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| **Project:** |  | | County: |  | | | **Date:** | **8/29/2024** | |
| Permit #: |  | | | | Original | Revision | | | Modification |
| Engineer: |  | Reviewed by: | T. Marsh, S. Sombutmai, A. Flanery, C. Robbins, L. Begeot | | | | | | |

Items needing correction or clarification are marked by an "N" beside the appropriate section number of the Florida Administrative Code citation (Current 64E-9, FAC, or current FBC 454.1). We have left the 64E-9 requirements in this checklist because they are critical for public health and therefore the pool will be checked for these items by the County Health Department at the first operating permit inspection after the Building Official’s final inspection approval of the construction.

**DEFINITIONS:**

**“Swimming Pool Slide”** is a slide designed by its manufacturer to discharge over the sidewall of a swimming pool, and which uses not more than 30 gallons per minute (113.55 L/m) of water to carry the riders.

**“Recreational Water Slides”** is a slide designed by its manufacturer to discharge water over the sidewall of a swimming pool or into pre-fabricated run-out lanes and uses more than 30 gallons per minute (113.55 L/m) of water to carry the riders

**“Water slides”** means a water recreation attraction ride which is characterized by having trough-like or tubular flumes or chutes.

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| **COMPLIANCE:** | **FLORIDA BUILDING CODE, FLORIDA STATUTES, OR FLORIDA ADMINISTRATIVE CODE:** | **DETAILS:** |
| **SUBMITTAL REQUIREMENTS** | | |
| YNN/A | 514.031(1)(a) | Plans review fees received as required by Florida Statute 514.031(1)(a) |
| YNN/A | 514.031(1)(a) | A current version of application (DH 4159) for approval of swimming pool plans received. |
| YNN/A | 514.031(1)(a) | A set of construction plans that include the following:  1. A description of the structure, its appurtenances, and its operation.  2. A description of the source or sources of water supply, and the amount and quality of water available and intended to be used.  3. The method and manner of water purification, treatment, disinfection, and heating.  4. The safety equipment and standards to be used.  5. A copy of the final inspection from the local enforcement agency as defined in s. 553.71.  6. Any other pertinent information deemed necessary by the department. |
| **SIZING REQUIREMENTS** | | |
| Reference | 454.1.1.1 | The public pools provided at a transient facility shall have a minimum 6 square feet (0.56 m²) of surface area and a minimum of 1 gallon per minute (0.063 L/s) of recirculation flow per living unit. The public pools provided at non-transient facilities shall have a minimum of 4.5 square feet (0.42 m²) of surface area and a minimum of 0.75 gallon per minute (0.047 Ls) of recirculation flow per living unit. Recreational vehicle sites, campsites and boat slips designated for live-aboards shall be considered a transient living unit. For properties with multiple pools, this requirement includes the cumulative total surface area and recirculation rate of all swimming pools, spas, wading pools and interactive water features. If the only pools at a facility are spa pools or interactive water features, this requirement does not apply. The bathing load for conventional swimming pools, wading pools, interactive water features, water activity pools and special purpose pools shall be computed on the basis of one person per 5 gpm (0.32 L/s) of recirculation flow. The bathing load for spa type pools shall be based on one person per each 10 square feet (0.9 m2) of surface area. All other types of projects shall be sized according to the anticipated bathing load and proposed uses. |
| YNN/A | 454.1.1.1 Transient | **Transient Calculations:**  # of Living Units x 6 square feet surface area and 1 gallon per minute per unit. (For All Pools, Spas, Etc. Combined)  Required Bather Load = Total recirculated rate ÷ 5 Gallons Per Minute = Bather load (For All Pools, Spas, Etc. Combined)  Required Spa Bather Load = Surface area ÷ 10 (For only Spa pools) |
| YNN/A | 454.1.1.1 Non-Transient | **Non-Transient Calculations:**  # of Living Units x 4.5 square feet surface area and 0.75 gallon per minute per unit. (For All Pools, Spas, Etc. Combined)  Required Bather Load = Total recirculated rate ÷ 5 Gallons Per Minute = Bather load (For All Pools, Spas, Etc. Combined)  Required Spa Bather Load = Surface area ÷ 10 (For only Spa pools) |
| YNN/A | 454.1.1.1 | Bathing load: The bathing load is computed on the basis of 1 person per each 5 gpm of water recirculated. (Note: Slide manufacture to confirm safe bather load) |
| **WATER SLIDE PLUNGE POOL SPECIFIC REQUIREMENTS** | | |
| YNN/A | 454.1.9.2.1 | Plunge pools shall be constructed of concrete or other structurally rigid impervious materials with a nontoxic, smooth and slip resistant finish. The plunge pool design shall meet the criteria of Sections 454.1.9.2.1.1 through 454.1.9.2.1.6. |
| YNN/A | 454.1.9.2.1.1 | Adequate space at terminus. The slide design engineer must demonstrate to the jurisdictional building department’s satisfaction that the water depth, clear area, distance between adjacent slides, floor slope, rope line placement, exit location and pool floor surface finish are all adequate to prevent injury or harm to riders or other users of the pool, making reference to ASTM F2376, Standard Practice for Classification, Design, Manufacture, Construction, and Operation of Water Slide Systems, as appropriate. |
| YNN/A | 454.1.9.2.1.1 | Only one entry or exit location shall be required, regardless of the plunge pool’s perimeter. |
| YNN/A | 454.1.9.2.1.3.1 | The slide flume terminus shall be designed by the design engineer who can demonstrate to the jurisdictional building department’s satisfaction that riders will be adequately slowed prior to discharge so as to prevent injury or harm to the rider upon impact with the plunge pool water. The design engineer must document the designed, safe location of the terminus relative to the plane of the pool wall and to the water level. |
| YNN/A | 454.1.9.2.1.4 | The plunge pool shall have a minimum of one main drain with separate piping and valve to the filtration system collector tank. The velocity through the openings of the main drain grate shall not exceed 1½ feet per second (457 mm/s) at the design flow rate of the recirculation pump. The main drain piping shall be sized to handle 100 percent of the design flow rate of the filtration system with a maximum flow velocity of 3 feet (914 mm) per second. |
| YNN/A | 454.1.9.2.1.5 | The plunge pool floor shall slope to the main drains and the slope shall not exceed 1 in 10. |
| YNN/A | 454.1.9.2.1.6.1 | Decking shall be provided at the entrance and exit points as necessary to provide safe patron access but shall not be smaller than 10 feet (3048 mm) in width and length. |
| YNN/A | 454.1.9.2.1.6.2 | All plunge pool decks shall slope to the plunge pool or pump reservoir or to deck drains which discharge to waste, or other acceptable means. All slopes shall be between 2 percent and 4 percent grade except for paver-type decks where a minimum of 1 percent grade is allowed. |
| YNN/A | 454.1.9.2.1.7 | The total volume of a plunge pool and its collector tank or tanks shall be equal to or greater than 3 minutes of the combined flow rate in gallons per minute of all filter and slide pumps.  The design engineer must account for the water level in the pool both when the slide pumps are on and when they are off.  If skimmers are used, skimmers must be placed at both levels if the variance is greater than 3 inches (76 mm).  If perimeter overflow is used, half of the gutter outlets must be functional at each water level. |
| **WATER SLIDES WITH RUN OUT LANES SPECIFIC REQUIREMENTS** | | |
| YNN/A | 454.1.9.2.2.1 | Run out lanes may be utilized in lieu or within a plunge pool system, provided they are constructed to the slide manufacturers specifications and are approved by the design engineer of record. |
| YNN/A | 454.1.9.2.2.2 | Five-foot-wide (1,524 mm) walkways shall be provided adjacent to run out lanes, as either dry deck or as part of a pool with up to 12 inches (305 mm) of water depth in this area. The 5-foot (1524 mm) walkway need be only on one side of the run out lane |
| YNN/A | 454.1.9.2.2.3 | Minimum water level indicator markings shall be provided on both sides of the run out trough to ensure adequate water for the safe slowing of pool patrons. |
| YNN/A | 454.1.9.2.2.4 | Attendants or lifeguards shall be provided at the top of the slides and at the runout in accordance with a safety/lifeguard plan approved by the Department of Health. |
| YNN/A | 454.1.9.2.2.4 | If night operation is proposed, 3 foot-candles (30 lux) of light shall be provided at the top of the slides and at the run outs. |
| YNN/A | 454.1.9.2.3 | Pump reservoirs are only required for slides with run out lanes. Pump reservoirs shall be made of concrete or other impervious material with a smooth slip resistant finish. Pump reservoirs shall be for the slide pump intakes, but where properly sized may also be used as a collector tank for the filter system. Pump reservoir designs shall meet the criteria of Sections 454.1.9.2.3.1 through 454.1.9.2.3.5. |
| YNN/A | 454.1.9.2.3.1 | The minimum reservoir volume shall be equal to 3 minutes of the combined flow rate in gallons per minute of all filter and slide pumps unless justified by the design engineer. |
| YNN/A | 454.1.9.2.3.2 | Pump reservoirs shall be accessible only to authorized individuals. |
| YNN/A | 454.1.9.2.3.3 | Access decks or walkable grating shall be provided for the reservoir such that all areas are accessible for vacuuming, skimming, and maintenance. The decks shall have a minimum width of 3 feet (914 mm) and shall have a slope of 2 percent - 4 percent away from the reservoir. |
| YNN/A | 454.1.9.2.3.3 | If any part of the pump reservoir has a permanent cover or roof, hatches or other openings for access to and observation of the floor must be provided with one hatch or opening, per 150 square feet (13.9 m²) of tank floor area. |
| YNN/A | 454.1.9.2.3.4 | The slide pump intakes shall be located in the pump reservoir and shall be designed to allow cleaning without danger of operator entrapment. |
| YNN/A | 454.1.9.2.3.5 | The pump reservoir shall have a minimum of one main drain with separate piping and valve to the filtration system collector tank unless the reservoir is used as the collector tank. Velocity through the openings of the main drain grates shall not exceed 1½ feet per second (457 mm/s) at the design flow rate of the filtration system pump. The main drain piping shall be sized to handle 100 percent of design flow rate of the filtration system pump with a maximum flow velocity of 3 feet per second (914 mm/s). |
| **WATER SLIDE RECIRCULATION AND PIPING REQUIREMENTS** | | |
| YNN/A | 454.1.9.2.4 | Slide pumps shall have check valves on all discharge lines. |
| YNN/A | 454.1.9.2.5 | Plunge pools and pump reservoirs shall have perimeter overflow gutter system or skimmer which shall be an integral part of the filtration system. |
| YNN/A | 454.1.9.2.5.1 | Perimeter overflow gutter systems shall meet the requirements of Section 454.1.6.5.3.1 except that gutters are not required directly under slide flumes or along the weirs which separate plunge pools and pump reservoirs. |
| YNN/A | 454.1.9.2.5.2 | Surface skimmers may be used in lieu of perimeter overflow gutters The provisions of Section 454.1.6.5.3.2 shall apply, except no maximum width or maximum area shall apply to plunge pools. |
| YNN/A | 454.1.9.2.6.1 | The recirculation-filtration system of water slide plunge pools shall turn the water over in a period of 2 hours or less. The turnover rate for slides with run-out lanes shall be 1 hour or less. For swimming pools that are not dedicated as plunge pools but include a recreational water slide as part of the design, the total water volume shall include the water in the plunge pool dimensions stipulated by code, plus the slide water. |
| YNN/A | 454.1.9.2.6.2 | A continuous readout/electronic recording in-line turbidity meter shall be installed per manufacturer’s specifications and used to determine compliance with 64E-9, *Florida Administrative Code* water quality criteria for clarity. Otherwise, if not installed, the recirculation turnover rate of the plunge pool’s total water volume, as defined in Section 454.1.9.2.6.1, must be enhanced to 1 hour or less. |
| YNN/A | 454.1.9.2.7 | The disinfection equipment shall be capable of feeding 12 mg/L of halogen to the continuous recirculation flow of the filtration system. |
| YNN/A | 454.1.9.2.8 | Slide design and construction is the responsibility of a professional engineer licensed in Florida and the applicant. |
| YNN/A | 454.1.9.2.9 | A lockable gate shall be provided at the stair or ladder entrance to the slide. |
| YNN/A | 454.1.9.2.10 | Upon construction completion, a professional engineer licensed in Florida shall certify that the slide was constructed in accordance with the manufacturer’s specifications and is structurally sound. |
| YNN/A | 64E-9.008(13) | A lifeguard and/or safety plan shall be submitted to the department with the application for the initial operation permit. |
| **RIVER RIDES SPECIFIC REQUIREMENTS** | | |
| YNN/A | 454.1.9.5.1 | River rides shall be constructed within the limits of sound engineering practice. |
| YNN/A | 454.1.9.5.2 | River rides shall be constructed of concrete or other impervious materials with a nontoxic, smooth and slip resistant finish. These rides shall be of such shape and design as to be operated in a safe and sanitary manner. |
| YNN/A | 454.1.9.5.3 | The recirculation filtration system of the river ride shall be capable of a minimum of one turnover every 3 hours. |
| YNN/A | 454.1.9.5.4 | The maximum water depth of the river ride shall not exceed 3 feet (914 mm) unless justified to the jurisdictional building department’s satisfaction by the design engineer. |
| YNN/A | 454.1.9.5.5 | Decking shall comply with Section 454.1.9.2.1.6.1. Additional decking along the ride course is not required except that decking shall be required at lifeguard locations and emergency exit points. |
| YNN/A | 454.1.9.5.6 | Access and exit shall be provided at the start and end of the ride and additional exit locations shall be located along the ride course as necessary to provide for the safety of the patrons. |
| YNN/A | 454.1.9.5.6 | Propulsion jets shall be installed in the walls of the river ride. Grate covers shall be provided at each jet discharge point. In the alternative, propulsion jets maybe installed in the floor if they are covered by a grate that will inhibit entrapment or injury of the pool patrons’ feet or limbs. |
| **CONSTRUCTION STANDARDS** | | |
| YNN/A | 454.1.2.1 | Pools shall be constructed of concrete or other impervious and structurally rigid material. All pools shall be watertight, shall be free from structural cracks and shall have a nontoxic smooth and slip-resistant finish. All materials shall be installed in accordance with manufacturer’s specifications unless such specifications violate Chapter 64E-9, Florida Administrative Code, rule requirements or the approval criteria of NSF/ANSI Standard 50 or NSF/ANSI Standard 60. |
| YNN/A | 454.1.2.4 | Pool floors and walls shall be white or light pastel in color and shall have the characteristic of reflecting rather than absorbing light. The interior finish coating floors and walls shall be comprised of a non-pigmented white cementitious binder component together with a sand/aggregate component. The finish coating shall have a dry lightness level (CIE L value) of 80.0 or greater and a wet luminous reflectance value (CIE Y value) of 50.0 or greater, as determined by test results provided by the manufacturer, utilizing testing methodology from American Standard ASTM D4086, ASTM E1477, ASTM E1347. Pools constructed of fiberglass, thermoplastic, or stainless steel shall be subject to the same interior finish color requirements. |
| YNN/A | 454.1.2.1(a) | Horizontal tile used in less than 3’ (914 mm) of water must be slip resistant. (FBC Definitions: “Slip resistant” means having a textured surface which is not conducive to slipping under contact of bare feet unlike glazed tile or masonry terrazzo and nontextured plastic materials. Manufactured surface products shall be designated by the manufacturer as suitable for walking surfaces in wet areas.) |
| YNN/A | 454.1.2.1(a)& 454.1.2.4 | A minimum 4-inch (102 mm) tile line, each tile a minimum size of 1 inch (25 mm) on all sides, shall be installed at the water line, but shall not exceed 12 inches (305 mm) in height if a dark color is used. Gutter type pools may substitute 2-inch (51 mm) tile, each a minimum size of 1-inch (25 mm) on all sides, along the pool wall edge of the gutter lip. |
| YNN/A | 454.1.6.5.3.2.5 | A minimum 6” (152 mm) water line tile shall be provided on all pools with automatic skimmer systems, each a minimum size of 1” (25 mm) on all sides. Glazed tile that is smooth and easily cleanable shall be utilized. |
| ENSURE IF APPLICABLE | 454.1.2.1(b)(c) | One-inch (25 mm) square tile may be used if the manufacturer has specified the adhesive for use underwater to adhere the type of tile used [vitreous (glass) or ceramic]. Tiles shall not have sharp edges exposed that could cause bather injury. The grout line is allowed to be included when meeting the 1-inch (25 mm) square tile requirements, if the tile is sold and distributed as nominal or trade size tile. |
| **DIMENSION STANDARDS** | | |
| YNN/A | 454.1.2.2.2 | Slide Plunge pool walls shall have a clearance of 15 feet (4572 mm) and River Ride walls shall have a clearance of 10 feet (3048 mm) perpendicular to the wall (as measured at design water level from gutter lip to gutter lip, or on skimmer pools, from vertical wall to vertical wall). Offset steps, spa coves, spa pools and wading pools are exempt from this clearance requirement. (FBC Definitions: “Offset” means set back into the deck from the normal pool wall perimeter [three sides must be surrounded by pool deck].)  NOTE: Where interior steps shall not protrude into the lazy river resulting in less than 10 feet (3048 mm) of clearance from any wall. |
| YNN/A | 454.1.2.2.2 | The upper part of pool walls in areas 3 feet (914 mm) deep or less shall be within 5 degrees vertical for a minimum depth of 2½ feet (762 mm) from which point the wall may join the floor with a maximum radius equal to the difference between the pool depth and 2½ feet. |
| YNN/A | 454.1.2.2.2 | Corners shall be a minimum 90-degree angle. (Internal angle) |
| YNN/A | 454.1.2.2.2 | The corner intersections of walls which protrude or angle into the pool water area shall be rounded with a minimum radius of 2 inches (51 mm). This radius shall be continued through the top of the gutter edge; chamfering is allowed. |
| YNN/A | 454.1.2.2.2 &  454.1.3.2 | Pool coping shall not overhang into the pool more than 1½ inches (38 mm). |
| NOTE: | 454.1.2.2.3 | The radius of curvature between the floor and walls is excluded from the following two requirements (454.1.2.2.3.1 & 454.1.2.2.2.3.2).  **Multiple floor levels in pools are prohibited, however, an area meeting all of the requirements of a sun shelf shall not be considered a violation of this requirement.** |
| YNN/A | 454.1.2.2.3.1 | Floor slope shall be uniform. The floor slope shall be a maximum 1 unit vertical in 10 units horizontal in areas 5 feet (1,524 mm) deep or less. |
| **MARKINGS** | | |
| YNN/A | 454.1.9.5.4 | Lazy River maximum water depth is 3' (914 mm) |
| YNN/A | 454.1.2.3.1(2) | Permanent depth markings followed by the appropriate full or abbreviated words “FEET,” “FT,” or “INCHES,” “IN,” shall be installed in minimum 4” high (102 mm) numbers and letters on a contrasting background. |
| YNN/A | 454.1.2.3.1(2) | Depth markers shall indicate actual depth within 3” (76 mm). \*Measured at normal operating water level when measured 3’ (914 m3) from the pool wall. |
| YNN/A | 454.1.2.3.1(3) | At a minimum, the markings shall be located on both sides of the pool at the shallow end, slope break, deep-end wall and deep point (if located more than 5 ‘(1,524 mm) from the deep-end wall). |
| YNN/A | 454.1.2.3.1(3) | Depth markings are visible from inside the pool and from the deck. |
| YNN/A | 454.1.2.3.1(3) | Maximum perimeter distance between depth markings is 25'. (Pool size and geometry may necessitate additional depth marking placements about all sides of the pool to meet this requirement) |
| YNN/A | 454.1.2.3.1(4) | When curb is provided, depth markings are located on inside and outside or top of the pool curb. |
| YNN/A | 454.1.2.3.1(4) | When a pool curb is not provided, the depth markings shall be located on the inside vertical wall at, or above, the water level and on the edge of the deck within 2' (610mm) of the pool water. |
| YNN/A | 454.1.2.3.1(4) | When open type gutters are used, depth markers are located on the back of the gutter wall. |
| YNN/A | 454.1.2.3.1(4) | When a coping stone with curved or angled underside is provided, the depth markings may be installed on the curved or angled coping underside, and outside or top of the pool curb. |
| YNN/A | 454.1.2.3.1(6) | In areas, not part of an approved diving bowl, tile "NO DIVING" markings are on the curb top or deck within 2' (610 mm) of water edge on each side of pool with a maximum distance between markings of 25' (7,620 mm). |
| YNN/A | 454.1.2.3.1(6) | The "NO DIVING" markings are at least 4" high (102 mm) high and contrasting; or a 6” (152 mm) tile with min. 4” (102 mm) or larger red international “NO DIVING” symbol. |
| YNN/A | 454.1.2.3.1(7) | All markings installed on horizontal surfaces have a slip-resistant finish. |
| YNN/A | 454.1.2.3.1(7) | All markings are tile. Markings shall be flush with the surrounding area where placed and recessed if necessary to provide a smooth finish that will avoid creation of an injury hazard to bathers. |
| YNN/A | 454.1.2.3.1(7) | Pools constructed of fiberglass, thermoplastic or stainless steel may substitute other type markings when it can be shown that said markings are permanent and will not fade over time. This exemption does not extend to concrete pools that are coated with fiberglass. Tile alternative examples include stone or manufactured plaques with engraved or sandblasted numbers and characters with permanent paint. Permanent appliqués may be used for fiberglass, thermoplastics or stainless steel pools. |
| YNN/A | 454.1.2.3.1(7) | Pools that are not conducive to tile can employ other equivalent markings as stated in item above. |
| YNN/A | 454.1.2.3.2 | Any design or logo on the pool floor or walls shall be such that it will not hinder the detection of a human in distress, algae, sediment, or other objects in the pool. |
| YNN/A | 64E-9.008(9)(a) | The bathing load will be posted at the pool as required in the bathing rules. |
| YNN/A | 454.1.2.3.5 | The lettering for the pool rules sign is at least 1" high (25.4 mm). |
| YNN/A | 454.1.2.3.5 | The following rules in **BOLD** will be posted at or near poolside and will be legible from pool deck:  1. **NO FOOD OR BEVERAGES IN THE POOL OR ON POOL WET DECK. COMMERCIALLY BOTTLED WATER IN PLASTIC BOTTLES IS ALLOWED ON THE POOL WET DECK FOR POOL PATRON HYDRATION.**  2. **NO GLASS OR ANIMALS IN THE FENCED POOL AREA (OR 50 FEET (15,240 MM) FROM UNFENCED POOL).**  3. **BATHING LOAD: \_\_\_ PERSONS.**  4. **POOL HOURS: \_\_ A.M. TO \_\_ P.M.**  (DAWN TO DUSK is approved for pool hours if the pool is not certified for night usage)  5. **SHOWER BEFORE ENTERING.**  6. “**NO DIVING**”, in 4-inch (102 mm) letters is required for pools of 200 square feet (18.58 m2) in area or greater without an approved diving well configuration.  7. **DO NOT SWALLOW THE POOL WATER**. (This statement shall be added to signs at pools that conduct alterations as that term is defined)  8. “**POOL MAXIMUM DEPTH: \_\_\_ FEET \_\_\_ INCHES** in 2-inch (51 mm) letters |
| **ACCESS** | | |
| YNN/A | 454.1.9.5.6 | Lazy river – Access and exit shall be provided at the start and end of the ride and additional exit locations shall be located along the ride course as necessary to provide for safety of the patrons. |
| YNN/A | 454.1.2.5.1 | Ladders shall be of the cross braced type and shall be constructed of corrosion-resistant materials and be securely anchored into the pool deck. |
| YNN/A | 454.1.2.5.1 | Clearance between the ladder and pool wall shall be between 3 to 6 inches (76 mm to 152 mm). |
| YNN/A | 454.1.2.5.1 | Ladders shall extend at least 28 inches (711 mm) and no more than 40 inches (1,016 mm) above the pool deck |
| YNN/A | 454.1.2.5.1 | Ladder bottom braces shall have intact end caps or bumpers that rest firmly against the pool wall. |
| YNN/A | 454.1.2.5.1 | The top rung of the ladder shall be at or below the water level on open gutter pools and not more than 12 inches (305 mm) below the deck or curb top on all other type pools. |
| YNN/A | 454.1.2.5.2 | Recessed treads shall be installed flush with the wall and shall be a minimum 5 inches (127 mm) wide, 10 inches (254 mm) long, with a maximum vertical distance of 12 inches (305 mm) between treads. |
| YNN/A | 454.1.2.5.3 | Stairs shall have a minimum tread width of 10” (254 mm) and a maximum width of 48” (1,219 mm) for a minimum tread length of 24” (610 mm) and a maximum riser height of 10” (254 mm). |
| YNN/A | 454.1.2.5.3 | Treads and risers between the top and bottom treads shall be uniform to within ½” (12.7 mm) in width and height.  The riser heights shall be measured at the marked step edges and the differences in elevation shall be considered the riser heights. (**Exception:** Where a gutter is used as a top step, the gutter’s 2” slope from lip to the drain shall be continuous for the full length of the stairs, and the riser from the gutter to the next tread need not be uniform with the remaining risers and treads.) |
| YNN/A | 454.1.2.5.3 | The front ¾ to 2 inches (19.1 mm to 51 mm) of the tread and the top 2 inches (51 mm) of the riser shall be tile, dark in color, contrasting with the interior of the pool. **Tile shall be slip resistant.**  Bullnose tile that is slip resistant may be used when the ¾-inch (19 mm) segment is placed on the tread or horizontal surface and the 2-inch (51 mm) segment is placed on the riser or vertical surface. |
| YNN/A | 454.1.2.5.3 | Where the gutter is used as the top step, the tile on the gutter for the width of the steps shall be slip resistant. |
| YNN/A | 454.1.2.5.5 | Handrail(s) for the stairs are correct length to mount in deck and bottom step. |
| YNN/A | 454.1.2.5.5 | Where “figure 4” deck-mounted-type handrails are used, they shall be anchored in the deck and extend laterally to any point vertically above the bottom step. |
| YNN/A | 454.1.2.5.5 | Grabrails must be mounted in the pool deck at each side of recessed steps. |
| YNN/A | 454.1.2.5.5 | Handrails and grabrails shall extend between 28 and 40 inches (711 mm and 1,016 mm) above the step edge and deck. |
| YNN/A | 454.1.2.5.6 | Permanent or portable steps, ramps, handrails, lifts or other devices designed to accommodate handicapped individuals in swimming pools **may** be provided. Excluding all ADA pool access area(s) and their clear deck area(s), the height of the pool wall above wet deck around the remainder of pool perimeter shall comply with Sections 454.1.3.1.2 or 454.1.8.5.  If provided, lifts mounted into the pool deck shall have a minimum 4-foot-wide (1,219 mm) deck behind the lift mount. |
| YNN/A | 454.1.2.6 | The pool water area shall be unobstructed by any type structure unless justified by engineering design as a part of the recirculation system. Engineering design and material specifications shall show that such structures will not endanger the pool patron, can be maintained in a sanitary condition and will not create a problem for sanitary maintenance of any part of the pool, pool water, or pool facilities. Structures in accord with the above shall not be located in a diving bowl area or within 15 feet (4,572 mm) of any pool wall.  NOTE: Stairs, ladders and ramps, necessary for entrance/exit from the pool are not considered obstructions. |
| **POOL APPURTENANCES** | | |
| YNN/A | 454.1.3.1.1 | Pool wet decks shall be constructed of concrete or other nonabsorbent material having a smooth slip resistant finish. Wet deck area finishes shall be designed for such use and shall be installed in accordance with the manufacturer’s specifications. ***Wooden decks and walkways are prohibited.*** |
| YNN/A | 454.1.3.1.2 | Pool wet decks shall be uniformly sloped away from the pool or to deck drains to prevent standing water. |
| YNN/A | 454.1.3.1.2 | The minimum slope for the wet deck is 2 percent, but in the portions of the deck intended to be accessible to disabled persons, it maybe 1 percent less than the maximum allowable cross slope given by the *Florida Building Code, Accessibility*. The maximum slope is 4 percent. A minimum of 1 percent deck slope is allowable for paver type decks. |
| YNN/A | 454.1.3.1.2 | Textured deck finishes that provide pitting and crevices of more than 3/16 inch (4.8 mm) deep that accumulate soil are prohibited. |
| YNN/A | 454.1.3.1.2 | If settling or weathering occurs that would cause standing water, the original slopes shall be restored, or corrective drains installed. |
| YNN/A | 454.1.3.1.2 | When a curb is provided, the deck shall not be more than 10 inches (254 mm) below the top of the curb. |
| YNN/A | 454.1.3.1.3 | Pool wet decks shall have a minimum unobstructed width of 4 feet (1219 mm) around the perimeter of the pool, pool curb, ladders, handrails, diving boards, diving towers and slides. |
| YNN/A | 454.1.3.1.4 | Traffic barriers shall be provided as needed so that parked vehicles do not extend over the deck area. |
| YNN/A | 454.1.3.1.5 | Walkways shall be provided between the pool and the sanitary facilities and shall be constructed of concrete or other nonabsorbent material having a smooth slip resistant finish for the first 15 feet (4572 mm) of the walkway measured from the nearest pool water’s edge. |
| YNN/A | 454.1.3.1.5 | A hose bibb with a vacuum breaker shall be provided to allow the deck to be washed down with potable water. |
| YNN/A | 454.1.3.1.6 | Obstructions of pool perimeter may exist as long as the maximum of 20% of the deck along the pool perimeter is not exceeded and as any one obstruction does not exceed 10% of the pool perimeter or 20’ (6096 mm), whichever is less, in any one area where water depth is 5’ (1,524 mm) or less. No lowered portion of the wet deck may be obstructed. |
| YNN/A | 454.1.3.1.6 | Obstructions shall have a wet deck area behind or through them, with the near edge of the walk within 15 feet (4572 mm) of the water except approved slide obstructions shall have the near edge of the walk within 35 feet (10 668 mm) of the water. |
| YNN/A | 454.1.3.1.6 | Obstructions must be protected by a barrier or must be designed to discourage patron access. (Effective barriers that are designed to define the walking path shall be subject to review and approval by the department.) |
| YNN/A | 454.1.3.1.6 | Obstructions shall not include pool exit points. |
| YNN/A | 454.1.3.1.6 | When an obstruction exists in multiple areas around the pool, the minimum distance between obstructions shall be 4 feet (1219 mm). |
| YNN/A | 454.1.3.1.7 | Food or drink service facilities shall not be located within 12 feet (3658 mm) of the water’s edge. |
| YNN/A | 454.1.3.1.8 | The vertical clearance above the pool deck shall be at least 7 feet (2137 mm). |
| **FENCE/BARRIER** | | |
| YNN/A | 454.1.3.1.9 | All public pools shall be surrounded by a minimum 48 inch (1219 mm) high fence or other approved substantial barrier. The fence shall be continuous around the perimeter of the pool area that is not otherwise blocked or obstructed by adjacent buildings or structures and shall adjoin with itself or abut to the adjacent members.  Fencing consideration shall be given to the U.S. Consumer Product Safety Commission (CPSC) Publication, No. 362, March 2005, guidelines available from CPSC.gov; or Sections 454.2.17.1.1 through 454.2.17.1.8. Safety covers that comply with ASTM F1346-91 (Reapproved 2003), titled Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs, and available from ASTM.org, do not satisfy this requirement. |
| YNN/A | 454.1.3.1.9 | Access through the barrier or fence from dwelling units, such as homes, apartments, motel rooms and hotel rooms, shall be through self-closing, self-latching lockable gates of 48 inch (1219 mm) minimal height from the floor or ground with the latch located a minimum of 54 inches (1372 mm) from the bottom of the gate or at least 3 inches (76 mm) below the top of the gate on the pool side. |
| YNN/A | 454.1.3.1.9 | If the self-closing, self-latching gate is also self-locking and is operated by a key lock, electronic opener or integral combination lock, then the operable parts of such locks or openers shall be 34 inches minimum (864 mm) and 48 inches maximum (1,219 mm) above the finished floor or ground. |
| YNN/A | 454.1.3.1.9 | Doored access points from public rooms such as lobbies or club houses need not be through gates if the door(s) meet the same self-closing, self-latching requirements as a gate. Operable parts used for opening doors at these access points shall be 45 inches (1143 mm) minimum to 48 inches (1220 mm) maximum above the finish floor or ground |
| YNN/A | 454.1.3.1.9 | Gates shall open outward away from the pool area. |
| YNN/A | 454.1.3.1.9 | A latched, lockable gate shall be placed in the fence within 10 feet (3,048 mm) of the closest point between the pool and the equipment area for service access. |
| YNN/A | 454.1.3.1.9 | Instead of a fence, permanent natural or manmade features such as bulkheads, canals, lakes, navigable waterways, etc., adjacent to a pool may be permitted as a barrier when approved. When evaluating such barrier features, the applicable governing body may perform onsite inspections, and review evidence, such as surveys, aerial photographs, water management agency standards and specifications, and any other similar documentation to verify at minimum, the following: the barrier feature is not subject to natural changes, deviations or alterations and is capable of providing an equivalent level of protection as that provided by a structure, and the barrier feature clearly impedes, prohibits or restricts access to the pool. |
| YNN/A | 454.1.3.1.9 | Screened pool enclosures must be hardened on the bottom 3 feet (914 mm). |
| YNN/A | 454.1.3.2 | Bridges and overhead obstructions over the pool shall be designed so they will not introduce any contamination to the pool water. |
| YNN/A | 454.1.3.2 | The minimum height of the bridge or obstruction shall be at least 4 feet (1219 mm) above the surface of the pool in all cases except when the pool is a river ride where it shall be at least 5 feet (1524 mm) above the surface of the pool. |
| YNN/A | 454.1.3.2 | Minimum 42-inch-high (1067 mm) handrails shall be provided along each side of the bridge. |
| YNN/A | 454.1.3.2 | The walking surfaces shall be constructed of concrete or other non-absorbent material having a smooth slip resistant finish. |
| YNN/A | 454.1.3.3.1; 64E-9(3)(b)(c)(d) | All swimming pools shall be installed with a shepherd’s hook securely attached to a one piece pole not less than 16 feet (4880 mm) in length, and at least one 16-24 inch (408 mm – 610 mm) diameter lifesaving ring, approved or certified under a nationally recognized water safety device standard, with sufficient rope attached to reach all parts of the pool from the pool deck. |
| YNN/A | 454.1.3.3.1; 64E-9(3)(d) | Safety equipment shall be mounted in a conspicuous place and be readily available for use. |
| YNN/A | 454.1.3.3.1; 64E-9(3)(b)(c) | Pools greater than 50 feet (15250 mm) in length shall have multiple units with at least two shepherd’s hook and one life saving ring. |
| YNN/A | 454.1.3.3.4 | A room or space shall be provided for chemicals to be stored, and the area shall be inaccessible to the public. |
| YNN/A | 454.1.3.3.6 | Floating and climb on devices, objects or toys that are not a part of the approved pool design shall not be tethered in the pool or installed without an engineering alterations application. |
| YNN/A | 454.1.3.3.7 | To reduce the possibility of injury, removable padding may be installed over the walls and floors of the pool, in areas where impacts are likely, so long as the surface of the padding is impervious, nontoxic, smooth and slip resistant and should be installed and maintained according to the manufacturer’s recommendations. |
| YNN/A | 454.1.3.3.7 | Surface underneath the padding must be structurally rigid, impervious, nontoxic, smooth and slip resistant. The padding may be white or a contrasting color |
| YNN/A | 454.1.4.1 | Electrical equipment wiring and installation, including the bonding and grounding of pool components shall comply with Chapter 27 of the Florida Building Code, Building. Outlets supplying pool pump motors connected to single phase 120-volt through 240-volt branch circuits, whether by receptacle or by direct connection, and outlets supplying other electrical equipment and underwater luminaires operating at voltages greater than the low voltage contact limit, connected to single phase, 120-volt through 240-volt branch circuits, rated 15 or 20 amperes, whether by receptacle or by direct connection, shall be provided with ground fault circuit interrupter protection for personnel. **\*TO BE REVIEWED BY BUILDING DEPT.** |
| **LIGHTING** | | |
| YNN/A | 454.1.4.2 | Artificial lighting shall be provided at all swimming pools which are to be used at night or which do not have adequate natural lighting so that all portions of the pool, including the bottom, may be readily seen without glare. |
| YNN/A | 454.1.4.2.1 | Outdoor pool lighting: Lighting shall provide a minimum of 3 foot-candles (30 lux) of illumination at the pool water surface and the pool wet deck surface. Underwater lighting shall be a minimum of ½ watt incandescent equivalent, or 10 lumens, per square foot of pool water surface area. |
| YNN/A | 454.1.4.2.2 | Indoor pool lighting: Lighting shall provide a minimum of 10 foot-candles (100 lux) of illumination at the pool water surface and the pool wet deck surface. Underwater lighting shall be a minimum of 8/10 watt incandescent equivalent, or 15 lumens, per square foot of pool surface area. |
| YNN/A | 424.1.4.2.3 | Underwater lighting: Underwater luminaires shall comply with Chapter 27 of the Florida Building Code, Building. **\*TO BE REVIEWED BY BUILDING DEPT.** |
| YNN/A | 454.1.4.2.3 | The location of the underwater luminaires shall be such that the underwater illumination is as uniform as possible. |
| YNN/A | 454.1.4.2.3 | Underwater lighting requirements can be waived when the overhead lighting provides at least 15 foot-candles (150 lux) of illumination at the pool water surface and pool wet deck surface. |
| YNN/A | 454.1.4.2.3 | If signage clearly indicates that night swimming is prohibited, underwater lights supplying less than minimum illumination required for night swimming may be installed for safety and decorative purposes. Nothing in this section exempts swimming pools located in coastal areas, as specified in Section 3109 of the *Florida Building Commission* code. |
| YNN/A | 454.1.4.2.4 | Overhead wiring. Overhead service wiring shall not pass within an area extending a distance of 10 feet (3048 mm) horizontally away from the inside edge of the pool walls, diving structures, observation stands, towers or platforms.  Allowances for overhead conductor clearances to pools that meet the safety standards in the *National Electrical Code* may be used instead. Electrical equipment wiring and installation including the grounding of pool components shall comply with Chapter 27. |
| YNN/A | 454.1.4.2.5 | Voltage limitation. Underwater lighting, or lighting that may be exposed to nozzle directed pool water, shall not exceed 30 volts DC or 15 volts AC. Such lights shall be installed in accordance with manufacturer’s specifications and approved for such use by UL or NSF. **\*TO BE REVIEWED BY BUILDING DEPT.** |
| **EQUIPMENT AREA** | | |
| YNN/A | 454.1.5.1 | Equipment designated by the manufacturer for outdoor use may be located in an equipment area, all other equipment must be located in an equipment room or enclosure. |
| YNN/A | 454.1.5.1 | An equipment area shall be surrounded with a fence at least 4 feet (1219 mm) high on all sides not confined by a building or equivalent structure. A self-closing and self-latching gate with a permanent locking device shall be provided if necessary, for access. An equipment room shall be protected on at least three sides and overhead. Any fence or gate installed shall use members spacing that shall not allow passage of a 4-inch (102 mm) diameter sphere. The fourth side may be a gate, fence, or open if otherwise protected from unauthorized access. |
| YNN/A | 454.1.5.1 | An equipment enclosure shall be lockable or otherwise protected from unauthorized access. |
| YNN/A | 454.1.3.1.9 | A latched, lockable gate shall be placed in the fence within 10 feet (3048 mm) of the closest point between the pool and the equipment area for service access. |
| YNN/A | 454.1.5.2 | Indoor equipment. Equipment not designated by the manufacturer for outdoor use shall be located in an equipment room. An equipment room shall be protected on at least three sides and overhead. The fourth side may be a gate, fence or open if otherwise protected from unauthorized entrance. |
| YNN/A | 454.1.5.3 | The equipment enclosure, area or room floor shall be of concrete or other nonabsorbent material having a smooth slip resistant finish and shall have positive drainage, including a sump pump if necessary |
| YNN/A | 454.1.5.3 | Ancillary equipment, such as a heater, not contained in an equipment enclosure or room shall necessitate an equipment area as described above (454.1.5.1). |
| YNN/A | 454.1.5.4 | Equipment rooms shall have either forced draft or cross ventilation. |
| YNN/A | 454.1.5.4 | All below grade equipment rooms shall have a stairway access with forced draft ventilation or a fully louvered door and powered intake within 6 inches (152 mm) of the floor. |
| YNN/A | 454.1.5.4 | Where stairway access is not necessary to carry heavy items into the below grade room or vault, a “ship’s ladder” may be used if specified by the design engineer who must consider anticipated workload including equipment removal; and the ladder slope, tread height and width; and construction material of the ladder. |
| YNN/A | 454.1.5.5 | The opening to an equipment room or area shall be a minimum 3 feet by 6 feet (914 mm by 1829 mm) and shall provide easy access to the equipment. |
| YNN/A | 454.1.5.6 | The size of the equipment enclosure, room or area shall provide working space to perform routine operations. |
| YNN/A | 454.1.5.6 | Clearance shall be provided for all equipment as prescribed by the manufacturer to allow normal maintenance operation and removal without disturbing other piping or equipment. |
| YNN/A | 454.1.5.6 | In rooms with fixed ceilings, the minimum height shall be 7 feet (2,137 mm). |
| YNN/A | 454.1.5.7 | The equipment room is lighted to provide a minimum 30 fc (300 lux) of illumination at floor level. |
| YNN/A | 454.1.5.8 | Equipment enclosures, rooms or areas **shall not be used for storage of chemicals** emitting corrosive fumes or for storage of other items to the extent that entrance to the room for inspection or operation of the equipment is impaired. |
| YNN/A | 454.1.5.9 | A hose bibb with vacuum breaker shall be located in the equipment room or area. |
| **SANITARY FACILITIES** | | |
| YNN/A | 454.1.6.1 | Sanitary facilities: Restrooms shall include a water closet, a diaper change table and a lavatory. The entry doors of all restrooms shall be located within a 200-foot (60 960 mm) walking distance of the nearest water’s edge of each pool served by the facilities.  (Swim diapers are recommended for use by children that are not toilet trained. Persons that are ill with diarrhea cannot enter the pool.)  **Exception:** Where a swimming pool serves only a designated group of residential dwelling units including hotel rooms and not the general public, poolside sanitary facilities are not required if all living units are within a 200-foot (60 960 mm) horizontal radius of the nearest water’s edge, are not over three stories in height unless serviced by an elevator, and are each equipped with private sanitary facilities. |
| YNN/A | 454.1.6.1.1 | Sanitary facilities: Required fixtures shall be provided as indicated on Table 454.1.6.1. rounded up to the next whole number. The fixture count on this chart is deemed to be adequate for the pool and pool deck area that is up to three times the area of the pool surface provided. |
| YNN/A | 454.1.6.1.1 | |  |  |  |  |  | | --- | --- | --- | --- | --- | | **TABLE 454.1.6.1** | | | | | | **PUBLIC SWIMMING POOL—REQUIRED FIXTURE COUNT PER SQUARE FOOT OF POOL SURFACE** | | | | | | **SIZE OF POOL (square feet)** | **MEN’S RESTROOM** | | **WOMEN’S RESTROOM** | | | **For SI: 1 FT2 = 0.0929 m2.** | **WC** | **Lavatory** | **WC** | **Lavatory** | | 0 – 1,250 | 1 | 1 | 1 | 1 | | 1,251 – 2,500 | 1 | 1 | 2 | 1 | | 2501 – 3,750 | 2 | 1 | 3 | 1 | | 3,751 – 5,000 | 2 | 1 | 4 | 1 | | 5,001 – 6,250 | 3 | 2 | 5 | 2 | | 6,251 – 7,500 | 3 | 2 | 6 | 2 | | 7,501 – 8,750 | 4 | 2 | 7 | 2 | | 8,751 – 10,000 | 4 | 2 | 8 | 2 | |
| NOTE: | 454.1.6.1.1 | **Exception:** When a public swimming pool meets all of the following conditions the following shall apply:  1. The pool serves only a designated group of dwelling units,  2. The pool is not for the use of the general public, and  3. A building provides sanitary facilities;  The fixture requirement for the building shall be determined and if it exceeds the requirement in Table 454.1.6.1 then the building requirement shall regulate the fixture count, otherwise the fixture count shall be based on the requirement for the pool. **Under no circumstances shall the fixture counts be cumulative.** |
| YNN/A | 454.1.6.1.1 | Sanitary facilities: One diaper changing table shall be provided at each restroom. Diaper changing tables are not required at restrooms where all pools served are restricted to adult use only.  (Swim diapers are recommended for use by children that are not toilet trained. Persons that are ill with diarrhea cannot enter the pool.) |
| YNN/A | 454.1.6.1.1 | **Additional fixtures** required for each additional 2,500 square feet (233 m²) over 10,000 square feet, or proportion thereof (929 m²): – Women’s (1) WC  **Additional fixtures** required for each additional 5,000 square feet (465 m²) over 10,000 square feet, or proportion thereof (929 m²): Men’s – (1) WC, Women’s - (2) WC  **Additional fixtures** required for each additional 10,000 square feet (929 m²) over 10,000 square feet, or proportion thereof (929 m²): Men’s - (2) WC, (1) Lavatory, Women’s - (4) WC, (1) Lavatory. |
| YNN/A | 454.1.6.1.2 | Sanitary facilities: Outside access to facilities shall be provided for bathers at outdoor pools. Where the restrooms are located within an adjacent building and the restroom doors do not open to the outside, the restroom doors shall be within 50’ (15 240 mm) of the building’s exterior door. |
| YNN/A | 454.1.6.1.2 | Sanitary facilities: If the restrooms are not visible from any portion of the pool deck, signs shall be posted showing directions to the facilities. Directions shall be legible from any portion of the pool deck; letters shall be a minimum of 1” (25 mm) high. |
| YNN/A | 454.1.6.1.3 | Sanitary facilities: Floors of sanitary facilities shall be constructed of concrete or other nonabsorbent materials, shall have a smooth, slip resistant finish, and shall slope to floor drains, which must be installed within the facility. |
| YNN/A | 454.1.6.1.3 | Sanitary facilities: There are no foot baths, carpet or duck boards on the floor. |
| YNN/A | 454.1.6.1.3 | Sanitary facilities: The intersection between the floor and walls shall be coved where either floor or wall is not made of waterproof materials such as tile or vinyl. |
| YNN/A | 454.1.6.1.4 | Sanitary facilities: A hose bibb with vacuum breaker is in or within 25’ (7620 mm) each restroom for ease of cleaning. |
| **RECIRCULATION AND TREATMENT** | | |
| YNN/A | 454.1.6.2 | A minimum of one rinse shower shall be provided on the pool deck of all outdoor pools within the perimeter of the fence. |
| YNN/A | 454.1.6.3 | An atmospheric break or approved backflow prevention device shall be provided in each pool water supply line that is connected to a public water supply. |
| YNN/A | 454.1.6.3 | Vacuum breakers shall be installed on all hose bibbs. |
| YNN/A | 454.1.6.5.1 | Recirculation and treatment equipment such as filters, recessed automatic surface skimmers, ionizers, ozone generators, disinfection feeders and chlorine generators shall be tested and approved using the NSF/ANSI 50-2019, *Equipment and Chemicals for Swimming Pools, Spas, Hot Tubs and other Recreational Water Facilities*, which is incorporated by reference. |
| YNN/A | 64E-9.004(6) | The pool recirculation system must be operated at all times when the pool is open for use. The recirculation system may be shut off three hours after the pool closes but must resume operation three hours before opening the pool. Shut down time must be controlled by a time clock. When a variable speed pump is used, the recirculation system shall be operated such that it achieves the equivalent of 6 hours of treatment at 100% design flowrate during the daily closed period, or at least one complete water volume turnover, whichever is greater. Exception: vacuum DE systems are excluded from this allowance. \*\*\*If multiple recirculation pumps are used the required flowrate, filtration, & chemical treatment must be maintained to operate the pool. Example: The pool must not be open to the public without one pump if the additional pumps are not able to maintain the proper flowrate, filtration, and chemical treatment (some type of audible alarming may be employed to ensure requirement is met). |
| YNN/A | 64E-9.004(1) | Pool makeup water supply is from an approved potable water system or meets those requirements with bacteriological/chemical reports to county health department. |
| YNN/A | 454.1.6.5.4 | If the pump or suction piping is located above the water level of the pool, the pump shall be self-priming. |
| YNN/A | 454.1.6.5.4 | Pumps that take suction prior to filtration shall be equipped with a hair and lint strainer. |
| YNN/A | 454.1.6.5.4 | Pressure filter system pump shall be selected to provide the required recirculation flow against a minimum total dynamic head of 60 feet (18,288 mm) unless hydraulically justified by the design engineer. |
| YNN/A | 454.1.6.5.4 | Vacuum filter system pumps shall provide at least 50 feet (15,240 mm) of total dynamic head. Should the total dynamic head required not be appropriate for a given project, the design engineer shall provide an alternative. |
| YNN/A | 454.1.6.5.5 | Filters sized to handle the required recirculation flowrate shall be provided. |
| **GUTTER SYSTEMS** | | |
| YNN/A | 454.1.6.5.3 | The design pattern of recirculation flow shall be 100 percent of the minimum turnover rate through main drain piping and 100 percent of the minimum turnover rate through perimeter overflow system. Except when a bottom drain is used in conjunction with a wall drain carrying 100 percent of the recirculation flow. |
| YNN/A | 454.1.6.5.3.1 | The lip of the gutter shall be uniformly level with a maximum tolerance of ¼” (6 mm) between the high and low areas. |
| YNN/A | 454.1.6.5.3.1 | The bottom of the gutter shall be level or slope to the drains. |
| YNN/A | 454.1.6.5.3.1 | The spacing between drains shall not exceed 10 feet (3048 mm) for 2-inch (51 mm) drains or 15 feet (4572 mm) for 2½-inch (64 mm) drains, unless hydraulically justified by the design engineer. |
| YNN/A | 454.1.6.5.3.1 | Gutters may be eliminated along pool edges for no more than 15 feet (4,572 mm) and this shall not exceed 10 percent of the perimeter (at least 90 percent of the perimeter shall be guttered). |
| YNN/A | 454.1.6.5.3.1 | In areas where gutters are eliminated, handholds shall be provided within 9” (229 mm) of the water surface. Handhold design shall be approved by the jurisdictional building department prior to construction. |
| YNN/A | 454.1.6.5.3.1.1 | Either recessed-type or open-type gutters shall be used. Special designs can be approved provided they are within limits of sound engineering practice. |
| YNN/A | 454.1.6.5.3.1.1 | Recessed type gutter open areas shall be at least 4 inches (102 mm) deep and 4 inches (102 mm) wide, with a minimum 4 inches (102 mm) clearance for cleaning. |
| YNN/A | 454.1.6.5.3.1.1 | The open area of the recessed gutter, excluding the gutter front dam wall, shall not be visible from a position directly above the gutter sighting vertically down the edge of the deck or curb. |
| YNN/A | 454.1.6.5.3.1.1 | Open type gutters shall be at least 6 inches (150 mm) deep and 12 inches (305 mm) wide. |
| YNN/A | 454.1.6.5.3.1.1 | The gutter shall slope 2 inches (51 mm), +/- ¼ inch (+/- 6 mm), from the lip to the drains. |
| YNN/A | 454.1.6.5.3.1.1 | The gutter drains shall be located at the deepest part of the gutter. |
| YNN/A | 454.1.6.5.3.1.2 | All gutter systems shall discharge into a collector tank. |
| YNN/A | 454.1.6.5.3.1.3 | The gutter lip shall be tiled with a minimum of 2” (51 mm) tile on the pool wall, each a minimum size of 1” (25 mm) on all sides. **Exception**: Stainless steel gutter systems when it can be shown that the surfaces at the waterline and back of the gutter are easily cleanable. |
| YNN/A | 454.1.6.5.3.1.3 | All tile used on the flat, horizontal part, or the leading edge of an open-type gutter, must be slip resistant. |
| YNN/A | 454.1.6.5.3.1.3 | The back vertical wall of the gutter shall be tiled with glazed tile. **Exception**: Stainless steel gutter systems when it can be shown that the surfaces at the waterline and back of the gutter are easily cleanable. |
| **SKIMMER SYSTEMS** | | |
| YNN/A | 454.1.6.5.3 | The design pattern of recirculation flow shall be 100 percent of the minimum turnover rate through main drain piping and at least 60 percent of the minimum turnover rate through the skimmer system. Except when a bottom drain is used in conjunction with a wall drain carrying 100 percent of the recirculation flow. |
| YNN/A | 454.1.6.5.3.2.1 | Skimmer system designed to carry 60% of pool total design flow rate with each skimmer carrying a minimum of 30 gallons per minute (2 L/s). *NOTE: In order to achieve this code requirement, the minimum required flowrate per skimmer would need to be 50 gallons per minute to ensure at 60% of the flow the 30 gallons per minute can be met (Example: Two skimmer pool would require a flowrate of 100 gallons per minute)* |
| YNN/A | 454.1.6.5.3.2.2 | Prevailing wind direction and the pool outline shall be considered by the designer in the selection of skimmer locations. The location of skimmers shall be such that the interference of adjacent inlets and skimmers is minimized. |
| YNN/A | 454.1.6.5.3.2.2 | Skimmers do not protrude into pool area. |
| YNN/A | 454.1.6.5.3.2.2 | The deck or curb shall provide for a handhold around the entire pool perimeter and shall not be located more than 9 inches (229 mm) above the midpoint of the opening of the skimmer. |
| YNN/A | 454.1.6.5.3.2.3 | **If installed**, an equalizer valve shall be a spring-loaded vertical check valve that will not allow direct suction on the equalizer line. Float valves are prohibited. The equalizer line inlet shall be installed at least 1 foot (305 mm) below the normal pool water level and the equalizer line inlet shall be protected by an ASME/ANSI A112.19.8 compliant cover/grate. The equalizer line shall be sized to handle the expected flow with a 2-inch (51 mm) minimum line size. Where an equalizer valve is not installed, the skimmer port may be plugged. |
| YNN/A | 454.1.6.5.3.2.4 | A wall inlet fitting shall be provided directly across from each skimmer within a tolerance of 5 feet (1524 mm) measured along the perimeter in either direction from center, or shall have a directional flow inlet across from skimmer that directs flow towards skimmer |
| **D.E. FILTER SYSTEMS** | | |
| YNN/A | 454.1.6.5.5.1 | D.E. Type filters or regenerative media type filters: The filter is sized such that the filtration rate does not exceed 2 gpm/ft². [or 3 if so approved using the procedure stated in Section 454.1.6.5.1] |
| YNN/A | 454.1.6.5.5.2.1 | D.E. type filters: Pressure filter systems shall be equipped with an air relief valve, influent and effluent pressure gauges with minimum face size of 2 inches (51 mm) reading 0–60 psi (0–414 kPa). |
| YNN/A | 454.1.6.5.5.2.2 | D.E. type filters: Vacuum filter systems shall be equipped with a vacuum gauge which has a 2-inch (51 mm) face and reads from 0–30 inches of mercury. |
| YNN/A | 454.1.6.5.5.2.3 | D.E. type filters: A precoat pot or collector tank shall be provided. |
| YNN/A | 454.1.6.5.5.3 | D.E. type filters: The D.E.-type filter tank and elements shall be installed such that the recirculation flow draw down does not expose the elements to the atmosphere whenever only the main drain valve is open or only the surface overflow gutter system valve is open. |
| YNN/A | 454.1.6.5.5.3 | D.E. type filters: The filter area shall be determined on the basis of effective filtering surfaces with no allowance given for areas of impaired filtration, such as broad supports, folds, or portions which may bridge. |
| YNN/A | 454.1.6.5.5.3 | D.E. type filters: D.E. type filter elements shall have a minimum 1-inch (25 mm) clear spacing between elements up to a 4 square foot (0.4 m2) effective area. The spacing between filter elements shall increase 1/8 inch (3 mm) for each additional square foot of filter area or fraction thereof above an effective filter area of 4 square feet (0.4 m2). |
| YNN/A | 454.1.6.5.5.3 | D.E. type filters: Vacuum filter tank has coved intersections between the wall and the floor and the tank floor slopes to the filter tank drain. |
| YNN/A | 454.1.6.5.8 | D.E. type filters: The filter and vacuuming system shall have the necessary valves and piping to allow filtering to pool, vacuuming to waste, vacuuming to filter, complete drainage of the filter tank, D.E.- type filters and precoat recirculation for D.E.-type filters. |
| YNN/A | 454.1.6.5.15 | D.E. type filters: Disposal of water from pools using D.E. powder shall be accomplished through separation tanks which are equipped with air bleed valves, bottom drain lines, and isolation valves, or through a settling tank with final disposal being acceptable to local authorities. D.E. separator tanks shall have a capacity as rated by the manufacturer, equal to the square footage of the filter system |
| **SAND FILTER SYSTEMS** | | |
| YNN/A | 454.1.6.5.5.1 | Sand type filters: The filter is sized such that the filtration rate does not exceed 3 gpm/FT² for rapid sand filter or 15 gpm/ft² for high rate sand filters [or 20 gpm/ft² if so approved using the procedure stated in Section 454.1.6.5.1] |
| YNN/A | 454.1.6.5.5.2.1 | Sand type filters: Pressure filter systems shall be equipped with an air relief valve, influent and effluent pressure gauges with minimum face size of 2 inches (51 mm) reading 0–60 psi (0–414 kPa), and a sight glass when a backwash line is required. |
| YNN/A | 454.1.6.5.8 | Sand type filters: The filter and vacuuming system shall have the necessary valves and piping to allow filtering to pool, vacuuming to waste, vacuuming to filter, complete drainage of the filter tank, backwashing for sand filters. |
| **CARTRIDGE FILTER SYSTEMS** | | |
| YNN/A | 454.1.6.5.5.1 | Cartridge type filters: The filter complies with the maximum filtration rate of 0.375 gpm/ft² for pleated type cartridges. |
| YNN/A | 454.1.6.5.5.2.1 | Cartridge type filters: Pressure filter systems shall be equipped with an air relief valve, influent and effluent pressure gauges with minimum face size of 2 inches (51 mm) reading 0–60 psi (0–414 kPa). |
| YNN/A | 454.1.6.5.5.2.2 | Cartridge type filters: Vacuum filter systems shall be equipped with a vacuum gauge which has a 2-inch (51 mm) face and reads from 0–30 inches of mercury. |
| YNN/A | 454.1.6.5.5.3 | Cartridge type filters: Vacuum filter tank has coved intersections between the wall and the floor and the tank floor slopes to the filter tank drain. |
| YNN/A | 454.1.6.5.5.3 | Cartridge type filters: All cartridges used in public pool filters shall be permanently marked with the manufacturer’s name, pore size and area in square feet of filter material. All cartridges with end caps shall have the permanent markings on one end cap. |
| YNN/A | 454.1.6.5.8 | Cartridge type filters: The filter and vacuuming system shall have the necessary valves and piping to allow filtering to pool, vacuuming to waste, vacuuming to filter, and complete drainage of the filter tank. |
| **PIPING** | | |
| YNN/A | 454.1.6.5.6 | All plastic pipe used in the recirculation system shall be imprinted with the manufacturer’s name and the NSF-pw logo for potable water applications. Size, schedule and type of pipe shall be included on the drawings |
| YNN/A | 454.1.5.1, 454.1.6.4, &  454.1.6.5.6 | Plastic pipe subject to a period of prolonged sunlight exposure must be coated to protect it from ultraviolet light degradation. |
| YNN/A | 454.1.6.5.7 | Return line, main drain line, and surface overflow system lines each have proportioning valves. |
| YNN/A | 454.1.6.5.8 | All pressure piping is sized such that the flow velocity does not exceed 10' per second (2,038 mm/s) at the design flow rate. (**Exception**: Precoat lines when higher velocity is needed for agitation purposes.) |
| YNN/A | 454.1.6.5.8 | All suction piping is sized such that the flow velocity does not exceed 6' per second (1,829 mm/s) at the design flow rate. (**Exception**: Vacuum filter header assembly where velocity may be up to 10' per second (3048 mm/s).) |
| YNN/A | 454.1.6.5.8 | Main drain systems and surface overflow systems which discharge to collector tanks are sized such that the flow velocity does not exceed 3' per second (914 mm/s) at the design flow rate. |
| YNN/A | 454.1.6.5.9 | Wall inlets shall be installed a minimum of 12 inches (305 mm) below the normal operating water level unless precluded by the pool depth or intended for a specific acceptable purpose. |
| YNN/A | 454.1.6.5.9 | Wall inlets are directionally adjustable. |
| YNN/A | 454.1.6.5.9 | Floor return inlets have a means of flow adjustment. |
| YNN/A | 454.1.6.5.9; 454.1.6.5.9.5 | Floor inlets shall be designed and installed such that they do not protrude above the pool floor and all inlets shall be designed and installed so as not to constitute sharp edges or protrusions hazardous to pool bathers. |
| YNN/A | 454.1.6.5.9.1 | Pools 30 feet (9144 mm) in width or less, with wall inlets only shall have enough inlets such that the inlet spacing does not exceed 20 feet (6096 mm) based on the pool water perimeter. |
| YNN/A | 454.1.6.5.9.2 | Pools 30 feet (9144 mm) in width or less with floor inlets only shall have a number of inlets provided such that the spacing between adjacent inlets does not exceed 20 feet (6096 mm) and the spacing between inlets and adjacent walls does not exceed 10 feet (3048 mm). |
| YNN/A | 454.1.6.5.9.3 | A combination of wall and floor inlets may be used in pools 30 feet (9144 mm) in width or less only if the requirements of Section 454.1.6.5.9.1 or Section 454.1.6.5.9.2 are fully met. |
| YNN/A | 454.1.6.5.9 | The flow rate through each inlet shall not exceed 20 gpm (1 L/s) except for inlets designed for higher flows as specified by the manufacturer. |
| YNN/A | 454.1.6.5.10 & 454.1.6.5.3. | Main drain outlets: All pools shall be provided with an outlet at the deepest point. |
| YNN/A | 454.1.6.5.10.1 | If the depth at the outlet deviates more than 3 inches (76 mm) from the side wall, that depth shall be identified on depth markers in addition to the markers normally required for the sidewall depth.  Markers for the depth at the drains shall be in accordance with Section 454.1.2.3 with the following words added: “AT CENTER” for circular areas and “AT DEEP POINT” for other pool shapes. |
| YNN/A | 454.1.6.5.10.2 | Outlets are covered by a secure grate which requires the use of a tool to remove. |
| YNN/A | 454.1.6.5.10.2 | The open area of the main drain grate(s) is such that the maximum velocity of water passing through the openings does not exceed 1½ feet per second (457 mm/s) at 100 pecent of the design recirculation flow. |
| YNN/A | 454.1.6.5.10.2 | Main drain covers/grates shall comply with the requirements of ANSI/APSP 16 and the water velocity of this section. |
| YNN/A | 454.1.6.5.10.3 | Multiple outlets, equally spaced from the pool side walls and from each other, shall be installed in pools where the deep portion of the pool is greater than 30 feet (9144 mm) in width. |
| YNN/A | 454.1.6.5.10.4 | If the area is subject to high ground water, the pool shall be designed to withstand hydraulic uplift or shall be provided with hydrostatic relief devices. |
| YNN/A | 454.1.6.5.10.5 | The main drain outlet shall be connected to a collector tank. |
| YNN/A | 454.1.6.5.10.5 | The capacity of the Lazy River collector tank shall be at least 1 minute of the recirculated flow unless justified by the design engineer. Note: Vacuum filter tanks are considered collector tanks. **(see 454.1.9.2.3.1, for Slide system collector tank minimum capacity)** |
| YNN/A | 454.1 Definitions | “Collector tank” means a reservoir, with a minimum of 2.25 square feet (0.2 m2) water surface area, that is vented by piping and/or open to the atmosphere, from which the recirculation or feature pump takes suction, which receives the gravity flow from the main drain line and surface overflow system or feature water source line, and that is cleanable.  The vent shall measure a minimum of 12.56 square inches (8103 mm2) in area and shall be equipped with a screen, or equivalent device, to prohibit entry by animals. The vent shall be designed to minimize rainwater entry into the tank. Tanks with vented lids shall not be required to be equipped with a separate vent. Tanks shall be constructed of concrete or other impervious and structurally rigid material, with adequate manway access, shall be watertight, shall be free from structural cracks and shall have a nontoxic smooth finish. |
| YNN/A | 454.1.6.5.11 | An automatic and manual water makeup control shall be provided to maintain the water level at the lip of the overflow gutter or at the mouth of the recessed automatic surface skimmers and shall discharge through an air gap into a fill pipe or collector tank.  *Over the rim fill spouts are prohibited.* |
| YNN/A | 454.1.5.5 | Below grade collector tank(s) must have adequate access for cleaning, maintenance and inspection. |
| YNN/A | 454.1.6.5.12 | A portable, robotic or plumbed in vacuum cleaning system shall be provided.  **Note: Cleaning devices shall not be used while the pool is open to bathers.** |
| YNN/A | 454.1.6.5.12 | All vacuum pumps shall be equipped with hair and lint strainers. |
| YNN/A | 454.1.6.5.12 | When the system is plumbed-in, the vacuum fittings shall be located to allow cleaning the pool with a 50-foot (15 240 mm) maximum length of hose. |
| YNN/A | 454.1.6.5.12 | Vacuum fittings shall be located remotely in the pool deck. Remote vacuum assemblies shall be installed with an equalizer valve and an equalizer line when the vacuum piping system is connected directly to pump suction and the suction line shall be protected with a threaded plug when not in use. The equalizer valve shall be a spring-loaded vertical check valve that will not allow direct suction on the equalizer line. Float valves are prohibited. The equalizer line inlet shall be installed at least 1 foot (305 mm) below the normal pool water level and the equalizer line inlet shall be protected by an ANSI/APSP 16 compliant cover/grate. The equalizer line shall be sized to handle the expected flow with a 2 -inch (51 mm) minimum line size. The provision of a filtered, chemically treated water supply to the equalizer piping shall be provided to assist in preventing algae from forming within the equalizer piping arrangement. |
| YNN/A | 454.1.6.5.12 | Bag type cleaners that operate as ejectors on potable water supply pressure are protected by a vacuum breaker. |
| YNN/A | 454.1.6.5.13 | A rate of flow indicator (flowmeter), reading in gpm, shall be installed on the return line following filtration and prior to chemical injection |
| YNN/A | 454.1.6.5.13 | The rate of flow indicator shall be properly sized for the design flow rate and shall be capable of measuring from three-quarters to at least one and one-quarter times the design flow rate. The flow measuring device shall have an operating range appropriate for the anticipated flow rates and be installed where it is readily accessible to read and for routine maintenance |
| YNN/A | 454.1.6.5.13 | The clearances upstream and downstream from the rate of flow indicator shall comply with manufacturer’s installation specifications. |
| YNN/A | 64E-9.004(e) | Landscape irrigation water that wets the wet deck area of the pool, the pool itself, enters the collector tank, or wets an interactive water feature must be potable water from a public water system or shall meet the bacteriological quality of potable water as evidenced by annual laboratory analysis submitted to the department. Reclaimed water may not be used in these areas. If reclaimed water is used in the vicinity of the pool (inside of the pool fence or within 100’ of the pool water’s edge) it must employ drip irrigation or soaker hoses. Signs shall be posted notifying pool patrons that reclaimed water is in use and is not to be consumed. |
| YNN/A | 64E-9.008(13) | A lifeguard and/or safety plan shall be submitted to the department with the application for the initial operation permit when climbable structures are installed. |
| **WATER FEATURES** | | |
| YNN/A | 454.1.6.5.17 | Water features such as waterfalls or fountains in pools may use up to 50 percent of the return water that has passed through the filter and received the addition of chemicals may be diverted to water features such as waterfalls or fountains in pools, however, all waters used in the feature shall not be counted toward attaining the minimum turnover rate specified in 454.1.1.1 or 454.1.6.5.2, or elsewhere in the code. Example: If designed recirculation flowrate is 100 gpm and the features are using the maximum 50% allowed the cumulative flowrate must now be 150 gpm. |
| YNN/A | 454.1.6.5.17 | Return piping system shall be designed and capable of handling the additional feature flow when the feature is turned off, otherwise the pump speed shall be reduced automatically. |
| YNN/A | 454.1.6.5.17 | Features that require more than 50 percent of the flow rate shall be supplied by an additional pump that drafts from a suitable collector tank. Example: Recirculation Flow in gpm + Feature flowrate in gpm = required gallons for collector tank(s). |
| YNN/A | 454.1.6.5.17 | All water features that utilize water from the pool shall be designed to return the water to the pool. |
| YNN/A | 454.1.6.5.17 | Spray features mounted in the pool deck shall be flush with the pool deck and shall be designed with the safety of the pool patron in mind. |
| YNN/A | 454.1.6.5.17 | Where the pool’s feature flow is greater than 20 percent, that pool shall comply with Section 454.1.6.5.19 and 454.1.7.9 for automated controllers and with Section 454.1.9.2.7 for 12ppm (mg/L) disinfectant capacity by halogen feeder equipment. |
| **ZERO DEPTH ENTRY POOLS** | | |
| YNN/A | 454.1.9.6.1 | Zero depth entry pools shall have a continuous floor slope from the water edge to 3 feet (914 mm) of water depth at which point the slope can transition to another, less steep continuous slope. Floating safety ropes and slope transition markings are not required at this transition point. |
| YNN/A | 454.1.9.6.2 | The deck level perimeter overflow system with grate shall be provided at the water’s edge across the entire zero depth portion of the pool. Zero entry grate must be 8 to 12 inches wide, slip resistant, and constructed for intended purpose of submersion in water and exposure to UV sunlight. |
| YNN/A | 454.1.9.6.3 | The pool deck may slope toward the pool for no more than 7 feet (2,133 mm), as measured from the overflow system grate outward. Beyond this area the deck shall slope away from the pool in accordance with Section 454.1.2.2.3. |
| YNN/A | 454.1.9.6.4 | “No Entry” markers shall be provided along the pool wall edge where the water depth is more than 10” (254 mm) but less than 3 feet (914 mm) unless stairs and handrails are provided. “No Entry” markers shall be slip resistant, shall have 2-inch-high (51 mm) letters, shall be located within 2 feet (610 mm) of the pool edge and shall be spaced no more than 8 feet (2438 mm) apart, or 15 feet (4572 mm) apart if 4-inch (102 mm) high letters are provided. ”No Diving” markers are not required around zero entry area. |
| YNN/A | 454.1.9.6.5 | Additional inlets shall be provided in areas of less than 18 inches (457 mm) deep. The numbers and location shall be such as to ensure a 1-hour turnover in this area. |
| YNN/A | 454.1.9.6.6 | Min.1 turnover every 2 hours in areas 18” (457 mm) to 3’ (914 mm) deep. |
| YNN/A | 454.1.9.6.6 | T The design plans submitted by the applicant shall provide the volume of water in the pool areas of 0” – 18” depth, the volume of pool water 18” (457 mm) to 3’ (914 mm) depth, the volume of water in the remaining pool area greater than 3‘ (914 mm) depth and the total volume in the pool for determination of minimum circulation flow. The volume calculations shall provide verification that the correct volume of water is used to determine the minimum flow at the 1-hour, 2-hour and the 6-hour flow requirements.  0” – 18” Capacity: \_\_\_\_\_\_\_\_\_\_ Flow Rate: \_\_\_\_\_\_\_\_\_ T/O: \_\_\_\_\_\_\_\_\_\_\_\_\_  18” – 36” Capacity ­­­­­\_\_\_\_\_\_\_\_\_\_ Flow Rate: ­­­­­­­­\_\_\_\_\_\_\_\_\_ T/O: \_\_\_\_\_\_\_\_\_\_\_\_\_  Remaining Volume: \_\_\_\_\_\_\_\_\_\_\_ Flow Rate: \_\_\_\_\_\_\_\_\_\_\_ T/O: \_\_\_\_\_\_\_\_\_\_\_ |
| YNN/A | 454.1.9.6.7 | Those portions of the zero-depth entry pool, where the water depth will not allow for the proper installation of underwater lighting, shall be provided with 6 foot-candles (60 lux) of lighting on the deck and the water. |
| YNN/A | 454.1.9.6.8 | Play structures in a zero-depth entry area [in depth 0–3 feet (0 to 914 mm)] may be within 15 feet (4572 mm) of the pool walls but shall comply with sound engineering requirements for the safety of pool patrons. |
| YNN/A | 454.1.9.3.6 | Play features with overhead clearance of less than 4’ are blocked to preclude children becoming entrapped. |
| **HEATERS** | | |
| YNN/A | 454.1.6.5.14 | Pool heaters shall comply with nationally recognized standards acceptable to the jurisdictional building department and to the design engineer. |
| YNN/A | 454.1.6.5.14 | Pools equipped with heaters shall have a fixed thermometer mounted in the pool recirculation line downstream from the heater outlet. **Thermometers mounted on heater outlets do not meet this requirement.** |
| YNN/A | 454.1.6.5.14 | A sketch of any proposed heater installation including valves, thermometer, pipe sizes, and material specifications shall be included in the application for permit prior to installation. |
| YNN/A | 454.1.6.5.14 | Piping and influent, effluent and bypass valves which allow isolation or removal of the heater from the system shall be provided. *\*\*\*Valves must be proportional type, gate type valves prohibited* |
| YNN/A | 454.1.6.5.14 | Materials used in solar and other heaters shall be nontoxic and acceptable for use with potable water. |
| YNN/A | 454.1.6.5.14 | Heaters shall not prevent the attainment of the required turnover rate. |
| **POOL WASTEWATER** | | |
| YNN/A | 454.1.6.5.15 | Pool wastewater shall be discharged through an air gap. |
| YNN/A | 454.1.6.5.15 | Pool wastewater disposal shall be to sanitary sewers, storm sewers, drain fields, or by other means, in accordance with local requirements including obtaining all necessary permits. |
| YNN/A | 454.1.6.5.15 | All lines shall be sized to handle the expected flow. |
| YNN/A | 454.1.6.5.15 | There shall not be a direct physical connection between any drain from a pool or recirculation system and a sewer line. |
| **ADDITION OF CHEMICALS** | | |
| YNN/A | 454.1.6.5.19 | Automated ORP & PH controllers with sensing probes shall be provided on all newly built public swimming pools to assist in maintaining proper disinfection and pH levels. |
| YNN/A | 454.1.6.5.18 | Only NSF 60 approved chemicals shall be provided. |
| YNN/A | 64E-9.004(10) | A test kit is provided and is capable of testing for free active halogens, total or combined available chlorine and pH. **PROVIDE APPROVED TEST KIT** |
| YNN/A | 64E-9.004(10)(a) | If a cyanurate type feeder is used, a cyanuric acid test kit is provided. **PROVIDE APPROVED TEST KIT** |
| YNN/A | 64E-9.004(10)(a) | If a salt solution in the pool water is necessary for a chlorine generator, a sodium chloride test kit is provided. **PROVIDE APPROVED TEST KIT** |
| YNN/A | 454.1.6.5.16 | Disinfection and pH adjustment shall be added to the pool recirculation flow using automatic feeders meeting the requirement of ANSI/NSF 50. |
| YNN/A | 454.1.6.5.16 | All chemicals shall be fed into the return line after the pump, heater and filters unless the feeder was designed by the manufacturer and approved by the NSF to feed to the collector tank or to the suction side of the pump. |
| **HYPOHALOGENATION AND ELECTROLYTIC CHLORINE GENERATORS** | | |
| YNN/A | 454.1.6.5.16.2 | Hypohalogenation: The hypohalogenation-type feeder and electrolytic chlorine generators shall be adjustable from 0 to full range. |
| YNN/A | 454.1.6.5.16.2 | Hypohalogenation: The feeder is capable of feeding a dosage of 6 ppm to the minimum required turnover flow rate (if solution type feeders, a 5% calcium hypochlorite or 10% sodium hypochlorite solution is to be utilized). |
| YNN/A | 454.1.6.5.16.2 | Hypohalogenation: An electrical feeder, when used, has electrical interlock with the recirculation pump to prevent the disinfectant from siphoning or feeding directly into the pool or pool piping under any type failure of the recirculation equipment. |
| YNN/A | 454.1.6.5.16.2 | Hypohalogenation: Solution crock has a volume equal to at least 50 percent of the maximum daily feed capacity of the solution feeder. Solution crock is marked to indicate contents. The solution reservoirs shall be manufactured to accommodate corrosive and oxidizing liquid chemicals. Tanks not located in a room or enclosure shall have a lockable lid |
| YNN/A | 454.1.6.5.16.2 | Erosion type feeder shall have a flowmeter and flow adjustment valve. |
| **FEEDER FOR pH ADJUSTMENT** | | |
| YNN/A | 454.1.6.5.16.3 | Feeders for pH adjustment shall be provided on all pools. |
| YNN/A | 454.1.6.5.16.3 | pH adjustment feeder: pH adjustment feeders shall be positive displacement type, shall be adjustable from 0 to full range. |
| YNN/A | 454.1.6.5.16.3 | pH adjustment feeder: An electrical feeder has electrical interlock with the recirculation pump to prevent discharge when the recirculation pump is not operating. |
| YNN/A | 454.1.6.5.16.3 | pH adjustment feeder: When soda ash is used for pH adjustment, the maximum concentration of soda ash solution to be fed shall not exceed 1/2-pound (0.2 kg) soda ash per gallon of water. Feeders for soda ash shall be capable of feeding a minimum of 3 gallons (11 L) of the above soda ash solution per pound of gas chlorination capacity. |
| YNN/A | 454.1.6.5.16.3 | pH adjustment feeder: Solution crock has a volume equal to at least 50 percent of the maximum daily feed capacity of the solution feeder. Solution crock is marked to indicate contents. The solution reservoirs shall be manufactured to accommodate corrosive and oxidizing liquid chemicals. Tanks not located in a room or enclosure shall have a lockable lid |
| **ULTRAVIOLET (UV) LIGHT DISINFECTANT EQUIPMENT** | | |
| YNN/A | 454.1.6.5.16.6 | Ultraviolet (UV) light disinfectant equipment may be used as supplemental water treatment on public pools [and additional treatment on interactive water features (IWF’s)] subject to the conditions of this paragraph and manufacturer’s specifications. UV is encouraged to be used to eliminate or reduce chlorine resistant pathogens, especially the protozoan cryptosporidium. |
| YNN/A | 454.1.6.5.16.6 (1) | UV equipment and electrical components and wiring shall comply with the requirements of the National Electrical Code and the manufacturer shall provide a certification of conformance to the jurisdictional building department**. \*TO BE REVIEWED BY BUILDING DEPT.** |
| YNN/A | 454.1.6.5.16.6 (2) | UV equipment shall meet UL standards and shall be electrically interlocked with recirculation pump(s) on all pools and with feature pumps(s) on an IWF such that when the UV equipment fails to produce the required dosage as measured by an automated sensor, the feature pump(s) are disabled so the water features do not operate. |
| YNN/A | 454.1.6.5.16.6 (3) | UV equipment shall be certified for secondary or supplemental disinfection per NSF 50-2020. |
| YNN/A | 454.1.6.5.16.6 (4) | UV equipment that is not certified for secondary disinfection per NSF 50-2020 shall be installed and configured to constantly produce a validated dosage of at least 40 mJ/cm2 (millijoules per square centimeter) at the end of lamp life **and** conform with all other third party validation criteria in accordance with USEPA Ultraviolet Disinfectant Guidance Manual dated November 2006, publication number EPA 815-R-06-007, whenever these devices are used in high-risk (IWF) pools for secondary disinfection. |
| YNN/A | 454.1.6.5.16.6 (5) | The UV equipment shall not be located in a side stream flow and shall be located to treat all water returning to the pool or water features. Any treatment chemicals shall be injected downstream of the UV equipment. |
| **OZONE EQUIPMENT** | | |
| YNN/A | 454.1.6.5.16.4 | Ozone generating equipment may be used for supplemental water treatment on public swimming pools subject to the conditions of this section. |
| YNN/A | 454.1.6.5.16.4.1 | Ozone generating equipment electrical components and wiring shall comply with the requirements *of Chapter 27 of the Florida Building Code, Building* and the manufacturer shall provide a certificate of conformance. The process equipment shall be provided with an effective means to alert the user when a component of this equipment is not operating. **\*TO BE REVIEWED BY BUILDING DEPT.** |
| YNN/A | 454.1.6.5.16.4.2 | Ozone generating equipment shall meet the NSF/ANSI Standard 50. |
| YNN/A | 454.1.6.5.16.4.3 | The concentration of ozone in the return line to the pool shall not exceed 0.1 mg/L. |
| YNN/A | 454.1.6.5.16.4.4 | The injection point for ozone generating equipment shall be located in the pool return line after the filtration and heating equipment, prior to the halogen injection point, and as far as possible from the nearest pool return inlet with a minimum distance of 4 feet (1219 mm). Injection methods shall include a mixer, contact chamber, or other means of efficiently mixing the ozone with the recirculated water. The injection and mixing equipment shall not prevent the attainment of the required turnover rate of the recirculation system. Ozone generating equipment shall be equipped with a check valve between the generator and the injection point. Ozone generating equipment shall be equipped with an airflow meter and a means to control the flow. The generator shall be electrically interlocked with the recirculation pump to prevent the feeding of ozone when the recirculation pump is not operating. A flow sensor controller can also be used to turn off the feeder when flow is sensed. |
| YNN/A | 454.1.6.5.16.4.5 | Ventilation requirements. Ozone generating equipment shall be installed in equipment rooms with either forced draft or cross draft ventilation. Below grade equipment rooms with ozone generators shall have forced draft ventilation and all equipment rooms with forced draft ventilation shall have the fan control switch located outside the equipment room door. The exhaust fan intake for forced draft ventilation and at least one vent grille for cross draft ventilation shall be located at floor level. |
| YNN/A | 454.1.6.5.16.4.6 | A self-contained breathing apparatus designed and rated by its manufacturer for use in ozone contaminated air shall be provided when ozone generator installations are capable of exceeding the maximum pool water ozone contact concentration of 0.1mg/L. The self-contained breathing apparatus shall be available at all times and shall be used at times when the maintenance or service personnel have determined that the equipment room ozone concentration exceeds 10 mg/L. Ozone generator installations which require the self-contained breathing apparatus shall also be provided with Draeger type detector tube equipment which is capable of detecting ozone levels of 10 mg/L and greater.  **Exception:** In lieu of the self-contained breathing apparatus an ozone detector capable of detecting 1 mg/L may be used. Said detector shall be capable of stopping the production of ozone, venting the room and sounding an alarm once ozone is detected. Said detector shall be capable of stopping the production of ozone, venting the room and sounding an alarm once ozone is detected. |
| **IONIZATION EQUIPMENT** | | |
| YNN/A | 454.1.6.5.16.5 | Ionization units may be used as supplemental water treatment on public pools subject to the condition of this section. |
| YNN/A | 454.1.6.5.16.5.1 | Ionization equipment and electrical components and wiring shall comply with the requirements of *Chapter 27 of the Florida Building Code, Building* and the manufacturer shall provide a certification of conformance. |
| YNN/A | 454.1.6.5.16.5.2 | Ionization equipment shall meet the NSF/ANSI Standard 50, *Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs*, or equivalent, shall meet UL standards and shall be electrically interlocked with a recirculation pump. |
| **COPPER/SILVER IONIZATION EQUIPMENT** | | |
| YNN/A | 454.1.10.3 | The installation of copper or copper/silver ionization units and ozone generators capable of producing less than a pool water ozone contact concentration of 0.1 milligrams per liter (mg/L) shall not be considered a pool repair or alteration provided compliance when the following is met:  1. The ionization or ozone generator unit complies with paragraph 64E9.008 (10)(e), Florida Administrative Code.  2. The manufacturer provides one set of signed and sealed engineering drawings indicating the following:  a. The unit does not interfere with the design flow rate.  b. The unit and the typical installation meet the requirements of the National Electrical Code.  c. A copper test kit and information regarding the maximum allowed copper and silver level and the minimum required chlorine level shall be available to the pool owner.  d. The unit shall meet the requirements of NSF/ANSI Standard 50.  3. At least 7 days before the time of installation, the installer will provide a photocopy of the above drawings and a letter of intent identifying the pool on which the unit is to be installed.  4. Upon completion of the installation, a professional engineer or electrician licensed in the state of Florida shall provide a letter to the county health department, indicating the unit was properly installed in accordance with the typical drawings, the National Electrical Code and local codes. |
| **ELECTRICAL \*TO BE REVIEWED BY BUILDING DEPT.** | | |
| YNN/A | 454.1.10.4.1 | Ground fault circuit interrupter protection for personnel. Outlets supplying repaired, replaced, altered, or relocated pool pump motors connected to single-phase, 120-volt through 240-volt branch circuits, whether by receptacle or by direct connection, and outlets supplying all other repaired, replaced, altered, or relocated electrical equipment and underwater luminaires operating at voltages greater than the low voltage contact limit, connected to single-phase, 120-volt through 240-volt branch circuits, rated 15 and 20 amperes, whether by receptacle or by direct connection, shall be provided with ground fault circuit interrupter protection for personnel. |
| **EQUIPOTENTIAL BONDING \*TO BE REVIEWED BY BUILDING DEPT.** | | |
| YNN/A | 454.1.10.4.2 | Equipotential bonding. Any of the parts specified in Sections 680.26(B)(1) through(B)(7) of the NFPA 70, National Electrical Code that are repaired, replaced, altered, or installed new at an existing swimming pool shall be connected to the existing bonding system using solid copper conductors, insulated, covered, or bare, not smaller than 8 AWG or with rigid metal conduit of brass or other identified corrosion resistant metal. Connections to bonded parts shall be made in accordance with Section 250.8 of NFPA 70, *National Electrical Code*. An 8 AWG or larger solid copper bonding conductor provided to reduce voltage gradients in the pool area shall not be required to be extended or attached to remote panelboards, service equipment, or electrodes. All metallic float in light rings shall be connected to the equipotential bonding grid. Float in light rings with no provision for bonding, and other devices which do not provide an electrical connection between a metallic underwater luminaire and the forming shell of a wet niche fixture, including screws or bolts not supplied by the luminaire’s manufacturer and listed for use with the specific luminaire, shall not be allowed for use with any underwater luminaire that is required to be grounded. Where none of the bonded parts is indirect connection with the pool water, the pool water shall be in direct contact with an approved corrosion resistant conductive surface that exposes not less than 9 square inches (5800 mm2) of surface area to the pool water at all times. The conductive surface shall be located where it is not exposed to physical damage or dislodgement during usual pool activities, and it shall be bonded in accordance with Section 680.26(B) of the NFPA 70, *National Electrical Code.* A bonded concrete pool shell shall be considered to be a conductive surface. The interior metallic surface or surfaces of any forming shell (wet niche) shall not be covered with any material, including plaster, except potting compound covering internal bonding connections in conformance with 680.23(B)(2)(b) of NFPA 70, *National Electrical Code*, shall be allowed. |

**Appendix A**

**STEPS REQUIRED TO DETERMINE CODE COMPLIANCE**

Calculate required minimum bathing load – Transient (minimum 6 sq.ft. surface area and 1.0gpm per unit) or Non-Transient (minimum 4.5 sq.ft. surface area and 0.75gpm per unit)

Divide GPM calculations by 5 to determine required bather load. **ALL CALCULATIONS SHOULD BE ‘ROUNDED UP’**

**EXAMPLES**

**Transient Pool with 200 Living Units**

Living Units x 6sq.ft. = 1,200 sq.ft. minimum surface area required, **and**

Living Units x 1.0gpm = 200gpm minimum design flow required.

Pool/s must meet both criteria.

200gpm ÷ 5 = 40 bathers

**Non-Transient Pool with 117 Living Units**

Living Units x 4.5sq.ft. = 526.50 sq.ft. minimum surface area required, **and**

Living Units x 0.75gpm = 87.75gpm minimum design flow required (rounded up to 88gpm)

88gpm ÷ 5 = 17.60 bathers (rounded up to 18 bathers and 90gpm minimum flow)

Pool/s must meet both criteria

*If a facility decides to have a pool, spa and IWF the sizing can be split between all three bodies of water.*

**Multi-feature Transient Facility with 462 living units**

Living Units x 6sq.ft. = 2,772 sq.ft. minimum surface area required, **and**

Living Units x 1.0gpm = 462gpm minimum design flow required.

462gpm ÷ 5 = 92.40 bathers (rounded up to 93 bathers and 465gpm minimum flow)

**Main Pool**

Surface area = 2,200 sq.ft.

Bathers = 56

Potential flow = 280gpm

**Spa**

Surface area = 120 sq.ft.

Bathers = 12

Minimum flow = 60gpm

**Interactive Water Feature**

Surface area = 452 sq.ft.

Bathers = 25

Potential flow = 125gpm

**Multi-feature Non-Transient Facility with 462 living units**

Living Units x 4.5sq.ft. = 2,079 sq.ft. minimum surface area required, **and**

Living Units x 0.75gpm = 346.5gpm minimum design flow required.

347gpm ÷ 5 = 69.40 bathers (rounded up to 70 bathers and 350gpm minimum flow)

**Main Pool**

Surface area = 1,507 sq.ft.

Bathers = 33

Potential flow = 165gpm

**Spa**

Surface area = 120 sq.ft.

Bathers = 12

Minimum flow = 60gpm

**Interactive Water Feature**

Surface area = 452 sq.ft.

Bathers = 25

Potential flow = 125gpm