

June 6, 2025

TRANSMITTED VIA EMAIL

Brett Horn  
ASTM F15.49 on Pool Safety Standards Subcommittee Chairman  
ASTM International  
100 Barr Harbor Dr.  
West Conshohocken, PA 19428-2959

RE: Recommended Revisions to ASTM F3698-24, *Standard Specification for Computer-vision Drowning Detection Systems for Residential Swimming Pools*

Dear Mr. Horn,

U.S. Consumer Product Commission (CPSC) staff<sup>1</sup> appreciates your willingness to serve as Chairman on this subcommittee and looks forward to working together to implement enhanced safety provisions in the recently published standard ASTM F3698-24, *Standard Specification for Computer-vision Drowning Detection Systems for Residential Swimming Pools*.

Annually, CPSC publishes a national statistical residential drowning and submersion report, *Pool or Spa Submersion: Estimated Nonfatal Drowning Injuries and Reported Drownings*. In the latest 2025 report,<sup>2</sup> staff identified 842 fatality scenarios related to pool water access by children younger than 5 years old for the years 2020-2022. The reports of children under 5 years old who drowned were classified into common scenarios. The highest percentage of the reports (62 percent or 522 toddler fatalities) were attributed to a timeframe when the adult lost contact or knowledge of the child's whereabouts during that period, and the child managed to access the pool water. Staff recommends additional requirements in ASTM F3698 to provide better notification of children entering the pool water or vicinity.

***Toddler Pool Entry Detection:***

Currently, ASTM F3698 has only one requirement related to a child entering the pool. Section 5.2.1 outlines a water entry test using a CAMI toddler dummy entering the pool feet first and held upright with head and shoulders above the water surface. However, ASTM F2208, *Standard Safety Specification for Residential Pool Alarms*, contains several toddler entry tests, such as vertical feet-first entry and horizontal roll-in, both utilizing CAMI toddler dummy entry.

---

<sup>1</sup> These comments were prepared by the CPSC staff. They have not been reviewed or approved by, and may not represent the views of, the Commission.

<sup>2</sup> Pool or Spa Submersion: Estimated Nonfatal Drowning Injuries and Reported Drownings, 2025 Report, May 2025  
Yang, Ted

The vertical and horizontal CAMI testing characterizes system alarm capability in scenarios mimicking the toddler jumping or rolling into the water. In addition, ASTM F2208 also tests for a child entering the pool perimeter. This characterizes the system alarm capability when a toddler walks, crawls, or runs through a perimeter area in proximity to the pool. These additional tests in ASTM F2208 characterize the efficacy of the system to alarm and notify the caregiver when the child is nearing or first enters the water, potentially allowing time for drowning rescue.

For the ASTM F3698 standard to provide robust protection against drowning, staff recommends including the ASTM F2208 toddler water entry tests for both vertical feet-first and horizontal roll-in, and the toddler perimeter area entry test. These pool water and area entry tests provide greater coverage in the multiple ways that toddlers access the pool and increase the notification time to the caregivers, thereby increasing the potential rescue of the child before a drowning event occurs.

#### *Toddler Drowning Detections*

Staff notes that drowning detection using computer vision technology is relatively new but has potential to detect toddlers or other swimmers in water distress. Currently, ASTM F3698 is the only known residential pool standard with computer vision drowning detection. Section 5.2.2.1 requires alarm notification with complete submergence of the CAMI at the bottom of the pool with no movement for 20 seconds. Due to the varied timeframes needed for the child (or other swimmers) in water distress to reach the pool bottom, staff is concerned that the requirement would not likely support a successful rescue scenario. Staff expressed similar concern to the subcommittee in a March 14, 2024 letter.<sup>3</sup> Due to the time for a child to reach the pool bottom and potential technical limitations of the drowning detection, staff reiterates the recommendation of integrating the pool perimeter and vertical and horizontal pool water entry from ASTM F2208. With these added tests, the ASTM F3698 would offer the same toddler safety as the ASTM F2208 with the added feature of drowning detection.

#### *Sound Pressure Levels*

UL 2017, *General-Purpose Signaling Devices and Systems Alarms*, covers signaling devices for emergency and non-emergency use in indoor and outdoor locations for consumer products. Consumer products with alarms should have a sound pressure level of 85 decibels (dBA) at 10 feet. Currently, the ASTM F3698 standard requires a pool unit rating of 85 dBA at 9.8 feet and an indoor alarm of 65 dBA at 3.2 feet. These requirements are not aligned with standardized alarm sound pressure levels in other consumer alarm products and may not be heard by the consumer. Staff recommends that the subcommittee adopt the sound pressure levels required in UL 2017.

Staff appreciates your continued efforts to improve children's safety in pools and looks forward to working with ASTM to revise this important safety standard.

Sincerely,

---

<sup>3</sup> March 14, 2024, [US CPSC Letter to Shadie Bisharat Working Group Chair for ASTM WK76767 Computer Vision Based Drowning Detection Systems for Residential Swimming Pools](#)

Susan Bathalon, M.S., Mechanical Engineering  
Children's Program Area Risk Manager  
U.S. Consumer Product Safety Commission

cc: Don Mays, Chair, ASTM F15 Subcommittee  
Molly Lynyak, Staff Manager, ASTM Technical Committee Operations  
Merle Stoner, ASTM Subcommittee F15.49 on Pool Safety Standards  
Jacqueline Campbell, CPSC Voluntary Standards Coordinator  
Doug Lee, CPSC Electrical Program Area Risk Manager  
Daniel Taxier, CPSC Children's Program Manager