



## FIBERGLASS UNDERGROUND TANK SPECIFICATION

for

### POTABLE WATER

#### Short Form Specification

The contractor shall provide the appropriate underground fiberglass storage tank and accessories as indicated on tank drawings. Capacity, dimensions, and fitting locations and sizes will also be indicated on tank drawings. Tanks shall be single-wall fiberglass as manufactured by Containment Solutions, Inc. The tank must be installed according to manufacturer's current installation instructions.

#### Long Form Specification

##### *Part I: General*

#### 1.01 Quality Assurance

- A. Acceptable Manufacturers:  
Containment Solutions, Inc., Conroe, Texas
- B. Governing Standards, as applicable:
  - 1. Tank manufacturer shall be in the business of manufacturing tanks to Underwriters Laboratories (UL) Standard 1316.
  - 2. The tank must be constructed with a liner certified to NSF/ANSI Standard 61: Drinking Water System Components - Health Effects.
  - 3. The tank must be manufactured to meet or exceed the requirements of ANSI/AWWA – D120 (Thermosetting Fiberglass-Reinforced Plastic Tanks). A PE design in lieu of the tank testing requirements in AWWA D120 is not allowed.

#### 1.02 Submittals

Contractor shall submit to engineer \_\_\_\_ copies of shop drawings for each tank and \_\_\_\_ copies of manufacturer's literature (including installation instructions).

##### *Part II: Products*

#### 2.01 Single-Wall Fiberglass Underground Tanks

- A. Product-Storage Requirements:
  - 1. All primary tanks must be vented. Tanks are designed for operation at atmospheric pressure only.
  - 2. Tank shall be capable of storing products identified in the manufacturer's current limited warranty.
  - 3. All potable water tanks require an accessible entry point.

B. Loading Conditions - Tanks shall meet the following design criteria:

1. External hydrostatic pressure: Buried in ground with 7' of over burden over the top of the tank, the hole fully flooded and a safety factor of 5:1 against general buckling.
2. Surface Loads: When installed according to manufacturer's current installation instructions, tanks will withstand surface HS-20 axle loads (32,000 lbs/axle).
3. Internal Load: Tanks shall withstand 5 psig (3 psig for 12' tank) air pressure test with 5:1 safety factor.
4. Tanks shall be designed to support accessory equipment such as submersible pumps, ladders, drop/fill tubes, etc. when installed according to manufacturer's recommendations and limitations.

C. Materials:

1. The tank shall be manufactured as a matrix of premium resin, glass fibers and silane-treated silica that together result in a composite providing improved corrosion protection.
2. Tank inner wall shall be fabricated against a mold to produce a non-air inhibited and high gloss laminate to provide fully cured inner surface without the need of wax coats, a low coefficient of friction and a natural resistance to the build-up of algae or other contamination on the surface. Wax and wax resin coatings cannot be used to achieve full surface cure on tank shells and endcaps.

D. Tank Dimensions and Capacity: (refer to CSI sales literature and drawings)

1. Inside tank diameter shall be \_\_\_\_\_.
2. Tank length shall be \_\_\_\_\_.
3. Nominal tank capacity shall be \_\_\_\_\_.

## 2.02 Accessories

A. Optional Anchor Straps:

1. Straps shall be standard as supplied by tank manufacturer.
2. Provide glass fiber reinforced plastic anchor straps for each tank shown.
3. Number and location of straps shall be as specified by manufacturer.

B. Flanged Manways:

1. The standard manway is 22" ID, which is supplied by the manufacturer. (30" and 36" manways are optional)
2. All manways will be furnished complete with gaskets, bolts and covers.
3. Location(s) shall be indicated on tank drawings.
4. Optional manway extensions shall be FRP

C. Fill Tubes: Fill tubes of appropriate design will be supplied by contractor.

D. Optional Ladders: Ladders shall be supplied by the tank manufacturer using materials that conform to the requirements of NSF/ANSI Standard 61.

Refer to drawings for locations.

- E. Optional Pump Platform: Contact manufacturer for details.
  - 1. Pump platforms shall be FRP.
  - 2. Pump platforms shall be manufactured with materials that conform to the requirements of NSF/ANSI Standard 61.
  - 3. Contact tank manufacturer with pump details, such as dimensions, mounting configuration and weight.
- F. Optional Fittings:
  - 1. All standard threaded fittings are carbon steel NPT half couplings. Reducers can be used for smaller sizes where specified and provided by the contractor.
  - 2. All standard threaded fittings to the primary tank and monitoring cavity are 4" in diameter.
  - 3. All optional FRP nozzles shall be flat-faced, flanged and conform to ANSI B16.5 150 pound bolting patterns.
  - 4. Flexible connectors must be used on all piping connections. Piping must be free to move independent of the tank.

*Part III: Testing and Installation*

**3.01 Testing and Installation**

- A. Testing - Tank shall be tested and installed according to the CSI Installation Instructions in effect at time of installation.
- B. Installation - Tank shall be installed according to the CSI Installation Instructions in effect at time of installation. Contractor shall be trained by the tank manufacturer, state, or other approved agency.

*Part IV: Limited Warranty*

**4.01 Limited Warranty**

Warranty shall be Containment Solutions limited warranty in effect at time of delivery.