

Sri Lanka Pool Safety Guidelines



— Safe Pools, Healthy Lives —



SAFE ENVIRONMENT



SUPERVISION



SAFETY EQUIPMENT



MAINTENANCE



BE PREPARED



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சுகாதார அமைச்சு
Ministry of Health



Directorate of Non-Communicable Diseases
Ministry of Health, Sri Lanka.



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Disclaimer

The Sri Lanka Pool Safety Guidelines (SLPSG) have been developed to provide evidence-informed recommendations and minimum safety requirements for the safe design, construction, operation and maintenance of swimming pools and similar aquatic facilities in Sri Lanka.

Every effort has been made to ensure that the information contained in these guidelines is accurate, appropriate and consistent with available national and international evidence, standards and good practices. However, the guidelines should not be considered a substitute for professional advice, detailed risk assessment, engineering assessment, medical advice, or compliance with applicable laws, regulations, codes and statutory requirements.

Pool owners and operators remain responsible for assessing and managing the risks specific to their facilities and for ensuring appropriate safety measures, supervision, emergency preparedness and maintenance. The application of these guidelines should take into account the design, size, depth, layout, user characteristics, activities and environmental conditions of each facility. Where any conflict exists between these guidelines and applicable legislation, regulations, mandatory standards or requirements of a competent authority, the relevant legal or mandatory requirements shall prevail.

The Ministry of Health and other agencies involved in the development of these guidelines shall not be held responsible for any loss, injury, damage or other consequence arising from the inappropriate interpretation or application of the information contained herein. These guidelines should be read together with relevant legislation and other applicable technical standards and should be reviewed and updated as necessary to reflect changes in evidence, legislation, standards, technology and emerging risks.

Preface

As the popularity of swimming pools continues to grow in Sri Lanka, ensuring the safety and well-being of pool users has become a paramount concern. This Sri Lanka Pool Safety Guidelines (SLPSG) document presents comprehensive guidelines on pool safety standards, designed to address the unique challenges and needs of public and private swimming pools in our country.

The primary objective of these guidelines is to establish a standardized approach to the safe design, construction, operation, and maintenance of swimming pools. Further, these guidelines cover a wide range of topics essential for the safe and efficient operation of swimming pools, including safety measures, Design and construction, water quality and hygiene, accessibility and operational standards.

Adopting these pool safety standards marks a significant step forward in ensuring the health, safety, and enjoyment of swimming pool users in Sri Lanka. We urge all pool operators to implement these guidelines diligently and to continuously strive for excellence in pool safety and management.

Adherence to these guidelines is crucial for all public pool and private operators, including those in hotels, resorts, community centers, schools, and sports facilities. By following these standards, pool operators can provide a safe, hygienic, and enjoyable environment for all users, while also fulfilling their legal and ethical responsibilities.

Purpose

The purpose of the SLPSG is to ensure that all pool owners/operators understand their responsibilities with regard to health and safety in swimming pools. Ultimately, it is intended to support a reduction in drowning events, drowning related injuries and other water related illnesses, as far as it is reasonably practical.

On-going Review

It is intended that these guidelines will be regularly reviewed and updated, at least once annually, by the Technical Working Group for Drowning Prevention, Ministry of Health, Sri Lanka (TWG-DP-MOH). Pool owners/operators are encouraged to provide written comments on these guidelines so that they may be evaluated during the review process. Feedback should be provided in writing and mailed or emailed directly to TWG, using the contact details in the 'Contact Us' section of this document.

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Pool Classifications

Swimming pools can be supplied with fresh (surface or ground), marine, or thermal water. They can be private (domestic), semi-public (e.g., hotel, school), or public (e.g., municipal). They may be supervised or unsupervised and can be located indoors, outdoors, or both. They may also be heated or unheated. Traditional swimming pools are rectangular and used by people of all ages and abilities. There are also specialty pools like learner pools, diving pools, and pools with features like water slides.

Type A - Waterparks and Hotel Pools



Waterparks are large aquatic amusement parks. Features at waterparks will vary, although common attractions include lazy rivers, wave pools, splash decks, waterslides and flumes. Hotel pools are any pools within a building or a facility that has a commercial registration as a hotel with the relevant government authority.

Type B - Public / Private / Club Pools



Public / Private / Club pools are facilities where any members of the public can pay and swim during (one or more) defined operating periods. These pools may also be found in social or private member clubs.

Type C - School and University Pools

School / University pools are any swimming pools within an educational establishment. This may include (but is not limited to) schools, colleges and universities.



Type D - Residential Pools



Residential pools are swimming pools that are within furnished and non-furnished apartment buildings or compounds that are provided to residents for shared use. They may also be found in hotels with three stars or less.

Type E - Private Home Pools



Private Home pools are private swimming pools within a personal residence. Typically found in villas, they vary in size and may include features such as spa pools. They do not provide shared services.

The standards mentioned in this document mainly focus on pools that are commonly used for recreational activities.

Users may include:

- The general public
- Hotel guests
- Health club members
- Competitive swimmers
- Clients of outdoor camping parks
- Leisure users, including clients of theme parks
- Specialist sporting users, including scuba divers, canoeists and water polo participants
- Children/babies
- Tourists
- Exercise class members (e.g. aqua-aerobics)
- Non-swimmers

Hazards associated with swimming pools along with specific examples of associated adverse health outcomes:

Physical Hazards: These include risks such as drowning, near-drowning incidents, or injuries such as head or spinal injuries. Factors contributing to these hazards might include sudden changes in depth, inadequate supervision, slippery surfaces, alcohol consumption, poor swimming ability, and inadequate pool design and maintenance.

Heat, Cold, and Sunlight: Acute exposure to extreme temperatures, whether from excessively hot water in hot tubs or outdoor pools, or from prolonged exposure to sunlight, can pose risks such as heatstroke, dehydration, or sunburn.

Water Quality: Maintaining proper water quality is crucial to prevent health risks associated with contaminants, bacteria, or inadequate chemical treatment. Poor water quality can lead to infections, skin irritations, or respiratory issues among pool users. It can be due to ingestion, inhalation, or contact with pathogenic bacteria, viruses, fungi, and protozoa present in water and pool surroundings, contamination by fecal matter from users or animals, and non-enteric organisms present in the aquatic environment.

- a. Pool water clarity - The pool owner/operator must ensure that when a swimming pool is open for use, the water is maintained in a clear condition such that the floor of the pool or any lane markings or object placed on the floor of the pool are clearly visible when viewed from either side of the pool.
- b. Pool water testing - The swimming pool water should be treated by means of a chlorine-based disinfectant in accordance with the parameters specified in the table below, by suitably certified personnel.

- c. Free Chlorine / Total Chlorine / Combined Chlorine and pH should be tested a minimum of pre-opening and every four hours thereafter. Cyanuric Acid and Total Alkalinity should be tested a minimum of once a week. The pool owner/operator must also ensure that when the swimming pool is open:
 - i. Water is effectively filtered so that all visible extraneous matter
 - ii. Water does not exceed 40 degrees Celsius

Air Quality:

Indoor swimming pools can present risks related to poor air quality, such as high levels of chloramines (chlorine byproducts) or airborne contaminants. Inhalation of chemically contaminated air can lead to respiratory problems, especially in individuals with asthma or other respiratory conditions.

Addressing these hazards requires proactive management strategies to ensure the safety and well-being of pool users. Hence, standards given in this document can be classified into four major categories:

- a. Design and construction of facilities (including licensing and authorization, as appropriate)
- b. Operation and management (including pool safety plan and lifeguard training)
- c. Public education and information
- d. Regulatory requirements (including licensing of equipment, chemicals, etc., available for use in swimming pools and similar environments)

Therefore, the objectives of the guidelines are,

- a. Enhance User Safety: By minimizing the risks of accidents, injuries, and drowning incidents.
- b. Maintain Hygiene: By ensuring high standards of water quality and cleanliness to prevent the spread of waterborne diseases.
- c. Promote Inclusivity: By ensuring pools are accessible to individuals of all abilities, including those with disabilities.
- d. Ensure Regulatory Compliance: By aligning pool operations with national health, safety, and construction regulations.

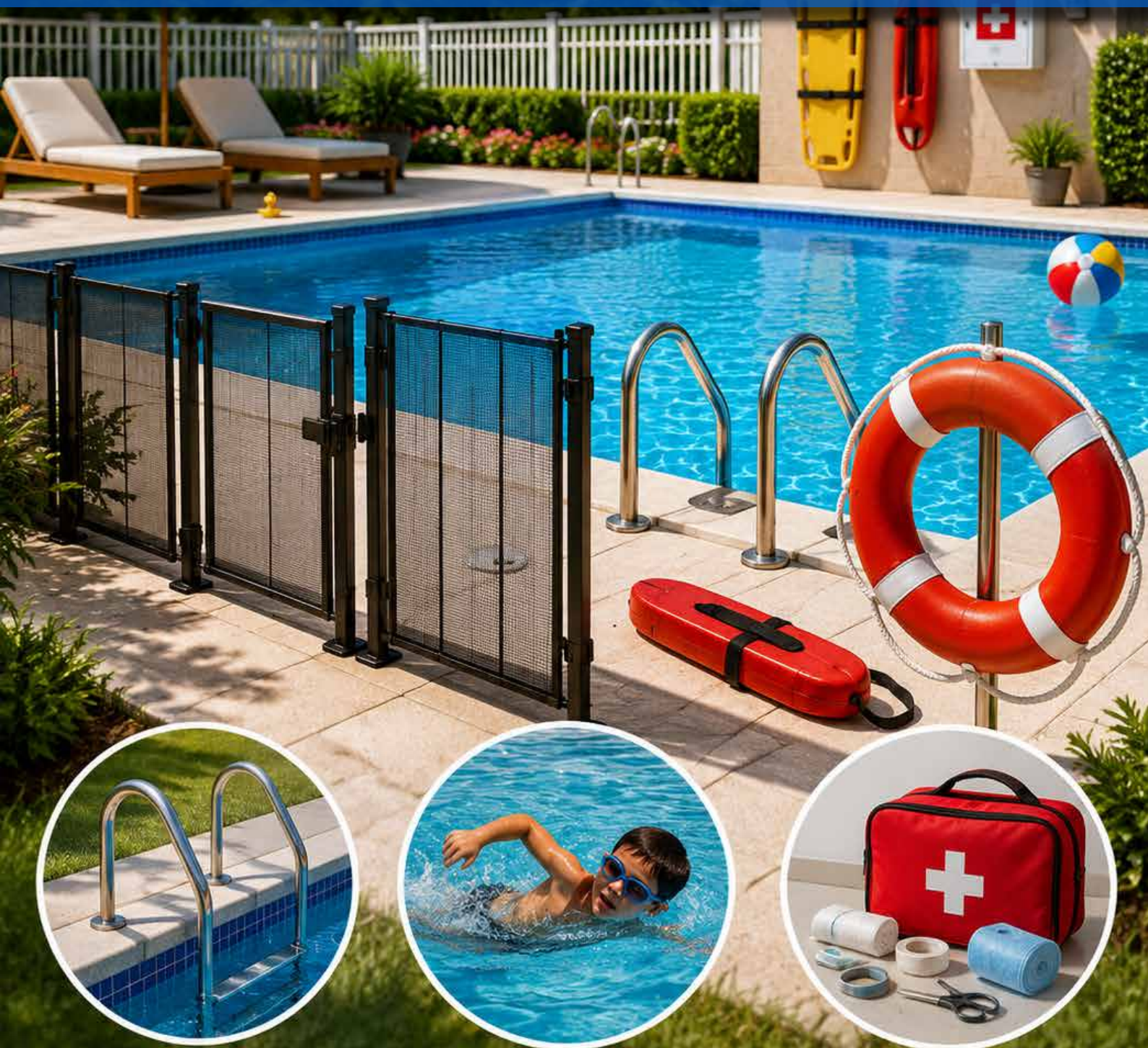
Key Components discussed in the guideline

These guidelines cover a wide range of topics essential for the safe and efficient operation of swimming pools, including:

1. Safety Measures
2. Water Quality and Hygiene
3. Design and Construction
4. Accessibility
5. Maintenance and Operational Standards



1. Safety Measures



1.1 Safety regulations

Safety regulations in swimming pool standards are paramount to ensuring the well-being of swimmers and preventing accidents. The following areas should be considered.

a. Lifeguards:



Lifeguards play a critical role in surveillance, accident prevention, and responding to emergencies. Ideally, Lifeguards are required during all hours of operation when the pool is open to the public. But if the pool meets one or more criteria from the following list, it is necessary for constant pool supervision by a qualified Pool Lifeguard to be made available:

- The pool has water deeper than 3 feet (0.9m)
- The pool water area is greater than 170 m²
- Diving from the pool side is allowed
- Poolside equipment or a feature is posing additional risk
- There are abrupt changes in depth, exceeding 1:14

- It is not reasonably practicable to enforce the pool rules
- Appropriate access restrictions are not in place
- The pool will be used by unaccompanied children (under 16 years of age)
- Crowded conditions are anticipated
- Higher risk activities are taking place

i. Required number of lifeguards

The required number of lifeguards can vary depending on factors such as the pool's size, depth, opening hours, peak usage time, type of activities, and events or programs. The following recommendations need to be considered.

- There must be enough Pool Lifeguards on duty to effectively supervise all bodies of water to ensure adequate surveillance and response capabilities.
- As all swimming pools are different, the only way to determine the exact number of Pool Lifeguards required at a facility is by completing a thorough risk assessment.
- The table below will help you determine these numbers.

Pool length and width (m)	Pool area (m ²)	Minimum number of pool lifeguards	Recommended number of lifeguards in busy conditions
20.0 (l) x 8.5 (w)	170	1	2
25.0 (l) x 8.5 (w)	212	1	2
25.0 (l) x 10.0 (w)	250	1	2
25.0 (l) x 12.5 (w)	312	1	2
33.3 (l) x 12.5 (w)	416	2	2
50.0 (l) x 20.0 (w)	1000	3	3

Source: © Guidelines for Safe Pool Operations – (GSPO v1 – SLLS, January 2020)

A pool Lifeguard is responsible for maintaining safety, cleanliness, and proper pool operation in various settings. The required number of lifeguards depends on factors such as pool size, swimmer capacity, activity type, and local regulations.

Important:

- The bather-to-lifeguard ratio represents a minimum standard.
- In the following circumstances, facility operators are required to have more lifeguards on duty to maintain a safe level of supervision
 - Weather
 - Holidays
 - Size of pool, depth, design, number of pools, and layout of pools

- Equipment usage
 - Where recreational activity is undertaken eg inflatable toys (eg. inflatable toys)
 - Average attendance
 - Swimming capabilities
 - Special needs individuals and groups
- Where there is only one lifeguard on duty, the owner/operator shall ensure that there is at least one other individual on the premises who is within call of the lifeguard and who can provide emergency assistance when requested

ii. Qualifications and Training:



- Lifeguards must possess specific qualifications and undergo rigorous training to effectively perform their duties.
- A qualified lifeguard must be at least 16 years of age.
- A lifeguard certificate should be obtained from recognized organizations, and it is valid only for 01 year.
- The lifeguard certificate should be renewed every (01) one year.
- Lifeguards must undergo regular refresher training every year to maintain their skills and stay updated on best practices.

iii. Responsibilities:

- Continuous surveillance of the pool area to quickly identify and respond to any signs of distress or potential hazards.
- Enforcing pool rules and regulations to ensure the safety of all patrons.
- Conducting regular safety checks of the pool and surrounding areas, including equipment inspections and monitoring water quality.
- Responding promptly and appropriately to emergencies, including rescuing distressed swimmers, administering first aid, and coordinating with emergency services if needed.

- Providing assistance and guidance to swimmers, such as enforcing proper diving techniques and offering water safety tips.
- Maintaining accurate records of incidents, rescues, and any other noteworthy events that occur during their shifts.

iv. Supervision zones:

Lifeguards should be positioned strategically to provide optimal coverage and minimize response times in case of emergencies. Hence need to identify and designate specific supervision zones within the pool area based on factors such as depth and distance from lifeguard stations.

v. Internationally recognized Pool Lifeguard colors



Pool Lifeguards must be clearly identifiable and distinguishable from other employees. The internationally recognised colours for Pool Lifeguards are red and yellow. It is advised that Pool Lifeguard uniforms should be these colours to ensure that pool users can easily recognise Pool Lifeguards should they need assistance.

Pool owners/operators are encouraged to adopt uniforms of yellow (Pantone 136 - 137) and red (Pantone 186C). This will help promote international consistency and recognition. Ideally, upper body clothing (shirt and jacket) should be predominantly yellow with red lettering, and lower body clothing (swimsuit, shorts, pants) should be predominantly red with yellow lettering.

vi. Fit for purpose

Pool Lifeguard uniform should be fit for purpose and should not hinder or affect the ability of the Pool Lifeguard to perform the full scope of their duties (including aquatic rescue). The uniform should also consider the environment within which the Pool Lifeguard is operating to ensure comfort and safety.

vii. Footwear

Pool Lifeguards should be provided with closed-toe footwear that has a suitable level of grip to prevent slipping or falling on the poolside. It is expected that a Pool Lifeguard's feet will frequently become wet and non-absorbent / waterproof footwear is recommended.

viii. Personal Protective Equipment (PPE)



During an emergency, Pool Lifeguards may be required to perform Cardiopulmonary Resuscitation (CPR) or other first aid treatment to an ill or injured person. Pool Lifeguards must be issued with Personal Protective Equipment (PPE) to enable them to protect themselves and the ill or injured person from the risk of cross-infection.

Below is the minimum expectation of PPE for a Pool Lifeguard, which should be provided by the pool owners/operators;

- Pocket mask (including a one-way valve)
- Two pairs of disposable non-latex gloves

- Three non-alcoholic moist cleansing wipes
- Suitable broad-brimmed hat (if working outdoors)
- 100 percent UV protection polarized sunglasses (if working outdoors)
- Whistle
- Radio or other device to allow lifeguards to request assistance to the pool deck
- Sun cream (SPF 30+ or above) – Kids (SPF 50+ or above)
- Triangular bandage

Pool Lifeguards must have their PPE with them at all times, and as such it is recommended that each Pool Lifeguard is provided with a waterproof ‘bum bag’ to be worn around their waist.

ix. Hair, fingernails and jewelry

For safety reasons, and in accordance with the Pool Lifeguard certificate, Pool Lifeguards are not permitted to wear loose hanging jewelry such as necklaces or earrings while performing Pool Lifeguard duties. Pool Lifeguards with long hair should have it tied back whilst performing Pool Lifeguard duties. Fingernails should be well trimmed at all times to avoid discomfort and any potential risk to themselves or others.

x. Hand phones, tablets or other electronic devices

Pool Lifeguards are not permitted to carry any mobile or electronic devices while performing Pool Lifeguard duties. These devices are prohibited during working hours, and secure storage should be provided at a pool to ensure they can be safely stored whilst Pool Lifeguards are on duty.

xi. Daily work sheets, incident report log and patrol cards

Pool Lifeguards should complete daily documentation and hand over the same to relevant authorities.

xii. Cigarette smoking

Literature linking smoking to several diseases (including lung disease and various known cancers) is well documented. SLLS does not allow smoking at all whilst Pool Lifeguards are undertaking active duties, or ancillary activities including coaching, officiating or meeting attendance.

xiii. Alcohol

Pool Lifeguards should minimise alcohol intake the night before their duty, as blood alcohol concentration (BAC) remains high for 12 to 20 hours after the last drink. Pool Lifeguards should not consume alcohol for a period of 12 hours before they are scheduled to perform supervision duties. Pool Lifeguards under the influence of alcohol should not undertake pool supervision duties and should inform their employer that they are unable to perform such duties.

xiv. Physical health and fitness

It is important for Pool Lifeguards to maintain an appropriate level of health and fitness. SLLS recommends:

- 60 minutes of moderate to intense physical activity per day for teenagers
- five (5) to ten (10) hours of moderate to intense activity per week for adults

(Running 01 km to 02 km and 500 m to 01 km swim at least (3) three times per week)

xv. Diet and Sleep

A Pool Lifeguard's diet should contain sufficient quantities of vitamins, minerals and fibre. It should also include regular/sufficient water consumption and adequate rest periods to prevent dehydration and fatigue. - Sleep - minimum 07 hours to 09 hours (including the period from 11 pm to 3 am)
Critical incident stress

Traumatic events may include the recovery of a drowned person, the administration of major first aid treatment, performing resuscitation, or a perceived threat to the Pool Lifeguard. As a result, appropriate psychological support from a certified person should be available.

xvi. To assist with critical incident stress, Pool Lifeguards should:

- Exercise
- Talk with someone they trust
- Spend time with family/friends
- Decrease alcohol/caffeine consumption
- Engage in positive thinking
- Rest and sleep - minimum 07 hours to 09 hours of sleep (including the period from 11 pm to 3 am)
- Perform controlled breathing exercises
- Seek professional support

xvii. Prevention of sun damage

Health professionals recommend the following preventative actions to assist Pool Lifeguards against skin damage caused by the sun if working at outdoor pools:

- Stay in the shade whenever possible
- Protect your body with appropriate (long-sleeved) clothing
- Protect your head with a broad-brimmed hat
- Only use sunglasses that block 100% of the UV rays
- Use high protection sun cream (SPF 30+ or above for Adults)

- Use high protection sun cream (SPF 50+ or above for Kids and Babies)
- Apply sunscreen at least 20 minutes before going outside.

Note: The impact of the sun is most intense between 10am and 3pm.

xviii. Impact of Storms and Rain:

Lightning: Never use the pool during a thunderstorm, as lightning poses a significant risk.

Rainfall:

While light drizzle may not have much impact on the pool, heavy rainfall can cause the following effects.

- Change in chemical and pH levels
 - Heavy rainfall may dilute the chemicals in the pool water and create a pH imbalance.
 - Rain also washes bacteria, dirt, algae spores, and other debris into the pool, which can attack the active chlorine and mitigate its effects. Hence, it is necessary to check the pH level of the pool after heavy rainfall to see where it should be adjusted.
- Rise of pool water level rapidly potentially leading to flooding and damage.

xix. Communication and Coordination:

Lifeguards should be provided with effective communication systems to coordinate their efforts and respond swiftly to emergencies. This may include whistle signals, hand signals, two-way radios, or other communication devices. Specifically, an emergency alarm system should be mandatory if there is only one lifeguard on duty.

Key responsibilities and duties of a pool attendant/ monitor include,

• Safety and Supervision

- Monitor Swimmers: Keep a vigilant eye on swimmers to ensure their safety and prevent accidents or drownings.
- Enforce Rules: Ensure that all pool rules and regulations are followed by swimmers, such as no running, diving in shallow areas, or using glass containers.
- Emergency Response: Be prepared to respond quickly and effectively in case of emergencies, including performing CPR, first aid, or contacting emergency services.
- While the lifeguard attends to the emergency, the pool guard should ensure that guests remain calm and provide any necessary assistance or services.
- Surveillance: Use lifeguard stands, cameras, or patrols to maintain constant surveillance over the pool area.

• Maintenance and Cleanliness

- Water Quality: Regularly check the chemical balance of the pool water, including pH and chlorine levels, and adjust as needed to ensure a safe and clean swimming environment.
- Cleanliness: Keep the pool area clean by removing debris, cleaning pool surfaces, and ensuring the cleanliness of surrounding areas such as restrooms and showers.
- Equipment Maintenance: Inspect and maintain pool equipment, such as pumps, filters, and safety equipment, to ensure they are in good working condition.

• Customer Service

- Assist Swimmers: Provide assistance to swimmers, including answering questions, providing information, and ensuring they have a pleasant experience.
- Provide Towels and Supplies: Distribute towels, pool toys, and other supplies as needed, and ensure these items are returned or properly stored.
- Set Up and Tear Down: Set up pool furniture, umbrellas, and other equipment at the start of the day and put them away at closing.

• Administrative Duties

- Record Keeping: Maintain records of pool usage, chemical tests, maintenance activities, and incidents.
- Compliance: Ensure the pool complies with local health and safety regulations, and prepare for inspections by health authorities.
- Training and Meetings: Participate in regular training sessions and staff meetings to stay updated on safety protocols, procedures, and best practices.

• Interpersonal Skills

- Communication: Communicate effectively with swimmers, parents, and other staff members to ensure a safe and enjoyable pool environment.
- Conflict Resolution: Handle conflicts or issues that arise with tact and professionalism, ensuring they are resolved promptly and effectively.
- Teamwork: Work collaboratively with other pool staff, such as lifeguards and maintenance personnel, to ensure smooth operation and safety.

b. Safety Signage:

Clear and prominent signage should be installed throughout the pool area to convey important safety information, rules, and emergency procedures. The following must be included.



i. Pool Rules and Regulations:

- Signs displaying pool rules and regulations inform patrons of expected behavior and safety guidelines while using the facility.
- Pool rules signage should be prominently displayed at entrances, around the pool perimeter, and in other highly visible areas.
- These rules may include prohibitions on running, diving in shallow areas, rough play, glass containers, and smoking.

ii. Health Notices: A minimum of two health notices are required on the deck or at the pool indicating the following:

- No person infected with a communicable disease or having open sores on their body shall enter the pool.
- No person shall bring a glass container onto the deck or into the pool.
- No person shall pollute the water in the pool in any manner, and spitting, spouting of water and blowing the nose in the pool or on the deck are prohibited.
- No person shall engage in boisterous play in or about the pool.
- The maximum number of users permitted on the deck and in the pool at any time is (depending on the pool size and availability of number of lifeguards)

Calculation of maximum bather load:

Shallow /1.4 + Deep area/2.5

- Deep = area in square metres where the water is deeper than 1.35 metres
- Shallow = area in square metres where the water is 1.35 metres in depth or less
- The emergency telephone is located.
- Any other information or photos that the owner/ operator determines is necessary to maintain the health and safety of the persons using the pool.

iii. First Aid Stations:

Signs indicating the location of first aid stations should be prominently displayed and easily visible from various areas around the pool. Additionally, signs may include instructions on how to access first aid supplies and summon assistance from trained personnel.



- iv. **Warning Signs:** Warning signs alert patrons to potential hazards or risks associated with pool use, such as slippery surfaces, steep drop-offs, strong currents, or underwater obstacles. These signs typically feature a yellow background with black text and symbols to attract attention and convey urgency. Warning signs should be strategically placed in areas where hazards exist and clearly communicate the nature of the danger.



- v. **Accessibility Information:** Signs indicating accessibility features for individuals with disabilities, such as ramps, handrails, and accessible seating areas, ensure that all patrons can safely access and enjoy the pool facility. Accessibility signage should comply with relevant accessibility standards and regulations, providing clear guidance on accessible routes and amenities.



- vi. **Contact Information:** Signs displaying contact information for pool management, lifeguards, emergency services, and other relevant personnel should be prominently displayed at key locations around the pool and include phone numbers, email addresses, and other contact details.

- vii. Pool depth markings:** Clear and accurate depth markings are essential for swimmers to understand the depth of the water at different points in the pool. This helps swimmers make informed decisions and prevents accidents, especially for those who are less experienced or unable to swim. In addition to enhancing safety, depth markings serve as an educational tool to teach swimmers about water safety and awareness. Lifeguards and pool staff may use depth markings to provide guidance on safe swimming practices, diving restrictions, and other important pool rules.



- Consistency and accuracy: Depth markings should be consistent and accurately reflect the actual water depth at each marked location. Regular maintenance and inspections are necessary to ensure that depth markings remain visible, legible, and correctly positioned over time. Any discrepancies or fading should be promptly addressed to maintain safety standards.
- Accessibility for all swimmers: Depth markings should be accessible to all swimmers, including those with disabilities or limited mobility. This may involve ensuring that markings are positioned at a height and location that can be easily seen and accessed from the water's edge or from within the pool itself.
- Standardized symbols or numerals:
 - Depth markings often use standardized symbols or numerals to indicate the water depth.
 - Common symbols include horizontal lines, numbers, or color-coded indicators that represent specific depth ranges.

For example, a series of horizontal lines spaced at regular intervals may signify incremental depth changes, while numeric markings may indicate the exact depth in feet or meters.

- Placement and visibility:
 - Depth markings should be clearly visible and easily readable from both the pool deck and within the water.
 - The size of markings should be at least 100mm (10 cm) in height
 - Markings must be placed in a position where they can be seen from all areas of the pool and from the pool deck
 - Depth marking signage should be of a strong contrast to the surrounding area
 - They are typically placed at regular intervals along the pool's edge, such as on the pool walls or deck surface, and may also be marked on floating buoys or signage suspended above the water.
- Shallow and deep end differentiation:

Pool depth markings distinguish between shallow and deep areas to help swimmers navigate the pool safely. Typically, shallow areas are indicated by shallower depth markings or different colors than deep areas. This differentiation helps swimmers recognize areas suitable for activities such as diving, swimming, or wading.

- Any sharp change in gradient must be clearly marked and signposted. A sharp gradient is any change that is greater than 1:14
- In shallow water (1.2m or less), the words 'Caution Shallow Water' and the symbol for shallow water should be displayed in Sinhala, English and Tamil.
- In deep water (1.8m or more), the words 'Danger Deep Water' and the symbol for deep water should be displayed in Sinhala, English, and Tamil.



- The number of these signs that are required will also depend on the size and configuration of the pool.
- Areas for diving:
 - Water Depth
 - The minimum water depth where diving activities can take place without a diving board or platform is 1.8m
 - Minimum Depth for Diving Boards:
 - ➔ For a 1-meter diving board, the minimum water depth should be around 11.5 feet (3.5 meters).
 - ➔ For a 3-meter diving board, the minimum water depth should be approximately 12.5 feet (3.8 meters).
 - The depth should increase with the height of the diving board to prevent divers from hitting the bottom of the pool.
 - Signage:
 - Clearly mark the diving area and display warning signs indicating the water depth and diving rules.
 - No diving signs

“No diving” signs should be positioned conspicuously at the pool’s edge and at entrances to shallow areas.

 - “No Diving” signs must be clearly displayed in Sinhala, English and Tamil in areas where diving is prohibited due to shallow water depth, submerged obstacles, or other safety concerns and in any area of the pool that has a water depth of less than 1.8m.



- viii. Pool rules/ conditions of use:** The pool rules for safe use should be clearly displayed in Sinhala, English and Tamil, and appropriate symbols should be displayed. Pool rules signage should be clearly displayed at the entrance to the swimming pool. It should also be easily visible from the pool and pool deck. The pool owner/operator must decide on the rules and conditions of use for their swimming pools, based on the pool, the anticipated pool users and the planned activities. Swimming pool rules may include, but are not limited to:
- Shower before entering pool
 - Use rest rooms

- Caution: Slippery
- No running
- No glassware/ bottles
- No littering
- No alcohol
- No food and drinks
- No drugs
- No smoking
- No pushing
- No tuck jumping (jumping high)
- No photography or video (without management consent)
- No Pets
- No shouting
- No rough play
- No underwater diving
- No underwater breath-holding (underwater blackout) - hypoxia (low oxygen)

ix. Other signage: Pool owners/operators must determine any other necessary signage that should be displayed in or around the pool area based on a risk assessment. Other signage may include, but is not limited to:

- Slippery when wet - Appropriate for changing room areas and the poolside.
- Pool closed - To be displayed whenever a pool is not in use
- Shower sign – Every bather shall take a shower, using warm water and soap and thoroughly rinse off all soap before entering the deck.
- Safe use of water features - These should be in line with manufacturer guidelines for features such as wave pools, lazy rivers, slides and flumes.
- Lap lanes - Should be displayed at the ends of each swimming lane, showing the direction swimmers should swim in and the recommended speed for users in each lane.
- Program/activity signage - Indicating what activities are permitted, and who can access each area of the pool.
- Warning signs - Advising swimmers of changing water conditions, such as wave pools, lazy rivers and other water features.
- Pool/building map - The plan of the building may include positions of pool alarms, fire alarms, emergency exit routes and any other relevant information.
- Advertising boards/hoardings - Should not disturb/distract swimmers or surrounding people.
- Plant rooms, chemical store areas should be secured with proper visible, understandable higher risk signage.

c. Emergency preparedness and response in swimming pool facilities

Ensuring the safety of individuals in and around swimming pools requires a robust emergency preparedness and response system. This includes.

- The availability of emergency equipment
- Trained personnel
- Clearly defined procedures
- Dedicated first aid stations

The following guidelines outline essential components to prevent and manage accidents, injuries, and drowning incidents in pool environments.

i. Emergency rescue equipment:

Swimming pool standards should mandate the availability and accessibility of essential emergency equipment. These items enable swift and effective rescue operations in the event of drowning, injury, or other emergencies. All equipment should be strategically positioned, readily accessible, and regularly inspected and maintained.

- Rescue tube, Lifebuoys or Ring Buoys:



- At least two (2) lifebuoys should be positioned around the pool.
- Each lifebuoy must have:

A minimum outside diameter of 15 inches (381 mm).

A throwing rope attached with a diameter of $\frac{1}{4}$ to $\frac{1}{8}$ inch, and a length of at least two-thirds the maximum width of the pool.

- Reaching Poles:



- Each pool must have at least one non-telescopic reaching pole:
Minimum length: 12 feet or more than half the pool's width.
Constructed of lightweight, strong, and durable materials.
Equipped with a securely attached body hook or shepherd's crook with blunted ends.

- Throw Ropes:



Throw ropes are floating ropes that can be quickly used in an emergency.

- Length: At least 1.5 times the pool's maximum width or 50 feet (15,240 mm), whichever is less.
- Diameter: Not less than 1/4 inch (6.4 mm)
- Stored in an easily accessible container or throw bag.

- Rescue Tubes:



At least one (1) rescue tube should be available with every lifeguard on duty.

- Emergency communication devices:

- Communication devices such as two-way radios or mobile phones are essential for quickly summoning additional assistance, such as emergency medical services or additional lifeguards, in the event of a serious emergency.
- Pool staff should be trained in emergency communication protocols and have access to reliable communication devices at all times.



ii. First aid preparedness

• First Aid Kits:



Each pool facility must maintain at least one (1) fully stocked first aid kit. Kits should be:

- Waterproof, clearly labeled, and placed in easily accessible designated locations around the pool area
- Stocked with all essential items (see below list of first aid items) including splints
- Inspected regularly and restocked as needed

Recommended contents of the first aid kit

	First aid item	Quantity in each first aid kit
1	Guidance leaflet/ First aid book	1
2	List of contents	1
3	Medium sterile dressings	4
4	Large sterile dressings	4
5	Eye pad sterile dressings	4
6	Alcohol free moist cleansing wipes	10
7	Adhesive tape (non-allergic)	1 roll
8	Sterile bandages – different sizes	25
9	Disposable gloves	4 pairs
10	Burn dressings	1
11	Foil emergency blanket	1
12	Conforming bandage	1
13	Triangular bandage	4
14	CPR pocket mask/ face shield	1
15	Sterile adhesive dressings (Various sizes)	100
16	Normal saline	2
17	Scissors	1 pair
18	Tweezers	1 pair
19	Safety pins	4

- **First Aid Stations:**



Every swimming pool facility should have a designated first aid station. It should be;

- Easily accessible to both pool users and staff.
- Staffed by trained personnel
- Equipped with essential medical supplies and equipment, including those listed in the first aid kits.

Additional items to be kept at the station include:

- Instant cold packs
- Glucose doses
- Larger gauze bandages
- Antibiotic ointments
- Cervical collars
- Space (thermal) blankets
- Automated External Defibrillator (AED):

AEDs should be located in easily accessible and clearly marked locations around the pool area

Pool staff should be trained in the proper use of AED and basic life support (BLS).

- Spine Boards and Backboards:

Used to immobilize individuals with suspected spinal injuries during water rescues.

Should be readily available to allow rescuers to safely remove individuals from the water without compromising spinal integrity and transport them to medical facilities for further evaluation and treatment.

iii. Emergency Response Planning

- **Trained Personnel**



Lifeguards and pool staff must be trained in:

Basic Life Support and CPR (For more details, please refer the National Guidelines of Basic First Aid, 2025)

Water rescue techniques

Use of emergency equipment

- **Emergency Procedures**

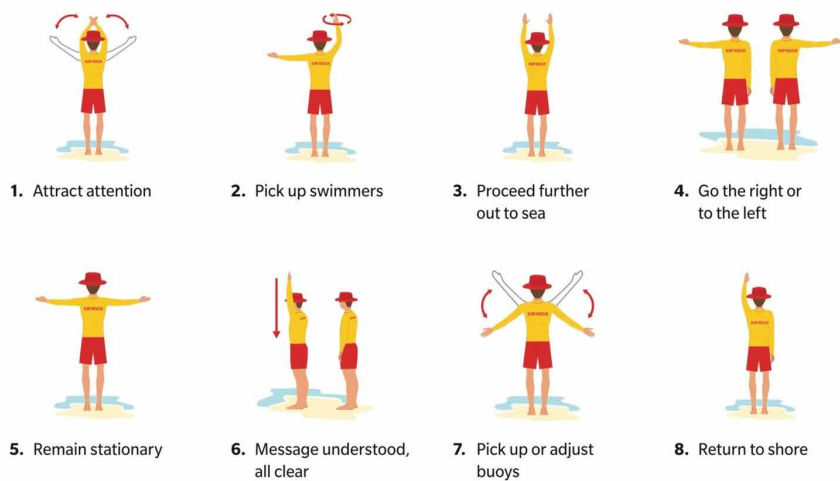
- Display clear emergency response charts around the pool area.
- Outline procedures for:
 - Drowning
 - Head or spinal injuries
 - Seizures in water
 - Slips, falls, and burns
 - Heat-related illnesses

• Regular Drills and Training



- Conduct emergency response drills periodically.
- Offer refresher training for all staff to ensure readiness

iv. Communication and Coordination



- Ensure real-time communication between staff using reliable devices.
- Have clear protocols for:
 - Alerting emergency services
 - Crowd control during incidents
 - Coordinating evacuation if needed

1.2 Supervision of programmed activities

- a. Purpose: To establish the minimum supervision required for programmed activities.
- b. Programmed activities: A programmed activity is defined as any swimming or aquatic activity that has a formal structure: disciplined or controlled and is continuously monitored from the poolside. This includes, amongst other activities, swimming lessons, coaching sessions or other tuition such as diving, water aerobics, synchronized swimming, water polo or instructional water-based activities for people with learning or physical disabilities. Teachers and coaches of these types of activities should be competent and hold appropriate, recognised teaching/coaching qualifications.
- c. Provided that safe operating practices are in place and the person conducting the programmed activity is suitably trained, programmed activities generally offer a lower level of risk when compared to non-programmed activities such as recreational swimming.
- d. Appropriate level of supervision - To determine the appropriate level of supervision for programmed activities, pool owners/operators are required to complete a risk assessment for each programmed activity at their facility. The risk assessment should consider the following:
 - i. The nature of the activity
 - ii. The number of people that will be participating in the activity
 - iii. The ability of people participating in the activity
 - iv. The risks associated with the activity
 - v. International guidance on best practice for each programmed activity
- e. Programmed activities should obtain the services of a qualified Pool Lifeguard for direct and continuous supervision, as this is usually the safest available option and is subsequently recommended.
- f. If the pool owner/operator does not provide a Pool Lifeguard to supervise the programmed activity, the person teaching / coaching the activity must hold valid certification in the following skills:
 - i. Accident prevention in an aquatic environment
 - ii. Aquatic rescue
 - iii. ILS Junior Lifesaver
 - iv. ILS Lifesaver
 - v. ILS Pool Lifeguard
 - vi. Cardiopulmonary Resuscitation (CPR)
 - vii. First aid

- g. Duty of care and external hirers - Pool owners/operators owe a duty of care to any person who uses the pool facility for a programmed activity. Pool owners/operators may rent their pool, or engage with external hirers to deliver programmed activities such as swimming lessons. Pool owners/operators must ask the external hirer to provide evidence of risk assessments, training certificates relevant to the activity and details of supervision arrangements and emergency response prior to the activity commencing. A formal hire or pool usage agreement should clearly state the health and safety and supervision responsibilities of both the Pool owners/operators and the external hirer. The details should include, but are not limited to, information on:
- i. The number of participants
 - ii. Participant swimming ability
 - iii. Name, address and telephone number of hirer representative(s)
 - iv. Details of who will be responsible for the group (teacher/master in charge)
 - v. Details of who will provide Pool Lifeguard personnel
 - vi. Numbers and certificates of Pool Lifeguards to be present (if provided by the hirer)
 - vii. Any pool rules/behaviour standards to be enforced
 - viii. Any advice on safety to be given to participants
 - ix. Specific agreement on the respective responsibilities for action in any emergency, including;
 - x. emergencies arising from the activities of the group using the pool
 - xi. other emergencies (structural or power failure)

Importantly: The hirer should be provided with copies of any applicable emergency action plans or Standard Operating Procedures (SOP). These should be provided ahead of the planned activity and should be signed and returned to the pool owner / operator to confirm that the content has been read and understood.

- h. Duty of care and swimming lessons

There should be at least one teacher / authorized officer employed by the School / Organization at the pool to supervise students/employees during swimming lessons. This person has overall responsibility for the activity and legal responsibility for the implementation of the emergency action plan (unless detailed otherwise through the hire agreement).

Other supervising staff must be approved by the Principal / Director or appropriate officer. These may include parents/guardians, education support class officers, instructors or employees of swimming pools. When arranging for supervision of swimming or water activities, schools/organizations must take into account the age and experience of the students as well as the venue and experience of staff.

In addition, there must be sufficient certified Pool Lifeguards on duty to effectively supervise all bodies of water. The minimum overall school staff to student ratio should be:

Level	Description	Staff to Student Ratio (one staff member must overlook the activity all times) – (from pool deck)
Beginner swimmers	Students with little or no experience	2 (Swim teacher & Lifeguard) – 1:15 3 (2 teachers & Lifeguard) – 16:40 4 (3 teachers & Lifeguard) – 41:50
Intermediate swimmers	Students with basic skills, able to swim 25 meters with a recognizable stroke	2 (Swim teacher & Lifeguard) – 1:25 3 (2 teachers & Lifeguard) – 26:40 4 (3 teachers & Lifeguard) – 41:60
Advanced swimmers	Students able to swim four strokes using two recognisable strokes	2 (Swim teacher & Lifeguard) – 1:30 3 (2 teachers & Lifeguard) – 31:45 (3 teachers & Lifeguard) – 46:60

Source: © Guidelines for Safe Pool Operations – (GSPO v1 – SLLS, January 2020)

Note: Any child who is 5 years old or below must be directly supervised in the water by a parent or guardian over the age of 18 years (during programmed / un-programmed activities). The parent/guardian must be in the water and should remain within arm's reach of the child at all times.

Activity	Requirement	Authorized Organization
	ASCA Teacher of Swimming	American Swimming Coaches Association Teacher (USA)
	Swim Australia Teacher	Australian Swimming Coaches and Teachers Association (Australia)
	Swim for Safety Teacher / Trainer	Sri Lanka Life Saving (SLLS)
	SLLS Swim Teacher / Trainer	Sri Lanka Life Saving (SLLS)
	LSV Swim Teacher Certificate	Life Saving Victoria (Australia)
	AUSTSWIM Teacher of Swimming and Water Safety	AUSTSWIM (Australia)
	STA Swim Teacher	Swim Teacher Association (STA) United Kingdom (SAT UK)
	Swim Teacher / Trainer	Recommended and Authorized by the Ministry of Sports, Sri Lanka

Source: © Guidelines for Safe Pool Operations – (GSPO v1 – SLLS, January 2020)

All instructional staff must be capable and have the knowledge and skills to:

- Teach swimming and water safety activities
- Enact the emergency action plan
- Provide cardiopulmonary resuscitation
- Provide first aid treatment
- Child care or equivalent

At least one instruction staff member must hold one of the above-mentioned qualifications and, where possible, a second staff member should hold the same certificate.



Note: A record of staff swimming and water safety qualifications must be maintained at the school/ organization and include the date of issue of the qualification and formal notification of any subsequent renewal or upgrade.



2. Water Quality and Hygiene



Water quality standards are crucial for maintaining a safe and healthy swimming environment, protecting patrons from waterborne illnesses, and ensuring compliance with regulatory requirements. There are 3 major water quality tolerances:

1. Physical
2. Chemical
3. Bacteriological

2.1 Physical standards

- a. Water temperature: 36°C - 38°C (the maximum temperature should never exceed 40°C)
- b. Clearness of the Water
 - i. The water should be clear, odorless and colorless and shall be sufficiently clear at all times when the pool is in use.
 - ii. The following tests should be performed regularly to measure the physical tolerance.

Select a Method of Measurement:

- Visual inspection
 - Stand at the edge of the pool and visually assess the clarity of the water at the selected testing location.
 - Use a Secchi disk if available by lowering it into the water until it is no longer visible, then record the depth at which it disappears as a measure of water clarity.
- Turbidity meter (nephelometer)
 - Submerge the meter probe into the water at the selected testing location.
 - Follow the manufacturer's instructions for initiating the measurement and recording the turbidity reading in nephelometric turbidity units (NTU).
- Secchi disk
 - Place a black disc, 150 mm in diameter and fixed to a white background, on the bottom of the pool at the deepest point. The disc shall be clearly visible from the sidewalks of the pool at all distances up to 9 meters in a line drawn across the pool through the said disc.

2.2 Chemical standards

- a. **pH Levels:** pH levels measure the acidity or alkalinity of the water and play a critical role in maintaining water balance and comfort for swimmers.

pH range for swimming pools, should be between 7.2 and 7.8 (6.9 and 7.7 ppm), to ensure water clarity, prevent corrosion of pool equipment, and maximize the effectiveness of chlorine disinfection.

Problems with different pH levels

	Low pH	High pH
Problem	Corrosion	Scaling
	Chlorine loss	Chlorine inefficiency
	Staining	Cloudy pool
	Eye & skin irritation	Eye & skin irritation

- b. **Total alkalinity:** Total alkalinity is the amount of dissolved alkali in water that can both give and take Hydrogen ions or the ability of the pool water to resist a change in pH. The main purpose of total alkalinity is to help control the pool's pH.

Recommended range in public pools: 80 - 120 ppm (ppm - parts per million)

Problems with different total alkalinity levels

	Low Total alkalinity	High Total alkalinity
Problem	pH bounce	pH drift to 8.4
	Corrosion	Scaling
	Staining	Cloudy pool

- c. **Hardness:** Hardness is the amount of calcium in solution in pool water

Recommended range in public pools: 200 - 300 ppm (ppm - parts per million)

Problems with different hardness levels

	Low hardness	High hardness
Problem	Water will etch plaster, pit metal or roughen pool surfaces	Scaling
	Staining	Cloudy pool

- d. **Disinfectants:** A disinfectant is an agent which reduces the level of micro-organisms present in significant numbers (usually 99.9% or more) to safe. This will ensure effective disinfection and prevent the spread of waterborne illnesses.

Chlorine and bromine compounds are the most common disinfectants used in public pools.

- Chlorine is available in many forms such as chlorine gas, calcium hypochlorite, sodium hypochlorite, lithium hypochlorite, Trichloro-S-Triazinetrione and Sodium Dichloro-S-Triazinetrione.
- Bromine used in public pools is available in two forms. They are: organic bromine and sodium bromide and potassium monopersulfate

Recommended residuals for free available chlorine (FAC) in public pools are as follows:

- All Public Pools:
Indoor Pools: 1.5 ppm (minimum acceptable limit 0.5 ppm)
Outdoor Pools: 3.0 ppm (minimum acceptable limit 1.0 ppm)
Note:
- The FAC residual should not be greater than 5 ppm when users are in the pool water.
- Indoor swimming pools must have a trichloramine in the air level of less than 0.5 mg/m³

Recommended residuals for total bromine are:

All Public Pools: 2 - 3 ppm

Procedures for monitoring chlorine levels should be defined, including the frequency of testing (Morning, Afternoon, and Evening), methods of measurement (e.g., using test kits or electronic chlorine analyzers), and corrective actions to be taken if chlorine levels are too low or too high.

Parameter	Swimming Pool	Spa
Free Chlorine (mg/L) minimum	1	3
Total Chlorine (mg/L) minimum	10	10
Combined Chlorine (mg/L)	Less than free Chlorine / Min. below 1 once daily	
pH	7.2 - 7.8	7.2 - 7.8
Cyan uric Acid (mg/L) maximum (if used)	100	NA
Total Alkalinity (mg/L) minimum	60	NA

Source: © Guidelines for Safe Pool Operations – (GSPO v1 – SLLS, January 2020)



- e. **Stabilizer** : Ultraviolet rays of sunlight dissipate free available chlorine in outdoor pools quickly. Thus, stabilizer is used in outdoor pools to prevent chlorine from evaporating or dissipating from the pool water.

The stabilizer used in outdoor pools is cyanuric acid.

Chlorine residuals (free available chlorine) stabilized with cyanuric acid usually last three to five times longer.

Pool water without stabilizer should have an active chlorine content between 0.4 and 1.4 ppm.

Please note that a stabilizer is not recommended for indoor pools.

Recommended range for cyanuric acid in outdoor pools: 25 - 50 ppm

Cyanuric acid should not exceed 100 ppm. Levels above this limit reduce the disinfecting power of chlorine.

There are two choices to ensure cyanuric acid is present in outdoor pools. They are:

- Use of a stabilized chlorine
- Separate use of an unstabilized chlorine and a stabilizer

2.3 Bacteriological standards

There are four bacteriological standards that public pools must meet.

Test	Standard	Comment
E. coli	0 per 100 ml sample Note: repeat sample must be taken to confirm presence of E. coli	Indicator of the effectiveness of disinfection and recent fecal contamination
Staphylococcus aureus	50 or less per 100 ml sample Note: repeat sample must be taken to confirm presence of Staphylococcus aureus at levels above the standard	Indicator of water contamination
Pseudomonas aeruginosa	10 or fewer per 100 ml of sample Note: repeat sample must be taken to confirm Pseudomonas aeruginosa at levels above the standard	This organism is a pathogen in pools, spas and whirlpools.
Standard Plate Count (SPC)	250 or fewer per 1 ml of sample Note: repeat sample to confirm SPC at levels above the standard	Indicator of a deficiency in the treatment process

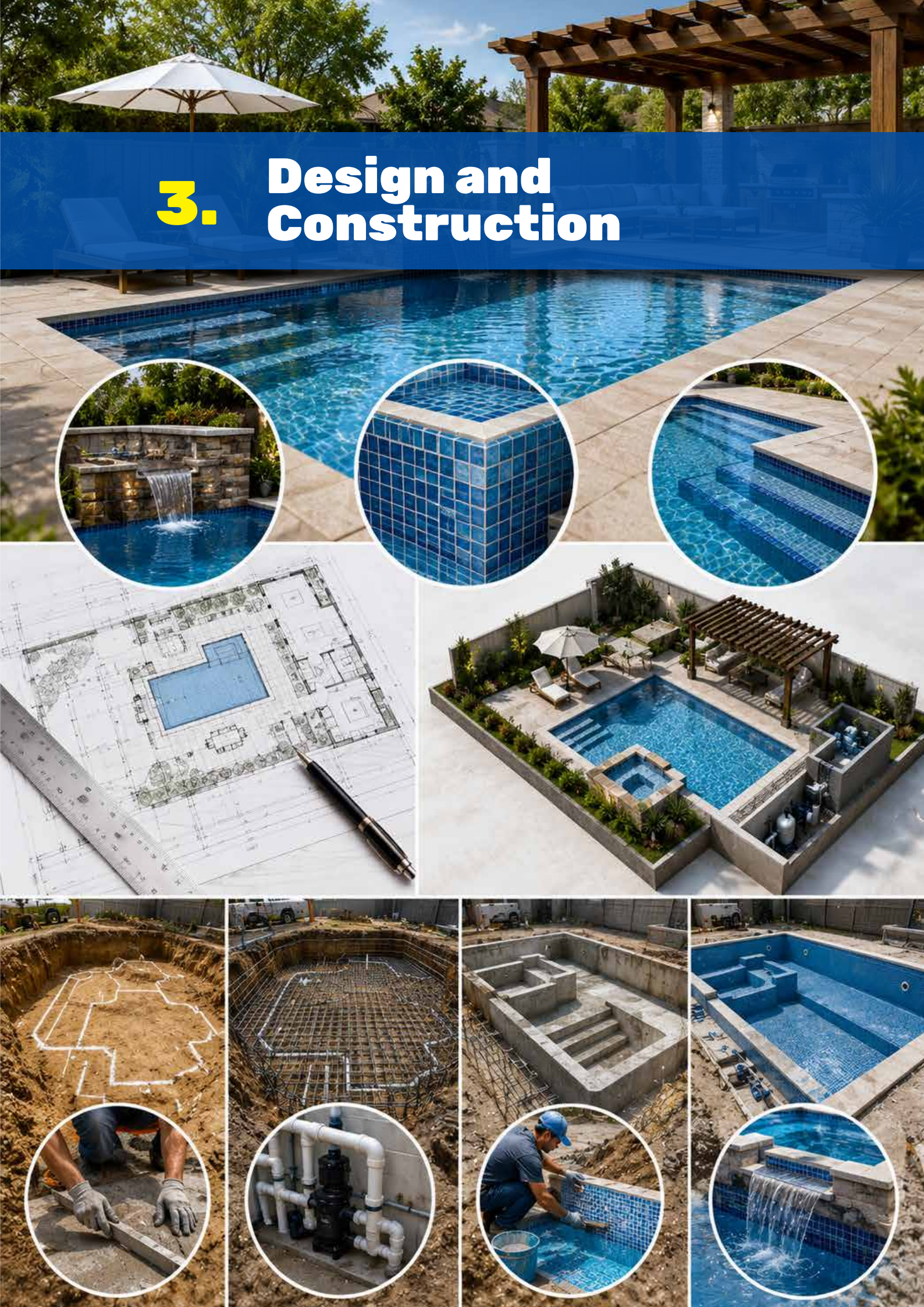
a. Testing methodology

Requirements for pool operators

- All pool operators are to perform and record the following tests at the indicated time intervals:

	Test	Testing Frequency	Remarks
1	Water Temperature	Once a day for all public pools	This is important for the comfort of users of the pool.
2	Free Available Chlorine Residual if used as a disinfectant for the pool	½ hour before opening and every four hours when the pool is in operation	This is the level of the uncombined chlorine in the pool water available to kill harmful germs
3	Total Chlorine Residual if used as a disinfectant for the pool	½ hour before opening and every four hours when pool is in operation	Total chlorine residual is defined as the sum of the uncombined chlorine (free available chlorine) and the combined chlorine. Combined chlorine is the free available chlorine which has combined with wastes to produce chloramines. Combined chlorine has very little disinfecting power but causes the chlorine odour in a pool. It is also responsible for eye irritation. The total chlorine residual must not exceed the free available chlorine residual by more than 0.5 ppm in the pool. Example: If the free available chlorine residual is 0.8 ppm, then total chlorine residual in the pool must not be greater than 1.3 ppm.
4	Total Bromine Residual if used disinfectant in the pool	½ hour before opening and every four hours when pool is in operation	This is the level of bromine in the pool water available to kill harmful germs
5	pH	½ hour before opening and every four hours when pool is in operation	High or low pH can affect the efficiency of chlorine to kill harmful germs
6	Total Alkalinity	Once a week for all public pools	This is important in maintaining the recommended pH levels in a pool.
7	Hardness	Once a week	May cause staining or cloudiness if the proper levels are not maintained.
8	Stabilizer (Cyanuric Acid) - Used in outdoor pools only	Once a week for all public pools	Used to prevent chlorine from evaporating or dissipating from the pool water

3. Design and Construction



3.1 Climate considerations for pool design

When designing a pool, it is essential to consider the local climate and weather patterns. Key factors to take into account include:

- a. Sunlight Exposure: Assess how much direct sunlight the pool area receives throughout the day.
- b. Wind Patterns: Understand prevailing wind directions, which can affect water evaporation and user comfort.
- c. Extreme Weather Events: Anticipate seasonal or occasional weather extremes, such as heavy rain, storms, or heatwaves.

To ensure long-term durability and safety, use weather-resistant materials in pool construction. These materials should be capable of withstanding environmental elements such as intense sunlight, rainfall, and fluctuations in temperature.

3.2 Pool deck

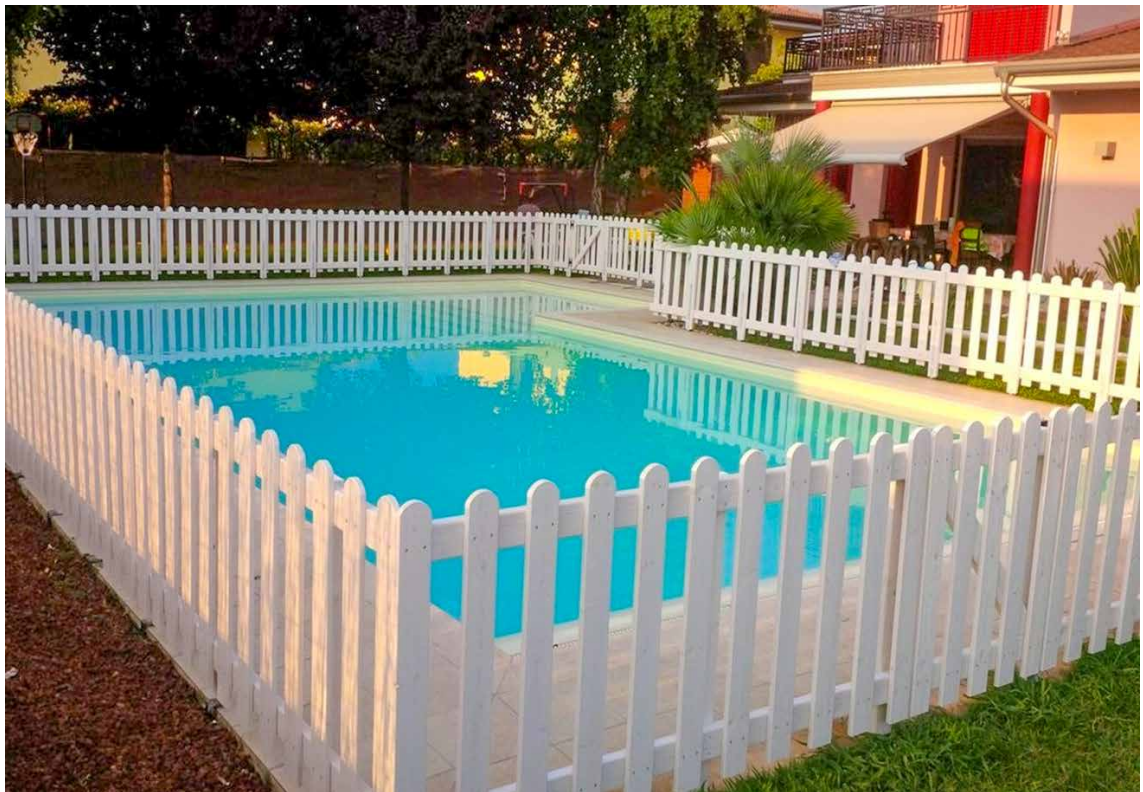


The area that surrounds the pool is considered the deck, and it can be made from a variety of materials. Use non-slip materials on the pool deck, diving board and ladders.

3.3 Pool access control

Swimming pools require robust access control to ensure safety, maintain cleanliness, and manage usage effectively. Further they are critical for managing the pool's capacity, ensuring only authorized users have access, and even maintaining optimal water quality. Overcrowding can lead to safety hazards and degrade the experience for users. Unauthorized access could result in liability issues, while uncontrolled access could lead to contamination and increased maintenance costs. Below are the minimum measures to follow for pool access control.

a. Fence:



- i. There should be a fence at least four feet (1200mm) high around all sides of the pool with a locked gate to keep children out when there is no supervision
- ii. The fence should be constructed in such a way that it is difficult to climb.
- iii. Any gaps in the fencing must be less than 100mm
- iv. The top of the fence must be a minimum of 900mm away from climbable objects, including trees, shrubs, pot plants and furniture that provides an easy boost over the fence.
- v. The device for unlocking any entry door/gate is at least 1.5m above the ground

- vi. Avoid using the side of a house or building or part of the boundary wall or fence instead of a fence. This will help to prevent small children or pets from entering into the pool through an open door or window.
 - If a boundary fence is used as a pool barrier, then this must be at least 1800mm in height. If the fence has vertical posts, then these cannot be more than 100mm apart; horizontal slats no less than 900 mm apart.
 - If the side of a house or building is used as part of the pool fence, it should be a blind wall.
- vii. The pool fence must be constructed from durable materials.
- viii. Gates must be self-closing and swing away from the pool.
 - Gate latches must be mounted pool-side.
 - Install sturdy guard rails around the pool deck.
 - Look for rolled rims on the metal shell to be sure the rims do not present a sharp cutting edge if someone falls.

b. Pool Safety Nets

Pool safety nets provide a safe, secure barrier while maximizing the available backyard space and preserving the view and ambiance of the swimming pool area. Further, they are an effective and secure method for preventing accidental drownings, especially for households with young children or pets. As with all safety barriers, the net is only to be used as a deterrent and the child should never be left alone near the pool. Swimming pool nets provide an excellent barrier for small or confined areas.

A swimming pool net has several advantages over pool fences. Children cannot climb over or under a net pool cover like they may be able to with some fences. If unwanted pool entry by older children who may be able to gain access even though a fence is in place is a concern, a pool net can be a viable solution.

- i. The squares are small enough that children can't fall through but too big to walk or stand on.
- ii. The mesh size of the net is specifically designed to prevent small children or pets from falling through while allowing water and debris to pass through. Typical mesh sizes range from 3 to 5 inches.

c. Safety Pool Covers: Swimming pool safety covers are the best way to ensure a safe environment for any child or pet that is near the pool, especially when closed. To be a safety pool cover, it is required that a pool cover be able to hold a minimum of 485 pounds per five square feet. This is considered to be the combined weight of one child and two average adults to make sure that a child or adult could be rescued from the cover.

3.4 The steps of the pool ladder

- a. The steps of the pool ladder should be at least three inches wide, and the ladder should have handrails on both sides small enough for a child to grasp.
- b. There should be a ladder at both ends of the pool.
- c. The access ladder to the deck should be sturdy and without protruding bolts or other sharp edges.
- d. The access ladder should swing up to prevent children from unauthorized entry or should be easily removable for secure storage away from the pool area.

3.5 Electrical equipment

Electrical equipment should be installed by a licensed electrician in accordance with local safety codes.

3.6 Depth of the pool

- a. Check with a professional pool contractor to be sure the depth is sufficient for a diving board or slide. Always put a slide in a deep area of the pool-- never in shallow water.
- b. Mark water depths conspicuously. Use a safety float line where the bottom slope deepens.



3.7 Alarms and sensors

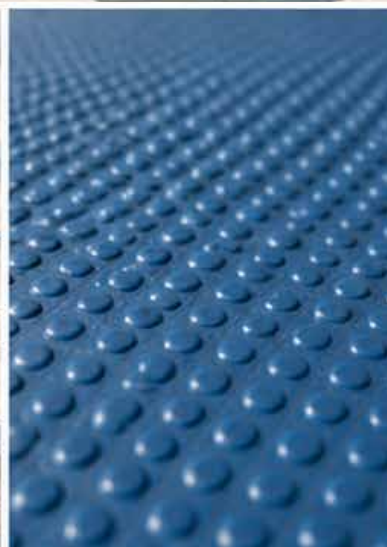
- a. **Pool Alarms:** There are many different types of pool alarms to consider depending on your budget, type of pool, and technical requirements. Remember that pool alarms are one tool that will help to make your swimming area safer. Parental guidance and vigilance are primary in ensuring pool safety.
- b. **Gate Alarms:** Gate alarms are mounted directly on your pool's gate with two magnetic switches. These alarms, which are battery-powered, activate when the gate is opened and the electrical field is broken. There is an override button that can be pressed by an adult to allow them to pass through without sounding the alarm. Gate alarms are designed for outdoor use, come in many different sizes, are inexpensive, and are easy to install.
- c. **Door Alarms:** Door alarms are designed for swimming pools that include the house in some part of their entire perimeter. When the door is opened, an audible alarm sounds. These alarms, which are turned on and off using a key or a keypad, are either battery-powered or use the home's current. They are affordable, easy to install, and provide a warning if the door is opened. They are also useful in detecting intruders.
- d. **Window Alarms:** As with door alarms, window alarms are used if the house is included in some part of or in the entire perimeter of the pool. When the window is open, an audible alarm sounds. These alarms, which are turned on and off using a key or a keypad, are either battery-powered or use the home's current. They are affordable, easy to install, and provide a warning if the window is opened.
- e. **Perimeter Alarms:** Perimeter alarms use laser or infrared light, forming an unbroken beam of light around the swimming pool's perimeter. When someone entering the perimeter breaks the beam, the alarm sounds. Alarm beams are positioned 12 to 24 inches above ground level and should be adjusted according to your child's height. These devices, which are the most expensive on the market, give total perimeter protection at a set height. Disadvantages are that the set height may not suit visiting children and that the alarm will activate if one of the pool's perimeter alarms is inadvertently hit, moved, or covered.
- e. **Wrist Alarms:** Wrist alarms are the latest in water safety. They may be used at the pool or even in a boat. These waterproof devices are key-locked securely onto your child's wrist and communicate via a base station. When the wrist alarm is immersed in water, the station alarm is activated. Base units and wrist alarms are purchased separately, which means you may have numerous wrist alarms for one base station.
- g. **Floating/Wave Sensors:** Floating/wave sensors are mounted on the edge of the pool or in the pool. They are key-activated, battery-powered, and portable. Generally, these alarms sense water displacement when an object weighing more than fifteen pounds enters the pool. When this occurs, a signal is sent to a remote receiver, which is either in the home or carried by the adult. The receiver emits an alarm of approximately 85 decibels. These alarms can be used with pool covers or solar blankets and have an adjustment that can reduce their sensitivity.

- h. **Fence/Wall Mounted Passive Infrared Motion Detectors:** Fence/wall mounted passive infrared motion detectors are an all-weather-designed system and may be mounted on a pool fence or wall. They can also be installed in a spa, patio, or garage. They protect an 8-yard semi-circular area by emitting a 110-decibel alarm that can be heard up to 50 yards away. These alarms, which are most effective when mounted on a pool fence or wall, are armed one minute after being switched on and possess a 5-second entry delay feature, which prevents the device from going off immediately after it's been activated. Unique features include both a movement and heat-sensitive sensor that can only be activated by a small child or animal when performing movements and emitting body heat within its patrol range.
- i. **Pool Mounted Passive Infrared Motion Detectors:** Pool mounted passive infrared motion detectors combine all of the important features found in other devices and are very affordable. Each unit simultaneously detects both motion and heat of anyone passing by and will not give any false readings for inanimate objects. With this device, a perimeter fence is not an integral part of the system as it is with most other systems. This key-operated unit runs on batteries or a DC power adapter and has a 24-hour warning signal for low battery power. With a 110-decibel micro siren, this is also the loudest alarm on the market and can be heard 50 yards away. These alarms cover an 8.5-yard radius and a 150-degree area.
- j. **Above Ground Pool Alarms:** Above Ground Pool Alarms use a new sensing method that requires no adjustments and is designed to detect intrusions similar to a 1 year-old child weighing 18 pounds and up. The alarm is activated with an on/off key - simply remove the key to turn the alarm on. Entry into the pool by children, pets, or intruders is detected by the unit's electronic sensor and sets off a loud, pulsating alarm both in the home and at the pool. The in-house remote receiver has a range up to 200 ft and comes with a 12-volt power supply. Safe, simple, and easy to operate, the alarm snaps onto the top rail of your above-ground pool. To store your alarm while using the pool, snap it on the outside of the pool.

3.8 Anti-entrapment equipment

- a. Suction entrapment can occur when a swimmer gets pulled down by the suction of a pool or hot tub drain. If this happens, the victim can get their hair, limbs, or other body parts trapped and pulled toward the drain.
- b. A Safety Vacuum Release System - or SVRS for short - is an automatic suction force release system. When a drain becomes blocked, the SVRS provides a rapid vacuum release. This quickly frees anyone whose body or limb is trapped in the drain. An SVRS works whether or not there is a cover on the drain, and does not interfere with the pump function. Once installed, an SVRS requires little or no maintenance. It is recommended to have a pool professional install the SVRS.
- c. A pool safety drain cover works to prevent the powerful suction of a pool drain from making a complete seal that could trap a person's body against the drain, or entangle hair. Safety drains cover the main drain of a pool, which is the suction outlet at the bottom or side of a swimming pool that directs water into the circulation and filtration system.

4. Accessibility



4.1 Preventing overcrowding

Admissions are normally controlled at the point of entry to the pool facility, rather than the water itself. Therefore, allowances can be made in setting a maximum bather (swimmer) load. This is the maximum number of people that can be safely admitted to the pool. Pool owners/operators may decide to set a maximum bather load for each swimming pool or feature within a given facility. When deciding maximum bather loads, consideration should also be given to:

- a. The capacity of the plant room
- b. The available space for swimming and recreating
- c. Staffing/supervision levels
- d. Emergency management (including evacuation) plans

Pool owner/operators should (as part of a risk assessment) ensure that an effective method of access control and attendance recording is in place and operational. Should there be a risk of the maximum number of users being exceeded, admissions into the facility should be restricted.

Staff must be trained in the Emergency Action Plan (EAP) for the management of overcrowding



4.2 Preventing disorderly behaviour

Pool owners/operators should act to prevent any disorderly behaviour (towards staff or other pool users) in the pool or surrounding areas. Staff must be trained in the Emergency Action Plan for the management of disorderly behaviour.

4.3 Controlling access to plant rooms and other areas

Plant rooms, chemical stores and other areas should be secured against unauthorised access. This includes preventing untrained staff from entering these higher-risk areas.

4.4 Disability access

Access to swimming pools is a fundamental right for people with disabilities and seniors, providing not only physical but also social and emotional benefits. Ensuring pool access for disabled individuals and seniors involves adhering to specific standards and guidelines to promote safety, accessibility, and usability.



a. Accessible Routes:

- i. Pools must have accessible routes from the parking area, entrance, and other amenities to the pool deck.
- ii. These routes should be free of obstacles, with smooth, slip-resistant surfaces and appropriate width to accommodate wheelchairs and mobility devices.
- iii. Pools must provide at least two accessible means of entry/exit if the pool perimeter is over 300 linear feet; For smaller pools, one means is required.
- iv. The primary accessible entry method is typically a pool lift or a sloped entry (ramp).
 - Pool Lifts: Must be capable of unassisted operation by the user.
 - Sloped Entries:
 - Sloped entries must have a slope not steeper than 1:12.
 - They should have handrails on both sides, extending from the deck to the water level.

b. Non-Slip Surfaces:

Both the pool deck and entry/exit points should have non-slip surfaces to prevent falls.

c. Shallow Water Access:

Pools should have areas with gradual depth changes, allowing seniors to comfortably enter and exit the water without sudden drops.

d. Additional Features for Enhanced Accessibility

i. Accessible Restrooms and Changing Facilities:

- Restrooms and changing facilities should be designed to accommodate wheelchairs and include features like grab bars, accessible showers, and sufficient maneuvering space.

ii. Visual and Auditory Aids:

- For those with visual impairments, tactile guide paths and Braille signage can be helpful.
- For hearing impairments, visual alarms and indicators around the pool area enhance safety.

e. Staff Training:

Pool staff should be trained in assisting disabled and senior patrons, including proper operation of accessibility equipment and emergency response protocols.

4.5 Child admission policy

The child admission policy for the swimming pool must be clearly displayed at all entrances to the pool area. For swimming pools that are open to members of the public, the child admission policy must also be displayed at the point of sale. The pool owner/operators should make parents/guardians aware of the policy prior to admission. Signage should be provided in Sinhala, English and Tamil (Please find details below)

- a. To provide guidance on the admission of children to a swimming facility and appropriate supervision by a parent or guardian.
- b. It is the responsibility of the pool owner/operator to establish a clearly defined admission policy for children. It is essential that this policy is implemented and monitored by all staff at all times.
- c. This policy should be clearly displayed in accordance with the signage guidelines and should be explained to visitors before admission. It is important that parents/guardians are fully aware of the supervision policy and their responsibilities.
- d. Any child who is under 5 years old must be directly supervised in the water by a parent or guardian over 18 years old during unprogrammed activities. The parent/guardian must be in the water and within arm's reach of the child at all times. An unprogrammed activity is any activity that is open to members of the public for recreational swimming without direct control by a certified instructor/trainer.
- e. Children under 10 years old must be accompanied into the swimming pool by a responsible parent or guardian over 18 years old. They must be constantly and actively supervised, and the parent/guardian must be positioned to have a clear view of the child with no physical or structural barriers between them and the child/ children.
- f. The recommended ratio of parent/guardians to children under 10 years old is 1:2. Pool owners/operators must complete a risk assessment to decide the appropriate supervision ratio.
- g. Personal flotation devices - Personal Flotation Devices (PFDs) such as arm bands or life jackets can help to reduce the risk of drowning; however, they are not an alternative to the active supervision of children. Pool owners/operators are not required to provide life jackets; however, they may consider doing so. If this is the case, pool owners/operators must ensure that the devices are fit for purpose, maintained in a usable condition, and routinely inspected. LIFEJACKET PIC
- g. Pool Lifeguard supervision - Pool Lifeguards are provided to support parents/guardians in the safe supervision of their children. The responsibility for the direct supervision of children, however, ultimately remains with the parent/guardian. This is because Pool Lifeguards are responsible for supervising all pool users.

5. Maintenance and Operational Standards



To make sure that the swimming pool is clean and healthy, proper maintenance is a must.

There are three C's to follow in pool care:

- I. Circulation
- II. Cleaning
- III. Chemistry

Check the pool and equipment periodically for cleanliness and good maintenance. Cover all sharp edges and protruding bolts; repair rickety or broken ladders and railings. Replace non-slip materials when they wear out.

5.1 Circulation

- a. Run pool pump 8-12 hours per day
- b. Backwash or clean filter if pressure is above 10-15 psi
- c. Clean the skimmer & pump basket
- d. Keep jets facing circular and downward

5.2 Cleaning

- a. Brush walls, steps, ladders, low circulation spots daily
- b. Skim the surface daily
- c. Vacuum once a week or use an automatic cleaner
- d. Keep debris and “dead spots” cleaned up

5.3 Chemistry

(See details under water quality and hygiene)

Scrubbing the walls with a pool brush prevents algae, staining, and scaling, especially around “dead areas” such as steps, ladders, crevices, and below the skimmer.

References

1. Government of Newfoundland and Labrador, Department of Health and Community Services, Public Health Division. Public Pool Standards and Guidelines. St. John's, Newfoundland and Labrador: Department of Health and Community Services; 2023 Mar. Available at: <https://www.gov.nl.ca/hcs/files/Environmental-Health-Guidelines-Public-Pool-Manual.pdf>
2. International Code Council. 2021 International Swimming Pool and Spa Code (ISPSC): Chapter 4 – Public Swimming Pools. Washington, DC: International Code Council; 2021. Available at: <https://up.codes/viewer/washington/ispac-2021/chapter/4/public-swimming-pools>
3. International Life Saving Federation. Lifesaving Position Statement – LPS-05: Lifesaver and Lifeguard Uniforms. Leuven, Belgium: International Life Saving Federation; 2005. Available at: <https://www.ilsf.org/wp-content/uploads/2019/01/LPS-05-2006-Uniforms.pdf>
4. Leisure & Culture Dundee. Management Rules for the Regulation of Leisure Centres, Sports Centres and Swimming Pools. Dundee: Leisure & Culture Dundee. Available at: <http://www.leisureandculturaldundee.com>
5. Lifesaving Society Canada. Public Pool Safety Standards for Canadian Public Swimming Pools. Ottawa, Ontario: Lifesaving Society Canada; 2013 Nov. Available at: <https://www.lifesaving.ca/publications/national-public-pool-safety-standards>
6. Region of Waterloo Public Health. Public Pool Safety Manual. Waterloo, Ontario: Region of Waterloo. Available at: https://www.regionofwaterloo.ca/en/doing-business/resources/Documents/POOL_MANUAL.pdf
7. Sri Lanka Life Saving. Guidelines for Safe Pool Operations (GSPO–SL). Version 1. Sri Lanka: Sri Lanka Life Saving; 2020 Jan.
8. SwimmingPool.com. Swimming Pool Safety Guidelines. Available at: <https://www.swimmingpool.com/resources/safety-guides/safety-guidelines/>
9. The Swimming Swan. The Difference Between Lifeguards and Pool Monitors. 2021 Mar 18. Available at: <https://theswimmingswan.com/2021/03/18/the-difference-between-lifeguards-and-pool-monitors/>
10. World Health Organization. Guidelines for Safe Recreational Water Environments. Volume 2: Swimming Pools and Similar Environments. Geneva: World Health Organization; 2006. ISBN 92-4-154680-8. Available at: <https://www.who.int/publications/i/item/9241546808>



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