
PART 1 GENERAL**1.1 RELATED DOCUMENTS**

- A. The requirements of the General Conditions, Supplementary Conditions and the following Specification sections apply to all Work herein:
1. Section 22 00 10 - General Requirements
 2. Section 22 00 20 - Plumbing Scope of Work
 3. Section 22 05 07 - Design Conditions
 4. Section 22 05 93 - Testing, Balancing and Adjusting
 5. Section 22 10 00 - Domestic Water Systems
 6. Section 22 21 23 - Pumps
 7. Section 22 30 00 - Plumbing Equipment

1.2 SUMMARY

- A. Furnish and install the tanks and vessels for various water systems herein specified and as indicated on the Drawings.

1.3 REFERENCE STANDARDS

- A. All tanks and vessels shall be designed, manufactured and tested in accordance with the latest applicable standards including the following:
1. ASME
 2. Underwriters Laboratories
 3. American Welding Society
 4. AISC
 5. AWWA
- B. All equipment and material to be furnished and installed on this Project shall be UL, NSF or ETL listed, in accordance with the requirements of the authorities having jurisdiction, and suitable for its intended use on this Project.

1.4 SUBMITTALS

- A. The following submittal data shall be furnished according to the General Conditions and Section 22 00 10 and shall include, but not be limited to:
1. Water Tanks and Vessels, complete with controls, gauges, materials, accessories, etc.
 2. Submit Shop Drawings of the tanks and accessories for Engineer's re-view before fabrication of the tanks.
 3. Factory Test Reports
 4. Filed Test Reports
- B. All items or equipment listed above with asterisks (*) shall be certified by the manufacturer using Manufacturer Certification "MCA" as set forth in Section 22 00 10. See Section 22 00 10 for certification requirements.

1.5 WARRANTY

- A. Comply with the requirements of the General Conditions, Section 22 00 10 and this specification Section.

PART 2 PRODUCTS**2.1 ACCEPTABLE MANUFACTURERS**

- A. If it complies with these Specifications, domestic water compression tanks manufactured by one of the following manufacturers will be acceptable:
1. Amtrol

2. Bell and Gossett
3. Bruner
4. CompTec
5. Taco
6. Wessels
7. Woods

2.2 DOMESTIC WATER COMPRESSION TANK

- A. Domestic water compression tanks shall be diaphragm type hydro-pneumatic compression tanks especially designed for use on the services specified herein. The compression tanks shall be constructed of welded steel or fiberglass sealed with epoxy resin and equipped with a butyl or molded FDA bladder or a NSF polyethylene flexible diaphragm to maintain a separation between the system water and the air cushion. Steel compression tanks shall be similar to Amtrol "WELL-X-TROL" Vertical Series "WX-L" with bottom inlet connection for the domestic water system. Each tank shall bear an appropriate ASME label for the maximum working pressure of the domestic water system.
- B. The compression tanks shall have a minimum total tank volume as indicated on the Drawings. Provide an initial factory charge of 30 psig.
- C. Provide for each tank lifting lugs, base ring, drains, charging connections, piping connections, and specialties as required and indicated on the Drawings.
- D. See Section 22 21 23 titled "Pumps" for flow switch and pressure switch requirements for the domestic water pumping system. Coordinate with the domestic water pumping system manufacturer.
- E. The outside of steel tanks shall be painted with a shop coat of approved rust inhibiting primer after fabrication. The finish painting will be done under another Division.
- F. The internal tank coating and diaphragm shall be corrosion resistant and be FDA approved for domestic water systems.

2.3 DOMESTIC WATER HOUSE TANKS (New)

- A. Each tank shall be of the size and configuration shown on the Drawings. Minimum thickness for top plate shall be 3/16". Minimum thickness for shell and bottom plates shall be 1/4". Each tank shall have at least the capacities indicated on the Drawings plus 12" free space above the highest water level. All plates shall be continuous weld and watertight in accordance with American Welding Society Specifications.
- B. On the outside of each tank provide reinforcing and stiffeners to strengthen the tank adequately to withstand maximum allowable stresses in accordance with AISC Specifications. On the inside and outside of each tank section provide a ladder accessible through a 24" x 24" manhole with cover.
- C. For each pipe connection opening provide a flange set true. Before commencing fabrication of tank, submit Shop Drawings certified by a registered Structural Engineer.
- D. Provide stilling wells for all controllers and float valves.
- E. After fabrication and prior to applying interior tank coating, inside of tanks shall be thoroughly cleaned and abrasive blasted on all interior surfaces including ceiling, floor, walls, flanges, manways and nipples to a NASE #2 near white surface to obtain a minimum surface profile of 2 mils. Inside coating shall be MEI-500 Epoxy Lining System or Carboline "Plasite 4500S" and shall be applied with a minimum of two (2) coats to a minimum 30 mil D.F.T. (dry film thickness) to all interior surfaces including interior of nozzles and flange faces. Interior tank ladder shall be an aluminum ladder coated with MEI-500, Carboline "Plasite 4500S" or a fiberglass ladder. Tank coating system shall be manufactured and installed by McCrory Engineering, Inc., 9894 Bissonnet Street, Suite 740, Houston, Texas 77036 (713) 484-5000 or Fax (713) 484-5005 or Carboline.

- F. After fabrication, paint the outside of the tank with a shop coat of slow drying, lead and chromate free, rust inhibitive alkyd metal primer similar to Carboline "Carbocoat 115" with a 3.0 mil D.F.T. The Subcontractor shall apply another coat of primer after the tank has been erected at the site. Finish paint will be done under another Division. All primers and paint coatings shall be approved by the authorities having jurisdiction for use on potable water systems.
- G. Set the bottom of the tank in a coat of mastic that completely covers the area under the tank. The thickness of the mastic shall be as recommended by the manufacturer to form a monolithic, highly impermeable membrane system compatible with the material of the tank and shall accommodate for any irregularities in the surface beneath the tank. If the irregularities are excessive the Subcontractor shall be contacted to make the necessary repairs. Mastic shall be Chevron Industrial membrane, or Engineer accepted equivalent.

PART 3 EXECUTION

3.1 GENERAL

- A. All tanks and vessels shall be installed in accordance with the latest industry standards, per the manufacturer's recommendations and as indicated on the Drawings.
- B. Provide suitable structural support as required for each compression tank as indicated on the Drawings.

3.2 FACTORY TESTING

- A. All tanks and vessels shall be tested in accordance with the latest applicable industry standards.

3.3 FIELD TESTING

- A. Refer to Section 22 05 93 for additional testing requirements for tanks and vessels.

END OF SECTION