

Virginia Precast Tank Association
The Performance Standard
For Septic Tanks, Pump Chambers and other
Sewage Containment Structures
To be used in Virginia

Three types of design categories:

1. Standard Design: Watertight Structurally Sound to be buried at least two feet up to four feet. Use 150 pounds per square foot as a load per foot of burial. For example, at two feet of burial, use 300 psf. At four feet of burial, use 600psf.
2. Heavy Duty Design: Traffic rated AASHTO HS20-44
3. Special Design: Neither Standard nor Heavy Duty. Designed to meet specific conditions, for example, burial more than four feet.

Design Requirements

1. All Standard Design tanks are intended for typical residential use.
2. Heavy Duty Design tanks are for sites where vehicle loading is anticipated.
3. Special Design tanks are made to meet specific site conditions where Standard and Heavy Duty tanks are not suitable.

Structural Requirements

1. Structural Design for each category of tank shall be by a licensed engineer's calculations, or Proof of Design by load testing to meet anticipated loads.
2. All tanks will be marked showing the Name or Logo of the Manufacturer, The Date of Manufacture, The Capacity in Gallons, and the Maximum Depth of Burial.
3. All tanks, whether Standard Design, Heavy Duty Design, or Special Design, shall be designed to resist floatation with a factor of safety greater than 1.00, assuming the tank is completely empty and the ground water elevation (water table) is at 36 inches below finished grade. Ballast or dead man anchors may be used to meet anti-floatation requirements. If a minimum earth cover is required to meet anti-floatation requirements, the minimum cover requirement shall be clearly marked on each tank.

Watertight Tanks:

1. All tanks shall be watertight.
2. Testing to prove water tightness will be by either vacuum test or water test as chosen by the manufacturer.
 - A. Vacuum Test: 4 inches of Mercury (Hg) negative pressure will be held for 5 minutes with more than 10 % loss.
 - B. Water Test: Fill the tank with water to two inches above the lowest riser connection. Wait 24 hours. If there is no loss of water the tank passes. If the water has dropped, refill the tank and check the water level in one hour. If there is no loss the tank passes.

Note: Tanks that do not pass at first, whether by vacuum or water test, may be repaired and retested.

3. All pipe penetrations will be made watertight.
4. Access openings will be integral to the tank: risers or adaptors that receive risers, will be cast into the top of the tank.
5. Risers will be fastened securely to the tank to prevent shifting during backfill.
6. Riser lids at grade or above grade, shall have locking devices or weigh more than 59 pounds, to deter entry by children.
8. Riser assemblies shall be watertight and structurally sound to withstand anticipated loads.

Quality Assurance To be Listed

1. A Licensed Engineer must inspect the manufacturing process and structural designs to satisfy himself that the manufacturer produces tanks meeting The Performance Standard. The engineer will choose, at random, from the manufacturer's inventory, for testing for Proof of Design (if necessary) and watertightness.
2. The Engineer will submit a report to The Executive Director of the Virginia Precast Tank Association, affirming that the manufacturer's tanks meet The Performance Standard.
3. Listed Tanks may be advertised as meeting The Performance Standard, and a special marker of the Virginia Precast Tank Association may be cast into the inlet end of the tank.