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| **Project:** |  | | | County: |  | | | **Date:** | **7/17/2024** | |
| 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 approval of the construction.

**DEFINITIONS:**

**“Spa pool”** means a pool used in conjunction with high-velocity air or water.

**“Swim spa”** is a pool used in conjunction with a directional flow of water against which one swims.

**“Portable pool”** means a pool or spa, and related equipment systems of any kind, which is designed or intended to be movable from location to location.

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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) |
| **SPA SPECIFIC REQUIREMENTS** | | |
| YNN/A | 454.1.1.1 | The bathing load for spa type pools shall be based on one person per each 10 square feet (0.9 m²) of surface area. |
| YNN/A | 454.1.8.1 | Spa pools shall meet the requirements of Sections 454.1.1 through 454.1.6.5, unless specifically indicated otherwise. |
| YNN/A | 454.1.8.2; 454.1.2.4 | The color, pattern or finish of the pool interior shall not obscure the existence or presence of objects or surfaces within the pool. Floors and walls shall be white or pastel in color and shall have the characteristics of reflecting rather than absorbing light. 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 | 454.1.8.3 | Water depths. Spa type pools shall have a minimum water depth of 2½ feet (762 mm) and a maximum water depth of 4 feet (1219 mm), except that swim spa pools may have a maximum water depth of 5 feet (1524 mm). |
| YNN/A | 454.1.8.5 | Spa pools that are 10 feet (3048 mm) wide or less shall have a minimum 4-foot-wide (1219 mm) unobstructed continuous deck around a minimum of 50 percent of the pool perimeter, with all points on the water surface within 10 feet (3048 mm) horizontally of the deck. |
| YNN/A | 454.1.8.5 | Decks shall not be more than 36 inches (914 mm) below the top of the pool. |
| YNN/A | 454.1.8.5 | Spa pools greater than 10 feet (3048 mm) in width, deck obstructions shall comply with Section 454.1.3.1.6 |
| YNN/A | 454.1.8.6.1 | The return lines of spa type therapy or jet systems shall be independent of the recirculation filtration and heating systems. |
| YNN/A | 454.1.8.6.2 | Therapy or jet pumps shall take suction from the collector tank. Collector tank sizing shall take this additional gallonage into consideration. |
| YNN/A | 454.1.8.6.3 | Heated systems shall incorporate a 15-minute patron-activated timer on the therapy pump circuit. |
| YNN/A | 454.1.8.7 | Spa type pools shall have a minimum of two equally spaced adjustable inlets. |
| YNN/A | 454.1.8.8 | The piping, fittings, and hydraulic requirements shall be in accordance with Section 454.1.6.5. |
| YNN/A | 454.1.8.8 | All recirculation lines to and from the pool shall be individually valved with proportional flow type valves in order to control the recirculation flow. |
| YNN/A | 454.1.8.9 | Spa type pools of over 200 square feet (19 m2) of pool water surface area shall have provisions for vacuuming. |
| YNN/A | 454.1.8.10 | When spa pools are part of a conventional swimming pool, the spa pool area shall be the same water depth as the main pool area. The spa pool area shall meet Sections 454.1.8.6 and 454.1.8.7 and the deck area protected by connected 30-inch-high (762 mm) stanchions, or other approved obstruction to prevent entry, wherever there is a bench with high velocity nozzles producing air bubbles. The deck perimeter at the offset spa area shall not exceed 20 feet (6096 mm) All benches shall have contrasting markings on the leading edges of the intersection of the bench seats. If tile is used, it shall be slip resistant. |
| YNN/A | 454.1.8.11 | Portable and wooden type spa pools are prohibited. |
| **CONSTRUCTION STANDARDS** | | |
| YNN/A | 454.1.2.1 | Spa pools shall be constructed of concrete or other impervious and structurally rigid material. All spa pools shall be watertight, shall be free from structural cracks and shall have a nontoxic smooth and slip-resistant finish. All elevated pools constructed of concrete shall have waterproofing integral to the mix, or applied over the surface prior to the final surface application. 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 | 454.1.2.1(a) | Horizontal tile used in less than 3 feet (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 non-textured 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-inch (152 mm) water line tile shall be provided on all pools with automatic skimmer systems, each a minimum size of 1-inch (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 | The upper part of spa walls in areas 5 feet deep or less shall be within 5 degrees (4,572 mm) 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 (1524 mm) deep or less. |
| **MARKINGS**  ***\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.*** | | |
| YNN/A | 454.1.8.3 | Depth markers and “NO DIVING“ markers are not required on spa type pools with 200 square feet (19 m2) or less of water surface area. |
| 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-inch-high (102 mm) numbers and letters on a contrasting background. *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| YNN/A | 454.1.2.3.1(2) | Depth markers shall indicate actual depth within 3 inches (76 mm). \*Measured at normal operating water level when measured 3 feet (914 m3) from the pool wall. *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| 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 feet (1524 mm) from the deep-end wall). *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| YNN/A | 454.1.2.3.1(3) | Depth markings are visible from inside the pool and from the deck. *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| YNN/A | 454.1.2.3.1(3) | Maximum perimeter distance between depth markings is 25 feet. (Pool size and geometry may necessitate additional depth marking placements about all sides of the pool to meet this requirement). *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| YNN/A | 454.1.2.3.1(4) | When a curb is provided, the depth markings shall be installed on the inside and outside or top of the pool curb. *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| YNN/A | 454.1.2.3.1(4) | When a pool curb is not provided, the depth markings shall be installed on the inside vertical wall at, or above, the water level and on the edge of the deck within 2 feet (610mm) of the pool water.*\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| YNN/A | 454.1.2.3.1(4) | When open type gutter designs are utilized, depth markers shall be located on the back of the gutter wall.. *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| 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. *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| YNN/A | 454.1.2.3.1(5) | When deck level perimeter overflow systems are utilized, additional depth marking signs shall be posted nearby or placed on adjacent fencing or walls and the size shall be increased so they are recognizable from inside the swimming pool.  Alternatively, tile depth markers may be placed at the top of the pool wall just under the water level. Depth markers placed on the pool deck shall be within 3’ (914 mm) of the water. *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| 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 feet (610 mm) of water edge on each side of pool with a maximum distance between markings of 25 feet (7620 mm). *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| YNN/A | 454.1.2.3.1(6) | The "NO DIVING" markings are at least 4-inch high (102 mm) high and contrasting; or a 6-inch (152 mm) tile with min. 4-inch (102 mm) or larger red international “NO DIVING” symbol. *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| 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) | Spas 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 spa 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. All markings installed on horizontal surfaces shall have a slip resistant finish. 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) | Spa 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 spa 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 spa. |
| YNN/A | 64E-9.008(9)(a) | The bathing load will be posted at the spa pool as required in the bathing rules. |
| YNN/A | 454.1.2.3.5 | The lettering for the spa pool rules sign is at least 1 inch high (25.4 mm). |
| YNN/A | 454.1.2.3.5, 454.1.8.13 & 64E-9.004 | The following rules in **BOLD** will be posted at or near poolside and will be legible from spa pool deck:  1. **NO FOOD OR BEVERAGES IN THE SPA POOL OR ON SPA 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 SPA AREA (OR 50 FEET (15,240 MM) FROM UNFENCED POOL).**  **Exception: Service animals as defined in s. 413.08, F.S. All animals are**  **prohibited to enter the pool water or onto the drained area of an interactive**  **water feature**  3. **BATHING LOAD: \_\_\_ PERSONS.**  4. **SPA 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. “**SPA POOL MAXIMUM DEPTH: \_\_\_ FEET \_\_\_ INCHES**, in 2-inch (51 mm) letters  9. **MAXIMUM WATER TEMPERATURE: 104º F (40º C).**  10. **CHILDREN UNDER TWELVE MUST HAVE ADULT SUPERVISION.**  11. **PREGNANT WOMEN, SMALL CHILDREN, PEOPLE WITH HEALTH PROBLEMS AND PEOPLE USING ALCOHOL, NARCOTICS OR OTHER DRUGS THAT CAUSE DROWSINESS SHOULD NOT USE SPA POOLS WITHOUT FIRST CONSULTING A DOCTOR.**  12. **MAXIMUM USE: 15 MINUTES.** |
| YNN/A | 454.1.8.14 | A clock shall be visible from the spa pool to assist the patron in meeting the maximum use requirements. |
| YNN/A | 454.1.8.15 | **If** a spa is equipped with an emergency cutoff or kill switch, it shall include provisions for a minimum 80 decibel audible alarm near the spa to sound continuously until deactivated when such device is triggered. |
| YNN/A | 454.1.8.15 | The following rule in **BOLD** must be posted and visible at all spas with an emergency cut off or kill switch:  “**ALARM INDICATES SPA PUMPS OFF. DO NOT USE SPA WHEN ALARM SOUNDS UNTIL ADVISED OTHERWISE**.” |
| **ACCESS** | | |
| YNN/A | 454.1.8.4 | Steps or ladders shall be provided and shall be located to provide adequate entrance to and exit from the spa. The number of sets of steps or ladders required shall be on the basis of one for each 75 feet (22 860 mm), or major fraction thereof, of pool perimeter. |
| 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. |
| **STEP SETS FOR SPA TYPE POOLS WITH LESS THAN 200 SQUARE FEET (19 M2) OF POOL WATER SURFACE AREA** | | |
| YNN/A | 454.1.8.4 | Step treads shall have a minimum width of 10 inches (254 mm) for a minimum continuous tread length of 12 inches (305 mm) |
| YNN/A | 454.1.8.4 | Step riser heights shall not exceed 12 inches (305 mm). |
| YNN/A | 454.1.8.4 | Intermediate treads and risers between the top and bottom treads and risers shall be uniform in width and height, respectively. |
| YNN/A | 454.1.8.4 | Contrasting markings on the leading edges of the submerged benches and the intersections of the treads and risers are required to be installed in accordance with Section 454.1.2.5.  The front ¾ to 2 inches (19.1 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. |
| **STEP SETS FOR SPA TYPE POOLS WITH MORE THAN 200 SQUARE FEET (19 M2) OF POOL WATER SURFACE AREA SHALL COMPLY WITH SECTION 454.1.2.5** | | |
| 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 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 | 454.1.2.5.5 | Handrails shall be provided for all stairs, shall be anchored in the bottom step and the deck. 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. Grabrails must be mounted in the pool deck at each side of recessed steps. Handrails and grabrails shall extend between 28 and 40 inches (711 mm and 1016 mm) above the step edge and deck. |
| YNN/A | 454.1.2.5.3 | Vinyl liner and fiberglass spas may use other material for the step edge marking, provided the material is permanent, permanently secured, dark in color, nonfading and slip resistant. |
| 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 | 454.1.8.4.1 | Handrail(s) for the stairs are correct length to mount in deck and bottom step. |
| YNN/A | 454.1.8.4.1 | Handrails shall be located to provide maximum access to the steps and handrails shall extend 28 inches (711 mm) above the pool deck |
| YNN/A | 454.1.8.4.2 | Where “figure 4” handrails are used, they shall be anchored in the deck and shall extend laterally to any point vertically above the bottom step. Handrails shall be located to provide maximum access to the steps and handrails shall extend 28 inches (711 mm) above the pool 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. |
| YNN/A | 454.1.2.6(2) | Underwater seat benches may be installed in areas less than 5 feet (1,524 mm) deep. |
| YNN/A | 454.1.2.6(2) | Bench seats must be 14 to 18 inches (356 to 457 mm) wide and must have a dark contrasting tile marking on the seat edge extending 2 inches (51 mm) on the horizontal and vertical surface. Tile shall be slip resistant. Bullnose tile may be substituted and installed in accordance with Section 454.1.2.5.  Vinyl liner, stainless steel and fiberglass pools may use other material for the bench edge marking as detailed in Section 454.1.2.3.1, Item 7, provided the material is permanently secured, dark in color, nonfading and slip resistant. |
| **SUN SHELVES** | | |
| YNN/A | 454.1.2.3.5  64E-9.004 | The following rules must be posted at spas with a sun shelf:  1. “**WARNING: DROP OFF AT SUN SHELF EDGE IS \_\_\_ FEET \_\_\_ INCHES DEEP** in 4-inch (102 mm) letters. *(Not required when sun shelves transition to steps)*  2. **DO NOT PLACE FURNITURE IN POOL**, in 1-inch (25.4 mm) letters. *(Not required when all movable furniture on the deck or in the pool is entirely made from UV-resistant, inert plastic as detailed in Section 454.1.2.6(4)).* |
| YNN/A | 454.1.2.5.5 | Where stairs are used as an access point between a sun shelf and pool area, a handrail shall be provided. The handrail shall be anchored into the bottom step and the sun shelf floor.  (Handrails and grabrails shall extend between 28 and 40 inches (711 mm and 1016 mm) above the sun shelf floor and deck) |
| YNN/A | 454.1.2.5.5 | Where “figure 4” deck-mounted-type handrails are used, they shall be anchored in the sun shelf floor and extend laterally to any point vertically above the bottom step. |
| YNN/A | 454.1.2.5.5 | Where such stairs are inset into the sun shelf, a handrail shall be placed adjacent to each edge of the sun shelf |
| YNN/A | 454.1.2.6 (3) | A sun shelf may be installed in pool areas with no more than 4 feet (1219 mm) of water depth, or less, except where the entire sun shelf transitions to steps, where the depth at the bottom of the steps can exceed 4 feet (1219 mm). **(Measurement taken from point at the end of the sun shelf wall and pool floor radius. +/- 3” allowance not permitted),** |
| YNN/A | 454.1.2.6 (3) | A sun shelf must have markings using sound engineering practices |
| YNN/A | 454.1.2.6 (3) | A sun shelf shall not protrude into the diving bowl and must additionally comply with Section 454.1.2.8. |
| YNN/A | 454.1.2.6 (4) | Furniture that is non-corrosive, will not introduce contaminants into the pool water, and is acceptable to the health department may be placed in a pool. Means shall be taken to protect finish surfacing of the pool shell that is in contact with the furniture. Furniture shall not obstruct any recirculation inlet points or obscure depth and ‘No Diving’ markers |
| YNN/A | 454.1.2.8.1 | Sun shelf areas must be a minimum of 20 inches (508 mm) wide and provide a minimum of 10 square feet (0.93 m2) of horizontal surface adjoining on the edge of the pool over a distance of not less than 3 feet (914 mm). |
| YNN/A | 454.1.2.8.1 | The sun shelf edge that adjoins the pool edge must be continuous. |
| YNN/A | 454.1.2.8.1 | The sun shelf floor shall be horizontal or sloped at a maximum of 1 unit vertical in 60 units horizontal, or shall a have uniform slope from a zero-depth entry, and its maximum depth shall be between 6 inches (152 mm) to 12 inches (254 mm) maximum below the water surface. **Note: Minimum Depth on a Horizontal sun Shelf Floor is 6 inches (152 mm)** |
| YNN/A | 454.1.2.8.2 | Where a sun shelf is installed, wet deck located depth and no diving markers shall be placed every 25 feet (7620 mm) or less, with at least two (2) markers per sun shelf. |
| YNN/A | 454.1.2.8.2 | If the vertical distance between the coping or wet deck and the shelf floor adjacent to the wall is 12 inches (305 mm) or less, these markers shall indicate the water depth of the sun shelf. |
| YNN/A | 454.1.2.8.2 | For open type gutter spas, the vertical distance shall be measured from the gutter lip to the shelf floor. |
| YNN/A | 454.1.2.8.2 | Where vertical distance between the coping or wet deck and the shelf floor adjacent to the wall is more than 12 inches (305 mm), “**No-Entry**” markers as described in Section 454.1.9.6.4 shall be provided in the deck. |
| YNN/A | 454.1.2.8.2 | When the sun shelf does not use stairs as a transition, depth markers of the adjacent pool depth at the sun shelf edge and no-dive markers shall be placed on the sun shelf floor, every 10 feet (3048 mm) or less, along a line no more than 1 foot (305 mm) back from the edge of the sun shelf above the deeper pool. |
| YNN/A | 454.1.2.8.2 | All markers shall comply with Items 2, 6, and 7 of Section 454.1.2.3.1, except the distance between them as described in this section shall be followed. |
| YNN/A | 454.1.2.8.3 | If the vertical distance between the coping and the shelf floor adjacent to the wall is more than 10 inches (254 mm), stairs up to the deck or coping shall be provided which shall comply with Sections 454.1.2.5.3 and 454.1.2.5.5; or a zero-depth entry area complying with Section 454.1.9.6 may be provided instead of stairs. |
| YNN/A | 454.1.2.8.3 | For open gutter spas, where the gutter is used as a step, additional steps shall not be required where the distance from the gutter lip to the shelf floor is 10 inches or less. |
| YNN/A | 454.1.2.8.3 | At least one handrail must be provided at the sun shelf. The handrail shall be anchored into the bottom step and the sun shelf floor.  (Handrails and grabrails shall extend between 28 and 40 inches (711 mm and 1016 mm) above the sun shelf floor and deck) |
| YNN/A | 454.1.2.8.4 | Additional inlets shall be provided in the sun shelf area. The numbers and location shall be such as to ensure the volume of water in the shelf is filtered and chemically treated once every 60 minutes (1 hour) or less.  Capacity: \_\_\_\_\_\_\_\_\_\_ Flow Rate: \_\_\_\_\_\_\_\_\_ T/O: \_\_\_\_\_\_\_\_\_\_\_\_\_  Remaining Pool Capacity: \_\_\_\_\_\_\_\_\_\_ Flow Rate: \_\_\_\_\_\_\_\_\_ T/O: \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **POOL APPURTENANCES** | | |
| YNN/A | 454.1.3.1.1 | Spa 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 | Spa wet decks shall be uniformly sloped away from the spa 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 | 454.1.3.1.2 | Deck level perimeter overflow systems may be sloped at a maximum of 4 percent toward trench or slot drains for a maximum distance of 18 inches (457 mm) where deck level perimeter overflow systems are utilized. These must be slip resistant. This distance is not applicable to zero depth entries in Section 454.1.9.6.2. Wet deck area in accordance with Section 454.1.3.1.3 shall be provided beyond the trench grate or slot drain. |
| YNN/A | 454.1.3.1.2 | Where a perimeter overflowing edge is provided, up to 40 percent or 65 feet (19 812 mm), whichever is less, of the wet deck may be lowered. Lowered portions of wet deck shall be at least 10 inches (254 mm) but not more than 36 inches (914 mm) below the pool water level. Lowered portions of wet deck shall adjoin the rest of the wet deck via a set of stairs or a ramp at each end. If the lowered deck is adjacent to a transfer wall per section 1009.4 of the *Florida Building Code, Accessibility*, one end of the lowered deck must be connected to the rest of the wet deck via a accessibility route as described in Section 402 of the *Florida Building Code, Accessibility.* |
| 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 (4,572 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 | 454.1.3.1.7 | 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 (1219 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 | 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 | 454.1.3.3.1; 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 (4,880 mm) in length, and at least one 18-inch (457 mm) diameter lifesaving ring with sufficient rope attached to reach all parts of the pool from the pool deck. *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| 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. *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| YNN/A | 454.1.3.3.1; 64E-9(3)(b)(c) | Pools greater than 50 feet (15,250 mm) in length shall have multiple units with at least one shepherd’s hook and one life saving ring located along each of the longer sides of the pools. *\*Note: Not required on spa-type pools with 200 FT2 (19 m2) or less of water surface area.* |
| YNN/A | 64E-9.008(5); 454.1.3.3.3 | If a pool cover or solar blanket is installed, it shall be secured around the entire perimeter and designed to support a live load of an adult person; or, the pool area shall be inaccessible to unauthorized individuals during times of cover or blanket use. |
| 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 | 454.1.4.1 | 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 footcandles (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 footcandles (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 footcandles (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 entrance. |
| 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 (2137 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 feet (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-inch (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 feet (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 | 454.1.8.8 | Spa type pools shall have a minimum of one turnover every 30 minutes. |
| YNN/A | 64E-9.004(5) | 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 percent 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, or the entire system shall not operate. Example: System must not be able to operate without one pump if the additional pumps are not able to maintain the proper flowrate, filtration, and chemical treatment (some type of audible alarming system audible 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 are sized to handle the required recirculation flowrate. |
| **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 (4572 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 inches (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 | If perimeter overflow gutters are used, clean-out access panels shall be located at each gutter drop-out. |
| 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 inch (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 | Skimmer pool water surface area does not exceed 1,000 FT.² (93 m2) excluding offset stairs & swim-outs. |
| YNN/A | 454.1.6.5.3.2 | Skimmer pool does not exceed maximum width of 20 feet (6096 mm). |
| 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 | 454.1.6.5.3.2.1 | Number of skimmers is based upon 1 for every 400 FT.² (37 m2) or fraction thereof of pool water surface area. |
| 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. If installed, the equalizer line outlet shall be installed at least 1 foot (305 mm) below the normal pool water level and the equalizer line outlet shall be protected by an ASME/ANSI A112.19.8 compliant cover/grate. Any equalizer line shall be 2-inch (51 mm) or larger. 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 is 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 | 454.1.6.5.5.2.1 | 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 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 and pressure. |
| **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 | 454.1.8.8; 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 (2038 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 (3,048 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 | Floor inlets for vinyl liner and fiberglass pools, shall be smooth with no sharp edges, and shall not extend more than 3/8 inch (9.5 mm) above the pool floor. |
| YNN/A | 454.1.6.5.9.1 | Pools 30 feet (9144 mm) in width or less, with wall inlets and has wall inlets such that the inlet spacing does not exceed 20 feet (6096 mm) along the entire pool water perimeter. |
| YNN/A | 454.1.6.5.9.2 | Pools 30 feet (9144 mm) in width or less with floor inlets provided such that the spacing between adjacent inlets of the same type does not exceed 20 feet (6096 mm), the spacing between a floor inlet and an adjacent wall without inlets does not exceed 10 feet (3048 mm), and spacing between a floor inlet and an adjacent wall with inlets does not exceed 25 feet (7620 mm). In each case, additional wall or floor inlets may be provided above and beyond the minimum requirements |
| YNN/A | 454.1.6.5.9.6 | 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 & 454.16.5.3 | Main drain outlets: All pools shall be provided with an outlet at the deepest point. |
| 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 percent 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 | 454.1.6.5.10.4 | 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 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. |
| 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 and 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. A vent cap assembly shall be installed to minimize rainwater entry into the tank while still allowing for adequate air movement. The vent cap assembly shall be designed to prohibit entry by animals. The vent opening, where connected to the tank, must be set above the static water surface elevation and crown of the overflow piping, if installed. Tanks with vented lids shall not be required to be equipped with a separate vent. Tanks not located in a room or enclosure shall have a lockable lid. Tanks shall be constructed of concrete or other impervious and structurally rigid material, with adequate access for maintenance and cleaning, 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 | 454.1.8.9;  454.1.6.5.12 | Spa type pools of over 200 square feet (19 m2) of pool water surface area shall have provisions for vacuuming. A portable, robotic or plumbed in vacuum cleaning system.  **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. |
| **WATER FEATURES (NOT THERAPY INLETS)** | | |
| YNN/A | 454.1.6.5.17 | Water features such as waterfalls or fountains in spas 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 percent 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 spa 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 12 mg/L disinfectant capacity by halogen feeder equipment. |
| **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 & 454.1.8.12 | 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 percent calcium hypochlorite or 10 percent sodium hypochlorite solution). |
| 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 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 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. **\*TO BE REVIEWED BY BUILDING DEPT.** |
| 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