
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 21 00 10 - General Requirements
 2. Section 21 00 20 - Fire Suppression Scope of Work
 3. Section 21 05 07 - Design Conditions
 4. Section 21 05 13 - Motor Requirements for Fire Suppression Equipment
 5. Section 21 05 48 - Vibration and Seismic Controls for Fire Suppression Piping and Equipment
 6. Section 21 05 93 - Testing
 7. Section 21 07 00 - Fire Suppression System Insulation
 8. Section 21 11 00 - Connections to Utilities
 9. Section 21 12 00 - Fire Suppression Standpipe Systems
 10. Section 21 13 00 - Fire Suppression Sprinkler Systems
 11. Section 21 30 00 - Fire Pumps and Controllers
 12. Division 28 - Fire Detection, Alarm, and Communication System Specifications

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
 6. EPA
 7. NEMA
 8. NFPA 30
 9. NFPA 31
 10. NFPA 37
 11. NFPA 70
 12. NFPA 110
 13. National Association of Corrosion Engineering RP-01-69 (Rev. 76)
- 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 21 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 (and prior to commencing the fuel piping systems for standby generating system fuel storage tanks).
 3. Factory Test Reports.
 4. Field 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 21 00 10. See Section 21 00 10 for certification requirements.

1.5 WARRANTY

- A. Comply with the requirements of the General Conditions, Section 21 00 10 and this specification Section.

PART 2 PRODUCTS

2.1 FIRE SUPPRESSION WATER STORAGE TANK

- A. The fire suppression water storage tank will be concrete and shall have the capacity required to supply the automatic sprinkler system demand plus have hose stream demand for a period of sixty (60) minutes. The tank shall be of the size and configuration shown on the Drawings.
- B. Provide stilling wells for controllers and float valves.

2.2 FIRE SUPPRESSION WATER STORAGE TANK TRIMMINGS

- A. For each tank furnish and install a supervised liquid displacement controller to provide both low and high level signal to operate an audible alarm bell furnished and installed in the tank room, an alarm at the Division 28 fire alarm panel in the Fire Command Center, and an alarm to the Division 25 Building Management and Control System (BMCS). The low water level alarm shall provide an alarm whenever the tank level drops below one half full.
- B. Furnish at least three (3) overlapping liquid level sight glasses with shut off valves at the top and bottom of each glass. Each sight glass shall be equipped with a protection guard to prevent breakage of the glass tube.
- C. For the fire suppression water storage tank furnish and install Cla-Val No. 124-01AC globe type fill valves with slow closing speed control, Clayton CF1 float controls, stainless steel or polypropylene floats and stainless steel or brass rods.. The fill valve piping system shall include a full size manual bypass butterfly type stop valve.
- D. Electrode Controls: Each tank shall have Nema 4X Control Panel completely wired with suspended electrodes and fitting. Provide required amount of stainless steel electrode suspension wire and wire suspended electrodes for each tank compartment. Provide two system reference electrodes, one high level and one low level, for each tank.
1. Arrangement of electrodes from top of tank down shall be (one set of electrodes are required for each tank compartment):
 - a. No. 1 – High Level Alarm
 - b. No. 2 – High Level Reference
 - c. No. 3 – Low Level Reference
 - d. No. 4 – Low Level Alarm
 2. Electrode Controls shall be Warrick Series 3G with 3Z1A suspension wire and 3W2 Electrodes, or an approved equal.

PART 3 EXECUTION

3.1 GENERAL

- A. 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 21 05 93 for additional testing requirements for tanks and vessels.

END OF SECTION