

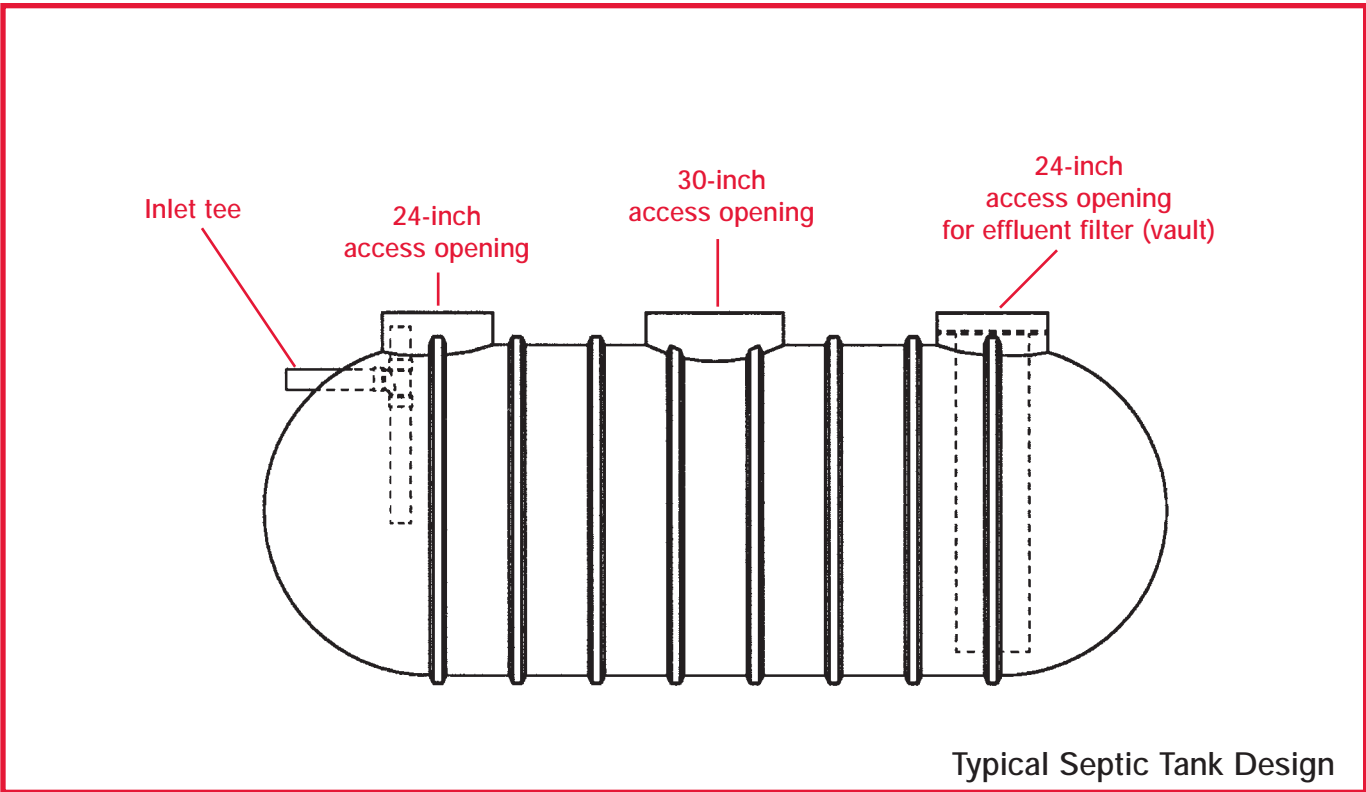
# Fiberglass Underground Tanks For Septic Applications

As consumers and industries become increasingly accountable to meet ecological requirements for underground collection and storage of liquids and other materials, Xerxes Corporation continues to be in the forefront with innovative solutions. Xerxes fiberglass-reinforced plastic (FRP) tanks offer a superior option for underground collection and storage of septage, including tanks for recirculation, dosing, holding and pump tank applications. Manufactured of high-quality resin and glass, Xerxes tanks have a unique integral-rib design, making them structurally strong yet lightweight. They are, therefore, easy to ship and easy to install. Rustproof and long-lasting, Xerxes offers customers a maintenance-free, cost-effective fiberglass tank, a preferable choice to precast or cast-in-place reinforced concrete in septic applications because a fiberglass tank is a nonpermeable storage container. Xerxes also manufactures the RST-II, a fiberglass septic tank specifically designed for residential applications. The RST-II is available in 1,000-gallon and 1,500-gallon models. (See separate literature for details.)

Xerxes four strategically located manufacturing facilities give customers prompt delivery and quality service. Xerxes manufactures custom-designed tanks for septic applications, offering great flexibility for customers' needs.

### Typical Applications

- Municipalities
- Public parks
- Recreation sites
- Rural developments
- Sanitary stations
- Rest areas
- Private RV parks
- Truck stops
- Resorts



Typical Septic Tank Design

## Available

- In single-wall, double-wall and triple-wall models
- In 600-gallon to 50,000-gallon sizes

## Standard Features

- Nonpermeable
- Rustproof, long-lasting fiberglass
- Integral-rib design for added strength and robustness
- Easy to ship and easy to install
- Designed for H-20 axle loads

## Optional Features

- Inlet and outlet piping
- Inspection opening
- Openings for effluent filters (vaults)
- Baffles/Partition walls
- Baffle/Partition-wall penetrations
- Sanitary tees (influent or effluent)
- Ladders (FRP or aluminum)
- FRP hold-down straps
- Concrete deadmen
- Pump platforms
- Tank-tightness testing

## Tank Data

Nominal Capacity (gallons)*	Diameter	Length	Shipping Weight (pounds)
600	4'	6'-11 7/8"	500
1,000	4'	11'-3 7/8"	700
1,500	4'	16'-0"	1,000
1,500	6'	10'-7 1/4"	800
2,000	6'	13'-5 3/4"	1,000
3,000	6'	16'-4 1/4"	1,200
4,000	6'	21'-11 1/8"	1,600
5,000	6'	26'-5"	1,900
6,000	6'	30'-8 3/4"	2,200
2,000	8'	9'-1/2"	900
3,000	8'	12'-3"	1,200
4,000	8'	15'-1/2"	1,400
5,000	8'	17'-8 1/2"	1,700
6,000	8'	20'-6 1/2"	2,000
7,000	8'	23'-1"	2,200
8,000	8'	26'-1/2"	2,500
9,000	8'	28'-9"	2,700
10,000	8'	31'-6 1/2"	3,000
11,000	8'	34'-4"	3,200
12,000	8'	37'-1/2"	3,500
13,000	8'	41'-2"	4,000
14,000	8'	43'-11 1/2"	4,200
15,000	8'	46'-9"	4,500
10,000	10'	21'-5 1/4"	3,200
11,000	10'	22'-9 3/4"	3,400
12,000	10'	24'-1/4"	3,600
13,000	10'	25'-6 3/4"	3,800
14,000	10'	26'-11 1/4"	4,000
15,000	10'	29'-5 3/4"	4,500
20,000	10'	37'-8 3/4"	5,700
22,000	10'	42'-3/4"	6,600
25,000	10'	47'-6 3/4"	7,900
30,000	10'	55'-9 3/4"	9,400
35,000	10'	64'-3/4"	10,500
40,000	10'	73'-8 1/4"	12,100
20,000	12'	29'-4"	9,200
25,000	12'	35'-7"	10,600
30,000	12'	43'-1"	12,500
35,000	12'	49'-4"	13,900
40,000	12'	54'-4"	15,000
48,000	12'	65'-7"	17,700
50,000	12'	68'-1"	18,300

Note:

\*The actual working capacity will fluctuate depending on placement of effluent piping.

# Guide Specifications

## Single-Wall FRP Tank for Septic Use

### Short Form

The contractor shall provide single-wall fiberglass-reinforced plastic (FRP) underground storage tank as shown on tank drawings. Capacity, dimensions, fitting sizes and locations, and optional accessories shall be as shown on tank drawings. The tank shall be as manufactured by Xerxes Corporation.

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

### Long Form

#### Part I: General

##### 1.01 Quality Assurance

###### A. Acceptable Manufacturer:

Xerxes Corporation, Minneapolis, Minnesota

###### B. Manufacturing Standards:

1. Manufacturer shall manufacture the tank shell to the applicable requirements of Underwriters Laboratories Standard UL 1316.
2. Tank manufacturer shall be in the business of manufacturing tanks to UL 1316 standards.

1.02 Submittals: Contractor shall submit to the engineer \_\_\_\_\_ copies of shop drawings for each tank and \_\_\_\_\_ copies of manufacturer's literature.

#### Part II: Products

##### 2.01 Single-Wall Fiberglass Underground Tanks

###### A. Loading Conditions: Tank shall meet the following design criteria:

1. Internal Load: Tank shall be designed to withstand a 5-psig air-pressure test (3 psig for a 12-foot tank) with a 5:1 safety factor.
2. Surface Loads: Tank shall withstand surface H-20 axle loads when properly installed according to manufacturer's current installation instructions.
3. External Hydrostatic Pressure and Burial Depth: Tank shall be capable of being buried in ground with 7 feet of overburden, 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—as shown on tank drawings and when installed according to tank manufacturer's recommendations.

###### B. Product Storage:

1. Tank shall be capable of storing septage limited to the collection and storage of human solid or liquid organic sewage.
2. Tank shall be vented to atmospheric pressure as the tank is not designed as a pressure vessel.

###### C. Materials:

1. Tank shall be manufactured of 100% resin and glass-fiber reinforcement, with no sand fillers and no exposed glass fibers.
2. Resin used in tank and accessories shall be premium isophthalic polyester

###### D. Tank Dimensions:

1. Tank shall have a nominal outside diameter of \_\_\_\_\_.
2. Tank shall have an approximate overall length of \_\_\_\_\_.

##### 2.02 Accessories

###### A. Piping:

1. Schedule 40 PVC or FRP pipe shall be used for inlet and outlet piping.
2. All piping shall be factory sealed to enable field tightness testing with at least one piping opening provided with a threaded fitting for connecting a pressure test manifold.

###### B. Access Openings:

1. All access openings 24 inches in diameter or larger, shall be manufactured of FRP.
2. All access openings shall be factory sealed to enable field tightness testing.
3. Location(s) shall be shown on tank drawings.
4. Optional riser extensions shall be FRP or PVC.

###### C. Optional Anchor Straps:

1. Straps shall be FRP anchor straps as supplied by tank manufacturer.
2. Number and location of straps shall be shown on tank drawings.

#### Part III: Execution

##### A. Testing and Installation:

1. Tank shall be tested and installed according to the Xerxes Installation Manual and Operating Guidelines for Single-Wall Fiberglass Underground Wastewater Tanks in effect at time of each installation.
2. Prior to installation, a tank-tightness test consisting of a 5 psi air pressure/soap test shall be performed on all 4, 6, 8 and 10 ft. diameter tanks per the tank testing procedure outlined in Xerxes' current Installation Manual and Operating Guidelines.

#### Part IV: Warranty

Warranty shall be manufacturer's current standard limited warranty.

## Limited Warranty Underground Septic Tanks

Xerxes Corporation ("Xerxes") warrants to ("Owner") that our underground septic tanks, if installed, used and maintained in the United States in accordance with Xerxes' published specifications, installation instructions and operating guidelines, all applicable laws and regulations, and the limited septic applications defined herein, will be free from material defects in materials and workmanship for a period of one (1) year from date of original delivery by Xerxes. Septic applications for purposes of this warranty are limited to the collection and storage of human solid or liquid organic sewage at ambient temperatures.

Xerxes warrants to Owner that all Xerxes manufactured septic tank accessories, if installed, used and maintained in the United States in accordance with Xerxes' published specifications, installation instructions and operating guidelines, and all applicable laws and regulations, will be free from material defects in materials and workmanship for a period of one (1) year following the date of original delivery by Xerxes.

If any tank is to be removed from an installation, moved to Owner's new location and is intended for active service at the new location, the tank must be recertified by Xerxes in order to maintain the warranty as originally extended. The foregoing warranty does not extend to tanks damaged due to acts of God, war, terrorism, or tank failures caused, in whole or in part, by misuse, improper installation, storage, servicing, maintenance, or operation in excess of their rated capacity, contrary to their recommended use, or contrary to the septic applications defined above, whether intentional or otherwise, or any other cause or damage of any kind not the fault of Xerxes. Xerxes only warrants repairs or alterations performed by Xerxes or its authorized contractor. Xerxes does not warrant any product, components or parts manufactured by others. THIS WARRANTY IS NULL AND VOID IF A TANK HAS BEEN USED FOR PRODUCTS CONTAINING A "HAZARDOUS SUBSTANCE" AS DEFINED BY THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT OF 1980 (CERCLA OR "SUPERFUND") WHICH DESIGNATES CERTAIN CHEMICALS AS "HAZARDOUS SUBSTANCES." SEE 42 UNITED STATES CODE, SECTION § 9601 (14).

Owner's sole and exclusive remedy for breach of warranty is limited at Xerxes' option to: (a) repair of the defective tank or accessory, (b) delivery of a replacement tank or accessory, to the point of original delivery, or (c) refund of the original purchase price. A claimant must give Xerxes the opportunity to observe and inspect the tank and/or accessory prior to removal from the ground or the claim will be barred. All claims must be made in writing within one (1) year after tank and/or accessory failure or be forever barred. THE FOREGOING WARRANTY CONSTITUTES XERXES' EXCLUSIVE OBLIGATION AND XERXES MAKES NO OTHER WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, WITH RESPECT TO THE TANK OR ANY SERVICE, ADVICE, OR CONSULTATION, IF ANY, FURNISHED TO OWNER BY XERXES OR ITS REPRESENTATIVES, WHETHER AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE. THE REMEDIES SET FORTH IN THE ABOVE WARRANTY ARE THE ONLY REMEDIES AVAILABLE TO ANY PERSON OR ENTITY FOR BREACH OF WARRANTY OR FOR BREACH OF ANY OTHER COVENANT, DUTY, OR OBLIGATION ON THE PART OF XERXES. XERXES SHALL HAVE NO LIABILITY OR OBLIGATION TO ANY PERSON OR ENTITY FOR BREACH OF ANY OTHER COVENANT, DUTY, OR OBLIGATION UNDER THIS WARRANTY EXCEPT AS EXPRESSLY SET FORTH HEREIN. IT IS EXPRESSLY AGREED THAT THIS WARRANTY DOES NOT FAIL OF ITS ESSENTIAL PURPOSE. XERXES SHALL HAVE NO LIABILITY FOR TANK INSTALLATION OR REMOVAL COSTS, ENVIRONMENTAL CONTAMINATION, FIRES, EXPLOSIONS OR ANY OTHER CONSEQUENCES ALLEGEDLY ATTRIBUTABLE TO A BREACH OF WARRANTY, OR INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES OF ANY DESCRIPTION, WHETHER ANY SUCH CLAIM OR DAMAGES BE BASED UPON WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER TORT, OR OTHERWISE. IN NO EVENT SHALL XERXES' TOTAL LIABILITY HEREUNDER EXCEED THE ORIGINAL PURCHASE PRICE OF THE TANK WHICH GAVE RISE TO SUCH LIABILITY.

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