

EQUIPMENT

The purpose of a recirculation water system is to disinfect water by filtering it, adding disinfectant and returning it to the pool. Each of the following devices are an integral part of a recirculation system:

1. A pressure and vacuum gauge shall be provided for each pump system.
2. An approved automatic disinfecting unit shall be provided and maintained to continuously feed disinfectant to the pool or spa.
3. A flow meter shall be installed on the recirculation system to measure the required flow of water in gallons per minute, as water is returned to the pool.
4. DPD test kit shall be available for daily readings of free/total/combined chlorine, bromine, and pH.

INSPECTION

Health inspectors may at all reasonable times enter all parts of the premises of a public pool to determine compliance with health and safety requirements.

Please be aware a pool or spa may be closed for one or more of the following reasons related to public health and safety:

- Failure to meet water clarity, not able to see the main drains from the deck (cloudy/green water)
- The suction cover/grate is missing, broken, cracked, or not properly secured
- Free Chlorine/bromine residual is less than the level required
- The chlorine residual is greater than 10ppm
- pH of water is greater than 7.8
- Cyanuric acid level is greater than 100 ppm
- Safety/lifesaving equipment is missing or broken
- Loose or damaged pool/spa lights
- Fence/gate is damaged and not secure
- A fecal/vomit/blood accident has occurred



FECAL, VOMIT, BLOOD CONTAMINATION AND NEAR DROWNING, OR DROWNING INCIDENT RESPONSE

A pool must close after a fecal, vomit, or blood contamination incident. The following actions shall be conducted:

- The pool operator shall remove contaminating material and discharge material directly to sanitary sewer.
- Pool operator shall ensure a pH of water not greater than 7.5.
- The filtration system shall be operating while it reaches and maintains the free chlorine concentration during the disinfection process.
- The pool shall be disinfected as follows:

Accident Type	Raise Free Chlorine to:	Minimum Contact Time	pH to be at
Formed fecal stool or vomit	2ppm	25 minutes	7.5 or lower
Diarrheal stool without cyanuric acid in water	20ppm	12.75 hours	7.5 or lower
Diarrheal stool with cyanuric acid in water	40ppm	30 hours	6.5 or lower
*Blood– see below			7.8 max

- If *Blood is the contaminant, close pool if the required free chlorine residual is not present and keep closed until the required minimum free chlorine level is achieved.
- Backwash filter to sewer and/or replace cartridge filters. Do not return filter backwash to pool. Replace filter media if necessary.
- Pool operator shall not open the pool until the disinfection process has been completed and water chemistry balanced to normal operation.
- Incident shall be documented in operational logs and recorded by indicating: dates, time of incident, free chlorine concentrations, pool temperature, pH, type of incident (vomit, fecal/diarrheal, blood), and followed procedures.

Note: Adjustments of water chemistry can result in damage to the pool equipment if performed incorrectly. Although not required, an experienced pool professional is recommended.

If you have any other questions about these or any other requirements related to your pool or spa, please contact us (442)265-1888 or visit our website at www.icphd.org

IMPERIAL COUNTY
PUBLIC HEALTH DEPARTMENT

Public Pool Operational Guide

A guide provided to educate public pool operators about maintenance practices and safety requirements



Division of Environmental Health
Tel. (442) 265-1888
Fax (442) 265-1903
www.icphd.org



The goal of properly maintaining a pool is to provide water quality for swimmers, as for water to be safe and clear, with disinfecting properties for the control of bacteria, viruses, algae, and nonirritating to swimmers. In order for the pool owner, manager, or operator to ensure water quality, it is important to be aware of the basic concepts of pool maintenance. During inspections conducted by the Division of Environmental Health, we receive a number of questions regarding maintenance and operation of public pools and spas. The following should help clarify the requirements enforced by our Division.

WATER QUALITY

Frequent and accurate water testing is critical to assure water quality. Daily operation records must be kept for each pool, noting the chemical readings and corrective actions, if needed. It is essential to have a test kit able to test the levels of the disinfectant. A DPD Reagent test is used to test bromine and free chlorine residuals.



Chlorine and bromine oxidize and eliminate organic compounds such as algae, dirt, and cosmetics. Chlorine and bromine also inactivate infectious microorganisms such as E. Coli, Shigella, and Giardia. When chlorine or bromine are added to the pool water, a portion of the chlorine or bromine will be consumed by these reactions and the remaining chlorine/bromine is referred to as free available chlorine or bromine residual. The table below indicates the levels required for effective sanitation, based on chemicals used:

Different forms of chlorine may be used. These forms include Sodium Hypochlorite (liquid chlorine), Calcium Hypochlorite (usually available in granular form), and Trichlor and Dichlor (usually found in tablets). Trichlor and Dichlor

	Free-Chlorine Residual				Bromine Residual	
	Without CYA		With CYA		Min	Max
	Min	Max	Min	Max		
pools	1.0 ppm	10.0 ppm	2.0 ppm	10.0 ppm	2.0 ppm	--
spas, wading pools, spray grounds	3.0 ppm	10.0 ppm	3.0 ppm	10.0 ppm	4.0 ppm	--

contain cyanuric acid (CYA) which is also referred to as stabilizer or conditioner. If a pool/spa contains cyanuric acid, such levels shall be maintained less than 100ppm.

The pH of the pool water shall be maintained between 7.2 to 7.8. These levels ensure the effectiveness of chlorine/bromine, prevent the water from being corrosive or scaling. Pool water problems may result from improper pH. A low pH may result in irritation to the swimmer's eyes or mucous membranes, dissolving of metal pool components, or plaster staining. A high pH may result in cloudy water or scale and the control of algae or bacteria may be affected. It is important to be aware other water chemistry parameters will affect water balance, such as, alkalinity, calcium hardness, total dissolved solids, and water temperature.

	Min	Max
pH	7.2	7.8
Cyanuric acid	0.0 ppm	100.0 ppm
Combined chlorine	0.0 ppm	0.4 ppm
Water Temperature	N/A	104°F

SAFETY

The pool shall be enclosed by a fence, portion of building wall, or other durable enclosure not less than 5 feet in height. Openings, holes, or gaps in the fence shall not exceed 4 inches. The gate to the fence is required to open outward and to have a self-latching device designed to keep the gate or door securely closed at all times. The latching device of the gate shall be between 42-44 inches above the deck.



The following is a list of safety equipment required to be available and accessible at the public pool facility:

1. A body hook properly secured to a 12 ft pole or a pole of sufficient length to effectuate rescue for each spa/pool enclosure
2. A life ring with a minimum 17 inch diameter with an attached rope 3/16 inch diameter, long enough to span the maximum width of the pool
3. The bottom drain and suction/equalizer lines are required to be covered with approved grates/covers which shall be properly secured and can only be removed with tools. All

grates/covers shall meet current ANSI/APSP performance standards.

4. Each spa must have an emergency shut off switch connected to the jet and circulation pumps. Pool circulation pumps shall not be connected to spa emergency shut-off switches.
5. Although pool covers are not required, if planning to use/install floating or safety covers, please refer to the document titled "Guidelines for use of Pool Cover on Public Swimming Pools, Spas and Wading Pools" at http://www.icphd.com/media/managed/environmentalhealth/Guidelines_for_Using_Public_Pool_Cover_3_6_13.pdf

SIGNS

The following signs are required to be posted, clearly visible from the pool/spa:

- "Warning--No Lifeguard On Duty. Children Under the Age of 14 Shall Not Use Pool Without A Parent or Adult Guardian in Attendance"
- Demonstration of artificial respiration, with a diagrammatic illustration
- Emergency telephone number : 911 and the name and address of the pool facility
- Maximum occupant capacity:
 - *Swimming pools: one bather per 20 sq. ft.
 - *Spa pools: one bather per 10 sq. ft.
- "No Diving" for pools with a maximum depth of less than 6 ft
- "Keep Closed" posted on the exterior side of gate and door leading into the pool enclosure
- "Emergency Exit" for pool with only one emergency exit
- Diarrhea sign-- Posted at entrance directing people who have active signs of diarrhea or had diarrhea within the last 14 days to not use the pool/spa

In addition to the above signs, spas are required to provide the following caution sign:

CAUTION	
· Elderly persons, pregnant women, infants and those with health conditions requiring medical care should consult with a physician before entering a spa	
· Unsupervised children under the age of 14 are prohibited	
· Hot water immersion while under the influence of alcohol, narcotic, drugs, or medicines may lead to serious consequences and is not recommended	
· Do not use alone	
· Long exposure may result in hyperthermia, nausea, dizziness, or fainting	

EMERGENCY SHUT OFF SWITCH *posted next to switch