

15A NCAC 18A .2539 SUCTION HAZARD REDUCTION

(a) At all public wading pools that use a single main drain for circulation of water, signs shall be posted stating, "WARNING: To prevent serious injury do not allow children in wading pool if drain cover is broken or missing." Signs shall be in letters at least one-half inch in height and shall be posted where they are visible to people entering the wading pool. Submerged suction outlets shall be prohibited in wading pools in accordance with ANSI/PHTA/ICC-7 2020 American National Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins, which is incorporated by reference, including any subsequent amendments or editions, and available at <https://webstore.ansi.org/> at a cost of one hundred and sixty five dollars (\$165.00)(hereinafter referred to as "ANSI/PHTA/ICC-7").

(b) All submerged suction outlets in public swimming pools other than vacuum ports shall be protected by a cover in compliance with ANSI/APSP/ICC-16 2017 (PA 2021) American National Standard for Suction Outlet Fitting Assemblies (SOFA) for Use in Pools, Spas, and Hot Tubs, which is hereby incorporated by reference, including any subsequent amendments or editions, and available at <https://webstore.ansi.org/> at a cost of one hundred and sixty five dollars (\$165.00)(hereinafter referred to as "ANSI/APSP/ICC-16"). All submerged suction fittings shall be installed in accordance with the manufacturer's instructions.

(c) Public swimming pools that have a single main drain or single submerged suction outlet other than an unblockable drain, or that have multiple outlets in the same plane separated by less than three feet, measured from the centers of the covers, shall have one or more secondary methods of preventing bather entrapment. Secondary methods of preventing bather entrapment include:

- (1) A safety vacuum release system which ceases operation of the water pump, reverses the circulation flow, or otherwise provides a vacuum release at the suction outlet when a blockage has been detected, and that has been tested by a third party and found to conform with ANSI/PHTA/ICC-7. The operator of the public swimming pool shall test an installed safety vacuum release system using the methodology and at the frequency recommended by the manufacturer, and the test dates and results shall be recorded in the written records required by Rule .2535(11) of this Section. Safety vacuum release systems installed or replaced after the effective date of this Rule shall have a shut off valve for testing the device, if recommended by the manufacturer;
- (2) A suction-limiting vent system with an atmospheric opening inaccessible to the public;
- (3) A gravity drainage system that utilizes a surge tank;
- (4) An automatic pump shut-off system;
- (5) Disabling the submerged suction outlet; or
- (6) Any other system that complies with ANSI/PHTA/ICC-7.

(d) Owners of all public swimming pools shall provide documentation to the Department, as part of the application for an operation permit under Rule .2510(c) of this Section, to verify suction outlet safety compliance. This documentation shall include:

- (1) Documentation of the maximum possible flow rate for each [pump] with a submerged suction outlet. This shall be the pump's maximum flow shown on the manufacturer's pump performance curve except where flow reductions are justified with total dynamic head measurements or calculations. Flow reduction measurement documentation shall include photographs taken within two hours of backwashing or replacing the filter with all valves in the fully open position that show the levels of all the gauges used in the public swimming pool. All systems using a flow reduction to comply with this rule shall have a flow meter installed in accordance with manufacturer's instructions confirming that the water flow does not exceed the gallon per minute flow rating of the drain covers or a sealed statement from a Registered Design Professional showing calculations used to justify the reduction;
- (2) Documentation that drain covers are in compliance with ANSI/APSP/ICC-16 and the manufacturer's instructions. This includes documentation that each drain cover on a single or dual drain submerged suction outlet is rated to meet or exceed the pump's maximum flow or the measured flow of the water through the submerged suction outlets. Drain covers on a submerged suction system with three or more suction outlets shall together be rated to meet or exceed the pump's maximum flow with one drain completely blocked, unless the combined flow of all unblockable drains meet or exceed the pump's maximum flow or the measured flow of the water; and
- (3) Documentation that drain sumps meet the dimensional requirements specified in the drain cover manufacturer's installation instructions.

(e) Operators of all public swimming pools shall inspect pools daily to ensure the drain covers are not missing, broken, or cracked and are securely attached. The operator shall close the public swimming pool until missing, broken, or cracked suction fittings are replaced and loose suction fittings are resecured.

History Note: Authority G.S. 130A-282;
Temporary Adoption Eff. June 1, 1994 for a period of 180 days or until the permanent rule becomes effective, whichever is sooner;
Eff. October 1, 1994;
Amended Eff. May 1, 2010; January 1, 2006; February 1, 2004; April 1, 1999;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. July 20, 2019;
Amended Eff. November 1, 2024.