

Construction Plan Review**Iowa Department of Public Health
Division of Environmental Health**321 E 12th Street, Des Moines, IA 50319
Phone: (515)281-8722 Fax: (515)281-4529

Facility Name:		Construction Permit #:		
Owner:		<input type="checkbox"/> Pool <input type="checkbox"/> Spa <input type="checkbox"/> Other:		
Facility Physical Address:		City:	State:	Zip:
County:		Date of Plan Review:		
Engineer:				
<p>The construction plans and specifications for the above named project have been reviewed in relation to the particular requirements of 641 IAC Chapter 15 identified below. This review is limited in scope and time to identify obvious deficiencies. This review in no way waives any of the requirements of 641 IAC Chapter 15 and the facility will be required to correct any deficiencies identified through future inspections. The plans were not review against any other local, state, or federal laws, ordinances, regulations, or requirements applying to this project.</p>				

Key: S = Satisfactory U = Unsatisfactory (additional plan/spec or correction required) N/A = Not Applicable

S U N/A

15.5(1) Construction permit.

- No swimming pool shall be constructed or reconstructed without the owner or a designated representative of the owner first receiving a permit from the department.

15.5(2) Plans and specifications.

- Plans and specifications shall be sealed and certified in accordance with the rules of the engineering and land surveying examining board or the architectural examining board by an engineer or architect licensed to practice in Iowa.

15.5(3) General design.

- Water supplied to a swimming pool shall be discharged to the pool system through an air gap, or a reduced-pressure principle backflow preventer.
 Each hose bib at a facility shall be equipped with an atmospheric vacuum breaker or a hose connection backflow preventer.
 No part of a swimming pool recirculation system may be directly connected to a sanitary sewer. An air break or an air gap shall be provided.

15.5(4) Decks.

- A swimming pool shall be surrounded by a deck at least 6 ft wide for a Class A swimming pool, and 4 ft wide for a Class B swimming pool, and shall extend at least 4 ft beyond the diving stands, lifeguard chairs, swimming pool slides, or any other deck equipment.
 Decks shall be constructed of stable, nontoxic, durable, and impervious materials.
 The deck of a swimming pool shall not drain to the pool or to the pool recirculation system. For deck-level swimming pools ("rim flow" or "rollout" gutter), a maximum of 5 ft of deck may slope to the gutter.
 For outdoor swimming pools, the drainage for areas outside the facility and for nondeck areas within the facility shall be designed and constructed to keep the drainage water off the deck and out of the swimming pool.
 At least one hose bib shall be provided for flushing the deck.

15.5(5) Recirculation.

- The recirculation flow rate shall provide for the treatment of one pool volume within the time period specified in code based on the type and volume of the pool.
 The pump(s) shall supply the required recirculation rate at 40 ft TDH for vacuum filters, 60 ft TDH for pressure sand filters, or 70 ft TDH for DE or cartridge filters. A valve for regulating the rate of flow shall be provided in the recirculation pump discharge piping.
 A compound vacuum-pressure gauge shall be installed on the pump suction line. A vacuum gauge may be used for pumps with suction lift. A pressure gauge shall be installed on the pump discharge line.
 On pressure filter systems, a hair and lint strainer shall be installed on the suction side of each recirculation pump. A spare strainer basket shall be provided, except where the strainer basket has a volume of 15 gallons or more.
 A thermometer shall be installed in the piping to measure the temperature of the water returning to the pool.
 Combustion air shall be provided for fuel-burning water heaters.
 Fuel-burning water heaters shall be vented.
 Each fuel-burning water heater shall be equipped with a pressure relief valve.
 Each swimming pool recirculation system shall be provided with a permanently installed flow meter to measure the recirculation flow rate.

15.5(6) Filtration.

- Each pressure filter shall have a pressure gauge on the inlet side. A differential pressure gauge that gives the difference between the inlet and outlet pressure of the filter may be used in place of a pressure gauge.
- An air relief valve shall be provided for each pressure filter.
- Backwash water from a pressure filter shall discharge through an observable free fall, or a sight glass shall be installed in the backwash discharge line.
- The filtration rate shall not exceed specified rate based on the filter type.

15.5(7) Piping.

- Swimming pool recirculation piping shall be sized so water velocities do not exceed 6 ft/sec for suction flow and 10 ft/sec for pressure flow.

15.5(8) Inlets.

- Where wall inlets are used, they shall be no more than 20 ft apart around the perimeter of the area with an inlet within 5 ft of each corner of the swimming pool.
- Floor inlets shall be provided for the areas of a zero-depth swimming pool or wave pool where the water is less than 2 ft deep and may be used throughout a swimming pool in lieu of or in combination with wall inlets. Floor inlets shall be no more than 20 ft apart in the area where they are used. There shall be floor inlets within 15 ft of each wall of the swimming pool in the area where they are used.

15.5(9) Overflow system.

- Where skimmers are used, a swimming pool shall have at least one skimmer for each 500 ft² of surface area or fraction thereof.
- If a swimming pool is not equipped with an automatic water level maintenance device, each skimmer that is a suction outlet shall have an operational ASME compliant equalizer.
- A skimmer pool shall have a handhold around the perimeter of the pool. The handhold shall be 9 inches or less above the minimum skimmer operation level.
- A perimeter overflow gutter system is required for a swimming pool greater than 30 ft in width, except for a wave pool or a wading pool. The gutter shall be designed to provide a handhold.

15.5(10) Main drain system.

- Each swimming pool shall have main drains to provide a convenient means of draining the water from the pool for winterization and service.
- If the main drain system is connected to the recirculation system, there shall be two or more main drains with 2 located at least 3 ft apart on center or a single main drain that is unblockable.
- There shall be a control valve to adjust the flow between the main drain and the overflow system.
- Each main drain or other submerged suction outlet shall be covered with a cover/grate that complies with the ASME standard.

15.5(11) Disinfection.

- Each swimming pool recirculation system shall be equipped with an automatic controller for maintenance of the disinfectant level in the swimming pool water. The control output of the controller to the disinfectant feed system shall be based on the continuous measurement of the ORP of the water in the swimming pool recirculation system.
- Secondary containment must be provided when a tank larger than 55 gallons is installed for the storage of sodium hypochlorite.
- Chlorine gas and gas feeding equipment shall be housed in a separate room or building without openings into other buildings, with ventilation, lighting, leak detection.

15.5(12) pH control.

- Each swimming pool recirculation system shall be equipped with a controller that senses the pH of the swimming pool water, and that automatically controls the operation of a metering pump for the addition of a pH control chemical or the operation of a carbon dioxide (CO₂) gas feed system.

15.5(13) Safety.

- Diving boards are permitted only if the diving area dimensions conform to the minimum requirements shown in Figure 3, Tables 4 and 5.
- There shall be a completely unobstructed clear distance of 13 ft above the diving board measured from the center of the front end of the board. This area shall extend at least 8 ft behind, 8 ft to each side, and 16 ft beyond the end of the diving board.
- Handrails shall be provided at steps and ladders leading to diving boards and diving platforms. Guardrails shall be provided for diving boards and platforms which are more than 1 meter above the water. Guardrails for diving boards and platforms shall be at least 36 inches high and shall have at least one horizontal mid-bar and shall extend to the edge of the water.
- Ladders or recessed steps shall be provided in the deep portion of a swimming pool and in the shallow portion if the vertical distance from the bottom of the swimming pool to the deck is more than 2 ft. Stairs or ramps may be used instead of ladders or recessed steps at the shallow end of the swimming pool. If a swimming pool is over 30 ft wide, recessed steps, ladders, ramps, or stairs shall be installed on each side.
- The distance between the swimming pool wall and the vertical rail of a ladder shall be no greater than 6 inches and no less than 3 inches.
- Recessed steps shall have a tread depth of at least 5 inches, a tread width of at least 12 inches, and a uniform rise of no more than 12 inches. Each set of recessed steps shall be equipped with a securely anchored deck-level grab rail on each side.
- Stairs shall have a uniform tread depth of at least 12 inches and a uniform rise of no more than 10 inches. Stairs shall be provided with at least one handrail for each 12 ft in width. Handrails shall be between 34 inches and 38 inches high, measured vertically from the line defined by the front edge of the steps. A stripe at least 1 inch wide of a color contrasting with the step surface and with the swimming pool floor shall be marked at the top front edge of each tread.

S U N/A

- The bottom of the swimming pool shall slope toward the main drain(s).
- The slope of the swimming pool bottom where the water is less than 5 ft deep shall not exceed 1 ft vertical in 12 ft horizontal.
- Walls in the deep section of a swimming pool shall be vertical. If a transition radius is provided, it shall comply with Figure 3. Ledges, when provided, shall fall within an 11° line from vertical. A ledge shall be no less than 4 inches wide and no more than 8 inches wide.
- The bottom and sides of the swimming pool shall be white or a light color. This does not prohibit painting or marking racing lines or turn targets.
- A stripe at least 4 inches wide in a color contrasting with the pool bottom and sides shall be on the shallow side of the slope change or 5-ft depth area within 6 inches of the slope change or 5-ft depth area. Depending on the pool configuration, more than one stripe may be required. A float line with floats no more than 5 ft apart shall be installed on the shallow side of the stripe.
- The landing area for a swimming pool slide or a water slide which does not terminate in a separate plunge pool shall be delineated by a float line.
- Depth markers shall be located 25 ft apart or less, center to center, around the full perimeter of a swimming pool.
- The maximum depth of a swimming pool shall be marked on both sides of a swimming pool at the main drain.
- In shallow water, the depth shall be marked at 1-ft depth intervals.
- "No Diving" or equivalent wording or graphics shall be marked on the swimming pool deck where the water is shallow. The markers shall be 25 ft apart or less, center to center, around the perimeter of the area. This marking is not required at the zero-depth end of a wave pool or of a zero-depth swimming pool.
- One elevated lifeguard chair or station shall be provided for a swimming pool with a water surface area of 2000 to 4000 ft² inclusive; two chairs shall be provided if the area is 4001 to 6000 ft²; three chairs shall be provided if the area is 6001 ft² or more. This requirement does not apply to wave pools, leisure rivers or wading pools.
- Except for a circulated wading pool that is drained when not in use, or a spray pad, a swimming pool shall be enclosed by a fence, wall, building, or combination thereof not less than 4 ft high. The enclosure shall be constructed of durable materials.
- A fence, wall, or other means of enclosure shall have no openings that would allow the passage of a 4-inch sphere, and shall not be easily climbable by toddlers. The distance between the ground and the top of the lowest horizontal support accessible from outside the facility, or between the two lowest horizontal supports accessible from outside the facility, shall be at least 45 inches. A horizontal support is accessible if it is on the exterior of the fence relative to the swimming pool, or if the space between the vertical members of a fence is greater than 1¾ inches.
- Gates and doors shall be installed in the enclosure for general access, maintenance and emergency access. At least one 36-inch-wide gate or door shall be installed for emergency access. Gates and doors shall be lockable. Except where lifeguard or structured program supervision is provided whenever the swimming pool is open, gates and doors shall be self-closing and self-latching.
- If a wading pool is within 50 ft of a swimming pool, the wading pool shall have a barrier at least 36 inches high separating it from the swimming pool. The barrier shall have at least one 36-inch-wide gate or door. Gates and doors shall be lockable. Except where lifeguard supervision is provided, gates and doors shall be self-closing and self-latching.
- An indoor swimming pool shall be enclosed by a barrier at least 3 ft high if there are sleeping rooms, hallways, apartments, condominiums, or permanent recreation areas which are used by children and which open directly into the swimming pool area. No opening in the barrier shall permit the passage of a 4-inch sphere. The barrier shall not be easily climbable by toddlers. There shall be at least one 36-inch-wide gate or door through the barrier. Gates and doors shall be lockable. Except where lifeguard supervision is provided whenever the pool is open, gates and doors shall be self-closing and self-latching.
- Each electrical outlet in the deck, shower and dressing rooms and the pool water treatment equipment areas shall be equipped with a properly installed ground fault circuit interrupter (GFCI) at the outlet or at the breaker serving the outlet.
- An underwater light circuit shall be equipped with a GFCI unless the underwater light(s) operates at 15 volts or less.
- Artificial lighting shall be provided at indoor swimming pools and at outdoor swimming pools which are to be used after sunset. Underwater lighting of at least 60 lamp lumens/ft² or 0.5 watts/ft² of water surface area, located to provide illumination of the entire swimming pool bottom, and area lighting of at least 10 lumens/ft² or 0.6 watts/ft² of deck area. If underwater lights are not provided, overhead lighting of at least 30 lumens/ft² or 2.0 watts/ft² of swimming pool water surface area shall be provided.
- Swimming pool slides shall meet the requirements of the product standard of the United States Consumer Product Safety Commission (CFR Title 16, Part 1207)

15.5(17) Water slides.

- There shall be at least 5 ft between the side of the plunge pool or swimming pool and the side of the flume. Adjacent flumes shall be at least 10 ft apart on center.
- The water depth shall be at least 3 ft and no more than 4 ft at the end of the flume and for at least 15 ft beyond the end of the flume.
- If the water slide flume ends in a swimming pool, the landing area shall be divided from the rest of the swimming pool by a float line.

15.5(21) Showers, dressing rooms, and sanitary facilities.

- Bather preparation facilities shall be provided at each swimming pool facility except where the swimming pool facility is intended to serve living units such as a hotel, motel, apartment complex, condominium association, dormitory, subdivision, mobile home park, or resident institution.
- Bathhouse fixtures shall be provided in accordance with Table 6.
- All indoor swimming pool areas, bathhouses, dressing rooms, shower rooms, and toilets shall be ventilated by natural or mechanical means to control condensation and odors.
- At least one hose bib shall be installed within the bathhouse.
- Combustion air shall be provided for fuel-burning water heaters.
- Fuel-burning water heaters shall be vented