

Virginia Graeme Baker Act – Resource List

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A & A	www.unblockabledrain.com			
	Bill Geltch	602-300-3986		bill.geltch@aamfg.com
Aquastar	www.aquastarpoolproducts.com			
	Olaf Mjelde, Wade Arens	1-877-768-2717		info@aquastarpoolproducts.com
Cal Plastering Co. Inc.	www.calplastering.com (website to be effective 10/15/08)			
	Barb Eaton	602-267-8059 x105		newpools@calplastering.com
Hayward	www.haywardnet.com safety/public pool safety/suction outlets			
	Bruce Sauvageau	602-463-1103		bsauvageau@haywardnet.com
Paramount	www.1paramount.com			
	Andrew Bracanovich	602-821-2477		andrewb@1paramount.com
Stingl (SVRS)	www.stinglproducts.com			
	John Grucky	602-684-5202		john.grucky@blakesales.net
	Dwayne May	602-312-5045		dwayne.may@blakesales.net
Vac-Alert (SVRS)	www.vac-alert.com			
	Jared Schwab	602-565-7512		jschwab@alphawest.com

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 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 A112.19.8¹ 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.

¹ 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 99th 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

Grate type cover attached over the channels

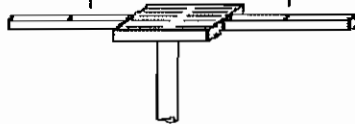


Figure a. Long Channel

Long, narrow grate

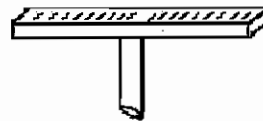


Figure b. Large Grate

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...

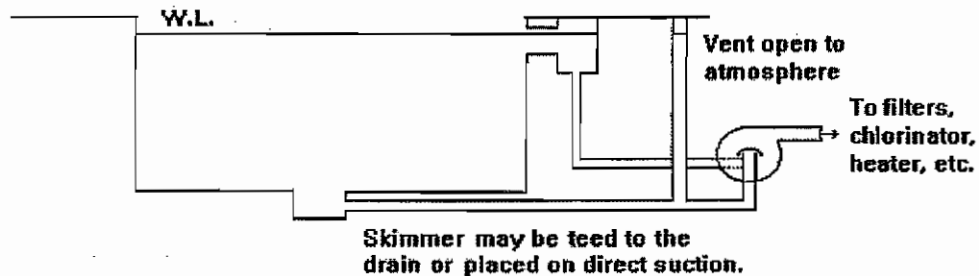
Staff Interpretation: In addition to having a drain cover or other anti-entrapments device that complies with *ASME/ASNI A112.19.8*, public pools and spas with single main drains must have one of the following additional systems or devices.

(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).

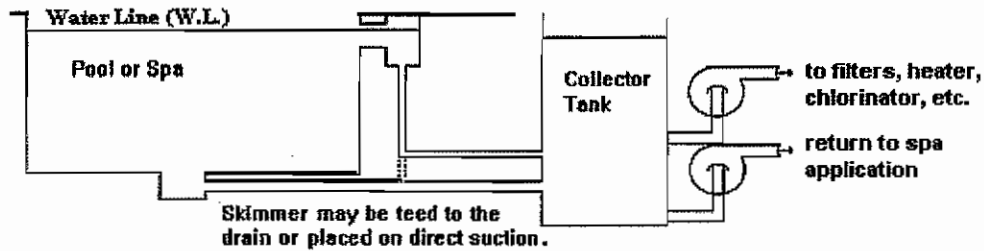


Conceptual Suction-Limiting Vent System to Relieve Main Drain Suction

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 or be in violation of a consumer product safety rule. 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.



Hot News

Pool Builder Charged in Entrapment Death

By Rebecca Robledo For the first time in industry history, a builder has been arrested and faces criminal charges for causing an entrapment death.

David Lionetti, president of Shoreline Pools in Stamford, Conn., was charged with second-degree man-slaughter in the 2007 death of Zachary Cohn, the 6-year-old son of a prominent hedge-fund manager.

"David Lionetti is shocked to be personally charged with manslaughter," said his attorney, Richard Meehan Jr. of the Bridgeport, Conn., law firm Meehan Meehan & Gavin. "He's the president of a company that employs well over 300 people and has built thousands of pools."

Lionetti, 53, was immediately released on \$25,000 bail. He was scheduled to appear in court July 28 and faces a maximum penalty of 10 years in prison. He will plead not guilty, according to his attorney.

Zachary died July 28, 2007, at his Greenwich, Conn., home when his arm became trapped in a wall drain leading from the pool to a waterfeature pump. The incident received national coverage and helped prompt the U.S. Congress to pass the first-ever federal Pool & Spa Safety Act.

"Nothing will bring our son back, but we hope this prosecution will help prevent another horrific incident like this from happening to someone else," parents Brian and Karen Cohn said in a statement. "Those who knowingly violate pool safety codes designed to protect children should be held accountable for their actions."

The Cohns' pool allegedly was not equipped with dual drains or SVRS devices, making it out of compliance with Connecticut building code requirements.

The prosecutor, State Attorney David Cohen, charged that in constructing the vessel, Shoreline Pools went beyond negligence into the category of recklessness.

"The difference between criminal negligence and manslaughter in the second degree ... is what we call the specific intent of the actor," he stated. "Reckless conduct basically involves perceiving a known risk and ignoring that known risk."

But Meehan said the "risk" should have been seen by many. The Cohns' pool was designed by an outside engineer and approved by the Greenwich building inspector, he said. Meehan added that the installation met several inspections throughout construction and received a Certificate of Occupancy, indicating it was suitable for use.

"[At] no step along the way did any of those individuals, who are now defendants in [a] civil case, indicate that there was anything out of keeping with regulations," he said.

In an odd turn of events, three days before the arrest, a warehouse at Lionetti's company burned to

COMPARISON OF FEDERAL POOL AND SPA SAFETY ACT 2007*, ANSI/APSP-7 AND ICC CODES

1404 (b) FEDERAL ACT ² Requires that all drain (suction outlet) covers be tested and certified to ASME/ANSI A112.19.8-2007	Yes Section 4.5	No Section 3109.5.1 Exempts drains 12 x 12 or larger Exempts channel drains References
1404(b) FEDERAL ACT Requires future covers to comply with "any successor standard" or version of 19.8	Yes Section 4.5	No Section Referenced Standards ASME/ANSI A112.19.8M -1987 (R1996) edition only
1404 (c)(1)(A)(i) FEDERAL ACT Requires ASME/ANSI certified covers on all drains regardless of size in public pools and spas	Yes Section 1.1 Section 4.5	No Section 3109.5.1 Exempts drains 12 x 12 or larger Exempts channel drains
1404 (c)(1)(A)(ii) FEDERAL ACT Public pools and spas with a single drain that is not unblockable to have added protection	Yes Section 1.1 Section 6.3 Note: single blockable drain prohibited in new construction	Yes Section 3109.5.2

¹ ANSI/APSP-7 2006 Standard for Suction Entrapment Avoidance in Swimming Pools, wading Pools, Spas, hot Tubs and Catch Basins.

² Federal Act refers to section 1404, which creates a Federal Swimming Pool and Spa Drain Cover Standard, and requires that public pools be equipped with certain devices.

* The Federal Pool and Spa safety Act also known as the Virginia Graeme Baker Pool & Spa Safety Act

**COMPARISON OF
FEDERAL POOL AND SPA SAFETY ACT 2007, ANSI/APSP-7 AND ICC CODES**

<p align="center">1404 (c)(1)(A)(ii) (I-VI) FEDERAL ACT</p> <p>Allows all options recognized in ASME/ANSI A112.19.17 to protect single drain installations in public pools and spas</p>	<p align="center">Yes Section 7</p>	<p align="center">No Section 3109.5.2</p> <p>Prescriptive language requires "atmospheric vacuum relief" eliminating reversing circulation flow inconsistent with ASME Section 1.4 <i>Safety Vacuum Release System</i></p>
<p align="center">1404 (c)(1)(A)(ii) (I-VI) FEDERAL ACT</p> <p>Allows all devices that comply with ASTM F2387 to protect single drain installations in public pools and spas</p>	<p align="center">Yes Section 7.1</p>	<p align="center">No Section 3109.5.2 Sub 1.</p> <p>Referenced Standards (ASTM) pages 559-565, 2006 IBC does not include ASTM F2387</p>
<p align="center">1404 (c)(1)(A)(ii) FEDERAL ACT</p> <p>Recognizes that Safety Vacuum release System (SVRS) or other devices are not required on public pools or spas with multiple drains or an unblockable drain</p>	<p align="center">Yes Section 5.5.2</p>	<p align="center">No Section 3109.5.2</p>
<p align="center">1406(a)(1)(A)(iii) STATE VOLUNTARY GRANT PROGRAM³</p> <p>Applies to residential pools and spas only if participating states have enacted minimum state laws called for by CPSC Expressly permits pools without any main drains</p>	<p align="center">Yes Section 5.2</p>	<p align="center">Unclear Section 3109.5</p> <p>"Suction outlets shall be designed to product circulation throughout the pool or spa."</p>

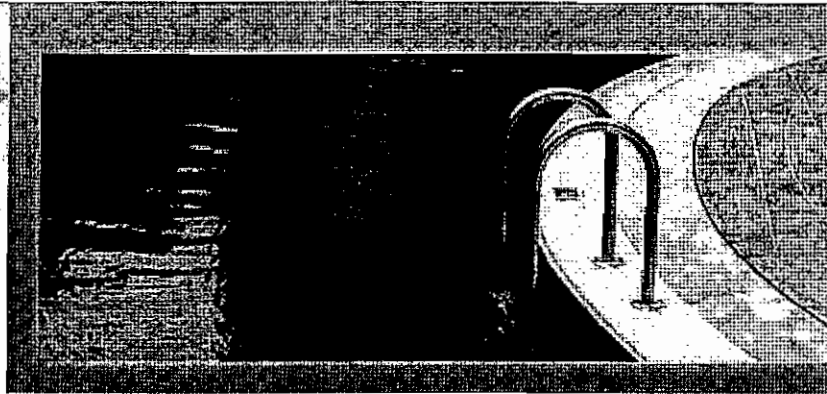
³ Refers to section 1406, which creates a Federal "State Grant Program". To be eligible for a grant, a state must pass legislation which meets or exceeds the "minimum State law requirements" as defined in the Act.

**COMPARISON OF
FEDERAL POOL AND SPA SAFETY ACT 2007, ANSI/APSP-7 AND ICC CODES**

<p>1406(a)(1)(A)(iii) STATE VOLUNTARY GRANT PROGRAM New construction to have multiple drains, unblockable drain or no drain</p>	<p align="center">Yes Section 5</p>	<p align="center">Unclear Section 3109.5</p>
<p>1406(a)(1)(A)(iv) STATE VOLUNTARY GRANT PROGRAM Requires ASME/ANSI certified covers on all drains that are not unblockable</p>	<p align="center">Yes Section 4.5</p> <p>Note: requires certified covers on all drains.</p>	<p align="center">No Section AG106.2</p> <p>Exempts channel drains and drains 18 x 23 or larger, some of which may not be unblockable</p>
<p>1406(a)(1)(A)(iv) STATE VOLUNTARY GRANT PROGRAM Requires such covers to comply with "any successor standard" or version of ASME/ANSI A112.19.8</p>	<p align="center">Yes Section 4.5</p>	<p align="center">No Section AG108 Standards</p>
<p>1406(d)(1)(A-F) STATE VOLUNTARY GRANT PROGRAM Existing pools with single drain that is not unblockable to have added protection</p>	<p align="center">Yes Section 6.3</p>	<p align="center">Yes Section AG106.3</p>
<p>1406(d)(1)(A-F) STATE VOLUNTARY GRANT PROGRAM Allows all options recognized in ASME/ANSI A112.19.17 to protect single drain installations in residential pools and spas</p>	<p align="center">Yes Section 7</p>	<p align="center">No Section AG106.3</p> <p>Prescriptive language requires "atmospheric vacuum relief" eliminating reversing circulation flow inconsistent with ASME Section 1.4 <i>Safety Vacuum Release System</i></p>

**COMPARISON OF
FEDERAL POOL AND SPA SAFETY ACT 2007, ANSI/APSP-7 AND ICC CODES**

<p align="center">1406(d)(1)(A-F) STATE VOLUNTARY GRANT PROGRAM</p> <p>Allows all devices that comply with ASTM F2387 to protect single drain installations in residential pools and spas</p>	<p align="center">Yes Section 7.1</p>	<p align="center">No Section AG106.3 Sub 1.</p> <p>Section AG108 Standards: ASTM F2387 not included</p>
<p align="center">1406(d)(1)(A-F) STATE VOLUNTARY GRANT PROGRAM</p> <p>Recognizes that SVRS or other devices are not required on pools or spas with multiple drains or an unblockable drain in residential pools</p>	<p align="center">Yes Section 5.5.2</p>	<p align="center">No Section AG3109.5.2</p>

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Industry Currents September 24

ICC Adopts ANSI/APSP-7 Anti-Entrapment Standard

On September 21 in Minneapolis, MN, code official members of the International Code Council (ICC) overwhelmingly approved the proposal of APSP to incorporate the ANSI/APSP-7 Standard for Suction Entrapment Avoidance into both the International Building Code (IBC) and the International Residential Code (IRC).

APSP senior technical director Carvin DiGiovanni said, "This victory is a major step for pool and spa safety, and it reinforces APSP's safety core value proposition. Adoption into the ICC codes will greatly facilitate implementation of the ANSI/APSP-7 standard nationwide. The IBC code (public pools and spas) has been adopted by all 50 states and 46 states have adopted the IRC (residential pool and spas)."

"The ICC's action is the culmination of a great deal of effort by APSP staff and many dedicated APSP volunteers over a long period of time," adds APSP President & CEO, Bill Weber. "It underscores the power of the industry when we speak with one voice, as we did here with the APSP proposals to the ICC. It affirms the integrity of the ANSI consensus process in approving the ANSI/APSP-7 standard. And, most of all, it affirms what will truly protect the public from future risk of suction entrapment. It is one of the most significant pool and spa safety advances ever!"

Click [HERE](#) to view a press release on the ICC decision.

Gibbs & Soell In-House Trade Show Features APSP

On September 9, APSP's public relations agency, Gibbs & Soell, hosted an in-house trade show and invited editors from the New York area. The event had a great turnout, with 15 editors from 9 trade and consumer publications in attendance to preview tabletop displays and presentations. The show gave APSP an excellent opportunity to explain the association's mission to consumer media. Feedback was extremely positive, with Gibbs & Soell hopefully gaining future media exposure for the association and its members.

Consumers buy more household products in stay-at-home economy

APSP member Kathleen Carlson of Aqua Quip noticed this article in *MediaPost Communications*, citing research by culture guru Faith Popcorn, who has dug into the consumers' minds in this shaky, stay-at-home economy. The study reports that **43% of consumers are spending more on their homes, especially on products such as flat-screen TVs and video games.** There is no reason

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FREQUENTLY ASKED QUESTIONS ABOUT THE FEDERAL POOL & SPA SAFETY ACT

Question #1: *What do the mandatory provisions of the Federal Pool and Spa Safety Act cover?*

Answer: The federal mandates in the Act pertain to two issues:

1. The manufacture, import, and sale of suction outlet fittings (drain fittings and covers) and
2. Entrapment avoidance systems in public pools and spas.

Question #2: *What do these provisions require?*

Answer: The Act requires the following --

1. On or after 12/20/08, all suction outlet fittings and covers made, imported, or sold in the U.S. must be certified to comply with ASME/ANSI A 112.19.8, 2007 version.
2. As of 12/20/08, all public pools and spas, both new and existing, be equipped with certified covers on every suction outlet.
3. As of 12/20/08, every public pool and spa, new and existing, that has a single outlet, other than an unblockable outlet, must employ one or more of the following additional options:
 - Safety vacuum release system (SVRS) that complies with ANSI/ASME A112.19.17 or ASTM F2387; or
 - Suction limiting vent system; or
 - Gravity drainage system; or
 - Automatic pump shut-off; or
 - Drain disablement; or
 - Equivalent system that may be approved by the CPSC.

Question #3: *Does the suction outlet cover requirement in the Act apply to pools and spas with dual or multiple drains?*

Answer: Yes. Every drain in every public pool and spa must have a compliant cover by the effective date. After 12/20/08 the pool or spa cannot be open for use if the covers and system are not compliant.

Question #4: Will such covers be available in time to install before the effective date?

Answer: Some manufacturers have assured the APSP that compliant covers will be available in sufficient time to purchase and install. However, the APSP cannot speak to every cover installed, especially covers of unusual sizes and shape.

Question #5: How will I know which covers comply?

Answer: They will have the following embossed or permanently marked in a location that is visible when installed:



Or, "ASME A112.19. 8 2007" and, a flow rating "X GPM", and "Life: X Years", and Manufacturer and Model.

Question #6: What if I cannot find the manufacturer or a compliant replacement cover that fits?

Answer: The drain will require permanent disablement, or replacement with a cover and mounting frame that is compliant.

Question #7: Is a skimmer considered a suction outlet?

Answer: No. The Act addresses only submerged suction outlets.

Question #8: Does the Act require SVRS devices on all public pools?

Answer: No. An SVRS is one of several options available to release a high vacuum occurrence in a pool or spa with a single outlet. These options are not required on pools or spas with multiple certified drains or with a single unblockable drain and sump.

Question #9: What is an unblockable drain?

Answer: The Act defines an unblockable drain as a drain sump of "any size or shape that a human body cannot sufficiently block to create a suction entrapment issue." The ANSI/APSP-7 2006 standard defines unblockable as "of any size and shape such that a representation of the torso of the 99 percentile adult male cannot sufficiently block it to the extent that it creates a body suction entrapment hazard." In other words, the outlet must be such that a torso 18" x 23" with corners having a 4-inch

radius would not be able to sufficiently block the outlet. The standard also allows for channel drains with a minimum open area 3" wide X 31" long.

Question #10: What is a safety vacuum release system (SVRS)?

Answer: The definition in the Act is as follows: "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." SVRS devices must be certified to ASME/ANSI A112.19.17 or ASTM 2387-04

Question #11: What is a gravity drainage system?

Answer: Gravity Drainage is a circulation system where the water flowing from the pool/spa does not connect directly to the pump. The water drains into a tank or basin open to atmosphere from which the pump pulls its water for circulation back to the pool.

Question #12: What is a suction limiting vent system?

Answer: Suction-Limiting Vent System -- a pipe vented to the atmosphere that connects to the suction pipe between the pool and the pump. When a high vacuum event occurs, air from the vent pipe replaces the water in the suction pipe thereby breaking the suction. The vent opening is protected by a tamper resistant cover.

Question #13: What is an automatic pump shut-off?

Answer: Automatic Pump shut-off system -- a device or system that shuts off the pump/motor when it senses a high vacuum occurrence that includes but is not limited to some of the safety vacuum release devices (SVRS) and load sensing motors.

Question #14: What is drain disablement?

Answer:

Existing Construction-

1. Fill with concrete, Glue in plug
2. Reverse flow, permanently disconnect from pool pump suction (no valve to switch back)
3. Permanently disconnect suction outlet pipe from all circulation systems

New Construction-

1. Not applicable -- the rest of the codes and standards do not permit single blockable drain configurations.

Question #15: According to the Act, how far apart must multiple or dual drains be?

Answer: The Act does not specify. The ANSI/APSP-7 2006 standard requires that multiple drains or suction outlets be at least 3 feet apart, measured from center of sump to center of sump. Or that suction outlets be located on different planes.

Question #16: Does the Act apply to hot tubs?

Answer: Yes. Hot Tubbs are considered "spas" for purposes of this act.

Question #17: Does the Act apply to residential pools and spas?

Answer: Yes. As of 12/20/08, it will be against federal law to make, import, or sell a suction outlet fitting and cover that does not comply with ASME/ANSI A112.19.8 -2007. Installation of a non compliant cover in a customer's pool or spa would be a violation of that provision. The other federal mandates discussed above apply only to public facilities.

Question #18: How does the Act define a "Public" pool or spa?

Answer: The term is defined broadly and includes --

1. any facility open to the public whether free or for a fee
2. multiple family residential facilities
3. hotels or other public accommodations
4. facilities operated by the federal government for the military, their dependents, or for any federal agency or department

Question #19: How do these Federal provisions or mandates compare with ANSI/APSP-7?

Answer: Each of the above provisions is entirely consistent with ANSI/APSP-7. Pools and spas built or retrofitted to comply with this standard will also comply with the Act.

Question #20: Does ANSI/APSP-7 require a pool to be closed to swimmers if the cover is not ASME compliant?

Answer: The standard requires ASME approved covers. Non-compliant covers and systems should be addressed. If a cover is broken, damaged, not secure or missing, the standard requires that the pool or spa be immediately closed to bathers.

Question #21: What is the penalty for not complying with these provisions?

Answer: That has yet to be determined by the CPSC.

Question #22: *How else does this Act affect residential pools and spas?*

Answer: That is also yet to be determined. The CPSC is charged with creating "minimum state law requirements," pertaining to entrapment protection and barriers to prevent drowning. Any state that enacts laws that meet or exceed those requirements will be eligible for grant money from the CPSC. The Act provides guidelines and instructions to the CPSC in creating those "minimum state law requirements." With regard to entrapment, these guidelines and instructions are entirely consistent with ANSI/APSP-7. With regard to barriers, these guidelines and instructions are consistent with the "Layers of Protection" approach endorsed by the APSP and found in our literature.

Question #23: *What else should I do about entrapment protection in residential pools?*

Answer: All residential pools and spas and hot tubs should be built and maintained in accordance with applicable state and local law and ANSI/APSP-7.

Question #24: *What should I do about barriers in public and residential pools and spas?*

Answer: All pools and spas and hot tubs should be protected in accordance with applicable state and local law and the ANSI/APSP-8 Model Barrier Code.



32" Channel Drain Flat Grate Anti-Entrapment Suction Outlet Cover and 3-Port Fabricated Sump

VGB Series

Product Specification Sheet

The AquaStar line of suction outlet covers compliant with the new Virginia Graeme-Baker Pool and Spa Safety Act (ASME/ANSI A112.19.8-2007)

Features

A Single, Unblockable Suction Outlet that Exceeds the New VGB Mandate and ASME/ANSI A112.19.8-2007 Standard

For Single or Multiple Drain Use (See Installation Instructions for Plumbing, Hydrostatic Valve/Drain Pipe & Single or Multi-Pump Connections)

Single:
Floor: 316 GPM at 3.9 fps / Wall: 208 GPM at 2.6 fps

Dual:
Floor: 632 GPM at 3.9 fps / Wall: 416 GPM at 2.6 fps
Floor: 242 GPM at 1.5 fps

25.9 sq. In. Opening

#316 Stainless Steel Screws

Manufactured from Super Strong UV Resistant ABS/ASA Material

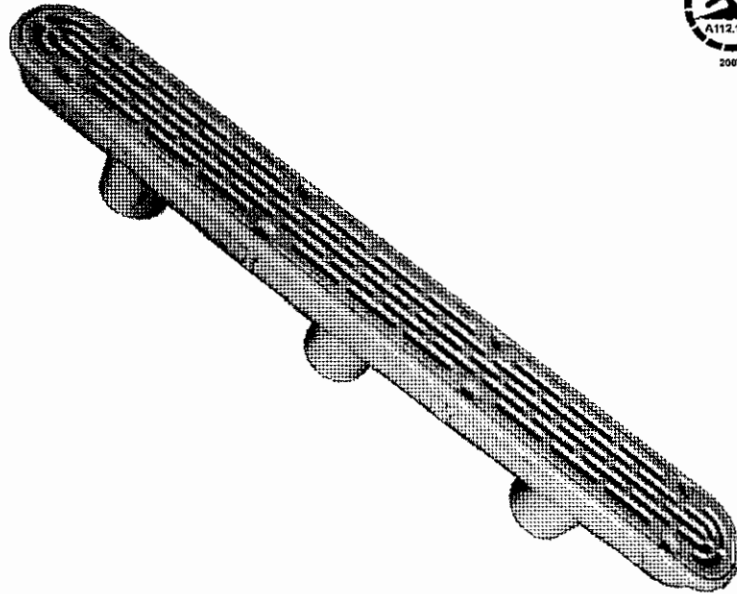
3 Ports: Bottom 2.5" OD, 2.0" ID S/S; Inside 2.0" Threaded FPT; Two 2" Threaded Plugs Included

Meets or Exceeds ASME/ANSI A112.19.8-2007 National Standards and ASTM G154 UV Testing

Listed with IAPMO R&T

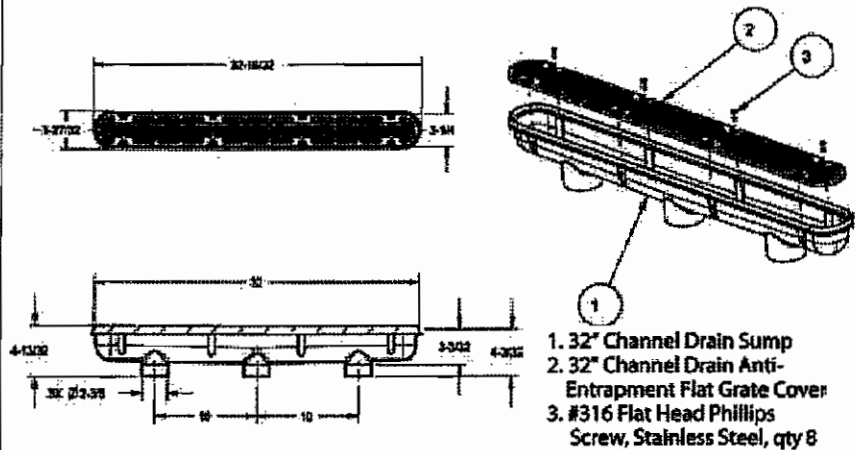
4 Per Case

The Unblockable!™



Part Numbers / Colors

- 32CDFL101 White
- 32CDFL102 Black
- 32CDFL103 Lt. Gray
- 32CDFL104 Blue
- 32CDFL105 Dk. Gray
- 32CDFL106 Bone
- 32CDFL107 Taupe
- 32CDFL108 Tan



1. 32" Channel Drain Sump
2. 32" Channel Drain Anti-Entrapment Flat Grate Cover
3. #316 Flat Head Phillips Screw, Stainless Steel, qty 8

SAFEGUARD YOUR FUTURE.

AVSFO

ANTI-VORTEX SINGLE CHANNEL DRAIN

**THE ONLY UNBLOCKABLE
DRAIN CERTIFIED BY**

NSF NSF INTERNATIONAL

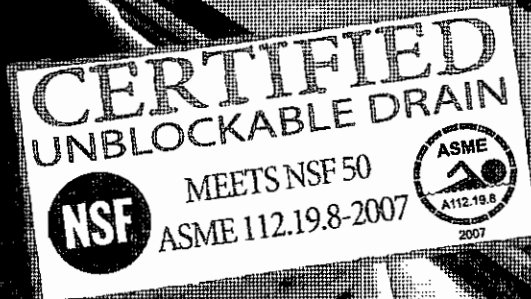
**COMPLIANT WITH THE NEW
VIRGINIA GRAEME-BAKER
POOL & SPA SAFETY ACT!**

CERTIFIED TO MEET ASME A112.19.8-2007

» ONLY LARGE APERTURE (DEBRIS REMOVING)
DRAIN CURRENTLY APPROVED BY NSF.

» FLOW RATES UP TO 227 GPM.

» PATENT PENDING.



A&ATM
MANUFACTURING

Toll Free: 800.851.8492
Local: 402.256.6935
Fax: 402.592.4896
www.aamfg.com

**ONE DRAIN CAN BE PLUMBED
WITH SINGLE OR DUAL PUMPS!**

FOR MORE INFORMATION:
www.UNBLOCKABLEDRAIN.com



COMPLIANT WITH THE VIRGINIA GRAEME BAKER POOL & SPA SAFETY ACT

SAFETY DRAINS FOR NEW OR EXISTING POOLS AND SPAS

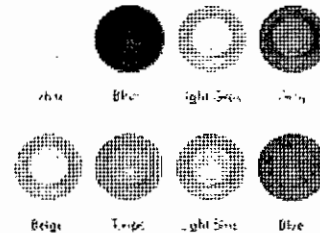
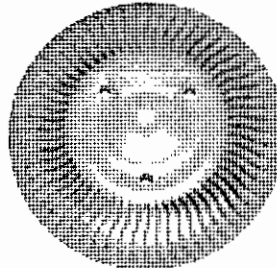


HIGH FLOW SAFETY DRAIN

Paramount Pool and Spa Systems' SDX High Flow Safety Drain™ boasts a flow rate of 200gpm on the floor and 192gpm on the wall and is compatible for pumps up to 3hp. Installed with at least two SDX drains feed together to comply with split suction codes, SDX serves as a wall drain and also as a floor drain if debris removal is not a concern. SDX is available in eight colors for Concrete, Vinyl, and One-Piece pools.



HIGH FLOW SAFETY DRAIN



FEATURES AND BENEFITS

- Compliant with the Virginia Graeme Baker Pool and Spa Safety Act.
- Available for concrete, vinyl and fiberglass pools and spas
- High Flow Rating for use with large HP or even multiple pumps:
 - 2 SDX drains – 200gpm floor, 192gpm wall
 - 3 SDX drains – 300gpm floor, 288gpm wall
 - 4 SDX drains – 400gpm floor, 384gpm wall

←→ 1.5 FPS



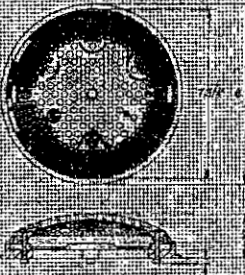
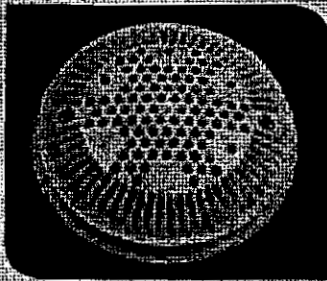
2007 LISTED
 SAFETY FOR ALL POOL AND SPA SAFETY ACT
 VIRGINIA GRAEME BAKER POOL AND SPA SAFETY ACT

SDX protects against all five recognized forms of entrapment, Body, Hair, Mechanical, Limb, and Evisceration

- Patented design achieves high flow with sixty independent suction points
- Dome shape to prevent a seal with a swimmer
- Anti-vortex shield to block contact with direct-suction

Missing cover prevention security complies with next generation safety standards

Frames & Covers

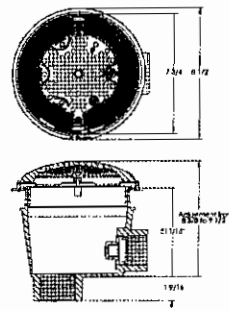


Open Area - 14.50 sq. in.

Model Number	Size	Description	Flow Rate
WG1030AVPAK2	7 7/8" Dia	Dual pack White	125
WG1030AVBPAK2	7 7/8" Dia	Dual pack Black	125
WG1030AVGPAK2	7 7/8" Dia	Dual pack Gray	125
WG1048E*	7 7/8" Dia	Floor Cover	125
WG1048EW*	7 7/8" Dia	Wall Cover	72
WGX1048B*		Vinyl Ring	-

*Add BLK for Black or GR for Gray color.

Deluxe Suction Outlet

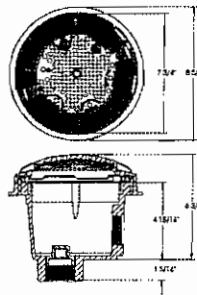
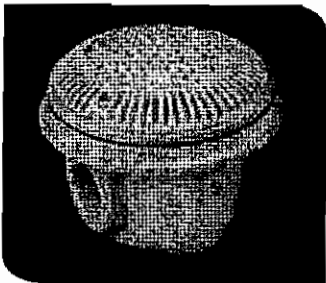


Open Area - 7 sq. in.

Model Number	Side	Bottom	Description
WG1153AVPAK2	1 1/2"	2"	Dual sumps with covers for Concrete
WG1154AVPAK2	2"	2"	

Standard screws are 3/16" max, wall thickness

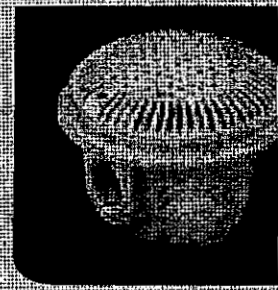
Suction Outlets



Open Area - 8.1 sq. in.

Model Number	Size	Description
WG1048AVPAK2	1 1/2"	Dual Sumps with covers, for Vinyl, or fiberglass
WG1049AVPAK2	2"	

*Standard screws are 3/16" max, wall thickness

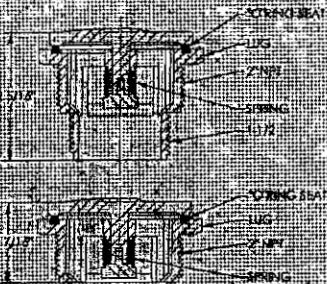
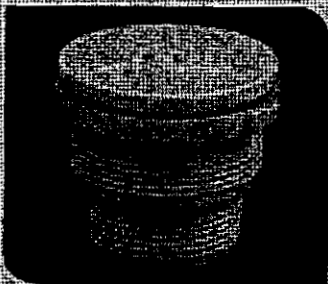


Open Area - 7 sq. in.

Model Number	Side	Bottom	Description
WG1051AVPAK2	1 1/2"	1 1/2"	Dual Sumps with covers, for Concrete
WG1052AVPAK2	2"	1 1/2"	
WG1053AVPAK2	1 1/2"	2"	Dual Sumps with covers, for Concrete
WG1054AVPAK2	2"	2"	
WB1051X			Adjustable Collar for Plaster Concrete

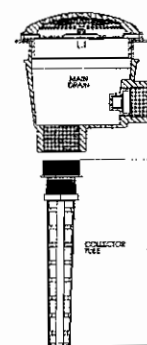
Standard screws are 3/16" max, wall thickness

Hydrostatic Relief Valve



Model Number	Size	Description
SP1056	1 1/2", 2"	Spring Loaded

Main Drain Collector Tube



Model Number	Size	Description
SP1055	1 1/2", 2"	12" long collector tube

"TOP OF NICHE" OPENING
= COVER WIDTH
(including ring) + 1"

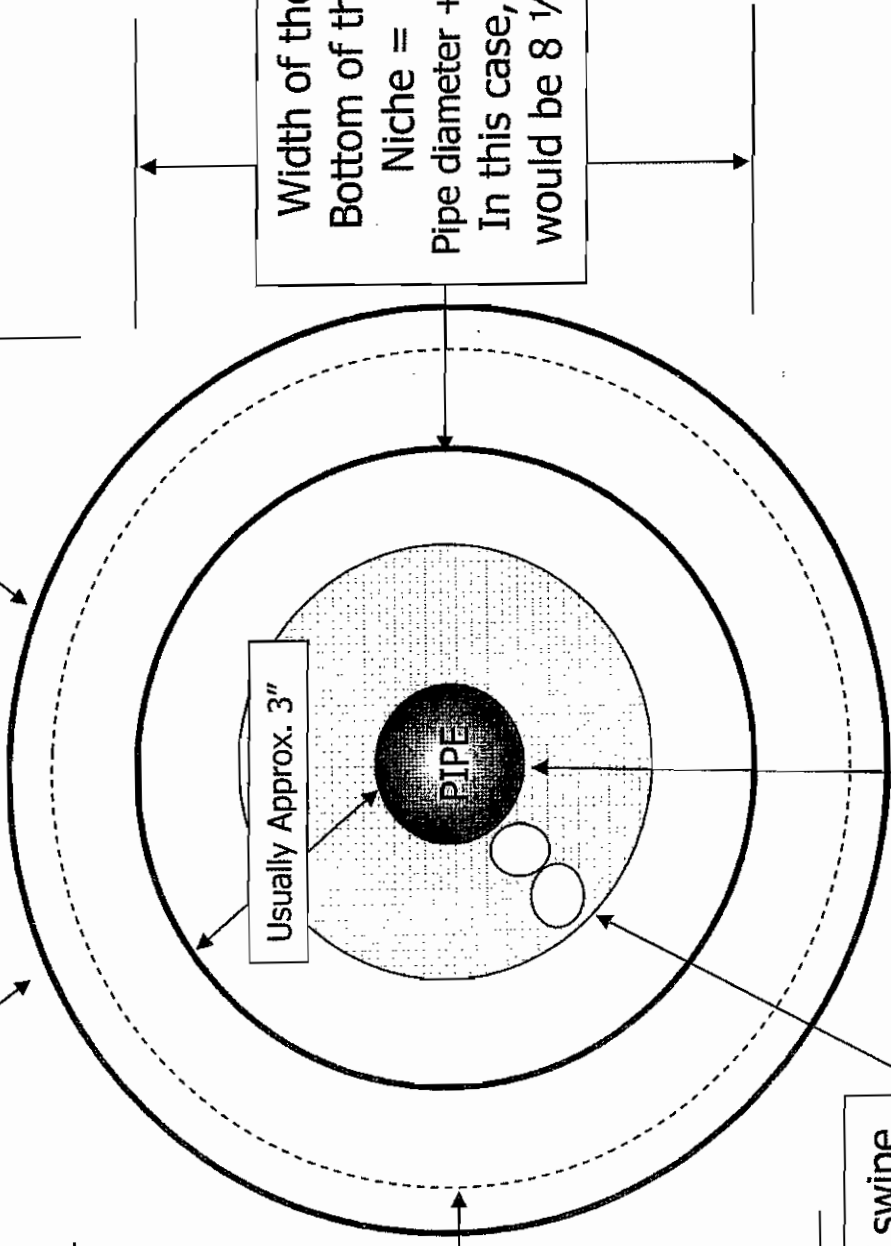
**RING AND
COVER WIDTH**
(Example: If the
above dimension
is 10", then the
"top of Niche"
opening will be 11")

Usually Approx. 3"

Width of the
Bottom of the
Niche =
Pipe diameter + 6"
In this case, it
would be 8 1/2".

Cut a "Two Finger" swipe
around the pipe to allow
room for Water-stop
installation and Finish
material to go around the
Water-stop.

Typical 2 1/2" Stub-up
or Wall Stub-out
(will vary by flow/velocity requirements)



A SHOTCRETE/GUNITITE:
Cut the Niche 5" deep (from the floor or wall of the pool or spa to the bottom of the niche). This dimension will work for suction lines up to 3" (inside diameter).
For larger pipe, use "Pipe inside diameter X 1.5 = Niche Depth" as your guide.
ASME A112.19.8-2007

B SHOTCRETE/GUNITITE:
"B" = 3". The width of the bottom of the niche should be the pipe size (inside diameter) + 6" (in other words, 3" of clearance from the outside edge of the pipe riser to the wall of the niche.)

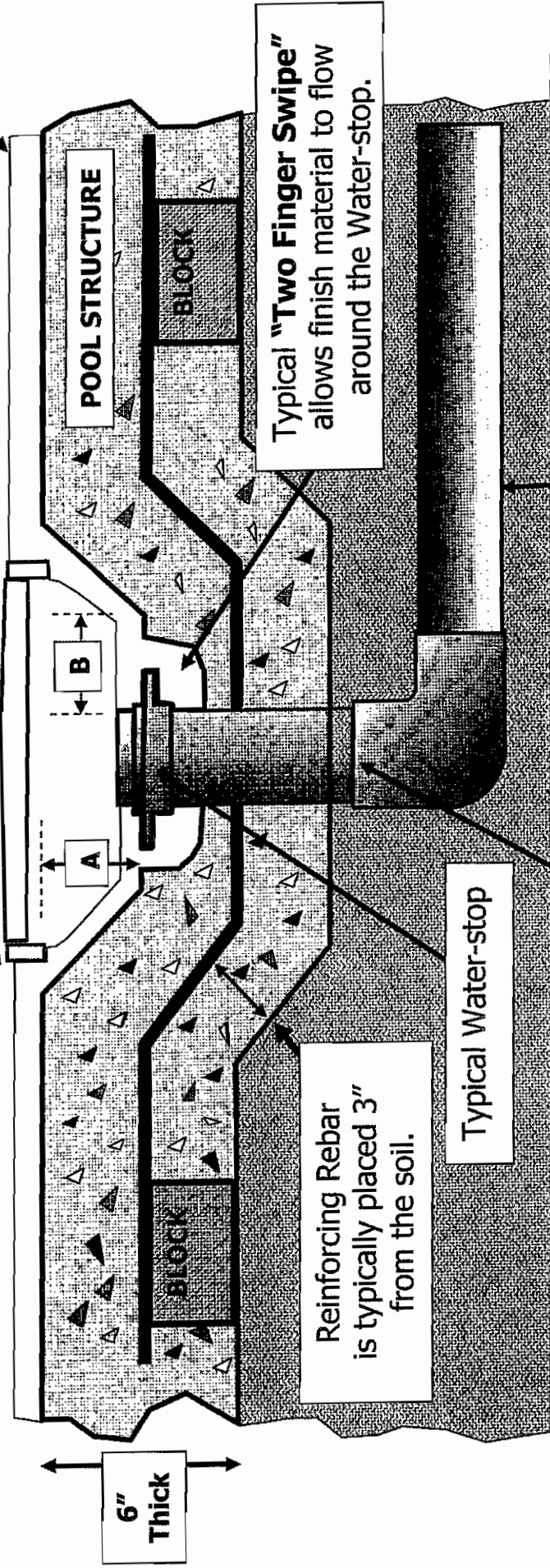
EXAMPLE: If the pipe is 2 1/2", cut the width at 2 1/2" + 6" = 8 1/2" total width at the bottom of the niche (Actual distance from edge of pipe to niche wall will be slightly less than 3" because of pipe wall thickness).

SHOTCRETE/GUNITITE:
Cut the Niche
THE WIDTH OF THE DRAIN COVER + 1"

EXAMPLE: If you have a 10" round drain cover, cut the niche at 11" across.

INTERIOR FINISH

APPROVED SUCTION COVER and RING



6" Thick

Reinforcing Rebar is typically placed 3" from the soil.

Typical Water-stop

Typical "Two Finger Swipe" allows finish material to flow around the Water-stop.

The TOP of this elbow should be AT LEAST 12" BELOW THE SHOTCRETE FLOOR (5" below the excavated floor and 1" below the bottom of the excavated niche).

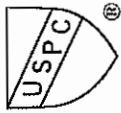
Typical Main Drain or Suction Line is 2 1/2" or larger (inside diameter). See the "GPM and Velocity Chart" to determine the proper size for your system.
On some pools, 2" Main Drain or Suction lines may be acceptable, but you need to know the parameters!

SUCTION SUMP MINIMUM DIMENSIONS "Side View"

VELOCITY - FEET PER SECOND

PIPE SIZE	5 FPS	6 FPS	7 FPS	8 FPS	9 FPS	10 FPS	GALLONS PER MINUTE
1"	13	16	18	21	23	26	GALLONS PER MINUTE
1.5"	31	37	43	50	56	62	GALLONS PER MINUTE
2"	52	62	72	82	92	103	GALLONS PER MINUTE
2.5"	73	88	102	117	131	146	GALLONS PER MINUTE
3"	113	136	159	181	203	227	GALLONS PER MINUTE
4"	196	234	274	313	353	392	GALLONS PER MINUTE
5"	308	369	430	493	555	616	GALLONS PER MINUTE
6"	445	534	623	712	800	890	GALLONS PER MINUTE
8"	772	926	1081	1235	1390	1544	GALLONS PER MINUTE

Information from Pentair Training Manual



Pool & Spa Anti-Entrapment Suction Outlet Retro-Fit Cross-Reference Chart



**REPLACE YOUR SUCTION OUTLET COVERS WITH APPROVED, USPC CERTIFIED, SAFETY SUCTION OUTLETS
ALL AQUASTAR POOL PRODUCTS ANTI-ENTRAPMENT SUCTION OUTLETS BELOW
MEET OR EXCEED CURRENT ASME/ANSI A112.19.8-2007 NATIONAL STANDARDS**

VGB SERIES PART #*	PART DESCRIPTION	ASME/ANSI "2007" COMPLIANT GPM & fps	GPM at 1.5 fps	Sq. In. Openings	AquaStar (Pre-VGB "2007" Series)	Hayward	DS360/ New Water Solutions Remove Cover to Determine Frame/ Sump Size	Pentair #1 Model	Am. Pool Products/ PAC-FAB/ (Pentair #2 Model)	Waterway
RFS9xxx**	9"x9" Square Retro-Fit to 8" AE Cover with 2 Different Screw Sets	Floor: 88 GPM at 3.2 fps Wall: 70 GPM at 2.6 fps	41	8.8	NO	YES	Remove Cover to Determine Frame/ Sump Size	NO	YES	YES
LPRFS9xxxx**	9"x9" Square Retro-Fit to 8" Low Profile AE Cover with 2 Different Screw Sets	Floor: 100 GPM at 4.2 fps Wall: 70 GPM at 2.9 fps	36	7.7	NO	YES	Remove Cover to Determine Frame/ Sump Size	NO	YES	YES
RFS12xxx**	12"x12" Square Retro-Fit to 10" AE Cover with 3 Different Screw Sets	Floor: 206 GPM at 5.8 fps Wall: 96 GPM at 2.8 fps	52	11.2	NO	YES	N/A	NO	YES	YES
LPRFS18xxx	Four (4) LPRFS9xxx in 18"x18" Frame with 2 Different Screw Sets	Floor: 400 GPM at 3.2 fps	164	30.8	NO	YES	N/A	NO	YES	YES
RFS24xxx	Four (4) RFS12xxx in 24"x24" Frame with 3 Different Screw Sets	Floor: 824 GPM at 5.8 fps	208	44.8	NO	YES	N/A	NO	YES	YES
24xxx (Available ~ 10/08)	Four (4) 12"x12" Flat Grates in 24"x24" Frame with 3 Different Screw Sets	Floor: 1480 GPM at 1.4 fps (Pending 10/08)	1645	352	AquaStar's Original Frame YES	NO	N/A	YES	NO	NO
WAV9xxx (Available ~ 11/08)	9"x9" Square Wave Grate with Screws	Floor: 165 GPM at 1.2 fps (Pending 11/08)	205	44	AquaStar's Original Frame YES	NO	Remove Cover to Determine Frame/ Sump Size	YES	NO	NO
WAV12xxx (Available ~ 11/08)	12"x12" Square Wave Grate with Screws	Floor: 254 GPM at 0.9 fps (Pending 11/08)	392	84	AquaStar's Original Frame YES	NO	N/A	YES	NO	NO

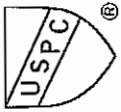
*See AquaStar Color Chart for Part Ending #s / Color Codes: 100=Clear, 101=White, 102=Black, 103=Light Gray, 104=Blue, 105=Dark Gray, 106=Bone, 107=Taupe, 108=Tan

**Frames sold separately; Part #s: RFSFR9xxx, RFSFR12xxx

BE A POOL AND SPA PROFESSIONAL! ALWAYS FOLLOW AND UNDERSTAND AQUASTAR'S "INSTALLATION INSTRUCTIONS" THOROUGHLY. COMPLIANCE TO THE NEW "2007" VGB STANDARD DOES NOT STOP WITH THE INSTALLATION OF THE COMPLIANT COVER ONLY. THE EXISTING FRAME MUST BE IN GOOD CONDITION, OR IT SHOULD ALSO BE REPLACED; THE SUMP NEEDS TO BE AT LEAST THREE (3) INCHES IN DEPTH; AND THE SCREWS MUST SECURELY FASTEN TO THE FRAME. READ THE INSTRUCTIONS!

P 877-768-2717 F 877-276-POOL info@aquastarpoolproducts.com www.aquastarpoolproducts.com





Pool & Spa Anti-Entrapment Suction Outlet Retro-Fit Cross-Reference Chart



REPLACE YOUR SUCTION OUTLET COVERS WITH APPROVED, USPC CERTIFIED, SAFETY SUCTION OUTLETS
ALL AQUASTAR POOL PRODUCTS ANTI-ENTRAPMENT SUCTION OUTLETS BELOW
MEET OR EXCEED CURRENT ASME/ANSI A12.19.8-2007 NATIONAL STANDARDS

VGB SERIES PART #	ASME/ANSI 2007 COMPLIANT GPM & fps	Sq. In. Openings	Afras/ ABF/ Splash	Am. Pool Products	Color Match	Custom Molded	Hayward	New Water Solutions/ Triodyne	Advanced (APP)	Pentair	Sta-Rite/ Polaris/ Caretaker	Waterway
8AVxxx	Floor: 88 at 3.2 Wall: 70 at 2.6	8.8		NLA American #86105100 (Brass Insert & Self-Tap)**	All 8" Rings Including FL, AV, PTD (All Colors)	25539-00 Series (All Colors)		All Models ****		86105000 & 86107000 Series		640-2310 and Others
8CCVGBxxx (Pending IAPMO Final ~10/08)	Floor: 210 at 7.7 (A12.19.8M Rating)	8.8		NLA American #86105100 (Brass Insert & Self-Tap)**	All 8" Rings Including FL, AV, PTD (All Colors)	25539-00 Series (All Colors)		All Models ****		86105000 & 86107000 Series		640-2310 and Others
LP8AVVGBxxx	Floor: 100 at 4.2 Wall: 70 at 2.9	7.7		NLA American #86105100 (Brass Insert & Self-Tap)**	All 8" Rings Including FL, AV, PTD (All Colors)	25539-00 Series (All Colors)		All Models ****		86105600 & 86107000 Series		640-2310 and Others
RLP8AVVGBxxx	8" Retro-Fit Low-Profile AE Cover with Frame, 2 Plastic Bushings and 3 Different Screw Sets	7.7	All Afras/ Alloy Brass (ABF 64 etc.) NLA Splash			25535-000 & NLA & SP1030 25537-000 Series		All Models ****	APP*** NLA		07017-0741/ Polaris/ Caretaker	
10AVxxx	Floor: 206 at 5.8 Wall: 96 at 2.8	11.2										10" 640-3110S
LP10AVVGBxxx (Pending IAPMO Final ~10/08)	Floor: 220 at 6.4 (A12.19.8M Rating)	11.1										10" 640-3110S
32CDAVFRxxx	Floor: 236 at 3.4 Wall: 136 at 1.9	22.6		\$5	\$5			\$5	\$5	\$5	\$5	\$5
32CDFLRxxx	Floor: 316 at 3.9 Wall: 208 at 2.6	25.9		\$5	\$5			\$5	\$5	\$5	\$5	\$5

* See Aquastar Color Chart for Part Ending #s / Color Codes: 100=Clear, 101=White, 102=Black, 103=Light Gray, 104=Blue, 105=Dark Gray, 106=Bone, 107=Taupe, 108=Tan

** "American Products" is printed on bottom of existing cover along the rim

*** "A.P.P." is printed on top and center of existing cover

**** New Water Solutions: Remove cover to determine frame/sump size; Triodyne: Fits on either side of ring with use of 1/8" drill

5 Waterway 10" drain covers: Special order #316 stainless steel screws for existing threaded inserts

6 Replace ALL existing SINGLE non-compliant 8" or 9" cover/grates etc. with field fabricated sumps by using Aquastar's 32" Channel Drain with mud frame.

NOTES:

- For best fit, Aquastar's existing guide "bits" under lid near screw holes should be "knocked off" when replacing other brand
- There may be some differential in other brand's part #s due to color suffixes etc
- NLA = No longer available
- BE A POOL AND SPA PROFESSIONAL! ALWAYS FOLLOW AND UNDERSTAND AQUASTAR'S INSTALLATION INSTRUCTIONS! THOROUGHLY COMPLIANCE TO THE NEW "2007" VGB STANDARD DOES NOT STOP WITH THE INSTALLATION OF THE COMPLIANT COVER ONLY. THE EXISTING FRAME MUST BE IN GOOD CONDITION, OR IT SHOULD ALSO BE REPLACED. THE SUMP NEEDS TO BE AT LEAST 1-3/8" (3) INCHES IN DEPTH; AND THE SCREWS MUST SECURELY FASTEN TO THE FRAME. READ THE INSTRUCTIONS!

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