SECTION 330110.59 - DISINFECTION OF WATER UTILITY STORAGE TANKS

This Section specifies methods of disinfecting water storage tanks for potable water. Disinfection of water utility distribution mains is specified in Section 330110.58.

See Drawing Coordination Checklist and Evaluations for information needed to coordinate this Specification Section with Drawings.

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes:

Water tank disinfection.

Bacteriological testing.

* + - * 1. Related Requirements:

List other Sections directly related to or affecting Work of this Section. Include Sections specifying information expected to be found in this Section as well as Sections required to describe complete system or assembly requirements.

Section 330110.58: Disinfection of Water Utility Piping Systems: Disinfection of water mains and testing.

Section 331616 - Multi-Column Elevated Steel Water Storage Tanks: Fabrication details of elevated steel water storage tanks.

Section 331636 - Ground-Level Reinforced Concrete Water Storage Tanks: Fabrication details of concrete water storage tanks.

* + - 1. REFERENCE STANDARDS

List reference standards included within text of this Section, with designations, numbers, and complete document titles.

* + - * 1. American Water Works Association:

AWWA C652 - Disinfection of Water-Storage Facilities.

* + - 1. SUBMITTALS

Only request submittals needed to verify compliance with Project requirements.

* + - * 1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
        2. Manufacturer’s installation instructions shall be provided along with product data.
        3. Submittals shall be provided in the order in which they are specified and tabbed (for combination submittals).
        4. Disinfection Procedure:

Submit description of procedure, including type of disinfectant and calculations indicating quantities of disinfectants required to produce specified chlorine concentration.

Comply with Sections 3 and 4 of AWWA C652.

* + - * 1. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
        2. Certify that disinfectants meet or exceed AWWA C652 requirements.

Include separate paragraphs for additional certifications.

* + - * 1. Test and Evaluation Reports: Indicate results of bacteriological and residual chlorine laboratory test reports.
        2. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
        3. Qualifications Statement:

Coordinate following subparagraph with requirements specified in QUALIFICATIONS Article.

Submit qualifications for applicator.

* + - 1. QUALITY ASSURANCE

Include this Article to specify compliance with overall reference standards affecting products and installation included in this Section.

* + - * 1. Perform Work in compliance with AWWA C652.
        2. Comply with all requirements of the New York State Department of Health for disinfection of potable water storage tanks.

Include following paragraph only when cost of acquiring specified standards is justified.

* + - * 1. Maintain <**\_\_\_\_\_\_\_\_**> [**copy**] [**copies**] of each standard affecting Work of this Section on Site.
      1. DELIVERY, STORAGE, AND HANDLING
         1. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
         2. Store disinfectants according to manufacturer's recommendations and in a cool, dry place away from combustibles such as wood, rags, oils, and greases.
         3. Handle disinfectants according to manufacturer's safety precautions.

1. PRODUCTS
   * + 1. DISINFECTANTS
          1. Chlorine Forms: According to AWWA C652, Section 4.
2. EXECUTION
   * + 1. EXAMINATION
          1. Inspection:

Conduct inspection of tank interior before beginning disinfection.

Verify that tank is clean and free of polluting materials.

Verify that tank pipe and vent connections are properly made and clear of obstructions.

Verify that paint is thoroughly cured according to paint manufacturer's instructions.

* + - 1. PREPARATION
         1. Furnish personnel working inside tank during disinfection with equipment to comply with Federal and state regulations for Work conducted in a confined space/hazardous atmosphere.
         2. Protect aquatic life and vegetation from damage from disinfectant solution purged from tank.
      2. APPLICATION
         1. Use any one or combination of the following three methods for disinfecting tank according to AWWA C652, Section 4:

Chlorination Method 1.

Chlorination Method 2.

Chlorination Method 3.

* + - * 1. Flushing: Continuously fill and drain tank until water discharging from tank has a maximum chlorine concentration of 1.0 mg/1.
        2. Disposal:

Neutralize disinfectant solution before disposal.

Discharge super chlorinated water in a manner that will not adversely affect plants and animals. Comply with applicable State regulations for waste discharge.

* + - * 1. Repair damage caused by disinfectant solution and disinfection procedures.
      1. FIELD QUALITY CONTROL
         1. Sampling:

Collect samples of water from filled tank for bacteriological analysis according to AWWA C652, Section 5.

Bacteriological Tests: Coordinate with Director’s Representative for sampling criteria and procedures.

Test water main for bacteriological quality before putting the tank into service. A minimum of two successive sets of samples shall be taken at 24-hour intervals. Both sets of samples shall indicate bacteriological safe water and approval must be obtained by the Director’s Representative before putting the system in operation. Pay all expenses incurred for testing.

Tests shall be conducted by a laboratory approved by the New York State Department of Health.

Give all test results to Director’s Representative.

Should test results prove any part of the system bacteriologically unsafe, repeat disinfection procedures until satisfactory results are obtained.

Obtain written approval from the Director’s Representative/New York State Department of Health prior to bringing the tank online.

END OF SECTION 330110.59