



Sprinkler System – Main Drain Test Procedure

NFPA 25-2011, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, published by the National Fire Protection Association (NFPA), requires that the main drain of an automatic sprinkler system should be tested at least annually and more often for special conditions as noted in Table 13.1.1.2 of NFPA 25. A main drain test is used to identify major reductions in water flow for the system under test. This client handout provides the steps required to perform this test.

Procedure

The following steps can be used to conduct a full-flow trip test:

1. Locate the original and previous year's main drain test data. It is important to note if the system is provided with a check valve between the supply source and the main drain. Such a system may have a high (false) static pressure (i.e., non-flowing) caused by trapped pressure surges. This false high pressure should be adjusted to reflect the actual supply side pressure.
2. Verify that the main drain discharge is free of objects, such as loose rocks, debris, and vehicles.
3. Record the supply side static pressure.
4. Close the alarm control valves to prevent sending a water flow alarm.
5. Fully open the main drain valve.
6. Allow the flow to stabilize (i.e., consistent stream with no change in stream size or volume).
7. Record the residual pressure (e.g., pressure remaining in the system during full flow) on the supply side.
8. Slowly close the main drain, while noting the time.
9. Record the time required for the supply side to return to the starting static pressure.
10. Open the alarm control valve to return the system to service.

Test Record

Starting static pressure _____ Residual pressure _____

Time required for a return to the starting static pressure _____

Test Failure

Any of the following conditions indicate possible obstructions to the sprinkler water supply that require further investigation:

- Failure of the static pressure to return to the original reading within a short period of time (i.e., one minute).
- A large drop (i.e., 10%) in the residual pressure as compared to the previous test.
- An extended time required (i.e., more than one minute) for the discharge stream to stabilize during the main drain test.
- A decrease in the static pressure either before or after the main drain test

Test By: _____

Test Date: _____



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