Fire Hose Testing Standard Operating Guidelines

The purpose of this guideline is to explain the proper procedure for the testing of Fire Service Hose. This procedure outlines the National Fire Protection Associations (NFPA) Standards 1962, "Standard for the Care, Use and Service Testing of Fire Hose Including Couplings and Nozzles." This guideline will be followed and accepted by all employees of Safety 1st Fire Hose Testing.

- Section One -

General Operating Guidelines:

1. The length of any hose to be tested shall not exceed 300 feet.
2. Hose shall be laid out in as straight of a line as possible.
3. All fire service hose shall be tested. This includes supply beds, pre-connects, hose bundles and rolls.
4. All hose shall be pre-inspected prior to testing. All couplings will be checked for damage/slipping. Gaskets will be checked for damage or if they are missing. The outer jacket will be checked for damage. If for any reason, one of the above is found, the hose is removed and marked out of service.
5. Each hose will have an Identification Number assigned. If there is a numbering system in place, those numbers will be used accordingly.
6. If there is no identification number assigned, each length of hose shall be given one.
7. All hose shall be repacked to the hose department's SOG.
8. It is the responsibility of the customer department to supply an Apparatus Operator for the duration of their hose testing session. Safety First Fire Hose will not at any time directly operate a department's apparatus or pump.

- Section Two -

Testing Procedures:

The following procedures defined in this guideline shall be used when hose is service-tested using a hose testing machine.

1. The condition of the hose tester shall be thoroughly checked before each testing session and before the machines is used after being transported to a new testing site.
2. The hose testing machine shall be carefully examined for damaged components that might fail during the test.
3. If any damage is discovered, the hose testing machine shall not be used until the damaged component(s) are repaired or replaced.
4. A pressure leak integrity test shall be preformed on the machine to determine whether the pressurized outlet side of the machine and its related components are leak free.
5. The fire hose outlet connection(s) of the machine shall capped or otherwise closed.
6. Pressure shall be applied through the machine using integral pump to a level that is 10% higher than the highest service test pressure needed for the hose to be tested.
7. The pressure shall be held for 3 minutes with the pump turned off.
8. If leaks are detected, the testing machine shall not be used until leaking component(s) is repaired/replaced.
9. The test gauge that is used to read the test pressure shall have been calibrated within the last 12 months.
10. The test layout shall be connected to the outlet side of the water supply valve on the hose testing machine.
11. With the air bleeder open, the pressure shall be raised gradually to 45 PSI (± 5 psi) (3.1 bar ± 0.35 bar or 310 kPa ± 35 kPa)
12. After the hose test layout is full of water, all the air in each hose line shall be exhausted by raising the discharge end of each hose line above the highest point in the system.
   Warning: Take care to remove all, air from the hose before the valve in the test cap is closed and the pressure is raised.
   The development of test pressures introduces a serious accident potential if air remains in the system.
13. The test cap valve shall be closed slowly, and then the outlet water supply valve shall be closed.
14. The hose directly in the back of the test cap shall be secured to avoid possible whipping or other uncontrolled reactions in the event of a hose burst.
15. With the hose at 45 PSI (± 5 PSI) (3.1 bar ± 0.35 bar or 310 kPa ± 35 kPa), it shall be checked for leakage at each coupling and the couplings tightened with a spanner wrench where necessary.
16. Each hose shall then be marked at the end of each coupling to determine, after the hose has been drained, if the coupling has slipped during the test.
17. All personnel other than those persons required to perform the remainder of the test shall clear the area. An “ALL CLEAR” signal will be given by a Safety First supervisor overseeing the test. Safety cones will be placed 20 feet from test hose layout. This will mark a “SAFETY AREA.” Only authorized Safety First staff will be allowed into the “SAFETY AREA” during the testing phase.
18. The pressure shall be raised slowly at a rate not greater than 15 PSI (1 bar or 103 kPa) per second until the service test pressure is attained and then maintained, by pressure boosts if necessary, for the duration of the stabilization period.
19. The stabilization period shall be no less than 1 minute per 100 feet (30 m) of the hose in the test layout.
20. After the stabilization period, the hose layout shall hold the service test pressure for 3 minutes without further pressure boosts.
21. While the hose test layout is at the service test pressure, it shall be inspected for leaks.
22. The inspecting personnel will walk the test layout to inspect for leaks, they shall be at least 15 ft (4.5 m) to the left side of the nearest hose line in the test layout. The left of the hose line shall be defined as that side that is to the left when facing the free end from the pressure source.
23. Personnel shall never stand in front of the free end of the hose(s), on the right side of the hose, or closer than 15 ft (4.5 m) on the left side of the hose, or straddle a hose in the test layout during the test.
24. If the hose test layout does not hold the service test pressure for the three (3) minute duration. The service test shall be terminated.
25. The length(s) of hose that leaked shall have failed the test.
26. The test layout shall be drained and the defective hose removed from the test layout.
27. The service test shall be restarted beginning with the above procedures.
28. After the three (3) minutes at the service test pressure, each test cap shall be opened slowly to drain the test layout.

- Section Three -

Coupling Slippage:

1. The marks placed on the hose at both coupling ends shall be observed for coupling slippage.
2. If the coupling has slipped, the hose shall have failed the test.

- Section Four -

Hose Testing Records:

1. Each length of hose shall be assigned an identification number for the use in recording its history throughout its service life.
2. The identification number shall be marked on the hose at the female end of all attack hose (1 ¾ in., 2 in., 2 ½ in.). All supply hose (3 in, 4 in, 5 in,) the identification number will be marked at the furthest end of the hose from the hose testing machine. A black magic marker shall be used to mark the ID number.
3. Accurate hose records shall be established and maintained.
4. Records of the hose used by the fire department shall be kept as part of the departments complete equipment inventory.
5. Safety first will provide detailed documentation of all hose that is tested for each department. The document will provide the ID number, hose size/length, age (if possible), apparatus location, testing pressure, and whether the hose passed or failed.
6. Hose Testing Records will be shipped to the customer once payment for fire hose testing service has been received. Payments are due within thirty (30) days of receipt of bill.