

105 CMR 435.00

Minimum Standards for Swimming Pools
State Sanitary Code: Chapter V

Massachusetts Health Officers Association
Spring 2022



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435.01: Definitions

Public Pool means every swimming, wading or special purpose pool, admission to which maybe gained by the general public with or without the payment of a fee.

Swimming Pool means and includes every artificial pool of water having a depth of two feet or more at any point and used for swimming or bathing, located indoors or outdoors, together with the bathhouses, equipment, and appurtenances used in connection with the pool. It does not include any special purpose pool or residential pool as herein defined nor does it include any pool used primarily for baptismal purposes or the healing arts.

Semi-Public Pool means a swimming, wading or special purpose pool on the premises of, or used in connection with a hotel, motel, trailer court, apartment house, condominium, country club, youth club, school, camp, or similar establishment where the primary purpose of the establishment is not the operation of the swimming facilities, and where admission to the use of the pool is included in the fee or consideration paid or given for the primary use of the premises. Semi-public pool shall also mean a pool constructed and maintained by groups for the purposes of providing bathing facilities for members and guests only.

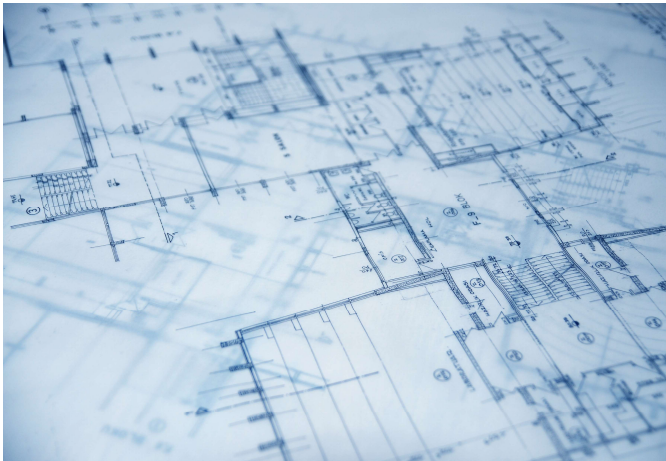
Special Purpose Pool means a unit designed for recreational and therapeutic use which is shallow in depth and not meant for swimming or diving. These pools are not drained, cleaned or refilled for each user. It may include, but not be limited to hydrojet circulation, hot water/cold water mineral baths, air induction bubbles, or any combination thereof. Industry terminology for such a pool includes but is not limited to, therapeutic pool, hydrotherapy pool, whirlpool, hot spa, hot tubs, float tanks, etc. This standard excludes residential units and facilities used or under the direct supervision and control of licensed medical personnel.

Wading Pool means a pool of water in a basin having a maximum depth of less than two feet intended chiefly as a wading place for children. It does not include any residential pool as herein defined.

435.02: Plan Approval

Construction, Installation, Renovation, or Expansion of a Swimming, Wading, or Special Purpose Pool, requires:

- Plans and specifications stamped and signed by a Massachusetts Registered Professional Engineer or Registered Architect
- Approved in writing by the Board of Health



Work shall conform to approved plans and specs

- Changes to the plans shall be submitted in writing before the work affected by the change is undertaken.

Nearing Completion:

- Notification shall be given at least 1 week prior to project completion
- Board of Health provides a final inspection and written approval of compliance
- Pool shall not be used before final inspection

435.03: Bathhouse and Sanitary Facilities

What's Required at a Public Swimming Pool?

Separate dressing and sanitary facilities for each sex, requiring:

- Ample size, well lighted, drainage, and ventilated
- Showers with hot and cold water (minimum 1 for each 40 bathers)
- 1 Water Closet for each 40 bathers (Urinals may be substituted for up to 1/3 of the number of water closets required)
- 1 Washbasin for each 60 bathers

In association with the required water closets, washbasins, and showers, the operator shall provide:

- Toilet paper holders with toilet paper at each toilet
- Suitable waste receptacles
- Soap dispensers at each wash basin (shatter-proof material)
- Common towels shall not be permitted!
- If mirrors are provided, they shall be unbreakable or safety glass material

The operator shall provide a room designated and equipped for the emergency care of sick or injured bathers:

- Room shall be approved by the Board of Health
- Minimum equipment: Cot and Blanket

The operator shall be responsible for maintaining adequate lighting in all parts of the bathhouse, toilets, pool area and pool water by sunlight or artificial lighting, or both, under all conditions of pool use:

- Arrangements and design of lighting shall allow lifeguards and attendants to see all areas clearly without being blinded by the lights.
- All lighting, including underwater pool lighting, shall be so installed to prevent glare and maintained as not to create a hazard.

435.03: Bathhouse and Sanitary Facilities

M.G.L. c. 140, § 206: Public and Semi-Public Outdoor Inground Swimming Pools; Enclosures; Safety Equipment; Inspection; Violations; Penalty

Every public and semipublic outdoor inground swimming pool shall be enclosed by a fence:

- Chain Link: 6 feet in height and firmly secured at ground level provided that any
- Board or Stockade fence: at least 5 feet in height
- Gates: self-latching with latches placed 4 feet above ground or make inaccessible from the outside to children up to 8 years of age
- No gaps wider than 3 inches

Inspection:

- Every public and semipublic outdoor inground swimming pool shall be inspected annually by the inspector of buildings of each city and town in which said pool is located.
- This law is referenced in 780 CMR (The MA State Building Code)

Safety Equipment required by law:

- Any such pool shall be equipped with at least 1 life ring and a rescue hook

Link: [General Law - Part I, Title XX, Chapter 140, Section 206 \(malegislature.gov\)](https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXX/Chapter140/Section206)

435.05 (3): Projections

Highlights:

No projection except ladders and grab rails shall be permitted from any pool wall or floorsurface.

A recessed stairway shall not be considered a projection.

A safety ledge as described in 105 CMR 435.11(4) shall not be considered a projection for the purposes of 105 CMR 435.00.

What is a projection?

What do I do if I come across a pool with a projection?

When are stair steps considered a projection?

435.05 (3): Projections

Recessed Stair Steps - Examples



435.05 (3): Projections

Are These Stair Steps in Compliance?



435.05 (3): Projections

Projecting Stair Steps - Examples



435.05 (3): Projections

Other Projections??



435.06 (1): Water Circulation and Filtration Systems

All swimming, wading and special purpose pools shall be equipped and operated with a system for recirculation and purification of the pool water. This system shall be capable of maintaining the water quality standards of 105 CMR 435.28 through 435.31. The over-all recirculation and purification system shall be so designed and constructed that the entire volume of the pool can be recirculated and filtered as follows:

Swimming Pools: once every 8 hours

Wading Pools: once every 4 hours

Special Purpose Pools: once every ½ hour

Water Slide Flumes: once every hour



$$\text{Turnover Rate} = \text{Pool Volume (gallons)} \div \text{Flow Rate} \div 60 = \underline{\hspace{2cm}} \text{GPM}$$

Filter Room

Questions to ask yourself in this area:

- Who has access to the filter room? Is the door always locked?
- Is the door labeled? Labels help protect!
- How are chemicals being stored?
- Who handles the chemicals? Is the appropriate PPE available at all times?
- Is the filter system labeled so that you could understand the basics without assistance?
- Are all components working properly?
- Is the area clean and dry?
- Are there CO₂ cylinders in the area? Are they anchored?
- Where is the flow meter? Is it working properly?
- Is this area well-lighted and well-ventilated?

Ask Questions!

The pool operator should be familiar with the recirculation system and its components!

435.08: Inlets and Outlets

Return inlets and suction outlets shall be designed so as to not constitute a hazard to the bather

The main drain(s):

- Shall be provided at the lowest point of the pool floor
- At least 2 main drains required for every swimming or wading pool more than 30 feet wide
- Shall not be greater than 20 feet apart
- Shall not be more than 15 feet from the nearest side wall
- All main drain covers should be VGB approved
- Shall be installed in a way that cannot be removed without the use of tools
- If single main drain, a secondary anti-entrapment system is required, including, but not limited to:
 - Safety Vacuum Release System
 - Gravity Drainage System
 - Automatic Pump Shut-Off System
 - Etc.

All swimming, wading and special purpose pools with any type of suction outlet cover(s), including those used for main drains, hydrotherapy or automatic cleaning outlets, which are missing, broken, loose, create an obstruction or are secured in such a way that the cover can be removed without the use of tools (excluding skimmers or gutters) shall be immediately closed for use until such repairs have been made to eliminate the hazard.

All special purpose and wading pools shall, by July 1, 1998, install an emergency shut off pump switch, in an accessible location, prominently marked and within plain sight at the special purpose or wading pool.

Virginia Graeme Baker Pool and Spa Safety Act (VGB)

Effective 1 year after December 19, 2007, each swimming pool or spa drain cover manufactured, distributed, or entered into commerce in the United States shall conform to the entrapment protection standards of the ASME/ANSI A112.19.8 performance standard, or any successor standard regulating such swimming pool or drain cover.

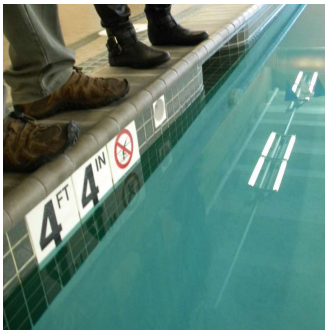
Things to Remember:

- This is a federal law! Pool(s) should not be open without VGB compliant covers
- Covers have a life-expectancy or an expiration – operators should be able to provide proof of compliance on demand
- If the operator cannot provide this information, it is recommended the installer and the manufacturer of the cover be contacted for specific information
- At this time, the most recent pool drain cover standard as determined by the Consumer Product Safety Commission (CPSC): APSP-16 2017

Operators should maintain all main drain information from the manufacturer and/or installer that confirm drain covers and grates meet applicable standard(s), and that they have not exceeded their expiration date. This information should be available at all times and stored in the record keeping log book!

435.12: Water Depth Markings

- Plainly marked on the pool deck and pool walls
 - Dark/Contrasting color
 - Minimum 4 inch markings
 - One foot intervals in shallow end (up to 5 feet) and not more than 25 foot intervals around the deep portion of pool
 - When non-swimmers use pool, a polyethylene line with floats shall separate non-swimmer area from deeper water
- All pools after the effective date of these regulations shall:
 - have the boundary line between the shallow and deep areas marked with a four-inch stripe of contrasting color on the floor and walls of the pool.
 - ledges and step edges shall also be marked with a four-inch stripe of contrasting color.



435.13: Walkways and Decks

Walkways shall be:

- Continuous around the pool
- A minimum width of 4 feet of unobstructed clear distance
- 8 feet of walkway is desirable
- A minimum of 3 feet walk width shall be provided around any piece of diving equipment
- All walkway and deck surfaces shall be furnished with a slip resistant non-abrasive surface



435.17: Pool Supervision

All public and semi-public swimming pools when open for use shall be under the management of a supervisor, who shall be responsible for all phases of the pool operation. The pool supervisor shall also be:

- At least 21 years old
- Knowledgeable of 105 CMR 435.00
- A certified pool operator

The pool supervisor shall conduct a site visit to the pool at least once a week to ensure the pool is being operated in a safe and sanitary manner. The pool supervisor shall record the findings of his/her site visit in the records required to be maintained by 105 CMR 435.21(5).



435.21: Permit Requirements

- No person shall operate or maintain any swimming, wading or special purpose pool without obtaining a permit from the Board of Health
- The permit shall state:
 - The method of water treatment
 - The number of trained lifeguards required
 - The maximum number of people allowed in the water at any time
- The operator shall post the permit in a conspicuous location near the swimming, wading or special purpose pool
- All permits shall expire no more than 12 months following the date of issue, and may be revoked for cause at any time by the Board of Health
 - The Board of Health may issue a permit for less than one year in those instances where there is only seasonal use of the swimming, wading or special purpose pool.

The operator shall maintain a current written record of all data pertaining to the operation and condition of the pool and s/he shall keep it available for inspection by the Board of Health at all reasonable times. The record shall include:

- Daily attendance
- Amounts and types of chemicals used daily
- Results of chemical and bacteriological tests
- Dates and times of emptying and cleaning the pool and backwashing of filters
- The daily number of hours of operation of purification equipment
- Other pertinent information which the Board of Health may require
- The records shall be initialed by the person making the required tests

435.22: Health Regulations; Signs

The operator shall cause a sign to be placed at the entrance of the pool enclosure, or on a wall of the dressing room where one is provided, which reads substantially as follows:

"All persons are required to take a cleansing shower bath before entering the pool."

"No person with a communicable disease is allowed to use the pool."



The following regulations shall be enforced by the operator:

- No bather shall enter the pool unless he first takes a cleansing shower.
- No bather shall wear a bathing suit that is unclean.
- No person suffering from a fever, cough, cold, inflammation of the eyes, nasal or ear discharges, or any communicable disease shall be allowed the use of the pool.
- No person with sores or other evidence of skin disease, or who is wearing a bandage or medical covering of any kind, shall be allowed the use of the pool.
- No person shall spit in or in any other way contaminate the pool, or its floors, walkways, aisles, or dressing rooms.
- No glass, with the exception of shatterproof light shields, shall be permitted in the pool or on walkways within eight feet of the pool.
- No person shall bring or throw into the pool any object that may in any way carry contamination or endanger the safety of bathers.

435.22: Health Regulations; Signs

What signage is required for Special Purpose Pools?

The operator of special purpose pools shall include on the sign required in 105 CMR435.22(3) the following warnings:

- Do not use when alone.
- Do not use while under the influence of alcohol, anticoagulants, antihistamines, vasoconstrictors, vasodilators, stimulants, hypnotics, narcotics or tranquilizers.
- Elderly persons, pregnant women, and persons suffering from heart disease, diabetes, high or low blood pressure should not use this pool until they consult with their physician.
- Do not use the pool when the water temperature is greater than 104°F.
- Observe a reasonable time limit (e.g., ten minutes), then shower, cool down, and, if you wish, return for another brief stay. Long exposure may result in nausea, dizziness or fainting.
- The use of oils and body lotion by bathers is prohibited.

The operator of special purpose pools shall provide a permanently mounted clock, with a large dial, located as to be easily readable by bathers at the pool.



435.23: Lifeguards

The operator shall provide one or more lifeguards 16 years of age or older if the Board of Health determines that they are necessary for the safe use of the swimming or wading pool.

Ratio: 1 Lifeguard to each 25 bathers

Current Certifications:

- Lifeguard Training
- CPR
- First Aid

If no lifeguards are required by the Board of Health, a warning sign shall be posted in a conspicuous location and shall state "WARNING-NO LIFEGUARD ON DUTY" in easy to read, legible letters which are at least 4 inches. In addition, there shall be signs which are readily visible stating "CHILDREN UNDER AGE 16 SHOULD NOT USE SWIMMING POOL WITHOUT AN ADULT IN ATTENDANCE" and "ADULTS SHOULD NOT SWIM ALONE."



435.23: Lifeguards

What's required of Lifeguards?

All lifeguards while on duty shall:

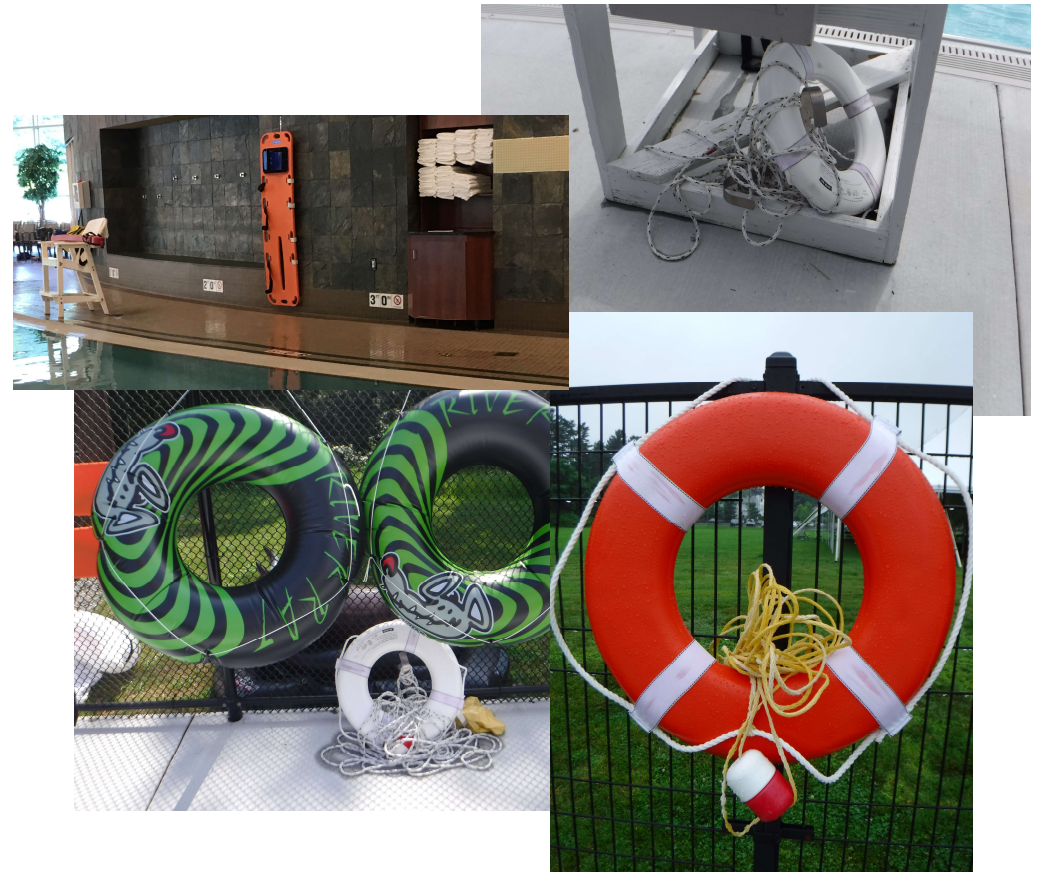
- Wear a **red** or bright **orange** bathing suit
 - Any shirt or jacket worn as an outer garment by a lifeguard shall also be **red** or bright **orange** and have the word GUARD printed in 4" lettering on the back
 - An **orange** hat or sun helmet shall be worn by all lifeguards out-of-doors while on duty
- The operator shall provide:
 - Whistles, bull horns, or other appropriate voice amplification devices to all lifeguards on duty
 - A sunblock or other skin protection should be made available to all lifeguards



435.24: Safety Equipment

For each 2000 square feet of water surface area or fraction thereof, the operator shall provide, in readily accessible locations:

- At least one Ring Buoy, U.S. Coast Guard approved, with a $\frac{1}{4}$ inch polyethylene rope attached, no less in length than $1\frac{1}{2}$ times the width of the pool
- At those swimming pools that are staffed by lifeguards, there shall also be one Rescue Tube located at each lifeguard station
- A backboard with straps shall also be readily available at each swimming pool which is attended by a lifeguard
- In addition, all outdoor, inground swimming pools shall be equipped with a rescue hook



435.25: Emergency Communication

An emergency communication system which at a minimum would allow **convenient**, **immediate** and **toll-free** communication with emergency medical services, local police, state police and the local fire department, must be in working order and available at each pool.

What shall be posted?

- The telephone numbers of the emergency services
- Instructions necessary to operate the communication system

The location of the emergency communication device must be in an area that is **unlocked** and **available** to both the **staff** and **the public at all times**.



435.25: Emergency Communication

Compliant? Non-Compliant?



Chemical Standards, Testing, Records

435.29: Chemical Standards

Swimming, wading, and special purpose pool water shall meet the following ranges:

- Free Chlorine: 1.0 – 3.0 ppm
- Combined Chlorine: 0.0 – 0.2 ppm
- pH: 7.2 – 7.8 ppm
- Alkalinity: 50 – 150 ppm
- Calcium Hardness: 150 – 1000ppm (recommended)
- Bromine: 2.0-6.0 ppm

Free Chlorine, Combined Chlorine, and pH shall be tested:

- 4 times per day
- Once during the peak load by the pool operator
- More often if required by the Board of Health

Alkalinity and Calcium Hardness shall be tested:

- Weekly
- More often if required by the Board of Health

When electronic monitoring devices are used in conjunction with chlorine or bromine disinfection at a swimming, wading or special purpose pool, the operator shall check the disinfectant, pH and alkalinity levels manually at least once every 24 hours.

Chemical Log Book – Questions to Ask Yourself During Inspections?

- Are there 4 tests recorded, at minimum, each day?
- Are Alkalinity and Calcium Hardness tested once per week?
- Are there skipped/missing days?
- Do you notice any patterns or consistencies in the recorded results?
- Are there notes indicating corrective action when chemicals are out of compliance?
- Is the pool operator/supervisor noting and initialing pool maintenance? Pool closures? Etc.
- Is there VGB main drain/equalizer line information available?
- Is there any notation of checking the emergency communication system?
- Is there any documentation relative to the purchase of the chemistry test kit?

Chemical Standards, Testing, Records

435.30: Water Testing Equipment

The operator shall provide and use a DPD test kit for measuring the concentration of chlorine or bromine and an appropriate test kit for measuring pH, alkalinity, and cyanuric acid levels at each swimming, wading and special purpose pool.

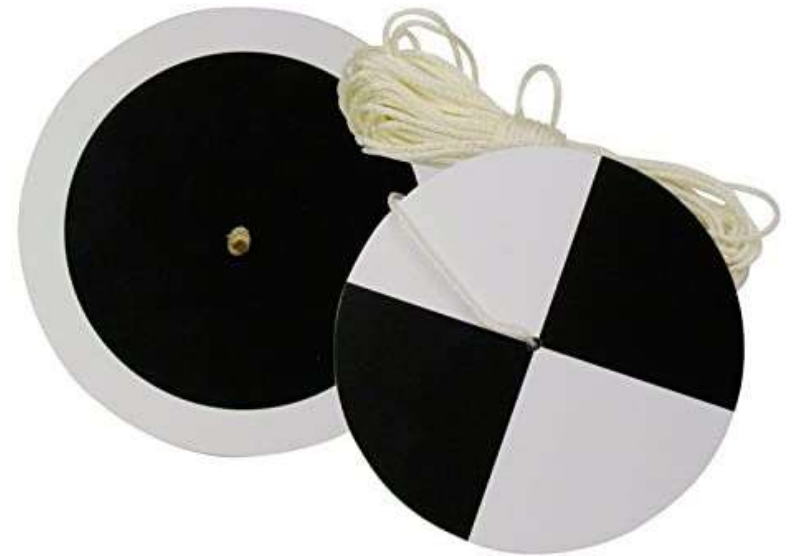
The test kit shall be maintained in good repair together with an adequate supply of reagents that are no more than one year old.

The requirements of 105 CMR 435.29 will not be superseded by the use of automatic equipment.



435.31: Water Clarity

At all times any swimming, wading or special purpose pool is in use, the water shall be sufficiently clear to permit a black disc six inches in diameter on a white field, when placed on the bottom of the pool at the deepest point, to be clearly visible from the sidewalks of the pool at all distances up to ten yards measured from a line drawn across the pool through said disc.



Secchi Disc

435.34: Closure of Pool

The operator shall be familiar with the provisions of 105 CMR 435.000 and every other applicable law and regulation pertaining to swimming, wading and special purpose pools including testing equipment and safe handling of chemicals.

If at any time the swimming, wading or special purpose pool water does not conform with the requirements set forth in 105 CMR 435.28 through 435.31, **the operator shall immediately close the pool until the pool water conforms with those standards.**



435.38: General Sanitation

All swimming, wading and special purpose pools and all bathhouses, grounds and appurtenances shall be maintained in good repair and in a safe and sanitary manner.





Questions??

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