

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**1. GENERAL**

1.1. Quality Assurance

1.1.1. Acceptable Manufacturers:

Containment Solutions, Inc., Conroe, Texas

1.1.2. Governing Standards, as applicable:

1.1.2.1. Tank manufacturer shall be in the business of manufacturing tanks to Underwriters Laboratories (UL) Standard 1316.

1.1.2.2. Tank manufacturer shall be in the business of manufacturing tanks with materials conforming to the requirements of ANSI/AWWA – D120 (Thermosetting Fiberglass-Reinforced Plastic Tanks).

1.1.2.3. Tank manufacturer shall be in the business of manufacturing tanks with materials and design conforming to the requirements of NFPA 22, NFPA 20 and NFPA 1142.

1.2. Submittals

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

2. PRODUCTS

2.1. Single-Wall Fiberglass Underground Tanks

2.1.1. Product-Storage Requirements:

2.1.1.1. All primary tanks must be vented. Tanks are designed for operation at atmospheric pressure only.

2.1.1.2. Tanks shall be capable of storing non-potable water at ambient temperatures.

2.1.1.3. Tank shall be capable of storing products identified in the manufacturer's current limited warranty.

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

2.1.2.1. 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.

2.1.2.2. Surface Loads: When installed according to manufacturer's current installation instructions, tanks will withstand surface HS-20 axle loads (32,000 lbs/axle).

2.1.2.3. Internal Load: Tanks shall withstand 5 psig (3 psig for 12' tank) air pressure test with 5:1 safety factor.

2.1.2.4. 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.

2.1.3. Materials:

2.1.3.1. 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.

2.1.3.2. 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.

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

2.1.4.1. Inside tank diameter shall be ____.

2.1.4.2. Tank length shall be ____.

2.1.4.3. Nominal tank capacity shall be ____.

2.2. Accessories

2.2.1. Optional Anchor Straps:

2.2.1.1. Straps shall be standard as supplied by tank manufacturer.

2.2.1.2. Provide glass fiber reinforced plastic anchor straps for each tank shown.

2.2.1.3. Number and location of straps shall be as specified by manufacturer.

2.2.2. Flanged Manways:

2.2.2.1. The standard manway is 22", which is supplied by the manufacturer. (30" and 36" manways are optional)

2.2.2.2. All manways will be furnished complete with gaskets, bolts and covers.

2.2.2.3. Location(s) shall be indicated on tank drawings.

2.2.2.4. Optional manway extensions shall be FRP

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

2.2.4. Optional Ladders: Ladders shall be supplied by the tank manufacturer

2.2.5. Optional Pump Platform:

2.2.5.1. Pump platforms shall be FRP as supplied by the tank manufacturer.

2.2.5.2. Contact tank manufacturer with pump details, such as dimensions, mounting configuration and weight.

2.2.6. Optional Fittings:

2.2.6.1. All standard threaded fittings are carbon steel NPT half couplings. Reducers can be used for smaller sizes where specified and provided by the contractor.

2.2.6.2. All standard threaded fittings to the primary tank are 4" in diameter.

2.2.6.3. All optional FRP nozzles shall be flat-faced, flanged and conform to ANSI B16.5 150 pound bolting patterns.

2.2.6.4. All optional inlet/outlet stub outs shall be FRP.

2.2.6.5. Flexible connectors must be used on all piping connections. Piping must be free to move independent of the tank.

2.2.7. Optional Flanged Bottom Sump:

2.2.7.1. The standard bottom sump is 22", and shall be supplied by the tank manufacturer (30" and 48" bottom sumps are optional).

2.2.7.2. All bottom sumps will be furnished complete with gaskets and stainless steel hardware.

2.2.7.3. Location(s) shall be indicated on tank drawings.

2.2.7.4. Optional bottom sumps shall be FRP.

2.2.7.5. Bottom sump shall be installed according to the CSI supplemental installation instructions in effect at time of installation.

2.2.8. Optional Vertical Pump Vault:

2.2.8.1. The standard pump vault is 42" I.D., and shall be supplied by the tank manufacturer (36" through 120" diameter pump vaults are optional).

2.2.8.2. Fiberglass top flange shall be factory installed to accommodate contractor supplied pump mounting plate.

2.2.8.3. Fiberglass anti-flotation ring shall be factory installed.

2.2.8.4. All optional FRP nozzles shall be flat-faced, flanged and conform to ANSI B16.5 150 pound bolting patterns.

2.2.8.5. Flexible connectors must be used on all piping connections. Piping must be free to move independent of the tank and pump vault.

2.2.8.6. Optional pump vault shall be FRP.

2.2.8.7. Vertical Pump Vault (VPV) shall be installed according to the CSI supplemental installation instructions in effect at time of installation.

3. TESTING AND INSTALLATION

3.1. Testing and Installation

3.1.1. Testing - Tank shall be tested and installed according to the CSI Installation Instructions in effect at time of installation.

3.1.2. 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. The installing contractor must complete the tank installation checklist (CSI Pub. No. INST 6001) provided with the tank and return the completed checklist to the tank owner upon completion of the installation. The signed checklist, and applicable written approvals from Containment Solutions, should be retained by the tank owner and must be provided later to CSI to validate any future warranty claim.

4. LIMITED WARRANTY

4.1. Limited Warranty

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