

Operating Guideline # 305

Hose Testing

September 30, 2019



PURPOSE:

The purpose of this Operating Guideline (OG) is to establish guidelines for the safe testing of fire hose.

GUIDELINE:

General

1. All Muskoka Lakes Fire Department structural firefighting hose and all large diameter hose will be hose tested on a two-year cycle. Supply hose shall be service tested to a minimum of 200 psi and attack fire hose to a minimum of 300 psi or a pressure not to exceed the service test pressure marked on the hose.

Procedures

2. The development of test pressures as high as 300 psi (2100 kpa) introduces a serious accident potential unless the following procedures are followed.
3. When testing fire hose a safety zone must be set up and monitored to prevent accidents and or injuries to observers, bystanders, vehicles, and passing motorists and fire personnel. Safety zones will be established by strategically placing cone markers and or fire personnel.
4. Ensure that the extension cord being used with the hose tester is rated for the same amperage as the motor. Inspect the cord before use, do not use any cord with frayed or damaged electric lines. Never place the hose tester electrical cord into a pool of water. This can result in electric shock to the operator or personnel in the service test area.
5. Test pressures for 38mm (1 1/2") and 65mm (2 1/2") hose will be 300psi (2100 kpa). Test pressure for large diameter hose e.g. 100mm (4 1/2") will be 200 psi (1400 kpa). These test pressures will be maintained for 3 minutes.
6. Lay out hose lines of convenient lengths, not to exceed 300', making sure they are straight, flat and without kinks or twists.
7. Connect hose being tested to the discharge ports on the hose testing machine.
8. All high volume supply hose will have its bolts (socket head cap screws) torqued to manufacturers specified tolerance and be replaced at the first signs of wear. Angus 100 mm rubber hi-vol hose is to be torqued to 40 ft.-lbs.
9. Mark each end of hose at the coupling with a marker. This will determine whether there is any coupling movement during the test.(circular or horizontal movement)
10. Check all gaskets for flexibility and replace any dried out or stiff gaskets before the test starts.
11. With test cap's bleeder valve open gradually charge the test hose to a pressure not to exceed 45psi (315 kpa). When the line is charged and all air has been exhausted close the bleeder valve slowly. Check all couplings for leaks and tighten with a spanner if necessary.
12. With discharge valve open slowly raise test pressure to 300 psi (2100 kpa). This is called the stabilization period. The stabilization period shall not be less than 1 minute per 100 ft. (300 m) of hose in the test layout. While bringing the hose up to the desired service test pressure the hose test machine operator must always be aware of what is happening.

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13. The operator should always stand a short distance behind the hose tester and its handle and opposite the hose(s) being tested to watch for burst hose or leaks. In the case of a hose failure or sign of water leakage the hose tester should be turned off and the problem, or problems, fixed before resuming the test.

14. After the hose stabilization period, the hose test layout shall hold for 3 minutes.

15. If the inspecting personnel walk the test layout to inspect for leaks, they shall be at least 15' (4.5 m) to the left side of the nearest hose line in the test layout. The left side of the hose line shall be defined as that side that is to the left when facing the free end from the pressure source. The hose tester pump has a rated capacity of 3.0 gallons per minute. There should be limited high water volume surge and limited possibility of a whipping hose line if a testing hose bursts.

16. Personnel shall never stand in front of the free end of the hose, on the right side of the hose, or closer than 15' (4.5 m) on the left side of the hose, or straddle a hose in the test layout during the test.

17. After the 3-minute test time is up, reduce the pressure and drain the test layout. Should any length of hose not hold the test pressure for the 3 minute duration, the test shall be terminated. The length of hose that failed the test will be removed and marked as failed. The hose will be drained and reconnected and test be restarted. Observe the coupling marks for movement during the test. If there is any movement the hose will be removed and marked as failed.

18. All tested and passed hose will be hung to dry and then reloaded onto the hose rack.

19. All fire hose shall be assigned an identification number for use in recording its history throughout its service life. After each test the results of the test will be recorded in the Hose Testing binder.

RESPONSIBILITY:

It is the responsibility of all Emergency Operations Division staff to comply with the provisions of this Operating Guideline.

REFERENCES:

- NFPA 1962- 2013 Edition
- Electric Hose Tester Start Up Safety Procedures