



NSF International
Recreational Water Program

Component Certification
Specification for Public Use
Spa, Swim Spa, Hot Tub or
Related Equipment
(CCS-11804)

The Public
Health and Safety
Company.™



Recreational Water Program Component Certification Specification for Public Use Spa, Swim Spa, Hot Tub or related Equipment (CCS-11804)

Scope:

NSF/ANSI Standard 50 – 2011 has many requirements for technical evaluation, testing, and certification of a variety of components and parts used in spas, hot tubs, pools, and water parks. The purpose of this document is to specify the requirements for components used as part of a spa type system to enable appropriate assessment for product performance and health safety.

Physical Evaluation:

- Product shall bear the NSF 50 certification mark and other markings as required herein.
- Product shall include clear use instructions in the owner's installation and use manual.

Performance Testing:

- Product shall be tested and certified in accordance with the requirements from other standards noted herein including:
 - o NSF/ANSI Standard 50 Equipment for Swimming Pools, Spas, Hot Tubs and other Recreational Water Facilities
 - o NSF/ANSI 14 – Plastics Piping System Components and Related Materials
 - o ANSI/APSP-16 (aka ANSI/ASME A112.9.8) Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs.
 - o ANSI Z124.7, Prefabricated Plastic Spa Shells
 - o ANSI Z124.1.2, Plastic Bathtub and Shower Units
 - o ASTM F462, Standard Consumer Safety Specification for Slip-Resistant Bathing Facilities
 - o ASTM F1346 Standard Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs
 - o ASTM D1894-Static and Kinetic Coefficients of Plastic Film and Sheeting
 - o ASTM F1908 Standard Guide for Fences for Residential Outdoor Swimming Pools, Hot Tubs, and Spas
 - o ASTM F2286 Standard Design and Performance Specification for Removable Mesh Fencing for Swimming Pools, Hot Tubs, and Spas
 - o IAPMO PS 33 – Flexible PVC Hose for Pools, Hot Tubs, Spas, and Jetted Bathtub
 - o IAPMO SPS 4 Special Use Suction Fittings
 - o UL 1081 Swimming Pools Pumps Filters and Chlorinators
 - o UL 1261 Electric Water Heaters for Pools and Tubs
 - o UL 1563 Standard for Electric Hot Tub, Spas and Associated Equipment
 - o UL 2017 General Purpose Signaling Devices and Systems

Toxicology Evaluation:

- A health effects toxicological risk assessment shall be completed on parts of the final product in accordance with NSF/ANSI Standard 50, Section 3 and Annex A.



Spas, swim spas, exercise spas, hot tubs, or related equipment for public use shall be evaluated for conformance to the requirements of this section in order for the product to be certified to NSF/ANSI Standard 50.

1.1 Scope

This establishes evaluation and testing criteria including health and performance requirements for public use spas and swim spas. The criteria addresses factory manufactured, self-contained and non-self-contained, portable, and pre-fabricated spas and hot tubs including requirements for the materials, design and construction, marking, installation and use instructions, performance of the spa shell and structure, performance of the spa components, including those involved in resistance or exercise systems as well as the heating, circulation, filtration, sanitation and treatment, and of the water.

1.2 Limitations and Variations

1.2.1 Limitations

The section does not establish requirements for the installation of spas or spa components.

1.2.2 Variations in design and operation

A spa of varying in design and/or operation may qualify under these requirements. Appropriate tests and investigations shall indicate the spa exercise pool components perform as well as systems complying with this section. Such spas or spa components shall meet the requirements for materials and construction in this standard.

1.3 Definitions

Integral: Part of the device (ie spa or swim spa) that cannot be removed without compromising the device function or destroying the physical integrity of the unit.

Spa (swim spa, exercise spa, or related equipment): A spa or tub intended for the immersion of persons in temperature-controlled water circulated in a closed system, and not intended to be drained and filled with each use. It is manufactured to factory specifications with specific design, plumbing, components, and suppliers such that the water is circulated, treated, and filtered via closed loop system. The spa may be portable and typically includes certain systems or components integral to the spa or as part of a separate manufacturer specified assembly or skid-pack: tub or shell structure and support system, steps and seats, hand hold(s) and rail(s), filter(s), pump(s), suction fitting(s) or drain(s), water return fittings, skimmers, piping, tubing, hose, and other air or water distribution fitting(s), resistance exercise equipment, heater(s) [solar, electric, or gas], chemical treatment system(s), and control system. Other equipment such as lighting, blowers, A/V equipment etc. may be added to the equipment compartment or skid-pack. The design and construction of a swim spa, exercise spa or related equipment includes specific features and equipment to produce a water flow intended to allow recreational physical activity including, but not limited to, swimming in place. Exercise spas may include peripheral jetted seats intended for water therapy or may have a separate distinct portion of a combination spa/exercise spa and may have separate controls. These aquatic vessels are of a design and size such that it has an unobstructed volume of water large enough to allow swimming or exercising in place.

Sealed: Fabricated without openings to prevent entry of liquid.

Operating water level: Level at which water must be maintained to enable proper water circulation and skimming.

Indoor use: A product that is not designed, tested or certified for use outside or exposed to the elements and weather.



Outdoor use: A product that is designed, tested, or certified for use outside or exposed to the elements and weather.

Waterline: Designed operating level or range (often near the top of the skimmer opening)

1.4 Materials

All spa materials contacting spa water shall meet the health effects and corrosion resistance requirements of Section 3 and Annex A of NSF/ANSI Standard 50.

Rigid plastic piping shall meet the latest requirements of:

- NSF/ANSI 14 – (NSF-pw) Plastics Piping System Components and Related Materials for potable water usage,

Flexible reinforced (helical or fabric) plastic spa hose shall meet the latest requirements of:

- NSF/ANSI 50 - Equipment for Swimming Pools, Spas, Hot Tubs and other Recreational Water Facilities, and
- IAPMO PS 33 – Flexible PVC Hose for Pools, Hot Tubs, Spas, and Jetted Bathtub

Flexible non-reinforced plastic spa hose shall meet the latest requirements of:

- NSF/ANSI 50 - Equipment for Swimming Pools, Spas, Hot Tubs and other Recreational Water Facilities, Section 3 and Annex A

Fittings shall meet the latest requirements

- NSF/ANSI 14 – (NSF-pw) Plastics Piping System Components and Related Materials for potable water usage, or
- NSF/ANSI 50 - Equipment for Swimming Pools, Spas, Hot Tubs and other Recreational Water Facilities, Section 3 and Annex A.

1.4.1 Alternate materials

If specific materials are mentioned, other materials equally satisfactory from the standpoint of public health and performance may be permitted so long as they meet the requirements of this standard.

1.5 Electrical components

All relevant electrical components of the spa system shall meet the requirements of UL 1563 “Standard for Electric Hot Tub, Spas and Associated Equipment” or other electrical standard as specified herein.

1.6 Design and construction

1.6.1 General

Spas shall be designed and constructed to prevent the accumulation of dirt and debris, and to facilitate inspection, maintenance, servicing and cleaning. There shall be no protrusions, extensions, or other obstructions that create an entanglement hazard in the bathing area.

Spas marked as “indoor use” only shall have the exterior surfaces of spa sealed to prevent leakage or splashing of spa water into the mechanical equipment areas in accordance with UL1563, Water exposure test, section 54.2 Splashing and 54.3 Seal test.

Spas marked as “outdoor use”, “indoor and outdoor use”, or not marked shall have the exterior surfaces of spa sealed to prevent leakage or splashing and precipitation of spa water into the mechanical equipment areas in accordance with UL1563, Water exposure test, section 54.2 Splashing, 54.3 Seal test and 54.4 Simulated rain.



1.6.2 Accessibility

Water and air circulation system components including pumps, motors, blowers, and filters, shall be accessible for inspection, maintenance, repair and/or replacement.

1.6.3 Spa shell or tub

1.6.3.1 Spa shell or tub: surface material, strength, and slip resistance

- Plastic spa shells shall be tested and comply with the following requirements:
- ANSI Z124.1.2
 - Section 5.2 Stain resistance
- ANSI Z124.7, "Prefabricated Plastic Spa Shells"
 - Section 4.3 Surface testing
 - Section 4.4 Subsurface testing
 - Section 5.1 Colorfastness testing
 - Section 5.2 Wear and cleanability
 - Section 5.3 Cigarette test
 - Section 5.4 Chemical resistance
 - Section 6.1.2 Hydrostatic load requirements
 - Section 6.2 Empty unity loading testing
 - Section 6.3 Point Impact testing (upon rim and seat)
 - Section 7.1 Flammability (aka UL94 HB or HBF rating) or Section 5.6 Ignition of ANSI Z124.1.2
 - Section 8.1 Hot water resistance
 - Section 8.2 Thermal shock cycle testing

1.6.3.2 Spa step surfaces

- Spas steps shall be marked with color contrasting edge markings
- Steps and stepping surfaces within the spa intended primarily for ingress/egress footing shall be slip-resisting, as defined by the requirements of:
 - ASTM F462 Standard Consumer Safety Specification for Slip-Resistant Bathing Facilities, or,
 - ASTM D1894-Static and Kinetic Coefficients of Plastic Film and Sheeting as appropriate for the surface and material.
- ASTM F462 Testing shall be performed with both the traditional soapy water solution as well as tap water treated with 2.0 ppm of free available chlorine.

1.6.3.3 Spa water depth

- Spas shall be marked with color contrasting depth markings
- General use spas water depth at any seat or bench intended for use as a step when entering or exiting the spa shall not exceed 24 inches (62 cm).
- General use spas with multi-level seating to address tall users, shall not exceed 28 inches (71 cm) water depth for any seat or sitting bench, as measured from the waterline.
- Special use spas such as those designed for exercise such as swimming, therapy or other special purpose may exceed a depth of 48 inches (122 cm).

1.6.3.4 Spa floor slope

- General use spa floors shall have a slope not exceeding one inch per foot (maximum pitch 1:12).

1.6.4 Steps, handholds, and handrails (if applicable)



- If the spa is designed with steps for entering, step treads shall have a minimum unobstructed horizontal depth of 10 inches (25.4 cm) and a minimum unobstructed surface area of 240 in² (1550 cm²).
- Riser heights shall be consistent and no less than 7 inches (17.78 cm) and no greater than 12 inches (30.48cm). If the bottom tread serves as a bench, the bottom riser may be a maximum of 14 inches (35.56 cm) above the spa floor.
- If the spa rim is designed by the manufacturer for use as a step, a handrail shall be recommended for installation by the manufacturer. The handrail shall not be readily removable (ie without the use of tools).
- When used or recommended by the manufacturer, hand rails shall be made from corrosion resistant materials such as polymeric materials or metals such as SS304 or better.
- When used or recommended by the manufacturer, handholds shall be made from corrosion resistant materials such as polymeric materials or metals such as SS304 or better. The handhold shall not be positioned higher than 9 inches above the operating water level.

NOTE: Local code requirements

Always consult and comply with the local regulatory authority having jurisdiction regarding access, steps, handholds, and handrail requirements.

1.6.5 Barriers and layers of protection

1.6.5.1 Barriers and layers of protection

When a spa system is installed safety barriers and layers of protection can help reduce certain risks. Examples of layers of protection include use of barriers to entry such as fences, pool and spa covers and alerts to entry such as alarm devices. The manufacturer may recommend or supply a barrier or layer of protection provided it has been tested and certified to one of the following standards:

- Personal immersion alarms certified to ASTM F2208,
- Fences, certified to ASTM F 1908, ASTM F 2286,
- Door walls or gates with alarms, certified to UL 2017, and
- Safety covers, certified to ASTM F 1346,

1.6.5.2 Safety cover

If the spa manufacturer recommends or supplies a safety cover, it shall be a lockable safety cover that has been tested and certified to the requirements of ASTM F1346 “Standard Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs”.

NOTE: Local code requirements

Always consult and comply with the local regulatory authority having jurisdiction regarding spa safety, barriers, and the layers of drowning protection required for public use spas. There is no substitute for constant and vigilant adult supervision.

1.6.6 Lighting

If a spa has submerged lighting, such lighting shall have been certified by an OSHA accredited certification firm to the requirements of UL 1563 “Standard for Electric Hot Tubs, Spas and Associated Equipment” and/or UL676 Underwater Luminaires and Submersible Junction Boxes.

1.7 Circulation system

1.7.1 General

The circulation system shall be capable of:



- Shall produce a 30 minute or less volumetric turnover of the spa system when operated at the maximum flow rate of the pump and filter in a clean media condition. Always consult local regulations for required water circulation rate.
- The piping from the skimmers and suction fittings shall be hydraulically balanced such that when piping is split between two fittings, the lengths of the piping shall be equal to aid in balanced flow.
- The manufacturer of the spa shall either supply or recommend the specific equipment for installation. If the equipment is not provided by the manufacturer with the spa the manufacturer must specify the items for use during the installation. The specification must reference one or more manufacturer(s) and model or size of the equipment as it applies to the following circulation, filtration, and treatment system.
 - The following items are required to be supplied with the unit or recommended by the manufacturer for installation with the unit:
 - Filter(s), Certified to NSF/ANSI 50
 - Pump(s), Certified to NSF/ANSI 50
 - Primary disinfection system Certified to NSF/ANSI 50 such as:
 - Mechanical chemical feeder,
 - Flow through chemical feeder,
 - In-line electrolytic or brine batch type chemical generator
 - Circulation piping (pressure and suction),
 - Circulation fitting(s), manifold(s), etc.
 - Valve(s),
 - Skimmer(s),
 - Water return inlet(s),
 - Water suction outlet(s) or suction fitting(s)
 - The following items are not required to be supplied with the unit, but may be specified by the manufacturer for installation with the unit:
 - Secondary treatment systems Certified to NSF/ANSI 50 such as:
 - Ozone treatment systems
 - UV treatment systems
 - Copper/Silver ion systems

1.7.1.2 Circulation system design and performance requirements

The spa shall be tested with the manufacturer recommended or provided piping, fittings, filter, pump, and other components as a system for compliance with the following:

- Circulation performance
 - a. The entire system shall be designed with 2 or more water return fittings to aid in circulation of the water within the spa or equipment,
 - b. The entire system shall circulate water through the filter at a rate equal to or greater than the flow rate required to turn over the volume of the spa or exercise pool within 30 minutes.
 - c. The entire system shall meet or exceed the 70% turbidity reduction requirement when tested using Sil-co-sil 106 (a #140 silica), after 5 volumetric turnovers in accordance with NSF/ANSI Standard 50, Section 5, and Annex B.
 - d. The entire system shall also meet or exceed 70% reduction of challenge particulates 20 micron and larger when tested using Arizona A3 medium test dust, after 5 volumetric turnovers in accordance with NSF/ANSI Standard 50, Section 5, and Annex B.

1.7.2 Pumps

1.7.2.1 Pump performance and testing standards



All pumps and filtration system components shall be designed and sized to supply sufficient flow rate to operate the filter and meet the required 30 minute turn-over rate. The water circulation pumps shall meet the spa requirements of:

- NSF/ANSI 50 – Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities.
- ANSI/UL 1081 - Standard for Swimming Pool Pumps, Filters and Chlorinators.

1.7.2.2 Labeling, mounting, access, and support

Pump horsepower rating and labeling shall not exceed the brake horsepower of the motor. Pumps shall be mounted per pump manufacturer's specifications. Pumps shall be accessible for inspection, service, and maintenance. Pumps shall be supported to prevent damage to the pump and piping due to settling or other movements.

NOTE:

Spa or swim spas utilizing a non-self contained skid-pack with a pump(s) must comply with the requirements of this section.

1.7.3 SVRS, suction outlets, exercise resistance systems, vacuum fittings, and water return fittings

1.7.3.1 SVRS

Spas that utilize a SVRS shall comply with the following requirements:

- All SVRS shall be certified to the latest requirements of ASME A112.19.17 or ASTM F2387 by an accredited independent 3rd party that is accredited for the test standard in accordance with ISO 17025, and as pool and spa product certification organization in accordance with ISO17021.

1.7.3.2 Suction outlet fittings used in water circulation

Spas that utilize submerged suction outlets shall comply with the following requirements:

- All suction outlets shall be certified to the latest requirements of APSP-16 by an accredited independent 3rd party that is accredited for the test standard in accordance with ISO 17025, and as pool and spa product certification organization in accordance with ISO17021. Each suction fitting shall be installed in accordance with its certified ratings as relates to:
 - Installation orientation (floor or wall), and
 - Installation configuration (single or dual), and
 - Maximum flow rating for the specific opening to which the fitting is affixed.

1.7.3.3 Suction outlet fittings used in exercise therapy or resistance systems

Spas that utilize submerged suction outlets for use in exercise or resistance systems shall comply with the following options:

- All suction outlets shall be tested to the latest requirements of APSP-16 by an accredited independent 3rd party that is accredited for the test standard in accordance with ISO 17025, and as pool and spa product certification organization in accordance with ISO17021.
- The fitting (as installed in the spa/tub unit) shall be fully tested to all applicable requirements of the APSP-16 standard including finger and limb entrapment, horizontal and vertical load, corrosion resistance, fastener testing, pull load, vacuum impact (if system can generate vacuum), etc.
- Suction fittings for use in spa equipment shall be tested in-situ in the exercise spa to verify that the suction fitting and pumping system (propeller, paddlewheel, centrifugal pump, etc.) do not exceed the acceptable hair entrapment and body block hold down forces when tested in accordance with the requirements within APSP-16. In cases where the system has power



controls or adjustability the system testing shall be performed in the worst case scenario of maximum flow rate and greatest power of the exercise resistance system.

1.7.3.4 Specialty vacuum fittings

If spa vacuum cleaning fitting (used to temporarily install a hose for vacuuming the spa floor) is utilized it shall be:

- Installed outside the spa shell in a location inaccessible to spa users, or
- If provided within the spa, it shall be installed with a lockable specialty vacuum closure fitting which has been tested and certified to the requirements of:
 - NSF/ANSI Standard 50, Section 3 material formulation requirements, and
 - IAPMO SPS 4, Special use suction fittings.

1.7.3.5 Water return fittings

- Fittings that return water to the spa or exercise pool shall comply with NSF/ANSI Standard 50 requirements for corrosion resistance and material safety.
- The entire system shall be designed with 2 or more water return fittings to aid in circulation of the water within the spa system.

1.7.4 Filters

All pumps and filtration systems components shall be designed and sized to supply sufficient flow rate to operate the filter and meet the required turn-over rate. The filters shall meet the spa requirements of:

- NSF/ANSI 50 – Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities.
- ANSI/UL 1081 - Standard for Swimming Pool Pumps, Filters and Chlorinators.

Filters integral to the spa shall meet the requirements, but a separate filter data plate and operational instructions are not required if the filter information is provided in the spa or equipment manual.

NOTE:

Spa or swim spas utilizing a non-self contained skid-pack with a filter(s) must comply with the requirements of this section.

1.7.5 Surface skimmers/weirs and overflows or perimeter grating

The spa shall be designed to draw water from the top via one or more of the following: perimeter overflow grating, gutter system, or skimmers to aid in rapid removal of floating debris and contaminants. Systems utilizing skimmers shall have 2 or more. All systems shall be marked with their ideal operating water level and acceptable range.

1.7.5.1 Recessed surface skimmers (when used)

All recessed surface skimmers shall meet the requirements of:

- NSF/ANSI 50 – Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities, Section 3 and 8.
- The entire system shall be designed with 2 or more skimmers.
- Skimmers shall be externally vented to atmosphere whether integral to the spa or not: (example, a vent hole in the skimmer cover or lid, a vented entry to the skimmer weir, or other means).
- Systems shall be marked (either on the skimmer face or shell structure) with their ideal operating water level and acceptable range.

Skimmers integral to the spa shall meet the requirements, but a separate skimmer data plate and operational instructions are not required.

1.7.5.2 Non-recessed surface skimmers (when used)



All non-recessed surface skimmers shall meet the requirements of:

- NSF/ANSI 50 – Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities, Section 3 materials formulation and corrosion resistance, and
- Skimmer and housing when installed in the spa or exercise pool shall have at least 2 of the following design safety features
 - External vacuum break on the skimmer throat entry.
 - Housings whose inlet may be closed during part of the operation cycle shall not sustain damage or permanent deformation when exposed to a negative pressure of 25 in Hg (85kPa).
 - The skimmers shall be installed with a vacuum vent line externally vented to atmosphere on the suction piping from the skimmer housing whether integral to the spa or not.
- Skimmer strainer basket shall be easily removable for cleaning.
- The entire system shall be designed with 2 or more skimmers
- Skimmer strainer basket volume and open area dimensions shall comply with NSF/ANSI Standard 50.
- Skimmer trimmer valves (when used) shall comply with NSF/ANSI Standard 50.
- Skimmer weir, a non-recessed skimmer shall have a weir that operates freely with continuous action and adjusts automatically to variation in water levels over the manufacturer prescribed operating water level at the maximum flow rate of the spa or exercise pool.
- The skimmer system shall be evaluated for entrainment of air through the skimmer system. The skimmer system shall be capable of 50% of flow to the filter without air entrainment when the system is operated at the spa or exercise pool manufacturers recommended operating water level.
- Systems shall be marked (either on the skimmer face or shell structure) with the operating water level or acceptable range of water level.

1.7.5.3 Perimeter over flow grating or gutter system (when used)

All recessed perimeter overflow grating or gutter **system** shall meet the requirements of:

- NSF/ANSI 50 – Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities
- Systems shall be marked (either on the gutter, overflow system or shell structure) with their ideal operating water level and acceptable range.

1.7.6 Air Blower and air induction systems (when used)

The requirements of this section apply to systems integral systems that induce or allow air to enter the spa either by means of a power pump or passive design:

- Air blower systems shall prevent water backflow toward the device via one or more of the following mechanisms:
 - Backflow prevention valve
 - Hartford loop (i.e. piping loop to prevent water backflow),
 - Installation height of the blower is above the water line
- Air intake sources shall not introduce water, dirt or contaminants from outside the spa unit, into the spa;
- Integral air passages shall be able to withstand 150% the manufacturer's maximum rated working pressure for a minimum of 5 minutes.
- Air blower tubing shall meet or exceed the tubing performance requirements of NSF/ANSI Standard 50 and or IAPMO PS 33.

1.7.7 Temperature control systems, heater and controls (when used or integrated into spa)



1.7.7.1 Temperature control

Each spa shall have a temperature-regulating control that is in conformance with ANSI/UL 1563 “Standard for Electric Hot Tubs, Spas, and Associated Equipment”, including requirements for:

- Maximum set point corresponding to a water temperature of 40 °C (104 °F) in the tub; and
- Tolerance at the maximum temperature setting of not more than ± 3 °C (± 5 °F).

1.7.7.2 Temperature limits

Each spa shall have a temperature-limiting control that is in conformance with ANSI/UL 1563 “Standard for Electric Hot Tubs, Spas, and Associated Equipment”, including requirements for:

- Limiting the water at the inlet to the tub to a maximum temperature of 50 °C (122 °F); and
- Tolerance at the maximum temperature setting of not more than ± 3 °C (± 5 °F).

1.7.7.3 Temperature display

Each spa shall have a display in one degree increments (Fahrenheit or Celsius) reflecting the spa water temperature. This display shall be located on the top surface or side of the spa and shall be readily visible to persons prior to entry. The display shall conform to:

- UL1563, Section 35.4.2 display tolerances of ± 1 °C (± 2 °F).

1.7.7.4 Heater

The heater shall be stable and stationary after plumbing and electrical connections are completed. The minimum clearances to combustible materials, as specified by the heater manufacturer, shall be maintained. All heaters and system components shall meet the requirements of:

- NSF/ANSI 50 – Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities
- ANSI/UL 1261 - Electric Water Heaters for Pools and Tubs

1.7.8 Sanitation and treatment systems

1.7.8.1 Water sanitation via chlorine and bromine

Water sanitation in the spa system shall be accomplished using chemicals registered by the United States Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide, and Rodenticide Act, as recommended in the manufacturer’s manual. The applicable requirements of NSF/ANSI Standard 50 shall apply to equipment recommended or supplied by the spa manufacturer for use in chlorine/bromine sanitation.

Spa disinfection systems shall be sized to meet varying regulatory requirements. The spa manufacturer shall specify or require at least one size/type system of Level-1, Level-2, or Level-3 disinfection system be installed. The spa manufacturer shall recommend or supply disinfection systems capable of meeting one or more of these levels:

- 1) Level 1-provide a minimum of 3 pounds of chlorine per day per 1,000 gallons of spa water volume.
- 2) Level 2-provide a minimum of 1.5 pounds of chlorine per day per 1,000 gallons of spa water volume.
- 3) Level 3-provide a minimum of 0.5 pounds of chlorine per day per 1,000 gallons of spa water volume.

Spa systems for public use shall not require direct or hand feeding of chemicals except in extreme cases such as super-chlorination or water balancing. Systems shall be of one or more the following types and shall meet the applicable requirements of this NSF/ANSI Standard 50:

- Mechanical chemical feeding systems, including Section 9 of NSF 50, or
- Flow through chemical feeding systems, including Section 10, or



- Electrolytic in-line or batch chlorine/bromine generators including Section 14, or
- Electrolytic batch or off-line chlorine/bromine generators including Section 15
- Automatic chemical controller, including Section 17.

Water sanitation equipment integral to the spa or exercise pool shall meet the requirements, but a separate data plate and operational instructions are not required if the information is contained within the spa.

NOTE: Local code requirements

Always consult and comply with the local regulatory authority having jurisdiction regarding chemical feeding requirements and system sizing. Some jurisdictions require Level 1 (sized) chemical treatment systems and or automatic controllers. Spa or swim spas utilizing a non-self contained skid-pack with a chemical treatment system(s) must comply with the requirements of this section.

1.7.8.2 Supplemental water sanitation and treatment (when used)

The applicable requirements of NSF/ANSI 50 shall apply to any equipment recommended or supplied by the spa manufacturer for use in treatment of spa water, including:

- Ozone systems, including Section 12, or
- UV light systems, including Section 13, or
- Copper and silver ion generators, including Section 16

Supplemental water treatment equipment integral to the spa or exercise pool shall meet the requirements, but a separate data plate and operational instructions are not required.

NOTE: Local code requirements

Always consult and comply with the local regulatory authority having jurisdiction regarding supplemental sanitation and treatment equipment requirements and system sizing. Spa or swim spas utilizing a non-self contained skid-pack with supplemental treatment equipment must comply with the requirements of this section

1.8 Data plate

Each spa or exercise pool shall have a data plate that is permanent and easy to read. The data plate shall have, at a minimum, the following information:

- Manufacturer's name and address;
- Model and serial number;
- Maximum number of users (bathers);
- Maximum recommended temperature;
- Recommended spa water quality parameters, including pH, temperature, sanitizer level (such as 3-5 mg/L (ppm) Free Available Chlorine, or 4-6 mg/L (ppm) Total Bromine) consult local regulatory authority having jurisdiction.
- Reference to using EPA registered chemical disinfectants;
- Date of manufacture;
- Dry weight, water capacity, and filled/occupied weight.
- Certifiers mark attesting to compliance with all requirements
- The NSF Certification mark is



1.9 Owner's manual

A comprehensive manual or manual package shall be provided with each spa covering important areas such as spa operation, maintenance, water quality monitoring, and safety. For spas utilizing components certified under NSF/ANSI 50, separate component manuals shall be included in the manual package. If the spa component is integral to the spa, equivalent information shall be provided in the spa manual.

1.9.1 General spa safety

This section shall include, at a minimum, the following information:

- Electrical hazards;
- Drowning hazards;
- Appropriate injury and health hazards.
- Barriers
 - When a spa or exercise pool is installed safety, barriers, and layers of protection can help reduce risk. Examples of layers of protection include use of barriers to entry such as fences, pool and spa covers and alerts to entry such as alarm devices. The manufacturer may recommend or supply a barrier or layer of protection provided it has been tested and certified to one of the following standards:
 - i. Personal immersion alarms certified to ASTM F2208,
 - ii. Fences, certified to ASTM F 1908, ASTM F 2286,
 - iii. Door walls or gates with alarms, certified to UL 2017, and
 - iv. Safety covers, certified to ASTM F 1346, the spa or exercise pool manufacturer may recommend or supply a lockable safety cover provided it has been tested and certified to the requirements of ASTM F1346 "Standard Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs".

NOTE: Local code requirements



Always consult and comply with the local regulatory authority having jurisdiction regarding spa safety, barriers, and the layers of drowning protection required for public use spas. There is no substitute for constant and vigilant adult supervision.

1.9.2 Spa specifications

This section shall include, at a minimum, the following information:

- Maximum number of users (bathers);
- Footprint dimensions;
- Spa height;
- Effective filtration area;
- Heater output;
- Water capacity;
- Dry weight;
- Filled weight, assuming average occupant weight of 175 lbs.;
- Dead weight, assuming average occupant weight of 175 lbs.;
- Electrical requirements;
- A general description of how the spa operates.

1.9.3 Installation instructions

Installation instructions shall include, at a minimum:

- Site preparation;
- Ventilation instructions, if installed indoors;
- Spa leveling procedure;
- Electrical requirements and precautions.

1.9.4 Operating instructions

Operating instructions shall include, at a minimum:

- Start-up and refill procedures and frequency;
- Jet control operations;
- Temperature adjustment operations;
- Lighting control, if appropriate.

1.9.5 Spa care and maintenance instructions

Maintenance instructions shall include, at a minimum:

- Draining instructions;
- Filter system maintenance, including filter cartridge removal, cleaning, and installation;
- Care instructions for spa shell, exterior, and cover;
- Instructions for prevention of freezing and winterizing;
- Vacation care instructions.

1.9.6 Water quality and maintenance instructions

Water quality instructions shall include, at a minimum:

- Methods for testing the spa water
- Methods for adding chemicals to the water;
- Methods for maintaining the proper water chemistry;
- Recommended water quality parameters (shown in the non-mandatory annex);
- Basic chemical safety guidelines;
- Recommended test frequency;
- Statement specifying use of EPA registered chemicals for spa sanitation;



- Statement reading “Maintaining your sanitizer at the recommended levels at all times will decrease the occurrence of unsafe bacteria in your spa water” (or equivalent).

1.9.7 Service information

Service information shall include, at a minimum;

- Troubleshooting guide;
- Warranty;
- Contact information for manufacturer or service company;
- List of user serviceable components/parts;
- Statement that consumer should not attempt to repair non-user serviceable components.