



PREVENTION MANUAL

FIRE EXTINGUISHING SYSTEMS

405.1 COMBINED STANDPIPE – ACCEPTANCE AND 5-YEAR TEST (FORM FOR CONTRACTOR USE)

EFFECTIVE: JANUARY 2009

SCOPE

Combined standpipe acceptance test and 5-year test procedures.

PURPOSE

This policy is intended to document the minimum inspection requirements for combined standpipe systems.

COMBINED STANDPIPE – ACCEPTANCE AND FIVE YEAR TEST (FORM FOR CONTRACTOR USE)

Building Name: _____

Address: _____

Test Performed By: _____
(Fitter's Name) (Company)

Date of Test: _____

Was the fire department notified at least 72 hrs. in advance?

YES NO (Explain "NO" answer on Page 3)

Note: It is the contractor's responsibility to anticipate drainage and flow velocity issues and take preventive measures as necessary.

PART A. STANDPIPE CONNECTION INSPECTION

Examine and operate each connection on the standpipe. Circle the appropriate answer.

YES NO All standpipe inlets/outlets operated properly.

YES NO All standpipe inlets/outlets have approved caps.

YES NO All standpipes are properly labeled.

YES NO All outlets have National Standard threads which are in good condition.

(Explain any NO answers on Page 3)

YES NO Are pressure reducing devices present? If YES, use separate PRV device flow test form.

PART B. FIRE PUMP RATING

_____ gpm _____ psi

STOP! If the fire pump is capable of flowing 500 gpm at 65 psi residual at the roof, use Part C; otherwise skip to Part D.

PART C. 65 PSI RESIDUAL METHOD FLOW TEST

1. Install Underwriter’s Laboratory specified playpipe with 1-3/4 inch tip on the most remote roof outlet (this should be a two or three-way outlet). Install a calibrated, liquid-filled pressure gauge on other roof outlet on the same standpipe.
2. Slowly open the roof outlet until a minimum flow of 500 gpm (30 psi pitot) is observed. (MAINTAIN FULL FLOW FOR A MINIMUM OF 3 MINUTES)
3. Note pressure reading on other outlet and record in No. 4 (below).
4. PSI reading from gauge on other outlet:

Location _____ psi _____

PART D. FRICTION LOSS METHOD FLOW TEST

1. Install calibrated, liquid-filled gauge on the discharge side of the fire pump after the check valve.

STOP! If the standpipe outlet elevation was determined at last five-year test or test at building final or distance from discharge pump gauge to roof standpipe outlet is accurately known (such as from the approved sprinkler plans), fill in the elevation loss test result column at the end of Part D. (Elevation in feet x .434 = psi). Go to Step 2.

Note: A-E (below) are usually unnecessary as elevation should have been determined at previous tests.

- A. Disengage fire pump and jockey pump at controllers.
- B. Isolate discharge gauge from system supply by shutting off water supply to pump suction, pump bypass loop, and jockey feed.
- C. Open standpipe outlet on roof. When water stops flowing, note pressure on pump discharge gauge _____ psi. Enter this number into the “elevation loss” column in the test results section.

D. As a check on the results in Step 4, complete the following:

$$\frac{\text{Number of Stories}}{\text{Number of Stories}} \times \frac{\text{Approx. Height per Story}}{\text{Approx. Height per Story}} \times .434 = \frac{\text{psi}}{\text{(This number should be close to entry in Step C. above)}}$$

E. Close outlet on roof, reopen supply isolation valves, restart jockey pump, and after shutoff pressure is achieved and jockey stops running, energize the fire pump.

2. Install Underwriter’s specified playpipe with 1-3/4 inch tip on roof outlet. Install a calibrated, liquid-filled pressure gauge on other roof outlet on the same standpipe.
3. Verify pump is in normal standby condition and slowly open roof outlet until one of the following flows is achieved:

- 375 gpm (17 psi pitot for a 250 gpm fire pump)
- 500 gpm (30 psi pitot for a 500 gpm [and larger] pumps)
- OR -

Flow achieved at last 5 year or initial acceptance test.

(MAINTAIN FULL FLOW FOR A MINIMUM OF 3 MINUTES)

4. Record pressures observed on gauges installed at fire pump discharge and standpipe outlet on the “Test Results” line on next page.

Note: The pressure at the fire pump outlet and standpipe gauges must be observed while the pitot reading is taken. Any change of pump speed, adjusting of valves, etc., between readings will invalidate the test results and the test must be repeated.

5. Friction loss for most remote standpipes is less than 20 psi (500 gpm) or 10 psi (375 gpm) or matches acceptance test results?
 YES NO

6. If answer to No.5 is “NO”, consult with the fire department to determine if friction loss results are acceptable.

PART D. “TEST RESULTS”

$$\frac{\text{Location}}{\text{Location}} : \frac{\text{Fire Pump Discharge psi}}{\text{Fire Pump Discharge psi}} - \frac{\text{Standpipe Outlet Gauge psi}}{\text{Standpipe Outlet Gauge psi}} - \frac{\text{Elevation Loss psi}}{\text{Elevation Loss psi}} = \frac{\text{Friction Loss}}{\text{Friction Loss}}$$

