

Water Safety Month 2023

Updates to VGB

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

VGB is a federal law that was signed in 2007 and enacted in 2008, where all pools must have VGB main drain covers to prevent drain and vacuum entrapments that can be dangerous, even fatal. No pools are grandfathered in.

What is required by VGBA?

- All Pools and spas must have a drain cover compliant with the 2007 ASME A112.19.8 standard and/or successor standards ANSI/APSP-16 2011 or ANSI/APSP/ICC-16 2017.
- For pools and spas with only one main drain must install additional anti-entrapment device:
 - Safety Vacuum Release System
 - Suction- limiting vent system
 - Gravity drainage system
 - Automatic pump shut off system
 - Drain disablement
- * Some local and state health departments have incorporated VGBA into their standards. Some of these incorporated standards have specific requirements above and beyond VGBA standards. *Make sure you know your local and state codes!



Why are we still talking about VGB?

In May 2021 ANSI/APSP/ICC-16 2017 American National Standard for suction outlet fitting assemblies (SOFAs) became the newest successor drain cover standard over all the previous versions. Things changed: *a few of the most popular

- ★ **The Name**- The standard is now officially abbreviated VGBA.
- ★ **Drain Markings**- Every drain will be marked with all approved flow ratings on the cover.
- ★ **Unblockable Drains**- The standard now defines in better language the definition of unblockable drains. An unblockable drain is one that can be installed in a pool with a single drain because it cannot be completely "blocked" by a person's body.
- ★ **Maximum Flow Rate**- stricter testing for drain cover. This may change the flow rates of drains you have used before. Drain covers manufactured after May 2021 may have different flow rates from previous models. This can happen even if they have the same model #.
- ★ **Field Build Sumps**- You can no longer build sumps in the field with no planning. You must now have instructions from drain cover manufacturers.
- ★ **Torque Requirements**- Installation instructions now include specific torque measurement for screws.
- ★ **Information Label**- Each drain will ship with a label that lists flow ratings, installation location, manufacturing date, etc.

Good News, these are rolling changes. VGB covers before 2021 are still good until they expire, damage or improperly installed.

How to Size and Select Compliant Drain Covers

- 1) Measure sump depth, pipe diameter and length, and pipe orientation of your pool.

Make sure your drain cover is approved for your dimensions. There will be a SOFA model number on the cover that has these dimensions

Example model SOFA #:

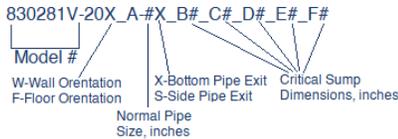
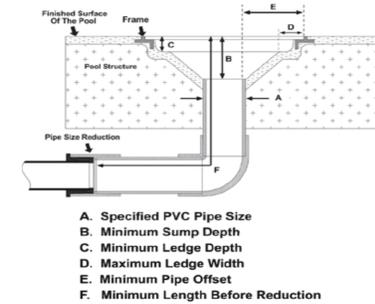


Figure 5: Sump specifications



example of required dimensions can be found on figure 5 from ANSI/APSP/ICC-16 2017.

- 2) Blockable vs Unblockable

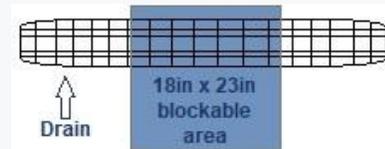
Blockable Drain FYI

- 3 feet (36") minimum between drains
- Must have at least one drain or anti-entrapment device.
- To determine flow rate (gpm)
 - Determine flow rate (step #3) of all drains. Assume one drain is blocked and the sum of the other drains is your gpm.
 - Example: ~~Drain #1~~ + Drain #2 = flow rate gpm
 - ~~Drain #1~~ + Drain #2 + Drain #3 = flow rate gpm
- Must be raised above the floor.



Unblockable Drain FYI

- No minimum separation required between drains
- Drain must be larger than 18"x23" blocking area.
- To determine flow rate (gpm)
 - 1 drain = determine in Step #3 and that is your gpm.
 - 2 or more drains - determine flow rate per drain (step #3) and the sum of all the flow ratings is your gpm.
 - Example: Drain #1 + Drain #2 = flow rate gpm
- Must be flush with the floor



- 3) Figure out Maximum Flow Rate-

- Cover must **exceed** maximum flow rate.
- Maximum flow rate is different from operational flow rate.

Information needed to determine Maximum Flow Rate:

- Total Dynamic Head (TDH)- amount of pressure differential created by pump as it operated.
- Pump Model- Specific Performance Curve chart- comes from the manufacturer with pumps.

- 1) Run pump at highest speed (Maximum RPM).
- 2) Make sure the pump is running with the lowest resistance.
 - a) Backwash filters
 - b) Clean skimmers
 - c) Open all drains to 100%
 - d) remove fittings in returns
- 3) Watch vacuum & pressure gauges to determine TDH
 - a) Multiply vacuum gauge reading by 1.13
 - b) Multiply pressure .gauge reading by 2.31
 - c) "a" total + "b" total = TDH
- 4) Plot TDH against pump model-specific performance curve chart to get Maximum Flow Rate.

*Make sure to check with Drain Cover Manufacturers when purchasing new drains to make sure you meet the new requirements.