



# Town of Charlton

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## Private Swimming Pools

This document contains excerpts of the Massachusetts State Building Code, 780 CMR, Section 4 Special Occupancies. Section 421.0 deals with; public, semi-public and private pools, we have removed the subsections that are not relevant to residential pool and spas. For the complete text of this section may be found at [http://www.mass.gov/bbrs/780CMR\\_Ch04.pdf](http://www.mass.gov/bbrs/780CMR_Ch04.pdf).

It is the responsibility of the owner and or contractor to ensure compliance will all the applicable section of both the State Building Code and Town of Charlton Zoning Bylaw relating to swimming pools, decks, enclosures, barriers (fences) during the entire construction process.

**As soon as there is any water in the pool or spa the required barriers or other safety devices must installed and maintained for the life of the pool.** (780 CMR § 421.10)  
Underlining has been added to the text to bring your attention to important passages of the code.

780 CMR 421.0 SWIMMING POOLS  
(Refer to M.G.L. c. 140, § 206 for further requirements pertaining to public or semi-public, outdoor, inground swimming pool enclosures, safety equipment, inspection, and penalties for violations.)

**421.1 General:** Swimming and bathing pools shall conform to the requirements of 780 CMR 421.0 provided that 780 CMR 421.0 shall not be applicable to any such pool less than 24 inches (610 mm) deep or having a surface area less than 250 square feet (23.25 m<sup>2</sup>), except where such pools are permanently equipped with a water-recirculating system or involve structural materials. For the purposes of 780 CMR, pools are classified as private swimming pools, public swimming pools or semi-public swimming pools, as defined in 780 CMR 421.2. Materials and constructions used in swimming pools shall comply with the applicable requirements of 780 CMR.

**421.2 Definitions:** The following words and terms shall, for the purposes of 780 CMR 421.0 and as used elsewhere in 780 CMR, have the meanings shown herein.

### **Pools, swimming, hot tubs and spas**

**Above-ground/on-ground pool:** See definition of private swimming pool.

**Barrier:** A fence, a wall, a building wall or a combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool. (Refer to M.G.L. c. 140, § 206 for required enclosure of public or semi-public, outdoor, inground swimming pools.)

**Hot tub (special purpose pool):** 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.

**In-ground pool:** See definition of private swimming pool.

**Private swimming pool:** Any structure that contains water over 24 inches (610 mm) in depth and which is used, or intended to be used, for swimming or recreational bathing in connection with an occupancy in Use Group R-3 or R-4 and which is available only to the family and guests of the householder. This includes in-ground, aboveground and on-ground swimming pools, hot tubs and spas.

**Private swimming pool, indoor:** Any private swimming pool that is totally contained within a private structure and surrounded on all four sides by walls of said structure.

**Private swimming pool, outdoor:** Any private swimming pool that is not an indoor pool.

#### **421.3 Permits and construction**

**documents:** A swimming pool or appurtenances thereto shall not be constructed, installed, enlarged or altered until *construction documents* have been submitted and a permit has been obtained from the code official. The approval of all city, county and state authorities having jurisdiction over swimming pools shall be obtained before applying to the code official for a permit. Certified copies of these approvals shall be filed as part of the supporting data for the permit application.

##### **421.3.1 Construction documents:**

*Construction documents* shall accurately show dimensions and construction of the pool and appurtenances and properly established distances to *lot lines*, buildings, walks and fences, as well as details of the water supply system, drainage and water disposal systems, and all appurtenances pertaining to the swimming pool. Detailed *construction documents* of structures, vertical elevations and sections through the pool showing depth shall be included.

**421.5.5 Steps and ladders:** At least one *means of egress* shall be provided from private pools. *All public and semi-public* pools shall provide ladders to other *means of egress* at both sides of the diving section and at least one *means of*

*egress* at the shallow section; or at least one *means of egress* in the deep section and the shallow section if diving boards are not provided. Treads of steps and ladders shall have slip-resistant surfaces and handrails on both sides, except that handrails are not required where there are not more than four steps or where the steps extend the full width of the side or end of the pool. (Refer to 521 CMR 19.00, the *Architectural Access Board's rules and regulations, for requirements pertaining to the accessibility of all public and semi-public swimming pools.*)

**421.6.2 Drainage systems:** The swimming pool and equipment shall be equipped to be emptied completely of water and the discharged water shall be disposed of in an approved manner that will not create a nuisance to adjoining property.

**421.7 Appurtenant structures:** All *appurtenant structures*, installations and equipment, such as showers, dressing rooms, equipment houses or other buildings and structures, including plumbing, heating and air conditioning systems, shall comply with all applicable requirements of 780 CMR, *applicable zoning laws and requirements, 105CMR 435.000: Minimum Standards for Swimming Pools (State Sanitary Code: Chapter V), 248 CMR 2.00 : the State Plumbing Code, and 527 CMR 12.00: the State Electrical Code.*

**421.7.1 Accessories:** All swimming pool accessories shall be designed, constructed and installed so as not to be a safety hazard. Installations or structures for diving purposes shall be properly anchored to insure stability.

**421.10 Enclosures for private swimming pools, spas and hot tubs:** *In lieu of any zoning laws or ordinances to the contrary*, private swimming pools, spas and hot tubs shall be enclosed in accordance with 780 CMR 421.10.1 through 421.10.4 or by other approved barriers.

**421.10.1 Outdoor private swimming pool:** An outdoor private swimming pool, including an inground, above ground or on-ground pool, hot tub or spa shall be provided with a barrier which shall comply with the following.

1. The top of the barrier shall be at least 48 inches (1219 mm) above finished ground level measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between finished ground level and the barrier shall be two inches (51 mm) measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above finished ground level, such as an above-ground pool, the barrier shall be at finished ground level, such as the pool structure, or shall be mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be four inches (102 mm).

2. Openings in the barrier shall not allow passage of a four-inch (102 mm) diameter sphere.

3. Solid barriers shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.

4. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1¾ inches (44 mm) in width. Decorative cutouts shall not exceed 1¾ inches (44 mm) in width.

5. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed four inches (102 mm). Decorative cutouts shall not exceed 1¾ inches (44 mm) in width.

6. Maximum mesh size for chain link fences shall be a 1¼-inch (32 mm) square unless the fence is provided with slats fastened at the top or the bottom which reduce the openings to not more than 1¾-inches (44 mm).

7. Where the barrier is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall be not more than 1¾ inches (44 mm).

8. Access gates shall comply with the requirements of 780 CMR 421.10.1 items 1 through 7, and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outwards away from the pool and shall be self-closing and have a selflatching device. Gates other than pedestrian access gates shall have a self-latching device. Where the release mechanism of the selflatching device is located less than 54 inches (1372 mm) from the bottom of the gate: (a) the release mechanism shall be located on the pool side of the gate at least three inches (76 mm) below the top of the gate; and (b) the gate and barrier shall not have an opening greater than ½ inch (13 mm) within 18 inches (457 mm) of the release mechanism.

9. Where a wall of a dwelling serves as part of the barrier, one of the following shall apply:

9.1. All doors with direct access to the pool through that wall shall be equipped with an alarm which produces an audible warning when the door and its screen, if present, are opened. The audible warning shall commence not more than seven seconds after the door and screen door, if present, are opened and shall sound continuously for minimum of 30 seconds. The alarm shall have a minimum sound pressure rating of 85 dBA at ten feet (3048 mm) and the sound of the alarm shall be distinctive from other household sounds such as smoke alarms, telephones and door bells. The alarm shall automatically reset under all conditions. The alarm shall be equipped with manual means, such as touchpads or switches, to deactivate temporarily the alarm for a single opening from either direction. Such deactivation shall last for not more than 15 seconds. The deactivation touchpads or switches shall be located at least 54 inches (1372 mm) above the threshold of the door.

9.2. The pool shall be equipped with an approved power safety cover.

10. Where an above-ground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and

the means of access is a fixed or removable ladder or steps, the ladder or steps shall be surrounded by a barrier which meets the requirements of 780 CMR 421.10.1 items 1 through 9. A removable ladder shall not constitute an acceptable alternative to enclosure requirements.

**421.10.2 Indoor private swimming pool:** All walls surrounding an indoor private swimming pool shall comply with 780 CMR 421.10.1, item 9.

**421.10.3 Prohibited locations:** Barriers shall be located so as to prohibit permanent structures, equipment or similar objects from being used to climb the barriers.

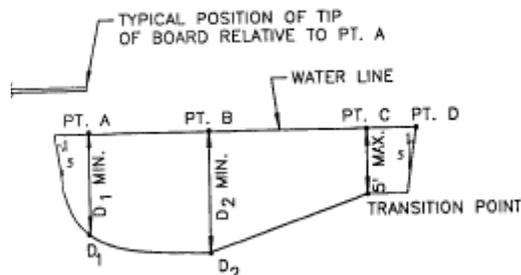
**421.10.4 Exemptions:** The following shall be exempt from the provisions of 780 CMR 421.0.

1. A spa or hot tub with an approved safety cover.
2. Fixtures which are drained after each use.

**421.11 Diving boards:** Minimum water depths and distances for diving hoppers for pools, based on board height above water, shall comply with Table 421.11(1) for public pools and Table 421.11 (2) for private pools.

The maximum slope permitted between point D2 and the transition point shall not exceed one unit vertical to three units horizontal (1:3) in private and public pools. D1 is the point directly under the end of the diving boards. D2 is the point at which the floor begins to slope upwards to the transition point. See Figure 421.11.

**Figure 421.11  
MINIMUM WATER DEPTHS AND  
DISTANCES BASED ON BOARD HEIGHT  
FOR ALL PUBLIC, SEMI PUBLIC AND  
PRIVATE POOLS**



**Table 421.1 1(1)**

**MINIMUM WATER DEPTHS AND  
DISTANCES BASED ON BOARD  
HEIGHT FOR ALL PUBLIC POOLS**

Board height	Minimum depth <sup>a</sup> at D <sub>1</sub> directly under end of board	Distance <sup>a</sup> between D <sub>1</sub> and D <sub>2</sub>	Minimum depth <sup>a</sup> at D <sub>2</sub>
2'2" (2/3 meter)	7'0"	8'0"	8'6"
2'6" (3/4 meter)	7'6"	9'0"	9'0"
1 meter	8'6"	10'0"	10'0"
3 meter	11'0"	10'0"	12'0"

Note a. 1 foot = 304.8 mm.

**Table 421.11(2)  
MINIMUM WATER DEPTHS AND  
DISTANCES BASED ON BOARD HEIGHT  
FOR PRIVATE POOLS**

Board height	Minimum depth <sup>a</sup> at D <sub>1</sub> directly under end of board	Distance <sup>a</sup> between D <sub>1</sub> and D <sub>2</sub>	Minimum depth <sup>a</sup> at D <sub>2</sub>
1'8" (1/2 meter)	6'0"	7'0"	7'6"
2'2" (2/3 meter)	6'10"	7'6"	8'0"
2'6" (3/4 meter)	7'5"	8'0"	8'0"
3'4" (1 meter)	8'6"	9'0"	9'0"

Note a. 1 foot = 304.8 mm.

The Board of Building Regulation and Standards web site is:  
<http://www.mass.gov/bbrs/index.htm>

U.S. Consumer Product Safety Commission, Swimming pools  
<http://www.cpsc.gov/cpscpub/prerel/prhtml04/04142.html>

**If you have any suggestions for improving this handout please let the Building Commissioner know.**