SECTION 330505.41 - AIR TESTING

This section specifies methods for low-pressure air testing of gravity sewer piping.

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: Low-pressure air testing of gravity sewer piping.
			2. 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 piping 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.
			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. AIR TESTING
				1. Equipment:

Air compressor.

Air supply line.

Shutoff valves.

Pressure regulator.

Pressure relief valve.

Stopwatch.

Plugs.

Pressure Gage: Calibrated to 0.1 psi.

1. EXECUTION
	* + 1. EXAMINATION
				1. Verify that piping is ready for testing.
				2. Verify that trenches are backfilled.
				3. Satisfactorily complete lamping of gravity piping prior to testing.
			2. PREPARATION
				1. Lamping:

Lamp gravity piping after flushing and cleaning.

Perform lamping operation by shining light at one end of each pipe section between manholes.

Observe light at other end.

Pipe not installed with uniform line and grade will be rejected.

Remove and reinstall rejected pipe sections.

Clean and lamp until pipe section is installed to uniform line and grade.

* + - * 1. Plugs:

Plug outlets, wye branches, and laterals.

Brace plugs to resist test pressures.

* + - 1. FIELD QUALITY CONTROL
				1. Notify and coordinate with the Director’s Representative a minimum of 48-hours before testing.
				2. Low-Pressure Air Testing:

Test each reach of gravity sewer piping between manholes. Director’s Representative shall be present for all testing.

Introduce air pressure slowly to approximately 4 psig.

Determine ground water elevation above spring line of piping.

For every foot of ground water above spring line of piping, increase starting air test pressure by 0.43 psi.

Do not increase pressure above 10 psig.

Allow pressure to stabilize for at least five minutes.

Adjust pressure to 3.5 psig or to increased test pressure as determined above when ground water is present.

Do not make allowance for laterals.

Edit pipe sizes per project requirements.

Minimum Testing Duration in Minutes Per 100 Feet:

Pipe Size 3 Inches: 0.2.

Pipe Size 4 Inches: 0.3.

Pipe Size 6 Inches: 0.7.

Pipe Size 8 Inches: 1.2.

Pipe Size 10 Inches: 1.5.

Pipe Size 12 Inches: 1.8.

Pipe Size 15 Inches: 2.1.

Pipe Size 18 Inches: 2.4.

Pipe Size 21 Inches: 3.0.

Pipe Size 24 Inches: 3.6.

Pipe Size 27 Inches: 4.2.

Pipe Size 30 Inches: 4.8.

Pipe Size 33 Inches: 5.4.

Pipe Size 36 Inches: 6.0.

Record drop in pressure during testing period.

If air pressure drops more than 1.0 psi during testing period, piping has failed.

If 1.0-psi air pressure drop has not occurred during testing period, piping is acceptable; discontinue testing.

If piping fails, test reach of piping in incremental stages until leaks are isolated, repair leaks, and retest entire reach between manholes. Coordinate repairs with the Director’s Representative.

If unsatisfactory testing results are achieved, make necessary repairs and retest until result meets criteria. Coordinate repairs with the Director’s Representative.

Repair visible leaks regardless of quantity of leakage. Coordinate repairs with the Director’s Representative.

END OF SECTION 330505.41