**Section 820.200 General Design Requirements**

Swimming facilities and appurtenances, including other pools associated with or provided as appurtenances to swimming pools, shall comply with this Subpart.

a) Enclosures

1) The swimming pool area shall be completely enclosed by a protective wall, fence or other barrier, at least 4 feet high, measured on the inside and outside, and not providing ready footing for climbing. The height of an opening under the bottom of the barrier shall not exceed 4 inches. The openings in any barrier shall not exceed 4 inches in width and height.

2) Each entrance into the pool enclosure shall be equipped with a door or gate that is self-closing and self-latching. This requirement is not necessary when people enter the pool area through the bather preparation facility and lifeguards are provided in the pool area. Doors and gates at all entrances to the pool enclosure shall be equipped with hardware that permits secure locking of the entrance.

3) A balcony shall not overhang or extend within 10 feet horizontally of any portion of the water surface of a swimming pool.

4) Sand areas shall not be allowed inside of the pool enclosure unless a barrier is provided to control access to the pool. If access is allowed to sand areas, bathers passing from the sand area to the pool area shall be required to pass through a shower facility with heated or tempered water for removal of sand.

b) Bather Load. The Department will compute a bather load for each swimming pool area. A bather load shall be specified with the issuance of a construction permit for a new swimming pool. In the case of multiple swimming pools contained within a common enclosure, the Department may compute a combined bather load for the pool enclosure. The criteria to be used for computing the bather load are as follows:

1) Shallow Area. Fifteen square feet of water surface shall be required for each bather.

2) Deep Area. Twenty-five square feet of water surface shall be required for each bather, with 300 square feet deducted for each diving board or platform.

3) The bather load for wading pools shall be computed at 15 square feet of pool water surface for each bather.

4) A designated plunge area or landing area for a slide, as specified in Section 820.250, shall not be considered in computing a bather load.

5) One bather shall be allowed for each 50 square feet of pool deck area in excess of the minimum specified in subsection (j)(1).

c) Structure. A licensed architect or structural engineer shall certify that the pool is designed to withstand all anticipated hydraulic structural loadings for both full and empty conditions. All appurtenances to the pool, such as diving boards and slides, shall be designed to carry the anticipated load.

d) Material. Pools shall be constructed of materials that provide a rigid, watertight shell with a smooth, impervious, light-colored finish that is non-toxic and easily cleaned. The floor of shallow areas shall have a slip-resistant finish. Pool vinyl liners may be installed only over a base of concrete, steel or other rigid material.

e) Obstruction. An obstruction creating a safety hazard shall not extend into or above the pool, or shall not protrude from the floor of the pool. Certified safety covers for suction outlets shall not protrude more than 2 inches from the floor or walls of the pool.

f) Slope of Pool Floor. The floor of a pool shall slope downward toward the main drain. The slope in shallow areas shall not exceed 1 foot vertical in 12 feet horizontal except for a slope directed downward from a transition point, which shall not exceed 1 foot vertical in 3 feet horizontal. In portions of the pool with a depth greater than 5 feet, the front slope of the deep area shall not be steeper than 1 foot in 3 feet. The slope requirements are illustrated in Appendix A.Illustration A.

g) Transition Point. Transition points shall be marked with a stripe on the pool floor at least 4 inches wide in a color that contrasts with that of the floor, and with a buoyed safety rope with colored buoys, installed at least 1 foot on the shallow side of the transition point. In other pools having adjoining shallow and deep areas, a safety rope with colored buoys shall be installed where the water depth reaches 5 feet.

h) Pool Walls

1) Pool walls shall meet the following requirements:

A) Where the pool depth is 42 inches or less, pool walls shall be vertical to the floor. The junction of the wall with the floor shall consist of a cove with a radius not exceeding 6 inches.

B) Where the pool depth exceeds 42 inches, pool walls shall meet one of the following criteria:

i) The wall shall be vertical for a distance of at least 5 feet below the water level, below which the wall may angle to the floor; or

ii) The wall shall be vertical for a distance of at least 3 feet below the water level, below which the wall shall form a curve to the floor. The curve shall be tangent to the pool wall and shall have a radius of curvature at least equal to the vertical distance between the center of curvature and the pool floor.

2) If pool ledges are provided, they shall have a maximum 6-inch width, shall be located at least 3 feet below the water level, shall slope away from the pool wall and shall have a slip-resistant surface with a color that contrasts with the pool walls and floor. The pool wall below the ledge shall be constructed in accordance with the requirements of this Section, except that the pool wall may slope inward toward the pool at an angle not exceeding 11 degrees from vertical.

3) Underwater seat benches shall be located a maximum of 20 inches below the water level, be visually set apart, have a slip-resistant surface, and be recessed into the pool wall or be installed so that there are no exposed corners or vertical edges in the pool.

4) All junctions between pool walls, and between pool walls and the pool floor, shall be coved with a minimum radius of 1 inch.

5) Devices for anchoring safety ropes and racing lane divider ropes shall be recessed into the pool wall.

6) An effective handhold shall be provided at or near the water level where the pool depth is 30 inches or greater. The handhold may consist of the rounded lip of a perimeter overflow system or bullnose coping with round, raised handhold not exceeding 2½ inches in thickness, or other effective handhold. The handhold shall not protrude more than 2 inches into or over the pool.

i) Depth Markers

1) The water depth shall be marked at or above the water surface on the wall of the pool and on the edge of the deck next to the pool so as to be readable by persons entering or in the pool. If depth markers cannot be placed on the walls at or above the water level so that at least 50 percent of the marking is above water level, they shall be placed on the pool wall as high as practicable and also on the fencing or pool enclosure so as to be plainly visible to persons in the pool. Depth markings shall be provided at the shallow and deep ends of the pool, the transition point, and the point of maximum depth, and shall be spaced at not more than 25 foot intervals measured peripherally, except that depth markings are not required at a zero-depth edge.

2) Depth markers shall indicate pool depth in either feet, feet and inches, or feet and fractions of a foot, and shall be of a color that contrasts with the background. Numerals indicating depth shall be a minimum of 4 inches high.

3) In shallow areas, "no diving" markers or symbols at least 4 inches high shall be located at not more than 25 foot intervals around the pool perimeter except at a zero-depth edge.

j) Walkways and Deck Areas

1) Except for plunge pools, wave pools and lazy rivers, pools shall be completely surrounded by a deck that is at least 4 feet in width and extends completely around and adjacent to the pool. Except as allowed for wave pools in subsection (u)(3), there shall be no obstructions or interruptions of the pool deck within the 4 feet adjacent to the pool other than necessary structural supports, or appurtenances such as diving boards, slides, perimeter overflow systems, or handrails. A clear, unobstructed walkway at least 42 inches in width shall be maintained at obstructions or interruptions.

2) Structural supports located within the minimum required deck width or within 4 feet of the swimming pool shall be no closer than 10 feet apart measured parallel to the adjacent perimeter of the pool, with the dimension of any single support in a plane parallel to the adjacent pool perimeter no greater than 3 feet and the sum of all support dimensions no greater than 10 percent of the pool perimeter.

3) The deck between two adjacent swimming pools shall be at least 8 feet wide. All decks and walkways shall have an unobstructed overhead clearance of at least 7 feet.

4) Deck Coverings. Synthetic material may be installed if it meets the following criteria:

A) It is non-fibrous and allows drainage so that it will not remain wet or retain moisture;

B) It is inert and will not support bacterial or fungal growth;

C) It is durable;

D) It is cleanable; and

E) It provides a slip-resistant finish.

5) The deck shall slope at least 1 inch per 10 feet to deck drains or to the surrounding ground surface. The maximum slope of the pool deck shall not exceed 1 inch per foot.

6) Except for linear drains, deck drains shall be located so that not more than 900 square feet of deck area is tributary to each drain, and deck drains shall not be more than 30 feet apart. Deck drains shall be located so that water does not drain more than 15 feet in any one direction. Where deck widths are 15 feet or less, deck drains are not required, provided that the deck drains to the ground surface. The deck drains shall not be connected to the pool water recirculation system. Pools designed to operate where the pool water level is at the deck level may be allowed to drain the first 4 feet of deck into the pool perimeter overflow system. Up to 10 feet of the deck adjacent to a zero-depth edge may be drained into the pool.

7) The decks and walkways shall have a paved surface. The surface of the pool deck, and other surfaces used for foot contact, such as gratings of perimeter overflow systems, shall be slip-resistant.

8) The outer perimeter of the deck for outdoor pools shall be at least 4 inches higher than the surrounding ground surface except where access is provided to adjacent turf areas.

9) Any opening in the deck shall have a locking type cover that is flush with the deck.

10) Hose bibbs shall be provided for cleaning all parts of the pool and deck (maximum separation 150 feet).

11) Except for wave pools, the vertical distance between the surface of the deck, pool curb or pool rim and the water level shall not exceed 10 inches.

12) A pool perimeter curb or raised rim, if provided, shall be at least 4 inches in height, measured above the adjacent pool deck surface. This requirement does not apply to a handhold provided in accordance with subsection (h)(6).

k) Ladders, Step-Holes, Steps and Ramps

1) Swimming pools shall have at least two means of egress, located near opposite ends. Pools 30 feet or more in width shall have at least four means of egress, which shall be located near each end and on opposite sides. A means of egress shall consist of a ladder, step-holes and grab rails, stair, ramp, or zero-depth edge. The distance from any point with a depth greater than 30 inches in the swimming pool to a means of egress shall not exceed 50 feet. At least two ladders or sets of step-holes shall be located at the deep area of the swimming pool if more than one diving board is provided.

2) Step-holes shall have a minimum tread depth of 5 inches. Where step-holes or ladders are provided, there shall be a handrail or grab rail at the top on both sides that extends to the edge of the pool.

3) Steps shall be of contrasting color or marked to contrast with the pool floor and have uniform size treads of at least 12 inches and a rise of no more than 12 inches. Steps shall be located where the water depth is 3½ feet or less and shall have no pointed or sharp edges. One sturdy handrail or grab rail per 12 feet of step width or fraction of step width, extending the length of the steps, shall be provided.

4) All ladders, step-holes, and steps shall have slip-resistant surfaces.

5) Ramps shall slope at no more than 1 foot in 12, shall have a slip-resistant surface, shall be no more than 4 feet wide, and shall have handrails on both sides.

l) Drinking Fountains. A drinking fountain shall be provided on the pool deck for the use of bathers.

m) Diving Area

1) Handrails shall be provided at all steps and ladders leading to diving boards, except for those ladders set at 15° or less from the vertical. Platforms and diving boards that are 1 meter or higher shall be protected with guard railings. One meter diving board guard rails shall be at least 30 inches above the diving board and extend to the pool water's edge. All platforms or diving boards higher than 1 meter shall have guard rails that are at least 36 inches above the diving board or platform and extend to the pool water's edge. Three-meter platforms and boards shall have a side rail barrier.

2) The dimensions of the diving area of a pool that has diving boards or platforms of 3 meters or less in height shall conform to those shown in Appendix A.Illustration C. The distance from the plummet to the pool wall ahead shall be at least 34 feet.

3) Swimming pools constructed with diving facilities in excess of 3 meters in height shall comply with dimensions given in Appendix B.Table A and illustrated in Appendix A.Illustration D. If the pool is used for swimming as well as diving and if slope N transitions from the deep to the shallow end, then transition slope N shall not be steeper than 1 foot in 3.

4) There shall be no obstruction extending from the wall or the floor into the clear area of the diving portion of the pool. There shall be an unobstructed distance of 16 feet above the diving board, measured from the center of the front end of the board, and this clearance shall extend at least 8 feet behind, 8 feet to each side, and 16 feet ahead of the measuring point.

5) A plunge area shall be designated for each diving board or platform. There shall be no overlap from plunge areas of other diving facilities or slides. The plunge area for a diving board of 1 meter height or less shall extend 4 feet laterally from the center of the board on either side and for a distance of 28 feet in front of the tip of the board. For diving boards or platforms greater than 1 meter in height, the plunge area shall extend 6 feet laterally from the center of a diving board or from the side of a platform on either side and for a distance of at least 34 feet in front of the board or platform.

n) Starting Platforms

1) For swimming pools issued a construction permit after May 20, 1999, or starting platforms installed after that date at existing pools, starting platforms shall be installed only where the water depth is at least 3½ feet.

2) The top front edge of the platform shall be no more than 30 inches above the water level for water depths 4 feet or more. For water depths between 3½ and 4 feet, the top front edge of the platform shall not exceed 20 inches above the water level.

o) Electrical Installation – Lighting

1) All aspects of the facility shall comply with the 2008 National Electrical Code.

2) Artificial lighting shall be provided at all indoor pools and at all outdoor pools that are open for use after sunset in accordance with one of the following:

A) Underwater lighting of at least 8.35 lumens or 0.5 watts per square foot of pool water surface area, located to provide illumination of the entire pool floor; plus area lighting of at least 10 lumens or 0.6 watts per square foot of deck area.

B) If underwater lights are not provided, at least 33.5 lumens or 2.0 watts per square foot of pool water surface area and deck area.

3) Where portable electric vacuum cleaning equipment is used, electrical receptacles with ground-fault circuit interrupter protection shall be provided. Separation between receptacles shall be a maximum of 100 feet. All receptacles installed in the swimming pool area shall have waterproof covers and ground-fault circuit interrupter protection.

4) Light dimmers shall not be installed on underwater lighting or lights for the pool deck.

5) Lighting controls shall not be accessible to the public.

p) Acoustics. Indoor pools shall receive acoustical treatment.

q) Ventilation. Indoor pools shall be mechanically ventilated and have humidity control. The ventilation system shall be capable of admitting 0.5 cubic feet per minute of outdoor air per square feet of floor area, including water surface area, in the pool enclosure.

r) Plumbing. All plumbing shall be in accordance with the Illinois Plumbing Code.

s) Emergency Telephone. Every swimming pool shall have a telephone that is accessible within the confines of the pool area or within 300 feet of the pool area, in case of emergencies.

t) Equipment Rooms

1) Equipment for swimming pool water treatment shall be housed in a lighted and ventilated room that affords protection from the weather and prevents unauthorized access.

2) The equipment room floor shall slope toward drains and shall have a slip-resistant finish.

3) A hose bibb shall be installed in the equipment room.

4) Suitable space, if not provided in the equipment room, shall be provided within the premises for storage of chemicals, tools, equipment, supplies and records and shall be weatherproof and protected from unauthorized access.

5) Electrical receptacles in the equipment room shall have ground-fault circuit interrupter protection.

u) Wave Pools. Wave pools shall comply with the following, and, except as specified in this subsection (u), with the requirements of this Section and Sections 820.210 and 820.220:

1) Overflow gutters, skimmers and inlets are not required along the deep end wall from which waves are generated.

2) Wave-generating equipment shall be installed and shall be provided with an emergency shut-off located at lifeguard chairs or stations on each side of the deep end of the pool.

3) A deck as specified in subsection (j) is required, except at the end of the pool where wave-generating equipment is located. Railings or other barriers may be installed on the deck adjacent to the sidewalls of the pool to control entry into the pool from the sides.

4) A safety rope will not be required if the pool is to be used only as a wave pool.

(Source: Amended at 37 Ill. Reg. 16539, effective October 4, 2013)