



Commercial Pool/Spa Plan Requirements

832-393-5100

The purpose of this document is to provide the user with guidance on commercial pool/spa requirements for plans submitted to Health plan reviewers. Items listed are based on current and applicable codes as it relates to aquatic structures. Plans are reviewed weekly and reviewers provide comments if requirements are not accurately identified on all plans. Comments will include specific details, charts, or other helpful tools that will assist the user with submitting plans. Reference pages that include charts are provided at the conclusion of this document.

All pool related drawings must be uploaded in the Health folder under Documents. Provide all pool details, such as volume surface area, deck markers, required signage, required equipment, and emergency phone to the plan page that also has the swimming pool drawn to scale. Following the below guidelines will minimize the number of times a plan is rejected.

Plans must be submitted as follows:

1. Submit a clear and legible plan. Ensure that all pages relevant to the pool and spa plans are uploaded to ProjectDox.
2. Plans must be drawn to scale, and scale noted on plans.
3. Include name and address of pool/spa location.
4. Include name, address, and phone number of the Pool Contractor and Owner's information as it appears on HCAD.
5. Include licensed engineer stamp on plans to verify plans compliance. The licensed engineer must a valid and current license.
6. Include top view and sideview (drawn to scale) of pool/spa with appropriate measurements.
7. Show size and type of all filters and pumps. Specify, where applicable, the make/model of pumps and filters installed on plans.
8. Show location of pump and filter in relation to the pool/spa. Provide a drawing that labels all required pump room equipment.
9. Show total number of gallons and surface area of pool/spa in square feet.
10. Show size and type of piping with schematic drawn.
11. Show complete enclosure around pool/spa. Highlight the entire primary enclosure and gates for pool yard.
12. Provide comprehensive fence detail (drawing) showing the actual fence and gate that will be installed. Fence shall comply with Texas Health and Safety Code, Chapter 757 and/or the State of Texas Design Standards, Section 265.203. Include details of enclosure (mechanism of self-latching and self-closing devices with the manufacture sheet attached for the self-latching hardware).

13. Include measurements of fence, distance between horizontals if present, gates and hardware including location of gates.
14. When submitting revisions, all details must match on both original submitted plans and on all revised plans.
15. Post pages relating to the pool plans in the Health folder.
16. Provide a legend that defines all symbols and acronyms are used to signify required equipment.
17. Specify the type (make/model) of main drain covers installed in the pool/spa. Drain cover description should match in all places on plans where the drain covers are referenced.

Listed below are the minimum requirements for pool/spa construction according to design standards of the Texas Department of State Health Services (DSHS), Subchapter L, Section 265.181-265.209 as of 01/01/2021.

18. Circulation systems:
 - a) A circulation system consisting of pumps, piping, return inlets and suction outlets, filters, and other necessary equipment shall provide complete and uniform circulation of water and be designed to accommodate 100% of the turnover flow rate and maintain the distribution of disinfectant residual through all parts of the pool or spa
 - b) The equipment shall be of adequate size to turn over the entire pool or spa water capacity as follow:
 - Class A, B and C pools must have a turnover rate that is equal to 1.5 times the average depth of the pool in feet and not to exceed 6 hours.
 - Turnover rates in pool with shallower average depths and activity pools shall be calculated based on the formula: average depth in feet times 1.5 shall be the required turnover rate; and not to exceed turnover times stated in Figure: 25TAC 265.190 (c)(1)
 - A spa recirculation system shall turn over the entire spa water capacity at a minimum of once every 30 minutes based on the manufacturer's recommended rate of the filter, with a clean filter; and
 - The turnover rate for a wading pool shall be at least once per hour.
 - Water velocities must comply with 265.190
19. Suction outlets:
 - a) All suction outlets must comply with Virginia Graeme Baker Pool and Spa Safety Act (VGBPSSA)A minimum of 2 hydraulically balanced suction outlets (main drains, skimmers, etc.) per pool/spa suction line.
 - b) Pools or spas that are 4 ft deep or less with an approved cover or grate less than 24 inches (diagonal) must be equipped with a Safety Vacuum Release System (SVRS)
 - c) No means of isolating suction outlets (main drains, skimmers, etc.) is permitted which could allow one suction outlet to serve as the sole source of water to a pump
 - d) Wading pools shall not have fully submerged suction outlets unless containing a PIWF then it must comply with 265.193 (b)(2)

- e) Drain covers must comply with ASME/ANSI A112.19.8 performance standard or by successor drain cover standard APSP-16 2017
 - f) Pool/spa circulation systems must be equipped with a flowmeter, pump suction vacuum gauge, inlet pressure gauge and filter outlet gauge.
 - g) A pool shall be provided with a minimum of one return inlet for every 300 square feet of pool surface area, or fraction thereof. A spa shall have a minimum of one return inlet for every 150 square feet of surface area with a minimum of 2 inlets per spa.
20. Backwash shall be discharged to the sanitary sewer through a p-trap if DE or Sand filter and backwash shall be provided with sight glass.
21. One skimmer shall be provided for every 500 sq. ft. of pool surface area or fraction thereof. One skimmer shall be provided for every 150 sq. ft. of spa surface area or fraction thereof. Skimmer equalizer lines shall not be installed. Show on plans:
- a) Location of all depth markers (deck and waterline).
 - b) All depth markings shall be four inches minimum height, in contrasting color to the background and be slip-resistant. Feet and inches shall be spelled out and abbreviated as "FT" and "IN."
 - c) Depth markers and waterline markers must be placed at the minimum and maximum depth; on both sides and at each end of the pool; and at all points of slope
 - d) Depth markers on decks shall be slip resistant, placed within 18 inches of the water edge and be positioned to be read while standing on the deck facing the water.
 - e) Deck "NO DIVING" wording and the international symbol for no diving must be located every 25 feet or fraction thereof around the deck wherever the depth of the pool is 5 ft or less. The wording and symbol shall be 4 inches in height and two "NO DIVING" markers with the international symbol for no diving shall be provided around each pool.
 - f) Pools with depths greater than 5ft shall provide:
 - Depth markers at the 5ft depth, and
 - The transition point of the pool from the shallow area to the deep area of the pool shall be visually set apart with a 4-inch minimum width row of floor tile or other permanent method using a color contrasting with the bottom.
22. Show on plans: Type and locations of backflow prevention device on fill line and that all hose bibs will be equipped with a vacuum breaker.
23. Pool / spa interior surface and finishes shall be at least 6.5 on the Munsell color value scale. For pools constructed or renovated on or after 1/1/2021, the Munsell color value must be provided when providing the color of the pool /spa interior surface and finishes.
24. The pool/spa yard shall be equipped with a drinking water fountain that is available to users at all times that pool/spa is in use. For pools constructed on or after 1/1/2021, when the drinking water is not located in the pool or spa yard, a sign with letters a minimum of 1 inch in height shall be posted so that it is visible to users that informs the users of the location of the drinking water.
25. Emergency summoning device. A pool or spa shall have a minimum of one emergency telephone, emergency monitoring contact device, or alternative communication system that is capable of immediately summoning emergency services and that is readily accessible, within 200 feet of the water,

and is functioning at all times the pool or spa is open for use Phone location must comply with 265.265.201(m).

26. A sign shall be posted above the emergency summoning device, whether it is a phone, emergency monitoring device, or alternative communication device with the precise location of the pool or spa such as an address, building number, GPS location, or other location identifying information in letters a minimum of 1-inch in height.
27. There must be at least 2 entry/exits in every pool- one in the shallow end and one in the deep end.
28. Show on plans: Pool/spa shall be equipped with a device capable of providing a continuous feed of disinfecting agent whose residual can easily be measured in the field.
29. Pool equipment must be at least 10 feet away from inside wall of pool/spa.
30. All underwater steps and benches must have 2x2 inch toe tile or 2-inch wide stripe on the leading edge in a contrasting color to the white or light colored plaster and must be slip resistant.
31. Steps shall have:
 - a) A minimum unobstructed horizontal depth (i.e., horizontal run) of 10 inches and a minimum width of 24 inches
 - b) Risers for steps shall have maximum uniform height of 12 inches, with the bottom rise height allowed to taper to zero
32. Underwater benches shall:
 - a) Have an unobstructed seating surface a minimum of 10 inches in depth and not less than 24 inches in width, at a depth not greater than 20 inches below the design water level
 - b) Not be used as the required entry/exit access unless they are in conjunction with pool steps
 - c) Be visually set apart with a permanent solid or broken stripe 2-inches wide on the top surface along the leading edge of the bench and in a contrasting color to the surface which it is applied
 - d) Have a slip-resistant surface
33. Floor slopes:
 - a) The slope of the floor in water less than 5 feet shall not exceed 1 foot in 10 feet to the point of the first slope change
 - b) The point of the first slope change shall be defined as the point at which the floor slope exceeds 1 foot in 10.
 - c) The slope of the floor in water five feet deep or more shall not exceed 1 foot in 3 feet.
34. Any area of a pool or spa, excluding steps and ramps, that is less than 3 feet in depth shall be visually set apart from deeper areas of the pool by a minimum 4-inch wide tile band, painted line, or similar means of contrasting color across the floor
35. Zero-depth entries shall:
 - a) The slope of beach entries used as a pool entry shall not exceed 1:12.
 - b) Where benches are used in conjunction with beach entries, the vertical riser height shall not exceed 12 inches.
 - c) Where steps are used in conjunction with beach entries, the steps must comply with 265.187(k).
 - d) Trench drains shall be used along beach entries at the waterline to facilitate surface skimming and may be flat or follow the slope of the entry.
36. Lighting for pools and spas shall comply with the following:

- a) Lighting shall be listed and labeled and shall be installed in accordance with NFPA 70 and the current NEC.
- b) At outdoor pools, any combination of overhead and underwater lights shall measure not less than 10 horizontal foot-candles (10 lumens per square foot or 108 lux) at the pool water surface.
- c) At indoor pools, any combination of overhead and underwater lights shall measure not less than 30 horizontal foot-candles (30 lumens per square foot or 323 lux) at the pool surface.
- d) At the deck area, any combination of overhead and underwater lights shall measure not less than 10 horizontal foot-candles (10 lumens per square foot or 108 lux) at the walking surface of the deck.
- e) Underwater lighting shall provide not less than 8 horizontal foot-candles (8 lumens per square foot or 86 lux) at the pool water surface area.
- f) Where fixtures and lamps are rated in watts, not less than a total wattage of $\frac{1}{2}$ watt/ft² of pool water surface for incandescent underwater lighting is required.
- g) Lighting shall be provided to illuminate all areas of the pool and spa, including all suction outlets on the bottom of the pool or spa such that the suction outlets shall be visible and that the pool water is transparent and free from cloudiness.
- h) Illumination shall be sufficient to enable a lifeguard or other persons standing on the deck or sitting on a lifeguard stand adjacent to the pool edge to determine if a pool user is lying on the bottom of the pool or spa.
- i) All suction outlets are to be visible from the edge of the deck at all times when artificial lighting is illuminated.
- j) Where outdoor pools and spas are open for use from 30 minutes before sunset to 30 minutes after sunrise, or during periods of low illumination, underwater lighting may be excluded where:
 - maintained illumination surface lighting levels are a minimum of 15 horizontal foot-candles (15 lumens per square foot or 161 lux); and
 - all portions of the pool including the bottom and suction outlets are readily visible without glare.
- k) Pools, spas, and pool yards that operate during periods of low illumination shall be provided with emergency lighting that will automatically turn on to permit evacuation of the pool and securing of the area in the event of power failure.
- l) Emergency lighting shall be arranged to provide initial illumination that is not less than 0.1 foot-candle (0.1 lumen or 1 lux) at any point on the water surface at any point on the walking surface of the deck, and not less than an average of 1 foot-candle (0.1 lumen or 1 lux).
- m) A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded.
- n) Where security lighting is provided, it shall be sufficient to illuminate the pool at all time during periods of low illumination or when the pool or spa is close. Security lighting may be overhead light, underwater, or combination of both.

37. Additional spa requirements (see Section 265.208):

- a) Maximum water depth shall be 4 feet from the design waterline, Maximum water depth for exercise spa shall not exceed 6 feet and 6 inches

- b) Maximum water depth of multi-level seating shall be 28 inches, measured from the design waterline,
 - c) A pump shutoff switch shall be provided to disconnect power to circulation and jet system pumps and air blowers in a spa
 - Switch must be clearly labeled as "EMERGENCY SPA SHUTOFF" in minimum 2 inch letter size;
 - Located within sight of the spa, or there shall be assign visible from the spa, in letters at least 1 inch tall, stating the location of the emergency shutoff switch;
 - Readily accessible shutoff switch;
 - Emergency switch must be accessible to users, located within sight of the spa and no closer than 5 feet, but not greater than 10 feet from the inside walls of the spa
 - d) if an air blower or other means of introducing air is provided, a manually operated timer switch located as to require the exiting of the spa to reset shall be provided. Such a timer shall operate the spa blower and booster pump and shall automatically shut the blower and booster pump off in 15 minutes or when manually switched to the off position.
 - e) minimum of 2 deck depth marker per spa
 - f) A break-resistant thermometer (plus or minus 1 degree Fahrenheit tolerance) that is designed for use in a spa environment shall be available for patrons and staff to monitor spa temperature.
38. Fire glass is prohibited where fire pits are installed in the pool / spa yard. Refer to signage in 265.201(j)(5)—Glass items are not allowed in the pool yard.
39. Landscaping – 265.185(g) -- Landscaping. Loose plant material or bedding, including planters, shall not be permitted on pool or spa decks constructed on or after the effective date of this subchapter.

Note: Plan review fees are subject to change for aquatic structures. Plans are reviewed weekly and if you have any questions regarding commercial reviews please call (832) 393-5089. For additional information regarding online plan submittal, please visit the website at: www.houstonpermittingcenter.org/our-services/eservices.

Reference Pages

Figure: 25 TAC §265.190(c)(1)

TURNOVER TIMES FOR POOLS AND SPAS

CATEGORY	MAXIMUM TURNOVER RATE
Class A, B and C pools	Turnover rate is equal to 1.5 times the average depth of pool in feet not to exceed 6 hours
Wading Pools	1 Hour
Activity Pools with 24 inches or less water depth	1 Hour
Activity Pools with water depths more than 24 inches	2 Hours
Runout Slide, Plunge Pool, Catch Pool	1 Hour
Leisure Rivers	2 Hours
Vortex Pools	1 Hour
Surf Pools, Wave Action Pools with less than 20,000 sq. ft. pool surface area	2 Hours or as per Licensed Engineer
Spas	30 minutes

Figure 25 TAC §265.184(d)(2)

RESERVOIRS AND SHELLS

MATERIAL	STANDARD
Fiberglass reinforced plastic	IAPMO Z124.7
Stainless steel (Types 316, 316L, 304, 304L)	ASTM A240
Tile	ANSI A108/A118/A136.1
Vinyl	ASTM D1953

Figure: 25 TAC §265.187(b)

ENTRY AND EXITS LOCATIONS FOR SPECIFIC POOLS

CLASS OF POOL	ENTRY AND EXIT LOCATIONS
Wave Pool	Entry at beach end only; exit at beach end, sides or end wall.
Activity Pool	Entry and exit determined by licensed engineer
Catch Pools	Entry prohibited from deck areas; exit by ladders, steps, or ramps as determined by licensed engineer
Leisure River	Entry and exit determined by licensed engineer
Vortex Pool	Entry and exit determined by licensed engineer
Pool with Interactive Water Feature or Fountain	Entry and exit determined by licensed engineer
Surf Pool	Entry and exit determined by licensed engineer

Figure: 25 TAC §265.184(n)(2)

CONSTRUCTION TOLERANCE

DESIGN ASPECT	CONSTRUCTION TOLERANCE
Depth-deep area, including diving area	± 3 inches
Depth – shallow area	± 2 inches
Length – overall	±3 inches
Step treads and risers	± 1/2 inch
Wall Slopes	± 3 degrees
Waterline – pools with adjustable weir skimmers	± 1/4 inch
Waterline – pools with nonadjustable skimming systems (gutters)	± 1/8 inch
Width – overall	± 3 inches
All dimensions not otherwise specified	± 2 inches

Figure 25 TAC §265.201(j)(5)
POOL SIGNAGE REQUIREMENTS

REQUIRED POOL SIGNS	LETTER AND SYMBOL SIZE
"WARNING-NO LIFEGUARD ON DUTY" (Where no lifeguard required or provided.)	4 inches
"NO DIVING" and International no diving symbol (Where no lifeguard required or provided.)	4 inches
"IN CASE OF EMERGENCY, DIAL 911"	4 inches
Precise Location of the Pool on or with the Emergency Phone (address, or directions, or GPS location, or building number, as appropriate)	Minimum 1-inch
Hours of Operation	Minimum 1-inch
Directions to and Location of Emergency Phone if Phone Not Visible in Pool Yard	Minimum 2-inches
Maximum User Load Limit	Minimum 2-inches
"PETS IN THE POOL ARE PROHIBITED"	Minimum 2-inches
"DO NOT SWIM IF YOU HAVE BEEN ILL WITH DIARRHEA WITHIN THE PAST 2 WEEKS"	Minimum 2-inches
"CHANGING DIAPERS WITHIN 6 FEET OF THE POOL IS PROHIBITED"	Minimum 2-inches
"GLASS ITEMS NOT ALLOWED IN THE POOL YARD"	Minimum 2-inches
"PERSONS UNDER THE AGE OF 14 MUST NOT BE IN THE POOL WITHOUT ADULT SUPERVISION"	Minimum 2-inches
"EXTENDED BREATH HOLDING ACTIVITIES ARE DANGEROUS AND PROHIBITED"	Minimum 2-inches

Figure: 25 TAC §265.208(e)

SPA SIGNAGE REQUIREMENTS

REQUIRED SPA SIGNS	LETTER AND SYMBOL SIZE
"WARNING – NO LIFEGUARD ON DUTY" (if no lifeguard is provided or required)	4 inches
"DO NOT USE THE SPA IF THE WATER TEMPERATURE IS ABOVE 104 DEGREES FAHRENHEIT"	Minimum 1-inch
Maximum User Load	Minimum 1-inch
Location of the Nearest emergency phone or device.	Minimum 2-inches
EMERGENCY SPA SHUTOFF	Minimum 2-inches
"DO NOT SWIM IF YOU HAVE BEEN ILL WITH DIARRHEA WITHIN THE PAST 2 WEEKS"	Minimum 2-inches
"PERSONS UNDER THE AGE OF 14 MUST NOT BE IN THE SPA WITHOUT ADULT SUPERVISION"	Minimum 2-inches
"PETS IN THE SPA ARE PROHIBITED"	Minimum 2-inches

Reference Links

Houston Health Department Chapter 43 Ordinance Pool and Spa Safety

https://library.municode.com/tx/houston/codes/code_of_ordinances?nodemd=COOR_C

Texas Department of State Health Services- Texas Administrative Code (TAC), Standards for Public Pools and Spas, Section 265.181 – 265.209

<https://www.dshs.state.tx.us/poolspa/rules.shtm>

Texas Department of State Health Services- Health and Safety Code, Chapter 757: Pool Yard Enclosures

<http://statutes.capitol.texas.gov/Docs/HS/htm/HS.757.htm>

Virginia Graeme baker Pool and Spa Safety Act

<https://dshs.texas.gov/poolspa/baker.aspx>

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