

Public Pool Safety Standards

For Canadian Public Swimming Pools 



LIFESAVING SOCIETY

The Lifeguarding Experts



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PUBLIC POOL SAFETY STANDARDS FOR CANADIAN PUBLIC SWIMMING POOLS

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The Lifesaving Society is Canada's lifeguarding expert. The Society works to prevent drowning and water-related injury through its training programs, Water Smart® public education, aquatic safety management, drowning research and lifesaving sport.

Annually, over 1,000,000 Canadians participate in our swimming, lifesaving, lifeguard and leadership training programs. As Canada's lifeguarding expert, the Lifesaving Society sets the standard for aquatic safety and certifies Canada's National Lifeguards – the professional standard for lifeguards in Canada.

The Society establishes aquatic safety standards and consults widely on aquatic safety issues for aquatic facility owners and operators, governments, agencies and the judicial system. The Society represents Canada internationally in the Commonwealth Royal Life Saving Society. We are Canada's Full Member in the International Life Saving Federation. We are the Canadian governing body for lifesaving sport – a sport recognized by the International Olympic Committee and the Commonwealth Games Federation.

We are a national, independent, charitable organization that has been saving lives in Canada for over 100 years.

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Foreword

As Canada's lifeguarding expert, and in consultation with its Affiliate Members, the Lifesaving Society advises the judicial system, governments and pool and waterfront owners and operators on matters related to public safety in aquatic environments. The Society's leadership in establishing aquatic safety standards is driven by our mission to prevent drowning deaths and water-related injury in Canada's aquatic facilities.

In Canada, most provincial/territorial jurisdictions have regulations or guidelines for public aquatic facilities. These regulations or guidelines vary – in the aquatic safety issues they address, and in their specifics. These regulations or guidelines may also be silent on topics deemed relevant by the Lifesaving Society.

Owners and operators of public swimming pools must fulfill the requirements detailed in regulations. Local health inspectors perform inspections of public pools, and should be used as resources in answering questions and assisting owners and operators in meeting the regulations.

The Lifesaving Society hopes the standards presented in this publication will provide guidance to public pool owners and operators on matters not addressed in regulation or guidelines in their own jurisdictions, and assist aquatic staff in operating safe facilities.

Lifesaving Society standards are based on extensive research of existing standards, guidelines and best practices at home and abroad.

Lifesaving Society standards represent the reasonable minimum; pool operators are encouraged to go beyond them.

The Lifesaving Society will continue to develop and publish national standards on other important aquatic safety issues.

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Definitions

General

Operator – a person designated by the owner of a public pool to be responsible for the operation of the pool.

Owner – a person or corporation who is the owner of a public pool.

Bather – a person whose intent is to use the swimming facility.

Public pool (includes swimming pool, hot tub/whirlpool, wading pools, spray/splash pools, etc.) –

- i. a pool to which the general public is admitted for the intention of bathing,
- ii. a pool operated in conjunction with or as a part of the program of an association or similar institution or an educational, instructional, physical fitness or athletic institution supported in whole or in part by public funds or public subscription.

Deck – the area immediately surrounding a public pool that is supervised by lifeguards.

General area – an area adjacent to the deck within a pool enclosure that is used for activities other than water-based activities.

Lifeguard – means a person with a current National Lifeguard certification appointed by the owner or operator to maintain surveillance over bathers while they are on the deck or in the pool and to supervise bather safety.

Lifeguard Certification

Current – a National Lifeguard certification dated not more than two years prior to the date of which the lifeguard is on duty.

Entrapment and Suction Hazards

Outlet – an opening in the pool tank that can generate suction (e.g., main drain or skimmers).

Equalizer – an outlet in the swimming pool used to provide an alternate source of water for the filter system linked to the skimmer basket system.

Vacuum fitting – an outlet in the pool designed to connect a swimming pool vacuuming system.

Safety Equipment

Buoyant aid – any device that floats and can be easily thrown or carried to a victim to help support them.

Spineboard – a device for immobilizing a suspected spinal-injured victim, with a head piece for neck immobilization and three straps for securing the victim on the board.

First Aid Box – contains appropriate supplies as outlined in the Canadian Lifesaving Manual and personal protective equipment.

Definitions

Emergency Telephone

Directly connected – able to communicate through an outside line to 911 or emergency services without the need to connect to a secondary agency or switchboard operator.

Easily accessible – immediately adjacent to the pool deck and not behind any locked doors.

Emergency service – often directly connected to emergency medical services (EMS).

Water Clarity

Nine metres – distance is measured in a straight line from the disc to the observer.

White background – must surround the black disc at least 150 mm beyond the disc.

Diving Depths

Diving – any head first entry.

Recreational swim – any period where bather's activities are not restricted and where bathers are not under the supervision or direction of an instructor or coach.

Bather – a person whose intent is to use the swimming facility.

Lighting Levels

Lux – a basic unit of illumination equal to one lumen per square metre (0.0929 foot-candles or one candela per square metre).

Safety Supervision During Instructional Periods

Aquatic instructor or coach – one who holds a current National Lifeguard certification together with a recognized aquatic instructor certification.

Lifeguard Age

Lifesaving Society standard for Canadian public swimming pools approved January 2012

Standard

The minimum age for a lifeguard on duty is 16 years of age.

Rationale

- Sixteen years is a reasonable minimum age of maturity for the assumption of lifeguard responsibilities and the performance of lifeguard duties.
- Sixteen years is consistent with the minimum age for lifeguards recommended by the International Life Saving Federation.

References consulted

1. Recommended Minimum Age for ILS International Lifesaving and Lifeguarding Certificates, International Life Saving Federation, Leuven, Belgium, September 2007
2. International Labour Organisation (www.ilo.org)
3. Guidelines for Establishing Open-Water Recreational Beach Standards, United States Lifesaving Association, 1980
4. Proposed Rules for Child Labor – Lifeguard Age, Correspondence to Officer of Enforcement Policy, U.S. Department of Labor, United States Lifesaving Association, May 2007
5. Guidelines for safe recreational water environments Volume 1, Coastal and fresh waters, World Health Organization. Geneva, 2003

Lifeguard Certification

Lifesaving Society standard for Canadian public swimming pools approved March 2011

Standard

The required certification for a lifeguard is a current National Lifeguard award.

Rationale

- The Lifesaving Society's National Lifeguard award is Canada's recognized lifeguarding certification:
 - The Canadian Parks and Recreation Association (CPRA) is composed of 13 provincial/territorial parks and recreation associations representing 90% of Canada's communities. CPRA unanimously endorses a single lifeguard standard for Canada and National Lifeguard as that standard (2006 and 2008 resolutions).
 - National Lifeguard is the Canadian lifeguard standard recognized by the International Life Saving Federation.
 - National Lifeguard has been endorsed by Recreation Nova Scotia, Parks and Recreation Ontario, Alberta Recreation and Parks, B.C. Recreation and Parks Association, CUPE and St. John Ambulance.
 - Of the over 4,000 supervised aquatic facilities in Canada, 99% endorse National Lifeguard as the sole lifeguard standard.
- The National Lifeguard standard is backed by the Lifesaving Society Canada and endorsed and supported by the National Lifeguard Advisory Committee composed of: lifeguard employers and national agencies: Canadian Parks and Recreation Association; Physical and Health Education Canada; YMCA; and Canadian Forces.
- The National Lifeguard standard is available in every province and territory in Canada and the only lifeguard certification recognized by employers in all provinces and territories.

References consulted

1. Various regulatory references from CANLIT website which offers regulatory references for all provinces.
2. *Alert: Lifeguarding in Action*, Lifesaving Society Canada

Bather-to-Lifeguard Ratios

Lifesaving Society standard for Canadian public swimming pools approved March 2011

Standard

Minimum numbers of lifeguards for public (general/open) recreational swims in a pool with a water surface area of 400 square metres* or less:

Number of bathers on the deck and in the pool	Minimum number of lifeguards on deck, on duty
0–40	1
41–80	2
81–140	3
141–200	4
201 and beyond	One additional lifeguard for each additional 100 bathers or fraction thereof

Notes:

- The bather-to-lifeguard ratio represents a minimum standard. Circumstances (e.g., pool size, depth, design, equipment usage, ability of patrons) may require more lifeguards to be on duty to maintain a safe level of supervision.
- 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 is able to provide emergency assistance when requested.

Rationale

- Owner/operators seek guidance from the Lifesaving Society when establishing reasonable supervision levels.
- To maintain a safe level of supervision, owners and operators must establish a bather-to-lifeguard ratio that ensures that lifeguard(s) will be able to see all areas of the pool that are accessible to bathers (including but not limited to the bottom of the pool).
- Lifeguards will provide this supervision during recreational swim periods. As the number of bathers increase, the number of lifeguards should increase.
- One other factor that will determine ratios is water surface area. In swimming pools where bathers can disperse over large areas, additional supervision should be provided.

References consulted

1. Various regulatory references from CANLIT website which offers regulatory references for all provinces.
2. Joshua Harder inquest, Manitoba 2003
3. *Alert: Lifeguarding in Action*, Lifesaving Society Canada

* 6 lane x 25 m swimming pool

Emergency and Operating Procedures

Lifesaving Society standard for Canadian public swimming pools approved March 2011

Standard

Every owner and every operator shall ensure that there are written emergency and operational procedures at the pool to be implemented in the event of an emergency, accident or injury in the pool and that all lifeguards and all other appropriate facility personnel are trained in the specific emergency and operational procedures for the facility at which they work.

Rationale

- Clear written procedures should be readily accessible to staff so that they familiarize themselves with the proper procedures. These procedures will enhance the day-to-day safe operation of the facility and the ability of staff to respond to an emergency situation.

References consulted

1. Various regulatory references from CANLIT website which offers regulatory references for all provinces.
2. *Alert: Lifeguarding in Action*, Lifesaving Society Canada

Entrapment and Suction Hazards



Lifesaving Society standard for Canadian public swimming pools approved March 2011

Standard

Every owner and every operator shall ensure that they identify and render safe all hazards related to underwater entrapment and suction points within the swimming pool.

Rationale

- Single-suction sources have proven to entrap bathers. These sources have been eliminated from most new construction standards.

References consulted

1. Various regulatory references from CANLIT website which offers regulatory references for all provinces.
2. Virginia Graeme Baker Pool And Spa Safety Act – US

Safety Equipment

Lifesaving Society standard for Canadian public swimming pools approved March 2011

Standard

Every owner and every operator shall ensure that there are provided in places conveniently located and readily accessible for emergency use:

- a) an electrically insulated or non-conducting reaching pole at least 3.65 metres long
- b) a minimum of two buoyant aids
- c) a spineboard designed for transporting a person with a suspected spinal injury
- d) a first-aid box

Rationale

- Sufficient rescue equipment should be provided for lifeguard use during an emergency situation. This equipment lowers the risk to the rescuer and increases the treatment options for the victim.

References consulted

1. *Canadian Lifesaving Manual*, Lifesaving Society Canada
2. *Alert: Lifeguarding in Action*, Lifesaving Society Canada
3. Various regulatory references from CANLIT website which offers regulatory references for all provinces.

Emergency Telephone



Lifesaving Society standard for Canadian public swimming pools approved March 2011

Standard

Every owner and every operator shall ensure that an emergency telephone is provided that is easily accessible from the deck and that is directly connected to an emergency service or the local telephone utility.

Rationale

- When an emergency occurs, emergency medical services are often required. Access to these services must be immediately accessible to lifeguards so that advanced care can be summoned to assist with victim care.

References consulted

1. Various regulatory references from CANLIT website which offers regulatory references for all provinces.
2. *Alert: Lifeguarding in Action*, Lifesaving Society Canada

Water Clarity

Lifesaving Society standard for Canadian public swimming pools approved March 2011

Standard

Every owner and every operator of a pool shall ensure that the pool water is of a clarity to permit a black disc 150 millimetres in diameter on a white background located on the bottom of the pool in the area of its greatest depth to be clearly visible from a point on the deck nine metres away from the disc in the pool. When the disc is not clearly visible, the entire pool area shall be closed.

Rationale

- To ensure lifeguards are able to provide proper supervision of bathers within their zones, the lifeguards must be able to see the pool bottom clearly at all times.
- A simple test for lifeguards to monitor visibility is the black disc test. Monitoring should be done regularly. When conditions do not meet this standard, the pool must be closed immediately.

References consulted

1. Various regulatory references from CANLIT website which offers regulatory references for all provinces.

Diving Depths

Lifesaving Society standard for Canadian public swimming pools approved March 2011

Standard

1. During a recreational swim, the minimum water depth for diving from a pool deck that is 500 mm or less above the surface is 2.75 m for a minimum distance of 6 m from the starting point of the dive.
2. Refer to FINA standards for safe diving from pool decks 500 mm or higher from the deck or from diving boards, starting blocks and platforms.
3. Diving and no-diving areas must be clearly identified.

Rationale

- Diving poses a risk to bathers entering the water due to potential collision with other bathers, or the bottom or side of the swimming pool.
- There are clear standards regarding water depths from diving boards and platforms, but few that suggest minimum standards from diving from the swimming pool deck.
- To reduce this risk, those choosing to enter the water head first should have sufficient water depth below them to ensure they do not hit the bottom of the pool regardless of the effectiveness of the diving entry.

References consulted

1. Various regulatory references from CANLIT website which offers regulatory references for all provinces.
2. FINA standards for diving (www.fina.org)
3. Ontario Building Code, section 3.11
4. 2006 Avis de santé publique sur la sécurité dans les piscines résidentielles et publiques au Québec (Safe Kids Worldwide)

Records

Lifesaving Society standard for Canadian public swimming pools approved March 2011

Standard

Every operator shall keep and sign daily records that shall set out:

- a) The free available chlorine and the total chlorine residuals in the pool water or where a bromine compound is used, the total bromine residual
- b) The pH value of the pool water
- c) The clarity of pool water
- d) The occurrence of any pool foulings
- e) The total number of bathers admitted to the pool each day
- f) The daily staffing levels and schedules
- g) Make-up water added
- h) Emergency telephone checks
- i) Lifeguard equipment checks
- j) Any emergencies, rescues or first aid assistance provided
- k) The occurrence of any equipment breakdowns and the action taken to rectify
- l) The time of day that the action was recorded

Rationale

- Records ensure all appropriate tests are being taken during the opening, closing and operating hours of a facility. These records provide evidence of owner/operator vigilance of the facility and the maintenance of safe water.

References consulted

1. Various regulatory references from CANLIT website which offers regulatory references for all provinces.

Lighting Levels

Lifesaving Society standard for Canadian public swimming pools approved March 2011

Standard

The lighting level for indoor and outdoor pools must be maintained at minimum 200 lux over the entire water surface and deck throughout all periods of operation.

Various facilities may require more lighting in order to maintain safe supervision.

An emergency lighting system must be in place to illuminate the deck and pool bottom in the event of a power failure.

Rationale

- Appropriate lighting levels must be maintained in order for lifeguards to provide adequate supervision of bathers. Poor illumination of swimming pool decks and water surface areas make it difficult for lifeguards to provide supervision and bathers on the pool bottom can go unseen. Appropriate lighting levels ensure visibility of all areas, especially the pool bottom.

References consulted

1. Building codes
2. Operational regulations
3. Illuminance Engineering Society of North America – IESNA RP-6-01

Safety Supervision During Instructional Periods

Lifesaving Society standard for Canadian public swimming pools approved January 2012

Standard

- A public pool is exempt from the recreational swim safety supervision requirements (see Bather-to-Lifeguard Ratios) during a period when the pool is being used solely by one or more groups (each not exceeding 25 in number or program recommended ratios whichever is lower) for aquatic instruction, practice, competition or display under the direct supervision of a certified aquatic instructor or coach who holds a current National Lifeguard certification.
- If the instructor or coach does not hold a current National Lifeguard certification then a current National Lifeguard must provide supervision.
- When there are 40 or more people in the pool and deck area during an instructional period, there shall be a lifeguard on deck to provide supervision.

References consulted

1. Ontario Ministry of Health Regulation 565/90
2. Swim Canada Guidelines for coach/student ratios

Swimming Pool Basin Colour

Lifesaving Society standard for Canadian public swimming pools approved January 2012

Standard

The submerged surfaces of a public pool must be white in colour, except for markings for safety or competition purposes.

Safety and competition markings:

- Markings such as lane and drop-off indicators should be dashed rather than solid lines.
- Safety markings should adhere to the applicable Building Code requirements.
- Competition markings should adhere to the applicable sport requirements (e.g., FINA).

Rationale

- Lifeguards and instructors must be able to clearly see the bottom of the swimming pool at all times when they are providing supervision of bathers (see Water Clarity, page 10).
- Studies have demonstrated that it is easier to discern objects on the pool bottom when the bottom is white in colour.

References consulted

1. Building codes
2. Operational regulations
3. Illuminance Engineering Society of North America – IESNA RP-6-01

Lifeguard Chair Specifications

Lifesaving Society standard for Canadian public swimming pools approved January 2012

Standard

A lifeguard chair shall be:

- a) an elevated platform or chair not less than 1.8 metres above the water surface
- b) constructed or designed so as to:
 - be readily identifiable by the public
 - provide an unobstructed view of the area under surveillance including the pool bottom
 - provide protection from the elements (e.g., sun)
 - provide storage areas for lifesaving equipment
 - meet Occupational Health and Safety Association standards
- c) securely positioned while in use and located so as to permit an unobstructed view of the area under surveillance
- d) restricted to the exclusive use of lifeguards
- e) maintained in good repair

Rationale

- Lifeguard chairs serve as a platform from which lifeguards monitor bathers in various aquatic settings. Designed properly, they allow an unobstructed view of bathers while facilitating a fast response to victims requiring assistance.

References consulted

1. Building codes
2. Operational regulations

Breath-Holding

Lifesaving Society standard for Canadian public swimming pools approved January 2012

Standard

Repetitive breath-holding, prolonged breath-holding and prolonged underwater swimming is not permitted by the general public pool user.

Such activities may be permitted in a public pool only under the direct supervision of a qualified instructor or coach, and following recognized safety protocols (i.e., Canadian Association of Freediving and Apnea).

Rationale

- Several drownings in Canada have occurred as a result of bathers attempting lengthy underwater swims while holding their breath.
- There is overwhelming evidence that extended underwater breath-holding is dangerous because it may lead to unconsciousness and drowning.
- Although this breath-holding activity is gaining in popularity in competition formats, typical recreational swims are not set up to provide adequate supervision or response to this type of activity.
- There are guidelines recommending supervision and prevention strategies for breath-holding competitions.

References consulted

1. Canadian Association of Freediving and Apnea Competition Manual
2. Talisman Safety Policy and Procedure Manual
3. Dying for Air, International Aquatics Magazine, February 2005
4. Shallow Water Blackout video, Dr. Tom Griffiths.
5. Shallow Water Blackout Information Bulletin, Lifesaving Society British Columbia & Yukon
6. *Canadian Lifesaving Manual*, Lifesaving Society Canada



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