

Water Recreation Program

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www.kingcounty.gov/health

Plan Guide for Water Recreation Facilities - Spa 2008

I. General

- A. Submit at least two sets of plans with the attached *Pool Plan Review Application* and applicable fee to:

DOWNTOWN
Eileen Hennessy
401 – 5th Avenue, Suite 1100
Seattle, WA 98104
206.263.8451

- B. Plans must be approved prior to construction.
- C. Plans must be submitted by the design engineer or architect with their cover letter and must be stamped with their seal and signed. Plans must be drawn to scale in sufficient detail to illustrate construction.
- D. Spa design plans must include:
1. One vicinity sketch noting spa in relation to the surrounding area and facilities.
 2. Both plan and cross sectional views of the spa. Cross sectional views should provide information on the radius of curvature of the spa at shallow, breakpoint and deep ends of the spa.
 3. Detailed view of the equipment room and equipment within it noting sufficient room is provided to access equipment for proper operation and maintenance.
 4. Dimensional drawings of spa bottom and sidewalls.
 5. Specifications of required equipment components.
 6. Piping schematic showing piping, pipe size, inlets, main drains, overflow channel or skimmers, vacuum fittings and all other appurtenances connected to the spa piping system.
 7. Details of barrier construction, including gate latch height, fencing material, spacing between fencing members, self closing latch detail, etc.
 8. Details of decking dimensions noting slope, direction, and location of drains.
- E. Before opening for business, the following steps must be completed:
1. A construction report must be completed and signed, and stamped by the spa designer architect or engineer. This form indicates that the spa has been constructed according to WAC 246-260, and the approved design.
 2. Occupancy and all other permits must be signed off before the opening inspection.
 3. An operating permit from Public Health – Seattle & King County must be applied for and obtained.
 4. A pre-opening inspection by Public Health – Seattle & King County Staff must be arranged and completed.

II. Complete the Spa Plan Review Application Form-Available at the District Office.

III. Spa Information - All the following applicable information outlined below must be included on plans and/or specifications. Omissions may result in the rejection of the plans and delays in plan review. This is a guideline to the basic requirements of a spa facility. Actual requirements are details in the Water Recreation Facility Regulations, Chapter 246-260 WAC Specific Design Characteristics. Specific swimming spa design characteristics:

Spa Shape:

- A. Spa Shape: Rectangular ____ Oval ____ Kidney ____ Other ____
- B. Spa Dimensions: Length ____, Width ____, or Diameter ____, Maximum Spa Depth ____
- C. Total surface area of spa ____ ft². Perimeter ____.
- D. Spa capacity ____ gallons.

- E. Bather Load
 - a. ____ people at one time. (Overflow system must remain operative to maintain skimming action and not create a flooded suction condition, 1 person/4 ft² surface area. Note skimmer weir dimensions.)
 - b. ____ people per hour.
- F. Spa location is ____ feet from any pump house, trees or other climbable structures.
If structures are within 15 feet, list and describe what they are _____

- G. Spa surface construction material: Painted Concrete __ Plaster __ Fiberglass __ Tile __ Painted Metal __
Other__ - Please specify ____ Spa color is ____.
- H. Handrail and handholds-specify location and types on plans.
- I. Ladders and steps.
 - 1. Note location, riser height, riser tread depth and surface area on the plans.
 - 2. Note contrasting color, and non-slip finish on stair tread on the plans.

Spa Decking

- J. Spa decking construction material: _____; Type of non-slip finish provided: _____
- K. Spa Deck slope rate ____/ft for drainage (Min ¼ in./ft, Max ½ in./ft.).

Equipment Room

- L. Show on drawing minimum three foot working area.
- M. Show any drains, lighting, ventilation, and access limitations.

Ventilation for Indoor Spas

- N. Specify how spa ventilation is in conformance with ASHRAE standards.

Restroom, Locker Rooms & Plumbing

- O. Note location and size of locker room facilities.
- P. Note location and number of plumbing fixtures.
- Q. Note location of drains within facility.
- R. Note drinking fountains (when required).
- S. Note floor finish.
- T. Distance _____ to the spa from the living unit, which is located the farthest from the spa.
- U. # ____ of stories in building.

Lighting

- V. Specify minimum lighting (30 foot-candles) around spa and deck for indoor facilities, and outdoor facilities used after dusk (15 foot-candles).
- W. Specify minimum lighting for locker rooms (20 foot-candles) and equipment room (20 foot-candles).
- X. Describe protective shielding on lights in locker room and walkway areas.
- Y. Document emergency lighting on indoor spa facilities.

Food Service

- Z. Must be in compliance with requirements.

Barrier Protection

- AA. Note minimum barrier height on plans.
- BB. Describe barrier construction to include maximum openings and distance between horizontal surfaces.
- CC. Note height to access latches on gates and doorways, and as appropriate continuous locked locks.

- DD. Note gate or door designed to be self-closing, self-latching.
- EE. Describe windows opening to spa area, and how barrier requirements are to be met.
- FF. Describe any gate or exit which serves as a barrier to the spa but also has fire department or ADA requirements. Describe your method of meeting all the appropriate building, ADA and water recreation codes.

Recirculation System

- GG. Name of public water system which is the source water for spa _____.
 1. Specify the location where make-up water is introduced into the spa and how it is protected from backflow.
- HH. Minimum flow needed to maintain _____ minute turnover is _____ gpm.
 II. Provide appropriate calculations and assumptions to determine pump rates:
 - 1. Pump capacity produces _____ gpm with filter clean.
 - 2. Pump capacity produces _____ gpm with filter dirty (just prior to backwash).
 - 3. Is pump above _____ or below _____ spa water level? Specify the feet _____.
 - 4. If liquid chlorine pump is above the spa water level, is backflow protection specified?
 - 5. Provide pump curves for the pump(s) in spa system.
- JJ. Line size of recirculation system, inlets, and outlets must be provided on the plans, with locations of all valves to provide for proper maintenance and use of equipment.
 - 1. Number of inlets _____. Flow capacity designed for each inlet is _____ gpm.
 - 2. Number of outlets _____. The maximum pipe flow through suction or valved discharge lines is _____ fps (6 fps maximum). Discharge downstream from any valved areas is _____ fps (10fps maximum).
 - 3. Note provision for routine draining of the entire spa volume.
- KK. Main Drains.
 - 1. Note number of main drains.
 - 2. The open area on each main drain is _____ inches².
 - 3. The maximum width of opening on main drains is _____ inches (maximum of ½ inch).
 - 4. The maximum velocity through main drains assuming 100% of maximum pump flow is going through the drains, _____ fps (maximum 1.5 fps).
 - 5. Specify net outlet area, must be at least 4 times the area of the discharge pipe at main drain.
 - 6. Main drains on vertical wall must be specified along with provisions to prevent hair entrapment.
 - 7. Provide the skimmer weir width for each skimmer.
 - 8. Specify airlock prevention device provided for skimmer(s).

Treatment System

- MM. Pump & Strainer.
 - 1. Specify location of pump strainer on plans.
 - 2. Specify any valving needed to isolate strainer for routine maintenance.
 - 3. If pump is above spa water level, specify the self-priming capability.
- NN. Filter.
 - 1. Type: DE _____, Sand _____, Cartridge _____, Other (specify) _____. Must be NSF approved.
 - 2. Number of filters used is _____.
 - 3. Number of square feet per filter is _____ sq. ft.
 - 4. Minimum application rate with filter dirty is _____ g/sf.
 - 5. Maximum filter application rate with filter clean is _____ g/sf.
 - 6. Air Relief.
 - a. Must note on plans.
 - b. When using a separation tank with a DE filter, instruction must be provided to warn operator to release air prior to opening.
 - 7. Gauges.
 - a. Must be noted on the plans.
 - b. Two gauges must be provided to measure differential pressure across the filter.
 - 8. Flowmeter.
 - a. Note location on plans.
 - b. Note range of flowmeter.

XX. Disinfection.

1. Type: Chlorine ____; Bromine ____; Other (specify) _____.
2. Type of material used: Gas ____; Liquid ____; Solid ____.
3. Note type of feeding equipment to be installed. Must be NSF approved for liquid or solid feeders.
4. Maximum number of pounds of disinfectant feeding system can add per day is ____ pounds/day.
5. Gas Chlorine.
 - a. Note prevailing wind direction in relation to the spa facility, include air intake structures for the buildings and surrounding area.
 - b. Gas Chlorine storage – Specify separate sealed room, door opening must open to out-of-doors, provide sign on door.
 - c. Ventilation – Must have mechanical exhaust at one air change per minute, with remote or door activated switch to turn on fan; must have means to exhaust from floor of room; must have means for make-up air to room across breathing zone of operator; must have screened chlorinator vent.
 - d. Note type of breathing protection.
 - e. Must have vacuum injection chlorine systems, with vacuum-actuated cylinder regulators, integral backflow and antisiphon protection at the injector.
 - f. Must have taring scales, means for automatic shutoff when spa flow is interrupted, means to store cylinders securely, valve-stem cylinder wrench on cylinders.
 - g. The Size cylinders used are _____ pounds.
6. Chemical feeders for pH control.
 - a. Required if feeding caustic soda or CO₂.
 - b. Attach specification on the feeding equipment.

YY. Heaters – Gas.

1. Pilot light must be readily accessible.
2. Specify installation in accordance with NEC and UMC.

ZZ. Chemical Storage.

1. Provide information on placement of chemicals.
2. Must be in conjunction with manufacturer's recommendations.

AAA. Testing Equipment.

1. Provide information on type of equipment provided for testing spa water chemistry.

Safety – Signage and Equipment

BBB. Note on plans equipment provided must include:

1. Phone or other emergency medical service response means.
2. Emergency shut off switch for all pumps.
3. 15 minute timer for jet pump.
4. First aid kit.
5. Two blankets.
6. Signs, note provisions for signage in conformance with regulation. Provide copy of proposed language.
7. Foot baths are prohibited.