

DOWNERS GROVE SANITARY DISTRICT  
SPECIFICATION FOR LOW PRESSURE AIR TESTING  
Effective Date: September 21, 1976

GENERAL

After installation, backfilling and prior to acceptance by the District, all sanitary sewers shall be tested for leakage with low-pressure air in accordance with these specifications.

This work includes the furnishing of all labor, tools, and equipment and work area safety to perform a low-pressure air test of all sanitary sewers. The Contractor, without additional compensation, shall determine the sources of leakage and make all repairs to the sewers failing to pass this low-pressure air test. Repairs shall be done in accordance as directed by the District.

SAFETY

The air test may be dangerous if a line is improperly prepared. It is important that the various plugs be installed and braced in such a way as to prevent blowouts. As a safety precaution, pressurizing equipment shall include a regulator set as 10-psi gage to avoid over-pressurizing.

TESTING PREREQUISITES

Prior to air testing, the following conditions shall be met:

1. All backfilling of sanitary sewers and appurtenances shall be completed 30 days prior to testing.
2. Where the existing ground surface, at time of construction, is less than 6 feet above the top of the sewer or the proposed ground surface after construction, will be less than 6 feet above the top of the sewer, then all clean-up and surface restoration to final grade shall be completed prior to air testing.
3. Where sanitary sewers are being installed with other underground installations and utilities then all crossings less than 6 feet above the top of the sewer and all installations less than 6 feet above and less than 10 feet horizontally from the sanitary sewer shall be completed prior to air testing for acceptance.

TEST PROCEDURE

All low-pressure air testing for acceptance shall be done under the direct supervision of the test procedure by the district or its authorized representative(s). The District shall be notified by the Contractor 48 hours prior to testing.

Air test equipment, to be furnished by the Contractor, shall consist of test plugs, bracing, air hoses, air supply equipment and control equipment. The control equipment shall contain suitable valves, pressure regulators and pressure gage(s). The pressure gage used to determine pressure loss must have a minimum of 4 ½" diameter dial face with a 0-10 psi range having minor gradations of 0.1 psi and accuracy of  $\pm 0.1$  psi over the full range.

- A. Testing shall be done between two (2) consecutive manholes.

- B. If required, clean the pipe to be tested by flushing in a manner approved by the District.
- C. Plug all pipe outlets with test plugs and brace each plug.
- D. Add air slowly until a constant pressure is reached of 4.5 p.s.i.g greater than the average back pressure of any ground water above the invert of the pipe. The air pressure must be regulated to prevent inside pressure from exceeding 5 p.s.i.g. greater than the average back pressure of ground water.
- E. When the pressure has reached 4.5 p.s.i.g. plus correction for ground water, throttle the air supply to maintain the air pressure above 4.0 p.s.i.g. (plus correction for ground water) for at least 5 minutes.
- F. After the stabilization period, adjust the air pressure to 4.5 psig (plus correction for ground water), shut-off the air supply, and allow the air pressure to drop to 4.0 psig. If this occurs in less than 15 minutes, the time for the air pressure to decrease for 4.9 psig to 3.5 psig (plus correction for ground water) shall be measured. If the air pressure does not drop to 4.0 psig. within 15 minutes, the section is considered to have passed the test.
- G. If the time in seconds for the air pressure to drop 0.5 p.s.i.g. is greater than that shown in the following tables, the section is considered to pass the air test. If the time is less than that shown in the tables, the section is considered to have failed the test and must be repaired and retested.

#### ADJUSTMENTS FOR GROUND WATER

When the ground water, at time of testing, is above the sewer invert (as determined by measurements from observation risers) the test pressure shall be increased 0.433 psi for each foot the ground water is above the invert.

#### MANHOLES

Manholes shall be observed during wet conditions and all observed sources of infiltration shall be corrected.