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**PETITION FOR A MANDATORY REGULATION FOR
CHILD-RESISTANT ABOVE-GROUND AND PORTABLE POOL LADDERS**

This petition seeks to have the CPSC establish a mandatory regulation for child-resistant ladders for above-ground and portable pools. The objective of this petition is a reduction in drowning deaths of children younger than 5 years of age, and particularly children between 1 and 3 years, as this is the age group at greatest risk.

I am a human factors psychologist specializing in consumer product safety. I have been working in this field for my entire career, beginning at the Center for Auto Safety and then working at the CPSC in the Division of Human Factors where I served as a senior engineering psychologist and Acting Division Director. At the CPSC, I was responsible for product safety assessments, age grading, and I served on many teams and committees that studied data and human behavior. Since leaving the CPSC I work as a consultant and expert witness in litigation. I have been actively involved in the development of numerous ASTM standards, including the standard for Portable Pools. I was the first Chair of this subcommittee and presently, head the Data Task Group. My CV is attached.

Two voluntary standards are relevant to this petition: (1) ASTM Standard Specification for Aboveground Portable Pools for Residential Use, ASTM F2666-16; and (2) ANSI/APSP/ICC-4 2012 American National Standard for Aboveground/Onground Residential Swimming Pools. A number of manufacturers are members of both of these subcommittees. ASTM F2666-16 covers all types of portable pools with a water depth of less than 36 in. (91 cm). ANSI/APSP-4 pertains to aboveground/on ground residential swimming pools with a water depth of 36 in. (91 cm) or greater.

In 2014, the ASTM subcommittee for Portable Pools learned that pool ladders are the primary method by which toddlers and young children access water in above-ground and portable pool drownings and near-drownings.¹ A data review of 95 IDIs between 2004 and 2012 and for pools with up to 52" wall height revealed that most drownings were in pools taller than 48 inches and the primary means of access was via a ladder. Of the 92 cases where the means of access was known, the ladder was identified in 61 incidents (66% of incidents where means of access was known). As expected, children who drowned were not being directly supervised at the time. In fact, drownings often occur when caregivers are inside the home and believe their children are also inside the house. That is, they are unaware that their children slipped out of the house and entered the pool.

¹ Data summary presented by industry member of the ASTM subcommittee for Portable Pools, May 13, 2014.

Child-resistant ladders are necessary to mitigate children’s access to above-ground and portable pools and mitigate the drowning risk. Since 2016, the ASTM voluntary standard for portable pools (defined as pools having a water depth up to 36 inches) has included a general requirement for child resistance on pool ladders: “Any ladders sold with or for use with Type A or Type B pools shall be... child-resistant to the degree of preventing unauthorized access for children under the age of five years” (see Section 5.1, Performance Requirements; Ladders). However, there is no protocol or metric required to verify that the ladder is child-resistant. Rather, the standard states: “Verification can be satisfied by document review.” Surprisingly, there is also no requirement for ladders intended for above-ground pools (defined as pools having a water depth of 36 inches or greater) to be child-resistant even though the data analysis conducted by industry (discussed above) found above-ground pools were much more likely to be involved in child drownings than smaller, portable pools.

While in-ground pools are required by state and local laws to have fence enclosures, this is an impractical requirement for above-ground and portable pools. First, above-ground and portable pools are considerably less costly than an in-ground pool. For example, a 15’ x 42” Bestway pool plus ladder, cover, and filter pump sells for \$359.19 on Amazon.² It is unrealistic to expect consumers to spend thousands of dollars for fencing for a \$300 pool. Furthermore, a fence requirement is not enforceable as above-ground and portable pools go up and down in backyards throughout this country. These pools are often installed by the homeowner without assistance or oversight by outside agencies or service providers.

This petition seeks to (1) establish a child-resistant requirement for A-frame and other ladders intended for above-ground and portable pools; and (2) establish an objective and measurable definition of “child-resistant.” The omission of such an objective definition, protocol, or test requirement is inconsistent with all other voluntary and mandatory standards requiring “child resistance”. All such standards include such a test protocol. See standards for child-resistant lid closures for medicines³, child-resistant activation mechanisms for lighters⁴, multi-purpose lighters⁵, etc.

As we have learned from other standards, requiring child-resistance in a standard – either mandatory or voluntary – is beneficial to both consumers and to industry as a child-resistant requirement levels the playing field for all manufacturers and inevitably leads to a reduction in per product manufacturing costs. It also reduces a company’s exposure and liability.

Pool Drowning Statistics

² https://www.amazon.com/Bestway-56687E-Steel-15x42-Ground/dp/B0799D1LDP/ref=sr_1_6?crid=23RIU1NH1AWY8&dib=eyJ2ljojMSJ9.xoDQ2Tx7InsnbCPumQ-3WnEcs50LrGFV9jGTbQmdyLz7Yavey3w3WXTxBQuKHvfrqnK2Fkkrti0f8D-A9_VMWx3kPt8UpcNrhAHuY96f-EY_cb3l2z4LmyzkSEzNT2iPikNie1khu8Mv9qr6pymetqePN8R0ulKuunYs7mVfnHbumTYawqMd6PTp9jObrH2pRVQ8xyUbF5xFATxSiwTEDkpYgVGzao1HGAWMvWXgJ3l.952R9cHoy6n43HfVmOLIALQgZR62mBjjNvyw8ahcX9l&dib_tag=se&keywords=above+ground+pool&qid=1731549769&prefix=above+ground+pool+%2Caps%2C141&sr=8-6

³ <https://www.cpsc.gov/Regulations-Laws--Standards/Statutes/Poison-Prevention-Packaging-Act/Child-resistant-and-Senior-Friendly-Packages-packaging-guide>

⁴ <https://www.ecfr.gov/current/title-16/chapter-II/subchapter-B/part-1210>

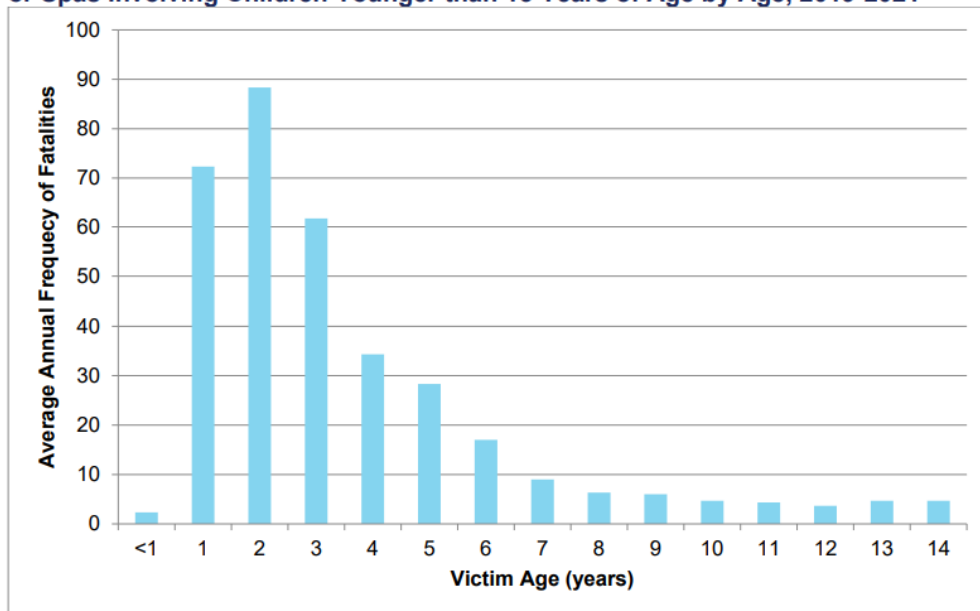
⁵ https://www.cpsc.gov/s3fs-public/Pool-or-Spa-Submersion-Estimated-Nonfatal-Drowning-Injuries-and-Reported-Drownings-2024-Report_0.pdf?VersionId=U_nD_OswUqUNRPDjtB8pqf3g66XOags

The CPSC's recent report entitled, *Pool or Spa Submersion: Estimated Nonfatal Drowning Injuries and Reported Drownings, 2024 Report*, summarizes drowning data relating to pools including above-ground and portable pools. Figure 4 from the report, reproduced below, shows the rate of drowning by age. As seen in this figure, children younger than 5 years of age, and particularly those between 1 and 3 years, are at greatest risk of drowning. The report states:

Children between the ages of 1 and 3 years (12 to 47 months) comprised approximately 64 percent of the reported pool or spa drowning fatalities. The graph shows a sharp decline child after age 2 (less than or equal to 35 months). (p. 19).

Figure 4

Average Annual Drowning Deaths Reported to CPSC Staff Associated with Pools or Spas Involving Children Younger than 15 Years of Age by Age, 2019-2021



Source: U.S. CPSC: CPRMS.

Furthermore, the rate of pool drowning for this vulnerable demographic is increasing rather than decreasing.⁶

There were, on average, an estimated 6,500 pool- or spa-related, hospital emergency department (ED)-treated, nonfatal drowning injuries each year for 2021 through 2023, and 358 pool- or spa-related fatal drownings reported per year for 2019 through 2021, involving children younger than 15 years of age. Additionally, an annual average of 77 percent of the ED-treated nonfatal drowning injuries from 2021 through 2023, and 75 percent of the reported fatal drownings from 2019 through 2021, involved children younger

than 5 years of age...

Also, while the report found the total number of fatal drownings in 2020 (340 fatalities) was lower than the total number of fatal drownings in 2019 (367 fatalities), this was not the case **for fatal drownings involving children younger than 5 years. (See Table 7 from the report, below). For this age group, “the total number of fatal drownings in 2020 (279 fatalities), was higher than the total number of fatal drownings in 2019 (254 fatalities).”** [Emphasis added].

Table 13 of the CPSC’s 2024 report, reproduced below, breaks out the different types of pools involved in reported fatalities from 2019-2021. There are six types of products included in this table: In-ground pool; Undisclosed pool/spa type; Above-ground pool; Portable pool; and two types of spas. Most fatalities, across all age groups, involve pools rather than spas. In-ground, above-ground, and portable pools are involved in 80% of reported drowning deaths. According to Table 13, 26% of deaths involving children younger than 5 years from 2019-2021 occurred in above-ground and portable pools, both of which are accessed by ladders. The majority of these deaths (85%) were in above-ground pools.

Table 13

Percentage of Drowning Deaths Reported to CPSC Staff Associated with Pools or Spas Involving Children Younger than 15 Years of Age by Specific Pool/Spa Type Product Category, 2019-2021

Location	Percentage of Reported Fatalities			
	Younger than 5 Years	5–9 Years	10–14 Years	Younger than 15 Years
In-Ground (Pool Only)	54	58	56	55
Undisclosed Pool/Spa Type	15	39	42	21
Above-Ground (Pool Only)	22	3	2	17
Outside Home (Spa Only)	4	-	-	3
Portable ¹⁵ (Pool Only)	4	1	-	3
Inside Home (Spa Only)	0	-	-	0
Total	100	100	100	100

Source: U.S. CPSC: CPSRMS. Appendix A details the methodology for data extraction. Percentages may not add up to 100 due to rounding and refer to percentages within each age group: In this table, 0 represents < 0.5%; “-” denotes no data recorded.

Ladders for Above-Ground and Portable Pools

An online search of ladders for above-ground and portable pools shows that one of the most common styles of ladder is an A-frame design. A-frame ladders have two sets of legs with steps; one set is positioned outside the pool and the other is placed inside the pool. Figures 1 and 2 show examples of non-child-resistant A-frame ladders. The Intex ladder, in Figure 1, fits 42" pool heights and retails for \$49.99 on Amazon.com.⁷ The Bestway A-Frame Pool ladder, shown in Figure 2, fits pools 52" or lower and retails on Target's website for \$84.99.⁸ Both hold up to 300 pounds.



Figure 1. Intex ladder



Figure 2. Bestway ladder

⁷ https://www.amazon.com/Intex-Ground-Swimming-Ladder-Height/dp/B0777W9N81/ref=sr_1_19?crid=3AQLZL0AJ7ODY&dib=eyJ2ljoimSJ9.VHU_711G1Z4dypZmWdErUHhs4Nb_3IKcTi2e6HIX6tCzkIfWum3bx0xU91wFKm7p3h8E9PRHMegGBv9W7aLksJ8NcslgcesTrDP8A0H1KJUXIVphDZ-WBtyISZzOXP8dHvYsGCUsoQQGFmOOKbZ_rEmGOKLgOyNmP8LoUaclIPZFOQ1X-bl2WqxPSOIMuQN6A1sUXKwEUzFbYdhBkO8polHI9xh29PbhIR8lj7idpXeU.AlfEc3oHCrzdkZb3ZDKruQO0jtL1geryYxWCLt1eHXQ&dib_tag=se&keywords=hook-on+pool+ladder+above+ground+pool&qid=1731545678&srefix=hook-on+pool+ladder+above+ground+pool%2Caps%2C99&sr=8-19

⁸ <https://www.target.com/p/bestway-flowclear-52-inch-versatile-metal-a-frame-above-ground-swimming-pool-ladder-with-heavy-duty-plastic-double-sided-steps/-/A-91153248#lnk=sametab>

This petition seeks to require all above-ground and portable pool ladders have a child-resistant feature to thwart access by young children. Child-resistant ladder designs have been on the market for many years now.

Figure 5 shows a child-resistant above-ground pool ladder manufactured by Andreas, Inc.¹¹ The product sells for \$430.01 on eBay. The company website provides the following description of the ladder which mentions the easy functionality of elevating the steps up out of reach of children.

The Ocean Blue A-Frame Ladder is built to last. It uses minimal hardware for easy assembly. Designed to fill with water, the A-Frame ladder requires no additional weights. It comes with a simple lift and lock for safety, easy assembly and includes a padlock. The Ocean Blue A-Frame has a 300 pound weight capacity and easily adjusts to fit above ground pools up to 56' tall. With safety in mind, the A-Frame Ladders outer steps can slide up and lock in place, protecting youngsters from unwanted entry.

**CHILD PROOF SAFETY LADDER FOR ABOVE
GROUND SWIMMING POOL FITS 48" TO 56"
TALL**



Figure 5. Pool ladder manufactured by Andreas, Inc.

¹¹ https://www.ebay.com/itm/146162856742?chn=ps&trkparms=ispr%3D1&amdata=enc%3A1kYf-TXkWSkulnc_JKYCfMg48&norover=1&mkevt=1&mkrid=711-213727-13078-0&mkcid=2&itemid=146162856742&targetid=4580771614098646&device=c&mktype=&googleloc=&poi=&campaignid=603247547&mkgroupid=1234752552191001&rlsarget=pla-4580771614098646&abclid=9316119&merchantid=51291&msclkid=9626922fdad310ce3746f51a9bfb3af6

Figure 6, below, shows a child-resistant ladder with removable steps. This Intex ladder retails for \$103.00 on the Target website¹². The website describes the ease of removing the steps:

This pool ladder is designed for above ground pools with 36in to 42in wall height. It comes with easily removable steps. The steps can be quickly detached and removed from the pool area when the pool is not in use. To replace the steps, simply set them in the base, then snap and lock them into place. This ladder has a weight capacity of 300 pounds....



Figure 6. Intex ladder with removable steps

¹² <https://www.target.com/p/intex-pool-ladder-with-removable-steps-for-42in-36in-pools/-/A-89402080#lnk=sametab>

Figure 7 shows a ladder with a cover that rolls over the steps to prevent access. This ladder, which adjusts to fit pools measuring 48" to 56" retails for \$228.56 on Temu.¹³



Figure 7. Ladder with roll cover to block steps

¹³ https://www temu.com/-7200-roll--48-to-56----for-----g-601099624804096.html?top_gallery_url=https%3A%2F%2Fimg.kwcdn.com%2Fproduct%2Fopen%2F2024-07-29%2F1722248468653-25e24a546fef477888d6802d3b4902e8-goods.jpeg&spec_gallery_id=2280409017&share_token=6U66hm7WjrZs0fbfazxLATIA-gyvS4DOKNK_i6fvahFODt6OngGd96hnBjBuytVpTEiEyn30h6NvTaX0xYpTKocfwLvdyyiG_gY7njabhXJh1_rPlvDgDU0EU7N3tOYpT0edl_2ncVgvxpajhRwilg1HBDPVI7v85d61KaYGJ&refer_page_el_sn=209279&x_vst_scene=adq&x_ns_product_id=1251695-17592618142091&x_ads_sub_channel=shopping&x_ns_prz_type=-1&x_gmc_catalog=1251695&x_ns_sku_id=17592618142091&x_ns_catalog_id=1251695&x_ads_channel=bing&x_gmc_account=3544491&x_ads_creative_id=83082224247999&x_ns_device=c&x_ads_account=176148943&x_ns_match_type=e&x_ns_msclid=d4f8c037cb4d10a351c1a7028a6513f7&x_ads_set=521002938&x_ns_source=o&x_ads_id=1329311936087231&x_ns_keyword=child-resistant%20pool%20ladder&refer_page_name=kuiper&refer_page_id=13554_1731544723993_5lu26xjrf&refer_page_sn=13554&x_sessn_id=g9icl2qvc3

An online search of pool ladders revealed that non-child-resistant ladders are more widely available (and typically less expensive) than child-resistant ladders, both for sale and resale. Also, in some cases, pools (e.g., the Bestway pool referenced earlier) include a non-child-resistant ladder. It is reasonable for consumers to expect the ladder that comes with a new pool is safe and sufficient. They are not likely to spend additional money beyond the cost of the pool for a child-resistant ladder as they may not have budgeted for it, expecting essential safety equipment will be sold or provided with the product.

Having both “safe” and “unsafe” versions of a product in the market is not a reasonable approach to safety. Window blind companies sold both safe and unsafe window covering products for decades and the deaths continued. Manufacturers of above-ground and portable pools must recognize that consumers are not likely to purchase a (sometimes more costly) child-resistant ladder when a well-functioning ladder is either provided with their pool or available at a lower cost, and particularly when they believe they are capable of controlling the risk with supervision. Consumers unfamiliar with drowning data do not realize that drownings often occur when the child exits the home without parents being aware.

Consumer Perception and Hazard Awareness

Unlike manufacturers who are aware of incident data involving their pools, the average consumer is not knowledgeable about actual drowning statistics and hazard patterns. While parents undoubtedly know that children can drown in a body of water, they may perceive the tall sides of an above-ground pool will be a barrier, preventing access. Further, parents of young children have no basis for knowing that 2-year-old children are at greatest risk and that ladders are the primary method of access by which even young children can gain access to the water. Parents may not realize that their toddler can climb an A-frame ladder on their own; in fact, caregivers often “assist” small children when climbing a ladder or stairs due to concerns that the child will fall, not realizing the much greater risk to their toddler is the child actually climbing to the top of the steps and falling into the water.

This hazard pattern – young children climbing to access danger without their parents’ appreciation of the risk - is well-known to the Commission. In the 1990s and early 2000s, children as young as 18 months of age climbed and accessed barbecue lighters, setting deadly fires before such lighters were required to be child-resistant. Some children scaled great heights to reach the lighters, e.g., pushing chairs over to counters and climbing up on the counter to access a lighter in an upper cabinet shelf. In deposition testimony, parents of toddlers who started such fires stated that, although they knew their children could climb stairs and playground ladders, they did not appreciate their child’s interest in or ability to climb on chairs and counters in order to reach a lighter that was stored “out of reach”. Aside from not recognizing a young child’s ability to climb certain objects and heights, parents often fail to appreciate their child’s motivation to access dangerous products such as lighters and pools.

Removing the Ladder from the Pool – An Inadequate Approach to Child-Resistance

Industry has long argued that the best form of child-resistance for a pool ladder is to have parents remove the ladder from the pool following every use. However, this is impractical and ineffective for many reasons. First, removing a pool ladder takes upper body strength that some consumers do not possess (e.g., a petite woman, a pregnant mother, a grandparent, etc.). Second, a consumer’s *perception* of how difficult this task is may be an impediment to them attempting to remove the ladder. Third, aside from the physical strength

required and the perception of difficulty, removing the ladder may not be practical to accomplish. A caregiver needs to have spare “hands” to remove a ladder. Parents who are carrying a toddler or juggling a number of kids do not have extra hands to get this task done. Fourth, even parents with the best of intentions may get distracted (e.g., often by other children) or reasonably forget to remove a ladder. And finally, caregivers who plan to allow the kids to go in and out of the pool throughout the day are not likely to remove the ladder each and every time they go in and out of the house. The long-standing published research on cost of compliance has unequivocally demonstrated that safety measures with “high cost” – financial cost, perceived difficulty, inconvenience, effort, etc. – have a low rate of compliance.^{14, 15, 16}

The time for a child-resistant requirement for above-ground and portable pool ladders is long overdue. A child-resistant ladder that inhibits use by young children but is easy for adults to manage can reduce the risk of drowning in above-ground and portable pools.

Due to industry’s failure to require objectively measured child-resistance for all above-ground and portable pool ladders, I am petitioning the CPSC to develop a mandatory standard that will require child-resistance for all pool ladders sold with or for above-ground or portable pool ladders in an effort to mitigate the risk of drowning.

I appreciate the Commission’s consideration of this request. I am available to discuss this petition at your convenience.


Carol Pellaack Nelson

Enclosure

¹⁴Dingus, T.A., Hathaway, J.A. and B.P. Hunn (1991). A most critical warning available: Two demonstrations of the powerful effects of cost on warning compliance, *Proceedings of the Human Factors Society 35th Annual Meeting*, 1034 – 1038.

¹⁵Wogalter, M.S., Allison, S.T., and N.A. McKenna (1989). Effects of Cost and Social Influence on Warning Compliance. *Human Factors*, 31(2), 133-140.

¹⁶Wogalter, M.S., McKenna, N.A. and S.T. Allison (1988). Warning compliance: Behavioral effects of cost and consensus. *Human Factors Perspectives on Warnings*, 235 – 238.