

4.12 Testing to Place Utilities Into Service

The Applicant shall flush, pressure test, and bacteriologically test each section of completed water main, in accordance with AWWA C600, prior to placing the utility into service. The Applicant shall schedule all pressure testing with the Field Inspector at least 48-hours in advance.

A. Pressure Test

1. Prior to making a wet tap, the Applicant shall pressure test the sleeve and valve assembly at 200 psi for 10 minutes.
2. After backfilling, the Applicant shall test new water mains to a hydrostatic pressure of at least 100 psi above the modeled pressure or Service Authority tested nominal operating pressure at the test site or 200 psi, whichever is greater.
3. Before testing, the Applicant shall vent all high points in the portion of the system under test and expel air from the system before beginning the test. Applicant shall ensure that fittings and hydrants are properly restrained before applying pressure and that concrete thrust blocks, if used, shall have attained their final, 28-day design strength.
4. Once the portion of the system being tested has reached the required test pressure, the Applicant shall maintain the pressure continuously for two (2) hours with no leakage. Should any leakage be detected, the Applicant shall determine the cause of the leak, make the necessary repairs, and the leak test repeated until no leakage is detected.

B. Bacteriological Test

Disinfection process of water main is required in accordance with AWWA C651 including, but not limited to, the following:

1. After pressure testing and before the final inspection of the completed system, Applicant shall flush the system completely at a flow velocity of at least 3.0 feet per second, per the direction of the Field Inspector.
2. A disinfection solution with an initial concentration of 25 ppm shall remain in the main for 24 hours, after which time a minimum chlorine residual, as CL2, of 10 parts per million throughout the main is required, in accordance with AWWA C651. It is the Applicant's responsibility to have access to AWWA C651, *Disinfecting Water Mains*, at the job site.
3. After chlorination and complete flushing, the Applicant shall fill the pipe with potable water. Before the system can be placed in service, Virginia Waterworks Regulations requires at least two (2) consecutive satisfactory bacteriological samples from the system. Sampling will be conducted at intervals not exceeding every 1,200 feet. The Applicant shall collect bacteriological samples each day over two (2) consecutive days at least 16 hours apart; however, the consecutive days shall not run from Friday to Monday.

4. If the initial disinfection procedure fails to produce satisfactory laboratory results, the Applicant shall repeat flushing, chlorination, and testing procedures until two (2) consecutive satisfactory bacteriological sample results are received.
5. The Applicant shall be responsible for any damage to vegetation, trees, streams, ponds, and lakes caused by the discharge of heavily chlorinated water. The Applicant shall perform the necessary measures to dechlorinate water that has been supplemented with chlorine and used for disinfection purposes prior to discharging water into any storm water system, estuary, or other environmentally sensitive area, in accordance with AWWA C651 and C655.