SECTION 330505.36 - VACUUM TESTING

This section specifies vacuum testing of gravity sewer manholes.

Manufacturers found in SpecAgent for this section were identified as representative and not as an endorsement for meeting requirements of this specification.

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

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes: Vacuum testing of manholes.
       2. REFERENCE STANDARDS

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

* + - * 1. ASTM International:

ASTM C1244 - Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill.

* + - 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.

* + - * 1. Test and Evaluation Reports: Indicate results of manhole tests.
        2. 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 according to [**ASTM**] standards.

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. QUALIFICATIONS

Coordinate following paragraph with requirements specified in submittals article.

* + - * 1. Applicator: Company specializing in performing Work of this Section with minimum [**three**] years' [**documented**] experience.

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

Vacuum pump.

Vacuum line.

Vacuum Tester Base:

Compression band seal.

Outlet port.

Shutoff valve.

Stopwatch.

Plugs.

Vacuum Gage: Calibrated to 0.1 in. Hg.

1. EXECUTION
   * + 1. EXAMINATION
          1. Verify that manholes are ready for testing.
          2. Verify that manholes are backfilled.
       2. FIELD QUALITY CONTROL
          1. Notify and coordinate with the Director’s Representative a minimum of 48-hours before testing.
          2. Manhole Testing:

Test manholes with manhole frame set in place.

Vacuum Testing:

Comply with ASTM C1244.

Plug pipe openings; securely brace plugs and pipe.

Inflate compression band to create seal between vacuum base and structure.

Connect vacuum pump to outlet port with valve open, then draw vacuum to 10 in. Hg.

Close valve.

Manhole Test Duration in Seconds:

Manhole Diameter of 4 Feet: 60.

Manhole Diameter of 5 Feet: 75.

Manhole Diameter of 6 Feet: 90.

Record vacuum drop during test period.

If vacuum drop is greater than 1 in. Hg during testing period, repair and retest manhole.

If vacuum drop of 1 in. Hg does not occur during test period, manhole is acceptable; discontinue testing.

If vacuum test fails to meet 1-in. Hg drop in specified time after repair, repair and retest manhole.

If unsatisfactory testing results are achieved, repair manhole and retest until result meets criteria. Coordinate re-testing with the Director’s Representative.

Repair visible leaks regardless of quantity of leakage.

END OF SECTION 330505.36