

**NDEE Swimming Pool Program
VGBA Drain Cover/SOFA Safety
Frequently Asked Questions**

ASME: American Society of Mechanical Engineers

ANSI: American National Standards Institute

APSP: Association of Pool and Spa Professionals (now known as Pool & Hot Tub Alliance (PHTA))

ICC: International Code Council

Who is Virginia Graeme Baker?

The VGBA is named after Virginia Graeme Baker, a 7 year old who died after being trapped by a hot tub drain's powerful suction. She was a proficient swimmer, but when she became stuck to the drain, she was unable to pull herself free of the estimated 700+ pounds of suction pressure – it later took 2 men to pull her body free, breaking the drain cover in the process. Her family lobbied to create safety standards for pool and spa drain covers.

What is the Virginia Graeme Baker Pool and Spa Safety Act (VGBA)?

It is a law enacted by Congress December 2007 to establish U.S. Consumer Product Safety Commission (CPSC) standards for swimming pool and spa safety. It requires suction drains comply with performance standards to prevent entrapment/evisceration.

What is ANSI/APSP/ICC-16 2017?

ANSI/APSP/ICC 16 2017 is the most current standard that establishes materials, testing, and labeling requirements for suction outlet fittings in pools/spas. It replaced ANSI/APSP-16 2011, which replaced ASME-ANSI A112.19.8.

What is a suction outlet fitting assembly (SOFA)?

SOFA includes all components including the sump, body, cover, grate, and hardware.

How do I check my drain cover for compliance?

There are different generations of VGBA-compliant drains. Older covers will be marked with “VGB-2008,” “ASME-ANSI A112.19.8-2007, -2008, or 2009b” or “ANSI/APSP-16 2011” depending on when they were produced. Newer covers will have “ANSI/APSP/ICC-16 2017” and/or “VGBA-2017” stamp. Some (not all) have a colored dot on the top – A light blue or green dot is an older generation, while a dark blue dot indicates it has passed the newer standard.

The cover must have a Certification of Compliance document stating product specifications and the performance standard against which the product was tested.

It is important that the drain cover is not only certified to comply with VGBA, but also that it is installed according to manufacturer's instructions. The drain covers were tested under specific conditions (location on floor/wall, sump depth, flow rate) to determine their safety. If the cover is incorrectly installed, it does not meet the standard and is not safe.

What if my drain cover was field-fabricated (“custom”)?

If the cover was designed by a professional engineer or registered design professional, it should have a certification stating the field-fabricated cover complies with the ASME/ANSI A112.19.8 2007 or successor standard, including flow rate, UV exposure (if applicable), and durability.

What is “sump depth”?

ANSI/APSP/ICC 16 2017 defines the sump depth as the distance from the surface of the pool floor to the point of first contact with the pipe. If plumbing runs vertically from the bottom of the drain, this measurement would go from the pool floor surface to the pipe opening. If the pipe enters horizontally on the side of the drain, the measurement would go from the pool floor surface to the closest side of the pipe.

How often do drain covers expire?

Drain covers have a service life of 5-7 years, depending on the manufacturer and model. The service life is marked on the top of the cover as “Life: X Years.” If you cannot access the cover, refer to manufacturer’s instructions or contact your manufacturer to determine service life. Service life begins the month and year the drain cover is installed, with or without water.

Why do drain covers expire?

The covers become brittle over time due to the corrosive pool chemicals and, at outdoor pools, UV light. Replacing expired covers prevents accidents caused by breakage.

Do stainless steel drain covers expire?

Yes. Stainless steel drain covers also have a service life determined by the manufacturer. Stainless steel is made “stainless” by a chromium oxide outer coating/layer that is resistant to corrosion. Chloride compromises that outer layer, causing pitting corrosion that can lead to the failure of the drain cover.

Is Engineering Review required to change drain covers?

Changing drain covers does not require engineering review. They must be installed according to manufacturer’s instructions. It is especially important to pay attention to the flow rating of the cover; due to the updated performance standards, covers manufactured after 2021 may have different flow ratings, even if they are the same make/model as your previous cover. Newer covers may have several flow ratings dependent on the sump depth and location on floor or wall.

My drain cover did not come with a label to stick on the wall– why?

This was a change made during the most recent revision of the standard. Drain covers manufactured before May 24, 2021 were not required to provide this label. We have provided the log sheet to make this information more easily accessible for maintenance and inspection purposes.

What do I do if my drain cover is expired?

The drain cover needs to be replaced with a compliant cover, according to manufacturer’s instructions, as soon as possible. Even if the drain cover appears to be intact, it may be brittle and easily broken – putting pool users in imminent danger of serious injury.

How do I replace outlet covers?

If possible, replace expired covers with the same manufacturer and model (NOTE: Due to the updated performance standards, covers manufactured after 2021 may have different flow ratings, even if they are the same make/model as your previous cover.) If needed, consult with the manufacturer of the existing outlet cover, or another pool professional, to find replacement covers.

Make sure to inspect the entire device: frames, sump, screws, plaster rings, and spacers. Do NOT reuse old screws – use the components that come with the new cover. Always tighten screws by hand, do not use power tools, to avoid the risk of stripping the threads.

Read, understand, and follow all manufacturer’s instructions! Ensure you retain installation information, including any manufacturer’s instructions and certification documents, in your records.

What do I do if the drain cover is missing a screw? What if it is cracked/damaged?

Close the pool immediately. Never allow anybody in a pool when a drain cover is missing, unsecured, cracked/damaged, or missing screws. This is a potential entrapment hazard. Refer to manufacturer’s instructions regarding repairs or replacement of missing screws. Most drain covers have a specific screw required to properly secure the cover without stripping the threads. Always tighten screws by hand, do not use power tools, to avoid the risk of stripping the threads.

Is there anything else I can do to prevent entrapment hazards?

We encourage you to teach children about the dangers of entrapment. Never allow them to lean against, sit on, or touch/play with the drain cover. Jewelry like necklaces, swimsuit designs with long strings/fringe, and long hair can all increase risks of accidents around the drain.

Is the log sheet required?

The log sheet is not required. It was provided as a tool to assist pool operators in keeping important SOFA installation information readily accessible for maintenance and inspection purposes.

Will the State/Health Department close my pool if my drain cover is expired?

No. The owner of the pool facility is responsible for ensuring the pool/spa complies with all applicable laws, including the federal VGB Act. The state/health department will be verifying that each pool is in compliance by completing visual inspections and reviewing related documents including manufacturer certificates and installation logs. At this time, we will be requiring any pool with an expired drain cover submit a corrective action reply with a plan and timeline for replacing the drain cover.

The inspector will close a pool immediately if there is any indication that a drain cover is not VGBA-certified, has been improperly installed, or has become damaged.