Guide to Standards - Pools and Spas

Your snapshot of Australian Standards® and Certification

Table of Contents

Introduction

This guide provides information on Standards, Certification and other industry specific information that may be of interest to those within the public and private pools and spas industry including importers, manufacturers, managers and owners.

Disclaimer: The information contained in these pages is provided by way of indicative guidance only and SAI Global Limited does not represent that it is accurate or complete or suitable for any particular specific purposes. The onus remains with users to satisfy themselves of their requirements and needs for their own particular circumstances.

Building Contracts

Australian building contracts are covered by:

- **AS 2124, General conditions of contract - Annexures Series**
- **AS 4000, General conditions of contract Series**
- **AS 4300, General conditions of contract for design and construct Series**
- **AS 4902, General conditions of contract for design and construct Series**

The Australian Standard® contract for swimming pools and spas is **AS 2160.1-1998, Contract for the supply and construction of a swimming pool or spa – Concrete swimming pool or spa**.

Information on our range of options covering these areas is available from **www.saiglobal.com/Contracts**. In addition, if you require information on contractual terms as set out in a recognized Australian Standard® and only need to make minimal amendments in the annexures, you can refer to the **Contracts Catalog**.

Some of these **Australian Standards® Contracts** are available in fully editable format.
Please contact Copyright Services for more information on Licensing.
Phone: 131 242 and press 2
Email: **copyright@saiglobal.com**

Manufacturing and Installation

Manufacturers and installers of spa baths should conform to the requirements outlined in **AS 3861-1991, Spa baths** and **AS 2610.2-2007, Spa pools – Private spas**.

The SAI Global **StandardsMark** scheme can be used to certify conformance to **AS 3861-1991**. For more information on this scheme you can refer to the **SAI Global Product Certification Schemes** section of this guide or contact the **Product Certification Services Group** on the following:
Phone: +61 2 8206 6322
Email: **product@saiglobal.com**

Electrical Equipment

Electrical equipment used with spas should be installed by following the details that are included in **AS/NZS 3000:2007, Electrical installations (known as the Australian/New Zealand Wiring Rules)**. A table providing information on zoning and ingress protection levels for electrical equipment used with pools and spas is also included in this Standard.

Enclosures housing electrical equipment used with pools and spas should be designed to meet Ingress Protection (IP) tests. IP tests (protection against entry of solid foreign objects, dust, and

harmful quantities of water) for these types of products are included in **AS 60529-2004, Degrees of protection provided by enclosures (IP Code)**.

Electrical safety requirements for filtration equipment used with pools and spas are included in **AS/NZS 3136:2001, Approval and test specification – Electrical equipment for spa and swimming pools** and **AS/NZS 60335.2.60:2006, Household and similar electrical appliances - Safety - Particular requirements for whirlpool baths and whirlpool spas (IEC 60335-2-60 Ed 3.1, MOD)**.

Plugs, cords, socket outlets and transformers used with pools and spas should be tested to:

- **AS/NZS 3112:2004, Approval and test specification - Plugs and socket-outlets**
- **AS/NZS 3191:2008, Electric flexible cords**
- **AS/NZS 60227.5:2003, Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Flexible cables (cords)**
- **AS/NZS 61558.2.6:2009, Safety of power transformers, power supplies, reactors and similar products for supply voltages up to 1 100 V - Particular requirements for safety isolating transformers and power supply units incorporating safety isolating transformers (IEC 61558-2-6 Ed 2, MOD)**

The **Guide to Standards – Household Electrical Equipment** may also be of use for those working with electrical equipment.

Filtration Equipment (Skimmer Boxes)

Filtration equipment, outlet devices and skimmer boxes used with pools and spas should be designed and installed by following the information in **AS 2610.2-2007, Spa pools - Private spas** and **AS 1926.3-2010, Swimming pool safety – Water recirculation systems**. Diagrams illustrating recommended dimensions for skimmer boxes are also included in **AS 1926.3-2010, Swimming pool safety - water recirculation systems**. These Standards cover product safety requirements for fittings that are supplied with pools and spas.

Information on details for filtration systems, outlet devices and pumps used with large public pools and spas is included in **HB 241-2002, Water Management for Public Swimming Pools and Spas**.

Plumbing Fittings

Plumbing products and fittings with swimming pools and spas should be installed by following the information that is included in **AS/NZS 3500.1:2003, Plumbing and drainage – Water services** and **AS/NZS 3500.4:2003, Plumbing and drainage – Heated water services**. These Standards are also available as **AS/NZS 3500 (Set):2003, Plumbing and drainage Set**.

A list of Standards and technical specifications for certification of plumbing and drainage products that are generally intended for installation, replacement, repair, alteration and maintenance by authorised persons is included in **AS 5200.000-2006, Technical specification for plumbing and drainage products – Procedures for certification of plumbing and drainage products**.

The SAI Global **WaterMark** scheme can be used to certify plumbing fittings and products. For more information on this scheme you can refer to the **SAI Global Product Certification Schemes** section of this guide or contact the **Product Certification Services Group** on the following:
Phone: +61 2 8206 6322
Email: **product@saiglobal.com**

Building and Design

General information on design, manufacturing and safety requirements for spas is included in **AS 2610.2-2007, Spa pools – Private spas** and **AS 2610.1-2007, Spa pools – Public spas**.

AS 1100.301-2008, Technical drawing – Architectural drawing provides architects, builders, drafting officers and others in the building industry with a common method for the representation of buildings and their components to enable the preparation and unambiguous interpretation of architectural drawings.

Persons responsible for designing pools and spas should be familiar with limit state design engineering methods. A definition for this term is included in **AS ISO 8930-2005, General principles on reliability of structures – List of equivalent terms**. There are a number of general building and engineering Standards that are based on limit state design principles:

- **AS/NZS 1170.0:2002, Structural design actions – General principles**
- **AS/NZS 1170.1:2002, Structural design actions – Permanent, imposed and other actions**
- **AS/NZS 1170.2:2002, Structural design actions – Wind actions**
- **AS/NZS 1170.3:2003, Structural design actions – Snow and ice actions**
- **AS 1170.4-2007, Structural design actions – Earthquake actions in Australia**
- **AS 4055-2006, Wind loads for housing**
- **AS 5104-2005, General principles on the reliability of structures**
- **AS ISO 13822-2005, Basis for design of structures – Assessment of existing structures (ISO13822:2001, MOD)**
- **ISO 13823:2008, General principles on the design of structures for durability**
- **ISO 15928-1:2003, Houses – Description of performance – Part 1: Structural safety**
- **ISO 15928-2:2005, Houses – Description of performance – Part 2: Structural serviceability**
- **ISO 15928-3:2009, Houses – Description of performance – Part 3: Structural durability**

Food premises (kiosks and cafes) are commonly located in areas where public pools and spas are located. Information on building, construction and safety requirements for these types of premises is included in **AS 4674-2004, Construction and fit out of food premises**.

Concrete Structures

Concrete used with swimming pools should be tested to the requirements that are included in **AS 1379-2001, Specification and supply of concrete**.

General information on structures manufactured from limit state design engineering principles using different types of precast and reinforced concrete materials is included in **AS 3600-2009, Concrete structures**. This Standard also includes information on durability requirements for concrete exposed to water.

Pools and Spas manufactured from prestressed or reinforced concrete should follow the details that are described in **AS 3735-2001, Concrete structures for retaining liquids**.

Pools with a surface area no greater than 100m^2 and with a length no greater than 15m, can be designed by following the details in **AS 2783-1992, Use of reinforced concrete for small swimming pools**.

Reinforcing steels used with concrete should be manufactured to the test methods that are included in **AS/NZS 4671:2001, Steel reinforcing materials**.

Tilt-up panels used to construct pools and spas should be designed and erected by following the information that is included in **AS 3850-2003, Tilt-up concrete construction**.

Fibre-Reinforced Plastics

Information on design and installation requirements for pools and spas manufactured from fibre-reinforced plastic materials, with volumes exceeding 7500L and depths greater than 750mm is included in **AS/NZS 1838:1994, Swimming pools – Premoulded fibre-reinforced plastics – Design and fabrication**.

Steel Structures

Buildings and facilities using different grades of steel structures in areas where pools and spas are located may be designed by using the information on structural design and engineering requirements included in **AS/NZS 4600:2005, Cold-formed steel structures**.

Steels used to design buildings may need to be galvanized and information on recommended coating and durability requirements for different types of steels is described in **AS/NZS 2312:2002, Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings**.

Timber Structures

General information on design requirements for timber-framed structures is included in **AS 1720.1-2010, Timber structures – Design methods**.

Structures manufactured from different types of timbers (including pagolas, verandahs and decking) can be designed by following the details that are included in:

- **AS 1684.1-1999, Residential timber-framed construction – Design criteria**
- **AS 1684.2-2010, Residential timber-framed construction – Non-cyclonic areas**
- **AS 1684.3-2010, Residential timber-framed construction – Cyclonic areas**
- **AS 1684.4-2010, Residential timber-framed construction – Simplified – Non-cyclonic areas**

Information on determining wind speeds and resulting wind actions which may affect timber framed structures is described in **AS/NZS 1170.2:2011, Structural design actions – Wind actions** and **AS 4055-2006, Wind loads for housing**.

Aluminium Structures

The 'limit state' design Standard for aluminium structures is **AS/NZS 1664.1:1997, Aluminium structures – Limit state design**. The 'allowable stress' design Standard for aluminium structures is **AS/NZS 1664.2:1997, Aluminium structures – Allowable stress design**. Definitions for these terms are included in **HB 50-2004, Glossary of building terms**.

Corrosion protection requirements for aluminium structures can be determined by following the information that is included in **AS 1231-2000, Aluminium and aluminium alloys – Anodic oxidation coatings**.

Playground Equipment

Playground equipment (including water slides) used near or with pools and spas should be designed by meeting the requirements covered in the **AS 4685, Playground equipment Series**. These publications are also available as **AS 4685 (Set)-2004, Playground Equipment Safety Set**.

Detailed information on manufacturing and design for all types of slides is included in **AS 4685.3-2004, Playground equipment – Particular safety requirements and test methods for slides**. This Standard is based on criteria included in **AS 4685.1-2004, Playground equipment – General safety requirements and test methods**.

Information on impact requirements for surfaces used with or near playground equipment is covered in **AS/NZS 4422:1996, Playground surfacing – Specifications, requirements and test method**. Impact attenuation requirements for surfaces used with or near playground equipment can be determined by evaluating free-fall heights for playground equipment. Information on this topic is included in **AS 4685.1-2004**.

Persons responsible for inspecting, maintaining and operating playground equipment can follow the information included in **AS/NZS 4486.1:1997, Playgrounds and playground equipment – Development, installation, inspection, maintenance and operation**.

Fences for Pools and Spas

Barriers designed to prevent young children entering pools and spas should be manufactured by following the information that is included in **AS 1926.1-2007, Swimming pool safety – Safety barriers for swimming pools**. This Standard specifies requirements for the design, construction and performance of fences, gates, retaining walls, windows, door sets and balconies intended to form a barrier that will restrict the access of young children to swimming pools.

Information on the options for the location of safety barriers intended to restrict access to swimming pools is included in **AS 1926.2-2007, Swimming pool safety – Location of safety barriers for swimming pools**. This Standard may be regulated in different ways by State and Territory building regulators.

There is a list of **Regulators**, **Industry Bodies and Associations** and **Local Government Associations** located at the end of this guide.

Lighting

Information on recommended lighting levels for indoor and outdoor pools and spas is included in **AS 2560.2.5-2007, Sports lighting – Specific applications – Swimming pools**. This Standard is based on the recommendations that are included in **AS 2560.1-2002, Sport lighting – General principles**.

AS 4282-1997, Control for the obtrusive effects of outdoor lighting establishes guidelines for the control of obtrusive effects of outdoor lighting and gives recommended limits for the relevant lighting parameters to contain these effects within tolerable levels. Floodlights are commonly used to illuminate public swimming pools and spas and information on this can be found in **AS/NZS 60598.2.5:2002, Luminaries – Particular requirements – Floodlights (IEC 60598.2.5:1998, MOD)**. This Standard references the design details and test methods that are included in **AS/NZS 60598.1:2003, Luminaries – General requirements and tests**.

Underwater lights should be tested to the requirements that are included in **AS/NZS 60598.2.18:1998, Luminaries – Particular requirements – Luminaries for swimming pools and similar** applications. Enclosures supplied with underwater lights require high levels of protection against the ingress of water. Information on recommended ingress protection (IP) ratings for pool lights is included in **AS/NZS 3000:2007, Electrical installations (known as the Australian/New Zealand Wiring Rules)**. Ingress protection levels for underwater pool lights are also listed in **AS/NZS 60598.2.18:1998**.

For more information on electrical equipment used with pools and spas, please refer to the **Manufacturing and Installation - Electrical Equipment** section of this guide.

Slip Resistance Levels

Areas surrounding pools and spas should be manufactured from products with low levels of slip resistance. Information on recommended slip resistance levels for materials used in these areas is included in **HB 197:1999, An introductory guide to the slip resistance of pedestrian surface materials**.

Slip resistance levels for materials (such as tiles) can be measured by following the methods described in:

- **AS/NZS 4586:2004, Slip resistance classification of new pedestrian surface materials**
- **AS/NZS 4663:2004, Slip resistance measurement of existing pedestrian surfaces**

Pool Safety

Ladders and diving boards used with pools and spas should be designed to meet the requirements described in **AS 2818-1993, Guide to swimming pool safety**. General information on safety and maintenance requirements for pools and spas is also included in this Standard.

Flotation aids used to assist persons with swimming should be tested to the requirements covered in **AS 1900-2002, Flotation aids for water familiarization and swimming tuition**.

Water safety signs placed near pools and spas should follow the recommendations in:

- **AS/NZS 2416.1:2010, Water safety signs and beach safety flags – Specifications for water safety signs used in workplaces and public areas (ISO 20712-1:2008, MOD)**
- **AS/NZS 2416.3:2010, Water safety signs and beach safety flags – Guidance for use**

Water Quality Levels

Information on recommended chlorination levels for private pools and spas are included in **AS 3633-1989, Private swimming pools – Water quality**. A table listing properties for different types of water sanitizing products is also included in this Standard.

Information on recommended water quality requirements for public pools and spas is included in **HB 241-2002, Water Management for Public Pools and Spas**. Detailed information on types of equipment that may be used to determine water quality is also included in this Handbook.

Water quality levels can be also be assessed by following the types of tests that are included in the **AS 4276, Water microbiology Series**.

Storing Chemicals

Large quantities of corrosive substances may be stored by owners and operators of pools and spas. These types of dangerous goods should be stored by following the information that is included in **AS 3780-2008, The storage and handling of corrosive substances**.

There may also be circumstances where different classes of chemicals (dangerous goods) are stored in the one location. In these types of cases, the storage requirements described in **AS/NZS 3833:2007, The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers** can be followed.

More information on storage and handling of chemicals can be found in the **Guide to Standards – Dangerous Goods**.

Disability Access

Administrators, designers and owners of public pools and spas should ensure persons with disabilities have equal and unimpeded access to facilities. This can be achieved by following the information that is included in **AS 1428.1-2009, Design for access and mobility – General requirements for access – New building work**. This Standard includes diagrams illustrating required circulation spaces and building access (including the use of ramps, handrails and stairs) that are accessed by persons with disabilities.

Tactile ground surface indicators used to assist persons with visual impairment should be designed and located by following the information in **AS 1428.4.1-2009, Design for access and mobility – Means to assist the orientation of people with vision impairment – Tacticle ground surface indicators**.

Hydrotherapy Pools

Information on design, construction and operational requirements for hydrotherapy pools is included in **AS 3979-2006, Hydrotherapy pools**. This Standard includes appropriate water temperatures, chlorination and water quality levels.

Filtration devices used with hydrotherapy pools should conform to the details that are included in **AS 1926.3-2010, Swimming pool safety – Water recirculation systems**.

Demonstrating Compliance to Building Standards

Generally, there are three methods available to persons and organizations in the building industry wishing to demonstrate compliance to building Standards. These methods are summarized below.

Method 1 – Commissioning Assessments from Suitably Competent Persons

Suitably competent persons, organizations, industry bodies, industry associations and companies can be engaged to independently assess work undertaken in the building industry. This method of assessment should be used to demonstrate compliance to manufacturing Standards.

Method 2 - Type Testing (ISO Type 1 Scheme)

This is a commonly applied method that involves the commissioning of an independent and relevant accredited test report of a sample product. The type test is prepared by an accredited test facility that is then reviewed for compliance requirements of relevant Standards. The result of the process is often referred to as a 'Type Test Certificate' that may provide the user, or stakeholder with an enhanced level of confidence in a manufacturer's or suppliers claim of compliance.

Method 3 – Third Party Product Certification (ISO Type 5 Schemes)

Organizations and personnel wishing to provide a higher level of confidence to stakeholders in their claims of compliance may wish to engage the services of an independent third party to procure testing of an initial sample of a product, undertake an audit of the manufacturer's facilities, followed by ongoing batch and surveillance tests of products and audits at regular intervals.

More detailed information on product certification schemes is included in **HB 18.67-2005, Conformity assessment – Fundamentals of product certification**.

SAI Global Product Certification Schemes

SAI Global Limited is the largest provider of third party product certification and testing services within the Asia Pacific, and is accredited against a broad range of Australian and International Standards, via its wholly owned subsidiary SAI Global Certification Services Pty Limited. Further information can be sought by contacting us at **product@saiglobal.com**.

The **Product Certification Services Group** offers a wide range of certification schemes tailored for swimming pool and spas.

StandardsMark

StandardsMark™ is a **System 5 certification scheme** which is used to certify manufacturers of electrical equipment to specific product performance Standards. The '5 ticks' StandardsMark™ certification requirements are:

- Testing of sample products by independent accredited laboratories
- Verification of test reports
- Audit of the manufacturing site for initial and ongoing compliance.

WaterMark Scheme

Plumbing products and plumbing fittings used in Australia are required to be certified under the **Water Mark** scheme. Taps, shower heads and other types of plumbing products are also required to be certified under the WELS (Water Efficiency Labelling Scheme). The SAI Global **WaterMark** scheme can be used to certify manufacturers of plumbing products and plumbing fittings under both schemes.

Unlisted Product Certification

Unlisted Product Certification has been developed for plumbing products that are not currently covered by an existing Standard or Technical Specification, but require **WaterMark** certification; SAI Global offers clients a service for currently Unlisted Products.

This process is based on a Technical Specification that is developed by the client that addresses all relevant design, performance, installation, operation and maintenance aspects of the product.

Electrical Type Test

Electrical Type Test certification is a **System 1 certification scheme**. This scheme is recognised as an 'External Approval Scheme' by the Minister of Fair Trading NSW. Through this scheme manufacturers can demonstrate product safety compliance as required by the Electrical Product Regulators in Australia and New Zealand. Under this scheme, the minimum requirements are:

- Testing of product samples by independent accredited laboratories
- Assessment of test reports.

IECEE CB Scheme

IECEE CB scheme is an international scheme for mutual recognition of product safety certification between participating countries. Developed by the Worldwide System for Conformity Testing and Certification of Electrical Equipment (IECEE), the CB scheme is the first truly international system for acceptance of test reports dealing with the safety of electrical and electronic products. The main objective is to facilitate trade by promoting harmonisation of the national Standards with international Standards and co-operation among product certifiers worldwide.

SAI Global is the accredited National Certification Body (NCB) for Australia and New Zealand. SAI Global also issues internationally recognised CB Certificates that exporters can use to gain local electrical approval in overseas countries.

Please contact the **Product Certification Services Group** for more detailed information on the above schemes.
Phone: +61 2 8206 6322
Email: **product@saiglobal.com**

Online Resources

Do you need online access to the Building Code of Australia and all the Australian Standards® referenced within it?
www.saiglobal.com/BCA

Do you need guidance on which Australian Standards® or parts thereof are referred to in legislation?
www.saiglobal.com/Newsletters

Would you like to be notified when Standards relevant to you are updated, amended or newly released?
www.saiglobal.com/SW

Do you need online access to the full text of your own customised selection of Australian Standards® as well as optional access to international Standards?
www.saiglobal.com/Select

Do you need to stay current on Australian Legislative, Regulatory and Compliance News?
www.saiglobal.com/compliance/regulatory-news/asiapac

Would you like to drive continued organizational success with results-focused training and professional development?
www.saiglobal.com/training

Industry Bodies and Associations

Swimming Australia
Website: **www.swimming.org.au**

Federation Internationale de Natation (FINA)
Website: **www.fina.org**

Royal Life Saving Society - Australia
Website: **www.royallifesaving.com.au**

Swimming Pool and Spa Association (SPASA)
Queensland
Website: **www.spasa.com.au**

New South Wales
Website: **www.spasa.org.au**

South Australia
Website: **www.spasaadelaide.com.au**

Victoria
Website: **www.spasavic.com.au**

Western Australia
Website: **www.spasawa.com.au**

Local Government Associations

Local Government and Shires Association of NSW
Website: **www.lgsa.org.au**

Municipal Association of Victoria (MAV)
Website: **www.mav.asn.au**

Local Government Association of Queensland (LGAQ)
Website: **www.lgaq.asn.au**

Local Government Association of South Australia (LGA)
Website: **www.lga.sa.gov.au**

Western Australia Local Government Association (WALGA)
Website: **www.walga.asn.au**

Local Government Association of Tasmania (LGAT)
Website: www.lgat.tas.gov.au/site/page.cfm

Regulators

Australian Building Codes Board (ABCB)
Website: www.abcb.gov.au

NSW Government
Planning & Infrastructure
Website: www.planning.nsw.gov.au

Division of Local Government, Department of Premier & Cabinet
Website: www.dlg.nsw.gov.au

Building Commission (Victoria)
Website: www.buildingcommission.com.au

State Government of Victoria
Department of Planning and Community Development
Website: www.dpcd.vic.gov.au

Government of South Australia
Department of Planning and Local Government - Planning in South Australia
Website: www.planning.sa.gov.au

Department of Planning and Local Government - Office for State/Local Government Relations
Website: www.localgovt.sa.gov.au

Government of Western Australia
Department of Regional Development and Lands
Website: www.rdl.wa.gov.au

Department of Local Government
Website: dlg.wa.gov.au

Queensland Government
Department of Local Government and Planning
Building Codes Queensland
Website: www.dlgp.qld.gov.au/our-services/building-codes-queensland-2.html

Tasmania Government

Department of Justice - Workplace Standards Tasmania

Website: **www.wst.tas.gov.au/industries/building**

Department of Premier and Cabinet – Local Government Division

Website: **www.dpac.tas.gov.au/divisions/lgd**

ACT Government

ACT Planning & Land Authority

Website: **www.actpla.act.gov.au**

Northern Territory Government

Department of Lands and Planning

Website: **www.dpi.nt.gov.au**

Department of Housing, Local Government and Regional Services

Website: **www.localgovernment.nt.gov.au**

Customer Service Contacts

Information Services Division

Standards & Technical Information Group

Within Australia: 131 242 (Press 1)

Outside Australia: +61 2 8206 6010 (Press 1)

Email: **sales@saiglobal.com**

Further Construction Materials and Building Standards

Assurance Services Division

Product Services Group

Within Australia: 1300 360 314

Outside Australia: +61 2 8206 6322

Email: **product@saiglobal.com**

Building Products Certification Services

Product Certification Key Documents