TO: Joint Committee on Recreational Water Facilities
FROM: Tom Vyles, Chair of the Joint Committee
DATE: October 26, 2020
SUBJECT: Proposed revision to NSF/ANSI/CAN 50: Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities (50i160r6)

Revision 6 of NSF/ANSI/CAN 50 issue 160 is being forwarded to the Joint Committee for consideration. Please review the proposal and submit your ballot by November 16, 2020 via the NSF Online Workspace <www.standards.nsf.org>.

When adding comments, please identify the section number/name for your comment and add all comments under one comment number where possible. If you need additional space, please upload a word or pdf version of your comments online via the browse function.

Purpose
This ballot will affirm changes to Section 6 of NSF/ANSI/CAN 50, revising language relating to pump flow rate outputs.

Background
Section 23 – Flow metering devices was added to NSF/ANSI 50-2017 to have a positive impact on public health by providing test methods for flow meters. Some pump manufacturers are now incorporating a flow rate display on their pump that infers a flow rate based on impeller RPM. These displays can be misleading.

To ensure listed products are providing accurate flow rate data, the standard could be revised to require any pumps listed under NSF/ANSI/CAN 50 Section 6 be tested / certified to the applicable flow meter accuracy performance test methods and the pump be rated as Level 0-5 like a flowmeter.

An r1 draft ballot was sent to the Joint Committee and received 12 negative votes. The issue paper was sent back to the RWF Flow Meters Task Group for revision, and r4 language was sent to approval ballot with the Joint Committee. That language drew comments regarding installation manual and data plate requirements. The issue proponent found the comments persuasive, and those changes were incorporated into the r5 language presented here for approval. That r5 ballot drew 2 comments requesting minor changes, which have been included in the r6 language presented here.

If you have any questions about the technical content of the ballot, you may contact me in care of:

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7 Centrifugal pumps

For each pump model or model series, the manufacturer shall provide a pump performance curve that plots the pump’s total dynamic head versus the discharge flow rate. The manufacturer shall also have a curve available that plots the net positive suction head (NPSH) or total dynamic suction lift (TDSL), brake horsepower, and pump efficiency in relation to the performance curve. Pumps with a rating of 5 HP (3.7 kW) or less are not required to have a NPSH curve.

For pumps utilizing motors rated for multiple voltages, if the pump performance curve varies between rated voltages, such as may occur between 230 V and 208 V, the manufacturer shall provide a pump performance curve for each rated motor voltage.

7.6.2 The actual pump curve, as determined in accordance with Section N-3.1, shall be within a range of -3% to +5% of the total dynamic head or -5% to +5% of the flow, whichever is greater, indicated by the performance curve. Data taken above 90% full flow shall not be judged to the acceptance criteria.

Pumps with more than one operating speed shall be tested as documented below:

— fixed multispeed pump or motor assemblies, test at each speed; or
— variable speed pump or motor assemblies, test at 100%, 50%, and the lowest speed.
7.6.3 For pumps that provide a flow rate output (such as a visual flow rate in LPM/GPM or other manner), the pump may be tested in accordance with the following flow meter requirements of Section 24 of this standard:

- Section 24.8 flow rate measurement accuracy
- Section 24.9 flow metering device testing and accuracy levels, and
- Section 24.12 life testing

7.7 Operation and installation instructions

7.7.1 The manufacturer shall provide a manual with each pump. The manual shall include written instructions for the proper installation, operation, and maintenance of the pump. Instructions shall include a parts list and diagrams to facilitate the identification and ordering of replacement parts. If the parts list does not uniquely identify each part for ordering, the manufacturer shall also supply the appropriate specification numbers and serial numbers, and the impeller diameter.

7.7.2 A pump manufactured without an integral strainer shall state in its installation instructions, on a data plate, or on an attached label that the pump is to be installed with a strainer conforming to the requirements in this Standard.

7.7.3 For pumps that provide a flow rate output, the instruction manual shall either state the accuracy level of flow metering performance, (e.g., Level 1 or L1) or shall include the statement "Displayed flow rate has not been evaluated to the flow meter requirements of NSF/ANSI/CA 50."

7.8 Self-priming pumps

A pump designated as self-priming shall be capable of repriming itself when operated under a suction lift without the addition of more liquid. Self-priming capability shall be verified in accordance with Section N-3.3.

7.9 Data plate

7.9.1 A pump shall have a data plate that is permanent; easy to read; and securely attached, cast, or stamped into the pump at a location readily accessible after installation. The data plate shall contain the following information:

- manufacturer’s name and contact information (address, phone number, website, or prime supplier);
- pump model number;
- pump serial number, date code, or specification number;
- whether the unit has been evaluated for swimming pools or spas / hot tubs, if not evaluated for both applications; and
- designation as a self-priming or non-self-priming pump. If the pump is self-priming, the maximum vertical lift height shall be specified.

- if applicable, accuracy level of flow metering performance, (e.g., Level 1 or L1).

7.9.2 The proper direction of impeller rotation shall be clearly indicated by an arrow on the data plate, on a separate plate, or cast onto the pump.