CABINET FOR HEALTH AND FAMILY SERVICES
Department for Public Health
Division of Public Health Protection and Safety
(Amended at ARRS Committee)

902 KAR 10:123. Kentucky public swimming and bathing facilities construction requirements.

RELATES TO: KRS 211.015, 211.090, 211.205, 211.210, 211.220, 211.990(2), 29 C.F.R. 1910.119, 15 U.S.C. 8003

STATUTORY AUTHORITY: KRS 194A.050, 211.180

NECESSITY, FUNCTION, AND CONFORMITY: KRS 194A.050(1) requires the secretary of the Cabinet for Health and Family Services to promulgate administrative regulations necessary to protect, develop, and maintain the health, personal dignity, integrity, and sufficiency of Kentucky citizens and to operate programs and fulfill the responsibilities vested in the cabinet. KRS 211.180 requires the cabinet to adopt administrative regulations relating to public facilities and their operation and maintenance in a safe and sanitary manner to protect public health and prevent health hazards. This administrative regulation establishes uniform standards for construction of public swimming pools and bathing facilities.

Section 1. Definitions.

(1) "Accessible" means having access to a fixture, connection, appliance or equipment, even if it is necessary to remove an access panel, door, or similar obstruction.

(2) "Agitation" means the mechanical or manual movement to dislodge the filter aid and dirt from the filter element.

(3) "Air gap" means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water or waste to a tank, plumbing fixture, receptor, or other device, and the flood level rim of the receptacle.

(4) "Approved" means that which is acceptable to the cabinet.

(5) "Backwash" means the flow of water through the filter element or media in the reverse direction sufficient to dislodge the accumulated dirt and filter aid and remove them from the filter tank.

(6) "Backwash cycle" means the time required to backwash the filter system thoroughly.

(7) "Backwash rate" means the rate of application of water through a filter during the backwash cycle expressed in gallons per minute per square foot of effective filter area.

(8) "Bather" means a person using a public swimming and bathing facility.

(9) "Cabinet" is defined by KRS 211.015(1)(a).

(10) "Cartridge filter" means a filter that utilizes a porous cartridge as its filter media.

(11) "Diatomaceous earth (DE) filter" means a filter that utilizes a thin layer of diatomaceous earth as its filter media that will need to be periodically replaced.

(12) "Disinfectant" means an approved chemical compound designed for the destruction of pathogenic organisms in bathing facilities and includes chlorine and bromine.

(13) "Equalizer line" means the connection from the skimmer housing to the pool, spa, or hot tub below the weir box that:

(a) Is sized to satisfy pump demand and prevent air lock or loss of prime; and

(b) Contains a float valve assembly and pop-up valve.

(14) "Facility operator" means a person or employee of that person who is responsible for the proper operation and maintenance of the facility.

(15) "Filter" means a device that separates solid particles from water by recirculating it through a porous substance.

(16) "Filtration rate" means the rate of water flow through a filter while in operation.

(17) "Flow meter" means a device that measures the flow of water through piping.
(18) "Head loss" means the total pressure drop between the inlet and the outlet of a component.
(19) "Holding tank" means a storage vessel to retain water for a spray pad recirculation system.
(20) "Hydrojet" means a fitting which blends air and water, creating a high velocity, turbulent stream of air enriched water.
(21) "Inlet" means a fitting or fixture through which filtered water returns to a pool or spa.
(22) "Main outlet" means an outlet fitting at the deepest point of the horizontal bottom of a pool through which water passes to a recirculating pump or surge tank, and is often referred to as a "main drain".
(23) "Modulating valve" means a valve that automatically regulates the flow of water from the main drain through the use of a float ball.
(24) "Perimeter overflow system" means a channel at normal water level that extends completely around the pool perimeter and is used to remove surface debris, also known as an overflow or scum gutter.
(25) "Perlite filter" means a filter that utilizes a thin layer of perlite as its filter media deposited on a septum that needs to be periodically replaced.
(26) "Play feature" means a structure or feature that is added to a pool for the purpose of entertainment.
(27) "Plunge pool" means a pool or area within a pool designed as the termination point for a water slide or water ride.
(28) "Positive shutoff valve" means a valve that completely stops the flow of water.
(29) "Precoat" means the process of depositing a layer of diatomaceous earth or perlite on the filter element at the start of a filter cycle.
(30) "Public swimming and bathing facility" means a natural or artificial body or basin of water that is modified, improved, constructed, or installed for the purpose of swimming or bathing, except for a pool at a private single family residence intended only for the use of the occupant and guests.
(31) "Readily accessible" means direct access without the necessity of removing any panel, door, or similar obstruction.
(32) "Skimmer" means a device designed to continuously remove surface film and water and return it through the filter.
(33) "Splash pad" means an area that:
   (a) Has aquatic play features that spray or drop water for the purpose of wetting people;
   (b) Is designed so that there is no accumulation or ponding of water on the ground;
   (c) Includes both recirculating and non-recirculating water systems; and
   (d) Includes splash pads operated by local governments as defined in KRS 211.205.
(34) "State Building Code" means the requirements established in 815 KAR 7:120.
(35) "State Plumbing Code" means the requirements established in 815 KAR Chapter 20.
(36) "Strainer" means a device used to remove hair, lint, leaves, or other coarse material on the suction side of a pump.
(37) "Suction piping" means that portion of the circulation piping located between the facility structure and the inlet side of a pump.
(38) "Surge tank" means a storage vessel within the pool recirculation system used to retain the water displaced by bathers.
(39) "Total discharge head" means the amount of water that a pump will raise water above its center line.
(40) "Total dynamic head" means the arithmetical difference between the total discharge head and total suction head (a vacuum reading is considered as a negative pressure). This

value is used to develop the published performance curve.

(41) "Total suction head" means the amount of water that a pump will lift by suction.

(42) "Turnover rate" means the time requirements, in hours or minutes, for the circulation system to filter and recirculate a volume of water equal to the facility volume.

(43) "Wading pool" means a pool or area within a pool where the water depth is twenty-four (24) inches or less.

Section 2. Submission of Plans and Specifications for Approval.

(1) A person shall not construct, alter, or reconstruct a public swimming and bathing facility until approval of detailed plans and specifications, with supporting design data as required in this administrative regulation, is granted in writing by the state or local agency having jurisdiction.

(2) The original plans and five (5) copies shall be submitted to the local health department with payment pursuant to Section 3 of this administrative regulation.

(3) The front page of the plans submitted for review and approval shall contain the:

(a) Name of the swimming and bathing facility;

(b) Location by city and county;

(c) Name and contact information for the facility owner;

(d) Name of the installer; and

(e) Name of the engineer, architect, or person preparing the plans.

(4) Plans submitted by an engineer or architect licensed in the state of Kentucky shall bear the individual's official seal.

(5) Plans and specifications on public swimming and bathing facilities constructed by the state or local government, or for a facility with surface area greater than 1,600 square feet, shall be prepared by an engineer or architect registered in the State of Kentucky.

(6) The plans shall be:

(a) Drawn to scale;

(b) Accompanied by proper specifications to permit a comprehensive review of the plans, including the piping and hydraulic details; and

(c) Include:

1. A site plan of the general area with a plan and sectional view of the facility complex with all necessary dimensions;

2. A piping diagram showing all appurtenances including treatment facilities in sufficient detail, as well as pertinent elevation data, to permit a hydraulic analysis of the system;

3. The specifications on all treatment equipment, including performance ranges of pumps, disinfecting equipment, chemical feeders, filters, strainers, lights, skimmers, suction outlets or return inlets, diving boards, safety equipment, and other related equipment;

4. A drawing of the equipment room showing the placement of equipment; and

5. Appropriate fees required by Section 3 of this administrative regulation.

(7) One (1) set of approved plans shall be kept at the job site and available for inspection.

(8) Upon completion of recirculation piping system construction and prior to the piping being tested for air pressure at ten (10) pounds per square inch of pressure for fifteen (15) minutes and covered, the owner or builder shall contact the cabinet for an inspection.

(9) Upon completion of construction, a notarized statement certifying the facility was constructed in accordance with the approved plans and this administrative regulation shall be submitted to the cabinet.

(10) The facility shall not be used before receiving a final inspection and written approval from the cabinet, as well as any other affected state and local regulatory agencies. It shall be the owner or operator's responsibility to notify the cabinet and other involved agencies of construction completion and call for inspection.

(11) Unless construction is begun within one (1) year from the date of approval, the approval shall expire. Extension of approval may be considered upon written request to the cabinet.

(12) A change in location, construction, design, materials, or equipment shall not be made to approved plans or the facility without the written approval of the cabinet.

Section 3. Fees for Plan Review and Construction Inspection.

(1) A fee shall be required for all plan reviews and construction inspections by the cabinet or the local health department to determine compliance with this administrative regulation.

(2) The fee for plan review shall be calculated as follows:

(a) Swimming and bathing facility plan review for gutter pools, the fee shall be $346.50;

(b) Swimming and bathing facility plan review for skimmer pools, the fee shall be $173.25; and

(c) Swimming and bathing facility plan review for minor reconstruction, the fee shall be $115.50.

(3) The fee required shall include $82.50 for interactive water features.

(4) The fee for swimming and bathing facility construction inspection shall be calculated as follows:

(a) Pre-renovation evaluation/consultation, the fee shall be $231.00;

(b) Rough-in construction inspection, the fee shall be $115.50; and

(c) Final construction inspection, the fee shall be $173.25.

(5) The plan review and construction inspection fees required by this section shall be paid to the Kentucky Department for Public Health by check or money order made payable to the Kentucky State Treasurer.

Section 4. Water Supplies.

(1) Potable water from an approved municipal water system or water district shall be supplied to all public swimming and bathing facilities. If these supplies are not available, a potable water supply meeting the approval of the Energy and Environment Cabinet shall be provided.

(2) The water supply shall be capable of providing:

(a) Sufficient quantities of water under pressure to all water-using fixtures and equipment at the facility; and

(b) Enough water to raise the water level by at least one (1) inch in three (3) hours in:

1. Swimming, diving, or wave pools; and
2. Water slide plunge pools.

Section 5. Sewage and Wastewater Disposal.

(1) Sewage or wastewater generated from the operation of a public swimming and bathing facility shall discharge to a public sanitary sewer.

(2) If a public sanitary sewer is not available, sewage or wastewater shall be discharged to a system that complies with 902 KAR 10:085.

(3) Outdoor deck or surface area drainage water may be discharged directly to storm sewers, natural drainage areas, or to the ground surface without additional treatment. This drainage shall not result in nuisance conditions that create an offensive odor, a stagnant wet area, or an environment that allows for the breeding of insects.

(4) Filter backwash shall be discharged to public sanitary sewers, or if unavailable, to a system approved by the cabinet.

Section 6. Facility Design and Construction.

(1) All public swimming and bathing facilities, and attendant structures, such as bathhouses, dressing rooms, or restrooms, except for beach areas at bathing beaches, shall

meet the design, materials, fixture, and construction requirements of 815 KAR 7:120 and 815 KAR Chapter 20.

(2) Depth markings and lane lines.

(a) On all facilities other than beaches, the depth of the water shall be marked plainly at or above the water surface on the vertical wall of the facility, if possible, and on the edge of the deck next to the facility. Depth markers shall be placed at the following locations:

1. At the points of maximum and minimum depths;

2. At the point of change of slope between deep and shallow portions or transition point;

3. At intermediate two (2) feet increments of water depth; and

4. If the facility is designed for diving, at appropriate points to denote the water depths in the diving area.

(b) Depth markers shall be spaced so that the distance between adjacent markers is not greater than twenty-five (25) feet as measured peripherally.

(c) Depth markers shall be in Arabic numerals at least four (4) inches high and of a color contrasting with the background. If depth markers cannot be placed on the vertical walls at or above the water level, other means shall be used, so that markings shall be plainly visible to persons in the facility.

(d) Lane lines or other markings on the bottom of the facility shall be a minimum of ten (10) inches in width and be of a contrasting color.

(3) A safety line supported by buoys shall be provided across the section of the pool where the break between the shallow and deep water occurs (five (5) feet) except if the pool is being used for organized activities or during operation as a wave pool. The line shall be placed one (1) foot toward the shallow end from where the break occurs.

(4) The hydrojet auxiliary air or water pump for a spa shall be controlled by an on-off switch with a fifteen (15) minute timer located and labeled at least five (5) feet away from the spa.

(5) All facilities shall provide an emergency automatic pump shut off located adjacent to the telephone.

Section 7. Facility Water Treatment Systems.

(1)

(a) A recirculation system, consisting of pumps, piping, filters, water conditioning, disinfection equipment, and other accessory equipment shall be provided to clarify, chemically balance, and disinfect the water for all swimming and bathing facilities, except bathing beaches.

(b) All system components, including piping, shall bear the NSF International (NSF) potable water (NSF-pw) mark.

(c) All pool equipment systems shall be certified to NSF or American National Standards Institute (ANSI) 50 standards by an ANSI accredited certification body.

(d) Pumps greater than seven and five-tenths (7.5) horse power that are not required to meet NSF testing standards shall be considered on a case-by-case basis.

(2) Pumping equipment.

(a) The recirculation pump and motor shall deliver the flow necessary to obtain the turnover required in the table in paragraph (b) of this subsection. A valve for flow control and a flow meter shall be provided in the recirculation pump discharge piping.

(b) The turnover rate shall be:

Type of Facility	Turnover Required

Diving pools	8 hours or less
Wading pools, Spas, Therapy pools, Splash pad holding tanks, Facility equipped with a spray feature not providing additional filtered and disinfected water to the spray feature	30 minutes or less
Wave pools, Lazy rivers, Water rides	2 hours or less
Vortex pools, Plunge pools	1 hour or less
All other pools	6 hours or less

(c) Higher flow rates may be necessary in pools with skimmers so that each skimmer shall have a minimum flow rate of thirty (30) gallons per minute.

(d) The pump shall be of sufficient capacity to provide a minimum backwash rate of fifteen (15) gallons per square foot of filter area per minute in sand filter systems.

(e) The pump or pumps shall supply the required recirculation rate of flow to obtain the turnover rate required at a total dynamic head of at least:

1. Fifty (50) feet for all vacuum filters;
2. Seventy (70) feet for pressure sand or cartridge filters; or
3. Eighty (80) feet for pressure diatomaceous earth filters and perlite filters.

(f) If the pump is located at an elevation higher than the facility water line, it shall be self-priming.

(g) If vacuum filters are used, a vacuum limit control shall be provided on the pump suction line. The vacuum limit switch shall be set for a maximum vacuum of eighteen (18) inches of mercury.

(h) A compound vacuum-pressure gauge or vacuum gauge shall be installed on the suction side of the pump.

(i) A pressure gauge shall be installed on the pump discharge line adjacent to the pump.

(j) Valves shall be installed to allow the flow to be shut off during cleaning, switching baskets, or inspection of hair and lint strainers.

(k) A hair or lint strainer with openings no more than one-eighth (1/8) inch is required except for pumps that are used with vacuum filter systems.

(3) Water heaters shall be installed at all indoor swimming and bathing facilities, and shall comply with the following:

(a) A water heater piping system shall be equipped with a bypass. A valve shall be provided at the bypass and on the influent and effluent heater piping. The influent and effluent heater piping shall be metallic and installed in accordance with heater manufacturer's recommendations;

(b) A heating coil, pipe, or steam hose shall not be installed in any swimming and bathing facility;

(c) Thermometers shall be provided in the piping to check the temperature of the water returning from the facility and the temperature of the blended water returning to the facility;

(d) An automatic temperature limiting device with thermostatic control that prevents the introduction of water in excess of 100 degrees Fahrenheit to swimming and diving pools and in excess of 104 degrees Fahrenheit for spas shall be provided and shall be accessible only to the facility operator;

(e) A pressure relief valve shall be provided and shall be piped to within six (6) inches of the floor;

(f) Venting of gas or other fuel burning water heaters shall be provided in accordance with the State Building Code;

(g) Heaters for indoor swimming and diving pools shall be capable of maintaining an overall pool water temperature between seventy-six (76) degrees Fahrenheit and eighty-four (84) degrees Fahrenheit;

(h) Combustion and ventilation air shall be provided for fuel burning water heaters in accordance with manufacturer recommendations or the State Building Code;

(i) Heaters for indoor swimming and diving pools shall be sized on a basis of 150 British Thermal Units per hour input per square foot of pool water surface area; and

(j) All heaters shall meet the latest standards of applicable recognized testing agencies.

(4) A flow meter shall be:

(a) Located so that the rate of recirculation may be easily read;

(b) Installed on a straight length of pipe at a distance of at least ten (10) pipe diameters downstream, and five (5) pipe diameters upstream from any valve, elbow, or other source of turbulence, except for those specifically designed without separation parameters; and

(c) Installed on each recirculation system, splash pad feature, waterslide, any other type of spray feature, and on multiple filtration units, except at government-owned, non-recirculating splash pads.

(5) Vacuum cleaning system.

(a) A vacuum cleaning system shall be:

1. Provided for all facilities except beaches; and
2. Capable of reaching all parts of the facility bottom.

(b) A vacuum system that utilizes the attachment of a vacuum hose to the suction piping through the skimmer may be provided.

(c)

1. If the vacuum cleaning system is an integral part of the facility recirculation system, a wall fitting shall be provided:
   a. Eight (8) to twelve (12) inches below the normal water level; and
   b. With a cap or plug that is not removable by bathers.
2. Piping from this connection shall be:
   a. To the suction side of the pump ahead of the hair and lint strainer;
   b. At least one and one-half (1.5) inches in diameter; and
   c. Equipped with a control valve near the junction with the pump suction line.
3. The size of the vacuum hose shall be at least one and one-half (1.5) inches in diameter and be of sufficient strength to prevent collapsing and allow adequate flow for proper cleaning.

(d) Automatic vacuum systems may be used to supplement the built-in vacuum system provided they are capable of removing all debris from the facility bottom.

(e) Vacuum systems shall only be used if the facility is closed to bathers.

(6) Piping, skimmer, and overflow system.

(a) Piping shall comply with the material specifications listed in the Kentucky State Plumbing Code for potable water.

(b) All piping, valves, and fittings shall be color coded, suitably labeled, or marked to denote its purpose within the facility water treatment system.

(c) The piping shall be designed to carry the required quantities of water at velocities not exceeding five (5) feet per second in suction piping and ten (10) feet per second in pressure piping.

(d) Gravity piping shall be sized so that the head loss in piping, fittings, and valves does not exceed the difference in water levels between the facility and the maximum operating level in the surge or filter tank.

(e) The following waste lines shall be provided with six (6) inch air gaps at their points of discharge to the waste pump or sewer:

1. Main outlet bypass or other connections to waste;
2. Surge tank drain and overflow lines;
3. Pump discharge to waste lines; and
4. Gutter bypass to waste lines.

(7) Inlets.

(a) Each inlet shall be directionally adjustable.

(b) The velocity of flow through any inlet orifice shall be in the range of five (5) to twenty (20) feet per second, except that facilities equipped with skimmers shall have a velocity of flow in the range of ten (10) to twenty (20) feet per second.

(c) Inlets shall be located and directed to produce uniform circulation of water to facilitate the maintenance of a uniform disinfectant residual throughout the entire facility without the existence of dead spots.

(d) Inlets in facilities with skimmers shall be twelve (12) inches below the midpoint on the skimmer throat.

(e) Inlets in facilities with a prefabricated perimeter overflow system shall be eight (8) inches or more below the lip of the gutter.

(f) Inlets shall be placed completely around the pool with each serving a linear distance of not more than fifteen (15) feet on center. The pipe serving the inlets shall form a loop completely around the pool, with no reduction in loop pipe sizing.

(g) The number of inlets shall be determined by dividing the perimeter of the pool measured in feet, by fifteen (15). Any fraction thereof may represent one (1) additional inlet.

(h) Pools greater than forty-five (45) feet wide shall be equipped with floor inlets in a grid pattern located no more than seven and five-tenths (7.5) feet from a wall and no more than fifteen (15) feet apart. The grid shall form a continuous loop with no reduction in loop pipe sizing.

(i) A minimum of two (2) inlets is required on all pools, holding tanks, and bathing facilities, regardless of size.

(j) At least one (1) inlet shall be located in each recessed stairwell or other space if water circulation may be impaired.

(k) Prefabricated perimeter overflow systems shall be approved on a case-by-case basis by the cabinet.

(8) Outlets.

(a) All facilities, including holding tanks, shall be provided with a minimum of two (2) main outlets at the deepest horizontal point plumbed in parallel to permit the facility to be completely and easily drained.

(b) Openings and grates shall:

1. Conform to 15 U.S.C. 8003;
2. Be covered by a proper grating that is not removable by bathers;
3. Be at least four (4) times the area of the main outlet pipe;
4. Have sufficient area so that the maximum velocity of the water passing through the grate does not exceed one and one-half (1.5) feet per second at maximum flow; and
5. Have a maximum grate opening width of one-fourth (1/4) inch.

(c) Additional outlets shall be provided in all facilities where the width of the facility is more than sixty (60) feet. In these cases, outlets shall be spaced not more than thirty (30) feet apart, nor more than fifteen (15) feet from side walls, and shall be connected in parallel, not series.

(d) A hydrostatic relief valve may be provided for in-ground swimming and diving pools. Subsurface drainage, if provided, shall not be directly connected to a sanitary

sewer.

(e) Main outlet piping shall be sized for water removal at a rate of at least 100 percent of the design recirculation flow rate and at velocities specified in subsection (6)(c) of this section. It shall function as a part of the recirculation system. The piping system shall be valved to permit adjustment of flow through it.

(9) Perimeter overflow systems.

(a) Swimming and bathing facilities with a water surface area greater than 1,600 square feet shall have a continuous perimeter overflow system.

(b) A perimeter overflow system shall:

1. Extend completely around the facility;

2. Permit inspection, cleaning, and repair;

3. Be designed so that no ponding or retention of water occurs within any portion of the system;

4. Be designed to prevent entrapment of bathers or the passage of small children into an enclosed chamber;

5. Have an overflow lip which is rounded, provides a good handhold, and is level within two-tenths (0.2) inch;

6. Provide for the rapid removal of all water and debris skimmed from the pool's surface;

7. Be designed for removal of water from the pool's upper surface at a rate equal to 100 percent of the design turnover flow rate;

8. Discharge to the recirculation system;

9. Be provided with a minimum of two (2) outlet pipes that shall not allow the overflow channel to become flooded if the facility is in normal use;

10. Require additional outlet pipes provided at one (1) per 150 lineal feet of perimeter overflow system or fraction thereof; and

11. Have drain gratings with surface area at least equal to two (2) times the area of the outlet pipe.

(10) All facilities that have perimeter overflow systems shall have a net surge capacity of at least one (1.0) gallon per square foot of water surface area. Surge capacity shall be provided either in a vacuum filter tank, surge tank, or a combination of these. Main drain piping shall terminate eighteen (18) inches above the surge tank floor and be equipped with a modulating valve and a positive shutoff valve. Surge capacity for a diatomaceous earth (DE) filter is measured eighteen (18) inches above the filter media and the bottom of the gutter pipe.

(11) Skimmers are permitted on facilities whose width does not exceed thirty (30) feet and whose water surface area is 1,600 square feet or less. If skimmers are used, the following shall be met:

(a) At least one (1) skimmer shall be provided for each 500 square feet of water surface area or fraction thereof with a minimum of two (2) skimmers provided, except for spas, holding tanks, or wading pools with a water surface area of 144 square feet or less, which shall require a minimum of one (1) skimmer.

(b) Skimmers shall be located to minimize interference with each other.

(c) The rate of flow per skimmer shall not be less than thirty (30) gallons per minute, and all skimmers shall be capable of handling at least eighty (80) percent of required flow rate.

(d) Surface skimmer piping shall have a separate valve in the equipment room to permit adjustment of flow.

(e) Each skimmer shall be provided with an equalizer line at least one and one-half (1.5) inches in diameter, located at least one (1) foot below the lowest overflow level of the skimmer, and be provided with a self-closing valve and cover that conforms to 15 U.S.C. 8003.

(f) All overflow water shall pass through a basket that may be removed without the use of tools.

(g) All pools not equipped with a perimeter overflow system shall have a smoothly contoured handhold coping not over two and one-half (2.5) inches thick for the outer two (2) inches or an equivalent approved handhold. The handhold shall be no more than nine (9) inches above the normal water line.

(12) All facilities shall be equipped for the addition of make-up water from a potable water source pursuant to the following:

(a) Discharge through an air gap of at least six (6) inches to a surge tank or a vacuum filter tank. If make-up water is added directly to the facility, the fill-spout shall be located under or immediately adjacent to a ladder rail, grab rail, or lifeguard platform. If added to a surge tank or vacuum filter tank, the six (6) inch air gap shall be measured above the top lip of the tank; and

(b) Through piping with vacuum breaker, antisiphon, or other protection as specified by the State Plumbing Code.

(13) Filtration.

(a) Filters shall comply with the following:

1. Pressure filters shall have:

a. Pressure gauges;

b. An observable free fall, or a sight glass installed on the backwash discharge line; and

c. A manual air-relief valve at the high point;

2. The filter backwash disposal facility shall have sufficient capacity to prevent flooding during the backwash cycle;

3. All filters shall be designed so that they may be completely drained. Filters shall be drained through a six (6) inch air gap to a pump or sanitary sewer; and

4. Filter media shall be listed as NSF approved.

(b) Each facility shall have separate filtration and treatment systems.

(c) Filter equipment and treatment systems shall operate continuously twenty-four (24) hours per day, except if the facility is closed for repairs or at the end of the swimming season.

(d) Rapid sand or gravity sand filters shall be designed for a filter rate not to exceed three (3) gallons per minute per square foot of bed area at time of maximum head loss with sufficient area to meet the design rate of flow required by the prescribed turnover.

(e) At least eighteen (18) inches of freeboard shall be provided between the upper surface of the filter media and the lowest portion of the pipes or drains that serve as overflows during backwashing.

(f) The filter system shall be designed with necessary valves and piping to permit filtering to the pool.

(g) High rate sand filters. The design filtration rate shall be a minimum of five (5) gallons per minute per square foot of filter area. The maximum design filtration rate shall be the lesser of fifteen (15) gallons per minute per square foot of filter area or seventy-five (75) percent of the NSF listed filtration rate. The backwash rate shall be fifteen (15) gallons per minute per square foot of filter area.

(h) Diatomaceous earth filters shall comply with the following requirements:

1. The design filtration rate shall not exceed one and one-half (1.5) gallons per minute per square foot of filter area on diatomaceous earth filters, except that the rate of filtration may be increased to two (2) gallons per minute per square foot of filter area if continuous feeding of diatomaceous earth is employed;

2. A precoat pot shall be provided on the pump suction line for pressure diatomaceous earth systems. All diatomaceous earth filter systems shall have piping arranged to allow recycling of the filter effluent during precoating;

3. If equipment is provided for the continuous feeding of diatomaceous earth to the filter influent, the equipment shall have a capacity to feed at least one and one-half (1.5) ounces of this material per square foot of filter area per day;

4. Overflow piping on vacuum diatomaceous earth filters shall be provided on the filter tank to discharge overflow water;

5. All filters shall be equipped for cleaning by one (1) or more of the following methods:

a. Backwashing;

b. Air-pump assist backwashing;

c. Spray wash;

d. Water pressure to wash vacuum filter; or

e. Agitation; and

6. Perlite may be used in filters listed by NSF for perlite, but it may not be substituted for diatomaceous earth without NSF listing.

(i) Vacuum sand filters shall comply with the following requirements:

1. The design filtration rate shall be seventy-five (75) percent of that listed by NSF or fifteen (15) gallons per minute, whichever is lesser. The backwash rate shall be at fifteen (15) gallons per minute per square foot of filter area; and

2. Overflow piping shall be provided in order to drain overflow water.

(j) Cartridge filters shall comply with the following requirements:

1. Cartridge filters shall not be used on facilities with a capacity larger than 80,000 gallons;

2. Cartridge filters shall only be used on indoor pools;

3. The design filtration rate shall not exceed fifteen hundredths (0.15) gallons per minute per square foot of filter surface area; and

4. A clean duplicate set of cartridges shall be maintained at the facility.

(14) Disinfectant and chemical feeders.

(a) The minimum chemical feed equipment required at any facility shall include a unit for feed of a disinfectant and a unit for feed of a chemical for pH control.

(b) Equipment capacity.

1. Equipment for supplying chlorine or compounds of chlorine shall be of sufficient capacity to feed the chlorine at a rate of:

a. Eight (8) ppm or two and seven-tenths (2.7) pounds per day chlorine gas or its equivalent for each 10,000 gallons of pool volume for outdoor facilities; or

b. Three (3) ppm or one (1) pound per day for chlorine gas or its equivalent for each 10,000 gallons of pool volume for indoor facilities based on the turnover rates specified in subsection (2)(b) of this section.

2. The equipment for supplying chlorine shall not be controlled by a day-date clock.

3. The injection point for chlorine shall be placed on the discharge side of the pump and downstream of the flow meter unless the chlorine injection point is located within the surge tank.

4. Pot feeders for supplying bromochlorodimethylhydantoin sticks shall contain at least five tenths (0.50) a pound of bromochlorodimethylhydantoin per thousand gallons of facility capacity, or fraction thereof. The feeder shall have a method of feed rate adjustment.

5. Supplemental NSF listed ultraviolet (UV) light disinfection systems:

a. Shall be:

(i) Provided on all splash pads with a recirculating water system;

(ii) Installed on a bypass line; and

(iii) Equipped with a flow indicator; and

b. May be used on other facilities as supplemental disinfection.

6. Ozone may be used as a supplement to chlorination or bromination. Ozonation equipment shall be considered by the cabinet on a case-by-case basis.

7. More than one (1) gram per day of ozone per ten (10) gallons per minute of flow rate shall not be allowed. The ambient air ozone concentration shall be less than five hundredths (.05) ppm at all times either in the vicinity of the ozonator or at the pool water surface.

(c) If positive displacement pumps, or hypochlorinators, are used to inject the disinfectant solution into the recirculation line, they shall be of variable flow type and shall be of sufficient capacity to feed the amount of disinfectant required by paragraph (b)1 of this subsection. If calcium hypochlorite is used, the concentration of calcium hypochlorite in the solution shall not exceed five (5) percent. The solution container shall have a minimum capacity equal to the volume of solution required per day at the feed rate required in paragraph (b)1 of this subsection.

(d) Gas chlorinators shall only be used in a pre-existing facility and shall comply with applicable sections of 29 C.F.R. 1910.119.

(e) pH control feeders. All facilities shall install a chemical feeder of positive displacement type for the purpose of applying chemicals to maintain pH of facility water within the range of seven and two-tenths (7.2) to seven and eight-tenths (7.8). A solution tank of adequate capacity shall be provided.

Section 8. Operational Water Quality Standards. Operational water quality shall comply with 902 KAR 10:120.

Section 9. Equipment Rooms. Equipment rooms shall comply with the following requirements:

(1) Equipment necessary for facility operation shall be housed in a lighted, ventilated room that affords protection from the weather, prevents unauthorized access, has ceilings of at least seven (7) feet in height, and is of sufficient size for operation and inspection.

(2) The equipment room floor shall slope toward drains and shall have a nonslip finish.

(3) A hose bib with a vacuum breaker shall be installed in the equipment room.

(4) Suitable space, if not provided in the equipment room, shall be provided for storage of chemicals, tools, equipment, supplies, and records where they may be acquired by the facility operator without leaving the premises. The storage space shall be dry and protected from unauthorized access.

(5) The equipment room and all other storage areas shall be maintained in a clean, uncluttered condition, and shall not be used for storage of materials not essential to operation and maintenance of the facility.

Section 10. Telephones.

(1) All facilities shall have a non-pay landline telephone, or Voice over Internet Protocol (VoIP) telephone, continuously connected to a power source and operational at all times, capable of direct dialing 911 without going through a switchboard located on the deck that is readily accessible and conspicuously located. A cordless telephone shall be prohibited.

(2) All facilities utilizing VoIP telephones shall only use fixed VoIP services.

(3) Instructions for dialing shall be posted if necessary.

(4) The address of the facility and the telephone number of the police department, fire department, emergency medical service, or a hospital shall be posted in a conspicuous place near the telephone.

Section 11. Existing Facilities and Equipment.

(1) Existing facilities and equipment being used prior to the effective date of this administrative regulation that do not fully meet the design, construction, and materials

requirements of this administrative regulation, may continue to be used if the facilities and equipment:

(a) Are in good repair;

(b) Are capable of being maintained in a sanitary condition;

(c) Meet facility water quality standards; and

(d) Create no health or safety hazard.

(2) If existing equipment, components, piping, or fittings involved in the facility water treatment system are replaced to effect repairs, the replacement equipment, components, piping, or fittings shall meet the requirements of this administrative regulation. If replacement occurs, it shall be the owner's or operator's responsibility to notify the cabinet as to what was replaced and what was used for a replacement.

Section 12. Effect on Local Administrative Regulations. Compliance with this administrative regulation shall not relieve any person from compliance with any other state or local laws dealing with pool operation and maintenance matters or zoning requirements that may also be applicable.

Section 13. Variances for Construction Requirements.

(1) All facilities shall be constructed or remodeled in compliance with the provisions of this administrative regulation, except that an applicant may request a variance if the cabinet determines that the variance shall not seriously affect the safe and healthful operation of the facility.

(2) Before granting a variance, the cabinet shall require documentation from the applicant that the requested variance shall comply with the basic intent of this administrative regulation and that a safety or health hazard shall not be created if the variance is granted.

(51 Ky.R. 441, 1163, 1468; eff. 2-13-2025.)

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