

A Code Review for the Inspection, Testing, and Maintenance of Fire Hydrants

By: the Fire and Life-Safety Group (FLS)

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I. INTRODUCTION

This document was prepared to list the requirements for the inspection, test and maintenance of fire hydrants. These requirements are based on the 2008 edition of NFPA-25 *The Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, the 2000 edition of the City of Boulder Design and Construction Standards Chapter 5 *Water Design*, and the 2009 edition of International Fire Code (IFC).

II. SUMMARY

For basic hydrant information please see the table on the previous page. In addition to those requirements the water outlet of a hydrant should be between 18 and 30 inches above ground level and placed at the lowest possible position. The hydrant must be kept clear of snow and ice so it can be accessed. Any additions, repairs, alterations, and servicing must comply with NFPA-25.

III. CODE REVIEW FOR THE INSPECTION, TESTING, AND MAINTENANCE OF FIRE HYDRANTS

1. Section 7.2.2.4 of NFPA-25 states that dry barrel and wall hydrants are to be inspected annually and after each operation with the necessary corrective action taken as shown in Table 7.2.2.4, listed below.

2. Table 7.2.2.4 of NFPA-25 states:

Condition	Corrective Action
Inaccessible	Make accessible
Barrel contains water or ice (presence of water or ice could indicate a faulty drain, a leaky hydrant valve, or high groundwater table)	Repair and drain; for high groundwater it could be necessary to plug the drain and pump out the barrel after each use
Improper drainage from barrel	Repair drain
Leaks in outlets or at top of hydrant	Repair or replace gaskets, packing, or parts as necessary
Cracks in hydrant barrel	Repair or replace
Tightness of outlet caps	Lubricate if necessary; tighten if necessary
Worn outlet threads	Repair or replace
Worn hydrant operating nut	Repair or replace
Availability of operating wrench	Make sure wrench is available

3. Section 7.2.2.5 of NFPA-25 states that wet barrel hydrants are to be inspected annually and after each operation with the necessary corrective action taken as shown in Table 7.2.2.5, listed below. Note: wet barrel hydrants do not exist on campus; this section is provided for completeness of information only.

4. Table 7.2.2.5 of NFPA-25 states:

Condition	Corrective Action
Inaccessible	Make accessible
Leaks in outlets or at top of hydrant	Repair or replace gaskets, packing, or parts as necessary
Cracks in hydrant barrel	Repair or replace
Tightness of outlet caps	Lubricate if necessary; tighten if necessary
Worn outlet threads	Repair or replace
Worn hydrant operating nut	Repair or replace
Availability of operating wrench	Make sure wrench is available

5. Section 7.3.2 of NFPA-25 states that hydrants are to be tested annually to ensure proper functioning.

6. Section 7.3.2.1 of NFPA-25 states that each hydrant is to be opened fully and water flowed until all foreign material has cleared.

7. Section 7.3.2.2 of NFPA-25 states that flow is to be maintained for not less than 1 minute.

8. Section 7.3.2.3 of NFPA-25 states that after operation, dry barrel and wall hydrants are to be observed for proper drainage from the barrel.

9. Section 7.3.2.4 of NFPA-25 states that full drainage is to take no longer than 60 minutes.

10. Section 7.3.2.5 of NFPA-25 states that where soil conditions or other factors are such that the hydrant barrel does not drain within 60 minutes, or where the groundwater level is above that of the hydrant drain, the hydrant drain is to be plugged and the water in the barrel is to be pumped out.

11. Section 7.3.2.6 of NFPA-25 states that dry barrel hydrants that are located in areas subject to freezing weather and that have plugged drains are to be identified clearly as needing pumping after operation.

12. Section 7.4.2.1 of NFPA-25 states that hydrants are to be lubricated annually to ensure that all stems, caps, plugs, and threads are in proper operating condition.

13. Section 7.4.2.2 of NFPA-25 states that hydrants are to be kept free of snow, ice, or other materials and protected against mechanical damage so that free access is ensured.

14. Section 5.10 (A) (5) of the City of Boulder Design and Construction Standards states that hydrants are to be placed no farther than 5 feet behind the curb, outside of any fenced area, and have a 10-foot radius of clearance to adjacent obstacles (fences, walls, shrubs trees, etc.).
15. Section 5.10 (A) (6) of the City of Boulder Design and Construction Standards states that hydrants are to have the lowest water outlet not less than 18 inches or more than 30 inches above the final ground elevation.
16. Section 5.10 (A) (7) of the City of Boulder Design and Construction Standards states that the designated hydrant colors are to be “Restful Green Bonnet” for barrels and “Reflective White” for caps.
17. Section 507.5.2 of the IFC states that fire hydrant systems are subject to periodic tests as required by the fire code official. Fire hydrant systems are to be maintained in an operative condition at all times and are to be repaired where defective. Additions, repairs, alterations and servicing are to comply with approved standards.
18. Section 507.5.4 of the IFC states that posts, fences, vehicles, growth, trash, storage and other materials or objects are not to be placed or kept near fire hydrants, fire department inlet connections or fire protection system control valves in a manner that would prevent such equipment or fire hydrants from being immediately discernible. The fire department is not to be deterred or hindered from gaining immediate access to fire protection equipment or fire hydrants.