

## SECTION 2 - DESIGN AND CONSTRUCTION REQUIREMENTS

Aquatic facilities are complicated structures that need to be designed to provide patrons with maximum levels of safety. Aquatic facilities can be subject to relatively large forces, from a range of sources.

Fibre-reinforced plastic pools are mainly used for smaller aquatic facilities, due to the speed of installation, and the variety of designs now available. This type of structure is normally manufactured at industrial premises and transported to the site for installation.

Aquatic facilities can become harsh environments that impose unique requirements upon materials used for construction. Correct selection of materials is essential to ensure the longevity of a facility, and can assist with ongoing maintenance and care of a facility.

Designing and constructing aquatic facilities with appropriate surface finishes can contribute to the safe and hygienic operation of the premises. A suitable finish will assist staff to carry out effective maintenance, by enabling dirt and visible contaminants to be detected, and assist in safety, by allowing submerged patrons to be seen easily. The use of non-slip floor materials will reduce the risk of slip and fall injuries to patrons and staff.

Ensuring aquatic facility water bodies are designed with appropriate wall slopes, wall and floor junctions, access and egress points, and separation distances between shallow and deep facilities, ensures patrons can safely enter and exit facilities. Appropriate floor gradients ensure patrons do not inadvertently move from shallow sections of a facility to deep sections, where they may not be able to swim.

Eliminating entrapment zones in aquatic leisure equipment, and ensuring adequate water depths are provided for certain aquatic activities, can reduce the potential for serious injuries.

A given depth of water may appear to be deeper or shallower when viewed from the concourse. Depth markings and signage assists patrons to make informed decisions about their ability to swim in a facility, and whether it is safe to perform activities such as diving.

The concourse directly surrounding aquatic facilities may need to accommodate considerable amounts of water from a variety of sources. Depressions in the concourse can result in pooling of water, providing an environment conducive to the survival and growth of micro-organisms. Inadequate drainage can allow contaminated water to run back into the water body. Irregularities in the concourse surface may create slip and trip hazards.

Adequate ventilation is required in indoor facilities to maintain air quality. Ventilation systems must be able to adequately dilute the concentration of water vapour and by-products of the water treatment processes.

All wastewater produced from aquatic centres needs to be disposed of in an appropriate manner, to prevent the creation of health hazards.

Displaying safety signage and behaviour rules informs patrons of the hazards in facilities, and may improve patron conduct.

Some larger aquatic facilities are used for competitive events that are attended by a significant number of spectators. These facilities require spectator seating areas and stands that are designed and constructed to support patrons safely.

Adequate lighting ensures aquatic facilities used after the hours of darkness are provided with sufficient illumination levels, which assists patrons to engage in safe activities and allows supervisors to see persons in the water.

Providing aquatic facilities with adequate fencing and security has been found to be effective in minimising drowning incidents, especially those involving young children.

Community exposure to ultraviolet radiation can be reduced by creating shaded recreational spaces.

Aquatic facilities create harsh environments that produce special electrical hazards. It is essential for electrical equipment to be correctly installed, maintained in a safe condition and tested regularly.

## 2.1 GENERAL STRUCTURAL REQUIREMENTS

Aquatic facilities shall be structurally sound, and engineered to withstand all forces imposed by the design of the facility and its anticipated use.

## 2.2 FIBRE-REINFORCED PLASTIC POOLS

Pre-moulded fibre-reinforced plastic pools shall be designed, fabricated and installed in accordance with the following Australia New Zealand Standards:

- AS / NZS 1838 - 1994: Design and Fabrication.
- AS / NZS 1839 - 1994: Installation.

## 2.3 OTHER POOLS

### 2.3.1 Spa Pools

Spa pools shall comply with the provisions in Section 9 of this Code.

*[Section 2.3.1 amended 16 May 2011]*

### 2.3.2 Hydrotherapy Pools

In addition to the requirements of this Section, hydrotherapy pools shall comply with the provisions in Section 11 of this Code.

## 2.4 CONSTRUCTION MATERIALS

Aquatic facilities shall be constructed of materials that are non-toxic to humans under normal conditions of use, impervious, enduring, capable of withstanding design stresses, and provide a watertight structure.

## 2.5 SURFACE FINISHES - WATER BODIES

Aquatic facility water bodies shall be provided with surface finishes that comply with the requirements of this Section.

The walls and floors shall be smooth, impervious, durable, easily cleanable and continuous, with no cracks, joints or protrusions other than structural joints. Floor surfaces shall be slip resistant in accordance with Appendix 6 - Slip Resistance Performance and Testing.

The colour of wall and floor finishes shall be no darker than the colours listed in Appendix 1, as defined by AS 2700 - 1996: Colour standards for general purposes. This requirement does not apply to:

- Lane markings
- Safety markings
- Hand holds
- Copings
- Step edges

The walls and floors shall not incorporate designs that are shaped in a form that may be reasonably mistaken for a human form, or that may inhibit detection of submerged persons.

The colour requirements of this Section do not apply to:

- Spa pools with a surface area of less than 10m<sup>2</sup>, or;
- Spa pools with a surface area greater than 10m<sup>2</sup>, which have a maximum water depth of 800mm and providing that access, will be restricted to adult use only.

*[Section 2.5 Surface Finishes - Water Bodies amended 15 Sep 2008]*

## **2.6 USE OF SAND AND EARTH MATERIAL**

Clean sand, or similar material, if used in a beach pool, shall only be used over an impervious surface. The sand shall be specifically produced for use in such an environment, and used in such a manner as to not adversely affect the proper filtration, water treatment, maintenance, safety, sanitation, water clarity and operation of the overall aquatic facility. Positive up-flow circulation of water through the sand shall be provided at all times.

## **2.7 OBSTRUCTION AND ENTRAPMENT**

Aquatic facility water bodies shall not be designed or constructed with obstructions that can cause patrons to become trapped or injured. Examples include wedge or pinch-type openings and rigid cantilevered protrusions.

All protruding edges and corners of facilities shall be rounded. Fixtures and fittings in the walls and floors of the water body, shall be fitted flush and have no sharp and protruding edges.

## **2.8 WALL SLOPES**

### **2.8.1 Prefabricated Pools**

Prefabricated pool walls shall not slope towards the pool by more than 11° for at least 75% of the depth of the pool, at any point along its perimeter. Any projections such as safety ledges shall be confined within the 11° angle from the top of the pool wall, and shall not project outwards greater than 600mm.

### **2.8.2 Non-Prefabricated Pools**

Non-prefabricated pool walls shall be vertical for at least 75% of the depth of the pool, at any point along its perimeter. Any projections such as safety ledges shall be confined within the 11° angle from the top of the pool wall, and shall not project outwards greater than 600mm.

### **2.8.3 Diving Bowls**

The wall slopes for diving pools, or diving bowls, shall comply with FINA design requirements.

## **2.9 RADIUS OF WALL AND FLOOR JUNCTIONS**

Where a radius is required, the wall-to-floor junction radius in aquatic facility water bodies shall be coved and easily able to be cleaned.

## **2.10 FLOOR GRADIENTS**

An aquatic facility water body of less than 12.5 metres in length shall have a pool floor with an even gradient so that there is no sudden increase in depth.

An aquatic facility water body of 12.5 metres or more in length shall have pool floor slopes that do not exceed 1:15, where the water depth is less than 1.75 metres.

Changes within the floor gradient at a water depth greater than 1.8m shall be highlighted with a contrasting colour, such as contrast tiles or painted lines.

## **2.11 MINIMUM WATER DEPTHS**

Aquatic facilities shall be designed and constructed so that water depths are appropriate for the expected usage of the facility.

Facilities should comply with Guideline FD1.01 - *Design of Pool Tank - 1996* of the Pool Safety Guidelines.

The depth of spa pools shall comply with the requirements of Section 9 of this Code.

Water depths in areas surrounding starting platforms shall comply with the requirements of 2.14 Starting Platforms within this section of the Code.

## 2.12 DEPTH MARKINGS

### 2.12.1 General Requirements

Depth markings of a permanent nature, and colour contrasting to the background, shall be installed around aquatic facilities water bodies at intervals not exceeding 7.5 metres, such that they are readily visible to persons entering the water body.

### 2.12.2 Location

Depth markings shall indicate maximum and minimum water depths and designate water depths at all major deviations in shape for irregularly shaped water bodies. All bodies of water, where there is a change in floor gradient shall have a pictorial sign displayed, to indicate a change in the floor depth.

Depth markings shall be located close as practicable to the corners of all square/rectangular shaped water bodies, near to all designated entry points and shall not be located directly over stair/step entries.

Depth markings shall be displayed around all horizontal or outside vertical aquatic facility water body surfaces, which may enable patron access, comprising of one, or a combination of the concourse, coping deck, pool hob or header.

Depth markings shall also be displayed on the inside vertical water body surface clearly above the water line in corresponding locations to horizontal depth markers where possible. Markings are not required on the inside vertical face of the water body, where the water level is < 125mm below the concourse, coping deck or header.

### 2.12.3 Dimensions

Depth marking dimensions shall be:

- at least 90mm high when positioned in the horizontal plane;
- at least 90mm high, when positioned in the vertical plane.

The height-to-width ratio of each numeral/letter contained within a depth marking shall be 3:1.

### 2.12.4 Spa Pools

Depth Markings for Spa Pools shall comply with the provisions of Section 9 of this Code.

## 2.13 ACCESS AND EGRESS

### 2.13.1 General Requirements

Access into or egress from an aquatic facility water body shall consist of one or a combination of the following:

Stairs/steps, ladders, swim-outs, pool-seats, landings, ramps or beach entries.

Aquatic facility water bodies shall have a means of access/egress at the shallowest point, if the water depth exceeds 600mm. A means of egress shall be provided in the deepest point of the water body, if the water depth is 1.8m or greater. Where the water body is greater than 9 metres wide, a means of egress shall be provided on both sides of the water body at the deepest point.

Handrails shall be provided for ramps and each set of steps/stairs.

All surfaces for access/egress shall be slip resistant in accordance with Appendix 6 - Slip Resistance Performance and Testing. *[Section 2.13.1 - General Requirements amended 15 Sept 2008]*

### 2.13.2 Dimensions

Swim-outs, pool-seats and landings shall extend a maximum width of 600mm from the vertical pool wall at any given perpendicular point along the pool wall and shall be located at a maximum height of 500mm below the water level. The outer 50mm edge of the swim-out, pool-seat, or landing tread shall be finished in a contrasting colour.

Stairs/steps for water bodies less than 12.5m in length shall have a minimum horizontal tread depth of 200mm, and a maximum rise of 300mm, except for the bottom riser height to the floor, which may vary. The outer 25mm edge of the stair/step tread shall be finished in a contrasting colour.

Stairs/steps for water bodies 12.5m, or greater in length shall have a minimum horizontal tread depth of 300mm, and a maximum rise of 250mm. The outer 50mm edge of the stair tread shall be finished in a contrasting colour.

*[Section 2.13.2 amended 21 September 2009]*

### 2.13.3 Spa & Hydrotherapy Pools

Spas with a surface area of 10m<sup>2</sup> or greater shall have means of access and egress which comply with AS2610.1: 2007, Section 2.5.

Spas with surface areas of less than 10m<sup>2</sup> shall have means of access and egress which comply with AS2610.1: 2007, Section 2.19.2.

Hydrotherapy pools shall have means of access and egress as referenced in Section 11 of this Code to AS3979:1993.

*[Section 2.13.3 amended 16 May 2011]*

## 2.14 STARTING PLATFORMS

Starting Platforms shall be designed and constructed in accordance with clauses 5.1 and 5.2 of Guideline FD 1.24 - *Design of Starting Blocks - 2002* of the Pool Safety Guidelines. For the purposes of this section of the Code, provisions in the Guidelines incorporating the word "should" shall be construed as mandatory requirements.

## 2.15 VENTILATION

Indoor aquatic facilities shall be provided with mechanical ventilation systems. The systems shall have a minimum ventilation capacity as required by this Section. The capacity of the systems shall be calculated based on the following:

Occupancy:

- Deck and pool 3.5 m<sup>2</sup> per person.
- Spectator areas: 1.5 m<sup>2</sup> per person.

Ventilation requirements:

- 10 litres per second of outdoor air per person, *or*
- 10 litres per second per m<sup>2</sup> of total floor area including pools as determined by the design engineer.

## 2.16 LIGHTING

While in use, aquatic facilities shall be provided with sufficient lighting to enable every part of the facility, including the underwater area, to be observed, without interference from direct or reflected glare from the lighting sources.

Lighting requirements do not apply within fully enclosed waterslide flume sections.

The water surface of water bodies located within Group One and Group Two facilities used after sunset, shall be illuminated by overhead lighting to a minimum level of 80 lux, and to such a level that will allow a Secchi disc placed on the floor of the water body to be seen from the concourse. Refer to AS 3550.7-1993, (Waters) Part 7: The construction and use of the Secchi disc.

The water surface of water bodies located within Group Three and Group Four facilities used after sunset, shall be illuminated by overhead lighting to a minimum level of 30 lux, and to such a level that will allow a Secchi disc placed on the floor of the water body to be seen from the concourse.

Aquatic facility concourses shall be illuminated in compliance with the above requirements to a distance of 3 metres from the water body.

Indoor facilities shall be provided with lighting systems that can achieve the above illumination levels. All areas of waterslide facilities that are available to the public shall also comply with these requirements.

Lighting fixtures must be of a type and located so as they shall not cause glare to supervisory staff or patrons using the facility.

Diving pools and areas of combined facilities used for diving must be provided with lighting installations that comply with AS 2560.2.5 - 1994: Guide to sports lighting - Specific recommendations - Swimming pools.

Aquatic facilities not provided with lighting shall be provided with signage at all access points into the facility, which incorporates the statement "No Use of Facility Allowed After Dark" or similar as referred to in Appendix 2.

*[Section 2.13.2 amended 21 September 2009]*

## **2.17 CONCOURSES AND WALKWAYS**

The requirements of this Clause shall not apply to shower and sanitary facilities in private residential premises associated with Group Four facilities, or any concourse areas consisting of grass.

Aquatic facility concourses shall be at least 1000mm wide and of sufficient width to ensure the safety of patrons around the water body.

All concourses and walkways shall be provided with surfaces that are smooth, free of protrusions that may constitute a trip hazard, impervious, durable, easily cleanable and continuous, with no cracks or joints other than structural joints.

All installed surfaces shall be slip-resistant and maintained such that the available friction is sufficient to enable a person to traverse the surface without unreasonable risk of slipping.

Refer to Appendix 6 for guidelines on the measure of slip resistance that should be maintained within certain areas of an aquatic facility.

Adequate drainage shall be provided in all areas that may become wet. The concourse shall be graded to drain away from the water body, to prevent water from accumulating on the concourse or draining back into water bodies. All general site and roof drainage shall be directed away from water bodies.

Garden areas adjacent to aquatic facilities shall be designed to prevent soil from falling or draining, onto the concourse, or into the water body.

The layout of the concourse shall enable supervising staff to move around freely, without losing visual contact with water areas.

Garden boxes and other features on the concourse shall not interfere with sightlines for supervision.

The concourse of facilities constructed above ground level shall be constructed with a balustrade, fence or other means that will prevent persons falling to lower levels.

## **2.18 FENCING AND SECURITY**

Whenever the facility is not in use, Group One and Group Two facilities shall be provided with security measures that deter the unauthorised entry of persons.

Group Three and Group Four facilities shall be provided with fencing and security measures that comply with Australian Standard AS 1926.1-1993: Swimming pool safety - Fencing for swimming pools and for the purpose of this

Code a door that provides access into the pool area, shall comply with clause 2.14 Child-resistant doorset of this standard.

Group Three and Group Four facilities may be provided with alternative fencing and security measures, provided they afford an equivalent or greater degree of safety to AS 1926.1-1993: Swimming pool safety - Fencing for swimming pools.

Alternative measures for Group 3 and 4 facilities may include provision of no fencing, when it is an Adult Only aquatic facility and no scope exists for access by children or other persons requiring protection. Acceptance of such alternative measures by regulators will nevertheless still require the Operator take on full responsibility for managing all risks associated with having these alternative measures for their aquatic facility and that they demonstrate precisely how risks will be managed and access controlled.

[Section 2.18 amended 9 September 2009]

## **2.19 SEPARATION DISTANCES**

Toddler pools and learner pools shall be situated away from the deep areas of other pools, and away from diving pools.

Where this is not possible, effective transparent barriers and appropriate signage shall be provided.

## **2.20 SANITARY AMENITIES**

Aquatic facilities shall be provided with toilets, hand-wash basins, showers and change rooms.

Toilets must be provided for spectators in Group One, Group Two and Group Three facilities in accordance with the requirements of parts F 2.3 and 2.4 of the Building Code of Australia - 2007.

Facilities shall be provided for persons using the aquatic facilities in accordance with the following requirements:

- One water closet for every 40 female patrons.
- One water closet plus one urinal for every 60 male patrons.
- One shower for every 40 patrons.
- One hand basin for every 60 patrons.

Sanitary facilities shall not be located further than 90m from the water body on the horizontal plane and as close as practicable on the vertical plane in the case of high rise complexes.

The number of patrons in waterslide facilities shall be designated by the maximum number of persons permitted to use the waterslide at any one time.

The number of patrons for all other aquatic facilities is to be calculated by allowing one person for each 2.3 square metres of water body surface area and allocating the final number as 50 per cent male and 50 per cent female.

Floor surfaces for toilets, showers and change rooms shall be impervious, slip-resistant when wet and sloped with a minimum grade of 1 in 50 to floor drains or other drainage areas.

Sanitary facilities are not required in Group Four aquatic amenities, where provision is made for bathers in their accommodation quarters.

The Executive Director Public Health may approve combined use of sanitary conveniences located in an adjacent building.

## **2.21 BACKWASH WATER**

The onsite discharge of backwash water from an aquatic facility water body shall be disposed of in a manner that has been approved by the local government.

## 2.22 FIRST AID FACILITIES

Aquatic facilities shall be provided with minimum first aid facilities as detailed in Table 2.

**Table 2 - First Aid Facilities**

Type of Facility	Mandatory First Aid Facilities
Group One	A separate room or area containing all of the following items: <ol style="list-style-type: none"><li>1. Resuscitation Notice.</li><li>2. Examination couch.</li><li>3. Hand wash basin with reticulated potable water.</li><li>4. Communication System. (Ready access to a telephone with emergency number posted close by)</li><li>5. One GPO outlet.</li><li>6. Work bench for the preparation or the cleaning and sterilisation of items used in first aid treatment.</li><li>7. Storage for first aid supplies and equipment.</li><li>8. Washable flooring.</li></ol>
Group Two and Group Three	A separate room or area containing all of the following items: <ol style="list-style-type: none"><li>1. Resuscitation Notice.</li><li>2. Hand wash basin with running water.</li><li>3. One GPO outlet.</li><li>4. Storage for first aid supplies and equipment.</li><li>5. Washable flooring.</li></ol>
Group Four	Resuscitation Notice - displayed in a prominent position in the aquatic facility area.

### 2.22.1 Dimensions of First Aid Area

The design and construction of first aid areas shall ensure these places can accommodate the items listed in the Table above.

### 2.22.2 Signage

Signage shall be provided at the pool area that clearly identifies the location of the first aid room. The design and installation of first aid signs shall follow the formats outlined in AS 1319 - 1994: Safety Signs for the Occupational Environment.

## 2.23 FIRST AID EQUIPMENT

Aquatic facilities shall be provided with first aid equipment as detailed in Table 3.

**Table 3 - First Aid Equipment**

Type of Facility	Mandatory First Aid Equipment
Group One	<ol style="list-style-type: none"><li>1. Resuscitation Equipment (capable of delivering oxygen therapy and oxygen supplementation for expired air resuscitation) for children and adults.</li><li>2. First Aid Kit.</li><li>3. Spinal Board and Extrication Collars.</li><li>4. Pillows and Blankets.</li><li>5. Pocket Mask and Disposable Gloves.</li><li>6. Stretcher.</li></ol>
Group Two and Group Three	<ol style="list-style-type: none"><li>1. First Aid Kit.</li><li>2. Two Pillows and Blankets.</li><li>3. Pocket Mask and Disposable Gloves.</li><li>4. Stretcher.</li></ol>
Group Four	First aid equipment is not required to be maintained on-site.

## 2.24 RESCUE EQUIPMENT

Group One, Group Two and Group Three aquatic facilities, excluding waterslide landing pools or watershed areas, unless otherwise required by the EDPH, shall be provided with appropriate rescue equipment, which shall be stored in a readily accessible location.

Examples of appropriate rescue equipment include reaching poles, rescue tubes, lifejackets and throwing ropes or throwing bags, as detailed in Guideline GO 1.03 - *Rescue Equipment - 1996* of the Pool Safety Guidelines.

## 2.25 SAFETY SIGNAGE

The purpose of safety signage in aquatic facilities is to give user guidance about the rules of expected behaviour when using the facility (as determined by the operator), specific facility features which might impact on their safety, particular restrictions on facility use and basic issues related to emergency response. Signage requirements for aquatic facilities are either mandatory or recommended as detailed below:

### 2.25.1 MANDATORY SIGNAGE

**2.25.1.1** All aquatic facilities intended or restricted to only day light use, because overhead lighting intensity has not been confirmed or provided shall have at least one sign which states: "NO USE OF FACILITY ALLOWED AFTER DARK" or something similar so users are aware of that restriction. That sign shall have minimum lettering size of 100mm and be located in a prominent position of view to users.

**2.25.1.2** All class 3 & Class 4 aquatic facilities (except spas) shall have at least one sign which states "NO LIFEGUARD ON DUTY". That sign shall have minimum lettering size of 100mm and be located in a prominent position of view to users.

**2.25.1.3** All aquatic facility water bodies shall be provided with depth markings per Section 2.12 of this Code.

**2.25.1.4** All aquatic facilities/water bodies shall have at least one Resuscitation Notice installed in a prominent position of view to users and adjacent to the first aid point per Section 2.22 of this Code. Where a first aid area is not provided or not located adjacent to the water body the required Resuscitation Notice or a second notice shall then be located in a prominent position of view to users.

Operators must ensure their Resuscitation Notices are kept up to date with the recommended procedure of the Resuscitation Council of Australia for Cardiopulmonary Resuscitation.

- 2.25.1.5 All spa pools shall have a *Spa Pool Safety Rules* sign which contains at least those items detailed in the spa pool safety rules sign example in Appendix 2 (adapted from AS2610.1:2007). That sign shall have minimum lettering size of 50mm sign and be installed adjacent to the spa pool in a prominent position of view to users.
- 2.25.1.6 All spa pools shall have signage on the emergency spa stop switch, detailing the purpose and be located adjacent to the switch/button.
- 2.25.1.7 All spray parks shall have a *Spray Park Safety Rules* sign which contains at least those items detailed in the *Spray Park Safety Rules* sign example in Appendix 2 . That sign shall have minimum lettering size of 50mm sign and be installed in a prominent position of view to users.

## **2.25.2 RECOMMENDED SIGNAGE**

- 2.25.2.1 A list of Recommended & Additional Recommended statements for signage is provided in Appendix 2 of this Code.
- 2.25.2.2 For Group 1 aquatic facilities a list of suggested signage can be found in Guideline FD 1.04 : Advisory Signage - 1995 of the Pool Safety Guidelines.
- 2.25.2.3 Recommended formats and symbols specific to water safety signage are contained in *AS2416-2002 Design and Application of Water Safety Signage*, *AS2899.0-1886 Public Information Symbol-Signs* & in *AS2899.2-1986 Public Information Symbol Signs - water Safety Signs*.

[Section 2.25 amended 16 May 2011]

## **2.26 SPECTATOR STANDS AND SEATING AMENITIES**

Spectator facilities need to be designed and constructed to support patrons in a safe manner. Poorly designed and constructed spectator structures may fail when under load, resulting in mass injuries and casualties.

Aquatic facilities which are used for organised events such as swimming competitions, swimming tuition, and water aerobics, are classified as Public Buildings under the Health Act 1911.

The Act requires facilities to comply with the safety requirements of the Health (Public Buildings) Regulations 1992. The Regulations stipulate a number of spectator safety requirements, such as the need to provide exits.

Although the Regulations do not contain specific requirements for spectator stands, they require all public buildings to be approved by the local government.

In approving public buildings, the local government may require a proponent to demonstrate that the spectator facilities, in this case the stands and seating facilities, are safe.

All spectator stands and seating facilities, whether permanent or temporary, should be certified by a practising structural engineer, as being safe for the proposed use.

The Department of Health's Guidelines on the Application of the Health (Public Buildings) Regulations 1992 - 2002 is a useful reference in approving large temporary structures.

## **2.27 SHADE PROTECTION**

The provision of shade is recommended for all outdoor aquatic facilities and, where provided, shall comply with the requirements stipulated in *Shade for the Public Swimming Pools Information Sheet included in The Shade Handbook: A practical guide for shade development in Western Australia published by the Cancer Foundation of Western Australia 2007*. Group Four facilities are not required to comply with this requirement.

Where facilities choose to erect shade structures, they shall be carefully positioned to ensure that they do not obscure overhead lighting towers.

*[Section 2.27 amended 21 September 2009]*

## **2.28 ELECTRICAL SAFETY**

All electrical installations shall comply with AS/NZS 3000:2000 - Electrical installations (Wiring rules).

Floor standing switchboards in plant rooms shall be mounted on plinths, minimum height 75mm.

The following items must be equi potentially bonded in accordance with the method prescribed in Section 5 of AS/NZS 3000:2000 - Electrical installations (Wiring rules):

- All metallic lane rope anchors, deck sockets or other metallic objects with a dimension greater than 100mm in a location accessible to the public that is likely to become wet whilst the public are in attendance.

Only electrical outlets required to service specific maintenance equipment shall be installed within three metres of aquatic facility water bodies.

Electrical outlets in areas accessible to the public shall be installed no less than 1200mm above floor level. Electrical outlets must not be installed in areas that are likely to become wet during normal operation of the facility. This requirement applies to areas that may be hosed down whilst the facility is open to the public.

Electrical outlets shall not be installed in areas of change rooms that may become wet, and must only be located in dry grooming areas.

Every electrical outlet shall be protected by a Residual Current Device (RCD) with a rated tripping current of no more than 30 mA.

Additional requirements for electrical installations in spa pools are detailed in Section 9 of this Code.

## **2.29 LIGHTNING PROTECTION**

Group One and Group Two aquatic facilities shall be provided with lightning protection systems in accordance with AS 1768 - 2007 - Lightning protection.

Operations Manuals and Emergency Action Plans developed in accordance with clause 7.8 of Section 7 of this Code should contain lightning protection provisions in accordance with Section 3 of AS 1768.