

DEPARTMENT OF PUBLIC HEALTH

NOTICE OF ADOPTED AMENDMENTS

- 1) Heading of the Part: Swimming Facility Code
- 2) Code Citation: 77 Ill. Adm. Code 820
- 3)

<u>Section Numbers:</u>	<u>Adopted Action:</u>
820.10	Amended
820.20	Amended
820.120	Amended
820.145	New
820.200	Amended
820.210	Amended
820.230	Amended
820.250	Amended
820.320	Amended
820.330	Amended
820.340	Amended
- 4) Statutory Authority: Authorized by and implementing the Swimming Facility Act [210 ILCS 125]
- 5) Effective Date of Rulemaking: February 3, 2010
- 6) Does this rulemaking contain an automatic repeal date? No
- 7) Do these amendments contain incorporations by reference? Yes
- 8) A copy of the adopted amendments, including any material incorporated by reference, is on file and available for public inspection at the Illinois Department of Public Health, 525 W. Jefferson Street, Springfield, Illinois 62761-0001.
- 9) Notice of Proposal Published in the Illinois Register: 33 Ill. Reg. 12459; September 11, 2009
- 10) Has JCAR issued a Statement of Objection to this rulemaking? No
- 11) Differences between proposal and final version: The following changes were made in response to comments received during the first notice or public comment period:

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In Section 820.145(a), "Section 820.210(f)(3)" was changed to "Section 820.210(f)(3)(H)".

In Section 820.210(a) "Spas 30 minutes" was inserted after "Other Pools 6 Hours".

In Section 820.210(f)(3)(H), the following was inserted after "maximum flow rate.: This requirement shall not apply to systems where each suction outlet is at least 18 inches or 29 inches as measured diagonally.".

The following changes were made in response to comments and suggestions of JCAR:

In the title, "ILLINOIS" was stricken, "POOL AND BATHING BEACH CODE" was stricken, and "FACILITY" was added before "CODE".

In Section 820.210(f)(3)(H), the last sentence was changed to read "This requirement shall not apply to systems in which each suction outlet is at least 18 inches by 23 inches or 29 inches as measured diagonally.".

In Section 820.145(a), the referenced Sections were changed as follows: "All swimming facilities with suction outlets located in the pool shall comply with Section 820.200(e) and Section 820.210(f)(3)(H). Compliance with Section 820.210(f)(3)(G) is not required when suction outlets comply with one or more of the following:".

- 12) Have all the changes agreed upon by the agency and JCAR been made as indicated in the agreements issued by JCAR? Yes
- 13) Will this rulemaking replace any emergency rulemaking currently in effect? No. A related emergency rulemaking expired on October 14, 2009.
- 14) Are there any amendments pending on this Part? No
- 15) Summary and Purpose of Rulemaking: This rulemaking implements amendments to Part 820 to address changes in federal law resulting from passage of the Virginia Graeme Baker Pool and Spa Safety Act (15 USC Sec. 8001 et seq.). These changes require that all public and commercial pools and spas be equipped with devices and systems designed to prevent entrapment by pool or spa drains; that pools and spas existing after the date of December 19, 2008 must have: more than 1 drain; one or more unblockable drains; or no main drain; and that every swimming pool and spa that has a main drain, other than an unblockable drain, be equipped with a drain cover that meets the consumer product safety

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standard established by section 8003 of the federal Act. Regulated entities must alter their drains to be in compliance with federal mandate. However, DPH will not have any regulatory authority to ensure that these bather entrapment requirements are enforced because the federal act does not authorize enforcement by states. This rulemaking was adopted because the previous Illinois rules were not equal to the new federal requirements, and it would have been impossible for owner/operators of swimming facilities in Illinois to be in compliance with both the state and federal requirements. The new certified safety covers protrude from the pool floor, which was not allowed in the previous code.

- 16) Information and questions regarding these adopted amendments shall be directed to:

Susan Meister
Division of Legal Services
Illinois Department of Public Health
535 West Jefferson, Fifth Floor
Springfield, Illinois 62761

217/782-2043
E-mail: DPH.RULES@illinois.gov

The full text of the Adopted Amendments begins on the next page:

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TITLE 77: PUBLIC HEALTH
CHAPTER I: DEPARTMENT OF PUBLIC HEALTH
SUBCHAPTER n: RECREATIONAL FACILITIES

PART 820

~~ILLINOIS~~ SWIMMING ~~POOL AND BATHING BEACH~~ FACILITY CODE

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Section

- 820.10 Definitions
820.20 Incorporated and Referenced Materials

SUBPART B: SWIMMING POOLS AND BATHING BEACHES

Section

- 820.100 Permits
820.110 Water Supplies
820.120 Wastewater Disposal
820.130 Food Service Sanitation
820.140 Exemptions
820.145 Swimming Facilities in Existence Prior to January 1, 2009
820.150 Variances

SUBPART C: SWIMMING FACILITY~~POOL~~ DESIGN REQUIREMENTS

Section

- 820.200 General Design Requirements
820.210 Swimming Facility~~Pool~~ Water Treatment System
820.220 Swimming Pool Bather Preparation Facilities
820.230 Wading Pools
820.240 Spray Pools
820.250 Slides
820.260 New Equipment, Construction and Materials (Repealed)
820.270 Lazy Rivers

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Section

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820.320	Water Quality
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SUBPART E: BATHING BEACH DESIGN AND OPERATION

Section

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820.ILLUSTRATION N	Chlorine Injection into Return Line to Pool Using Booster Pump

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820.TABLE A	Dimensions of Swimming Pools with Diving Facilities in Excess of Three Meters in Height
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820.TABLE D	Sizing Swimming Pool Chlorinators
820.TABLE E	Shower, Lavatory and Toilet Fixtures Required Per Bather Load

AUTHORITY: Implementing and authorized by the Swimming Facility Act [210 ILCS 125].

SOURCE: Adopted October 22, 1974; amended and effective February 9, 1976; amended at 4 Ill. Reg. 46, p. 1283, effective November 5, 1980; amended at 5 Ill. Reg. 9593, effective September 16, 1981; rules repealed and new rules adopted at 5 Ill. Reg. 13623, effective December 2, 1981; amended and codified at 8 Ill. Reg. 12366, effective July 5, 1984; amended at 11 Ill. Reg. 12308, effective July 15, 1987; amended at 14 Ill. Reg. 786, effective January 1, 1990; amended at 20 Ill. Reg. 6971, effective May 25, 1996; emergency amendment at 21 Ill. Reg. 7536, effective May 28, 1997, for a maximum of 150 days; amended at 22 Ill. Reg. 9357, effective May 15, 1998; amended at 23 Ill. Reg. 6079, effective May 20, 1999; emergency amendment at 23 Ill. Reg. 6551, effective May 20, 1999, for a maximum of 150 days; emergency expired October 16, 1999; amended at 24 Ill. Reg. 11271, effective July 15, 2000; amended at 25 Ill. Reg. 8291, effective July 1, 2001; emergency amendment at 27 Ill. Reg. 4223, effective February 15, 2003, for a maximum of 150 days, emergency expired July 14, 2004; emergency amendment at 33 Ill. Reg. 7177, effective May 18, 2009, for a maximum of 150 days; emergency expired October 14, 2009; amended at 34 Ill. Reg. 2698, effective February 3, 2010.

SUBPART A: GENERAL

Section 820.10 Definitions

In addition to the definitions in the Illinois Swimming ~~Facility~~~~Pool and Bathing Beach~~ Act, the following additional definitions shall apply:

"Act" means the Swimming ~~Facility~~~~Pool and Bathing Beach~~ Act [210 ILCS 125].

"Appurtenance" means an accessory facility or feature at a swimming pool or bathing beach, such as a diving board, slide, wading pool, plunge pool, spray pool, or bathhouse. The term does not refer to a therapy pool as defined in this Section.

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"Approval" means compliance with the Act and this Part.

"Approved Certification Agency" means an organization that has been accredited by the American National Standards Institute (ANSI) and found to meet the requirements specified in ANSI Z 34.1 (1993), Third Party Certification Program, to evaluate swimming pool equipment for compliance with ~~NSF~~ Standard 50, "Circulation system components and related materials for swimming pools, spas/hot tubs", published by NSF International (NSF).

"Attendant" means a person at least 16 years of age, stationed at the top of a water slide and responsible for ensuring safe use of the slide.

"Bather Load" means the maximum number of persons that may be allowed in the pool area at one time without creating undue health or safety hazards. (See Section 820.200(b).)

"Bathing Beach" means a Public Bathing Beach as defined in the Act.

"Certified Safety Cover" means a cover for a pool suction outlet that has been certified for conformance to American Society of Mechanical Engineers (ASME)/ANSI Standard A112.19.8-2007.

"Community Water System" means a public water system ~~that~~which serves at least 15 service connections used by residents or regularly serves at least 25 residents for at least 60 days a year.

"Construction" means the process of building or fabricating a swimming pool, bathing beach or appurtenance.

"Construction in a Flood Plain" means the placement or erection of structures or earthworks; land filling, excavation or non-agricultural alteration of the ground surface; installation of public utilities; channel modification; storage of materials or any other activity undertaken to modify the existing physical features of a flood plain with respect to the storage and conveyance of flood waters.

"Deep Area" means an area of a swimming pool in which the water depth exceeds five feet.

"Development" means improvement of a site for the purpose of establishing a

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bathing beach, the addition of an appurtenance to an existing swimming pool or bathing beach, modifying the shape, water surface area or depth of a swimming pool, or changing the design of the water recirculation or water treatment system of a swimming pool. It does not include repairs to existing facilities that do not alter the design of the facility.

"Diving Pool" means a pool designed and intended for use exclusively for diving.

"Drop Slide" means a slide with an exit angle exceeding 11 degrees measured downward from the horizontal.

"Field-Fabricated Suction Outlet" means a suction outlet having a cover that is not a certified safety cover or a safety cover installed in a manner that is not specified by the manufacturer. The term includes suction outlet covers consisting of a certified safety cover installed together with other components and covers comprising multiple certified safety covers covering a single suction outlet.

"Flume" means the inclined channel of a water slide.

"Homeowner's Association" is a not-for-profit corporation ~~composed~~comprised of members who have common ownership interest in property owned or operated by the association for the benefit of all the members.

"Inlet" means an opening or fitting through which filtered water enters the pool.

"Installation" means the emplacement of a swimming pool manufactured and transported to the intended site.

"Lazy River" means a pool intended for use with flotation devices and consisting of a closed loop with an artificially induced current.

"Major Alteration" means a substantial modification of a swimming facility. The term includes, but is not limited to, an alteration of a pool that changes the water surface area, depth or volume; addition of a permanently installed recreational appurtenance such as a diving board, slide or starting platform to a pool or beach; modification of the design of the recirculation system for a pool; or addition, replacement or modification of a bather preparation facility for a swimming facility. Examples of alterations that are not major include, but are not limited to, painting of a swimming pool, replacement of a pool filter or pump having

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identical characteristics or replacement of plumbing fixtures in a bather preparation facility.

"Main Drain" means the outlet or outlets in the floor of the pool.

"Make-up Water" means the water added to a pool to replace that which is lost.

"Manager/Operator" means the person or entity responsible for the actual daily operation, or for the supervision of the operation, of a swimming pool or bathing beach.

"Office of Water Resources" means the Illinois Department of Natural Resources, Office of Water Resources, One Natural Resources Way~~3215 Executive Park Dr.~~, Springfield IL 62702~~62703~~.

"Perimeter Overflow System" means a channel normally extending completely around the pool used to skim the surface layer of water. Also known as an overflow gutter.

"Permit" means a certificate issued by the Department allowing the construction, development or installation of a swimming pool or bathing beach under the provisions of the Act.

"Plunge Area" means a location in a pool or bathing beach at the exit of a slide, or the area in a pool below and in front of a diving board or platform.

"Plunge Pool" means a pool used exclusively as a plunge area for one or more slides.

"Pool" means a swimming pool ~~or a wading pool~~, plunge pool, spa, or other ~~recreational~~ water basin used by the public~~utilized in conjunction with or as an appurtenance to a swimming pool~~. The term does not refer to ~~spas and therapy pools not designed or intended for swimming or to~~ basins for individual use that are drained after each use.

"Pool Depth" means the vertical distance between the pool floor and the water level.

"Project Designer" means a licensed design professional primarily responsible for

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the design of the construction, development or installation of a swimming pool or bathing beach.

"Recirculation Piping" means the piping from the pool to the filters and back to the pool, through which the pool water circulates.

"Safety Vacuum Release System" means a device or combination of devices that has been designed to prevent bather entrapment on a suction fitting in a pool. Methods include, but are not limited to, immediately admitting air into the suction piping and/or de-energizing the pump upon sensing an increase in vacuum in the suction pipe, or reversing the circulation flow.

"Safety Vent Pipe" means a piping arrangement designed to admit air into suction piping to break a vacuum caused by a blocked suction fitting in a pool.

"Shallow Area" means an area in a swimming pool, in which the water depth does not exceed five feet at any point.

"Skimmer" means a mechanical device connected to the recirculation piping ~~that~~^{which} is used to skim the pool surface.

"Slide" means a recreational feature, including a water slide or drop slide, with a smooth, inclined flume or channel by which a rider is conveyed downward to a plunge area.

"Slip-Resistant" means not conducive to slipping under contact with bare feet when wet.

"Spa" means a basin of water designed for recreational or therapeutic use that is not drained, cleaned, or refilled for each user. It may include hydrojet circulation, hot water, cold water mineral bath, air induction bubbles, or some combination thereof. It includes "therapeutic pools", "hydrotherapy pools", "whirlpools", "hot spas", and "hot tubs". It does not include these facilities at individual residences intended for use by the occupant and his or her guests. (Section 3.10 of the Act) The term does not apply to a swimming pool as defined in the Act.

"Spray Pool" means an artificially constructed area over which water is sprayed but is not allowed to pool.

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"Suction outlet" means a fitting or opening in a pool basin through which water flows out of the pool. The term does not include a skimmer or a drain for a perimeter overflow system.

"Superchlorination" means the establishment of an elevated chlorine residual in pool water for the purpose of removing combined chlorine (chlorine that has reacted with nitrogenous compounds) or destroying unwanted organisms in the pool.

~~"Surge Weir" means an opening into a perimeter overflow system channel that allows skimming of the pool water surface when the surface is below the level of the overflow lip of the perimeter overflow system.~~

"Swimming facility" means a swimming pool, spa, public bathing beach, water slide, lazy river, or other similar aquatic feature. (Section 3.12 of the Act)

"Swimming pool" means any artificial basin of water which is modified, improved, constructed or installed for the purpose of public swimming, wading, floating, or diving, and includes: pools for community use, pools at apartments, condominiums, and other groups or associations having 5 or more living units, clubs, churches, camps, schools, institutions, Y.M.C.A.'s, Y.W.C.A.'s, parks, recreational areas, motels, hotels and other commercial establishments. It does not include pools at private residences intended only for the use of the owner and guests. (Section 3.01 of the Act) The term refers to swimming pools used for swimming, wading pools, lazy rivers, therapy pools, and plunge pools. The term does not refer to spas or to spray pools.

"Therapy Pool" means a pool that is not a spa and is intended only for medical treatment, physical therapy or muscle relaxation, ~~and not intended for swimming or instruction in swimming, and includes spas, whirlpools and hot spas.~~

"Transition Point" means a location in a shallow area of a swimming pool where an area, having a floor slope of no more than one foot vertical in 12 feet horizontal, adjoins an area where the floor slope exceeds one in 12.

"Turnover Period" means the time required to recirculate a volume of water equivalent to the water volume of the pool through the filtration system.

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"Wading Area" means a portion of a pool, other than an area of limited extent such as a stair, seat or ramp, where the water depth does not exceed 30 inches; or the portion of a bathing beach where the water depth is less than five feet, or that portion thereof designated by the installation of a buoyed line to separate this area from deeper water.

"Wading Pool" means a swimming pool having a maximum water depth not exceeding 30 inches.

"Water Level" means the level of the overflow lip of a perimeter overflow system ~~or the mid-level of surge weirs, if present,~~ or the mid-level of the skimmer operating range.

"Water Slide" means a slide with a flow of water and having a flume exceeding 30 feet in length.

"Wave Pool" means a swimming pool designed for the purpose of producing wave action in the water.

"Zero-Depth Edge" means that portion of the perimeter of a zero-depth pool where the pool floor intersects the pool water surface.

"Zero-Depth Pool" means a swimming pool where the pool floor intersects the water surface along a portion of its perimeter.

(Source: Amended at 34 Ill. Reg. 2698, effective February 3, 2010)

Section 820.20 Incorporated and Referenced Materials

a) The following materials are ~~incorporated or~~ referenced in this Part and are available for inspection at the Department's Springfield office:

~~1)a)~~ Statute
Swimming Facility~~Pool and Bathing Beach~~ Act [210 ILCS 125]

~~2)b)~~ Rules~~Regulations~~

~~A)4)~~ Illinois Plumbing Code (77 Ill. Adm. Code 890). (See Sections 820.200(r), 820.2109(c)(1), and 820.210(f)(1)(A).)

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~~B)2)~~ Regulation of Construction Within Flood Plains (92 Ill. Adm. Code 706). (See Sections 820.10 and 820.100 (b)(3)(A).)

~~C)3)~~ Drinking Water Systems Code (77 Ill. Adm. Code 900). (See Section 820.110(a).)

~~D)4)~~ Private Sewage Disposal Code (77 Ill. Adm. Code 905). (See Section 820.120.)

~~E)5)~~ Food Service Sanitation Code (77 Ill. Adm. Code 750). (See Section 820.130.)

~~F)6)~~ Public Water Supplies (35 Ill. Adm. Code: Subtitle F, Chapters I and II). (See Section 820.110(a).)

~~G)7)~~ Public Area Sanitary Practice Code (77 Ill. Adm. Code 895). (See Section 820.110(a).)

~~b)e)~~ The following materials are incorporated in this Part and are available for inspection at the Department's Springfield office:~~Other Materials~~

- 1) National Electrical Code (~~2008~~1999 Edition)
National Fire Protection Association
~~1~~ Batterymarch Park, ~~Quincy MA 02269~~
Quincy MA 02169
- 2) ~~NSF International~~
NSF Standard 50, "Circulation system components and related materials for swimming pools, spas/hot tubs" (~~February 15, 2008~~July 1996)
NSF International
~~789 N. Dixboro Road~~3475 Plymouth Road
P.O. Box ~~130140~~13014
Ann Arbor ~~MI, Michigan~~ 48113-0140
- 3) ANSI Z 34.1 (1993), Third Party Certification Program
American National Standards Institute
11 West 42nd Street
New York NY 10036

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- 4) ASME/ANSI Standard A112.19.8-2007, "Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs"
The American Society of Mechanical Engineers
345 East 47th Street
New York NY 10017
- 5) ASME/ANSI A112.19.17-2002, "Manufactured Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub and Wading Pool Suction Systems"
The American Society of Mechanical Engineers
345 East 47th Street
New York NY 10017
- 6) ASTM F2387-04, "Standard Specification for Manufactured Safety Vacuum Release Systems (SVRS) for Swimming Pools, Spas and Hot Tubs"
ASTM International
100 Barr Harbor Dr., P.O. Box C700
West Conshohocken PA 19428-2959
- 7) IAPMO SPS4-2000, "Material and Property Standard for Special Use Suction Fittings for Swimming Pools, Spas and Hot Tubs (For Suction Side Automatic Swimming Pool Cleaners)"
The International Association of Plumbing and Mechanical Officials
5001 E. Philadelphia St.
Ontario CA 91761

c)d All incorporations by reference of ~~federal regulations and~~ the standards of nationally recognized organizations refer to the regulations and standards on the date specified and do not include any amendments or editions~~additions or deletions~~ subsequent to the date specified.

(Source: Amended at 34 Ill. Reg. 2698, effective February 3, 2010)

SUBPART B: SWIMMING POOLS AND BATHING BEACHES

Section 820.120 Wastewater Disposal

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- a) Sewage generated from the operation of a swimming pool or bathing beach shall discharge to a public sanitary sewer or to a system ~~that~~^{which} complies with the Department's Private Sewage Disposal Code (77 Ill. Adm. Code ~~905940~~).
- b) Deck or surface area drainage water may be discharged directly to storm sewers, natural drainage areas, or the ground surface. Such drainage shall not result in nuisance conditions that create an offensive odor, produce a stagnant wet area, or create an environment for the breeding of insects.
- c) Wash or backwash water from filters shall be discharged to natural drainage areas, sanitary sewers, storm sewers, or to the ground surface in a manner that does not result in a nuisance condition.

(Source: Amended at 34 Ill. Reg. 2698, effective February 3, 2010)

Section 820.145 Swimming Facilities in Existence Prior to January 1, 2009

- a) All swimming facilities with suction outlets located in the pool shall comply with Section 820.200(e) and Section 820.210(f)(3)(H). Compliance with Section 820.210(f)(3)(G) is not required when suction outlets comply with one or more of the following:
 - 1) The suction outlet piping system is equipped with a safety vent pipe that will introduce air into the suction pipe if the water level in the vent pipe drops to a level of no more than 5 feet below the water level in the pool, but shall not introduce air into the suction piping when there is no obstruction of a suction outlet or in suction piping. The diameter of the vent pipe shall be at least ½ the diameter of the suction pipe, but not less than 1½ inches. The top of the vent pipe shall be open to the atmosphere and shall not be accessible to the public. The opening shall be protected against entry of dirt, rodents, birds, leaves, and other objects, and shall be accessible for cleaning and inspection; or
 - 2) The suction outlet piping system is equipped with a safety vacuum release system, which shall be installed in accordance with the manufacturer's specifications. A safety vacuum release system shall be certified in accordance with ASME/ANSI A112.19.17-2002 or ASTM F2387-04; or

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- 3) Water flows from the suction outlet to a surge tank, vacuum filter tank or balance tank by force of gravity, and the pump suction pipe draws water from the surge, vacuum filter or balance tank and is not directly connected to the suction outlet. The vacuum filter, surge or balance tank shall be vented to the atmosphere. The vent shall be designed to prevent blockage.
- b) Existing skimmer equalizer lines shall be permanently disabled or the piping shall be rerouted as required by Section 820.210(f)(5)(F).

(Source: Added at 34 Ill. Reg. 2698, effective February 3, 2010)

SUBPART C: SWIMMING ~~FACILITY~~~~POOL~~ DESIGN REQUIREMENTS**Section 820.200 General Design Requirements**

Swimming ~~facilities~~~~pools~~ 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~~~~four~~ 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~~~~four~~ inches. The openings in any barrier shall not exceed ~~4~~~~four~~ 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 bathhouse and lifeguards are provided in the pool area. Doors and gates at all entrances to the pool enclosure must 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

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such areas, an arrangement must be provided that requires bathers passing from the sand area to the pool area 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 of this Part, 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 Section 820.200(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~~which 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 ~~only~~ be installed only over a base of concrete, steel or other such rigid material.

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- 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 two 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 one foot vertical in 12 feet horizontal except for a slope directed downward from a transition point, which shall not exceed one foot vertical in 3three feet horizontal. In portions of the pool with a depth greater than 5five feet, the front slope of the deep area shall not be steeper than one foot in 3three 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 having a width of at least 4four inches and a color that contrasts with that of the floor, and with a buoyed safety rope with colored buoys, installed at least one 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 5five 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 6six 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 5five 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 3three 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

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the vertical distance between the center of curvature and the pool floor.

- 2) If pool ledges are provided, they shall have a maximum ~~six~~ inch width, shall be located at least ~~three~~ 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 one 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 ~~2½two and one-half~~ inches in thickness, or other effective handhold. The handhold shall not protrude more than ~~two~~ 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. Where depth markers cannot be placed on the walls at or above the water level such that at least 50% 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

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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 ~~4four~~ inches high.
- 3) In shallow areas, "no diving" markers or symbols at least ~~4four~~ inches high must 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 ~~4four~~ 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 ~~4four~~ 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 such obstructions or interruptions.
- 2) Structural supports located within the minimum required deck width or within ~~4four~~ 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 ~~3three~~ feet and the sum of all such support dimensions no greater than 10 percent of the pool perimeter.
- 3) The deck between two adjacent swimming pools shall be at least ~~8eight~~ feet wide. All decks and walkways shall have an unobstructed overhead clearance of at least ~~7seven~~ feet.
- 4) Deck Coverings. Synthetic material may be installed if it meets the following criteria:

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- A) It is non-fibrous and allows drainage such 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 one inch per ~~10~~ten feet to deck drains or to the surrounding ground surface. The maximum slope of the pool deck shall not exceed one 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~~four 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~~four 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~~which is flush with the deck.
- 10) Hose bibbs shall be provided for cleaning all parts of the pool and deck (maximum separation 150 feet).

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- 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~~four 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 that~~ 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 when more than one diving board is provided.
 - 2) Step-holes shall have a minimum tread depth of ~~5~~five inches. Where step-holes or ladders are provided, there shall be a handrail or grabrail at the top on both sides ~~that which~~ extends to the edge of the pool.
 - 3) Steps shall be of contrasting color or marked to contrast ~~with from~~ 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 ~~3½three and one half~~ feet or less and shall have no pointed or sharp edges. One sturdy handrail or grabrail per 12 feet of step width or fraction thereof, 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 one ~~foot~~ in 12, shall have a slip-resistant surface, shall be no more than ~~4~~four feet wide, and shall have handrails on both sides.
- l) Drinking Fountains. A drinking fountain shall be provided on the pool deck for

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the use of bathers ~~on the pool deck~~.

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 which~~ are one 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 one meter shall have guard rails ~~that which~~ 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 ~~3three~~ meters or less in height shall conform to those shown in Appendix A, Illustration C. In such pools, 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 ~~3three~~ 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 one foot in ~~3three~~.
- 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 ~~8eight~~ feet behind, ~~8eight~~ 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 one meter height or less shall extend ~~4four~~ 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 one meter in height, the plunge area shall extend

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~~6~~~~six~~ 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 ~~only~~ 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 conform with the ~~2008~~~~1999~~ 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.

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- 4) Light dimmers ~~shall~~may 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 (77 Ill. Adm. Code 890).
- s) Emergency Telephone. Every swimming pool shall have a telephone ~~that~~which 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~~which 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

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specified below, with the requirements of this Section and Sections 820.210 and 820.220 of this Part:

- 1) Overflow gutters, skimmers, and inlets are not required along the deep end wall from which waves are generated.
- 2) Wave-generating equipment ~~shall~~**must** 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) of this Section 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 34 Ill. Reg. 2698, effective February 3, 2010)

Section 820.210 Swimming ~~Facility~~Pool** Water Treatment System**

- a) General. A water treatment system, consisting of pumps, piping, filters, water conditioning, disinfection equipment and other accessory equipment shall be provided to clarify, chemically balance and disinfect the swimming pool water. The system shall be designed for a recirculation flow rate that will result in a turnover period in each pool not exceeding those specified below. Systems serving pools with skimmers shall be designed for a flow rate of at least 30 gallons per minute for each skimmer.

Type of Pool	Maximum Turnover Period
Diving Pools	8 Hours
Wading Pools, Wading Areas	2 Hours
Plunge Pools and Plunge Areas for Water Slides	2 Hours
Lazy Rivers	2 Hours
Other Pools	6 Hours
<u>Spas</u>	<u>30 Minutes</u>

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Other than equipment for circulating, heating, filtering and chemically treating water, as specified in this Section, or for automation of water quality control, no other type of device may be utilized as part of a pool water treatment system.

b) Pumping Equipment

- 1) The recirculation pump shall deliver the flow necessary to obtain a turnover as specified in subsection (a) of this Section. A valve for regulating the rate of flow shall be provided in the recirculation pump discharge piping.
- 2) The pump shall provide a minimum backwash rate of 15 gallons per minute per square foot of filter area in sand filter systems. The pump shall supply the required recirculation rate at a total dynamic head of at least 50 feet for all vacuum filters, 70 feet for pressure sand or cartridge filters, or 80 feet for pressure diatomaceous earth filters, unless a lower head is shown by the designer to be hydraulically appropriate.
- 3) If the pump operates with static suction lift, it shall be self-priming.
- 4) Where vacuum filters are used, a vacuum limit switch shall be provided on the pump suction line. The vacuum limit switch shall be set for a maximum vacuum of 18 inches of mercury.
- 5) A compound vacuum-pressure gauge shall be installed on the pump suction line as close to the pump as possible. A vacuum gauge may be used for pumps with suction lift. A pressure gauge shall be installed on the pump discharge line adjacent to the pump, with no valves between the pump and the gauge. Gauges shall be installed where they can be easily read.
- 6) Hair and Lint Strainer. A hair and lint strainer shall be installed on the suction side of the pump except on vacuum filter systems. The strainer basket shall be easily removable. Valves shall be installed to allow the flow to be shut off during cleaning, switching baskets, or inspection.

- c) Water Heater. A water heater shall be installed at all indoor pools. Pool water heaters shall be installed in accordance with the manufacturer's recommendations.

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- 1) The heater piping system shall be equipped with a valve bypass pipe around the heater, sized for the swimming pool design flow rate. The influent and effluent heater piping shall be valved, and shall conform to material specifications as approved for water distribution applications in the Illinois Plumbing Code.
- 2) A heating coil, pipe or steam hose shall not be installed in a swimming pool.
- 3) Thermometers shall be provided in the piping to check the temperature of the water returning from the pool and the temperature of the blended water returning to the pool.
- 4) The design of the water heating system shall prevent the introduction of water in excess of 115° F. to the pool.
- 5) A pressure relief valve with a maximum pressure rating of 75 pounds per square inch and having a thermal capacity at least equal to the heat input rating of the heater shall be provided, with the discharge piped to within ~~6~~six inches of the floor.
- 6) Venting of gas or other fuel burning water heaters to the outdoors shall be provided.
- 7) Heaters for indoor pools shall be capable of maintaining a minimum pool water temperature of 76° F.
- 8) Combustion and ventilation air shall be provided for fuel burning water heaters as required by the heater manufacturer.
- 9) Heaters for indoor swimming pools shall be sized on a basis of 150 BTU per hour input per square foot of pool water surface area.

(1 kilowatt = 3,412 BTU/hr.)
- 10) Heat exchangers used to heat pool water by use of a toxic transfer fluid, as defined in Section 890.122(a)(4) of the Illinois Plumbing Code, shall be of double-wall construction, with the space between the two walls having a

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drain open to the atmosphere.

- d) Flowmeter. Flowmeters shall be located so that the rate of recirculation and the backwash rate of sand filters can be read. In a multiple pool system, flowmeters shall be provided for each pool. Separate flowmeters shall be provided to monitor the flow for each area of a pool with a turnover rate that differs from adjacent areas according to subsection (b)(1). Flowmeters shall be provided on inlet supply piping in accordance with subsection (f)(2)(F). Flowmeters shall be installed on a straight length of pipe with no valves, elbows or other sources of turbulence within 10 pipe diameters upstream or ~~five~~ diameters downstream from the flowmeter. (See Appendix A, Illustration G.)
- e) Vacuum Cleaning System
 - 1) A vacuum cleaning system capable of reaching all parts of the pool floor shall be provided.
 - 2) When the vacuum cleaning system is an integral part of the pool recirculation system, the wall fitting shall connect to ~~the~~ the suction side of the pump ahead of the hair and lint strainer. Vacuum outlets in pools shall be equipped with covers that automatically close and latch when the vacuum hose is removed. A shut-off valve shall be installed in the piping. The suction outlet fitting shall comply with IAPMO SPS4-2000.
- f) Piping, Skimmer and Overflow System
 - 1) Piping.
 - A) The pool recirculation piping shall comply with the Illinois Plumbing Code for water service pipe or water distribution pipe as listed in 77 Ill. Adm. Code 890, Appendix A, Table A.
 - B) The piping shall be designed to carry the required flow at velocities not exceeding ~~five~~ feet per second in suction piping, and 10 feet per second in pressure piping, unless greater velocities can be hydraulically provided. Gravity piping shall be sized so that the head loss in piping, fittings, valves, etc., does not exceed the head available during normal operating conditions.

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- C) The following waste lines shall be provided with ~~6-six~~-inch air gaps at their points of discharge to the waste sump or sewer:
- i) Main drain bypass or other connections to waste.
 - ii) Sub-surface drains or deck drains around a pool that discharge to a sanitary or combined sewer.
 - iii) Filter backwash or drain lines and overflow lines.
 - iv) Surge tank drain and overflow lines.
 - v) Pump discharge to waste lines.
 - vi) Gutter bypass to waste lines.
- 2) Inlets.
- A) Inlets for filtered water shall be located and directed to produce uniform circulation of water to facilitate the maintenance of a uniform disinfectant residual throughout the entire pool without the existence of dead spots, and to produce surface flow patterns that effectively assist skimming. In pools with skimmers, inlets installed where the water depth is 18 inches or more shall be installed in the pool wall at a depth of ~~8-eight~~ inches to 16 inches below the mid-point on the skimmer throat. Each inlet installed in a wall of a pool where skimmers are utilized shall be directional.
 - B) The velocity of flow through any inlet orifice shall be in the range of 5 to 20 feet per second, except ~~that~~ in pools equipped with skimmers it shall be in the range of 10 to 20 feet per second. Velocities for various flows are shown in Appendix B, Table C.
 - C) Inlets installed in pool walls shall be spaced as follows:
 - i) In the shallow end wall, each inlet shall serve a linear distance of no more than ~~8-eight~~ feet. In the deep end wall, each inlet shall serve a linear distance of not more than 15 feet.

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- ii) In pools with a water surface area greater than 1,500 square feet or length in excess of 60 feet, additional inlets shall be provided along side walls at no more than 15 foot intervals.
 - iii) The location of inlets in pools with skimmers may vary from the above requirements to allow locations that will assist in skimming.
 - D) At least one inlet shall be located in each recessed stairwell or other space where water circulation might be impaired.
 - E) Where floor inlets are used, inlets shall be uniformly spaced at a distance of no greater than 20 feet apart, and rows of inlets shall be within 15 feet of each side wall. Floor inlets shall be flush with the pool floor and shall include a diffuser plate to evenly distribute the flow in all directions.
 - F) Floor inlets are required in wading areas that are more than 30 feet in width.
 - G) If both wall and floor inlets are utilized in a swimming pool, the wall inlets and the floor inlets shall be supplied by separate piping, with valves and flowmeters installed in each so that the flow can be individually regulated and monitored.
- 3) Outlets.
- A) Each pool shall be provided with a main drain system installed at the deepest point, which shall be connected to the pool recirculation system. For multiple-purpose pools, with a floor consisting of more than one drainage area, at least one drain shall be provided in each basin, so that each portion of the pool floor is sloped to drain.
 - ~~A) All pools shall be provided with a main drain at the deepest point. The main drain shall be connected to the recirculation system. Openings must be covered by grating which cannot be removed by bathers without the use of tools. Openings of the grating shall be~~

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~~at least four times the area of the main drain pipe or have an open area so that the maximum velocity of the water passing through the grate does not exceed one and one-half feet per second, or six feet per second when drain grate is of the anti-vortex type. The maximum width of grate openings shall be one-half inch. Main drains and all other suction outlets installed in a pool shall be designed to prevent bather entrapment by one of the following methods:~~

- ~~i) Multiple drains located at least three feet apart, center to center;~~
- ~~ii) One anti-vortex drain;~~
- ~~iii) A single drain with a grate of at least 18 inches by 18 inches.~~

- B) ~~Main drains~~~~Multiple outlets shall be provided where the width of the pool is more than 45 feet. In such cases, outlets~~ shall be spaced not less than ~~3~~~~three~~ feet apart, nor more than 30 feet apart, nor more than 15 feet from side walls, and shall be connected in parallel.
- C) A hydrostatic relief valve shall be provided for in-ground pools.
- D) Main drain piping shall be sized for removal of the water through it at a rate of at least 100% of the design recirculation flow rate. The piping system shall be valved to permit adjustment of flow through it.
- E) In cases where the pool cannot be drained completely through the main drain, a portable pump ~~that~~~~which~~ will effect complete pool drainage shall be provided.
- F) Each outlet, including main drains and suction outlets, but not including skimmers, shall be covered with a certified safety cover having openings not exceeding ½ inch that is not removable without the use of tools or meets the requirements of subsection (f)(3)(K). The water flow rate through certified safety covers shall

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not exceed the maximum flow rate recommended by the manufacturer.

- G) Suction outlets shall be equipped with a certified safety cover with dimensions of at least 18 by 23 inches or 29 inches diagonally, or the suction system shall include a minimum of two hydraulically balanced outlets spaced at least 3 feet apart, center to center. In a spa, the two outlets may be installed closer than 3 feet apart if installed on different surfaces, e.g., one outlet in the floor and one in a wall.
- H) For systems with multiple suction outlets, the sum of the maximum flow rates for the covers shall be at least twice the system maximum flow rate. This requirement shall not apply to systems in which each suction outlet is at least 18 inches by 23 inches or 29 inches as measured diagonally.
- I) A suction outlet shall not be installed on a horizontal surface of a stair or seat.
- J) Suction outlets and certified safety covers shall be installed in accordance with the manufacturer's requirements. For suction outlets with field-fabricated sumps or other sumps not specified by the manufacturer of a certified safety cover installed on the outlet, there shall be a spacing of at least 1½ pipe diameters between the outlet pipe or fitting and the bottom of the cover.
- K) Field-fabricated suction outlets that are at least 18 inches by 23 inches in size shall be certified for conformance to ASME Standard A112.19.8-2007 by a professional engineer licensed to practice in Illinois. Documentation of the testing and a certification document shall be issued by the engineer to the property owner. The engineer shall certify a maximum flow rate for each such outlet. Copies of all documentation shall be retained on the swimming facility premises for inspection by the Department.

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- L) The following documentation is required to certify a field-fabricated suction outlet for conformance to the ASME/ANSI A112.19.8-2007 standard:
- i) The suction fitting shall not protrude from the installed surface more than 2 inches.
 - ii) The maximum allowable flow through the cover shall be calculated and specified.
 - iii) The maximum system flow rate for the pool pump shall be specified.
 - iv) The design of a field-fabricated suction outlet shall be specified by a licensed engineer to fully address the considerations of cover/grate loadings, durability, hair, finger and limb entrapment issues, cover/grate secondary layer of protection, related sump design and other features specific to the site.
 - v) Field-fabricated suction outlets shall have the following information specified by the licensed engineer: compliance with ASME A112.19.8-2007; statement of single or multiple drain use; maximum certified flow rate; installed life of the fitting in years; installation position of the outlet (wall or floor); and instructions on installation and service for the fitting.
- 4) Perimeter Overflow Systems.
- A) Pools ~~that~~which have a width exceeding 30 feet shall have a continuous perimeter overflow system.
 - B) A perimeter overflow system shall:
 - i) ~~Extend~~extend completely around the pool except that interruptions not exceeding 25% of the pool perimeter nor 30 feet each may be allowed for steps, water slide entries, and side walls adjacent to zero-depth edges;

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- ii) ~~Permit~~permit inspection, cleaning, and repair;
- iii) ~~Be~~be designed so that no ponding or retention of water occurs;
- iv) ~~Be~~be designed to prevent the entrapment of bather's arms, legs, and feet;
- v) ~~Except~~except at a zero-depth edge, have an overflow lip that provides a good handhold and is level to within one eighth of an inch. At a zero-depth edge, a trench drain covered with a slip-resistant grating installed flush with the pool deck and with the pool floor, and level to within ~~1/8 one-eighth~~ inch measured along the pool perimeter, shall be provided;
- vi) ~~Provide~~provide for the removal of all surface debris skimmed from the pool;
- vii) ~~Be~~be designed for removal of water from the pool surface at a rate of at least 100% of the design turnover flow rate;
- viii) ~~Discharge~~discharge to the recirculation system;
- ix) ~~Be~~be provided with drains and piping ~~that~~which will not allow the overflow channel to become flooded when the pool is in use; and
- x) ~~Have~~have drain gratings with open area at least equal to two times the area of the outlet pipe and ~~that~~which can be removed for cleaning.

- C) Surge Capacity. Perimeter overflow systems shall be provided with a surge capacity of at least 0.6 gallon per square foot of pool water surface area. Surge capacity shall be provided either in a vacuum filter tank, ~~in the perimeter overflow system, in the pool in conjunction with provision of surge weirs in the perimeter overflow system, in~~ a surge tank, or combination thereof. Valving

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shall be provided to maintain the proper operating water level in the pool. ~~Surge weirs shall pass at least 50 percent of the design recirculation flow rate with the water level at the mid level of the weir. A minimum of one weir shall be provided for each 500 square feet of pool water surface area or fraction thereof. The combined flow rate through all the surge weirs shall not exceed the design recirculation flow rate. Surge weirs shall be uniformly spaced around the pool perimeter. The mid level of the weir opening shall be at least one inch but no more than two inches below the overflow lip of the perimeter overflow system. A flow-regulating device that will maintain a relatively constant flow rate as the water level is varied shall be included. Surge weirs shall not be utilized at a zero depth pool.~~

- 5) Skimmers. Skimmers are permitted on pools where the width does not exceed 30 feet. Where skimmers are provided, the following shall be met:
- A) At least one skimmer shall be provided for each 500 square feet of water surface area or fraction thereof;
 - B) Skimmers shall be located to optimize skimming;
 - C) Each skimmer and piping shall be designed so that it is capable of providing a flow-through rate of not less than 30 gallons per minute;
 - D) Skimmers shall be piped to provide approximately equal flow through each skimmer;
 - E) The surface skimmer piping shall have a valve to permit adjustment of flow through it;
 - F) If an equalizer pipe is installed, the skimmer shall be equipped with a valve~~Each skimmer shall be provided with an equalizer line at least ½ inches in diameter, located at least 1 foot below the lowest overflow level of the skimmer. (See Appendix A, Illustration H) A device~~ that will restrict flow through the equalizer pipe during normal operation of the skimmer. The equalizer pipe shall be connected to the main drain pipe~~shall be installed, and a~~

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~~grate shall be installed at the intake to the equalizer pipe in the pool. The grate shall be a convex grate intended for this purpose or one that complies with subsection (f)(3);~~

- G) The skimmer shall be tested in accordance with NSF Standard 50 and listed by an approved certification agency;
 - H) Skimming devices shall be built into the pool wall;
 - I) A basket ~~that~~which can be removed without the use of tools, and through which all overflow water must pass, shall be provided;
 - J) The skimmer shall be provided with a floating weir and shall operate at variations in water level over a range of at least 4 inches.
- g) Make-up Water. Make-up water shall be added through a fixed air gap of at least ~~6~~six inches to the pool, surge tank, vacuum filter tank, or other receptacle. When make-up water is added directly to the pool, the fill-spout shall be located under a low diving board or immediately adjacent to a ladder rail, grab rail, or fixed lifeguard chair. There shall be no connection between a therapy pool or associated water treatment system ~~and~~with a swimming pool or its recirculation system.
- h) Filtration
- 1) Filters shall be certified to comply with NSF Standard 50 and listed as such by an approved certification agency. The design filtration rate in the particular application in which the filter is utilized shall not exceed the maximum design filtration rate for which the filter was certified. An official certification label from the certifying agency shall be permanently affixed to the filter.
 - 2) Pressure gauges that indicate the inlet and outlet pressures of pressure filters shall be installed.
 - 3) For pressure filters, an observable free fall discharge, sight glass or other means of determining the clarity of backwash water shall be provided.
 - 4) Overflow piping shall be connected to vacuum filters if the rim of the filter tank is below the pool water level. Drain piping for vacuum filter

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tanks shall be provided.

- 5) The backwash rate for sand filters shall be at least 15 gallons per minute per square foot of filter area. A lesser backwash rate may be allowed when air scouring is utilized in accordance with the filter manufacturer's specifications.
 - 6) A filter backwash disposal facility, designed so that flooding, overflowing or excessive splashing does not occur when the filter is backwashed at the required flow rate, shall be provided where filters designed to be backwashed are utilized.
 - 7) A filter precoat pot or funnel shall be installed on the pump suction piping when diatomaceous earth filters are utilized, unless a precoat pot is provided as an integral part of the filter. The filter piping shall allow recycling or disposal of filter effluent during the precoating operation.
 - 8) If continuous feeding of diatomaceous earth is utilized with a vacuum diatomaceous filter in order to permit a design filtration rate higher than would otherwise be allowable, equipment capable of feeding diatomaceous earth at a rate of at least 1.5 ounces per day per square foot of filter area shall be provided.
 - 9) Filter media for sand filters shall be as specified by the filter manufacturer.
 - 10) ~~Prior to disposal, wash~~Wash or backwash water from diatomaceous earth filters shall be passed through a separation tank designed for removal of suspended diatomaceous earth and solids, ~~prior to disposal~~.
- i) Chemical Feeders
- 1) Equipment Capacity.
 - A) Chlorine. Equipment for supplying chlorine or chlorine compounds shall be of sufficient capacity to feed chlorine at a rate of ~~eight~~ parts per million for outdoor pools and three parts per million for indoor pools, based on the flow rate required by the table in subsection (a). Feed rates for various chlorinators and solutions are shown in Appendix B, Table D.

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- B) Bromine. Equipment for supplying bromine shall be capable of delivering at least 15 parts per million for outdoor pools and ~~5~~five parts per million for indoor pools based on a minimum design flow rate as required by the table in subsection (a).
- C) Ozone.
- i) Ozone may be used as a supplement to chlorination or bromination as required in subsection (i)(1). Ozone-~~generating~~ equipment and its components shall be tested in accordance with NSF Standard 50 and listed by an approved certification agency.
- ii) The ambient air ozone concentration shall be less than 0.10 parts per million (p.p.m.) in the vicinity of the ozonator and at the pool water surface. Ambient ozone monitors shall be installed in the equipment room, in the vicinity of the ozone-~~generating~~ equipment, and, when the ozonation system is utilized at an indoor swimming pool facility, in the swimming pool enclosure. Audible and visual alarms that are activated by ozone concentrations in excess of .10 parts per million shall be connected to the ozone monitor. The ozone-~~generating~~ equipment shall automatically shut off when the ozone concentration in the air exceeds 0.30 p.p.m. or when the pool recirculation flow is interrupted.
- iii) All corona discharge systems shall include a method for removing ozone in the water in excess of 0.1 p.p.m. prior to return to the pool.
- 2) Positive Displacement Pumps (Hypochlorinators). ~~Positive~~Where positive displacement pumps ~~that~~ are used to inject the disinfectant solution into the recirculation line, ~~they~~ shall be of variable flow type, ~~shall~~ be of sufficient capacity to feed the amount of disinfectant required by subsection (i)(1), and shall be installed such that feeding of chemicals is interrupted whenever the swimming pool recirculation flow is interrupted. Positive displacement pumps for feeding chlorine compounds or chemicals for control of pH shall be certified by a certified laboratory to

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conform to NSF Standard 50. If calcium hypochlorite is used, the concentration of calcium hypochlorite in the solution shall not exceed ~~5~~five percent by weight. The solution container shall have a minimum capacity equal to the volume of solution required per day at the feed rate required in subsection (i)(1).

3) Gas Chlorinators.

- A) The chlorine supply and gas feeding equipment shall be housed in a separate, relatively air-tight room with an out-swinging door. The room shall be provided with an exhaust system ~~that~~which takes its suction not more than ~~8~~eight inches from the floor and discharges outdoors in a direction to minimize exposure to toxic fumes. The fan shall be capable of producing one air change per minute. Means for introducing a fresh air supply to the enclosure through appropriate openings such as filters, grill openings, etc., at a high point opposite the exhaust fan intake shall be provided. The intake to the make-up air supply shall be located where the discharge from the exhaust system will not be drawn back into the room. The room shall have a window with an area of at least 100 sq. inches and shall have artificial lighting. Electrical switches for lighting and ventilation shall be outside and adjacent to the door. Scales for weighing chlorine cylinders in service shall be provided.
- B) The chlorine feeding device shall be designed so that during interruptions of the flow of the water supply, gas feed is automatically terminated. In addition, the release of chlorine shall be terminated when the recirculation pump is shut off. Where other than swimming pool recirculated water is used, the supply line shall be equipped with an electric shutoff valve wired to the recirculation pump and shall be equipped with a suitable backflow preventer. (See Appendix A, Illustrations L and N for methods of installation.)
- C) Chlorinator vent lines shall terminate outdoors. A screen made from a chlorine-resistant material shall be installed where the vent line terminates outdoors in order to exclude insects.
- D) The gas chlorinator shall be the solution feed type capable of

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delivering chlorine at its maximum rate without releasing chlorine gas to the atmosphere.

- E) The water supply for the gas feeding equipment shall produce the flow rate and pressure required according to the manufacturer's specifications for proper operation of the equipment.
- 4) pH Control Feeders. At pools with a volume greater than 100,000 gallons, or pools utilizing gas chlorine as a disinfectant, a chemical feed system shall be installed to maintain the pH of pool water within the range of 7.2 to 7.6. The system ~~shall~~must be installed so that the feeding of the pH controlling chemical is automatically interrupted whenever the swimming pool recirculation flow is interrupted. A solution tank of at least 15 gallons capacity shall be provided and shall be marked as containing a chemical to control pH. Alternatively, a system incorporating a cylinder of carbon dioxide and injecting mechanism may be employed to lower pH.
- 5) Erosion Type Chemical Chlorine Feeders.
 - A) Erosion type chlorine and bromine feeders shall be tested in accordance with NSF Standard 50 and listed by an approved certification agency.
 - B) Only the chemical specified by the feeder manufacturer shall be used as the disinfecting agent.
 - C) Erosion type chemical feeders shall be installed in accordance with the equipment manufacturer's instructions.
- 6) Copper/Silver and Copper Ion Generators. All copper/silver and copper ion generators shall be tested in accordance with NSF Standard 50 and listed by an approved certification agency and may ~~only~~ be used only as a supplement to chlorination or bromination as required in subsection (i)(1).

(Source: Amended at 34 Ill. Reg. 2698, effective February 3, 2010)

Section 820.230 Wading Pools

- a) Floor. The floor shall be slip-resistant and sloped to the main drain. The slope

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shall not exceed one vertical ~~foot~~ in 12 horizontal. No obstructions such as raised drains or steps on which children may fall or become injured, shall be placed in the wading pool area. Designed play items shall be ~~designed of a design~~ and ~~so~~ located to provide maximum safety to the children.

- b) Material. The floor and walls shall be of light-colored impervious materials. All corners shall be coved.
- c) Walk Area. ~~A There shall be a~~ walkway at least ~~4four~~ feet wide ~~shall extend~~ extending entirely around the pool ~~and shall be~~ sloped to drain away from the pool. The walks shall be constructed of impervious material with a slip-resistant finish. The walks shall slope not less than one inch in 10 feet away from the pool edge. A hose bibb shall be installed in the pool area.
- d) Barrier. A fence or other effective barrier, at least 3½ feet in height, shall totally enclose the wading pool and shall separate the wading pool from other pools. Except with regard to height, the barrier shall comply with Section 820.200(a). Any entrance into the wading pool enclosure shall be equipped with a self-closing and self-latching door or gate.
- e) Inlets. Inlets shall be provided as specified for swimming pools by Section 820.210(f)(2). At least two water inlets shall be installed.
- f) Drains. A minimum of two main drains shall be provided at the low point, located at least ~~3three~~ feet apart center to center and connected to the recirculation system. The drains shall be piped and valved so that water from the wading pool can be drained by bypassing the filter. Drains shall be provided with certified safety covers ~~grates~~ in compliance with Section 820.210(f)(3)(A) ~~and shall be flush with the pool floor.~~
- g) Overflow System. A perimeter overflow system shall be provided along at least ~~1/6one-sixth~~ of the perimeter or a skimmer shall be provided for each 500 square feet of water surface area or fraction thereof. The design of the overflow system shall conform to the requirements listed in Section 820.210, except that, if a skimmer equalizer line is provided, it shall be connected to the main drain line.
- h) Water Treatment. Recirculation and filtration equipment shall be installed and operated at wading pools that cannot be adequately served by an adjacent swimming pool recirculation system or when existing equipment on adjacent

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swimming pool recirculation systems cannot meet the requirements of Section 820.210. A separate disinfection system shall be installed and operated for the wading pool. The design of water recirculation, filtration, and disinfection systems shall be in conformance with Section 820.210.

(Source: Amended at 34 Ill. Reg. 2698, effective February 3, 2010)

Section 820.250 Slides

a) General Requirements

- 1) Structure. All slides shall be designed and constructed in accordance with the manufacturer's instructions to carry the anticipated load. Plans for water slides shall be signed and sealed by a structural engineer licensed to practice in Illinois.
- 2) Steps. Slide steps shall be slip-resistant and have a minimum tread of ~~2 two~~ inches and a minimum length of 12 inches. The riser height of the steps shall not exceed 12 inches. Specific requirements that apply to water slides are included in subsection (b)(1) of this Section.
- 3) Plunge Pools. Plunge pools shall comply with Sections 820.200 and 820.210 except that, for a plunge pool for a water slide, a deck is not required where the slide exits into the pool.

b) Water Slides

- 1) Design and ~~Construction~~~~construction~~. All curves, turns, and tunnels on the path of a flume shall be designed and constructed in accordance with the manufacturer's instructions.
- 2) Walkways. Walkways or stairs leading to the top of water slides shall be slip-resistant, rigid, and have a ~~4 feet~~~~four foot~~ minimum clear width.
- 3) Slide Position.
 - A) A flume shall be perpendicular to the pool wall for a distance of at least 10 feet from the exit end of the slide. The last 10 feet of the flume shall have a slope that is not steeper than one ~~foot~~ in 10.

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- B) A flume shall terminate between a depth of ~~6six~~ inches below to ~~2two~~ inches above the pool water surface level.
- C) The plunge area water depth shall be between ~~2½two and one-half~~ and ~~4four~~ feet at the end of the flume and for at least 10 feet beyond. The pool floor slope in the plunge area shall not exceed one foot vertical in 12 feet horizontal.
- 4) Surge Reservoir. A surge storage reservoir shall be provided except where the pool water elevation will not be lowered more than one inch when the water slide pumps are in operation. The surge reservoir shall not be accessible to the public.
- 5) Plunge Area. There shall be a slide plunge area extending at least ~~5five~~ feet on either side of the centerline of the slide terminus and 25 feet in front of the slide. This area shall not infringe on the plunge area for any other slides or diving equipment. Steps shall not infringe on this area. A water slide plunge area in a swimming pool shall be roped off from the rest of the pool when the slide is in operation. A means of egress shall be provided near the side of the plunge area opposite the flume terminus.
- 6) Grates. The intake openings for water pumped from ~~at the pool or~~ beach must be covered by grating that cannot be removed without the use of tools. The grate openings shall be at least four times the area of the intake pipe or have an open area so that the maximum velocity of the water passing through the grate does not exceed ~~1½one and one-half~~ feet per second. The maximum width of the grate openings shall be ~~½one-half~~ inch. Pump suction intakes at a beach shall be located or protected so as to be inaccessible to bathers. Drains shall be designed to prevent bather entrapment as specified in Section 820.210(f)(3)(A).
- c) Drop Slides
- 1) Slide Position. ~~A~~There shall be a slide landing area ~~shall extend~~extending at least ~~5five~~ feet on either side of the centerline of the slide terminus and 20 feet in front of the slide. This area shall not infringe on the landing area for any other slides or diving equipment. Steps shall not infringe on this area.

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- 2) Water Depth. The water depth directly below the slide discharge point and for a distance of 12 feet beyond shall comply with the following requirements:

Slide Platform Height <u>Above</u> above Water Level in Feet	Minimum Water Depth in Feet
3.5 to 5	8
5 to 10	10
10 to 12	12

- 3) Platform Height. The drop slide platform shall not exceed 12 feet in height, measured above the water level in the plunge area.

d) Other Slides

- 1) ~~A~~~~There shall be a~~ slide plunge area ~~shall extend~~~~extending~~ at least ~~3 1/2~~~~three~~ feet ~~six inches~~ on either side of the centerline of the slide terminus and 20 feet in front of the slide. This area shall not infringe on the landing area for any other slides, water slides, drop slides, or diving equipment.
- 2) Unless the slide is designed by the manufacturer for safe exits at lesser water depths, the water depth and slide exit height above the water shall be in accordance with the following table. The exit height shall not exceed 48 inches above the water surface.

Exit Height Above Waterline, Inches	Minimum Water Depth in <u>in</u> Feet
0 to 6	2.0
6 to 12	2.5
12 to 18	3.5
18 to 24	5.0
24 to 30	6.0
30 to 42	8.0
42 to 48	10.0

- 3) Slides shall be positioned so that any water flowing off the end of the slide

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terminus drops into the pool.

- 4) Handrails. Slides shall be equipped with handrails to aid the slider in safely making the transition from the ladder to the runway. Handrails shall begin at a point no more than ~~4~~four feet above the pool deck.

(Source: Amended at 34 Ill. Reg. 2698, effective February 3, 2010)

SUBPART D: OPERATIONAL REQUIREMENTS

Section 820.320 Water Quality

a) Testing Equipment.

- 1) Water testing equipment for determining pH and disinfectant level of pool water shall be provided. The equipment for determining pH shall include at least five color standards with a range of pH 6.8 to 8.0, as a minimum.
- 2) Where chlorine is used as a disinfectant, a DPD-type test kit shall be provided that includes at least four chlorine color standards with a range of 0.5 to 3.0 p.p.m., as a minimum.
- 3) Where bromine is used as a disinfectant, a colorimetric test kit shall be provided that will determine free bromine residual and pH. The test kit shall include at least five bromine standards covering a range of 1.0 to 5.0 p.p.m.
- 4) Pools using chlorinated cyanurates for disinfection shall have a test kit to measure cyanuric acid concentration. The cyanuric acid test kit shall permit readings up to 100 p.p.m.
- 5) Where silver/copper or copper ion generators are used, a test kit to determine the concentration of copper shall be provided.

b) Disinfectant Residual.

- 1) Where chlorine is used as a disinfectant, the chlorine residual shall be maintained between 1.0 and 4.0 p.p.m. as free chlorine residual. A free chlorine residual of at least 2.0 p.p.m. shall be maintained when the pool

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water temperature exceeds 85° F.

- 2) Where bromine is used as a disinfectant, a bromine residual shall be maintained between 2.0 and 8.0 p.p.m. as total bromine. A bromine residual of at least 4.0 p.p.m. shall be maintained when the pool water temperature exceeds 85° F.
 - 3) Where chlorinated cyanurates are used, the cyanuric acid concentration shall not exceed 100 p.p.m.
 - 4) When combined chlorine in excess of 0.5 p.p.m. is detected, the pool shall be superchlorinated to attain a free chlorine concentration of at least 10 times the combined chlorine concentration, or oxidized by other means to eliminate the combined chlorine.
 - 5) Where silver/copper or copper ion generators are used, the concentration of copper shall not exceed 1.3 p.p.m. and the concentration of silver shall not exceed 0.05 p.p.m.
 - 6) Where ozone is used, the ambient air ozone concentration shall be less than 0.1 p.p.m. at all times either in the vicinity of the ozonator or at the pool water surface.
- c) pH. The pH of the pool water shall be maintained between 7.2 and 7.6.
- d) Turbidity. The pool water shall be sufficiently clear that the entire pool basin~~main drain grate~~ is clearly visible from the pool deck.
- e) Alkalinity. The alkalinity of the pool water shall not be less than 50 nor more than 200 p.p.m. as calcium carbonate.
- f) Temperature. The pool water temperature for indoor swimming pools shall not be less than 76° F. nor more than 92° F. Air temperature at an indoor pool shall be higher than the water temperature.

(Source: Amended at 34 Ill. Reg. 2698, effective February 3, 2010)

Section 820.330 Swimming Pool Closing

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The manager/operator shall immediately close the pool whenever any of the following conditions exist:

- a) The manager/operator determines that conditions at a swimming pool or bathhouse create an immediate danger to health or safety.
- b) Bacteriological results show any of the following:
 - 1) Coliform concentration of 10 per 100 ml in two consecutive samples;
 - 2) Presence of fecal coliform, E coli, beta hemolytic Streptococcus or Pseudomonas in any sample.
- c) Turbidity exceeds the criteria outlined in Section 820.320(d).
- d) A disinfectant residual consisting of a minimum of 0.5 p.p.m. free chlorine or 1.0 p.p.m. bromine is not present or the disinfection system is inoperable.
- e) The total chlorine concentration exceeds 5 p.p.m. or the total bromine concentration exceeds 10 p.p.m.
- f) ~~The~~When the recirculation pumps and/or the filters are inoperable.
- g) ~~The~~When the pH of the pool water is less than 6.8 or greater than 8.0.
- h) ~~A~~When a patron has defecated or vomited in the pool. When this occurs, the manager/operator shall remove visible foreign matter and superchlorinate the affected area of the pool. The pool ~~shall~~must remain closed for a minimum of 30 minutes following superchlorination, or longer if necessary, for the disinfectant residual to return to prescribed levels. When an incident occurs in a pool with a capacity greater than 50,000 gallons, the pool operator may elect to prohibit use of only the affected area ~~only~~ in lieu of closing the pool.
- i) ~~A~~When a suction ~~outlet cover or main drain grate~~ is loose, improperly installed, damaged or missing.
- j) ~~A~~When a written notice to close is issued by the Department, in which case the notice shall be posted by the owner, operator or licensee at the entrance to the pool area. The pool shall remain closed until the Department has authorized the

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reopening of the pool.

- k) ~~Lightning~~When lightning is sighted or thunder is heard at outdoor pool facilities (see Section 820.360).

(Source: Amended at 34 Ill. Reg. 2698, effective February 3, 2010)

Section 820.340 Operation and Maintenance

a) Pool and Pool Area

- 1) The swimming pool shall be maintained free from sediment, lint, dirt and hair. Cracks and other defects in the pool shall be repaired. The walls, ceilings, floors, equipment and the pool proper shall be maintained so that they are protected from deterioration. All equipment shall be maintained in proper condition, with all required components in place. Equipment required to be NSF Standard 50 certified, including filters, skimmers and chemical feeding equipment, shall not be altered or modified in any way.
- 2) Pool decks shall be rinsed daily. Indoor pool decks shall be disinfected at least weekly. The walks, overflow gutters, counters, lockers, equipment, furniture, interior partitions and walls shall be kept in good repair, clean, and sanitary. No furniture, plants or other furnishings shall be placed within four feet of the pool. This area shall be kept free of obstructions such as chairs and baby strollers. The deck shall be kept free of tripping hazards, such as deck surface irregularities, hoses, baby strollers, and maintenance equipment. The deck, walkways and floors shall be free of areas with poor drainage that retain water.
- 3) Floats or tubes not in use ~~shall~~must be removed from the pool.
- 4) Starting Platforms. Starting blocks shall not be used for any ~~other~~other purpose than competitive swimming activities. Starting blocks shall be securely anchored when in use but removed or prohibited from use when not being used in conjunction with competitive swimming or training. The maximum height of the platform above the water shall be 30 inches where the water depth is 4 feet or greater and 20 inches when the water depth is less than 4 feet.

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- 5) Safety ropes shall be kept in place except when the swimming pool is being used exclusively for lap swimming or competition.
 - 6) Access to grass areas shall be prevented when bare areas develop, when the grass is not regularly maintained, when debris is allowed to accumulate, or an unsightly condition, offensive odor, or a muddy condition exists.
- b) Perimeter Overflow, Suction Outlet Covers and Skimmers. The perimeter overflow systems, suction outlet covers or automatic surface skimmers shall be clean and free of leaves or other debris ~~that~~~~which~~ would restrict flow. The strainer baskets for skimmers shall be cleaned daily. Broken or missing skimmer weirs shall be replaced. Broken or missing suction outlet covers shall be replaced immediately and installed in accordance with the manufacturer's requirements. The flow through each skimmer shall be adjusted as often as necessary to maintain a vigorous skimming action ~~that~~~~which~~ will remove all floating matter from the surface of the water. The pool water shall be maintained at an elevation such that effective surface skimming is accomplished. A higher water level may be maintained during official swimming competition. For pools with perimeter overflow systems, adequate surge storage capacity shall be maintained so that flooding of the perimeter overflow system does not occur during periods of peak usage. The flow returning from the pool shall be balanced or valved such that the majority of flow is returned through the perimeter overflow or skimmer system.
- c) Inlet Fittings. Inlets shall be checked frequently so that the rate of flow through each inlet establishes a uniform distribution pattern. Inlets in pools with surface skimmers shall be adjusted as necessary to provide vigorous skimming.
- d) Bather Preparation Facilities
- 1) Floors shall be cleaned and disinfected daily.
 - 2) Toilet rooms and fixtures shall be kept clean, free of dirt and debris and in good repair. Floors shall be maintained in a slip-resistant condition. Soap dispensers shall be filled and operable. A supply of toilet paper shall be provided at each toilet at all times.
- e) Foot Baths. Foot baths shall be free of dirt, debris and other floating matter and shall be operated by continuously introducing fresh water and discharging used

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water to waste.

- f) Security. Doors or gates in the swimming pool enclosure shall be kept closed and locked when the swimming pool is closed.
- g) Bather Loads. The number of persons within a swimming pool enclosure shall not exceed the permissible bather load established by the Department. Additional patrons may be allowed at other recreational features within the pool enclosure, such as sand play areas, turf sun-bathing areas and picnic areas, if additional toilet facilities are provided. However, the number of patrons in swimming pools, wading pools or on the pool deck shall not exceed the bather load. The bather load shall be posted at the pool entrance or at a location where it can be seen by all patrons and shall be enforced by the manager/operator.
- h) Electrical Systems. Electrical systems shall be maintained in accordance with the National Electrical Code.
- i) Diving Equipment. Diving equipment shall be maintained in a safe condition, be securely anchored, and have a slip-resistant surface.
- j) Vacuum Cleaners. Vacuum cleaning shall not be conducted when the pool is in use.
- k) Operation of Mechanical Equipment
 - 1) Manufacturers' instructions for operation and maintenance of mechanical and electrical equipment, as well as pump performance curves, shall be kept available at the pool. All valves and piping in the equipment room ~~shall~~must be permanently identified as to use and direction of flow. A valve operating procedure ~~shall~~must be provided in the equipment room for each operation (e.g., recirculation, filtration, backwashing, ~~etc.~~).
 - 2) Pumps, filters, disinfectant feeders, flow indicators, gauges, and all related components of the pool water recirculation system shall be kept in continuous operation 24 hours a day. A recirculation and filtration flow rate that will result in a turnover period as specified in Section 820.210 shall be maintained at all times, except for wading areas in swimming pools constructed prior to May 20, 1999 where such a flow rate cannot be attained without alteration of the recirculation system, in which case a

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recirculation flow rate that will result in a turnover period of no more than six hours shall be maintained in the wading area.

- 3) Recirculation Pumps. The pump shall not be throttled on the suction side during normal operation except for necessary regulation of flow through main drain piping. Recirculation pumps shall be kept in good repair and condition. The pump discharge or inlet supply line valve shall be adjusted as necessary to maintain the design flow rate.
- 4) Filtration.
 - A) The filtration flow rate shall not exceed the maximum filtration design flow rate specified by the filter manufacturer for public swimming pool usage in accordance with NSF Standard 50. Where this rate is not known or has not been determined, the flow rate shall not exceed 15 gallons per minute per square foot of filter area for high-rate sand filters, 3 gallons per minute per square foot for other sand filters, 1.5 gallons per minute per square foot for diatomaceous earth filters, or 0.375 gallons per minute per square foot for cartridge filters, except that a filtration flow rate of up to 2.0 gallons per minute per square foot may be allowed where continuous feeding of diatomaceous earth is utilized with a diatomaceous earth filter in accordance with subsection (k)(3)(C)(iii).
 - B) Sand Filters.
 - i) The filter air release valve shall be opened as necessary, to remove air ~~that~~^{which} collects in the filter, and following each backwash.
 - ii) The filter shall be backwashed when the design flow rate can no longer be achieved, or when specified by the filter manufacturer, whichever occurs first.
 - C) Diatomaceous Earth Filters.
 - i) The dosage of diatomaceous earth precoat shall be at least ~~1½ one and one-half~~ ounces per square foot of element

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surface area. Pressure diatomaceous earth filters shall be backwashed when the design flow rate can no longer be achieved or when specified by the filter manufacturer, whichever occurs first. Whenever the recirculation pump stops or is shut off, the filter shall be thoroughly backwashed and the elements shall be precoated before placing the pump back into operation. Vacuum diatomaceous earth filters shall be washed when the design flow rate can no longer be achieved or when specified by the filter manufacturer, whichever occurs first. Backwashing shall not be performed when the pool is in use.

- ii) During the precoating operation, the initial filter effluent shall be either recirculated through the filter until the filter effluent is clear, or the initial filter effluent shall be discharged to waste until properly clarified water is produced.
- iii) When continuous diatomaceous earth feed is utilized so that a filter may be operated at a filtration rate higher than would otherwise be allowable, it shall be applied at a rate of ~~1/2 one-half~~ to ~~1 1/2 one and one-half~~ ounces per square foot of surface area per day, or as needed to extend filter cycles.

D) Cartridge Filters. A clean extra set of filter cartridges shall be available at the pool.

- 5) Hair and Lint Strainers. Hair and lint strainers shall be cleaned to prevent clogging of the suction line and cavitation. The pump shall be stopped before the strainer is opened to avoid drawing air into the pump and losing the prime. In the case of diatomaceous earth filters, the hair strainer basket shall be cleaned immediately prior to precoating the filter.
- 6) Flowmeters. Flowmeters shall be maintained in an accurate operating condition and readable.
- 7) Vacuum and Pressure Gauges. The lines leading to the gauges shall be bled occasionally to prevent blockage.

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- 8) Gas Chlorinators.
- A) Gas chlorinators shall be repaired only by a person trained in servicing these units. The manager/operator shall post the telephone numbers of the appropriate emergency personnel to contact in the event of a chlorine gas emergency.
 - B) Chlorine cylinders shall be stored indoors in the area designed for that purpose and away from a direct source of heat. They shall be chained or strapped to a rigid support to prevent accidental tipping. Cylinders shall not be moved unless the protection cap is secured over the valve. A National Institute of Occupational Safety and Health (NIOSH) or Mine Safety and Health Administration (MSHA) approved gas mask, approved for use in a chlorine atmosphere, shall be kept outside the chlorine room in an unlocked container at all times. The gas mask canister shall be replaced regularly as per the manufacturer's recommendations.
 - C) Chlorinators, gas lines, injectors, vent lines and cylinders shall be checked daily for leaks. In case of a chlorine leak, corrective measures shall be undertaken only by trained persons wearing proper safety equipment. All other persons shall leave the dangerous area until conditions are again safe.
- 9) Positive Displacement Feeders.
- A) Positive displacement feeders shall be periodically inspected and serviced.
 - B) When a chemical feeder is used with calcium hypochlorite solution, to minimize sludge accumulation in the unit, the lowest practicable concentration of solution shall be used, and in no case shall this concentration exceed ~~5~~five percent (about 20 pounds of 65% chlorine powder in 50 gallons of water). If liquid chlorine solution is used, the dilution with water is not critical to the operation of the unit. After first thoroughly rinsing with water, a small amount of mild acid solution may be fed through the unit periodically, to dissolve sludge accumulations.

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10) Safety Vacuum Release System and Safety Vent Pipe. Safety vacuum release systems shall be maintained in operable conditions and in accordance with the manufacturer's requirements. Safety vent pipes and atmospheric vents for gravity drainage systems shall be maintained free of blockages.

l) Chlorinated Cyanurates. The use of chlorinated cyanurates is subject to the following requirements:

- 1) Superchlorination shall be accomplished by using a chlorine product other than a cyanurate; and
- 2) When the cyanuric acid level exceeds the maximum permissible limit of 100 p.p.m., the pool water must be partially wasted and replenished with fresh water until the cyanuric acid concentration is less than 50 p.p.m.

m) pH Adjustment

- 1) Soda ash or caustic soda may be used to raise the pool water pH.
- 2) Caustic soda shall ~~only~~ be used only in accordance with the manufacturer's instructions. Protective equipment and clothing, including rubber gloves and goggles, ~~shall~~must be available for the handling and use of this chemical.
- 3) Sodium bisulfate, carbon dioxide gas or muriatic acid shall be used to lower pool water pH. Carbon dioxide cylinders shall be securely chained or otherwise restrained in a manner that will prevent tipping.
- 4) Hydrochloric (muriatic) acid shall only be used in accordance with the manufacturer's instructions. Protective equipment and clothing, including rubber gloves and goggles, ~~shall~~must be available for handling this chemical.
- 5) The Department shall be consulted in the event of unusual pH problems including corrosion or scaling or wide fluctuations in pH.

n) Algae Control

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- 1) The development of algae shall be eliminated by superchlorinating to 10 p.p.m. and maintaining this level for several hours. The pool shall not be open for use during this treatment. If this fails to eliminate the algae, the Department shall be consulted for further advice.
 - 2) Treated algae ~~that~~which cling to the floor and sides of the pool ~~shall~~must be brushed loose, and removed by the suction cleaner and filtration system.
- o) Miscellaneous Chemicals
- 1) Chemicals shall be kept covered and stored in the original, labeled container, away from flammables and heat and in a clean, dry, well-ventilated place ~~that~~which prevents unauthorized access to the chemicals.
 - 2) The chemicals used in controlling the quality of water shall be used only in accordance with the manufacturer's instructions.
 - 3) If polyphosphates are used for sequestering iron, the concentration of polyphosphates shall not exceed 10 p.p.m.
- p) Acoustics. If noise is excessive, such that safety instructions cannot be heard, corrective action shall be taken.
- q) Slides
- 1) Water slide equipment shall be maintained in a safe condition and securely anchored.
 - 2) Only one rider at a time shall be allowed to enter a slide except when designed by the manufacturer for two or more riders.
 - 3) For water slides and drop slides, when the plunge area is not visible from the top of the slide, a means of communication shall be provided between the attendant at the top and the lifeguard at the bottom.
 - 4) At the entrance to water slides and drop slides, a sign shall be posted at the top of the slide warning all sliders not to proceed down the slide until

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instructed to do so by the slide attendant.

(Source: Amended at 34 Ill. Reg. 2698, effective February 3, 2010)