

Standards for Public Wading Pools

**for Operators, Owners and Public
Health Inspectors**

Rationale

The necessity for a comprehensive guideline for the construction, operation and maintenance of wading pools has been felt for quite some time. A survey of wading pools in 1974, indicated that a number of local public health agencies believe that with proper supervision, good maintenance and adherence to fundamental principles of sanitation and hygiene it should be possible to have a clean and enjoyable wading pool. It is with this end in view that this standard is being offered. The data obtained from various health agencies regarding the operation and maintenance of the wading pools were of value in preparing this guideline.

The operator/supervisor of the wading pool is the most important single factor in its proper maintenance. This person must be able and willing to carry out simple procedures that will safeguard the health and safety of the pool users.

Definition

"Wading pool" means any structure, basin, chamber or tank containing or intended to contain an artificial body of water having a depth of water equal to 0.75 metres (2 feet 6 inches) or less at any point that is provided for the recreational or instructive use of young children. "Public Wading Pool" means a wading pool other than a private residential pool or a wading pool for display or promotional purposes only.

1. Construction of Public Wading Pools

Where existing wading pools of the fill-and-dump type are to be reconstructed, conversion to the recirculating type should be considered. It is recommended that all new wading pools be provided with a recirculation system that includes filtration and an adjustable disinfectant feeder of adequate capacity and design.

1.1. Construction Details for all Wading Pools

1.1.(a) In addition to a main drain provided with a grating, a fill-and-dump pool should be provided with an overflow gutter located along the periphery of the pool. The overflow gutter shall be covered with a grating which shall be free from sharp edges or corners.

1.1.(b) The water depth should not be less than 0.15 metres (six inches). The greatest water depth should not exceed 0.75 metres (two feet six inches).

1.1.(c) The slope of the pool bottom should be steeper than one in 12.

- 1.1.(d) The pool should be provided with an apron not less than 1.22 metres (four feet) in width and having a surface area not less than one-third the water surface area.
- 1.1.(e) The apron should have a hard non-slip surface that can be readily cleaned and sanitized.
- 1.1.(f) The apron should slope between two to four percent (¼ inch to inch ¼ per foot) away from the pool.
- 1.1.(g) No surface run off from outside the pool area should drain into the pool.
- 1.1.(h) The ground surrounding the apron should be lower than the apron and should be sodded.
- 1.1.(i) The water from the overflow gutter should be disposed of in a manner satisfactory to the authority having jurisdiction.
- 1.1.(j) A hose bib fitted with a backflow preventer should be conveniently available for cleaning the pool and the apron and should be so located as to avoid injury to the pool users.
- 1.1.(m) Slides are considered hazardous and are not recommended. However, if a slide is to be installed, its design must be suited to the available water depth.

1.2 Additional Provision for Fill-and-Dump Wading Pools

- 1.2.(a) The water supply line should be capable of filling the pool in one hour or less.

1.3 Additional Provisions for Filtered and Recirculated Wading Pools

The Pool should be so constructed that,

- 1.3.(a) the recirculation system has a capacity sufficient to turn over the water content of the pool at least once every 2 hours;

- 1.3.(b) inlets are provided for satisfactory distribution and circulation of clean water throughout the pool before it re-enters the recirculation system;
- 1.3.(c) The pipelines and fittings terminating in the pool are provided with gratings or covers that are securely fastened;
- 1.3.(d) it can be emptied in four hours or less through one or more drains, and the area of the drains should be such that the flow of water does not exceed
- (i) 0.45 metres (1½ feet) per second through the openings of a grate; or
 - (ii) 1.83 metres (six feet) per second through the openings of an anti-vortex fitting;
- 1.3.(e) the size of the piping is such that the velocity of recirculating water shall not exceed
- (i) 1.83 metres (6 feet) per second in the suction line;
 - (ii) 3.05 metres (ten feet) per second in the return line in the case of plastic pipe or 2.44 metres (eight feet) per second in the case of copper pipe;
- 1.3.(f) it is provided with overflow gutters or surface skimmers of adequate capacity and design to remove surface film;
- 1.3.(g) gate valves are provided in the main drain and the gutter or skimmer lines to permit up to 25% of the pool water to be withdrawn daily from the water surface and discharged to waste;
- 1.3.(h) it is provided with a water meter to indicate and register the volume of all make-up water added to the pool or its recirculation system;
- 1.3.(i) a chlorinator or hypochlorinator is installed capable of providing a dosage equivalent of not less than,
- (i) 60 mg of available chlorine per day per litre of total pool capacity (six pounds per 10,000 gallons) in the case of an outdoor wading pool;

- (ii) 40 mg of available chlorine per day per litre of total pool capacity (4 pounds per 10,000 gallons) in the case of an indoor wading pool or a brominator is installed of sufficient capacity to maintain in the pool a total bromine residual of 4 mg/l.

1.3.(j) The provision of a suitable fence or barrier surrounding the apron and provided with a lockable gate should be considered.

2. Operation and Maintenance

2.1 General

2.1.(a) The pool should be continuously supervised as long as there is water in the pool in the case of a fill-and-dump pool, and during the period the pool is open for use in the case of a pool that is filtered and recirculated. The person supervising the pool should be at least 16 years of age, familiar with health hazards connected with wading pool use, and a holder of a valid St. John Ambulance Emergency First Aid Certificate or its equivalent.

2.1.(b) A notice should be posted at the wading pool containing the following instructions:

- (i) children who are not toilet trained or children with skin lesions, vaccination at the scab stage, communicable diseases, open sores, boils, colds, nasal or ear discharge, or inflamed eyes are not admitted within the pool enclosure
- (ii) no glass container, food or beverage of any description is allowed in the pool or on the apron.

2.1.(c) The pool water should be free from visible solids that may be hazardous to the health or safety of the waders. The pool water should be dumped immediately after gross fouling.

2.1.(d) A test kit specific for determining the free available chlorine (FAC) residual or total bromine residual and Ph should be used.

2.1.(e) The FAC or total bromine residual and Ph should be determined and recorded by the operator every hour as long as the pool is open for use.

2.1.(f) Disinfectants or other chemicals must be so stored that they are accessible solely to the operator or supervisor of the wading pool.

2.1.(g) A first-aid box should be available at the wading pool, containing as a minimum,

- (i) a current edition of s standard S. John Ambulance/Red Cross First Aid Manual,
- (ii) one dozen safety pins,
- (iii) dressings consisting of,
 - (a) 12 adhesive dressings individually wrapped
 - (b) four sterile gauze pads, 3 inches square
 - (c) two rolls of gauze bandage, two inches wide
 - (d) two field dressings, four inches square or two four-inch sterile bandage compresses and
 - (e) one triangular bandage

2.2 Fill and Dump Wading Pool

2.2.(a) The pool should be completely drained after the last period of use each day. The main drain valve of the pool should remain open during the night.

2.2.(b) Before being refilled, the pool and the apron should be scrubbed thoroughly and hosed down, special care being taken to scrub the area around the main drain. The pool should be disinfected to prevent the growth of algae.

2.2.(c) All debris, glass, leaves or other materials that could pollute the water or that could be hazardous to the pool users should be removed from the pool bottom and areas surrounding the wading pool and properly disposed of.

2.2.(d) The pool should then be filled with fresh water from a supply that is acceptable to the medical officer of health.

2.2.(e) Disinfectant should be added to the fresh entering the pool, sufficient to establish an initial residual of free available chlorine of not greater than 5 or less than 3 mg/l.

- 2.2(f) Children should not be allowed in the pool until the FAC level has fallen to 3 mg/l.
- 2.2(g) The FAC residual should be maintained throughout the pool within a range of 2.0 to 3.0 mg/l and the pH within the range of 7.2 to 7.8. Where the pH of the natural water supply is high, it can be brought down by the addition of a sodium bisulphate solution when fresh water is added to the pool.
- 2.2.(h) All chemicals should be dissolved completely in a pail full of water before being added to the pool.
- 2.2.(i) Prior to the addition of any chemical solution, all pool users should be directed to leave the pool and not re-enter the water until the operator is satisfied that the added chemicals are uniformly mixed with water.
- 2.2(j) Wherever possible, facilities should be provided for the children to cleanse their bodies using warm water and soap and thoroughly rinse themselves before and after using the pool.
- 2.2(k) The water clarity of the pool should be such that the main drain cover or grating is clearly visible from the edge of the pool.
- 2.2(l) The number of wading pool users at any given time should not exceed the pool area in square metres divided by 3 (square feet divided by 30).

2.3 Filtered and Recirculated Wading Pools

- 2.3(a) The recirculation system should be kept in continuous operation, except during the period of backwashing, repairs or maintenance.
- 2.3(b) The number of waders in the pool at any instant should not exceed the pool water surface area in square metres divided by 2 (square feet divided by 20).
- 2.3.(c) The pH of the pool water should lie between 7.2 to 7.8 where chlorine is used as a disinfectant.
- 2.3.(d) The free available chlorine residual should not be less than 1 mg/l nor greater than 2 mg/l.

- 2.3.(e) Where bromine is used the total bromine residual should not be less than 2 mg/l. The corresponding pH should lie between 7.2 to 7.5.
- 2.3.(f) The total alkalinity of the pool water should be not less than 80 mg/l nor greater than 150 mg/l.
- 2.3.(g) The pool bottom should be vacuum cleaned at least once every day.
- 2.3.(h) The pool should be shock-treated once every week in the evening after the waders have left by dosing it with chlorine solution equivalent to 10 mg/l of chlorine. Alternatively, the pool should be drained completely once every week and refilled with fresh water, or water from a public swimming pool.
- 2.3.(i) Fresh water in an amount not less than 70 litres (15 gallons) per bather should be added to the pool every day.
- 2.3.(j) The water clarity of the pool should be such that the main drain cover or grating is clearly visible from the edge of the pool.
- 2.3.(k) The pool should be cleaned when the main drain is not visible from the edge of the pool.