

Guide Specifications – Single-Wall FRP Tanks for Septic Use

Short Form

The contractor shall provide a single-wall fiberglass reinforced plastic (FRP) Underwriters Laboratories-labeled underground storage tank as shown on the drawings. The tank size, fittings and accessories shall be as shown on the drawings. The fiberglass tank shall be manufactured by Xerxes Corporation.

Tank shall be tested and installed according to the Xerxes Installation Manual and Operating Guidelines for Single-Wall and Double-Wall Fiberglass Underground Storage Tanks in effect at time of installation.

Long Form

Part I: General

1.01 Quality Assurance

- A. Acceptable Manufacturer: Xerxes Corporation
- B. Governing Standards, as applicable:
 - 1. Tank manufacturer shall be in the business of manufacturing tanks to Underwriters Laboratories (UL) Standard 1316.
 - 2. Tank manufacturer shall be in the business of manufacturing tanks with materials conforming to the requirements of ANSI/AWWA D120-02 Thermosetting Fiberglass-Reinforced Plastic Tanks.

Part II: Products

2.01 Single-Wall Fiberglass Reinforced Plastic (FRP) Underground Storage Tanks

- A. Loading Conditions – Tank shall meet the following design criteria:
 - 1. Internal Load – Tank shall withstand a 5-psig air-pressure test (3 psig for a 12'-diameter tank) with 5:1 safety factor. When tank is designed for onsite testing, contractor shall individually test tank for leakage prior to installation. Maximum test pressure is 5 psig (3 psig for a 12'-diameter tank).
 - 2. Surface Loads – Tank shall withstand surface H-20 axle loads when properly installed according to tank manufacturer's current Installation Manual and Operating Guidelines.
 - 3. External Hydrostatic Pressure – Tank shall be capable of being buried in ground with 7' of overburden over the top of the tank, the hole fully flooded and a safety factor of 5:1 against general buckling.
 - 4. Tank shall support accessory equipment – such as inlet and outlet piping, effluent filter chamber, ladders and baffles – when installed according to tank manufacturer's current Installation Manual and Operating Guidelines.
- B. Product Storage
 - 1. Tank shall be capable of storing wastewater products limited to the collection and storage of human solid or liquid organic sewage.
 - 2. Tank shall be vented to atmospheric pressure.
 - 3. Tank shall be capable of storing products identified in the manufacturer's current standard limited warranty.
- C. Materials
 - 1. Tank shall be manufactured with 100% resin and glass-fiber reinforcement. No sand fillers.
 - 2. Resin used in tank and accessories shall be premium isophthalic polyester.
- D. Tank Dimensions (Refer to Xerxes literature on gallonage.)
 - 1. Tank shall have nominal capacity of _____ gallons.
 - 2. Tank shall have nominal outside diameter of _____ feet.

2.02 Accessories

- A. Piping
 - 1. Schedule 40 PVC or FRP pipe shall be used for inlet and outlet piping.
 - 2. When a PVC pipe is affixed to the tank, a fiberglass lay-up is used.

3. All piping shall be factory-sealed to enable field tightness testing with at least one pipe opening provided with a threaded fitting for connecting a pressure-test manifold.

B. Access Openings

1. All access openings 24"-diameter or larger shall be manufactured of FRP.
2. Location(s) shall be as shown on tank drawings.
3. Optional riser extensions shall be FRP or PVC.
4. With tanks designed for onsite tightness testing, all access openings shall be factory-sealed to enable field tightness testing.

C. Optional Anchor Straps

1. Straps shall be FRP anchor straps as supplied by tank manufacturer.
2. Number and location of straps shall be specified in current literature by tank manufacturer.

D. Optional Ladders

1. Ladders shall be the standard ladder as supplied by tank manufacturer.

E. Optional Fittings

1. All threaded fittings shall be constructed of carbon steel or FRP.
2. All standard threaded fittings shall be half-couplings and shall be 2"-, 4"- or 6"-diameter. Reducers are to be used for smaller sizes where shown and provided by contractor.
3. All FRP and PVC nozzles shall be flat-faced and flanged, and shall conform to ANSI B16.5 150# bolting pattern.

F. Optional Internal Pump Platforms

1. Pump platforms shall be FRP.
2. Contact tank manufacturer with pump details, such as dimensions and weight.

Part III: Testing and Installation

3.01 Testing

- A. Testing – Tank shall be tested according to the Xerxes Installation Manual and Operating Guidelines in effect at time of installation.
- B. Optional Testing – Prior to installation, a tank-tightness test consisting of a 5-psig air-pressure/soap test shall be performed (3 psig for 12'-diameter tanks) per the tank testing procedures outlined in the Xerxes Installation Manual and Operating Guidelines in effect at time of installation.

3.02 Installation

- A. Tank shall be installed according to the Xerxes Installation Manual and Operating Guidelines in effect at time of installation.
- B. Contractor shall be trained in proper installation procedures by the tank manufacturer, the state or other approved agency.

Part IV: Warranty

4.01 Warranty

- A. Warranty shall be manufacturer's limited warranty for underground septic tanks in effect at time of purchase.