

STANDARD INFORMATION

Standard: NSF/ANSI 50

Standard ID: Equipment and Chemicals for Swimming Pools, Spas, Hot Tubs, and other Recreational Water Facilities [NSF/ANSI/CAN 50:2019]

Previous Standard ID: Equipment for Swimming Pools, Spas, Hot Tubs and other Recreational Water Facilities [NSF/ANSI 50:2017]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **May 1, 2022**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard.

Overview of Changes:

- Addition of operation and installation requirements for recessed automatic surface skimmers
- Additional requirements for Ultraviolet (UV) equipment
- New requirements for water conditioning devices
- New requirements for interactive waterplay venue surfacing systems

Specific details of new/revise requirements are found in table below.

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



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CLAUSE	VERDICT	COMMENT
		<p>Additions to existing requirements are <u>underlined</u> and deletions are shown lined out below.</p> <hr/> <p><i>New clause added;</i></p>
3.65	Info	<p>interactive waterplay venue: Any indoor or outdoor recreational water facility that includes sprayed, jetted, or other water sources contacting bathers and not necessarily incorporating standing or captured water as part of the bather activity area. These aquatic venues are also known as, but not limited to, splash pads, spray pads, wet decks.</p> <hr/> <p><i>New clause added;</i></p>
3.109	Info	<p>safety surfacing system: Products intended to cover the floor of a recreational water venue that also comply with the requirements of this Standard, including the impact attenuation and slip resistance requirements.</p> <hr/> <p><i>New clause added;</i></p>
3.153	Info	<p>water conditioning device: A device intended to treat swimming pool water and improve water quality without the introduction of additional chemicals.</p> <hr/>
10	Info	<p>Recessed automatic surface skimmers</p> <hr/>
10.1.3		<p>On swimming pool skimmers, the housing opening at the entrance throat shall be at least 7.5 in (190 mm) wide. <u>On and</u> spa / hot tub skimmers, the housing opening at the entrance throat shall be at least 4 in (102 mm) wide. If a circular weir is used, there shall be a clearance of at least 2 in (51 mm) between the weir lip and the side of the skimmer housing.</p> <hr/>
10.2.2		<p>Flap-type weirs on swimming pool skimmers shall have a minimum unobstructed width of 7.25 in (184 mm) over the full operating range. <u>Flap-type weirs on and</u> spa / hot tub skimmers shall have a minimum unobstructed width of 3.75 in (95 mm) over the full operating range. Flap-type weirs shall be buoyant and designed to develop an even flow over their full width. The clearance between the weir and the housing side shall not exceed 0.125 in (3 mm) at any point. Hinge construction shall preclude leakage. The weir shall be firmly attached to the housing and shall be accessible for cleaning and replacement in the field.</p> <hr/>
10.9	Info	<p>Operation and installation instructions</p> <hr/> <p>A skimmer equipped with an equalizer shall have, in its operation and installation instructions:</p>
10.9.2		<p>— a warning that the skimmer is to be installed with an equalizer wall or drain fitting conforming <u>certified</u> to ANSI/ASME A112-19.8 <u>APSP-16</u> to prevent hair or body entrapment at the skimmer equalizer;</p> <hr/>



CLAUSE	VERDICT	COMMENT
		<i>New section added;</i>
10.9.3		A skimmer's flow ratings (GPM, LPM) shall be specified by the manufacturer and conform to Sections 10.3.3.1 through 10.9.3.3, when applicable. When skimmers include water level based, maximum flow rating marks inside the housing, instructions shall indicate they are to be observed by users when the skimmer is off (i.e., no flow).
10.9.3.1		The minimum flow rating shall develop an even flow over the full width of the weir when tested at the skimmer's lowest operating water level (see Section N-5.2).
10.9.3.2		The maximum flow rating for each indicated operating water level shall not exceed the nominal pipe sizes specified by the manufacturer or entrain air in the suction line (see Section N-5.2). The maximum velocity for any nominal pipe size specified shall not exceed 6 FPS (1.83 MPS). Velocity calculations shall be based on the nominal inside diameter for ASTM D17859 schedule 40 PVC pipe.
10.9.3.3		The manufacturer may optionally specify water level based, maximum flow ratings within the operating range of the weir (e.g., the normal, mid-point operating level) that are higher than the maximum flow rating achieved when tested at the lowest operating water level of the weir (see Section N-5.2). When multiple water level based flow ratings are used, each shall be indicated on a data plate inside the skimmer housing that is permanent, easy to read, and securely attached, cast or stamped at the appropriate water elevation. The elevation of these markings shall be set and observed when the pump is off.
10.10		A skimmer shall have a data plate that is permanent, easy to read, and securely attached, cast or stamped into the cover or skimmer housing at a location readily accessible after installation. The data plate shall contain the following information: <ul style="list-style-type: none">— manufacturer's name and contact information (address, phone number, website, or prime supplier);— skimmer model number;— minimum design flow rate in GPM (LPM);— maximum design flow rate in GPM (LPM); and— <u>multiple water level based maximum design flow rates in GPM (LPM) that refer to or are located adjacent water level marks located inside the skimmer housing, if applicable.</u>
15	Info	Ultraviolet (UV) light process equipment
		<u>A supplemental UV system shall be provided with an effective means to alert the user when a component of this equipment is not operating.</u>
15.5		<u>A secondary UV system shall incorporate on the control panel a constantly visible readout of the actual flow (in US GPM), the actual calculated dose (in mJ/cm2) and the actual lamp intensity (in w/m2). It is acceptable for the display to constantly cycle through the parameters. The cycle duration shall not take more than 15 s.</u>



CLAUSE	VERDICT	COMMENT
15.6	Info	Operation and installation instructions
		Drawings and a parts list for easy identification and ordering of replacement parts shall be furnished with each unit and shall include: <ul style="list-style-type: none">— model number of the unit;— instructions for proper size selection and installation;— <u>whether the system has a mechanical cleaning system or requires an external chemical cleaning system installed per Section 15.13.1;</u>
15.6.1		<ul style="list-style-type: none">— operation and maintenance instructions;— a statement of the manufacturer's warranty;— applicable caution statements (prominently displayed);— ventilation requirements (if applicable);— cross connection protection (if the unit is physically connected to a potable water supply);— maximum daily operation time (if not designed for continuous operation); and— a warning, if the potential exists for release of high dosages of substances that may endanger bathers.
		UV systems claiming inactivation of cysts, the installation and operational instructions or product manual shall contain the following: <ul style="list-style-type: none">— reactor configuration type (U, S, etc.);— number of lamps per reactor;— lamp designation or model number;— sensor designation or model number;— UVT of water (minimum value or a range of UVTs under which validation was performed);— organism used in testing;— correlation between test organism and <i>C. parvum</i>;— effective log inactivation of organism at maximum flow rate or validated flow rates;— effective UV dose delivered at specified wavelength and flow rate; and— <u>whether the system has a mechanical cleaning system or requires an external chemical cleaning system installed per Section 15.13.1</u>
15.6.2		



CLAUSE	VERDICT	COMMENT
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Disinfection efficacy

Ultraviolet light process equipment designed for supplemental disinfection shall demonstrate a 3 log (99.9%) or greater inactivation of influent bacteria when tested according to Section N-8.1.

Ultraviolet light process equipment designed for secondary disinfection shall demonstrate a 3 log (99.9%) or greater inactivation of *C. parvum* when tested and evaluated according to Section 15.18 and is exempt from Section N-8.1 testing if during secondary validation the lamp intensity (per Section 15.5) is equal to or greater than the lamp intensity after the unit has completed life testing. Section N-8.1 shall be required if the dose is less.

Ultraviolet light process equipment designed for supplemental disinfection shall carry the following information in the installation and use instructions and be noted in the official certification listings:

15.8

“This unit has demonstrated an ability to provide three log inactivation of <name organisms>. This unit has not demonstrated an ability to provide three log kill or inactivation of <name organisms if applicable>. This product is designed for supplementary disinfection and is intended for use with appropriate residual levels of EPA registered disinfecting chemicals. Specific residual levels of EPA registered disinfecting chemicals may be required by the regulatory agency having authority.”

Ultraviolet light process equipment designed for secondary disinfection shall carry the following information in the installation and use instructions and be noted in the official certification listings:

“This unit has been tested to confirm a minimum inactivation equivalent of 3 log (99.9%) *C. parvum* in accordance with NSF/ANSI/CAN 50 and the US EPA UV DGM. This product has met the requirements of NSF/ANSI/CAN 50, Section N-8.1: Disinfection Efficacy, for the \geq minimum of a 3 log (99.9%) reduction of *Enterococcus faecium* [ATCC #6569] and *Pseudomonas aeruginosa* [ATCC #27313]. This product is intended for secondary disinfection and is intended for use with appropriate residual levels of EPA registered disinfecting chemicals. Specific residual levels of EPA registered disinfecting chemicals may be required by the regulatory agency having authority.”



CLAUSE	VERDICT	COMMENT
21	Info	Spas and hot tubs
21.4	Info	Design and construction
21.4.3	Info	Spa shell or tub
21.4.3.2	Info	Step surfaces
		Steps and stepping surfaces within the activity spa intended primarily for ingress / egress footing shall be slip-resisting, as defined by the requirements of the following: <u>and shall achieve a wet pendulum slip resistance of P5 when tested in accordance with AS4586-2013.</u>
21.4.3.2.2		<p>— ASTM F462; or</p> <p>— ASTM D1894</p> <p>Testing shall be performed with the traditional soapy water solution and the tap water treated with 2.0 ppm of free available chlorine.</p> <p><i>New section added;</i></p>
25		<p>Water conditioning devices</p> <p>This section contains requirements for water conditioning devices. A water conditioning device is a physical device that, without the introduction of any chemicals, treats the water. See standard for details.</p> <p><i>New section added;</i></p>
26		<p>Interactive waterplay venue surfacing systems</p> <p>The purpose of this section is to specify the evaluation and testing criteria of surfacing systems. These evaluation and testing requirements will enable the appropriate assessment of a safety surfacing system for interactive waterplay venues. These evaluation and testing requirements pertain only to the surface on grade / ground level. See standard for details.</p>
Normative Annex 5	Info	Test methods for the evaluation of recessed automatic skimmers
N-5.2	Info	Weir opening
N-5.2.4	Info	Weir opening and flow rating confirmation test method
		<i>New section added;</i>
N-5.2.4.2		<p>Weir operation and maximum flow rating test method</p> <p>This section contains requirements and acceptance criteria for the weir operation and maximum flow rating test.</p>



CLAUSE	VERDICT	COMMENT
Normative Annex 11	Info	<p>Water quality testing devices</p> <p>For shelf-life claims based on closed package studies</p> <p>To verify shelf life, open or use product as required for the above testing. Upon completion of use of product close/seal/turn off, and store in accordance with manufacturer's instructions or store at 50% relative humidity at 73 ± 8 °F (23 ± 4 °C) for the duration of the shelf life. Within a range of ± 2 wk of the expiration date/shelf life claim, open/turn on etc. and conduct testing with the product for the appropriate product types or parameters. If product does not comply, the manufacturer shall revise shelf life claims, storage conditions, etc. as appropriate.</p> <p>N-11.14</p> <p><u>Approximately one month before the shelf life time has elapsed, follow the manufacturer's instructions to conduct testing with the WTD or test kit for the appropriate product types or parameters. If the WTD or test kit includes reagents (e.g., liquid, powders, dry-phase chemistry) use reagents from an unopened package of the same lot used during the initial testing phase. If the product does not meet the shelf life claims, the manufacturer shall revise shelf life claims or other pertinent storage and handling information as appropriate. For shelf life claims based on open package studies use the same package(s) used in the original testing phase.</u></p>
Normative Annex 12	Info	<p>Toxicology review and evaluation procedures for swimming pool treatment chemicals</p>
N-12.3	Info	<p>Product information requirements</p> <p><i>New clause added;</i></p>
N-12.3.2		<p>Table N-12.1 lists chemicals used in the treatment of recreational water. The standardized evaluation level has been previously approved under Annex N-12 for use in recreational water and listed chemicals may be used at the stated dose, or less, without further Annex N-12 evaluation. However, this does not exempt the recreational water treatment products from contaminant testing or the evaluation of any measured contaminants to the requirements of Annex N-12.</p>