of 1800mm. Any material with apertures greater than 100mm shall not be used. Barriers of perforated or mesh materials must be of sufficient height so that a 25kg weight supported at any point along the top of the barrier will not reduce the height to less than 1200 mm.

The bottom of the barrier must be installed in such a manner that the gap at the bottom must not exceed 100mm when applied with a vertical lift force of 100 N.

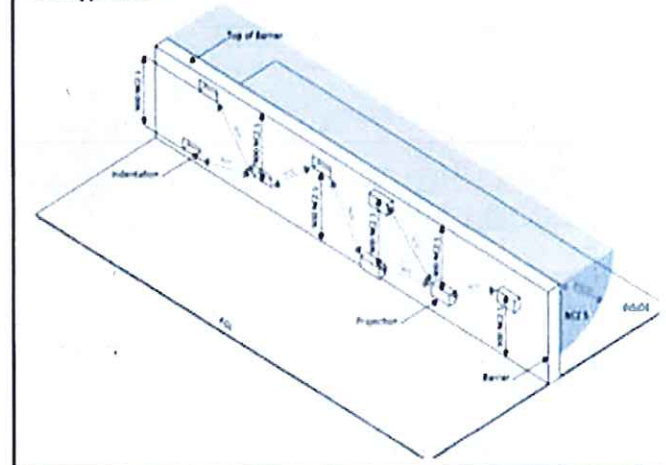
12.3 Projections and indentations

For projections and indentation within NCZ1, a horizontal surface with a depth greater than 10 mm shouldn't be made. Projections and or indentations with horizontal surfaces of a depth greater than 10 mm should not be less than 900 mm from the top of the barrier and less than 900 mm above the finished ground level. (Diagram 6)

12.4 Main drain/suction design – using alternatives to AS1926.3 for pools and spas
Part 3.9.4 of the BCA 2010 first referenced AS1926.3-2010 Water recirculation systems and was adopted by the BCA 2011 on 1 May 2011. Designers and builders of pools should be aware of the requirement for performance-based

testing of system elements to eliminate the risk of entrapment.

Diagram 6



In using AS1926.3-2010, pool designers need to provide the RBS with the design and test data from the manufacturer of the main drain cover, and the RBS will need to ensure that the main drain cover has been installed in accordance with the building permit documentation and AS1926-2010 where appropriate.

12.5 Testing and inspection prior to sign off

The RBS will need to satisfy themselves the pool or spa has been built in accordance with the documentation approved as part of the building permit. The RBS may also ask for the pool or spa to be tested to ensure that no pipes have been blocked during construction.

Pool and spa builders must satisfy themselves that no blockages have occurred in the suction pipes prior to handover to the client and operation of the pool or spa.

12.6 Connection of pool or spa pipework – not plumbing work

Although the designs of the recirculation and filtration systems are required to be provided to the RBS as part of the building permit application, the work to connect the circulation and filtration system to pump systems and filters etc is not plumbing work and does not need sign-off by a licensed plumber.