

# Virginia Graeme Baker Pool and Spa Safety Act

## June 18, 2008 Staff Interpretation of Section 1404:

### “Federal Swimming Pool and Spa Drain Cover Standard”\*

On December 19, 2007, the President signed into law the Virginia Graeme Baker Pool and Spa Safety Act, named after the daughter of Nancy Baker and the granddaughter of former Secretary of State James Baker. Graeme Baker died in a tragic incident in June 2002 after the suction from a spa drain entrapped her under the water. This Act was first introduced by Rep. Debbie Wasserman-Schultz (FL) and was supported by the Baker family and Safe Kids Worldwide.

There is an annual average of 283 drowning deaths (2003-2005) and 2,700 emergency room-treated submersion injuries (2005-2007) involving children younger than 5 in pools and spas. In addition, from 1997-2007, there were 74 reported incidents associated with suction entrapment, including 9 deaths and 63 injuries. The new law is aimed at reducing these deaths and injuries by making pools safer, securing the environment around them, and educating consumers and industry on pool safety.

The Act specifies that on or after December 19, 2008, swimming pool and spa drain covers available for purchase in the United States must meet specific performance requirements. Additionally, public swimming pools, wading pools, spas and hot tubs must meet requirements for installation of compliant drain covers. New drain covers which meet the current standard are now beginning to make their way into the marketplace. Additionally, in certain instances, public pools and spas must have additional devices or systems designed to prevent suction entrapment.

U.S. Consumer Product Safety Commission (CPSC) staff has prepared this guidance document that spells out the technical requirements of Section 1404 of the Act, along with CPSC staff’s answers to certain enforcement and legal issues. This document takes into account comments provided to CPSC during an open comment period in March 2008. Comments were provided by a member of the U.S. House of Representatives, state government officials, pool industry representatives, safety equipment manufacturers and representatives, consumer safety organizations, and others.

CPSC staff urges all public pool and spa owners/operators, state and local health and safety officials, and those in the pool and spa industry to carefully review this document as they work toward complying with Section 1404 of the Act prior to December 19, 2008.

Contact CPSC at [info@cpsc.gov](mailto:info@cpsc.gov) or 301.504.7908 if you need further assistance.

*\* This document, which was prepared by CPSC staff, has not been reviewed or approved by and may not necessarily represent the views of the Commission.*

## **ENGINEERING/MECHANICAL REQUIREMENTS**

Note: italicized language is taken directly from the Pool & Spa Safety Act.

**Drain Covers:** *...each public pool and spa in the United States shall be equipped with anti-entrapment devices or systems that comply with the ASME/ANSI A112.19.8 performance standard, or any successor standard...*

Staff interpretation: All public pools and spas must have ASME/ANSI A112.19.8<sup>1</sup> compliant Drain Covers on or after December 19, 2008. The basic requirements of the ASME/ANSI standard are:

- Cover material must be tested for structural integrity
- Cover must be tested for body entrapment and hair entrapment/entanglement
- Cover must display a flow value in gallons per minute (gpm) that indicates the maximum flow rate for which the cover has been approved

*Main Drain: The term “main drain” means a submerged suction outlet typically located at the bottom of a pool or spa to conduct water to a recirculating pump.*

**Single Main Drain:** *...each public pool and spa in the United States with a single main drain other than an unblockable drain...*

Staff interpretation: A **main drain** is a term usually referring to a plumbing fitting installed on the suction side of the pump in pools, spas and hot tubs (a **suction outlet**). Sometimes referred to as the drain, it is normally located in the deepest part of the pool, spa or hot tub. It does not literally drain the pool, spa or hot tub as a sink drain would, but rather connects to the pump to allow water to be drawn from the pool, spa or hot tub for circulation and filtration.

Staff interpretation: The term “single main drain” means a submerged suction outlet, with or without a skimmer, connected to a dedicated pool pump. A pool may have more than one single main drain if it has multiple suction outlets that are each connected to a dedicated pump. A group of suction outlets connected together is considered a single main drain if the centers of the outlets are located within three feet of one another.

Staff interpretation: Pools and spas with multiple main drains are not subject to the requirements of Section 1404(c)(1)(A)(ii).

Staff interpretation: **Multiple main drains** consist of, at minimum, two fully submerged suction outlets per pump, with drain cover centers at least 3 feet apart. While no maximum separation is noted, the connections between the outlets and the pump are important for proper operation and should be certified by a design professional and inspected by a licensed inspector to ensure hydraulic balance between outlets and the main suction line to the pump.

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<sup>1</sup> The current approved version of this standard is A112.19.8-2007. There is an Addendum moving forward through the ASME/ANSI ballot process to correct errors in the test method for UV light exposure. The prior version of this standard is 1987 (reaffirmed in 1996) and addresses only hair entrapment potential.

Staff interpretation: Field Fabricated suction outlets are subject to the requirements of *ASME/ANSI A112.19.8*.

**Unblockable Drain:** (7) *UNBLOCKABLE DRAIN* - The term *unblockable drain* means a drain of any size and shape that a human body cannot sufficiently block to create a suction entrapment hazard.

Staff interpretation: An unblockable drain, to be consistent with the test procedures found in *ASME/ANSI A112.19.8*, would have minimum dimensions of 18" x 23", which represent the shoulder to waist measurements of the 99<sup>th</sup> percentile adult male.

Staff interpretation: unblockable drain may include:

- Drain configurations that prevent a seal from occurring (large aspect cover, such as 18" x 23" or larger cover)
- Long channels that cannot be blocked by the body (conceptual Figure a. below)
- Large outlet grate (diagonal measure of 29" or more) (conceptual Figure b. below)
- Circulation designs that do not include fully submerged suction outlets

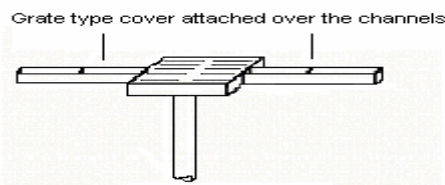


Figure a. Long Channel

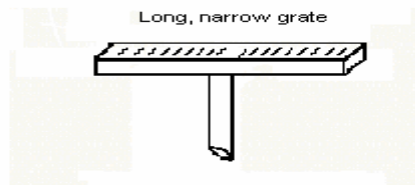


Figure b. Large Grate

### Conceptual Unblockable Drain Configurations

**Devices or Systems Designed to Prevent Entrapment:** ...each public pool and spa in the United States with a single main drain other than an unblockable drain shall be equipped, at a minimum, with 1 or more of the following devices or systems designed to prevent entrapment...

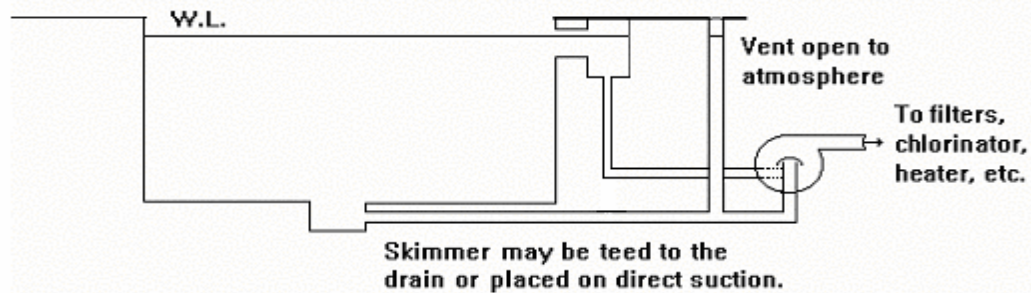
Staff Interpretation: In addition to having a drain cover or other anti-entrapment device that complies with *ASME/ANSI A112.19.8*, public pools and spas with single main drains must have one of the following additional systems or devices.

(1) *SAFETY VACUUM RELEASE SYSTEM (SVRS)* - A safety vacuum release system which ceases operation of the pump, reverses the circulation flow, or otherwise provides a vacuum release at a suction outlet when a blockage is detected, that has been tested by an independent third party and found to conform to *ASME/ANSI standard A112.19.17* or *ASTM standard F2387*.

*STATUTORY DEFINITION OF A SVRS: The term “safety vacuum release system” means a vacuum release system capable of providing vacuum release at a suction outlet caused by a high vacuum occurrence due to a suction outlet flow blockage.*

*(II) SUCTION-LIMITING VENT SYSTEM - A suction-limiting vent system with a tamper-resistant atmospheric opening.*

Staff interpretation: A suction-limiting vent system is also called an **atmospheric vent**. It is a pipe teed to the suction side of the circulation system on one end and open to the atmosphere on the opposite end. The pipe is normally full of water equal to the same height as the pool. When a blockage occurs at the main drain, air is introduced into the suction line thus causing the pump to lose prime and relieving the suction forces at the main drain (suction outlet).

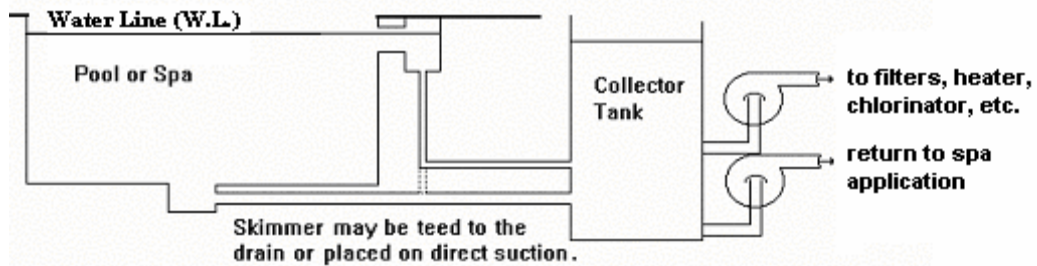


### **Conceptual Suction-Limiting Vent System to Relieve Main Drain Suction**

Currently there are no approved voluntary standards for suction-limiting vent systems; however, an ASTM International voluntary standards task group was formed in March 2004 and is currently developing minimum requirements for field-fabricated vent pipes. The performance of the vent, the ability to prevent obstructions from occurring within the vent, and a test procedure to assess performance are being addressed. The correct design and construction of the suction-limiting vent system are important to the overall function and should be certified by a design professional and inspected by a licensed inspector.

*(III) GRAVITY DRAINAGE SYSTEM - A gravity drainage system that utilizes a collector tank.*

Staff interpretation: A gravity drainage system utilizing a collector tank is a swimming pool/spa with a separate water storage vessel from which the pool circulation pump draws water. Water moves from the pool to the collector tank due to atmospheric pressure, gravity and the displacement of water by bathers which removes the need for direct suction at the pool. This type of system is also referred to as a reservoir, surge tank, or surge pit.



**Conceptual Gravity Drainage System – Direct Suction Removed from the Pool**

Currently there are no voluntary standards for gravity drainage systems or collector tank specifications.

*(IV) AUTOMATIC PUMP SHUT-OFF SYSTEM - An automatic pump shut-off system.*

Staff interpretation: An automatic pump shut-off system would be a device that could sense a drain blockage and shut off the pump system. Some safety vacuum release systems may meet this definition.

One pump motor manufacturer has developed a circuit board for its motors that monitors current to the motor and shuts the pump off when a noticeable change in current occurs, possibly caused by an entrapped bather.

The National Electrical Code (NEC) regulation number 680.40 has a requirement for an emergency stop switch for the pump to be located within 5 feet of a public spa in case of bather entrapment. However, this switch is manually operated and would require the presence of another person to activate the switch and therefore would not qualify as “an automatic pump shut-off system” under this Act.

Currently there are no voluntary standards for automatic pump shut-off systems, though the current SVRS standards provide release and response time performance criteria.

*(V) DRAIN DISABLEMENT - A device or system that disables the drain.*

Staff interpretation: Staff is not aware of a product that meets this description that is currently on the market. In the past, companies have developed products that sealed the suction outlet or shut off the pump when a cover is removed.

Additional consideration can be given to physically removing the submerged suction outlet (drain) by filling the sump with concrete (effectively removing the suction outlet from the bottom of the pool) as long as another source(s) of water for the suction side of the pump is(are) available, such as skimmers, re-plumbing the suction outlet into a return inlet (permanently reversing flow), or permanently disabling the suction outlet plumbing at the pump (removing the suction outlet connection to the pump) to remove the suction entrapment potential at the submerged outlet (drain).

Currently there are no voluntary standards for disablement devices or instructions for filling or re-plumbing the suction outlet.

*(VI) OTHER SYSTEMS - Any other system determined by the Commission to be equally effective as, or better than, the systems described in subclauses (I) through (V) of this clause at preventing or eliminating the risk of injury or death associated with pool drainage systems.*

Staff interpretation: This will allow the development of future products. Currently, the Commission has not determined that any other system is equally effective as, or better than, the systems described in subclauses (I) through (V) of this clause. Further, there are no voluntary standards for such other systems.

## **ENFORCEMENT AUTHORITY**

The Virginia Graeme Baker Pool and Spa Safety Act states that the requirements of Section 1404(b) shall be treated as a consumer product safety rule under the Consumer Product Safety Act. Under Section 19 of the Consumer Product Safety Act, it is unlawful for any person to manufacture for sale, offer for sale, distribute in commerce or import into the United States any consumer product that is not in conformity with an applicable consumer product safety rule. 15 U.S.C. § 2068(a). Accordingly, on or after December 19, 2008, it will be unlawful to manufacture for sale, offer for sale, distribute or import into the United States a drain cover that does not meet the entrapment protection standards of the ASME/ASNI A112.19.8 performance standard or any successor standard. Any person who knowingly commits a prohibited act under Section 19 of the Consumer Product Safety Act is subject to a civil penalty under Section 20 of the Consumer Product Safety Act. 15 U.S.C. § 2069(a)(1). Under current law, the maximum penalty for one or more related violations is \$1.825 million. Congress is considering legislation that would increase this penalty to \$10 million or higher. A willful violation of the drain cover standard could result in criminal penalties, including fines or imprisonment, under Section 21 of the Consumer Product Safety Act. 15 U.S.C. § 2070(a).

Any production, distribution or sale of a drain cover that does not meet the applicable standard also could trigger a requirement to report to the Commission under Section 15(a) of the Consumer Product Safety Act. Specifically, a manufacturer, distributor or retailer who obtains information which reasonably supports the conclusion that a drain cover fails to comply with an applicable consumer product safety rule must “immediately inform the Commission of such failure to comply...” 15 U.S.C. § 2064(b)(1).

The Act also addresses enforcement of Section 1404(c)(1), which identifies certain required equipment for public pools. Specifically, Section 1404(c)(3) of the Act states that any violation of the required equipment provisions is to be considered a violation of Section 19(a)(1) of the Consumer Product Safety Act. As explained above, any violation of Section 19(a)(1) may result in the imposition of civil or criminal penalties under Sections 20 or 21 of the Consumer Product Safety Act.

## **ENFORCEMENT DISCRETION**

Public pools and spas that are not in operation on December 19, 2008 need not meet the requirements of the Pool and Spa Safety Act until they return to operation.

Upon re-opening for use by the public after December 19, 2008, all public pools and spas must be in compliance with the Pool and Spa Safety Act, as specified in the engineering and enforcement sections above.

## **LEGAL RESPONSE TO PUBLIC COMMENTS**

- a) One commenter asked whether section 1404(c)(1)(A)(i) applies to all new pools constructed one year after date of enactment, or to all public pools in the United States, regardless of the date of construction.

Section 1404(c)(1)(A)(i) provides, “Beginning 1 year after the date of enactment of this title, each public pool and spa in the United States shall be equipped with anti-entrapment devices or systems that comply with ASME/ANSI A112.19.8 performance standard, or any successor standard.” Because the Act does not limit the requirement to pools and spas constructed one year after the date of enactment, we interpret this requirement to apply to all public pools and spas meeting the definition of public pool and spa in section 1404(c)(2) of the Act, regardless of the pool or spa’s date of construction.

- b) One commenter stated that section 1404(c)(1)(A)(ii) does not exclude pools and spas with multiple drains.

Section 1404(c)(1)(A)(ii) provides, “each public pool and spa in the United States *with a single main drain other than an unblockable drain* shall be equipped, at a minimum, with one or more of the following devices or systems designed to prevent entrapment by pool or spa drains...” The requirement that a public pool or spa be equipped with an anti-entrapment device or system applies to public pools or spas with a single main drain other than an unblockable drain. Thus, a plain reading of the statute indicates that pools and spas with multiple main drains are excluded from this provision.

- c) Another commenter strongly recommended that the CPSC interpret Section 1404(c)(1)(A)(ii) to require anti-entrapment devices or systems for all pools that have multiple drains—where those drains operate under independent drain systems.

If a pool or spa subject to the Act has more than one independent drain served by a separate, dedicated pump, then each such drain is a “single main drain” and must comply with the requirements of Section 1404 (c)(1)(A)(ii).

- d) Several commenters noted their states have pool and spa safety requirements that differ from those in the Virginia Graeme Baker Pool and Spa Safety Act (“Act”), and asked what effect the Act has on state requirements.

The Act contains no provision on its preemptive effect and, therefore, does not by its terms expressly preempt state law. However, section 1404(b) of the Act has been deemed by Congress to be a “consumer product safety rule” under the Consumer Product Safety Act. For this reason, we believe that the preemptive provisions of Section 26 apply directly to the Section 1404(b) requirement that all swimming pool or spa drain covers manufactured, distributed, or entered into commerce in the United States conform to ASME/ANSI A112.19.8. Drain covers or other anti-entrapment systems or devices marketed or sold in the U.S. on or after December 19, 2008 need to meet the new federal standard.

Congress required that each public pool and spa in the United States be equipped with anti-entrapment devices or systems that comply with the ASME/ANSI A112.19.8 performance standard *and* that each public pool and spa with a particular configuration be equipped “at a minimum” with one or more enumerated devices or systems designed to prevent entrapment associated with pool and spa drains. The fact that the Act lays out “minimum” requirements suggests Congress contemplated a minimum floor of protection, above which States could regulate. The impact of the Act on a particular state law or regulation needs to be assessed on a state by state basis. For a more detailed legal analysis of this issue with regard to a particular state, see CPSC’s May 6, 2008 letter to the Florida Department of Health.

- e) One commenter requested clarification as to whether all or what portion of the 1404 provisions (1404(a), (b), or (c)) are to be enforced as consumer product safety rules.

Section 1404(a) provides that the requirements in section 1404(b) are to be treated as a consumer product safety rule issued by the Consumer Product Safety Commission under the Consumer Product Safety Act. Thus, section 1404(b) will be enforced as a consumer product safety rule. Section 1404(c) is not characterized by the Act as a rule, but the statute sets forth specifically that “a violation of section 1404(c)(1) is to be considered a violation of section 19(a)(1) of the Consumer Product Safety Act and may also be enforced under section 17 of the CPSA.”