

## CHAPTER 4

### SANITARY FACILITIES AND CONTROLS

#### Section 1. Water Supply.

(a) Water supplied from a public water system to a public pool, spa or similar installation shall meet 40 CFR 141 National Primary Drinking Water Regulations.

(b) Water from a nonpublic water system shall meet the standards set by these Regulations.

#### Section 2. Conveying Sewage.

(a) Filter backwash water and water drained from a pool, spa or similar installation shall be discharged into a sanitary sewer through an approved air gap or disposed of by other means approved of by the regulatory authority.

(b) There shall be no direct physical connection between the wastewater disposal system and a drain or re-circulation system.

(c) Backwash water or water drained from a pool, spa or similar installation shall:

(i) Be discharged through an air gap formed by positioning the discharge pipe opening at least two (2) pipe diameters above the overflow level of any confining barrier which could cause flooding and submergence of the discharge opening, in the event that the disposal system should fail or by other means approved by the regulatory authority.

(A) Splash screening barriers are permitted as long as they do not destroy air gap effectiveness.

#### Section 3. Approved Sewage Disposal System; Other Liquid Wastes and Rainwater.

(a) Sewage shall be disposed through an approved facility that is:

(i) A public sewage treatment plant; or

(ii) An individual sewage disposal system that is sized, constructed, maintained, and operated according to law.

(b) Condensate drainage and other non-sewage liquids and rainwater shall be drained from point of discharge to disposal in accordance with law.

Section 4. Sanitizing Equipment and Chemical Feeders.

(a) Sanitizing equipment for pools, spas and similar installations shall meet the requirements of ANSI/NSPI-50, Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs.

(b) Sanitizing feed systems shall have the capacity to:

(i) Maintain up to five (5) parts per million chlorine or approved equivalent for outdoor pools and similar installations; and

(ii) Up to three (3) parts per million chlorine or approved equivalent for indoor pools and similar installations under all conditions of use.

(iii) The sanitizing feed equipment for spas shall have the capacity to:

(A) Maintain up to eight (8) parts per million chlorine or approved equivalent for outdoor spas; and

(B) Up to five (5) parts per million chlorine or approved equivalent for indoor spas.

Section 5. Sanitizing Equipment, Practices.

(a) Sanitizing equipment and practices shall comply with the following:

(i) A chlorine or bromine residual or residual of other sanitizers, approved by the regulatory authority shall be maintained in the pool, spa or similar installation to meet the water quality parameters outlined in chapter 5, section 1(a); and

(ii) Sanitizing equipment shall be selected and installed so that continuous and effective sanitizing can be maintained under all conditions.

(A) The use of elemental gas chlorine shall be in accordance with sections 28 through 35 of this chapter.

(b) Water shall be continuously sanitized by a sanitizing agent.

(i) The residual must be easily measured by simple and accurate field tests.

(c) If needed in order to maintain proper chemical levels, chlorine, pH or other chemical control equipment which adjusts chemical feed based on demand, shall be provided.

(d) If ancillary non-chlorine or non-bromine sanitizer is used, it shall be used in addition to chlorine or bromine or other approved equivalent unless the sanitizing method used is capable of producing a measurable residual when tested with an accurate field test kit.

(e) Sanitizing agents shall be:

(i) Capable of being tested by a field test kit; and

(ii) Registered for use by the United States Environmental Protection Agency (EPA).

#### Section 6. Sanitizing Equipment, Prohibited Practices.

(a) Supplemental hand feeding of sanitizing agents or other chemicals directly into the pool shall not occur when the pool, spa or similar installation is occupied by users.

(b) Pool and spa skimmer baskets and pump strainer baskets shall not be used as chemical feeders.

(c) In pools, spas and similar installations which are not maintaining the required sanitizing residuals and pH, a remote automated chemical control system that monitors the sanitizing agent and pH shall be installed to assure constant and adequate disinfectant and pH levels and to preclude overfeeding.

(i) Any use of remote monitor control systems for automatic chemical systems shall be constructed as a backup system to the required on-site monitoring and control system.

#### Section 7. Sanitizing, Personnel Responsibilities.

(a) Personnel responsible for the operation of the sanitizing and associated equipment and other potentially hazardous chemicals shall:

(i) Be properly trained; and

(ii) Wear protective equipment and clothing, including rubber gloves, goggles, and any other protective gear and safety equipment which may be necessary.

#### Section 8. Chemical Storage

(a) Sanitizing or other chemicals and feed equipment shall be stored in such a manner that pool, spa or similar installation users shall not have access to such facilities and/or chemicals.

- (b) Dry chemicals shall:
  - (i) Be stored off the floor; and
  - (ii) Protected against flooding or wetting from floors, walls, and ceilings.
- (c) Chemical bulk tanks shall be clearly labeled to indicate the tank's contents.
- (d) Solution containers shall be provided with a cover to prevent the entrance of dust, insects and other contaminants.
- (e) Sanitizing compounds shall not be stored in the same area as other chemical products.

Section 9. Pool Pumps, Requirements; Uses.

- (a) A pump and motor shall re-circulate the pool water.
  - (i) A hair and lint strainer shall be located on the suction side of the pump;
  - (ii) The strainer shall be at least equal in size to the pump suction line; and
  - (iii) Strainers installed below water level shall have a valve on each side to facilitate cleaning.
- (b) The performance of pumps shall meet the conditions of flow required for filtering and backwashing the filters against the total dynamic head developed by the complete system.
  - (i) The pumps shall be capable of providing design flow rates at no less than sixty (60) feet (1.83kg/cm<sup>2</sup>) of total dynamic head.
- (c) Pumps shall be capable of pumping at a rate sufficient to turn over the total pool volume within the periods of time specified in section 13(b) of this chapter.
- (d) Pumps on public swimming pools shall comply with the NSF50, Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs.
- (e) Pumps shall be sized so as to pump the flow required in subsection (c) of this section under the filter soil conditions described in the following chart:

High rate sand filters	Filter soil conditions such as to create a fifteen (15) psi (1.06kg/cm <sup>2</sup> ) increase above that created using clean filter media.
Rapid sand filters	Filter soil conditions such as to create an eight (8) psi (.56kg/cm <sup>2</sup> ) increase above that created using clean filter media.
Diatomaceous earth filters	Filter soil conditions such as to create pressures or vacuums at which manufacturer's recommend filter cleaning.
Cartridge Filters	Filter soil conditions such as to create a ten (10) psi (.70kg/cm <sup>2</sup> ) difference between influent and effluent pressures.

Section 10. Filters; Types, Uses, Requirements.

(a) Filters used in pools, spas and similar installations shall be capable of maintaining pool water clarity as described in chapter 5, section 1(a) under maximum use load conditions.

(b) The filter rate shall not exceed the following:

(i) High rate sand filters - twenty (20) gpm or (56.8 lpm) per square foot (.093cm<sup>2</sup>) of filter media or that rate approved by the National Sanitation Foundation for that particular filter, whichever is less;

(ii) Rapid sand filters - three (3) gpm (11.4 lpm) per square foot (.093m<sup>2</sup>) of filter media;

(iii) Diatomaceous earth filters - two (2) gpm (7.6 lpm) per square foot (.093m<sup>2</sup>) of filter media; or

(iv) Cartridge filters - 0.5 gpm (1.9 lpm) per square foot (.093m<sup>2</sup>) of effective filter area.

(c) The filter tank shall be designed to permit the release of air that enters the filter tank.

(d) Filter components that require servicing shall be accessible and available for inspection and repair.

(e) Filters shall be designed so that filtration surfaces may be easily inspected and serviced.

(f) Filters shall meet the safety performance standards of the NSF-50, Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs.

(g) Diatomaceous earth filter backwash water must discharge to the sewer system through a separation tank.

(i) The separation tanks shall:

(A) Be provided with a manual means air release mechanism or a lid that provides a slow and safe release of pressure; and

(B) Have a precautionary statement affixed to warn the user that the air release must be opened before starting the circulation pump.

(h) Pools with a perimeter overflow system shall be provided with surge tanks unless predesigned and prefabricated to use in-gutter surge.

(i) The surge tanks shall have a capacity of one (1) gallon (3.8 l) per square foot (.093m<sup>2</sup>) of pool surface.

#### Section 11. Chemical Feeders.

(a) Chemical feeders shall:

(i) Be installed, maintained and operated in accordance with the manufacturer's specifications;

(ii) Be installed:

(A) So the gas or solution is introduced downstream from the filter and heater; and

(B) If possible, at a point lower than the heater outlet fitting or according to the manufacturer's instructions.

(iii) Incorporate failure-proof features so the chemical cannot feed into:

(A) The pool, spa or similar installation;

(B) The piping system,

(C) The water supply system; or

(D) The pool, spa and similar installation enclosure if equipment or power fails.

(I) Chemical feed pumps shall be wired so they cannot

operate unless there is adequate return flow to properly disperse the chemical throughout the pool, spa or similar installation as designed.

(iv) Be regulated to ensure constant feed with varying supply or back pressure;

(v) Be designed to prevent siphoning from the re-circulation system to the solution container and to prevent siphoning of the chemical solution into the pool, spa or similar installation; and

(vi) Have a graduated and clearly marked dosage adjustment to provide flows from full capacity to ten (10) percent of such capacity.

(A) The device shall be capable of continuous delivery within ten (10) percent of the dosage at any setting; and

(B) Be provided with make-up water supply lines to chemical feeder solution tanks that have an air gap or other acceptable cross-connection control.

## Section 12. Overflow Systems.

(a) A public pool shall be operated with a continuous overflow system.

(i) The overflow system shall be a perimeter-type system or a system of overflow skimmers.

(b) A general-use pool or a limited-use pool with more than two thousand (2,000) square feet (185.78m<sup>2</sup>) of surface area shall use a perimeter-type overflow system.

(c) A limited-use pool with less than two thousand (2,000) square feet (185.87m<sup>2</sup>) of surface area shall use a perimeter-type system or a skimmer system.

(d) A perimeter-type system shall in addition be connected to the re-circulation system with a system surge capacity of at least one (1) gallon (3.785 l) per square foot (.3m<sup>2</sup>) of pool surface.

(i) External surge systems shall be capable of transferring water at a rate equal to one-hundred (100) percent of the design pool flow rate.

(e) Gutters shall:

(i) Drain in two (2) minutes or less after sudden flooding;

(ii) Extend completely around the pool;

- (iii) Be smooth and easy to clean;
  - (iv) Slope at least one-eighth (1/8) inch (3mm) per foot (30cm); and
  - (v) In combination with the upper rim of the pool, constitute a handhold.
- (f) A skimmer-type system shall:
- (i) Have one skimmer for each four-hundred (400) square feet (37.17m<sup>2</sup>) of surface area with a minimum of two skimmers per pool;
  - (ii) Be used only in conjunction with a continuous handhold extending the full perimeter of the pool; and
  - (iii) Be located so as to achieve effective skimming action over the entire surface area of the pool.
- (g) Where surface skimmers are used in a spa pool, the flow rate through the skimmer shall:
- (i) Be designed to provide fifty (50) percent of the total turnover rate with a maximum flow through any single skimmer of thirty (30) gpm;
  - (ii) Have the minimum width of a skimmer intake throat of five (5) inches (12.5cm); and
  - (iii) Where surface skimmers are used as the sole overflow system, one (1) surface skimmer shall be provided for each one hundred (100) square feet (9.3m<sup>2</sup>) or fraction thereof of the spa's surface area.
- (A) If a conflict arises between (i) and this subsection, the subsection requiring the greatest number of skimmers shall apply.
- (iv) When two (2) or more skimmers are used in a spa, they shall be located to maintain effective skimming action over the entire surface area of the spa.
- (h) Overflow systems shall be designed to return overflow water to the re-circulation system ahead of the filters; and
- (i) Provisions shall be made for diverting gutter water to waste when cleaning the gutter.

### Section 13. Re-Circulation Systems.

- (a) A public pool shall:

(i) Have re-circulation and filtration systems with piping, pumps, filters, disinfection and other equipment to maintain the pool water quality as required by these Regulations.

(b) The system of pumps, filters, disinfection facilities and other equipment shall be of adequate size to re-circulate, filter and disinfect the entire volume of pool water in the following maximum time intervals:

<b>Pool Type</b>	<b>Maximum Turnover Time in Hours</b>
General-Use or Limited-Use pool over 2,000 square feet (185.87m <sup>2</sup> ) of surface area	6
Limited-Use pool less than 2,000 square feet (185.87m <sup>2</sup> ) of surface area	8
Wading and plunge pool	2
Spa	½
Flotation tank	A minimum of three (3) turnovers between users. Bather load = one (1) person per tank unit.

; and

(i) Overflow water shall not be less than fifty (50) percent of the total re-circulated water.

(c) A flow meter must be installed in all re-circulation systems and shall:

(i) Measure the flow in gallons per minute;

(ii) Be mounted in accordance with the manufacturer's recommendations;

and

(iii) Be easily accessible and easy to read.

(d) Pressure gauges must be installed on the inlet and outlet of the filter.

**Section 14. Inlet and Suction Outlet, Requirements.**

(a) Inlets and suction outlets shall be provided and arranged to produce a uniform circulation of water and maintain a uniform disinfectant residual throughout the pool, spa or similar installation.

(b) A minimum of two (2) return inlets shall be provided regardless of the size of a pool, spa or similar installation.

(c) The depth of inlets must be located not less than eighteen (18) inches below the normal water level.

#### Section 15. Wall Inlets.

(a) Wall inlets shall:

- (i) Be rounded and smooth;
- (ii) Not extend from the pool or spa so as to create a hazard;
- (iii) Not exceed fifteen (15) feet between adjacent inlets; and
- (iv) Not be located within five (5) feet of a skimmer.

#### Section 16. Floor Inlets.

(a) When a pool or similar installation is in excess of forty (40) feet in width, floor inlets or a combination of floor and wall inlets shall be used, and shall:

- (i) Be flush with the floor of the pool or similar installation;
- (ii) Prevent entanglement; and
- (iii) Have the distance between adjacent floor inlets not exceeding fifteen (15) feet and be located within ten (10) feet of the side walls.

#### Section 17. Suction Outlets.

(a) Suction outlets for pools, spas and similar installations shall:

- (i) Be designed to protect against entrapment, hair entrapment or entanglement hazard;
- (ii) Not constitute a hazard to the user; and
- (iii) Protect against evisceration.

(b) Suction outlets other than skimmer throats shall:

- (i) Be provided with anti-vortex covers, or grates that have been tested by a

nationally recognized testing laboratory and comply with ASME/ANSI A.112.19.8M R96, Suction Fitting for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances.

(A) The installation of the anti-vortex covers or grates shall be according to manufacturer's specifications; and

(B) A minimum of two (2) hydraulically balanced suction outlets (suction fittings) with anti-vortex covers or grates shall be provided per pool or spa pump suction line.

(I) Multiple sets of pump suction shall be permitted into two (2) or more suction outlets as long as they are hydraulically balanced and meet the requirements of these Regulations.

(II) The distance between the suction fittings shall be three (3) to five (5) feet for suction outlets less than twelve (12) inches by twelve (12) inches and/or one-hundred forty-four (144) square inches.

(III) All suction outlets larger than twelve (12) inches by twelve (12) inches and/or one-hundred forty-four (144) square inches on any pool or spa shall have a minimum of two (2) hydraulically balanced suction outlets (main drains) with a separation distance of three (3) feet or more in the lowest point of the pool or spa floor.

(IV) The spacing of the suction outlets (main drains) shall not be:

(1.) Greater than twenty (20) feet on centers; or

(2.) More than fifteen (15) feet from each side wall.

(V) No means of isolating suction outlets is permitted which could allow one (1) suction outlet to serve as the sole source of water to a pump.

(VI) A single pipe to sump suction outlet that serves two (2) or more suction outlets may be valved to shut off the flow to the pump.

(c) Water velocity through suction outlet grates shall not:

(i) Exceed one and one half (1½) feet per second.

(d) Water velocity through anti-vortex suction outlet covers shall not:

(i) Exceed six (6) feet per second.

(A) Suction outlets with velocities exceeding one and one half (1½)

feet per second are permitted, provided each suction outlet has a cover that has been tested and approved for such velocities by a nationally recognized testing laboratory and complies with ASME/ANSI A.112.19.8M R96, Suction Fitting for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances.

(B) The maximum velocity in the pump suction hydraulic system shall not exceed six (6) feet per second when one-hundred (100) percent of the pump flow comes from the main drain system.

(C) The flow through the open area of the remaining suction grate outlet or outlets shall not exceed one and one half (1½) feet per second and shall meet ASME/ANSI A.112.19.8M R96, Suction Fitting for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances.

#### Section 18. Spa Outlets.

(a) A spa outlet shall be designed so that the pumping system complies with one of the following:

(i) Two (2) outlets of equal pipe diameter size designed so that:

(A) Neither one of the two outlets be cut out of the suction line by a valve; or

(B) By other means which would prevent entrapment of the bather on the suction orifices.

(ii) One antivortex drain:

(A) The antivortex drain shall not present a tripping or stubbing hazard to the feet; and

(B) The diameter of the antivortex plate shall be at least six (6) inches (15cm).

(iii) An open area of one-hundred forty-four (144) square inches (928 cm<sup>2</sup>) or larger grate.

(b) All outlet grates, antivortex plates and inlet fittings shall have tamper-proof screws; and

(i) Grates, vortex plates and inlet fittings shall be in place whenever the spa is in use.

#### Section 19. Vacuum Outlets, Covers.

(a) Vacuum outlets for pools, spas and similar installations shall be provided with covers which:

- (i) Automatically close;
- (ii) Automatically latch;
- (iii) Can only be opened with the use of a tool; and

(iv) Can be secured and latched when the pool, spa or similar installation is open for use.

(b) Where a vacuum outlet is internally located in a skimmer which is provided with a cover, a separate cover for the vacuum outlet is not required.

(c) If vacuum cleaner fittings are provided, they shall be located in an accessible position at least twelve (12) inches and no greater than eighteen (18) inches below water level or as an attachment to the skimmers.

#### Section 20. Automatic Cleaners; Entanglement.

(a) Automatic bottom or side cleaners shall not be used when the pool is open for use.

#### Section 21. Skimmer Equalizer Suction Outlets.

(a) The skimmer equalizer suction outlet must be designed to prevent entrapment by bathers

#### Section 22. Surface Skimmers, Perimeter Overflow Gutter Systems; Safety.

- (a) Surface skimmers and perimeter overflow gutter systems shall:
- (i) Be designed and installed so as to not constitute a hazard to the user;
  - (ii) Be designed to prevent entrance or entrapment of a limb, body, or hair.
- and

#### Section 23. Surface Skimmers and Perimeter Overflow Gutter Systems, Design.

(a) Surface skimmers and perimeter overflow gutter systems shall:

(i) Be provided, designed and constructed to skim the surface of the pool or spa water when the water level is maintained within the operating water level range of the systems rim or weir device.

(ii) The operating water level for perimeter overflow gutter systems shall:

(A) Be slightly over the overflow gutter lip; and

(B) In the case of surface skimmers, within the vertical operating range of the skimmers.

#### Section 24. Surface Skimmers.

(a) Surface skimmers for pools, spas and similar installations shall comply with all applicable requirements of ANSI/NSPI-50, Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs.

(b) Surface skimmers shall be located to maintain effective skimming action throughout the pool, spa or similar installation.

(i) At least one skimmer shall:

(A) Be located at a point in an outdoor pool or similar installation opposite the direction of prevailing summer winds;

(B) Be provided for each four hundred (400) square feet of water surface area, or fraction thereof.

(I) There shall be a minimum of two (2) skimmers in each pool or similar installation.

(c) At least one skimmer shall be provided for each one hundred (100) square feet of spa water surface area, or fraction thereof.

(d) The flow rate through surface skimmers shall be no less than three (3) gallons per minute per skimmer per weir inch.

(e) Skimmer covers located on a walking surface shall:

(i) Be securely seated;

(ii) Be slip-resistant;

(iii) Be of sufficient strength to withstand normal deck use; and

(iv) Not constitute a tripping hazard.

(f) Surface skimmer systems shall:

(i) Be provided with a skimmer equalizer line which is connected from the skimmer housing to the pool or spa wall at a minimum of twelve (12) inches below the skimmer throat; and

(ii) Be sized to satisfy the pump demand and prevent air lock.

(g) The appropriate equalizer and float valve assemblies shall be installed in the skimmer as per manufacturer's instructions and the requirements of ANSI/NSPI-50, Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs.

#### Section 25. Perimeter Overflow Gutter Systems.

(a) Perimeter overflow gutter systems for pools, spa and similar installations shall:

(i) When used as the sole surface skimming system be continuous around the pool or spa perimeter except at:

(A) Stairs;

(B) Recessed ladders;

(C) Directly under a slide flume; or

(D) Along the weirs that separate splash pools and pump reservoirs.

(b) Perimeter overflow gutter systems for pools and similar installations shall be connected to the circulation system with a system surge capacity of not less than one (1) gallon for each square foot of pool water surface.

(c) Perimeter overflow gutter systems of spas shall be connected to the circulation system with a system surge capacity of not less than two (2) gallons per square foot of spa water surface.

#### Section 26. Gas Chlorination, Approved Installation.

(a) Gas chlorination equipment may only be installed to replace approved, existing gas chlorination equipment.

(b) Gas chlorination equipment may not be installed on new pools, spas, or similar installations.

Section 27 Gas Chlorination Equipment, Trained Personnel.

(a) Only trained, designated personnel shall operate the gas chlorinator and change chlorine cylinders.

(b) Personnel responsible for the operation of gas chlorination equipment and other potentially hazardous chemicals shall:

(i) Be properly trained; and

(ii) Wear protective equipment and clothing, including:

(A) Rubber gloves;

(B) Goggles;

(C) Self-contained breathing apparatus; and

(D) Any other protective gear and safety equipment necessary to prevent personal injury.

(c) Two (2) persons trained in the performance of routine gas chlorination operation and emergency procedures shall be readily available during normal operating hours.

(d) Pool personnel shall be informed about leak control procedures.

(e) A Chlorine Institute Emergency Kit shall be provided and stored at an approved location where it is easily accessible per the emergency response plan.

Section 28. Gas Chlorination, Equipment Location.

(a) Gas chlorination equipment shall be located so that failure or malfunction will have a minimum effect on evacuation of pool users during an emergency.

Section 29. Gas Chlorination System, Design.

(a) Gas chlorinators shall:

(i) Be of the type where the regulator attaches to the cylinder with the injector located at the point of injection; and

(ii) Have a vacuum line taking suction at the regulator and delivering the gas to the vacuum injector.

(b) Gas chlorinators shall be designed to prevent the suction of water into the chlorination system if the booster pump fails.

Section 30. Gas Chlorinators, Booster Pump.

- (a) A booster pump water supply for the gas chlorinator injector shall:
- (i) Be capable of producing the flow rate and pressure required by the manufacturer's specifications for proper operation of the equipment;
  - (ii) Be activated by a booster pump using re-circulated water supplied via the re-circulation system; and
  - (iii) Be interlocked to the filter pump to prevent feeding of chlorine when the re-circulation pump is not running.

Section 31. Gas Chlorinator, Enclosure.

(a) The gas chlorinator, cylinders of chlorine and associated equipment shall be enclosed in a separate, corrosion-resistant, reasonably gas-tight room having a floor area adequate for the purpose.

- (b) Enclosures shall:
- (i) Be located at or above ground level;
  - (ii) Be provided with:
    - (A) Ducts located at the bottom of the enclosure to allow ventilation to an unrestricted area; and
    - (B) A motor-driven louvered exhaust fan capable of producing at least one air change per minute located near the top of the enclosure for admitting fresh air.
      - (I) Negative pressure ventilation may be provided as long as the facilities also have gas containment and treatment as prescribed by the Uniform Fire Code (UFC).

(c) The temperature of the gas chlorination equipment and cylinders must not fall below fifty five (55) degrees Fahrenheit.

(i) If necessary, a means of keeping the temperature at fifty five (55) degrees Fahrenheit or above shall be provided.

(d) Doors to the gas chlorine room shall:

- (i) Have a warning sign posted on the exterior side which states in four (4) inch minimum size lettering, "DANGER—CHLORINE;"
- (ii) Open away from the pool area;
- (iii) Open outward;
- (iv) Have panic hardware;
- (v) Have at least one (1) viewport to permit the operators to look into the room before entering; and
- (vi) Be kept locked when the chlorine room is not being serviced.

(e) Electrical switches for the control of artificial lighting and ventilation shall be on the outside of the enclosure adjacent to the door.

- (i) Adequate lighting shall be provided.

#### Section 32. Gas Chlorine, Safety Requirements.

(a) The following gas chlorination safety features shall be required:

(i) Two full-face, self-contained breathing apparatus (SCBA) or supplied air respirators that meet Occupational Safety and Health Administration (OSHA) or Mine Safety Health Administration (MSHA) standards shall be provided for protection against chlorine in the event of a leak.

(A) The equipment shall have:

(I) Sufficient capacity for the intended purpose;

(II) SCBA equipment shall be readily accessible at a location acceptable to local emergency planning committees or the local fire chief;

(III) Entry into the chlorine room shall not be permitted without the necessary safety equipment when conducting general maintenance;

(IV) Two persons trained in the performance of routine gas chlorination operation and emergency procedures shall be readily available during normal operating hours; and

(V) A written respirator program shall:

(1.) Be provided; and

(2.) Employees shall be trained in the use and maintenance of such equipment to ensure operability and safety, according to 29 CFR 1910, Occupational Health and Safety Standards and any other applicable federal, state, or local requirements for the proper handling of gas chlorine.

Section 33. Gas Chlorine Cylinders, Storage.

- (a) Gas cylinders may be stored indoors or outdoors.
- (b) Full and empty cylinders shall be:
  - (i) Segregated and appropriately tagged;
  - (ii) Stored in an upright position and properly secured; and
  - (iii) Chained to a wall or scale support.
- (c) The storage conditions shall:
  - (i) Minimize external corrosion;
  - (ii) Be clean and free of trash;
  - (iii) Not be near elevator shafts or intake vents; and
  - (iv) Be away from elevated temperatures, heat sources and direct sunlight.
- (d) Gas chlorine cylinders shall be handled with care.
  - (i) Valve protection caps and valve outlet caps shall be in place at all times except when the cylinder is in use.
  - (ii) Cylinders shall:
    - (A) Not be dropped;
    - (B) Be protected from falling objects;
    - (C) Be used on a first-in, first-out basis; and
    - (D) Have new, approved washers in place each time a cylinder is connected.
- (e) Empty containers shall:

- (i) Have the valve closed and the lines disconnected;
  - (ii) Have the outlet cap applied promptly and the valve protection hood attached;
  - (iii) Have the open end of the disconnected line plugged or capped promptly to keep atmospheric moisture out of the system; and
  - (iv) Have a chlorine valve shut off wrench kept on the cylinder valve stem of the cylinder that is in use.
- (f) A scale, suitable for weighing must be present in facilities handling chlorine gas cylinders.
- (i) Changing cylinders shall be accomplished only after weighing proves the cylinder to be exhausted; and
  - (ii) Care shall be taken to prevent water from back siphoning into the cylinder by closing the cylinder valve.
- (g) Emergency contact information shall be posted and include the following:
- (i) The name and telephone number of the gas chlorine supplier; and
  - (ii) The telephone number of the local fire department or agency trained in the handling of gas chlorine leaks.
- (h) An automatic chlorine gas leak detector shall be installed in the gas chlorine room with an audible alarm installed at the pool site and at the remote site where emergency personnel are located.
- (i) The gas chlorinator and all line and tank fittings shall be checked for leaks at regular intervals and after every cylinder exchange.

Section 34. Vacuum Cleaner.

- (a) Each public pool or similar installation operator shall maintain an approved vacuum capable of effectively removing settled material from the pool bottom.