



PRELIMINARY IMPACT ASSESSMENT

CHANGES TO

**Australian Standard: Swimming Pool Safety
Part 3: Water Recirculation Systems**

FOR INCLUSION INTO

BUILDING CODE OF AUSTRALIA 2011

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INTRODUCTION

Standards Australia

Australian Standards are classed as living documents which reflect progress in science, technology and system. To maintain their currency, standards must be periodically reviewed.

The current "Preface" of Australian Standard S 1926.3 - 2003 *Swimming Pool Safety PART 3: Water Recirculation Systems* states: *"The stated requirements are semi prescriptive; however, the Committee is considering possible development of performance – based requirements and a suitable test method."*

SPASA NSW produced the initial Standards Australia 1926.3 - 2003 *Swimming Pool Safety PART 3: Water Recirculation Systems* Project Proposal on 27th October 2009 which sought changes from a prescriptive standard to a performance based standard. The Project Proposal received unanimous support, albeit there were concerns raised by the BCBA as to the detail around the "performance based" proposal.

SPASA NSW submitted the draft performance based detail to the CS034 Committee by email on the 19th February 2010. The CS-034 and CS059 Committee was invited to Standards Australia Offices on the 26th February 2010 to discuss the revised SPASA NSW Project Proposal. Standards Australia advised stakeholders that the objective of the meeting was to obtain agreement on the scope of the Project Proposal submitted by SPASA NSW. This Proposal identified issues with AS 1926 Part 3 specifically the prescriptiveness of Clauses of 5.2 and 5.3.

Building Code of Australia (BCA) Role

A Preliminary Impact Assessment (PIA) is an early-stage analysis of the impacts associated with a proposal to alter the Building Code of Australia (BCA) and its referenced documents. The PIA process requires that the 'problem' be identified, options to solve the problem are considered, the impacts of all options assessed, stakeholders consulted, and a recommendation put forward for decision.

As a key stakeholder within CS034 Committee, the BCA are involved and is privy to the concerns, information, representations and substantiation tabled by the committee.

Currently, there is enough historical data and concern from industry and health bodies in Australia and internationally that the Building Code Board, as regulator and as a CS034 Committee Member should reference the revised AS1926 Part 3 in the best interest of health and safety.

SPASA NSW's amendments to AS 1926 Part 3 has already seen the Standard Australia CS034 and CS059 Committees provide support for the revisions to the standard to be reference in the 2011 BCA.

1. Purpose of this Preliminary Impact Assessment

The purpose of this Preliminary Impact Assessment is to identify the key issues associated with the revisions to AS1926 Part 3 as referenced in the Building Code of Australia, identify the parties affected and the likely extent of the impact (costs and benefits).

Clause 5.2 of AS 1926.3 - 2003 *Swimming Pool Safety PART 3: Water Recirculation Systems* goes to some length in designing an outlet cover

The Standard is prescriptive. It prescribes the shape, size and design of *Outlet Point Covers*.

AS1926 Part 3 is considered outdated and does not allow for safer suction point covers to be utilised given technological advances and alternatives.

The current revisions to AS1926 Part 3 are to allow for a performance based outcome that will lead to using safer suction point covers.

2. Nature, Extent and Background to the Problem

Nature

Entrapment occurs when part of a person's body becomes attached to a drain as a result of the powerful suction of the water circulation system, or an arm or leg is inserted into or next to a drain with a missing or broken cover. Death or serious injury can occur when the force of the suction overpowers the person's ability to disengage from a drain or suction point and rise to the surface of the water. Often, the strength of an adult is still not enough to remove a child trapped by a pool or spa drainage system.

Incidents and deaths continue to occur, even though suppliers, builders and installers of main drains and suction covers follow the current Australian Standard 1926 Part 3.

The revision to AS 1926 Part 3 seeks to address and articulate methods to prevent all five recognized suction entrapment hazards:

1. Hair entrapment —hair knotted or snagged in an outlet cover.
2. Limb entrapment —a limb inserted or sucked into an outlet opening with a broken or missing cover, resulting in a mechanical bind or swelling.
3. Body suction entrapment —suction applied to a large portion of the body, resulting in entrapment.
4. Evisceration/disembowelment —suction applied directly to intestines through an unprotected sump or suction outlet with a missing or broken cover.
5. Mechanical entrapment —jewellery, swimsuit, hair decorations, finger or toe, etc. caught in the opening of an outlet or cover.

Although there are a variety of standards aimed at specific components such as suction outlet covers, emergency stop switches and safety vacuum release system devices, these cannot address all of the possible pool and spa entrapment hazards.

Extent

The Building Code Board of Australia has referenced Australian Standard 1926.3 - 2003 Swimming Pool Safety PART 3: Water Recirculation Systems in the Building Code of Australia making it a legal requirement for all pools and spas to comply with the standard.

AS1926 Part 3 is a standard which affects the entire swimming pool and spa industry, government regulators, medical practitioners and all Australians. Given the importance to Australians that our water-related activities should be safe we owe it to our Community to maintain an up-to-date standard, as envisioned through the revision.

This present project is considered an urgent Public Interest project in the interests of:

1. Users of Residential Pools & Spas
2. Users of Commercial Pools & Spas
3. Manufactures of Pool & Spa Equipment
4. Builders & Renovators
5. Pool & Spa Service Technicians
6. Injury Prevention Organisations
7. Health & Safety Organisations
8. Regulators
9. Government

It is in the interests of all these groups for AS1926 Part 3 be amended to fall in line with standards that are similar in other countries.

The risk of hair or body entrapment has seen both children and adult users of pools and/or spas injured and in more serious cases death. The current revisions will contribute to the reduction of risk leading to injury and death when the standard is changed from prescriptive to performance based.

Background to the problem

Entrapment incidents have become more common due to the shortcomings of the current prescriptive AS 1926 Part 3 together with misinterpretation and misunderstanding of related pool and spa standards and how they interact.

Builders and installers who construct swimming pools and/or spas or fit suction outlet covers as prescribed by AS1926 Part 3 do so whilst relying on a standard that they consider poses an unnecessary entrapment hazard.

The Industry as well as other stakeholders have been highlighting deficiencies with suction outlet covers as prescribed by the current standard for many years.

Australian Standard 1926 Part 3 was prepared by Committee CS-034 and approved on 31st January 2003 and published on 18th March 2003.

It is inexcusable that 7 years has passed since the standard was first published and that there has not been a single review of the standard in that time whilst injuries and deaths have continued to occur.

Justification

Whilst there is plenty of examples available on the internet regarding incidents of pool or spa entrapment the actual medical reporting of such incidents is poor.

The below data has been compiled via a number of sources and the material reveals the justification for AS1926 Part 3 to be changed:

REPORTED CIRCULATION/SUCTION ENTRAPMENTS ASSOCIATED WITH POOLS & SPAS

1. NSW State Coroners' Court - Published 16 February 2010

- Inquest touching the death of: - Shannon Abby- Rose Rankin

2. QLD Office of the State Coroner - Published 18th December 2006

- Inquest into the death of: - Amanda Helen Boyce

3. United States Consumer product Safety Commission - Published Unknown

- 15 incidents of **evisceration/disembowelment** were reported to CPSC between 1980 and 1996.
- 9 cases of **body entrapment**, including seven confirmed deaths, between January 1990 and May 1996.
- 30 reported incidents in spas and hot tubs since 1990, of which 10 resulted in drowning deaths, as a result of long hair becoming entangled in the drain grates.

4. United States Consumer product Safety Commission - Published 21st March 2008

- The “United States Consumer product Safety Commission” reported in a memorandum to the “Office of Hazard Identification and Reduction” the following data. The memorandum confirms there was a reported total of 74 circulation entrapments including 9 fatalities, 63 injuries and 2 cases which were not reported between 1999 – 2007.

5. Noel Mensforth, Chief Project Officer, Department of Planning SA

- A summary of 2 Deaths and 2 Injuries attributable to Pool or Spa Filtration Systems
- Newspaper clipping on the entrapment of Charlotte Mettam

6. Dr Ruth Barker, Queensland Injury Surveillance Unit and Queensland Safe Communities Support Centre

- A summary of 4 (probable) cases of injury due to people being caught in the suction point of spa, spa baths, and pools

3. Objective

The objective of this Preliminary Impact Assessment is to determine whether there is sufficient justification to support the revisions to AS1926 Part 3 so that they can be referenced in the 2011 version of the Building Code of Australia.

The goal of the BCA is to enable the achievement of nationally consistent, minimum necessary standards of relevant safety objectives as efficiently as possible.

The changes proposed to AS1926 Part 3 are relevant to the BCA in relation to safety and by supporting the amendment, will ensure that the goals of the BCA continue to be met and that minimum necessary standards are maintained.

4. What Options are Available?

Possible options are:

An Industry code is possible, however, unworkable due to current AS1926 Part 3 being referenced in the BCA. Moreover, industry is mindful of commercial considerations and the need to avoid potential unnecessary litigation by diverting from the referenced Australian Standard within the Building Code of Australia.

Legislation or Regulation AS 1926.3 - 2003 *Swimming Pool Safety PART 3: Water Recirculation Systems* is referenced with the Building Code of Australia (BCA) meaning that manufactures and builders are compelled to continue complying with a standard they believe is potentially unsafe. Removing the reference within the BCA is a possibility, however, it does not address the unsafe prescriptive requirement in AS 1926 Part 3 in regards to suction point covers. The standard needs to change in the first instance which will promote the change within the Building Code of Australia.

An Alternative Solution is one that can be demonstrated to meet the Performance Requirements of the BCA by other means. The purpose of an Alternative Solution is to allow for new ways of achieving the required levels of performance. The onus is on the building applicant to show that the Alternative Solution complies with the Performance Requirements.

Whilst alternative solutions may be viable and/or practical in the commercial arena or on larger projects it is not practical or viable alternative for small to medium operators who operate primarily in the residential sector to explore and invest in an alternative solution when they can simply follow the current standard

Current Status

Australian Standards are published by Standards Australia on an “as needs basis” and generally take a significant time to be put together and published.

The BCA recognises selected Australian Standards and other documents that provide acceptable information. Such recognition is achieved through the referencing of an Australian Standard within the BCA.

Currently, AS1926 Part 3 is reference in the BCA.

Clause 5.2 of AS 1926 Part 3 goes to some length in designing an outlet cover.

The Standard is prescriptive. It prescribes the shape, size and design of *Outlet Point Covers*.

Clause 5.3 of AS 1926 Part 3 refers to Active Main Drain Covers which also references design criteria in Clause 5.2.

The AS1926 Part 3 Committee considers the standard outdated as well as not allowing for safer suction point covers to be utilised given technological advances and alternatives.

The amendments to AS1926 Part 3 provide for a performance based outcome that will lead to using safer suction point covers. In addition, AS2610.1 and AS2610.2 will require minor changes to reflect changes in AS1926.3 to provide greater consistency.

A Standards Australia meeting of CS034 and CS059 Committee Members was held on 26th Feb 2010 to obtain agreement on the scope of the Project Proposal submitted by SPASA NSW. The SPASA NSW Proposal identified issues with AS 1926 Part 3 specifically the prescriptiveness of Clauses of 5.2 and 5.3.

The following resolutions were noted at the Meeting:

Resolution 1.	That stakeholders agreed to revise only AS 1926.3 and make consequential correction amendments to AS 2610.1 and AS 2610.2 with a view to flag to the relevant Standards committee to align 60335.2.60.
Resolution 2.	That stakeholders agree to aim to complete the revision of AS 1926.3 with the view to achieve ABCB adoption into BCA 2011.
Resolution 3.	Update the proposal, by SPASA NSW and all Stakeholders within the agreed timeline.

5. Impact Analysis

Costs in changing suction point covers

Changes to the Standard will require manufactures, builders, sellers as well as importers of equipment to use suction point covers which are performance based. Whilst there is some innovation already in this area the changes to the Standard will lead organisations and individuals to have a significant rethink and/or retool of existing products manufactured and/or available.

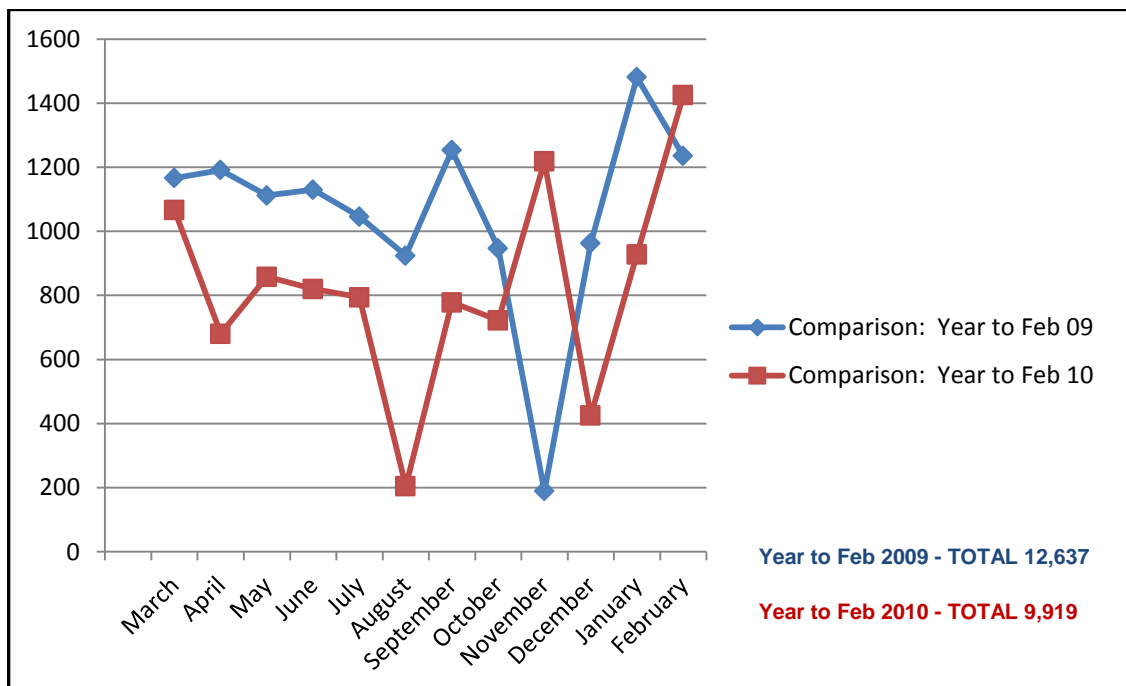
The industry has been prepared for some time for changes to AS1926.3 and sees the current proposal as inevitable.

The number of pools built in Australia over the last 24 months amounts to 22,556 (12,637 in 2009 and 9,919 in 2010). **Figure 1**

Industry data suggests that the split between Concrete and Fibreglass throughout Australia is approximately 50:50.

Figure 1

Comparison of Australian Pool Approvals Year to February 2010 with Year to February 2009



Data supplied by Reed Construction Data. Information is compiled via Council Development Applications throughout Australia.

Currently, the estimated cost of manufacturing the most popular Suction Point Covers range in price from \$2.00 to \$3.00. **Figure 2**

Total manufacturers cost of Suction Covers over the 2009 and 2010 for Concrete Pools is estimated at \$45,112.00 whilst the cost for Fibreglass Pools was \$67,668.00 over the same period.

Figure 2

MANUFACTURER, SUPPLIER and BUILDER RATES		AS PER CURRENT AUSTRALIAN STANDARD	
		CONCRETE SLIP IN	FIBREGLASS THREADED
Manufactures Cost of Suction Point Cover/s	*	\$ 2.00	\$ 3.00
Supplier List Price of Suction Point Cover/s	*	\$ 15.00	\$ 20.00
Builder Recommended Retail Price to End User	*	\$ 40.00	\$ 43.00

* Data sourced from SPASA Members

The increased cost of Suction Covers is estimated at 40%. **Figure 3**

Figure 3

MANUFACTURER, SUPPLIER and BUILDER RATES		AS PER REVISED AUSTRALIAN STANDARD	
		CONCRETE SLIP IN	FIBREGLASS THREADED
Manufactures Cost of Suction Point Cover/s	#	\$ 2.80	\$ 4.20
Supplier Sales List Price of Suction Point Cover/s	#	\$ 21.00	\$ 28.00
Builder Recommended Retail Price to End User	#	\$ 56.00	\$ 60.20

Data Sources from SPASA Members and represents an estimate of 40% increase in costs as a consequence of the revisions to the Australian Standard 1926.3

Education

There will be an obvious need to educate industry and relevant organisations and parties on revisions to AS1926 Part 3. This can be achieved via the following channels:

1. Standards Australia:	Standards Australia has an ongoing commitment to work with the Commonwealth Government to promote understanding and awareness of Australian Standards and their use through educational, training and promotional activities.
2. Building Code of Australia	The Building Code of Australia through referencing the revised AS1926 Part 3 will mean that manufactures, suppliers and builders will be legally obligated to comply with the changes. Moreover, the BCA has a number of training gateways which include; seminars, website and resource kits available to interested parties.
3. SPASA	SPASA is committed to promoting revisions of AS1926 Part 3 nationally to all sectors of industry via Sector, General and Chapter meetings.
4. Media	Given the prominence Water Safety has in the Australian psyche we can anticipate that there will be considerable Media interest that will provide free educational coverage

Public Health and Safety

The revision of the standard has a significant benefit in improving and maintaining safety within swimming pools and spas throughout Australia.

We can envision considerable publicity when the revised changes are adopted into the 2011 BCA. This will itself induce all of industry and regulatory bodies to monitor and ensure compliance.

Social and Community Impact

Benefits to Australians will accrue through the revision of AS1926 Part 3 which will bring Australian practice up to date with International practice. The most dramatic impact will be the improved safety of users in swimming pools and spas.

Environment Impact

The standard will have the effect of a safer environment with fewer accidents leading to injury and death.

Competition

Having a performance based standard rather than a prescriptive standards will provide Australians with a safer environment via a reduced risk of hair or body entrapment.

There is no obvious adverse competition risk if the revisions are adopted in the 2011 BCA.

The benefit of Pool and Spa safety would outweigh any commercial impact.

Economic Impact

The economic impact of the standard would be minimal in relation to present practices, or in relation to practices should the standard not proceed. That is, Outlet Point Covers would still be made and still be installed. However, without the change to the standard, Australians remain at significant risk whilst using swimming pools and spas.

The damage control that industry and regulators face when something goes wrong is not only an economic issue but a tragedy that may have been avoided.

Given the importance to Australians that our water-related activities should be safe we owe it to our Community to maintain an up-to-date standard, as envisioned through the revisions to AS1926 Part 3.

6. Consultation

Consultation has taken place with CS034 and CS059 Committee Members who have supported changes to the Standard.

The CS034 and CS059 Committee Members include:

1. Swimming Pool and Spa Association of New South Wales #
2. Swimming Pool and Spa Association of Western Australia #
3. Swimming Pool & Spa Association of Victoria #
4. NSW Government, Dept. Of Commerce
5. Australian Institute of Building Surveyors
6. Consumer Action Law Centre
7. Planning South Australia
8. Nothing changes If Nothing Changes
9. Australian Industry Group
10. Consumers Federation of Australia
11. Queensland Injury Prevention Council
12. Royal Life Saving Society Australia
13. Building Codes Queensland
14. Kidsafe National
15. Australian Building Codes Board #
16. National Research Centre for Environmental Toxicology
17. NSW Department of Health

Key Stakeholders

SPASA

SPASA is the peak body within each states pool and spa industry, representing thousands of Australian businesses. Members of SPASA include leading pool builders, manufacturers, suppliers, retailers, technical servicemen, subcontractors, installers, consultants and other allied trades, all of whom set themselves apart from the rest of the industry by setting standards of skill, workmanship and ethical business behaviour in the best interests of pool and spa owners.

SPASA in each state has been highlighting safety concerns relating to AS1926 Part 3 for many years through Forums, General, Sector and Chapter Meetings.

Every SPASA state has consulted and received overwhelming support from all their members regarding amendments to AS1926 Part 3.

Australian Building Codes Board

The ABCB is the peak national building regulatory body, and was established by an inter-government agreement signed by the Commonwealth, State and Territory Building Regulatory Ministers. It comprises senior officers responsible for building regulatory matters in each jurisdiction, in conjunction with industry and Local Government representatives.

The ABCB's mission, as stated in the inter-government agreement, is to address issues relating to health, safety, amenity and sustainability providing for efficiency in the design, construction and performance of buildings through the BCA and the development of effective regulatory systems.

7. Conclusion and Recommended Option

It is recommended that the BCA be amended to reflect the changes proposed by the Swimming Pool Safety Committee CS-034 and Spa Committee CS-059.

This preliminary impact assessment indicates that the revised AS1926 Part 3 standard has received support from all Committee Members which includes individuals, associations, organisations, interest groups and regulators.

Amendments to the standard provide an improvement to existing arrangements in line with the principles of good regulation. The ABCB should proceed with the inclusion of the amended standard in the 2011 BCA.

8. Implementation and Review

The amendments to AS1926 Part 3 have been achieved through consultation of the CS-034 and CS-059 committees.

The ABCB is constantly monitoring the application of the BCA and can make necessary amendments every year.

The CS034, CS059 Committee Members as well as the swimming pool & spa industry are eager for the revised standard to be reference in the 2011 BCA.

9. List of Attachments

Attachment A - - AS1926.3 Project Proposal dated 24th March 2010
 - *Addendum A - Proposed Changes AS 1926 - Part 3*
 - *Addendum B - Proposed Changes AS 2610 – Part 1*
 - *Addendum C - Proposed Changes AS 2610 – Part 2*

Attachment B - Coronial Inquest - Shannon Rankin

Attachment C - Coronial Inquest – Amanda Helen Boyce

Attachment D - Consumer Product Safety Commission - Memorandum

Attachment E - U.S Consumer Product Safety Commission – Guidelines

Attachment F - Summary of Deaths & Injuries attributable to Pool or Spa Systems

Attachment G - Newspaper clipping on the entrapment of Charlotte Mettam

Attachment H - QISU – Letter outlining incidents relating to suction point entrapment