SECTION 330505.43 - MANDREL TESTING

This section specifies mandrel testing of plastic gravity sewer piping.

This section includes performance, proprietary, and descriptive specifications. Edit to avoid conflicting requirements.

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes: Deflection testing of plastic sewer piping.
       2. REFERENCE STANDARDS

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

* + - * 1. ASTM International:

ASTM D2122 - Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings.

* + - 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 combined submittals).
        4. Submit following items prior to start of testing:

Testing procedures.

List of test equipment.

Testing sequence schedule.

Provisions for disposal of flushing and test water.

Certification of test gage calibration.

Deflection mandrel drawings and calculations.

* + - * 1. Test and Evaluation Reports: Indicate results of piping tests.

1. PRODUCTS
   * + 1. DEFLECTION TESTING
          1. Equipment:

[**Properly sized rigid ball**] [**or**] [**"go, no go" mandrel**].

Pull/retrieval ropes.

1. EXECUTION
   * + 1. EXAMINATION
          1. Verify that piping is ready for testing.
          2. Verify that trenches are backfilled.
       2. PREPARATION
          1. Plugs:

Plug outlets, wye branches, and laterals.

Brace plugs to resist test pressures.

* + - 1. FIELD QUALITY CONTROL
         1. Deflection Testing of Plastic Sewer Piping:

Notify and coordinate with the Director’s Representative a minimum of 48-hours before testing.

Perform vertical ring deflection testing on PVC and ABS sewer piping after backfilling has been in place for at least 30 days, but not longer than 12 months.

Allowable maximum deflection for installed plastic sewer pipe is no greater than five percent of original vertical internal diameter.

Perform deflection testing using [**properly sized rigid ball**] [**or**] [**"go, no go" mandrel**].

[**Rigid Ball**] [**or**] [**Mandrel**] Diameter:

Not less than 95 percent of base or average ID of pipe.

Pipe Diameter: Comply with ASTM D2122.

Perform testing without mechanical pulling devices.

Locate, excavate, replace, and retest piping that exceeds allowable deflection.

END OF SECTION 330505.43