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Chapter HFS 172

SAFETY, MAINTENANCE AND OPERATION OF PUBLIC SWIMMING POOLS

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Note: Chapter HSS 172 as it existed on November 30, 1989 was repealed and a new chapter HSS 172 was created effective December 1, 1989. HSS 172 was renumbered Chapter HFS 172 under s. 13.93 (2m) (b) 1., Stats., and corrections made under s. 13.93 (2m) (b) 6. and 7., Stats., Register, January, 1997, No. 493; correction made under s. 13.93 (2m) (b) 7., Stats., Register, August, 1998, No. 512.

HFS 172.01 Authority and purpose. This chapter is promulgated under the authority of ss. 250.04 (1) and (7) and 254.47, Stats., to regulate the maintenance and operation of public swimming pools, including whirlpools, in order to protect the health and safety of the public.

History: Cr. Register, November, 1989, No. 407, eff. 12−1−89; corrections made under s. 13.93 (2m) (b) 7., Stats., Register, January, 1995, No. 469, eff. 2−1−95.

HFS 172.02 Scope. (1) APPLICABILITY. This chapter applies to the operator of any public swimming pool.

(2) APPROVED COMPARABLE COMPLIANCE. (a) The department may approve an alternative to a method, practice, material, equipment or design required under this chapter that will not be contrary to public health, safety or welfare, when the department is provided with satisfactory proof that the alternative will achieve results which are closely equivalent to the results of literal application of the requirement under this chapter.

(b) An alternative approved under par. (a) may, at the department's discretion, be made conditional for:

1. A defined period of time; or

2. Experimental or trial purposes.

History: Cr. Register, November, 1989, No. 407, eff. 12−1−89.

HFS 172.03 Definitions. In this chapter:

(1) "Actual patron load" means the number of patrons in the water.

(1m) "Agent" means the city, county or village designated by the department under s. 254.69 (2), Stats., and ch. HFS 192 to issue permits to and make investigations or inspections of public swimming pools.

(2) "Approved" means acceptable to the department, based on its determination of conformance with this chapter and good public health practices.

(3) "Deck" means the approved, unobstructed walking surface around the pool.

(4) "Department" means the Wisconsin department of health and family services.

(5) "Filter aid" means finely powdered diatomaceous earth or similar approved material used to coat a septum type filter.

(6) "Lifeguard" means a person holding the following certifications:

(a) Lifeguard certification, limited to one of the following:

1. A current American Red Cross Lifeguard Training certificate;

2. An American Red Cross Basic Lifeguarding certificate;

3. A Young Men's Christian Association (YMCA) Lifeguarding certificate;

4. A National Pool and Waterpark Lifeguard Training (NPWLT) program certificate; or

5. Other lifeguard certification approved by the department;

(b) First aid certification, limited to one of the following:

1. A current standard first aid certificate from the American Red Cross; or

2. Other first aid certification approved by the department; and

(c) Cardiopulmonary resuscitation (CPR), limited to one of the following:

1. A current cardiopulmonary resuscitation (CPR) certificate for adult, children and infant skills from the American Red Cross;

2. A current cardiopulmonary resuscitation (CPR) certificate for adult, children and infant skills from the American Heart Association; or

3. Other CPR certification approved by the department.

(7) "Operator" means the owner of a swimming pool or the person responsible to the owner for the operation of the swimming pool.

(8) "Patron" means a user of the pool area.

(9) "Person" means an individual, partnership, association, firm, company, corporation, municipality, county, town or state agency, whether tenant, owner, lessee or licensee, or the agent, heir or assignee of any of these.

(10) "Pool" means a structure, basin, chamber or tank used for wading, swimming, diving, water recreation or therapy.

(11) "Pool area" means, for outdoor pools, the area within the pool enclosure and, for indoor pools, the pool including the required deck area.

(12) "Public swimming pool" means a pool used for one or more purposes described in sub. (10) except a pool serving fewer than 3 residences such as homes or apartments that are used by the owner or persons making the property their primary residence. A public swimming pool includes a pool installed in a "place of employment," as defined in s. 101.01 (11), Stats., or in a "public building," as defined in s. 101.01 (12), Stats., and any pool used on a regular basis by persons other than the residents. A public swimming pool includes but is not limited to a pool serving or installed for the state or any political subdivision of the state; a pool serving or installed at a motel, hotel, tourist rooming house, bed and breakfast establishment, campground, camp, club, association, housing development or school, or a religious, charitable or youth organization; a mobile pool; and a pool at an educational or rehabilitative institution. Included in the meaning of a"public swimming pool" are buildings, equipment and appurtenances, irrespective of whether or not a fee is charged for their use.

(13) "Responsible supervisor" means a person designated by the operator to provide emergency assistance to patrons, maintain order and enforce pool use regulations governing safety and sanitation, including pool closure, and who is knowledgeable about pool maintenance and operation and the testing of pool water.

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(14) "Superoxidation" means the addition of an oxidizing product such as chlorine to pool water to raise the level of the oxidizer to a point which will achieve the breakdown of combined chlorine and organic compounds. "Superoxidation" is sometimes referred to as"superchlorination".

(15) "Unauthorized access" means the entrance of a person into a restricted area without permission of the operator or the operator's designated representative.

(16) "Wading pool" means a shallow pool used primarily by children.

(17) "Waterslide plunge pool" means a pool located at the exit end of a waterslide flume and intended and designed to receive sliders emerging from the flume.

(18) "Wave pool" means a pool designed for generating waves for recreational purposes.

(19) "Whirlpool" means a relatively small pool, sometimes called a"spa", which uses higher temperature water than other pools and may include a water agitation system.

History: Cr. Register, November, 1989, No. 407, eff. 12−1−89; emerg. renum. (1) to be (1m), cr. (1), eff. 7−1−90; renum. (1) to be (1m), cr. (1), Register, November, 1990, No. 419, eff. 12−1−90; r. and recr. (6), renum. (16) to (18) to be (17) to (19), cr. (16), Register, June, 1992, No. 438, eff. 7−1−92; correction in (1m) made under s. 13.93 (2m) (b) 7., Stats., Register, January, 1995, No. 469; emerg. am. (12), eff. 6−22−96, am. (12), Register, January, 1997, No. 493, eff. 2−1−97; correction in (1m) made under s. 13.93 (2m) (b) 7., Stats., Register, April, 1999, No. 520; **correction in (12) made under s. 13.93 (2m) (b) 7., Stats**.

HFS 172.04 Permit. (1) APPLICATION. Before opening a public swimming pool for public use, the operator shall obtain a permit from the department or its agent by application made on a form furnished by the department or its agent. An application for a permit submitted to the department shall be accompanied by the fee required under sub. (1m) (a).

Note: To obtain a copy of the application form for a permit to operate a public swimming pool or to determine which agent to contact for an application form, write or phone: Bureau of Public Health, P.O. Box 309, Madison, Wisconsin 53701 (608−266−2835).

(1m) DEPARTMENT FEES. (a) *Annual permit fee.* Beginning July 1, 1998, the operator of a public swimming pool shall pay an annual permit fee of $130 to the department.

(b) *Penalty fee.* Beginning July 1, 1998, if the annual permit fee is not paid within the first 15 days of the permit renewal period, the department shall require the operator of the public swimming pool to pay a penalty fee of $75, in addition to the annual permit fee, for renewal of the permit.

(c) *Fee for duplicate permit.* The department shall charge the operator of a public swimming pool $10 for a duplicate permit.

(d) *Technology improvement surcharge.* For the permit period July 1, 1998 to June 30, 1999, the operator of a public swimming pool shall pay to the department a one−time technology improvement surcharge of $20.

(2) PLAN SUBMITTAL. An operator applying for a permit to operate a public swimming pool shall submit proof with the application that the department under s. Comm 90.04 (1) has approved plans and specifications for the pool. The department or its agent may not issue a permit if the applicant has not submitted proof of prior approval by the department of plans and specifications for the swimming pool.

(3) ACTION BY THE DEPARTMENT. Within 30 days after receiving a completed application for a permit, the department shall either approve the application and issue a permit or deny the application. If the application for a permit is denied, the department shall give the applicant reasons, in writing, for the denial. A permit may not be issued to the operator of a new public swimming pool or to the new operator of an existing public swimming pool without prior inspection of the public swimming pool by the department or its agent to ensure that the public swimming pool complies with this chapter.

History: Cr. Register, November, 1989, No. 407, eff. 12−1−89; emerg. am. (1), cr. (1m), eff. 9−1−94; am. (1), cr. (1m), Register, January, 1995, No. 469, eff. 2−1−95; correction in (2) made under s. 13.93 (2m) (b) 7., Stats., Register, January, 1995, No. 469; emerg. am. (1m), eff. 7−1−96; am. (1m), Register, January, 1997, No. 493, eff. 2−1−97; am. (1m), cr. (1m) (d), Register, August, 1998, No. 512, eff. 9−1−98.

HFS 172.05 Supervision and safety. (1) SUPERVISION. Every public pool shall at all times be under the supervision of at least one responsible supervisor.

(2) LIFEGUARDS AND ATTENDANTS. (a) 1. Except as provided in pars. (b) and (c), a pool having a surface area of 2,000 square feet or more shall have one or more lifeguards when the pool is in use. The required number of lifeguards shall be as shown in Table 172.05.

Table 172.05
Required Number of Lifeguards

Actual Patron Load *	Lifeguards for a Pool of 2,000 to 4,999 sq. ft.	Lifeguards for a Pool of 5,000 to 9,999 sq. ft.	Lifeguards for a Pool of 10,000 or More sq. ft.
1 − 60	1	2	3
61 − 136	2	3	4
137 − 236	3	4	5
237 − 336	4	5	6

* When the patron load exceeds 336 patrons, one lifeguard shall be provided for each additional 100 patrons or fraction thereof.

2. A pool operator may close a portion of the pool to patrons in order to meet the square foot limits in Table 172.05 for lifeguard staffing, except that lifeguard staffing for a pool of 2,000 to 4,999 square feet shall be maintained.

3. Except as provided in subd. 4., every lifeguard shall hold a current American Red Cross Lifeguard Training certificate, a Young Men's Christian Association (YMCA) Lifeguarding certificate, a National Pool and Waterpark Lifeguard Training (NPWLT) program certificate or other lifeguard certification approved by the department. In addition, every lifeguard shall hold a current certificate for the American Red Cross Community First Aid and Safety Course or other first aid certification approved by the department and a current certificate for the American Red Cross CPR for the Professional Rescuer Course or the American Heart Association BLS Health Care Provider Course or other equivalent cardiopulmonary resuscitation (CPR) certification approved by the department.

4. A lifeguard with approved certification prior to January 1, 1996, may continue to use that certification until it expires. At renewal the certification shall comply with the requirements of subd. 3.

(b) 1. Lifeguards, in a number determined by the department, shall be provided at water recreation attractions. A proposed lifeguard staffing plan for a water recreation attraction shall be submitted, in writing, to the department for approval.

2. An additional lifeguard shall be provided for every 2 waterslide flumes installed at a pool other than a waterslide plunge pool.

3. An attendant responsible for enforcing slide usage rules shall be stationed at the entrance to a waterslide flume.

(c) When a pool is used for instructional purposes, an instructor holding a current American Red Cross Water Safety Instructor (WSI) certificate with training in "Emergency Water Safety" may substitute for a lifeguard required in this subsection until the current certification expires or comes up for renewal or until July 1, 1997, whichever is earliest. WSI certification received after January 1, 1995, with training in "Community Water Safety" does not meet the requirements of this subsection. WSI certification received after January 1, 1996, does not meet the requirements of this subsection.

(3) LIFEGUARD IDENTIFICATION AND ASSIGNMENT. Lifeguards shall wear suits that are conspicuously marked "Lifeguard" or are otherwise readily identifiable. Lifeguards assigned to the supervi-

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sion of the pool may not be assigned duties that distract their attention from observation of persons in the pool area or prevent their immediate assistance to persons in distress.

(4) SAFETY. (a) *General.* Any object or material not specifically approved under this chapter or ch. Comm 90 which might cause hazardous conditions or interfere with efficient operation of the swimming pool is not permitted in the pool area.

(b) *Rescue equipment.* 1. Each pool, excluding whirlpools and wading pools, shall be provided with a shepherd's crook type pole. In addition, for each lifeguard chair, or when a pool is 30 feet or more in width and does not have lifeguard chairs, there shall be provided at least one of the following: a ring buoy having a minimum outside diameter of 20 inches, a rescue buoy, a rescue tube or a torpedo buoy. Each ring buoy shall be attached to a $^1/_4$ inch rope having a length not less than $1^1/_2$ times the maximum width of the pool or 50 feet, whichever is less. All rescue equipment shall be maintained in good repair.

2. When lifeguards are provided, a rescue tube with harness shall be provided to each lifeguard on duty.

(c) *Location of equipment.* Lifesaving equipment shall be mounted in a conspicuous place and shall be readily accessible.

(d) *First aid equipment.* An approved 24−unit first aid kit and 2 durable blankets shall be available at each pool area. In addition, a spine board shall be available at a pool where a lifeguard is required.

Note: A list of first aid items for the 24−unit kit is available from any regional office of the department's division of health or any agent office.

(e) *Safety rope.* The safety rope required in s. Comm 90.08 (4) shall remain in place except during a supervised event or activity when the safety rope would become an obstruction.

(f) *Waterslide plunge area separation.* The portion of the pool water surface which is used as a plunge area for a waterslide shall be kept continuously separated in a manner approved by the department as long as the waterslide is in use.

(g) *Playground−type slides.* Where playground−type slides are installed at pool−side, they shall be carefully supervised and properly used.

Note: See s. Comm 90.09 (2) for swimming pool slide construction and installation requirements.

(h) *Telephone.* For outdoor pools a working telephone shall be available in the pool area. For indoor pools a working telephone shall be available within the enclosed area around a pool. The department may approve under s. HFS 172.02 (2) an alternate location for a telephone or another system of communication. A current list of emergency numbers shall be attached to or posted near the telephone.

(5) POOL RULES. (a) The operator shall post pool use rules governing safety and sanitation and shall enforce those rules.

(b) A sign showing pool use rules shall be posted in a conspicuous place or places in the pool area and shall be legible.

(c) Except as specified in par. (f), the posted rules shall include at least the following rules:

1. Do not enter the pool if you have a communicable disease or an open cut;

2. Do not bring food, drink, gum or tobacco into the pool;

3. Shower before entering the pool and after use of toilet facilities;

4. Do not run or engage in rough play in the pool area; and

5. Do not bring animals into the pool area.

(d) For whirlpools, pool use rules shall be posted in a whirlpool area and shall include, in addition to those in par. (c), the following rules preceded by the word WARNING conspicuously printed:

1. Elderly persons and persons suffering from heart disease, diabetes, or high or low blood pressure should not enter the whirlpool;

2. Children who are unsupervised may not use the whirlpool;

3. Persons under the influence of alcohol or drugs may not use the whirlpool;

4. Pregnant women should consult their physician regarding whirlpool usage; and

5. Lengthy exposure may be hazardous to your health and may result in nausea, dizziness or fainting.

(e) For waterslide plunge pools, pool use rules shall be conspicuously posted at the entrance to the slide tower. The sign shall include at least the following rules in addition to the rules in par. (c):

1. Do not use the slide while under the influence of alcohol or drugs;

2. Follow the instructions of the attendant;

3. No standing, kneeling, rotating or stopping in the flume; and

4. Keep your hands inside the flume.

(f) With the approval of the department the pool rules stated in par. (c) may be eliminated, modified or added to in connection with water recreation attractions, therapy pools or other specialized pools defined in ch. Comm 90 or this chapter.

(g) A sign showing the maximum allowed pool attendance shall be conspicuously displayed in the pool area. The maximum pool attendance shall be determined as stated in s. Comm 90.17 or 90.19 (4).

(6) CHEMICALS. (a) *Labeling.* All containers of chemicals used in the operation and maintenance of pools shall be conspicuously labeled with at least the following information:

1. Name of the product;

2. The manufacturer's name and address;

3. Active ingredients;

4. Directions for use;

5. Hazardous ingredient warning; and

6. The U.S. environmental protection agency registration number.

(b) *Storage.* All chemicals shall be stored in the original covered container in a clean, dry, well ventilated and locked area, away from flammables and heat sources. Only authorized personnel shall have access to the storage area. Chemicals may not be stored in chlorine gas storage areas.

(c) *Mixing.* When mixing a chemical solution, mix the chemical in water. Each chemical or chemical solution shall be separately applied. Chemicals may not be combined.

(d) *Smoking.* Smoking shall be prohibited in the chemicals storage area or by anyone who is handling chemicals.

(7) SECURITY. (a) All gates and doors into the pool area shall be maintained and checked for proper operation. They shall be locked when the pool is not in use.

(b) During closed hours, a sign shall be conspicuously posted stating that the pool and deck area are closed.

Note: See s. Comm 90.10 on the outdoor pool enclosure.

History: Cr. Register, November, 1989, No. 407, eff. 12−1−89; emerg. r. and recr. (2) (a) 1., r. (2) (b) 1., renum. (2) (a) 2. and (2) (b) 2. to 5. to be (2) (a) 3. and (2) (b) 1. to 4., cr. (2) (a) 2., am. (2) (c), eff. 7−1−90; r. and recr. (2) (a) 1., r. (2) (b) 1., renum. (2) (a) 2. and (2) (b) 2. to 5. to be (2) (a) 3. and (2) (b) 1. to 4., cr. (2) (a) 2., am. (2) (c), Register, November, 1990, No. 419, eff. 12−1−90; am. (2) (a) 3., (c), (4) (d) and (h) and (5) (c) 2., r. (2) (b) 4., Register, June, 1992, No. 438, eff. 7−1−92; corrections made under s. 13.93 (2m) (b) 7., Stats., Register, January, 1995, No. 469; emerg. am. (2) (a) 3., (c), cr. (2) (a) 4., (4) (b) 2., renum. (4) (b) to be (4) (b) 1., eff. 6−22−96; am. (2) (a) 3., (c), cr. (2) (a) 4., (4) (b) 2., renum. (4) (b) to be (4) (b) 1. Register, January, 1997, No. 493, eff. 2−1−97.

HFS 172.06 Food and drink. Glass and shatterable plastic items are prohibited in the pool area. The pool area shall be maintained in a clean and sanitary condition.

History: Cr. Register, November, 1989, No. 407, eff. 12−1−89; r. and recr. Register, June, 1992, No. 438, eff. 7−1−92.

HFS 172.07 Recirculation system. (1) GENERAL. The recirculation system for the pool, consisting of filters, pumps, strainers, screens, disinfectant feeders, slurry or dry feeders and

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all related components, shall be operated continuously except for seasonal closing or during periods of necessary maintenance.

Note: See s. Comm 90.11 for design requirements for the recirculation system.

(2) SKIMMERS, GUTTERS AND MAIN DRAINS. The flow through each skimmer shall be adjusted as often as necessary to maintain a vigorous skimming action at each skimmer. The pool water level shall be maintained at an elevation so that continuous effective surface skimming is accomplished through skimmers or over the gutter lip. For gutter pools, 75% of the required recirculation flow shall be through the gutter and 25% through the main drain during normal operation. For pools with skimmers, 80% of the recirculation flow shall be through the skimmers and 20% through the main drain. For reverse flow pools, 100% of the required recirculation shall be through the gutter or skimmer.

(3) INLETS. Inlets shall be checked and adjusted to ensure that the rate of flow through each inlet is such that a uniform distribution pattern is established. Inlets in pools with surface skimmers shall be directed as necessary to ensure that there is effective skimming.

(4) RECIRCULATION PUMPS. The recirculation pump or pumps shall continuously achieve the designed pool water recirculation rate except during maintenance operations. The pump manufacturer's maintenance and operating instructions shall be followed.

(5) PUMP STRAINERS AND SCREENS. Strainer baskets or screens shall be continuously in use and maintained. Clean spare strainer baskets or screens shall be available.

(6) SURGE TANK. The surge tank shall be operated within its designed water levels.

(7) WATER SUPPLY PROTECTION. A minimum air−gap of 2 pipe diameters or 6 inches, whichever is less, shall exist between the potable water supply inlet and the overflow point of any pool, makeup tank, surge tank, solution or slurry tank unless another approved backflow and backsiphonage prevention device is provided.

(8) PIPING AND APPURTENANCES. (a) Flowmeters shall be maintained in accurate operating condition.

(b) Valves and gauges shall be maintained in operating condition.

(c) Filtration system piping shall be provided with permanent labels, numbered tags or a color coding system identifying valves and piping and indicating the direction of water flow. The labels, tags or color coding shall correspond to a conspicuously posted, easily readable chart explaining the number or color system.

(9) SAND FILTERS. (a) Rapid−rate sand filters shall be backwashed when the pressure differential is greater than 7 pounds per square inch or as recommended by the manufacturer, whichever is less.

(b) High−rate sand filters shall be backwashed when the pressure differential is greater than 11 pounds per square inch or as recommended by the manufacturer, whichever is less.

(c) The filter shell and appurtenances shall be maintained in operating condition.

(d) Filter media shall be cleaned or replaced when the initial pressure loss after backwashing exceeds 3 pounds per square inch.

(e) Vacuum sand filters shall be backwashed when the filter sand surface appears dirty. The backwash procedure shall follow the filter manufacturer's written directions which shall be conspicuously posted in the filter area on an easily readable chart. The filter housing, filter components and underdrainage system shall be maintained in good repair.

(10) DIATOMACEOUS EARTH FILTERS. (a) Pressure−type diatomaceous earth filters shall be backwashed when the pressure differential is greater than 25 pounds per square inch or as recommended by the manufacturer, whichever is less.

(b) Vacuum−type diatomaceous earth filters shall be backwashed when the vacuum gauge reading increases to greater than 15 inches of mercury or 7 pounds per square inch following precoating or as recommended by the manufacturer, whichever is less.

(c) Septums shall be removed and cleaned or replaced when they no longer provide effective filtration or create a friction loss preventing maintenance of the required recirculation rate.

(d) Diatomaceous earth wastewater separation tanks, where installed, shall be maintained.

(e) The filter shell and appurtenances shall be maintained.

(11) CARTRIDGE FILTERS. (a) Cartridge−type filters shall be removed and cleaned when the pressure differential is greater than 11 pounds per square inch or as recommended by the manufacturer, whichever is less.

(b) Cartridges shall be replaced when plugged or damaged. A complete set of replacement cartridges shall be available and used when removing a dirty cartridge from the filter for cleaning.

(12) BACKWASH AND WASTEWATER. The wastewater from filter cleaning and backwashing shall be discharged as specified in s. Comm 90.11 (9) (b), (c), (d) and (e).

History: Cr. Register, November, 1989, No. 407, eff. 12−1−89; correction in (12) made under s. 13.93 (2m) (b) 7., Stats., Register, January, 1995, No. 469; **reprinted to restore dropped text in (5), Register, April, 1999, No. 520, eff. 5−1−99**.

HFS 172.08 Chemical and filter aid feeding. (1) GENERAL. All disinfectant and filter aid feeding equipment for a pool shall be maintained so that they operate at the level of output which provides the required residual of disinfectant or solution of filter aid. The manufacturer's recommendations for maintenance shall be followed. The data plate on the feeder shall be accessible and readable. Electrically powered feeders shall be interwired with the recirculating pump electrical circuit.

Note: See s. Comm 90.12 (1) for design requirements for equipment to disinfect pool water.

(2) GAS CHLORINATION. (a) *Storage.* Chlorine cylinders shall be stored indoors in an area having approximately the same air temperature as the room housing the chlorinator and shall be sheltered from a direct source of heat or sunlight. Cylinders shall be in an upright position and shall be chained or strapped to a rigid support. Cylinders may not be moved unless the protection cap is secured over the valve. Empty cylinders shall be tagged to indicate that they are empty and their cylinder valves shall be closed.

Note: See s. Comm 90.12 (2) for design requirements for gas chlorination equipment.

(b) *Equipment maintenance.* Where chlorine gas is used, all pool equipment operating staff shall be trained in the handling, use and maintenance of chlorinating equipment.

(c) *Safety.* 1. A plastic bottle of ammonium hydroxide or other leak detection method approved by the department shall be available at the chlorine gas storage area.

2. A list of telephone numbers for the appropriate emergency personnel to be contacted in the event of an emergency related to use of chlorine shall be conspicuously posted at a continuously accessible telephone located reasonably close to the chlorine gas storage room. A durable placard clearly stating the location of the nearest accessible phone shall be posted on the outside of the chlorine gas storage room door.

3. A self−contained breathing apparatus designed for use in a chlorine gas atmosphere shall be provided and stored where it is immediately accessible to personnel who enter the chlorine gas storage room. The facility shall comply with 29 CFR 1910.134 on respiratory protection, including but not limited to the required provision of a written operating procedure governing the selection and use of respirators and the required training of users. The apparatus shall be continuously usable and readily accessible, and replacement parts shall be readily accessible.

Note: Section 29 CFR 1910.34 may be consulted in the offices of the department's bureau of public health, the secretary of state's office or the revisor of statutes bureau, or as part of the U.S. Code of Federal Regulations at any public library or university or college library.

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4. All pool equipment operating staff shall be trained in the use of the self−contained breathing apparatus and shall show evidence of that training.

5. A plan of action for an emergency arising from the usage of chlorine gas shall be written, made known, posted and practiced.

6. The doors to all rooms in which a chlorine gas feeder is located or a cylinder of compressed chlorine gas is located or stored shall be labeled "DANGER−CHLORINE GAS" in clearly readable letters.

(d) *Repairs.* Only trained personnel may repair gas chlorinators.

(3) POSITIVE DISPLACEMENT DISINFECTANT FEEDING. (a) Liquid chemicals shall be fed into pool water circulation piping, a surge tank or vacuum filter by means of a positive displacement feeder either at full strength or diluted. If calcium hypochlorite or another chemical that forms a residue is used, a 2− tank system shall be used. One tank shall be used for mixing the solution and settling the precipitate. The clear liquid shall be decanted or siphoned into the second tank for distribution. Mixing and distribution tanks shall be labeled. A cover with a screened vent shall be provided on all solution tanks. The installation shall be maintained to prevent backflow of water into the tanks and to prevent the chemicals from being siphoned out of the tanks into the pool or recirculation system.

(b) Positive displacement feeders shall be periodically inspected and maintained in an operational condition.

(c) The feeder suction intake shall be suspended at least 6 inches above any sludge layer in the solution tank.

(d) A small amount of mild acid solution shall be fed through the feeder as needed to dissolve sludge accumulations.

(4) FLOW−THROUGH FEEDERS. (a) Flow−through chemical feeders shall be periodically inspected and maintained in operating condition.

(b) The chemical used, the manner of usage and the quantity used in a flow−through feeder shall be as recommended by the feeder manufacturer.

(5) DIATOMACEOUS EARTH SLURRY FEEDERS. Positive displacement diatomaceous earth slurry feeders shall be periodically inspected and maintained for proper operation. The lowest effective concentration of solution shall be used in diatomaceous earth slurry feeders. In no case may the concentration exceed 5% by weight. Diatomite slurry feeder head and lines shall be flushed once every 15 minutes for a duration of one minute to assure proper and continuous operation. Water from the discharge side of the recirculation pump may be used. If connection is to a potable water supply line, the supply line shall be equipped with an approved backflow/backsiphonage prevention device. Diatomite slurry tank agitators shall run continuously.

(6) DRY FEEDERS. Feeders used for feeding dry chemicals into pool water circulation piping, a surge tank or vacuum filter shall be maintained for proper operation.

(7) AUTOMATIC FEED CONTROL AND MONITORING SYSTEMS. Automatic monitoring and feeding systems shall be maintained as recommended by the manufacturer and adjusted as necessary to provide the chemical residuals required in s. HFS 172.09.

History: Cr. Register, November, 1989, No. 407, eff. 12−1−89; am. (2) (c) 3., Register, June, 1992, No. 438, eff. 7−1−92.

HFS 172.09 Pool water chemistry. (1) DISINFECTION. All pools in use shall be automatically and continuously disinfected by means of equipment that is in compliance with s. Comm 90.12 and that uses a disinfectant which is approved by the department and meets all of the following requirements:

(a) The disinfectant is registered with the United States environmental protection agency as a disinfectant and the product label is registered with the Wisconsin department of agriculture, trade and consumer protection;

(b) The disinfectant has an effective residual which can be easily and accurately measured by a field test procedure;

(c) The disinfectant is compatible for use with other chemicals normally used in the pool water treatment, or is clearly identified as having a use limitation;

(d) The disinfectant does not impart toxic properties to the water when used according to directions; and

(e) The disinfectant does not create an undue safety hazard when handled, stored and used according to directions.

(2) CHEMICAL CONCENTRATIONS. (a) *Chlorine residual.* The free available chlorine residual in pool water shall be a minimum of 1.0 ppm except that in whirlpools the minimum shall be 3.0 ppm and in wading pools, waterslide plunge pools and wave pools the minimum shall be 2.0 ppm. When a waterslide plunge pool or a wave pool is equipped with approved and properly functioning electronic monitoring devices to control the chlorine residual and pH level, the free available chlorine residual may be a minimum of 1.0 ppm.

(b) *Cyanurates.* When cyanuric acid or a chlorinated isocyanurate is used, the free available chlorine in pool water shall be a minimum of 1.5 ppm, except that in wading pools, in waterslide plunge pools and in wave pools the free available chlorine shall be a minimum of 3.0 ppm and in outdoor whirlpools the free available chlorine shall be a minimum of 4.0 ppm. The cyanuric acid concentration in the pool water shall range between 25 and 100 ppm.

(c) *Bromine residual.* The bromine residual in pool water shall be a minimum of 3.0 ppm except that in wading pools the bromine residual shall be a minimum of 4.0 ppm and in whirlpools the bromine residual shall be a minimum of 5.0 ppm. Bromine may not be used in waterslide plunge pools or wave pools unless the department's prior approval is obtained.

(d) *Superchlorination or superoxidation.* When use of a department−approved test kit discloses the presence of combined chlorine (chloramines) in the pool water, the water shall be superchlorinated using a chlorine product as an oxidizer or the water shall be otherwise superoxidized using a nonchlorinated oxidizer such as potassium peroxymonosulfate. Isocyanurates shall not be used for superoxidation. The pool shall be closed to the public during periods of superoxidation when a chlorine product is used.

(e) *pH Control.* The pH of pool water shall be maintained within a range of 7.2 through 7.8.

(f) *Alkalinity.* The total alkalinity of pool water shall be maintained between 80 and 180 ppm as calcium carbonate unless it can be shown that another level of total alkalinity produces chemically balanced pool water based on calculations approved by the department.

Note: Consideration should be given to the maintenance of balanced water as indicated by a Langelier Index of 0.0 e 0.5. The index may be obtained from a division of health regional office or from a county or municipal health department.

(3) TESTING. (a) *Test kits.* 1. A test kit approved by the department shall be provided and maintained for testing the pool water pH, the disinfectant residual, the combined chlorine level when chlorine is used, the total alkalinity and, when used, the cyanuric acid concentration. The disinfectant testing reagent shall be diethyl−p−phenylene diamine (DPD) in tablet or liquid form.

2. Test kit reagents shall be stored in their original labeled container and shall be replaced every 6 months or as recommended by the manufacturer.

3. Test kit standard colorimetric comparators used for pool water testing shall be approved by the department and shall provide for accurate comparison in the required range for each test as stated in sub. (2).

(b) *Frequency of testing.* 1. Pool water, except whirlpool water, shall be tested daily before the pool is open to the public and at least one other time during the day's peak bather load for pH and disinfectant residual, at least twice a week for the combined chlorine level when chlorine is used, and at least once a week for total

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alkalinity and cyanuric acid concentration when cyanuric acid is used.

2. Whirlpool water shall be tested for pH and disinfectant residual at least 4 times daily. At least 2 of these times the testing shall be done when the pool is in use. Whirlpool water shall be tested at least once daily for combined chlorine, when chlorine is used, and at least once a week for total alkalinity.

3. When a properly functioning electronic monitoring device is installed to control pH and disinfectant residual in pool or whirlpool water, testing shall be done at least once a day for pH and disinfectant residual.

History: Cr. Register, November, 1989, No. 407, eff. 12−1−89; am. (2) (a) to (c), (3) (b) 2., cr. (3) (b) 3., Register, June, 1992, No. 438, eff. 7−1−92; correction in (1) (intro.) and (a) made under s. 13.93 (2m) (b) 7. and 6., Stats., Register, January, 1995, No. 469.

HFS 172.10 Pool water quality standards. (1) WATER SUPPLY. The water supplied to a swimming pool shall be from a source approved by the department of natural resources under ch. NR 108, 811 or 812.

(2) POOL WATER TEMPERATURE. (a) *Pools except whirlpools.* The water temperature of indoor pools, except whirlpools, shall be between 72ºF. (25ºC.) and 90ºF. (32ºC.). The air temperature at an indoor pool shall be at least 72ºF. The minimum water temperature for outdoor pools shall be 65ºF. (18ºC.). An accurate thermometer shall be located in the pool water return line and shall be accessible for observation by the pool operator.

(b) *Whirlpools.* The water temperature of whirlpools may not exceed 104ºF. (40ºC.).

(3) POOL WATER CLARITY. The water shall have sufficient clarity that the main drain or a black and white disc, 6 inches in diameter, placed at the deepest point of the swimming pool, is readily visible when viewed from the deck.

(4) POOL WATER BACTERIOLOGICAL QUALITY. (a) *Sampling.* Samples of pool water may be collected by the department or its agent for microbiological analysis in evaluating pool water quality. The analysis of water samples shall comply with the procedures established in the 16th edition of *Standard Methods for the Examination of Water and Wastewater,* published jointly by the American Public Health Association, the American Water Works Association and the Water Pollution Control Federation.

Note: The 16th edition of *Standard Methods for the Examination of Water and Wastewater* may be consulted at the offices of the Department's Bureau of Public Health, the Secretary of State's office or the Revisor of Statutes office and may be purchased from the American Public Health Association, 1015 18th Street, N.W., Washington, D.C. 20005.

(b) *Bacteriological standards.* 1. When bacteriological analysis is done for coliform organisms, the multiple fermentation tube method, confirmed test, may not show positive for coliform organisms in any one of 5 tubes containing 10 milliliter portions of a water sample, nor shall the membrane filter method show the presence of any coliform organism per 100 milliliters of water sample.

2. When bacteriological analysis is done for the heterotrophic plate count, the total count may not exceed 200 colonies per one milliliter of water sample.

3. When bacteriological analysis is done for staphylococcal organisms, not more that 50 organisms per 100 milliliters of water sample may be present.

(5) ALGAE CONTROL. An algicide may be used in the pool if the algicide complies with s. HFS 172.09 (1) (a) and is used as label directions indicate.

History: Cr. Register, November, 1989, No. 407, eff. 12−1−89; am. (2) (a) and (4) (b) 2., Register, June, 1992, No. 438, eff. 7−1−92; correction in (1) made under s. 13.93 (2m) (b) 7., Stats., Register, June, 1992, No. 438; correction in (1) made under s. 13.93 (2m) (b) 7., Stats., Register, January, 1995, No. 469.

HFS 172.11 Monthly reports and records. (1) OPERATING REPORTS. The pool operator or responsible supervisor shall complete monthly reports on daily pool operation on forms provided by the department or its agent. The monthly reports shall be submitted to the appropriate departmental regional office or to the department's agent not later than the tenth day of the following month.

Note: To obtain copies of the Department's form for monthly reporting of daily pool operations or to determine which agent to contact to obtain copies, write or phone: Bureau of Public Health, P. O. Box 309, Madison, Wisconsin 53701 (608−266−2835).

(2) FILES. The operator shall maintain on the premises a file containing a copy of each monthly report under sub. (1), each laboratory bacteriological report, and every other report submitted to the department or its agent for the preceding 2−year period; correspondence with the department or its agent for the preceding 2−year period; a copy of the current edition of ch. HFS 172; pool construction plans; the manufacturer's pump performance curve, manual of instruction on filter operation, and recommendations for operation and maintenance of all equipment; and instructions and other pertinent information on pool operation and maintenance. All of these documents shall be accessible to the operator and the department or its agent.

History: Cr. Register, November, 1989, No. 407, eff. 12−1−89.

HFS 172.12 Maintenance, repair and sanitation. (1) POOL AND POOL AREA. (a) *General.* Every pool bottom and its sides shall be routinely brushed or vacuumed to keep the pool free of sediment, lint, hair, debris, algae and slime growth and discoloration. Cracks or other defects in the pool shall be repaired and the pool interior refinished as necessary to maintain it in a cleanable condition. Pool and deck equipment shall be properly located and installed, and shall be maintained and repaired as necessary.

(b) *Skimmers, gutters and pump strainers.* Skimmers, skimmer weirs and overflow gutters and drains shall be maintained so that they are clean and shall be repaired or replaced as needed. Strainer baskets for skimmers and pump strainers shall be cleaned at least daily.

(c) *Whirlpools and wading pools.* Whirlpools and wading pools shall be cleaned at least once each day. Routine cleaning shall be performed during hours when the pool is closed.

(d) *Deck maintenance and cleaning.* Pool deck areas shall be maintained in good repair and shall be rinsed daily. Indoor pool decks shall be disinfected at least weekly. Depth markings along the edge of the pool shall be maintained to be clearly visible and readable. The deck shall be kept unobstructed except for easily portable furniture and equipment.

(e) *Walls, ceilings and floors.* The walls, ceilings and floors in the pool area shall be repaired and refinished as necessary to maintain them in a cleanable and sanitary condition.

(f) *Hosing.* Adequate lengths of hosing shall be provided and available to flush the entire deck area. All hosebibbs shall be protected against backsiphonage by the proper installation of an approved backflow prevention device.

(g) *Spectator area.* Where a spectator area is provided, it shall be separated by a railing or other barrier from the pool area. The spectator area shall be maintained in a clean condition.

(h) *Drinking fountain.* Each drinking fountain provided under s. Comm 90.09 (5) shall be maintained in a sanitary condition.

(2) SHOWER, TOILET AND DRESSING FACILITIES. (a) The walls, partitions and floors of showers, toilet rooms and dressing areas shall be maintained in good repair and shall be cleaned and disinfected daily and more often if necessary to provide clean and sanitary conditions.

Note: See s. Comm 90.16.

(b) Showers shall be maintained in an operable condition and each shower shall provide 3 to 5 gallons of water per minute.

(c) Toilet room fixtures shall be kept clean and maintained in good repair.

(d) Lockers and furniture shall be cleaned as needed and maintained in good repair.

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(e) Soap shall be continually provided at each sink and shower in permanently installed dispensing devices. The dispensers shall be maintained in operating condition.

(f) Individual towels in dispensers or hot air dryers shall be provided at handwashing sinks.

(g) A continuous supply of toilet tissue shall be provided in permanently installed dispensing devices.

(h) Where bathing suits or towels or caps are furnished to patrons, they shall be thoroughly laundered using a good detergent and machine dried after each use. The supply of clean suits, towels and caps shall be stored separately from unlaundered articles.

(3) WATER HEATERS, VENTILATION, ELECTRICAL. (a) Water heaters and heat exchangers shall be maintained in operating condition.

(b) Heating, ventilation and exhaust equipment shall be maintained and operated to provide air movement as required by s. Comm 64.66 to prevent any excessive condensation problems in indoor enclosures.

(c) Electrical equipment and lighting shall be maintained in good repair and in operating condition.

Note: See ss. Comm 90.14 and 90.17.

History: Cr. Register, November, 1989, No. 407, eff. 12–1–89; correction in (1) (h) made under s. 13.93 (2m) (b) 7., Stats., Register, January, 1995, No. 469; **correction in (3) (b) made under s. 13.93 (2m) (b) 7., Stats., Register, April, 1999, No. 520**.

HFS 172.13 Solid waste. All garbage and refuse produced in connection with the operation of a public swimming pool shall be stored in metal or rigid plastic containers having tight–fitting lids. A sufficient number of containers shall be provided for all garbage and refuse generated. Filled containers of garbage or refuse shall be covered and stored in a manner to prevent harborage for rodents, insect attraction and breeding areas, odors, environmental pollution and accidents. The contents of the containers shall be disposed of as needed and in a sanitary manner. All containers shall be kept clean and maintained in good repair.

History: Cr. Register, November, 1989, No. 407, eff. 12–1–89.

HFS 172.14 Pool closing criteria. One or more of the following conditions or situations shall constitute sufficient reason for the operator or responsible supervisor to close a public swimming pool or for the department or its agent under s. HFS 172.15 (2) (b) to order that the swimming pool be closed:

(1) The presence of a hazardous substance or object in the swimming pool or the existence of any condition creating an immediate danger to health or safety;

(2) Failure to comply with the water quality requirements in s. HFS 172.10;

(3) Failure to comply with the disinfectant residual levels established in s. HFS 172.09;

(4) A nonoperational circulation pump, filter, or disinfectant feeder;

(5) Absence of a responsible supervisor or required lifeguard.

History: Cr. Register, November, 1989, No. 407, eff. 12–1–89.

HFS 172.15 Enforcement. (1) ACCESS. An authorized employee or agent of the department, upon presenting proper identification, shall be permitted to enter any public swimming pool area, including the recirculation equipment and piping area, at any reasonable time for the purpose of inspecting the pool area and the operation of the pool to determine compliance with this chapter. The department's authorized employee or agent shall be permitted to examine pool records and files.

(2) ENFORCEMENT POLICY. (a) *Notification.* If upon inspection of a public swimming pool the authorized employee or agent of the department finds that the pool is not designed, constructed, equipped or operated as required by ch. Comm 90 and this chapter, the employee or agent shall, except as provided under par. (b), notify the operator in writing and shall specify the changes required to make the pool and its operation conform to the standards established in this chapter and the time period within which compliance shall take place. If the order to correct violations is not carried out by the expiration of the time period stipulated in the order, or any extension of time granted for compliance, the department may issue an order suspending or revoking the permit to operate the pool. The suspension or revocation order shall take effect 15 days after the date of issuance unless a request for a hearing has been received under sub. (3).

(b) *Order to deal with an immediate danger to health.* Where there is reasonable cause to believe that any construction, sanitary condition, operation or method of operation of the public swimming pool or its equipment creates an immediate danger to health, an authorized employee or agent of the department may, pursuant to s. 254.85, Stats., acting as the designee of the administrator of the department's division of health, and without advanced written notice, issue a temporary order to remove the immediate danger to health. That order shall take effect on delivery to the operator or responsible supervisor. The order shall be limited to prohibiting the continued operation or method of operation of specific equipment, requiring the premises to cease other operations or methods of operations, or a combination of these, except that if a more limited order will not remove the immediate danger to health the order may direct that all operations authorized by the permit shall cease. If before scheduled expiration of the temporary order, the department determines that an immediate danger to health does in fact exist, the temporary order shall remain in effect. The department shall then schedule and hold the hearing required under s. 254.85 (3), Stats., unless the immediate danger to health is removed or the order is not contested and the operator and the department mutually agree that no purpose would be served by a hearing.

Note: Under s. 254.85, Stats., the temporary order is effective for 14 days and may be extended for another 14 days to permit the department to complete its examination. The order expires at the end of the 14–day or 28–day period unless it is terminated by the department by notice to the operator within that period, or is kept in effect beyond that period, pending a hearing, by department notification to the operator. The hearing is to be held by the department no later than 15 days after the notice is served on the operator unless the department and the operator agree on a later date, and the department must issue a final decision on the matter within 10 days after the hearing.

(3) APPEAL BY THE OPERATOR. Any operator aggrieved by an order of the department under this chapter, except for an order issued pursuant to s. 254.85, Stats., and sub. (2) (b), may request a hearing under this subsection to challenge the order. A request for a hearing under this subsection shall be submitted to the department of administration's division of hearings and appeals and shall be received by that office within 15 days after issuance of the order. Procedures for the hearing shall be in accordance with ch. 227, Stats. After the hearing, the department shall affirm, set aside or modify the order. The final decision of the department may be appealed to the circuit court as provided in ch. 227, Stats.

Note: The mailing address of the division of hearings and appeals is P.O. Box 7875, Madison, Wisconsin 53707.

(4) LOCAL ENFORCEMENT. Notwithstanding subs. (2) and (3), if an agent issues permits directly under this chapter, the agent shall create enforcement and appeal procedures in accordance with ss. 254.69 (2) (g) and 66.0417, Stats., which shall supersede subs. (2) and (3).

History: Cr. Register, November, 1989, No. 407, eff. 12–1–89; corrections made under s. 13.93 (2m) (b) 7., Stats., Register, January, 1995, No. 469; correction in (3) made under s. 13.93 (2m) (b) 6., Stats., Register, January, 1997, No. 493; **correction in (4) made under s. 13.93 (2m) (b) 7., Stats.**