

## Construction Inspections:

### Underground Piping:

The installing contractor shall be responsible for the following:

1. Notifying the AHJ and the owner's representative of the time and date testing is to take place.
2. Performing all required acceptance tests.
3. Completing and signing the contractor's material and test certificate(s) shown in figure 24:10.10.1. [24:10.10.1]

### **NFPA 24: Fire Service Mains Acceptance Requirements:**

#### **Definitions:**

- A. Flow Test<sup>1</sup>: A test performed by the flow and measurement of water from one hydrant and the static and residual pressures from an adjacent hydrant for the purpose of determining the available water supply at that location. [24:3.3.14.1]
- B. Flushing Test<sup>2</sup>: A test of a piping system using high velocity flows to remove debris from a piping system prior to it being placed in service. [24:3.3.14.2]
- C. Hydrostatic Test<sup>3</sup>: A test of a closed piping system and its attached appurtenances consisting of subjecting the piping to an increased internal pressure for a specified period of duration to verify system integrity and leak rates. [24:3.3.14.3]
- D. System Working Pressure<sup>4</sup>: The maximum anticipated static (non-flowing) or flowing pressure applied to sprinkler system components exclusive of surge pressures and exclusive of pressure from the fire department connection. [13:3.3.23]

#### **1. Flushing of Piping**<sup>2</sup>:

- A. Underground piping from the water supply to the system riser, and lead-in connections to the system riser shall be completely flushed before the connection is made to downstream fire protection piping. [24:10.10.2.1.1]
- B. The flushing operation shall be continued for a sufficient time to ensure thorough cleaning. [24:10.10.2.1.2]
- C. The minimum rate of flow shall be not less than one of the following:
  1. Hydrostatically calculated water demand flow rate of the system, including any hose requirements.
  2. \*Flow IAW table 24:10.10.2.1.3.
  3. Maximum flow rate available to the system under fire conditions. [24:10.10.2.1.3]
- D. Provision shall be made for the proper disposal of water used for flushing or testing. [24:10.10.2.1.4]

#### **2. Hydrostatic Test**<sup>3</sup>:

- A. All piping and attached appurtenances subjected to system working pressure<sup>4</sup> shall be hydrostatically tested at 200 PSI or 50 PSI in excess of the system working pressure, whichever is greater, and shall maintain that pressure at +/- 5 PSI for 2 hours. [24:10.10.2.2.1\*]
- B. Pressure loss shall be determined by a drop in gauge pressure or visual leakage. [24:10.10.2.2.2]
- C. The Test pressure shall be read from one of the following, located at the lowest elevation of the system or the portion of the system being tested:
  1. A gauge located at one of the hydrant outlets.
  2. A gauge located at the lowest point where no hydrants are provided. [24:10.10.2.2.3]
- D. The trench shall be backfilled between joints before testing to prevent movement of pipe. [24:10.10.2.2.4]
- E. Where required for safety measures presented by the hazards of open trenches, the pipe and joints shall be permitted to be backfilled, provided the installing contractor takes the responsibility for locating and correcting leakage. [24:10.10.2.2.6\*]

**Hydrostatic Testing Allowance:** (See 24:10.10.2.2.6)

**NFPA 24: Hydrant Operating Test:**

1. All piping and attached appurtenances subjected to system working pressure<sup>4</sup> shall be hydrostatically tested at 200 PSI or 50 PSI in excess of the system working pressure, whichever is greater, and shall maintain that pressure at +/- 5 PSI for 2 hours. [24:10.10.2.2.1]
2. Dry barrel hydrants shall be checked for proper drainage. [24:10.10.2.4.2]
3. All control valves shall be fully closed and opened under system water pressure to ensure proper operation. [24:10.10.2.4.3]
4. Where fire pumps are available, the operating tests required by 24:10.10.2.4 shall be completed with the pumps running. [24:10.10.2.4.4]
5. A flow test shall be conducted of all new hydrants installed within the city limits of Dade City. Results of tests shall be provided to Dade City Fire Prevention. Hydrants shall be painted IAW

**NFPA 24: Backflow Prevention Assembly Acceptance:**

1. The backflow prevention assembly shall be forward flow tested to ensure proper operation. [24:10.10.2.5.1]
2. The minimum flow rate tested in 24:10.10.2.5.1 shall be the system demand, including the hose stream demand where applicable. [24:10.10.2.5.2]]