



**The City of Crystal Lake Illinois**

**AN ORDINANCE AMENDING CHAPTER 187: BUILDING CODE OF THE CODE OF ORDINANCES OF THE CITY OF CRYSTAL LAKE, ILLINOIS**

**BE IT ORDAINED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF CRYSTAL LAKE** as follows:

**SECTION I:** That Chapter 187: Building Code be amended to read as follows:

**Chapter 187: BUILDING CODE**

[HISTORY: Adopted by the City Council of the City of Crystal Lake 1-19-1993 as amended 12-17-2002 by Ord. No. 5590 (Art. III, Ch. II, Section A, § 3.43, of the 1993 Code); amended in its entirety 6-17-2008 by Ord. No. 6372. Subsequent amendments noted where applicable.]

**GENERAL REFERENCES**

Electrical Code — See Ch. 230.  
Existing Building Code – See. Ch. 239  
Fees — See Ch. 241.  
Mechanical Code — See Ch. 336.  
Plumbing Code — See Ch. 392.  
Residential Code — See Ch. 422.  
Property Maintenance Code - See Ch. 400

**§ 187-1. Adoption of standards by reference.**

The International Building Code, 2018 as amended by § 187-2 of this chapter, published by the International Code Council, Inc. shall be and is hereby adopted by reference as the Building Code for the City of Crystal Lake, for the rules and regulations for the design, construction, alteration, addition, quality of materials, erection, installation, repair, location, relocation, replacement, conversion, movement, enlargement, use, occupancy or maintenance of all buildings and structures for all buildings and structures in the City of Crystal Lake. All terms and conditions contained in the International Building Code, 2018, and amendments thereto, shall be part of the ordinance of the City of Crystal Lake, the same as if it were adopted verbatim.

**§ 187-2. Additions, insertions and amendments.**

The following sections of the International Building Code are hereby revised and amended as follows:

- A. Section 101.1: Insert City of Crystal Lake as the name of jurisdiction.

B. Section 101.2.1, Appendices, shall be amended as follows:

1. Appendix C is adopted in its entirety.

C. That Section 105.2 be amended to read as follows:

Section 105.2 Work exempt from permit.

Building:

1. Oil derricks.
  2. Painting, papering, tiling, carpentry, cabinets, counter tops and similar finish work.
  3. Temporary motion picture, television and theater stage sets and scenery.
  4. Prefabricated swimming pools accessory to a Group R-3 occupancy that are less than 24 inches deep, are not greater than 5,00 gallons and are installed entirely above ground.
  5. Shade cloth structures constructed for nursery or agricultural purposes not including service systems.
  6. Swings and other playground equipment accessory to detached one- and two-family dwellings.
  7. Nonfixed and movable fixtures, cases, racks, counters and partitions not over 5 feet 9 inches in height.
- D. The following is inserted as Section 105.2.2.1: Fence repairs. Repair or replacement of up to 2 fence panel sections or 3 support posts.
- E. The following is inserted as Section 105.2.2.2: Roof Repairs. Repair or replacement of up to an aggregate total 200 square feet of roofing material.
- F. The following is inserted as Section 105.2.2.3: Siding repairs. Repair or replacement of up to an aggregate total 200 square feet of siding material.
- G. Section 105.5, Expiration, is amended by adding the following sentence at the end of the section: All permits for new construction and additions not specifically listed below shall become invalid if not completed within one year from the date of issuance. Permits for roofing, siding, sheds, decks, windows, furnaces, water heaters, air conditioners, pools, fireplaces, driveways and similar minor projects shall become invalid if not completed within six months from the date of issuance. See Chapter 241 for permit extension fees.
- H. Section 109.2, Schedule of Permits Fees, is amended by adding the following sentence at the end of the section: See Chapter 241: Fees.
- I. Section 109.6, Refunds, is amended as follows: The code official shall not authorize the refunding of any fee paid, except upon written application filed by the original permittee not later than 7 days after the date of fee payment.
- J. Section 111.1, Change of occupancy, is amended as follows: A building or structure shall not be used or occupied, and a change of occupancy, tenant or business owner, regardless of use of a building or structure or portion thereof shall not be made until the building official has issued a certificate of occupancy therefore as provided herein. A change of occupancy, tenant or business owner requires a certificate of occupancy and is subject to a life-safety inspection conducted by the Building and Fire Departments.
- K. Section 113.1, General, is amended as follows: In order to hear and decide appeals of orders, decisions or determinations make by the building official relative to the application and interpretation of this code, there

shall be and hereby is created a board of appeals. The board of appeals shall consist of the City's Administrative Law Judge.

- L. All parts of Section 113 after Section 113.1 are deleted in their entirety.
- M. Section 114.4, Violation penalties, is amended as follows: Any person who violates a provision of this code or fails to comply with any of the requirements thereof or who erects, constructs, alters or repairs a building or structure in violation of the approved construction documents or directive of the building official, or of a permit or certificate issued under the provisions of this code, shall be subject to penalties as prescribed by law as set forth in Chapter 248: Fines.
- N. Section 115.32, Unlawful continuance, is amended as follows: Any person who shall continue any work in or about the structure after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by law as set forth in Chapter 248, Fines.
- O. The definition of High-rise building in Chapter 2 is amended as follows: High-rise building. A building with an occupied floor located more than 55 feet above the lowest level of fire department vehicle access.
- P. The following definitions are inserted into Chapter 2 in alphabetical order:

Barrier. A permanent fence, wall, building wall, or combination thereof that completely surrounds the pool or spa and obstructs the access to the pool or spa. The term permanent shall mean not being able to be removed, lifted, or relocated without the use of a tool.

Design waterline. The centerline of the skimmer or other point as defined by the designer of the pool or spa

Hot Tub. See "Spa"

Inground Pool. See "swimming pool"

Ladder. A structure for ingress and egress that usually consists of two long parallel side pieces joined at intervals by cross pieces such as treads.

Safety Cover. A structure, fabric or assembly, along with attendant appurtenances and anchoring mechanisms, that is temporarily placed or installed over an entire pool, spa or hot tub and secured in place after all bathers are absent from the water.

Shallow Areas. Portions of a pool or spa with water depths of less than 5 feet.

Slip Resistant. A surface that has been treated or constructed to significantly reduce the chance of a user slipping. The surface shall not be an abrasion hazard.

Spa. A product intended for the immersion of persons in temperature-controlled water circulated in a closed system, and not intended to be drained and filled with each use. A spa usually includes a filter, an electric motor, solar or gas heater, a pump or pumps and a control, and can include other equipment, such as lights, blowers, and water sanitizing equipment.

Swimming Pool. Any structure intended for swimming or recreational bathing that is capable of containing water over 24 inches deep. This includes in-ground, above ground and on-ground swimming pools, hot tubs and spas.

Swimming Pool, Indoor. A swimming pool, which is, totally contained within a structure and surrounded on all four sides by the walls of the enclosing structure.

Swimming Pool, Outdoor. Any Swimming pool, which is not an indoor pool.

Swimout. An underwater seat area that is placed completely outside of the perimeter shape of the pool. Where located at the deep end, swimouts are permitted to be used as the deep-end means of entry and exit to the pool.

Waterline. See "Design waterline"

- Q. Section 903.2, Where required, is amended as follows: Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in Section 903.2.1 through 903.2.12.

Exceptions:

1. Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided that those spaces are equipped throughout with an automatic smoke detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour fire barriers constructed in accordance with Section 707 or not less than 2-hour horizontal assemblies constructed in accordance with Section 711, or both.
  2. Normally unoccupied structures such as sheds, garages and cell towers where approved by the Fire Code Official.
  3. Buildings approved by the Fire Code Official due to special circumstances, such as available water supply or location.
- R. Section 903.3.5, Water supplies, is amended as follows: Water supplies for automatic sprinkler systems shall comply with this section and the standards referenced in Section 903.3.1. The potable water supply shall be protected against backflow in accordance with the requirements of this section and the Illinois State Plumbing Code.
- S. The following is inserted as Section 903.3.7.1: Hydrant use for fire department connection. Unless approved by the Fire Code Official, a fire hydrant shall be located within 100 feet of the Fire Department connection for use by the Fire Department. The hydrant shall be located no closer than a distance of 1.5 times the building height.
- T. Section 903.4.1, Monitoring, is amended by adding the following sentence at the end of the section: The remote supervising station shall be the City of Crystal Lake's dispatch center. The method of connection shall be the CLWAN.
- U. Section 904.13, Domestic cooking systems, is deleted in its entirety.
- V. Section 907.2, Where required-new buildings and structure, is amended as follows: An approved manual, automatic or manual and automatic fire alarm system shall be provided in all Use Groups unless approved by the Fire Code Official. Specific occupancy requirements in Section 907.2.1 through 907.2.23 shall be applicable. All fire alarm control panels shall be installed in a location approved by the Fire Department. All fire alarm systems shall be of the addressable type and shall be installed per NFPA 72.
- W. Section 907.6.6, Monitoring, is amended by adding the following sentence as the end of the section: The remote supervising station shall be the City of Crystal Lake's dispatch center. The method of connection shall be the CLWAN.
- X. Section 1507.1.2, Ice barriers, is amended as follows: In areas where there has been a history of ice forming along the eaves causing a backup of water, an ice barrier shall be installed for asphalt shingles, metal roof shingles, mineral surfaced roll roofing, slate and slate type shingles, wood shingles and wood shakes. The ice barrier shall consist of a self-adhering polymer-modified bitumen sheet used in place of normal

underlayment. The ice barrier shall be a minimum of 72 inches wide or extend from the lowest edges of all roof surfaces to a point not less than 24 inches inside the exterior wall line of the building whichever is greater.

- Y. Section 1608.2, Ground snow loads, is amended as follows: The ground snow loads to be used in determining the design snow loads for roofs shall be 30 pounds per square foot.
- Z. Section 1612, Flood Loads, is amended as follows: All flood loads shall comply with Chapter 595.
- AA. Section 1705.5.2, Metal-plate-connected wood trusses, is amended as follows: For wood trusses with a clear span of 60 feet or greater, the special inspector shall verify that the permanent restraint/bracing is installed in accordance with the approved truss submittal package.
- BB. Section 1805.4.3, Drainage discharge, is amended as follows: The floor base and foundation perimeter drain shall discharge by gravity or mechanical means into an approved drainage system that complies with the Illinois State Plumbing Code. Grading, drainage, or both, shall be performed so that the water will drain away from the building on all sides and off the lot in a manner which will provide reasonable freedom from erosion and pocketed surface water. Construction of walks, driveways, retaining walls, patios, fences and similar structures shall be installed so that they will not interfere with drainage. Grading and drainage shall be subject to the approval of the City Engineer or his/her designee.
- CC. The following is inserted as Section 1805.4.3.1: Sump pump and downspout discharge. When a sump pump or gutter downspout is not connected to the City storm sewer, it shall be discharged at a point located no closer to the abutting property line than one-half (½) the overall distance as measured between the building and the abutting property line. The discharged waster shall not be allowed to directly flow across walking or street surfaces. When the point of discharge is located within five feet (5') from the abutting property line, the discharge pipe shall be directed to the front or rear of the property. The City Engineer or his/her designee may vary the requirements of this section if warranted by site conditions.
- DD. Section 1612.3, Establishment of flood hazard area, is amended as follows: See Chapter 595 for establishment of flood hazard area.
- EE. Section 3109, Swimming Pools, is deleted in its entirety.
- FF. The following is inserted as Chapter 34, Swimming Pools:

**CHAPTER 34  
SWIMMING POOLS**

**SECTION 3401**

**GENERAL**

3401.1 Scope. The provisions of this chapter shall govern the general design and construction of public pools and spas and related piping, equipment and materials.

**SECTION 3402**

**BARRIER REQUIREMENTS**

3402.1 General. The provisions of this section shall apply to the design of barriers for restricting entry into areas having pools and spas. Where spas or hot tubs are equipped with a lockable safety cover complying with ASTM F1346 and swimming pools are equipped with a powered safety cover that complies with ASTM F1346, the areas where these spas, hot tubs or pools are located shall not be required to comply with Sections 3402.2 through 3402.7

3402.2 Outdoor swimming pools and spas. Outdoor pools and spas and indoor swimming pools shall be surrounded by a barrier that complies with Sections 3402.2.1 through 3402.7.

3402.2.1 Barrier height and clearances. Barrier heights and clearances shall be in accordance with all of the following:

1. The top of the barrier shall be not less than 48 inches above grade where measured from the side of the barrier that faces away from the pool or spa. Such height shall exist around the entire perimeter of the barrier and for a distance of 3 feet measured horizontally from the outside of the required barrier.
2. The vertical clearance between grade and the bottom of the barrier shall not exceed 2 inches for grade surfaces that are not solid, such as grass or gravel, where measured on the side of the barrier that faces away from the pool or spa.
3. The vertical clearance between a surface below the barrier to a solid surface, such as concrete, and the bottom of the required barrier shall not exceed 4 inches where measured on the side of the barrier that faces away from the pool or spa.
4. Where the top of the pool or spa structure is above grade, the barrier shall be installed on grade or shall be mounted on top of the pool or spa structure. Where the barrier is mounted on the top of the pool or spa, the vertical clearance between the top of the pool or spa and the bottom of the barrier shall not exceed 4 inches.

3402.2.2 Openings. Openings in the barrier shall not allow passage of a 4-inch diameter sphere.

3402.2.3 Solid barrier surfaces. Solid barriers that do not have openings shall not contain indentations or protrusions that form handholds and footholds, except for normal construction tolerances and tooled masonry joints.

3402.2.4 Mesh fence as a barrier. Mesh fences, other than chain link fences in accordance with Section 3402.2.7, shall be installed in accordance with manufacturer's instructions and shall comply with the following:

1. The bottom of the mesh fence shall not be more than 1 inch above the deck or installed surface or grade.
2. The maximum vertical clearance from the bottom of the mesh fence and the solid surface shall not permit the fence to be lifted more than 4 inches from grade or decking.
3. The fence shall be designed and constructed so that it does not allow passage of a 4-inch sphere under any mesh panel. The maximum vertical clearance from the bottom of the mesh fence and the solid surface shall not permit the fence to be lifted more than 4 inches from grade or decking.
4. An attachment device shall attach each barrier section at a height not lower than 45 inches above grade. Common attachment devices include, but are not limited to, devices that provide the security equal to or greater than that of a hook-and-eye-type latch incorporating a spring actuated retaining lever such as a safety gate hook.
5. Where a hinged gate is used with a mesh fence, the gate shall comply with section 3402.3.
6. Patio deck sleeves such as vertical post receptacles that are placed inside the patio surface shall be of a nonconductive material.
7. Mesh fences shall not be installed on top of onground pools.

3402.2.5 Closely spaced horizontal members. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches, the horizontal members shall be located on the pool or spa side of the fence. Spacing between vertical members shall not exceed 1 ¾ inches in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 ¾ inches in width.

3402.2.6 Widely spaced horizontal members. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches or more, spacing between vertical members should not exceed 4 inches. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 ¾ inches in width.

3402.2.7 Chain link dimensions. The maximum opening formed by a chain link fence shall be not more than 2 ½ inches. Where the fence is provided with slats fastened at the top or the bottom that reduce the openings, such openings shall be not greater than 1 ¾ inches.

3402.2.8 Diagonal members. Where the barrier is composed of diagonal members, the maximum opening formed by the diagonal members shall not be more than 1 ¾ inches. The angle of diagonal members shall not be greater than 45 degrees from vertical.

3402.3 Gates. Access gates shall comply with the requirements of Section 3402.3.1, through 3402.3.3 and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool or spa, shall be self-closing and have a self-latching device.

3402.3.1 Utility or service gates. Gates not intended for pedestrian use, such as utility or service gates, shall remain locked while not in use.

3402.3.2 Double or multiple gates. Double gates or multiple gates shall have not less than one leaf secured in place and the adjacent leaf shall be secured with a self-closing and self-latching device. The gate and barrier shall not have an opening larger than ½ inch within 18 inches of the latch release mechanism. The self-latching device shall comply with the requirements of Section 3402.3.3.

3402.3.3 Latches. Where the release mechanism of the self-latching device is located less than 54 inches from grade, the release mechanism shall be located on the pool or spa side of the gate not less than 3 inches below the top of the gate, and the gate and barrier shall not have openings greater than ½ inch within 18 inches of the release mechanism.

## SECTION 3403

### SUCTION ENTRAPMENT AVOIDANCE

3403.1 General. Suction entrapment avoidance for pools and spas shall be provided in accordance with APSP 7.

Exceptions:

1. Portable spas and portable exercise spas listed and labeled in accordance with UL 1563 or CSA C22.2 No. 218.1.
2. Suction entrapment avoidance for wading pools shall be provided in accordance with Section 3410.

## SECTION 3404

### PUMPS AND MOTORS

3404.1 General. The provisions of this section apply to pumps and motors for pools and spas.

3404.2 Performance. A pump shall be provided for circulation of the pool water. The pump shall be capable of providing the flow required for filtering the pool water and filter cleaning, if applicable, against the total dynamic head development by the complete system.

3404.3 Intake protection. A cleanable strainer, skimmer basket, or screen shall be provided for pools and spas, upstream or as an integral part of circulation pumps, to remove solids, debris, hair and lint on pressure filter systems.

3404.4 Location. Pumps and motors shall be acceptable for inspection and service in accordance with manufacturer's specifications.

3404.5 Safety. The design, construction and installation of pumps and component parts shall be in accordance with the manufacturer's specifications.

3404.6 Isolation valves. Shutoff valves shall be installed on the suction and discharge sides of pumps that are located below the waterline. Such valves shall be provided with access.

3404.7 Motor performance. Motors shall comply with UL 1004-1, UL 1081, CSA C22.2 No. 108 or the relevant motor requirements of UL 1563 or CSA C 22.2 No. 218.1, as applicable.

## SECTION 3405

### SKIMMERS

3405.1 General. The provisions of the section apply to skimmers for pools and spas.

3405.2 Required. A surface skimming system shall be provided for public pools and spas. Surface skimming systems shall be listed and labeled in accordance with NSF 50. Surface skimming systems shall be designed and constructed to create a skimming action on the pool water surface when the water level in the pool is within operational parameters.

Exception: Skimmers that are an integral part of a spa that has been listed and labeled in accordance with UL 1563 shall not be required to be listed and labeled in accordance with NSF 50.

3405.2.1 Circulation systems. Public pool circulation systems shall be designed to process not less than 100 percent of the turnover rate through skimmers.

3405.3 Skimmer sizing. Where automatic surface skimmers are used as the sole overflow system, not less than one surface skimmer shall be provided for the square foot areas, or fraction thereof, indicated in Table 3405.3. skimmers shall be located to maintain effective skimming action.

TABLE 3405.3  
Skimmer Sizing Table

POOL OR SPA	AREA PER SKIMMER (SQ. FT)
Public pool	500
Spas	150

3405.4 Perimeter coverage. Where a perimeter-type surface skimming system is used as the sole surface skimming system, the surface system shall extend around not less than 50 percent of the pool perimeter.

3405.4.1 Surge capacity. Where perimeter surface skimming systems are used, they shall be connected to a circulation system with a system surge capacity of not less than 1 gallon for each square foot of water surface. The capacity of the perimeter overflow system and related piping is permitted to be considered as a portion of the surge capacity.

3405.5 Equalizers. Equalizers on skimmers shall be prohibited.

3405.6 Hazard. Skimming devices shall be designed and installed so as not to create a hazard to the user.

#### SECTION 3406

##### AIR BLOWER AND AIR INDUCTION SYSTEM

3406.1 General. This section applies to devices and systems that induce or allow air to enter pools and spas either by means of a powered pump or passive design.

3406.2 Backflow prevention. Air blower systems shall be equipped with backflow protection as specified in UL 1563, CSA C22.2 No.218.1 or the Illinois State Plumbing Code.

3406.3 Air intake source. Air intake sources shall not induce water, dirt or contaminates.

3406.4 Sizing. Air induction systems shall be sized in accordance with the manufacturer's specifications.

3406.5 Inspection and service. Air blowers shall be provided with access for inspection and service.

#### SECTION 3407

##### LIGHTING

3407.1 Artificial lighting required. When a pool is open during periods of low natural illumination, artificial lighting shall be provided so that all areas of the pool, including all suction outlets on the bottom of the pool, will be visible. Illumination shall be sufficient to enable a lifeguard or other persons standing on the deck or sitting in a lifeguard stand adjacent to the pool edge to determine if a pool user is laying on the bottom of the pools and that the pool water is transparent and free from cloudiness.

These two conditions must be met when all suction outlets are visible from the edge of the deck at all times when artificial lighting is illuminated and when an 8-inch diameter black disk, placed on the bottom of the pool in the deepest point, is visible from the edge of the pool deck at all times when artificial lighting is illuminated.

3407.1.1 Pool and deck illumination. Overhead lighting, underwater lighting or both shall be provided to illuminate the pool and adjacent deck areas. The lighting shall be listed and labeled in accordance with NFPA 70.

3407.1.2 Illumination intensity. For outdoor pools, any combination of overhead and underwater lighting shall provide maintained illumination of not less than 10 foot-candles at the pool water surface. For indoor pools, any combination of overhead and underwater lighting shall provide maintained illumination of not less than 30 foot-candles at the pool water surface. Deck area lighting for both indoor and outdoor pools shall provide maintained illumination of not less than 10 foot-candles at the walking surface of the deck.

3407.1.3 Underwater lighting. Underwater lighting shall provide not less than 8 foot-candles at the pool water surface area, or not less than a total wattage of ½ watt per square foot of pool water surface for incandescent underwater lighting where the fixtures are rated in watts.



Exception: this requirement of this section shall not apply where overhead lighting provides not less than 15 foot-candles of maintained illumination at the pool water surface, the overhead lighting provides visibility, without glare, of all areas of the pool, and the requirements of Section 3407.1.2 are met or exceeded.

3407.2 Emergency illumination. Public pools and public pool areas that operate during periods of low illumination shall be provided with emergency lighting that will automatically turn on to permit evacuation of the pool and securing of the area in the event of power failure. Emergency lighting facilities shall be arranged to provide initial illumination that is not less than .1 foot-candle measured at any point on the water surface and at any point on the walking surface of the deck, and not less than an average of 1 foot-candle. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded.

SECTION 3408

LADDERS AND RECESSED TREADS

3408.1 General. Ladders and recessed treads shall comply with the provisions of this section and the applicable provisions of Sections 3410 through 3413 based on the type of pool or spa.

3408.2 Outside diving envelope. Where installed, steps and ladders shall be located outside of the minimum diving water envelope as indicated in Figure 3408.2.

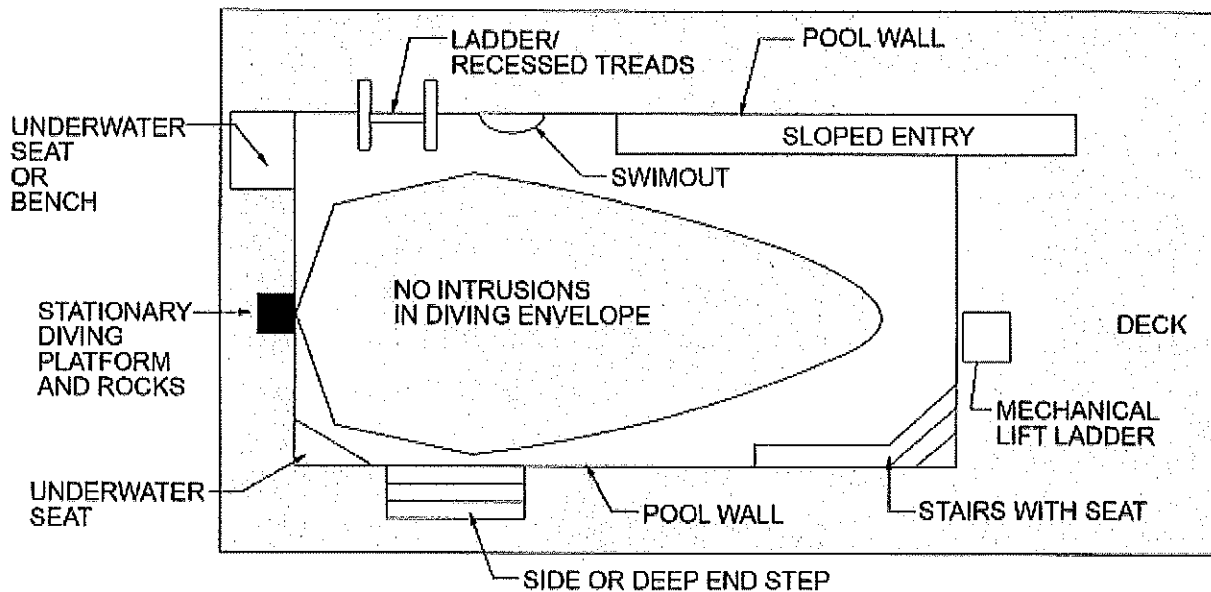


Figure 3408.2  
MINIMUM WATER DIVING ENVELOPE

3408.3 Ladders. Ladder treads shall have a uniform horizontal depth of not less than 2 inches. There shall be a uniform distance between ladder treads, with a distance of not less than 7 inches and not greater than 12 inches. The top tread of a ladder shall be located not greater than 12 inches below the top of the deck or coping. Ladder treads shall have slip-resistant surfaces.

3408.3.1 Wall clearance. There shall be a clearance of not less than 3 inches and not greater than 6 inches between the pool wall and the ladder.

3408.3.2 Handrails and handholds. Ladders shall be provided with two handholds or two handrails. The clear distance between ladder handrails shall be not less than 17 inches and not greater than 24 inches.

3408.4 Recessed treads. Recessed treads shall have a minimum depth of not less than 5 inches and a width of not less than 12 inches. The vertical distance between the pool coping edge, deck, or step surface and the uppermost recessed tread shall not be greater than 12 inches. Recessed treads shall have slip-resistant surfaces.

3408.4.1 Vertical spacing. Recessed treads at the centerline shall have a uniform vertical spacing of not less than 7 inches and not greater than 12 inches.

3408.4.2 Drainage. Recessed treads shall drain into the pool.

3408.4.3 Handrails and grab rails. Recessed treads shall be provided with a handrail or grab rail on each side of the treads. The clear distance between handrails and grab rails shall be not less than 17 inches and not greater than 24 inches.

## SECTION 3409

### SAFETY

3409.1 Handholds required. Where the depth below the design waterline of a pool or spa exceeds 42 inches, handholds along the perimeter shall be provided. Handholds shall be located at the top of deck or coping.

Exceptions:

1. Handholds shall not be required where an underwater bench, seat or swim out is installed.
2. Handholds shall not be required for wave action pools and action rivers.

3409.1.1 Height above water. Handholds shall be located not more than 12 inches above the design waterline.

3409.1.2 Handhold type. Handholds shall be one or more of the following:

1. Top of pool deck or coping
2. Secured rope
3. Rail
4. Rock
5. Ledge
6. Ladder
7. Stair step
8. Any design that allows holding on with one hand while at the side of the pool.

3409.1.3 Handhold spacing. Handholds shall be horizontally spaced not greater than 4 feet apart.

3409.2 Handrails. Where handrails are installed, they shall conform to this section.

3409.2.1 Height. The top of the gripping surface of handrails for public pools and spas shall be 34 inches to 38 inches above the ramp or step surface as measured at the nosing of the step or finished surface of the slope.

3409.2.2 Material. Handrails shall be made of corrosion-resistant materials.

3409.2.3 Nonremovable. Handrails shall be installed so that they cannot be removed without the use of tools.

3409.2.4 Leading edge distance. The leading edge of handrails for stairs, pool entries and exits shall be located not greater than 18 inches from the vertical face of the bottom riser.

3409.2.5 Diameter. The outside diameter or width of handrails shall be not less than 1 ¼ inches and not greater than 2 inches.

3409.3 Obstructions and entrapment avoidance. There shall not be obstructions that can cause the user to be entrapped or injured. Types of entrapment include, but are not limited to, wedge or pinch-type openings and rigid, nongiving cantilevered protrusions.

## SECTION 3410

### WADING POOLS

3410.1 Wading pools. Wading pools shall be separate pools with an independent circulation system, shall be physically separated from the main pool and shall be constructed in accordance with Sections 3410.2 through 3410.6.

3410.2 Nonentry area. The areas where the water depth at the edge of the pool exceeds 9 inches shall not be considered to be nonentry areas.

3410.3 Floor slope. The floors of wading pools shall be uniform and sloped with a maximum slope of 1 unit vertical in 12 units horizontal.

3410.4 Maximum depth. The water depth shall not exceed 18 inches.

3410.5 Distance from deck to waterline. The maximum distance from the top of the deck to the waterline shall not exceed 6 inches.

3410.6 Suction entrapment avoidance. Wading pools shall not have suction outlets. Skimmers and overflow gutters shall be installed and shall accommodate 100 percent of the circulation system flow rate.

## SECTION 3411

### SPECIAL FEATURES

3411.1 Pool stairs. The design and construction of stairs extending into the pool in either the shallow or deep water including recessed pool stairs, shall comply with Sections 4513.2.1 through 4513.2.4.

3411.1.1 Tread dimension and area. Treads shall not be less than 24 inches at the leading edge. Treads shall have an unobstructed surface area of not less than 240 square inches and an unobstructed horizontal depth of not less than 10 inches at the centerline.

3411.1.2 Risers. Risers, except for the bottom riser, shall have a uniform height of not greater than 12 inches measured at the centerline. The bottom riser height is allowed to vary to the floor.

3411.1.3 Top tread. The vertical distance from the pool coping, deck, or step surface to the uppermost tread shall be not greater than 12 inches.

3411.1.4 Bottom tread. Where stairs are located in water depths greater than 48 inches, the lowest tread shall not be less than 48 inches below the deck and shall be recessed in the pool wall.

## SECTION 3412

### SIGNAGE

3412.1 Safety signage. Safety signage advising on the danger of diving into shallow areas and on the prevention of drowning shall be provided as required by the authority that governs such pools. Safety signage shall be as shown in Figure 3412.1 or similar thereof.

3412.2 Emergency telephone signs. A sign indicating the location of the nearest landline that can be used to call emergency services shall be posted within sight of the main entry into a pool facility. The sign shall indicate the telephone numbers, including area code, that can be called for emergency services including, but not limited to, police, fire, ambulance and rescue services. If "9-1-1" telephone service is available for any of these services, "9-1-1" shall be indicated next to the telephone number for such services. The sign shall include the street address and city where the pool is located. The nearest landline telephone indicated by the sign shall be one that can be used free of charge to call for emergency services. A sign with the telephone number and address information required by this section shall be posted within sight of the landline telephone.

3412.3 Sign placement. Signs shall be positioned for effective visual observation by users as required by the authority that governs such pools.

3412.4 Emergency shutoff switch. Signs shall be posted that clearly indicate the location of the pump emergency shutoff switch. Such switch shall be clearly identified as the pump emergency shutoff switch.



**Actual Size:**  
 11" x 13- 3/8"  
 16" x 18-1/2"  
 18-3/8" x 24"

**SECTION 3413**

**PUBLIC SPAS AND EXERCISE SPAS**

3413.1 Scope. This section shall govern the design, installation, construction and repair of public spas and exercise spas regardless of whether a fee is charged for use.

3413.2 General. In addition to the requirements of this section, public spas and exercise spas shall comply with the requirements of Sections 3402 through 3409.

3413.3 Pumps and motors. Pumps and motors shall be listed and labeled for use in spas.

3413.4 Water depth. The maximum water depth for spas shall be 4 feet measured from the design waterline except for spas that are designed for special purposes and approved by the authority having jurisdiction. The water depth for exercise spas shall not exceed 6 feet 6 inches measured from the design waterline.

3413.5 Multilevel seating. Where multilevel seating is provided, the maximum water depth of any seat or sitting bench shall be 28 inches measured from the design waterline to the lowest measurable point.

3413.6 Floor slope. The slope of the floor shall not exceed 1 unit vertical in 12 units horizontal (8.3-percent slope). Where multilevel floors are provided, the change in depth shall be indicated.

3413.7 Emergency shutoff switch. One emergency shutoff switch shall be provided to disconnect power to circulation and jet system pumps and air blowers. Emergency shutoff switches shall be accessible, located within sight of the spa and shall be located not less than 5 feet but not greater than 10 feet horizontally from the inside walls of the spa.

3413.7.1 Alarms. Emergency shutoff switches shall be provided with an audible alarm rated at not less than 80 decibel sound pressure level and a light near the spa that will operate continuously until deactivated when the shutoff switch is operated. The following statements shall appear on a sign that is posted in a location that is visible from the spa:

**ALARM INDICATES SPA PUMPS OFF. DO NOT USE SPA WHEN ALARM SOUNDS AND LIGHT IS ILLUMINATED UNTIL ADVISED OTHERWISE.**

3413.8 Water temperature controls. Components provided for water temperature controls shall be suitable for the intended application.

3413.8.1 Water temperature regulating controls. Water temperature regulating controls shall comply with UL 873 or UL 372. A means shall be provided to indicate the water temperature in the spa

Exception: Water temperature regulating controls that are integral to the heating appliance and listed in accordance with the applicable end use appliance standard.

3413.8.2 Water temperature limiting controls. Water temperature limiting control shall comply with UL 873 or UL 372. Water temperature at the heater return outlet shall not exceed 140 degrees F.

3413.9 Water temperature. The temperature of the incoming makeup water shall not exceed 104 degrees F.

GG. The following are inserted in Chapter 35 Referenced Standards in their appropriate sections in alphabetical and numerical order.

APSP

ANSI/APSP/ICC 7-13: American National Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins  
4504.1

ASTM

F1346-91(2010): Standard Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs  
3402.1

CSA

C22.2 No.108-14: Liquid Pumps  
3404.7

C22.2 No.218.1-13: Spas, Hot Tubs and Associated Equipment  
3403.1; 3406.2; 3404.7

NSF

NSF 50-2015: Equipment for Swimming Pools, Spas, Hot Tubs, and Other Recreational Water Facilities  
3405.2

UL

372-2007: Automatic Electrical Controls for Household and Similar Use- Part 2: Particular Requirements for Burner Ignition Systems and Components- with revisions through July 2012  
3413.8.1; 3413.8.2

873-2007: Temperature-indicating and Regulating Equipment- with revisions through February 2018  
3413.8.1; 3413.8.2

1004-1-12: Standard for Rotating Electrical Machines General Requirements- with revisions through June 2011  
3404.7

1081-2008: Standard for Swimming Pool Pumps, Filters and Chlorinators- with revisions through March 2014  
3404.7

1563-2009: Standard for Electric Hot Tubs, Spas and Associated Equipment-with revisions through March 2015  
3403.1.1; 3404.7; 3405.2; 3406.2

**SECTION II:** All ordinances or parts of ordinances in conflict herewith are hereby repealed.

**SECTION III:** That this Ordinance shall be in full force and effect from and after November 1, 2018 as provided by law.

DATED at Crystal Lake, Illinois, this 17<sup>th</sup> day of April, 2018.

CITY OF CRYSTAL LAKE, an Illinois Municipal Corporation

BY:   
AARON T. SHEPLEY, MAYOR

SEAL

ATTEST:

  
CITY CLERK

PASSED: April 17, 2018

APPROVED: April 17, 2018

Published in pamphlet form by the authority of the Mayor and City Council of the City of Crystal Lake.