

**First Revision No. 117-NFPA 25-2023 [Detail]****A.14.3.1(16)A.4.1.5.1(1)**

Where nitrogen is used to allow for an increased *C* value in accordance with NFPA 13, the nitrogen supply should be from a listed nitrogen generator permanently installed, should be capable of supplying and maintaining at least 98 percent nitrogen concentration throughout the system at a minimum leakage rate of 1.5 psi (0.1 bar) per hour, should be provided with a means of verifying nitrogen concentration provided for each system where an increased *C* value is used, should be installed per the manufacturer's instruction, and should be maintained in accordance with this standard.

Nitrogen systems are equipped with an air compressor capable of restoring system air pressure within 30 or 60 minutes. It is not the intent of this section to require a 98 percent concentration of nitrogen within the 30 or 60 minutes as required by this standard.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Mon Dec 11 14:20:49 EST 2023

Committee Statement

Committee Statement: Existing annex has been relocated from A.14.3.1(16) to 4.1.5.1(1).

Response Message: FR-117-NFPA 25-2023



First Revision No. 79-NFPA 25-2023 [Detail]

[Update Heading to 13.6]

13.6 Hose Valves [and Hose Connections](#) .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Mon Oct 09 17:02:20 EDT 2023

Committee Statement

Committee Statement: Hose valves and their connections are covered in Chapter 13.6.

Response Message: FR-79-NFPA 25-2023

**First Revision No. 86-NFPA 25-2023 [Detail]**

[Revise 14.3.1(14) as shown below]

14.3.1*

An obstruction investigation shall be conducted for system or yard main piping wherever any of the following conditions exist:

- (1) Defective intake for fire pumps taking suction from open bodies of water
- (2) Discharge of obstructive material during routine water tests
- (3) Foreign materials in fire pumps, dry pipe valves, or check valves
- (4) Foreign material in water during drain tests or plugging of inspector's test connection(s)
- (5) Unknown materials heard in the system piping during draining, refilling, or otherwise flowing water through the system
- (6) Plugged sprinklers
- (7) Foreign organic or inorganic material with the potential to obstruct pipe or sprinklers found in the pipe
- (8) Failure to flush yard piping or surrounding public mains following new installations or repairs
- (9) Record of broken public mains in the vicinity
- (10) Abnormally frequent false tripping of a dry pipe valve(s)
- (11) System returned to service after an extended shutdown (i.e., greater than 1 year)
- (12) Reason to believe that the sprinkler system contains sodium silicate or highly corrosive fluxes in copper systems
- (13) System supplied with raw water via the fire department connection
- (14) Pinhole leaks or Leakage leakage caused by internal corrosion
- (15) *A 25 percent increase or a 5-second increase for portions of systems protecting dwelling units in the total water delivery time for dry pipe systems and double interlock preaction systems, with normal air pressure on the system and starting at the time of fully opened inspection test connection, when compared to the original system acceptance test
- (16) *Failure to maintain a nitrogen supply, except in instances of preplanned impairments, installed in accordance with NFPA 13 when a Hazen-Williams C value of 120 is used for dry and preaction systems.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 21:30:16 EDT 2023

Committee Statement

Committee Statement: Pinhole leaks are an early indicator of internal corrosion and should indicate a requirement for an internal investigation.

Response Message: FR-86-NFPA 25-2023

[Public Input No. 115-NFPA 25-2023 \[Section No. 14.3.1\]](#)



First Revision No. 1-NFPA 25-2023 [Section No. 1.1.3.1]

1.1.3.1*

~~This standard does not require~~ Unless otherwise stated in this standard, the inspector is not required to verify the adequacy of the design or installation of the system.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 12:33:45 EDT 2023

Committee Statement

Committee Statement: Clarifies the roles and responsibilities of the scope of NFPA 25. The beginning statement “unless specifically stated in this standard” covers situations where the inspector is required to verify the installation.

Response Message: FR-1-NFPA 25-2023

Public Input No. 117-NFPA 25-2023 [Section No. 1.1.3.1]



First Revision No. 91-NFPA 25-2023 [Chapter 2]

Chapter 2 Referenced Publications

2.1 General.

The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam*, 2024 2024 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2022 2025 edition.

NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, 2022 2025 edition.

NFPA 13R, *Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*, 2022 2025 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 2019 2024 edition.

NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection*, 2022 edition.

NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection*, 2022 2025 edition.

NFPA 22, *Standard for Water Tanks for Private Fire Protection*, 2018 2023 edition.

NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*, 2022 2025 edition.

NFPA 70E[®], *Standard for Electrical Safety in the Workplace[®]*, 2024 2024 edition.

NFPA 72[®], *National Fire Alarm and Signaling Code[®]*, 2022 2025 edition.

NFPA 101[®], *Life Safety Code[®]*, 2024 2024 edition.

NFPA 110, *Standard for Emergency and Standby Power Systems*, 2022 2025 edition.

NFPA 307, *Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves*, 2024 2026 edition.

NFPA 750, *Standard on Water Mist Fire Protection Systems*, 2023 edition.

NFPA 915, *Standard for Remote Inspections and Tests*, 2024 2024 edition.

NFPA 1142, *Standard on Water Supplies for Suburban and Rural Firefighting*, 2022 edition.

NFPA 1900, *Standard for Aircraft Rescue and Firefighting Vehicles, Automotive Fire Apparatus, Wildland Fire Apparatus, and Automotive Ambulances*, 2024 2024 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus*, 2016 edition.

NFPA 1930, *Standard on Fire and Emergency Service Use of Thermal Imagers, Two-Way Portable RF Voice Communication Devices, Ground Ladders, and Fire Hose and Fire Hose Appliances*, 2025 2025 edition.

NFPA 1962, *Standard for the Care, Use, Inspection, Service Testing, and Replacement of Fire Hose, Couplings, Nozzles, and Fire Hose Appliances*, 2018 edition.

2.3 Other Publications.

2.3.1 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM D975, *Standard Specification for Diesel Fuel*, ~~2020e~~ 2023 .

ASTM D3359, *Standard Test Methods for Rating Adhesion by Tape Test*, ~~2017~~ 2023 .

ASTM D6751, *Standard Specification for Biodiesel Fuel Blend ~~Stock~~ stock (B100) for Middle Distillate Fuels*, ~~2020a~~ 2023a .

2.3.2 CGA Publications.

Compressed Gas Association, ~~14501 George Carter Way, Suite 103, Chantilly, VA 20151~~ 8484 Westpark Drive, Suite 220, McLean, VA 22102 .

CGA C-6, *Standard for Visual Inspection of Steel Compressed Gas Cylinders*, ~~2019~~ 2022 .

2.3.3 HI Publications.

Hydraulic Institute, 300 Interpace Parkway, Building A, 3rd floor, Parsippany, NJ 07054.

HI 3.6, *Rotary Pump Tests*, 2016.

2.3.4 Other Publications.

Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, ~~2003~~ 2020 .

2.4 References for Extracts in Mandatory Sections.

NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam*, ~~2021~~ 2024 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, ~~2022~~ 2025 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, ~~2019~~ 2024 edition.

NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection*, 2022 edition.

NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection*, ~~2022~~ 2025 edition.

NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*, ~~2022~~ 2025 edition.

NFPA 110, *Standard for Emergency and Standby Power Systems*, ~~2022~~ 2025 edition.

NFPA 750, *Standard on Water Mist Fire Protection Systems*, ~~2019~~ 2023 edition.

NFPA 820, *Standard for Fire Protection in Wastewater Treatment and Collection Facilities*, ~~2020~~ 2024 edition.

NFPA 1140, *Standard for Wildland Fire Protection*, 2022 edition.

NFPA 1141, *Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas*, ~~2017~~ edition.

NFPA 1142, *Standard on Water Supplies for Suburban and Rural Firefighting*, 2022 edition.

NFPA 1910, *Standard for the Inspection, Maintenance, Refurbishment, Testing, and Retirement of In-Service Emergency Vehicles and Marine Firefighting Vessels*, 2024 edition.

NFPA 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles*, ~~2017~~ edition.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25-2023_Chapter_2_Reference_Updates.docx	Reference Updates.	

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 23:24:40 EDT 2023

Committee Statement

Committee Statement: Updated reference.

Response Message: FR-91-NFPA 25-2023



First Revision No. 101-NFPA 25-2023 [Section No. 3.3.1]

3.3.1 Adjust.

To maintain or regulate, within prescribed limits, by setting the operating characteristics to specified parameters. [~~1 911~~, 1910, ~~2017~~ 2024]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 11 00:05:00 EDT 2023

Committee Statement

Committee Statement: Reference update.

Response Message: FR-101-NFPA 25-2023

**First Revision No. 3-NFPA 25-2023 [Section No. 3.3.9]****3.3.9* Discharge Devices .**

~~A device~~ Devices designed to discharge water or foam-water solution in a predetermined, fixed, or adjustable pattern. [11, 2024]. ~~Examples include, but are not limited to, sprinklers, spray nozzles, and hose nozzles. [11, 2021]~~

A.3.3.9 Discharge Devices.

Examples include, but are not limited to, sprinklers, spray nozzles, and hose nozzles.
[~~11,2021~~ 2024]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 13:29:58 EDT 2023

Committee Statement

Committee Statement: Updated extract to align with NFPA 11.

Response Message: FR-3-NFPA 25-2023

Public Input No. 101-NFPA 25-2023 [Section No. 3.3.9]



First Revision No. 4-NFPA 25-2023 [Section No. 3.3.10]

~~3.3.10~~ Double Check Valve Assembly (DCVA):

~~This assembly consists of two internally loaded check valves, either spring-loaded or internally weighted, installed as a unit between two tightly closing resilient-seated shutoff valves as an assembly, and fittings with properly located resilient-seated test cocks.~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 13:38:14 EDT 2023

Committee Statement

Committee Statement: Double Check Valve Assembly is not used in the standard, and therefore removal of the definition is warranted.

Response Message: FR-4-NFPA 25-2023

[Public Input No. 40-NFPA 25-2023 \[Section No. 3.3.10\]](#)



First Revision No. 102-NFPA 25-2023 [Section No. 3.3.14 [Excluding any Sub-Sections]]

A valved connection on a water supply system having one or more outlets and that is used to supply hose and fire department pumpers with water. [~~1141~~, 1140, 2017 2022]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 11 00:12:38 EDT 2023

Committee Statement

Committee Statement: Reference update.

Response Message: FR-102-NFPA 25-2023

**First Revision No. 6-NFPA 25-2023 [Section No. 3.3.16]****3.3.16** ~~[Foam] Discharge Device:~~

~~A device designed to discharge water or foam-water solution in a predetermined, fixed, or adjustable pattern. Examples include, but are not limited to, sprinklers, spray nozzles, and hose nozzles. [11, -2021]~~

Submitter Information Verification**Committee:** INM-AAA**Submittal Date:** Tue Oct 03 14:08:18 EDT 2023**Committee Statement****Committee Statement:** The definition of 3.3.16 (Foam) Discharge Device is a duplicate definition to existing 3.3.9 Discharge Device and therefore deleted.**Response Message:** FR-6-NFPA 25-2023[Public Input No. 102-NFPA 25-2023 \[Section No. 3.3.16\]](#)



First Revision No. 5-NFPA 25-2023 [Section No. 3.3.23.2]

3.3.21.2 Preplanned Impairment.

A condition where a water-based fire protection system or a portion thereof is out of service due to work planned in advance, ~~such as revisions to the water supply or sprinkler system piping .~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 13:45:23 EDT 2023

Committee Statement

Committee Statement: Removing examples from the definition meets the NFPA MOS. The examples are redundant and a discussion on what an impairment is can be found in the definition to impairment.

Response Message: FR-5-NFPA 25-2023

[Public Input No. 103-NFPA 25-2023 \[Section No. 3.3.23.2\]](#)

**First Revision No. 7-NFPA 25-2023 [Section No. 3.3.25]****3.3.23* Inspection.**

A visual examination of a system or portion thereof to verify that it appears to be in operating condition and is free of physical damage. [820,2020 2024]

A.3.3.23 Inspection.

The definition of the term *inspection* does not preclude the need to have system components (e.g., internal conditions of check valves) disassembled to perform the required inspection and should not be considered maintenance work.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 14:11:37 EDT 2023

Committee Statement

Committee Statement: Added Annex language adds clarity and guidance where tools or equipment are needed to perform an inspection or checks.

Response Message: FR-7-NFPA 25-2023

Public Input No. 2-NFPA 25-2022 [Section No. 3.3.25]



First Revision No. 8-NFPA 25-2023 [Section No. 3.3.37]

~~3.3.37 Reduced-Pressure Principle Backflow Prevention Assembly (RPBA):~~

~~Two independently acting check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves, along with two resilient-seated shutoff valves, all as an assembly, and equipped with properly located test cocks.~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 14:19:59 EDT 2023

Committee Statement

Committee Statement: RPBA is not used in the standard, and therefore removal of the definition is warranted.

Response Message: FR-8-NFPA 25-2023

[Public Input No. 41-NFPA 25-2023 \[Section No. 3.3.37\]](#)

**First Revision No. 17-NFPA 25-2023 [Section No. 3.3.41]****3.3.41 Sprinkler.****3.3.41.1* Control Mode Specific Application (CMSA) Sprinkler.**

A type of spray sprinkler that is capable of producing characteristic large water droplets and that is listed for its capability to provide fire control of specific high-challenge fire hazards. [13, -2022]

A.3.3.41.1 Control Mode Specific Application (CMSA) Sprinkler.

A large drop sprinkler is a type of CMSA sprinkler that is capable of producing characteristic large water droplets and that is listed for its capability to provide fire control of specific high-challenge fire hazards. [13, -2022]

3.3.41.2 Corrosion-Resistant Sprinkler.

A sprinkler fabricated with corrosion-resistant material, or with special coatings or platings, to be used in an atmosphere that would normally corrode sprinklers. [13, -2022]

3.3.41.3 Dry Sprinkler.

A sprinkler secured in an extension nipple that has a seal at the inlet end to prevent water from entering the nipple until the sprinkler operates. [13, -2022]

3.3.41.4 Early Suppression Fast-Response (ESFR) Sprinkler.

A type of fast-response sprinkler that has a thermal element with an RTI of 50 (meters-seconds)^{1/2} or less and is listed for its capability to provide fire suppression of specific high-challenge fire hazards. [13, -2022]

3.3.41.5 Electrically Operated Sprinklers.

A sprinkler that is equipped with an integral means of activation using electricity.

3.3.41.6 Extended Coverage Sprinkler.

A type of spray sprinkler with maximum coverage areas as specified in Sections 11.2 and 11.3 of NFPA 13. [13, -2022]

3.3.41.7 Installation Orientation.

The following sprinklers are defined according to orientation.

3.3.41.7.1 Concealed Sprinkler.

A recessed sprinkler with cover plate. [13, -2022]

3.3.41.7.2 Flush Sprinkler.

A sprinkler in which all or part of the body, including the shank thread, is mounted above the lower plane of the ceiling. [13, -2022]

3.3.41.7.3 Pendent Sprinkler.

A sprinkler designed to be installed in such a way that the water stream is directed downward against the deflector. [13, -2022]

3.3.41.7.4 Recessed Sprinkler.

A sprinkler in which all or part of the body, other than the shank thread, is mounted within a recessed housing. [13, -2022]

3.3.41.7.5 Sidewall Sprinkler.

A sprinkler having special deflectors that are designed to discharge most of the water away from the nearby wall in a pattern resembling one-quarter of a sphere, with a small portion of the discharge directed at the wall behind the sprinkler. [13, -2022]

3.3.41.7.6 Upright Sprinkler.

A sprinkler designed to be installed in such a way that the water spray is directed upwards against the deflector. [13, -2022]

3.3.41.8 Nozzle.

A device for use in applications requiring special water discharge patterns, directional spray, or other unusual discharge characteristics. [13, -2022]

3.3.41.9 Old-Style/Conventional Sprinkler.

A sprinkler that directs from 40 percent to 60 percent of the total water initially in a downward direction and that is designed to be installed with the deflector either upright or pendent. [13, -2022]

3.3.41.10 Open Sprinkler.

A sprinkler that does not have actuators or heat-responsive elements. [13, -2022]

3.3.41.11 Ornamental/Decorative Sprinkler.

A sprinkler that has been painted or plated by the manufacturer. [13, -2022]

3.3.41.12 Quick-Response Early Suppression (QRES) Sprinkler.

A type of quick-response sprinkler that has a thermal element with an RTI of 50 (meters-seconds)^{1/2} or less and is listed for its capability to provide fire suppression of specific fire hazards. [13, -2022]

3.3.41.13 Quick-Response Extended Coverage Sprinkler.

A type of quick-response sprinkler that has a thermal element with an RTI of 50 (meters-seconds)^{1/2} or less and complies with the extended protection areas defined in Chapter 11 of NFPA 13. [13, -2022]

3.3.41.14 Quick-Response (QR) Sprinkler.

A type of spray sprinkler that has a thermal element with an RTI of 50 (meters-seconds)^{1/2} or less and is listed as a quick-response sprinkler for its intended use. [13, -2022]

3.3.41.15 Residential Sprinkler.

A type of fast-response sprinkler having a thermal element with an RTI of 50 (meters-seconds)^{1/2} or less that has been specifically investigated for its ability to enhance survivability in the room of fire origin and that is listed for use in the protection of dwelling units. [13, -2022]

3.3.41.16 Special Sprinkler.

A sprinkler that has been tested and listed as prescribed in Section 15.2 of NFPA 13. [13, 2022]

3.3.41.17 Spray Sprinkler.

A type of sprinkler listed for its capability to provide fire control for a wide range of fire hazards. [13, -2022]

3.3.41.18 Standard Spray Sprinkler.

A spray sprinkler with maximum coverage areas as specified in Sections 10.2 and 10.3 of NFPA 13. [13, -2022]

3.3.38 Sprinkler Definitions.

3.3.38.1 Automatic Sprinkler.

A fire suppression or control device that operates automatically when its heat-activated element is heated to its thermal rating or above, allowing water to discharge over a specified area. [13, 2025]

3.3.38.2 General Sprinkler Characteristics.

The following are characteristics of a sprinkler that define its ability to control or extinguish a fire. (1) Thermal sensitivity. A measure of the rapidity with which the thermal element operates as installed in a specific sprinkler or sprinkler assembly. One measure of thermal sensitivity is the response time index (RTI) as measured under standardized test conditions. (a) Sprinklers defined as fast response have a thermal element with an RTI of 50 (meters-seconds)^{1/2} or less. (b) Sprinklers defined as standard response have a thermal element with an RTI of 80 (meters-seconds)^{1/2} or more. (2) Temperature rating. (3) K-factor (see Chapter 7 of NFPA 13). (4) Installation orientation (see 3.3.221.3 of NFPA 13). (5) Water distribution characteristics (i.e., application rate, wall wetting). (6) Special service conditions. [13, 2025]

3.3.38.3 Installation Orientation.

The following sprinklers are defined according to orientation. [13, 2025]

3.3.38.3.1 Concealed Sprinkler.

A recessed sprinkler with cover plate. [13, 2025]

3.3.38.3.2 Flush Sprinkler.

A sprinkler in which all or part of the body, including the shank thread, is mounted above the lower plane of the ceiling. [13, 2025]

3.3.38.3.3 Pendent Sprinkler.

A sprinkler designed to be installed in such a way that the water stream is directed downward against the deflector. [13, 2025]

3.3.38.3.4 Recessed Sprinkler.

A sprinkler in which all or part of the body, other than the shank thread, is mounted within a recessed housing. [13, 2025]

3.3.38.3.5 Sidewall Sprinkler.

A sprinkler having special deflectors that are designed to discharge most of the water away from the nearby wall in a pattern resembling one-quarter of a sphere, with a small portion of the discharge directed at the wall behind the sprinkler. [13, 2025]

3.3.38.3.6 Upright Sprinkler.

A sprinkler designed to be installed in such a way that the water spray is directed upwards against the deflector. [13, 2025]

3.3.38.4 Sprinkler Types.

The following sprinklers are defined according to design and/or performance characteristics. [13, 2025]

3.3.38.4.1* Control Mode Density/Area (CMDA) Sprinkler.

A type of spray sprinkler intended to provide fire control in storage applications using the design density/area criteria described in this standard. [13, 2025]

A.3.3.38.4.1 Control Mode Density/Area (CMDA) Sprinkler.

This definition is focused on the storage application since the term CMDA is used in the storage chapters. As indicated in Chapter 20 of NFPA 13, spray sprinklers intended for storage applications requiring a design density greater than 0.34 gpm/ft (13.9 mm/min) should have a nominal K-factor of K-11.2 (K-160) or larger and be listed for storage applications. Spray sprinklers having a nominal K-factor of K-5.6 (K-80) or K-8.0 (K-115) are permitted to be used for storage applications as a CMDA sprinkler within certain design densities as described in Chapter 20 of NFPA 13.

Spray type sprinklers intended for use in accordance with the occupancy hazard density/area curves could also be considered CMDA sprinklers. However, the CMDA terminology is generally not referenced in the nonstorage chapters, and this term is not used to describe these sprinklers in the product listings. [13, 2025]

3.3.38.4.2* Control Mode Specific Application (CMSA) Sprinkler.

A type of spray sprinkler that is capable of producing characteristic large water droplets and that is listed for its capability to provide fire control of specific high-challenge fire hazards. [13, 2025]

A.3.3.38.4.2 Control Mode Specific Application (CMSA) Sprinkler.

A large drop sprinkler is a type of CMSA sprinkler that is capable of producing characteristic large water droplets and that is listed for its capability to provide fire control of specific high-challenge fire hazards. [13, 2025]

3.3.38.4.3 Corrosion-Resistant Sprinkler.

A sprinkler fabricated with corrosion-resistant material, or with special coatings or platings, to be used in an atmosphere that would normally corrode sprinklers. [13, 2025]

3.3.38.4.4* Dry Sprinkler.

A sprinkler secured in an extension nipple that has a seal at the inlet end to prevent water from entering the nipple until the sprinkler operates. [13, 2025]

A.3.3.38.4.4 Dry Sprinkler.

Under certain ambient conditions, wet pipe systems having dry pendent (or upright) sprinklers can freeze due to heat loss by conduction. Therefore, due consideration should be given to the amount of heat maintained in the heated space, the length of the nipple in the heated space, and other relevant factors.

Dry sprinklers are intended to extend into an unheated area from a wet pipe system or to be used on a dry pipe system. [13, 2025]

3.3.38.4.5* Early Suppression Fast-Response (ESFR) Sprinkler.

A type of fast-response sprinkler that has a thermal element with an RTI of 50 (meters-seconds)^{1/2} or less and is listed for its capability to provide fire suppression of specific high-challenge fire hazards. [13, 2025]

A.3.3.38.4.5 Early Suppression Fast-Response (ESFR) Sprinkler.

It is important to realize that the effectiveness of these highly tested and engineered sprinklers depends on the combination of fast response and the quality and uniformity of the sprinkler discharge. It should also be realized that ESFR sprinklers cannot be relied upon to provide fire control, let alone suppression, if they are used outside the guidelines specified in Chapter 20 of NFPA 13 . [13, 2025]

3.3.38.4.6 Electrically Operated Sprinkler.

A sprinkler equipped with an integral means of activation using electricity. [13, 2025]

3.3.38.4.7 Extended Coverage Sprinkler.

A type of spray sprinkler with maximum coverage areas as specified in Sections 11.2 and 11.3 of NFPA 13 . [13, 2025]

3.3.38.4.8 Institutional Sprinkler.

A sprinkler specially designed for resistance to load-bearing purposes and with components not readily converted for use as weapons. [13, 2025]

3.3.38.4.9 Intermediate-Level Sprinkler/Rack Storage Sprinkler.

A sprinkler equipped with integral shields to protect its operating elements from the discharge of sprinklers installed at higher elevations. [13, 2025]

3.3.38.4.10 Nozzle.

A device for use in applications requiring special water discharge patterns, directional spray, or other unusual discharge characteristics. [13, 2025]

3.3.38.4.11 Old-Style/Conventional Sprinkler.

A sprinkler that directs from 40 percent to 60 percent of the total water initially in a downward direction and that is designed to be installed with the deflector either upright or pendent. [13, 2025]

3.3.38.4.12 Open Sprinkler.

A sprinkler that does not have actuators or heat-responsive elements. [13, 2025]

3.3.38.4.13 Pilot Line Detector.

A standard spray sprinkler or thermostatic fixed-temperature release device used as a detector to pneumatically or hydraulically release the main valve, controlling the flow of water into a fire protection system. [13, 2025]

3.3.38.4.14 Quick-Response Extended Coverage Sprinkler.

A type of quick-response sprinkler that has a thermal element with an RTI of 50 (meter-seconds)^{1/2} or less and complies with the extended protection areas defined in Chapter 11 of NFPA 13 . [13, 2025]

3.3.38.4.15* Quick-Response (QR) Sprinkler.

A type of spray sprinkler that has a thermal element with an RTI of 50 (meter-seconds)^{1/2} or less and is listed as a quick-response sprinkler for its intended use. [13, 2025]

A.3.3.38.4.15 Quick-Response (QR) Sprinkler.

Quick response is a listing for sprinklers that combines the deflector, frame, and body of a spray sprinkler with a fast-response element [see 3.3.221.2(1)(a) of NFPA 13] to create a technology that will respond quickly in the event of a fire and deliver water in the same fashion as other types of spray sprinklers. [13, 2025]

3.3.38.4.16 Residential Sprinkler.

A type of fast-response sprinkler having a thermal element with an RTI of 50 (meters-seconds)^{1/2} or less that has been specifically investigated for its ability to enhance survivability in the room of fire origin and that is listed for use in the protection of dwelling units. [13, 2025]

3.3.38.4.17 Special Sprinkler.

A sprinkler that has been tested and listed as prescribed in Section 15.2 of NFPA 13. [13, 2025]

3.3.38.4.18 Spray Sprinkler.

A type of sprinkler listed for its capability to provide fire control for a wide range of fire hazards. [13, 2025]

3.3.38.4.19 Standard Spray Sprinkler.

A spray sprinkler with maximum coverage areas as specified in Sections 10.2 and 10.3 of NFPA 13. [13, 2025]

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
NFPA_25_Sprinkler_Definitions.docx	Sprinkler Definitions	

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 01:54:59 EDT 2023

Committee Statement

Committee Statement: The current definitions of sprinklers were not a complete list. The new definitions include the full list of sprinkler definitions that are used in NFPA 13 and NFPA 25. Definition of Ornamental and Decorative Sprinklers are not used in the body of the standard and therefore removed.

Response Message: FR-17-NFPA 25-2023

[Public Input No. 42-NFPA 25-2023 \[Section No. 3.3.41.11\]](#)

[Public Input No. 153-NFPA 25-2023 \[Section No. 3.3.41\]](#)



First Revision No. 105-NFPA 25-2023 [New Section after 3.3.42.2]

3.3.39.3 Horizontal Standpipe.

The system piping that delivers the water supply for two or more hose connections, and for sprinklers on combined systems, on a single level. [14, 2024]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 12 11:51:46 EDT 2023

Committee Statement

Committee Statement: Extracts the definition of horizontal standpipe to provide clarity should the proposed flow testing FR for horizontal standpipes be accepted.

Response Message: FR-105-NFPA 25-2023

**First Revision No. 51-NFPA 25-2023 [New Section after 3.3.49]****3.3.48* Vapor Corrosion Inhibitor (VCI).**

A chemical compound (substance) that emits rust-inhibiting vapor to protect ferrous and nonferrous metals against corrosion in air-filled dry pipe or preaction sprinkler systems. [13, 2025]

A.3.3.48 Vapor Corrosion Inhibitor (VCI).

VCIs are also referred to as vapor phase corrosion inhibitors, volatile corrosion inhibitors, and vapor phase inhibitors (VPI). All of these terms relate to a specific class of corrosion inhibitors. The inhibitor forms a thin protective layer through adsorption separating the pipe from the air or water and provides protection against corrosion. Other classifications include passivating (anodic), cathodic, organic, and precipitation inhibitors. VCIs are appropriate for atmospheric or gaseous corrosion. This is corrosion happening in the air-filled portion of the sprinkler system containing water vapor. Corrosion will occur when the relative humidity is greater than 60 percent. VCIs can also provide protection in partially aqueous environments (partially water-filled pipes) and aqueous environments (water-filled pipes). VCIs can inhibit anodic reactions, cathodic reactions, or both. VCIs protecting against both anodic and cathodic reactions provide the best level of protection for applications in sprinkler systems. [13, 2025]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 20:46:23 EDT 2023

Committee Statement

Committee Statement: This is a new term used in NFPA 25 which needs to be defined to alleviate misapplication of the requirements.

Response Message: FR-51-NFPA 25-2023

Public Input No. 166-NFPA 25-2023 [New Section after 3.3.49]



First Revision No. 71-NFPA 25-2023 [Section No. 3.5.4]

~~3.5.4 Pressure Control Valve:~~

~~A pilot-operated pressure-reducing valve designed for the purpose of reducing the downstream water pressure to a specific value under both flowing (residual) and nonflowing (static) conditions. [14, 2019]~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Fri Oct 06 13:01:24 EDT 2023

Committee Statement

Committee Statement: This term is not used in the standard.

Response Message: FR-71-NFPA 25-2023

**First Revision No. 73-NFPA 25-2023 [Section No. 3.5.5]****3.5.5 Pressure-Reducing Valve:**

A valve designed for the purpose of reducing the downstream water pressure under both flowing (residual) and nonflowing (static) conditions. [14, 2019]

3.5.5.1* Master Pressure-Reducing Valve:

A pressure-reducing valve installed to regulate pressures in an entire fire protection system and/or standpipe system zone.

A.3.5.5.1 Master Pressure-Reducing Valve:

Master pressure-reducing valves are typically found downstream of a fire pump's discharge.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Fri Oct 06 13:23:54 EDT 2023

Committee Statement

Committee Statement: Pressure regulating devices were restructured to align with NFPA 14.

Response Message: FR-73-NFPA 25-2023

**First Revision No. 72-NFPA 25-2023 [Section No. 3.5.6]****3.5.4 Pressure-Regulating Device.**

A device designed for the purpose of reducing, regulating, controlling, or restricting water pressure. [14, 2019 2024]

3.5.4.1 Pressure-Reducing Valve.

A valve designed for the purpose of reducing the downstream water pressure under both flowing (residual) and nonflowing (static) conditions. [14, 2024]

3.5.4.1.1* Master Pressure-Reducing Valve.

A pilot-operated valve installed to regulate pressures in multiple fire protection systems or zones or in an entire water-based fire protection system.

A.3.5.4.1.1 Master Pressure-Reducing Valve.

Master pressure-reducing valves are typically found downstream of a fire pump's discharge supplying multiple zones or an entire fire protection system. A pressure-reducing valve supplying multiple hose valves on a single floor should not be considered a master pressure-reducing valve.

3.5.4.2 Pressure-Restricting Device.

A valve or device designed for the purpose of reducing the downstream water pressure under flowing (residual) conditions only. [14, 2024]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Fri Oct 06 13:09:59 EDT 2023

Committee Statement

Committee Statement: Pressure regulating devices were restructured to align with NFPA 14. Additional annex language was provided to explain the purpose of a master pressure reducing valve.

Response Message: FR-72-NFPA 25-2023

Public Input No. 110-NFPA 25-2023 [Section No. 3.5.5.1]



First Revision No. 108-NFPA 25-2023 [New Section after 3.5.7]

3.5.6 Suction Pressure Regulating Valve.

A pilot-operated valve installed in discharge piping that maintains positive pressure in the suction piping, while monitoring pressure in the suction piping through a sensing line. [20, 2025]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 12 13:17:24 EDT 2023

Committee Statement

Committee Statement: A definition of “suction pressure regulating valve” was added as a sub definition to “pressure-regulating devices.” Suction pressure regulating valves should be inspected, tested, and maintained as a pressure-regulating devices and this definition is needed to apply within the standard.

Response Message: FR-108-NFPA 25-2023



First Revision No. 75-NFPA 25-2023 [New Section after 3.5.7.1]

3.5.5.2 Main Pressure Relief Valve.

A valve designed to relieve excess pressure that serves an entire fire protection system.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Fri Oct 06 13:39:17 EDT 2023

Committee Statement

Committee Statement: Added a definition for a term used in the standard.

Response Message: FR-75-NFPA 25-2023



First Revision No. 74-NFPA 25-2023 [Section No. 3.5.8]

3.5.7 Pressure-Restricting Device:

~~A valve or device designed for the purpose of reducing the downstream water pressure under flowing (residual) conditions only. [14, -2019]~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Fri Oct 06 13:26:45 EDT 2023

Committee Statement

Committee Statement: Pressure regulating devices were restructured to align with NFPA 14.

Response Message: FR-74-NFPA 25-2023



First Revision No. 9-NFPA 25-2023 [New Section after 3.6.4.6]

3.3.43 System Riser.

The aboveground horizontal or vertical pipe between the water supply and the mains (cross or feed) that contains a control valve (either directly or within its supply pipe), a pressure gauge, a drain, and a waterflow alarm device. [13, 2025]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 16:23:46 EDT 2023

Committee Statement

Committee Statement: Extract definition from NFPA 13 -3.3.225. This term is used in NFPA 25 and needs to be defined. Adds clarity to the requirements of NFPA 25 where they reference a system riser.

Response Message: FR-9-NFPA 25-2023

Public Input No. 137-NFPA 25-2023 [New Section after 3.6.4.3]



First Revision No. 10-NFPA 25-2023 [Section No. 4.1.2 [Excluding any Sub-Sections]]

The property owner or designated representative shall ensure that water-filled piping that is subject to freezing is maintained at a minimum temperature of 40°F (4°C) unless an antifreeze solution complying with Chapter 5 is ~~utilized~~ used .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 16:34:00 EDT 2023

Committee Statement

Committee Statement: Freeze Protection is only needed when the water-filled piping is subject to freezing and areas cannot be maintained at or above 40°F (4°C). There are locations that can drop below 40°F (4°C) but the water-filled pipe is not subject to freezing.

Response Message: FR-10-NFPA 25-2023

[Public Input No. 43-NFPA 25-2023 \[Section No. 4.1.2 \[Excluding any Sub-Sections\]\]](#)

[Public Input No. 44-NFPA 25-2023 \[Section No. 4.1.2.1\]](#)



First Revision No. 52-NFPA 25-2023 [Section No. 4.1.4.3]

4.1.5* Dry Pipe and Preaction Systems Using Increased C Values.

4.1.5.1

~~Where a nitrogen supply is used as part of the dry pipe or preaction system design in accordance with NFPA 13, it shall be maintained, repaired, or replaced with a nitrogen supply capable of maintaining design concentrations.~~ Where one of the following technologies permitted by NFPA 13 is used in the design of a dry pipe or preaction system to use a C value of 120, the approved corrosion mitigation system shall be inspected, tested, and maintained in accordance with NFPA 25 and the manufacturer's instructions:

- (1)* Nitrogen generator
- (2) Vapor corrosion inhibitor
- (3) Negative pressure system
- (4) Other approved technologies

4.1.5.2

Where the corrosion mitigation system is not replaced in accordance with NFPA 13 to maintain the increased C value, the dry pipe or preaction system shall be hydraulically calculated and modified, as necessary, to demonstrate the system can achieve the required hydraulic design criteria using the lower C value.

4.1.5.3

Where the corrosion mitigation system used in 4.1.5.1 is found to be deficient or impaired and the requirements of 4.1.5.2 are not met, the system shall be repaired or replaced with a corrosion mitigation system permitted by NFPA 13 allowing for the use of a C value of 120.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
Systems_Permitted_to_use_C_Value_120.docx	C-Value of 120	

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 23:36:22 EDT 2023

Committee Statement

Committee Statement: Requirements were added to address new technologies available for corrosion mitigation that permit an increased C Value in the hydraulic calculations. Additional guidance is provided to address repair and replacement of deficient corrosion mitigation devices.

Response Message: FR-52-NFPA 25-2023

Public Input No. 165-NFPA 25-2023 [New Section after 4.1.4]

Public Input No. 15-NFPA 25-2022 [Section No. 4.1.4.3]

[Public Input No. 118-NFPA 25-2023 \[Section No. 4.1.4.3\]](#)



First Revision No. 11-NFPA 25-2023 [Section No. 4.1.9.1]

4.1.10.1

A permanently marked metal or rigid plastic information sign shall be placed at ~~each system riser~~ the first control valve after the water supply main enters the protected structure or at an approved location .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 19:29:17 EDT 2023

Committee Statement

Committee Statement: The revised language clarifies that a sign is not needed in multiple locations throughout a structure. A single sign is needed either at the first control valve or another location within the structure where the information is easily accessible.

Response Message: FR-11-NFPA 25-2023

[Public Input No. 119-NFPA 25-2023 \[Section No. 4.1.9\]](#)



First Revision No. 16-NFPA 25-2023 [Section No. 4.1.10]

4.1.11 Antifreeze Information Sign.

~~An antifreeze information sign for listed solutions shall be placed on the antifreeze system main valve indicating the manufacture type and brand of the antifreeze solution, the minimum use temperature of the antifreeze solution used, and the volume of the antifreeze solution used in the system.~~

4.1.11.1*

An antifreeze information sign shall be placed on the antifreeze system control valve indicating the manufacture type and brand of the antifreeze solution, the concentration by volume of the antifreeze solution used, and the volume of the antifreeze solution used in the system.

A.4.1.11.1

Systems installed in accordance with the 2007 ~~edition~~ and subsequent editions of NFPA 13 are required by NFPA 13 to have an antifreeze system placard. It is not the intent of the technical committee for a system to have both the antifreeze sign required by this standard and the antifreeze placard required by NFPA 13. The antifreeze sign required by this standard is intended to be provided for systems installed prior to the 2007 edition of NFPA 13.

4.1.11.2

An antifreeze information sign for listed solutions shall be placed on the antifreeze system main valve indicating the manufacture type and brand of the antifreeze solution, the minimum use temperature of the antifreeze solution used, and the volume of the antifreeze solution used in the system.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 20:58:51 EDT 2023

Committee Statement

Committee Statement: With the existence of both premixed solutions and listed solutions, different sign requirements are needed providing the different information for testing the solution.

Response Message: FR-16-NFPA 25-2023

Public Input No. 26-NFPA 25-2023 [Section No. 4.1.10]



First Revision No. 33-NFPA 25-2023 [New Section after 4.1.11.2]

4.1.13 Inactive Water-Based Fire Protection System Components.

4.1.13.1

Where all or part of an inactive water-based fire protection system is abandoned in place, components including sprinklers, hose valves and hoses, and alarm devices shall be removed. [13: 30.2.2]

4.1.13.2

Control valves abandoned in place shall have the operating mechanisms removed. [13: 30.2.3]

4.1.13.3

System piping and/or valves abandoned in place shall be uniquely identified to differentiate them from active system piping and valves. [13: 30.2.4]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 16:27:17 EDT 2023

Committee Statement

Committee Statement: This new language provides needed guidance so inspectors don't confuse these abandoned components with ones they should be inspecting. Marking abandoned piping will hopefully eliminate mistakes when modifying a system. This new language applies to all systems and is preferred in Chapter 4.

Response Message: FR-33-NFPA 25-2023

Public Input No. 154-NFPA 25-2023 [New Section after 5.4.4]



First Revision No. 12-NFPA 25-2023 [New Section after 4.3.5]

4.3.6

All records shall be maintained in a documentation cabinet, where required.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 20:19:11 EDT 2023

Committee Statement

Committee Statement: Provides a location to store required systems record(s) in a single location. Often it is difficult for inspectors to locate past documentation as a basis of comparison for current tests. Having this information available in a single cabinet would make it easier for inspectors.

Response Message: FR-12-NFPA 25-2023

Public Input No. 136-NFPA 25-2023 [New Section after 4.3.5]

**First Revision No. 15-NFPA 25-2023 [Section No. 4.6.6]****4.7* Automated Inspection and Testing.****A.4.7**

Some devices, such as waterflow alarm devices, can be tested automatically. Some things to consider include the following:

- (1) Not all tests required by ~~NFPA-25~~ this standard are suitable for automatic testing.
- (2) Periodic visual inspection, including the use of video, should be performed.

4.7.1

Automated inspection and testing procedures performed in accordance with ~~the requirements in~~ this standard shall be permitted to be used.

4.7.2*

Automated inspection equipment that meets the intent of a required visual inspection shall be permitted to replace the visual inspection.

A.4.7.2

Transducers, temperature sensors, automatic and remotely operated valves, including motorized valves, and solenoids are examples of ~~some of the~~ equipment that could be used in an automated inspection. The list of items above is a partial list and should not be considered an exclusive list of equipment and methodologies.

4.7.3

Automated testing equipment shall produce the same action required by this standard to test a device.

4.7.4

The testing shall discharge water where required in this standard.

4.7.4.1

Automated testing equipment that does not discharge water for a test shall be permitted except as required in 4.7.4.2.

4.7.4.2*

The discharge shall be visually observed at a minimum frequency of once every 3 years.

4.7.5

Where required in this standard, personnel shall observe the testing and intervene in the testing procedures when necessary to prevent injury or property damage.

4.7.6

Automated test devices and equipment shall be listed for the purpose of the test being conducted.

4.7.7*

Devices and equipment ~~utilized~~ used to perform automated inspection and testing procedures that are not subjected to system pressure or are not integral to the operation of the system during a fire event shall not be required to be listed.

4.7.8

Failure of the testing equipment shall not impair the operation of the system unless indicated by a supervisory signal in accordance with *NFPA 72*.

4.7.9

Failure of a component or system to pass an automated test shall result in an audible and visual supervisory signal in accordance with *NFPA 72* or other approved fire alarm code.

4.7.10

Failure of automated inspection and testing equipment shall result in a trouble signal in accordance with *NFPA 72*.

4.7.11

Failure of a component or system that impairs the system shall require ~~that~~ impairment procedures to be followed.

4.7.12

The testing frequencies of this standard shall be maintained regardless of the functionality of the automated testing equipment.

4.7.13

A record of all inspections and testing shall be maintained in accordance with 4.3.2.

4.7.14

The results of automated inspections and testing shall be analyzed by qualified personnel.

4.8 Remote Inspections and Tests.

Remote inspections and tests shall be permitted in accordance with *NFPA 915*.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 20:47:18 EDT 2023

Committee Statement

Committee Statement: 4.6.6 was renumbered to new 4.7. A new section was added to address remote inspection and tests in accordance with NFPA 915, Standard for Remote Inspections and Tests.

Response Message: FR-15-NFPA 25-2023

Public Input No. 199-NFPA 25-2023 [New Section after 4.6.6]



First Revision No. 20-NFPA 25-2023 [Section No. 5.1.1.2]

5.1.1.2

Table 5.1.1.2 shall be used to determine the minimum required frequencies for inspection, testing, and maintenance.

Table 5.1.1.2 Summary of Sprinkler System Inspection, Testing, and Maintenance

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
Inspection		
Assessment of the internal piping condition	—	Chapter 14
Automatic air vents	~~Annually~~ —	Chapter 13
Control valves	—	Chapter 13
Electrically operated sprinklers	Annually	5.2.1.5
Fire department connections	—	Chapter 13
Gauges (wet and deluge systems)	—	Chapter 13
Gauges (dry and preaction systems)	—	Chapter 13
Hangers/braces/supports	Annually	5.2.3
Heat tracing	—	5.2.6
Hydraulic design information sign	Annually	5.2.5
Information signs	Annually	5.2.7, 5.2.8, and 5.2.9
Pipe and fittings	Annually	5.2.2
Sprinklers	Annually	5.2.1
Sprinklers (spare)	Annually	5.2.1.4
Sprinkler guards	Annually	5.2.1.1.7
Supervisory signal devices (except valve supervisory switches)	—	5.2.4 and Chapter 13
System valves	—	Chapter 13
Valve supervisory signal devices	—	5.2.4 and Chapter 13
Waterflow alarm devices	—	5.2.4 and Chapter 13
Test		
Antifreeze solution	Annually	5.3.4
Control valves	—	Chapter 13
Electrically operated sprinklers	—	5.3.2
Gauges	—	Chapter 13
Main drain	—	Chapter 13
Sprinklers (all)	At 50 years and every 10 years thereafter	5.3.1
Sprinklers (all)	At 75 years and every 5 years thereafter	5.3.1
Sprinklers (dry)	At 20 years and every 10 years thereafter	5.3.1
Sprinklers (extra-high or greater temperature solder type)	Every 5 years	5.3.1
Sprinklers (fast-response, except ESFR and CMSA)	At 25 years and every 10 years thereafter	5.3.1
Sprinklers (ESFR and CMSA with fast-response elements)	At 20 years and every 10 years thereafter	5.3.1

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
Sprinklers (harsh environments)	Every 5 years	5.3.1
Supervisory signal devices (except valve supervisory switches)	—	Chapter 13
System valves	—	Chapter 13
Valve supervisory signal devices	—	Chapter 13
Waterflow alarm devices	—	5.3.3 and Chapter 13
Maintenance		
Low-point drains (dry pipe and preaction systems)	—	Chapter 13
Sprinklers and automatic spray nozzles protecting commercial cooking equipment and ventilation systems	Annually	5.4.1.8
Replacement of sprinklers manufactured prior to 1920	—	5.4.1.1
Replacement of sprinklers showing signs <u>described</u> in 5.2.1.1.1	—	5.4.1.1
Replacement of sprinklers with unsatisfactory performance	—	5.4.1.1
Replacement of sprinklers affected by a fire	—	5.4.1.1
Replacement of threaded sprinklers removed from fitting for any reason (except dry type)	—	5.4.1.2
Replacement of damaged sprinkler guards	—	5.2.1.1.7.2
Valves (all types)	—	Chapter 13
Investigation		
Obstruction	—	Chapter 14

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 12:19:39 EDT 2023

Committee Statement

Committee Statement: Primarily editorial in nature and consistent with the other chapter 13 references.

Response Message: FR-20-NFPA 25-2023

Public Input No. 47-NFPA 25-2023 [Section No. 5.1.1.2]

**First Revision No. 21-NFPA 25-2023 [Section No. 5.2.1.1.5]****5.2.1.1.5**

Escutcheons and coverplates for recessed, flush, and concealed sprinklers that are missing or that show signs of any of the following shall be replaced with their listed ~~escutcheon or coverplate~~ if found missing during the inspection escutcheons or coverplates:

- (1) Physical damage
- (2) Corrosion detrimental to sprinkler performance
- (3) Loading detrimental to sprinkler performance
- (4) Paint, other than that applied by the sprinkler manufacturer, detrimental to sprinkler performance

5.2.1.1.5.1

Where the listed escutcheon or coverplate from a listed assembly is ~~missing~~ required to be replaced in accordance with 5.2.1.1.5 and is no longer commercially available, the sprinkler shall be replaced.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 12:22:01 EDT 2023

Committee Statement

Committee Statement: Modifications to this section align with section 5.2.1.1.1. It is necessary to inspect the escutcheon and coverplates for listed assemblies.

Response Message: FR-21-NFPA 25-2023

Public Input No. 133-NFPA 25-2023 [Section No. 5.2.1.1.5 [Excluding any Sub-Sections]]

**First Revision No. 22-NFPA 25-2023 [Section No. 5.2.1.1.6]****5.2.1.1.6***

Escutcheons for pendent sprinklers that are not recessed, flush, or concealed shall not be required to be replaced if found missing during the inspection.

A.5.2.1.1.6

Flat and adjustable escutcheons, also known as beauty rings, trim plates, or extension skirts that are aesthetic for nonrecessed or nonconcealed sprinklers and do not affect the response or spray pattern, are not required to be listed.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 12:29:26 EDT 2023

Committee Statement

Committee Statement: The additional annex information helps to clarify the reason as to why these types of escutcheons are not required to be replaced.

Response Message: FR-22-NFPA 25-2023

Public Input No. 48-NFPA 25-2023 [New Section after A.5.2.1.1.3]

**First Revision No. 23-NFPA 25-2023 [Section No. 5.2.8]****5.2.8* General Information Sign.**

The general information sign required by NFPA 13 shall be inspected annually to verify that it is provided, securely attached, and legible.

5.2.8.1

Such general information shall be provided with a permanently marked weatherproof metal or rigid plastic sign, secured with corrosion-resistant wire, chain, or other acceptable means. [13: 29.6.1.1]

5.2.8.2

Such signs shall be placed at each system riser. [13: 29.6.1.2]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 12:54:58 EDT 2023

Committee Statement

Committee Statement: Added text clarifies where the general information sign is to be installed and to identify how it should be mounted.

Response Message: FR-23-NFPA 25-2023

Public Input No. 134-NFPA 25-2023 [New Section after 5.2.8]



First Revision No. 25-NFPA 25-2023 [New Section after 5.3.1.1.5]

5.3.1.1.1.6

Concealed sprinklers that fail sample testing shall have coverplates and sprinklers replaced as a listed assembly.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 13:35:40 EDT 2023

Committee Statement

Committee Statement: Any sprinkler that is required to be replaced must be replaced as a listed assembly.

Response Message: FR-25-NFPA 25-2023

Public Input No. 132-NFPA 25-2023 [New Section after 5.3.1.1.5]



First Revision No. 26-NFPA 25-2023 [Section No. 5.3.4 [Excluding any Sub-Sections]]

Annually, toward the beginning of the heating season prior to the onset of freezing conditions, the antifreeze solution shall be tested using the following procedure:

- (1) The antifreeze information sign required by 4.1.11, installation records, maintenance records, information from the owner, chemical tests, or other reliable sources of information shall be used to determine the type of antifreeze in the system and whether ~~implementing to implement~~ 5.3.4(1)(a) or 5.3.4(1)(b) ~~is necessary~~ :
 - (a) If the antifreeze is a type that is no longer permitted; ~~or the type of antifreeze cannot be reliably determined,~~ the system shall be drained ~~completely~~ and refilled with a listed solution ~~or an acceptable solution~~ in accordance with 5.3.4.4.1 ~~or an acceptable solution in accordance with 5.3.4.4.3~~ .
 - (b) ~~If the type of antifreeze cannot be reliably determined, the system shall be drained completely and refilled with a listed solution or an acceptable solution in accordance with 5.3.4.4~~ : If the antifreeze is not replaced in accordance with 5.3.4(1)(a) ~~or 5.3.4(1)(b)~~ , test samples shall be taken at the top and the bottom of each system as follows:
 - i. If the most remote portion of the system is not near the top or the bottom of the system, an additional sample shall be taken at the most remote portion.
 - ii. If the connection to the water supply piping is not near the top or the bottom of the system, an additional sample shall be taken at the connection to the water supply.

~~If the antifreeze is not replaced in accordance with 5.3.4(1)(a) or 5.3.4(1)(b) , test samples shall be taken at the top and the bottom of each system as follows:~~

~~If the most remote portion of the system is not near the top or the bottom of the system, an additional sample shall be taken at the most remote portion.~~

~~If the connection to the water supply piping is not near the top or the bottom of the system, an additional sample shall be taken at the connection to the water supply.~~

- (2) The specific gravity of each solution shall be checked using a hydrometer with a suitable scale or a refractometer having a scale calibrated for the antifreeze solution.
- (3) If any of the samples exhibit values outside of the allowable range, the system shall be drained ~~completely~~ and refilled with a listed solution or an acceptable solution in accordance with 5.3.4.4.
- (4) If a concentration greater than that permitted by 5.3.4.4 was necessary to keep the fluid from freezing, alternative methods for preventing the pipe from freezing shall be employed.

Supplemental Information

File Name	Description	Approved
25_2023_5_3_4_PI_143_TG2.docx	Revised Text	

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 14:09:39 EDT 2023

Committee Statement

Committee Statement: It is unreasonable and nearly impossible to drain every drop of solution from an existing system. Parens (A) and (B) were condensed for clarity and more specific references were provided noting the requirements for listed antifreeze or approved solutions for ESFR systems.

Response Message: FR-26-NFPA 25-2023

[Public Input No. 143-NFPA 25-2023 \[Section No. 5.3.4\]](#)

**First Revision No. 54-NFPA 25-2023 [Section No. 5.3.4.2.1]****5.3.4.2.1**

If the results indicate an incorrect freeze point anywhere in the system, the system shall be drained ~~completely~~ and refilled with a listed solution ~~or an acceptable solution~~ in accordance with 5.3.4.4.1 or an acceptable solution in accordance with 5.3.4.4.3.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 01:15:50 EDT 2023

Committee Statement

Committee Statement: It is unreasonable and nearly impossible to drain every drop of solution from an existing system.

Response Message: FR-54-NFPA 25-2023

**First Revision No. 27-NFPA 25-2023 [Section No. 5.3.4.4.1]****5.3.4.4.1***

Where acceptable to the AHJ, ~~listed antifreeze solutions~~ used to replace nonlisted antifreeze solutions, ~~listed antifreeze solutions~~ shall be permitted to be used outside their listing limitations system volume and hydraulic calculations requirements, ~~provided if~~ the temperature range limitations are not exceeded.

5.3.4.4.1.1

The listed antifreeze shall comply with all other requirements.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 14:33:48 EDT 2023

Committee Statement

Committee Statement: This language more specifically identifies the installation requirements for how an antifreeze solution can be used outside of their listing requirements. This will accommodate a transition to listed solutions. The viscosity of listed solutions may be similar to legacy antifreeze mixtures. Where the viscosity is significantly different text has been added to allow the AHJ to disapprove the replacement solution.

Response Message: FR-27-NFPA 25-2023

Public Input No. 144-NFPA 25-2023 [Section No. 5.3.4.4.1]

**First Revision No. 28-NFPA 25-2023 [Section No. 5.3.4.4.2]****5.3.4.4.2***

An existing nonlisted antifreeze solution that tests with its specified concentration shall be permitted to remain in a an existing system, provided if the concentration of the factory premixed antifreeze solution is limited to 30 percent propylene glycol by volume or 38 percent glycerine by volume.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 14:50:58 EDT 2023

Committee Statement

Committee Statement: This language helps clarify the allowances for some legacy antifreeze to remain in service.

Response Message: FR-28-NFPA 25-2023

Public Input No. 145-NFPA 25-2023 [Section No. 5.3.4.4.2]



First Revision No. 29-NFPA 25-2023 [Section No. 5.3.4.4.3]

5.3.4.4.3

~~Premixed~~ ~~Nonlisted~~ premixed antifreeze solutions of propylene glycol exceeding 30 percent concentration by volume shall be permitted for use with ESFR sprinklers, ~~provided if~~ provided if the ESFR sprinklers are listed for such use in a specific application.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 14:55:09 EDT 2023

Committee Statement

Committee Statement: Editorial correction to use a defined term.

Response Message: FR-29-NFPA 25-2023

Public Input No. 146-NFPA 25-2023 [Section No. 5.3.4.4.3]

**First Revision No. 30-NFPA 25-2023 [Section No. 5.4.1.3.2]****5.4.1.3.2***

Where replacing residential sprinklers manufactured prior to 2003 that are no longer available from the manufacturer and are installed using a design density less than 0.05 gpm/ft² (204 mm/min), a residential sprinkler with an equivalent K-factor (± 5 percent or the next larger K-factor) shall be permitted to be used ~~provided~~ if the currently listed coverage area for the replacement sprinkler is not exceeded.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 14:57:00 EDT 2023

Committee Statement

Committee Statement: There are some existing K-Factor sprinklers for which a replacement cannot be procured. A sprinkler with a slightly larger K-Factor will allow the space to be protected with a slightly larger flow when a sprinkler first activates.

Response Message: FR-30-NFPA 25-2023

[Public Input No. 104-NFPA 25-2023 \[New Section after 5.4.1.3.2\]](#)

**First Revision No. 31-NFPA 25-2023 [Section No. 5.4.1.6.5]****5.4.1.6.5***

One sprinkler wrench as specified by the sprinkler manufacturer shall be provided ~~in the cabinet and maintained on the premises with the spare sprinklers~~ for each type of sprinkler installed ~~to be used for the removal and installation of sprinklers in the system~~.

A.5.4.1.6.5

One sprinkler wrench design can be appropriate for many types of sprinklers, and multiple wrenches of the same design should not be required. Unless sprinklers are being removed for testing, the sprinkler wrench should not be required for the removal of sprinklers, but could be beneficial for the removal of concealed or other special sprinklers.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 15:06:34 EDT 2023

Committee Statement

Committee Statement: Aligns with the requirement to have spare sprinkler provided on the premises.
Sprinklers that are being removed will not be reused, it is not necessary to require an approved wrench from the manufacturer to facilitate the removal of the sprinkler.

Response Message: FR-31-NFPA 25-2023

[Public Input No. 113-NFPA 25-2023 \[Section No. 5.4.1.6.5\]](#)

[Public Input No. 114-NFPA 25-2023 \[New Section after 5.4.1.6.4\]](#)



First Revision No. 56-NFPA 25-2023 [Section No. 5.4.1.6.6.1]

5.4.1.6.6.1*

The list shall include the following:

- (1) Sprinkler identification number (SIN), if equipped, ~~or the manufacturer, model, orifice K-factor, deflector type, thermal sensitivity, and pressure rating, and temperature rating~~
- (2) Manufacturer's sprinkler wrench model number for each sprinkler type
- (3) General description
- (4) Quantity of each type of sprinkler installed in the property
- (5) Quantity of each type of sprinkler to be contained in the cabinet
- (6) Issue or revision date of the list

[~~13: 16.2.7.7.1~~]

A.5.4.1.6.6.1

The minimum information in the list contained in the spare sprinkler cabinet should be marked with the following: ~~sprinkler identification described in 5.4.1.6.6.1 ; a general description of the sprinkler, including upright, pendent, residential, ESFR, and so forth; the quantity of each type of sprinkler installed in the property; the quantity of sprinklers that is to be maintained in the spare sprinkler cabinet; and a sprinkler wrench type.~~

~~General description of the sprinkler, including upright, pendent, residential, ESFR, and so forth~~

~~Quantity of sprinklers to be maintained in the spare sprinkler cabinet~~

An example of the list is shown in Figure A.5.4.1.6.6.1. [~~13: A.16.2.7.7.1~~]

Figure A.5.4.1.6.6.1 Sample List. [13:Figure A.16.2.7.7.1]

Sprinklers Contained in this Cabinet			
Sprinkler Identification, SIN	General Description	Temperature Rating, °F	Sprinkler Quantity Maintained
TY9128	Extended Coverage, K-25, upright	165	6
VK494	Residential concealed pendent	155	6
Issued: 8/31/19 Revised:			

Sprinklers Contained in this Cabinet					
Sprinkler Identification, SIN	General Description	Temperature Rating, °F	Sprinkler Quantity Maintained	Sprinkler Wrench Type	Sprinkler Quantity in the Property
TY9128	Extended coverage, K-25, upright	165	6	W-Type 1 sprinkler wrench	20
VK494	Residential concealed pendent	155	6	Standard sprinkler wrench 21475MB	20

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 01:44:38 EDT 2023

Committee Statement

Committee Statement: This aligns the spare sprinkler list with the requirements in NFPA 13 and NFPA 13R for the next editions.

Response Message: FR-56-NFPA 25-2023

[Public Input No. 155-NFPA 25-2023 \[Section No. 5.4.1.6.6.1\]](#)

[Public Input No. 139-NFPA 25-2023 \[Section No. 5.4.1.6.6.1\]](#)

[Public Input No. 157-NFPA 25-2023 \[Section No. A.5.4.1.6.6.1\]](#)

[Public Input No. 158-NFPA 25-2023 \[Section No. A.5.4.1.6.6.1\]](#)

**First Revision No. 32-NFPA 25-2023 [Section No. 5.4.2.2]****5.4.2.2**

Refrigerated spaces or other areas within the building interior ~~where temperatures are maintained at or below 40°F (4°C)~~ that are subject to freezing, shall not be permitted to be left wet.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 16:25:24 EDT 2023

Committee Statement

Committee Statement: NFPA 13 allows for piping to be below 40 degrees in refrigerated spaces if it is not subject to freezing. Coolers may be maintained between 33-40 degrees and it may not be considered a deficiency or an impairment in these areas.

Response Message: FR-32-NFPA 25-2023

[Public Input No. 58-NFPA 25-2023 \[Section No. 5.4.2.2\]](#)



First Revision No. 78-NFPA 25-2023 [Section No. 6.1.1.2]

6.1.1.2

Table 6.1.1.2 shall be used to determine the minimum required frequencies for inspection, testing, and maintenance.

Table 6.1.1.2 Summary of Standpipe and Hose Systems Inspection, Testing, and Maintenance

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
Inspection		
Cabinet	Annually	6.2.8
Control valves	—	Chapter 13
Gauges	—	Chapter 13
Hose	Annually	6.2.5
~~Hose connection~~	~~Annually~~	~~6.2.3~~
Hose nozzle	Annually and after each use	6.2.6
Hose storage device	Annually	6.2.7
Hydraulic design information sign	Annually	6.2.2

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
Hose valves <u>and hose connections</u>	—	Chapter 13
Piping	Annually	6.2.4
Pressure-regulating devices	—	Chapter 13
Supervisory devices (except valve supervisory devices)	—	Chapter 13
Valve supervisory devices	—	Chapter 13
Test		
Control valves	—	Chapter 13
System valves	—	Chapter 13
Flow test	5 years	6.3.1
Hose	—	NFPA ~~1962~~ <u>1930</u>
Hose connection ~~pressure-regulating~~ <u>pressure-regulating</u> devices	—	Chapter 13
Hose valves	—	Chapter 13
Hydrostatic test (manual and semiautomatic dry standpipes)	5 years	6.3.2
Main drain test	—	Chapter 13
~~Pressure control valve~~	~~—~~	~~Chapter 13~~
Pressure-reducing valve	—	Chapter 13
<u>Master pressure-reducing valve</u>	<u>—</u>	<u>Chapter 13</u>
Supervisory signal devices (except valve supervisory switches)	—	Chapter 13
Valve status test	—	Chapter 13
Valve supervisory devices	—	Chapter 13
Waterflow alarm devices	—	Chapter 13
Maintenance		
Hose valves	—	Chapter 13
Pressure gauges	—	Chapter 13
Valves (all types)	Annually/as needed	Chapter 13

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25-2023_6_1_1_2_PI_111_TG3.docx	Table 6.1.1.2 Revisions	

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Mon Oct 09 15:11:40 EDT 2023

Committee Statement

Committee Statement: This establishes requirements in Table 6.1.1.2 that correlate with the requirements in Chapter 13.

Response Message: FR-78-NFPA 25-2023

[Public Input No. 111-NFPA 25-2023 \[Section No. 6.1.1.2\]](#)

**First Revision No. 35-NFPA 25-2023 [Section No. 6.2.3.1]****6.2.3.1**

~~Hose connections shall be inspected annually for the following conditions:~~

- ~~Valve cap(s) missing or damaged~~
- ~~Fire hose connection damaged~~
- ~~Valve handles missing or damaged~~
- ~~Cap gaskets missing or deteriorated~~
- ~~Valve leaking~~
- ~~Visible and physical obstructions to hose connections~~
- ~~Pressure restricting device missing~~
- ~~Manual, semiautomatic, or dry standpipe valve does not operate smoothly~~
- ~~Valve threads damaged~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 16:51:03 EDT 2023

Committee Statement

Committee Statement: Delete section 6.2.3.1 since this section is redundant. Hose valves and their connections are covered in Chapter 13, 13.6. Modifying 13.6.1.8 is a clarification to indicate “where required” since not all hose valves utilize restricting devices. Add annex language to clarify the removal of restricting devices based on installation and fire code requirements.

Annual inspection of hose valves and hose connections is more appropriate annually rather than quarterly due to the secondary function of standpipes and there is no evidence that quarterly inspection is needed.

Response Message: FR-35-NFPA 25-2023

[Public Input No. 100-NFPA 25-2023 \[Section No. 6.2.3.1\]](#)

[Public Input No. 60-NFPA 25-2023 \[Section No. 6.2.3.1\]](#)

**First Revision No. 92-NFPA 25-2023 [Section No. 6.2.5.1]****6.2.5.1**

Hose shall be inspected annually for the following conditions as required by ~~NFPA 1962~~ [NFPA 1930](#) :

- (1) Mildew, cuts, abrasions, and deterioration
- (2) Couplings hose threads damaged
- (3) Gaskets missing or deteriorated
- (4) Incompatible threads on coupling
- (5) Hose not connected to hose rack nipple or valve
- (6) Hose test outdated

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 23:38:06 EDT 2023

Committee Statement

Committee Statement: Reference update.

Response Message: FR-92-NFPA 25-2023

**First Revision No. 103-NFPA 25-2023 [Section No. 6.3.1.2]****6.3.1.2***

Class I and Class III standpipe system demand shall include 500 gpm (1892 L/min) for the most remote standpipe and 250 gpm (946 L/min) for each additional standpipe until the total system demand is simultaneously flowing.

6.3.1.2.1

Where a horizontal standpipe on a Class I or Class III system is present and supplies three or more hose connections, system demand shall include 750 gpm (2840 L/min) for the most remote standpipe and 250 gpm (946 L/min) for each additional standpipe until the total system demand is simultaneously flowing.

6.3.1.2.2*

The 250 gpm (946 L/min) required from each additional Class I and Class III standpipe shall be allowed to be flowed from the most convenient hose valve on that standpipe.

6.3.1.2.3*

Where the 250 gpm (946 L/min) cannot be flowed from each additional Class I and Class III standpipe, the authority having jurisdiction shall determine where the additional flow can be taken.

A.6.3.1.2.3

In some instances, it isn't reasonable to attach a hose to a standpipe to provide this additional flow point. The authority having jurisdiction can allow the additional flow to be made at other outlets on the standpipe system, such as from another standpipe, or from the fire pump test header. Although the results of having the flow points somewhere else in the standpipe system won't match the hydraulic calculations, the test will still prove that the most remote standpipe can provide the necessary flow and pressure required for fire department use while simultaneously flowing the full system demand.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 12 11:39:25 EDT 2023

Committee Statement

Committee Statement: The new section addresses horizontal standpipes which have different design criteria than a typical vertical standpipe.

Response Message: FR-103-NFPA 25-2023



First Revision No. 112-NFPA 25-2023 [Section No. 6.5.1]

6.5.1

Whenever components in standpipe and hose systems are adjusted, repaired, reconditioned, or replaced, the actions required in Table 6.5.1 shall be performed.

Table 6.5.1 Summary of Component Action Requirements

<u>Component</u>	<u>Adjust</u>	<u>Repair</u>	<u>Replace</u>	<u>Required Action</u>
Water Delivery Components				
Backflow prevention device	X	X	X	See Chapter 13
Control valves	X	X	X	See Chapter 13
Fire department connections	X	X	X	See Chapter 13
Fire hose			X	No action required
Fire hose		X		Perform hydrostatic test in accordance with <u>NFPA 1962</u> <u>NFPA 1930</u>
Hose valve	X	X	X	See Chapter 13
Hose valve pressure-regulating devices	X	X	X	See Chapter 13
Piping	X	X	X	Hydrostatic test in conformance with NFPA 14
System pressure-regulating devices	X	X	X	See Chapter 13
Alarm and Supervisory Components				
Pressure switch–type waterflow	X	X	X	Operational test using inspector's test connection
Valve supervisory device	X	X	X	Operational test for receipt of alarms and verification of conformance with NFPA 14 and/or <i>NFPA 72</i>
Vane-type waterflow	X	X	X	Operational test using inspector's test connection
Water motor gong	X	X	X	Operational test using inspector's test connection
Status-Indicating Components				
Gauges	X		X	Verify at 0 psi (0 bar) and system working pressure
System Housing and Protection Components				
Cabinet	X	X	X	Verify conformance with NFPA 14
Hose storage rack	X	X	X	Verify conformance with NFPA 14
Testing and Maintenance Components				
Auxiliary drains	X	X	X	Inspect for leaks at system working pressure
Drain riser	X	X	X	Inspect for leaks while flowing from connection above the repair
Main drain	X	X	X	Inspect for leaks and residual pressure during main drain test

<u>Component</u>	<u>Adjust</u>	<u>Repair</u>	<u>Replace</u>	<u>Required Action</u>
Structural Components				
Hanger/seismic bracing	X	X	X	Verify conformance with NFPA 14
Pipe stands	X	X	X	Verify conformance with NFPA 14
Informational Components				
Hydraulic design information sign	X	X	X	Verify conformance with NFPA 14
Identification signs	X	X	X	Verify conformance with NFPA 14

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Fri Nov 10 14:44:17 EST 2023

Committee Statement

Committee Statement: Updated cross-reference.

Response Message: FR-112-NFPA 25-2023



First Revision No. 95-NFPA 25-2023 [Section No. 7.1.4]

7.1.4 Fire Hose.

Fire hose shall be maintained in accordance with ~~NFPA 1962~~ NFPA 1930 .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 23:46:03 EDT 2023

Committee Statement

Committee Statement: Reference update.

Response Message: FR-95-NFPA 25-2023



First Revision No. 82-NFPA 25-2023 [Section No. 7.3.3]

7.3.3 Monitor Nozzles.

7.3.3.1

Monitor nozzles ~~that are mounted on hydrants~~ shall be tested ~~as specified in 7.3.2~~ annually to ensure full function .

7.3.3.2

~~All monitor~~ Monitor nozzles shall be oscillated and moved throughout their full range ~~annually~~ to ensure ~~proper operability~~ full operation .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Mon Oct 09 17:44:18 EDT 2023

Committee Statement

Committee Statement: The revised text now applies to all monitor nozzles, whether or not they are mounted on a hydrant.

Response Message: FR-82-NFPA 25-2023

[Public Input No. 191-NFPA 25-2023 \[Section No. 7.3.3\]](#)



First Revision No. 113-NFPA 25-2023 [Section No. 7.5.1]

7.5.1

Whenever a component in a private fire service system is adjusted, repaired, reconditioned, or replaced, the action required in Table 7.5.1 shall be performed.

Table 7.5.1 Summary of Component Action Requirements

<u>Component</u>	<u>Adjust</u>	<u>Repair/ Recondition</u>	<u>Replace</u>	<u>Test Criteria</u>
Water Delivery Components				
Pipe and fittings (exposed and underground)	X	X	X	Hydrostatic test in conformance with NFPA 24 Flush in conformance with NFPA 24 or NFPA 20, as appropriate
Hydrants	X	X	X	Hydrostatic test in conformance with NFPA 24 Waterflow in conformance with NFPA 24 Inspect for proper drainage
Monitor nozzles	X	X	X	Flow test to confirm required coverage
Mainline strainers	X	X	X	Flow test downstream of strainer
Fire department connection	X	X	X	See Chapter 13
Alarm and Supervisory Components				
Valve supervisory device	X	X	X	Operational test for conformance with NFPA 24 and/or NFPA 72
System-Indicating Components				
Gauges			X	Verify at 0 psi (0 bar) and system working pressure
System Housing and Protection Components				
Hose houses	X	X	X	Verify integrity of hose house and hose house components
Hose		X		Repair and test hose in accordance with <u>NFPA 1962</u> <u>NFPA 1930</u>
Hose			X	No action required
Structural Components				
Thrust blocks	X	X	X	Test at system working pressure
Tie rods	X	X	X	Test at system working pressure
Retainer glands	X	X	X	Test at system working pressure
Informational Components				
Identification signs	X	X	X	Verify conformance with NFPA 24

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Fri Nov 10 14:45:48 EST 2023

Committee Statement

Committee Statement: Updated cross-reference.

Response Message: FR-113-NFPA 25-2023



First Revision No. 66-NFPA 25-2023 [Section No. 8.1.1.2 [Excluding any Sub-Sections]]

The minimum frequency of inspection, testing, and maintenance shall be in accordance with the manufacturer's recommendations and Table 8.1.1.2.

Table 8.1.1.2 Summary of Fire Pump Inspection, Testing, and Maintenance

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
Inspection		
Alignment	Annually	8.3.6.4
Cable/wire insulation	Annually	8.1.1.2.5
Diesel engine system	Weekly	8.2.2(4)
Electric system	Weekly	8.2.2(3)
Engine crankcase breather	Quarterly	8.1.1.2.12
Exhaust system, drain condensate trap, and silencers	Annually	8.1.1.2.13
Flexible hoses and connections	Annually	8.1.1.2.11
Fuel tank vents and overflow	Annually	8.1.1.2.10
Plumbing parts — inside and outside of panels	Annually	8.1.1.2.6
Printed circuit board (PCB) corrosion	Annually	8.1.1.2.4
Pump	Weekly	8.2.2(2)
Pump house/room	Weekly	8.2.2(1)
Shaft movement or endplay while running	Annually	8.1.1.2.1
Steam pump system	Weekly	8.2.2(5)
Suction screens	Annually	8.3.3.16
Test		
Automatic transfer switch and emergency/standby generators	Per NFPA 110	8.3.6.2
Diesel-engine-driven fire pump (no flow)	Weekly	8.3.1.1
Diesel fuel testing	Annually	8.3.4.1
Electric-motor-driven fire pump (no flow)	Weekly/monthly	8.3.1.2
Electronic control module (ECM)	Annually	8.3.3.17
Fire pump alarm signals	Annually	8.3.3.14
Flow meters	Annually	8.3.3.5.3
Fuel tank, float switch, and supervisory signal for interstitial space	Quarterly	8.1.1.2.7
Gauges, transducers, and other devices used for testing	Annually	8.3.3.5.2
Main pressure relief valve	Annually	8.3.3.12, 13.5.6.2.3
Positive displacement pump activation time (flow)	Annually	8.3.5.8
<u>Pump house/room environmental conditions</u>	—	<u>8.3.6.3</u>
Pump operation (no flow)	Weekly/monthly	8.3.2, 8.3.5
Pump performance (flow)	Annually	8.3.3, 8.3.5

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
Supervisory signal for high cooling water temperature	Annually	8.1.1.2.8
Maintenance		
Batteries	Annually	8.1.1.2.15
Circulating water filter	Annually	8.1.1.2.22
Control and power wiring connections	Annually	8.1.1.2.16
Controller and all other components of the pump assembly	Per manufacturer	8.5
Diesel active fuel maintenance system	Annually or per manufacturer	8.3.4.3
Diesel engine system	Per manufacturer	8.5
Electric motor and power system	Per manufacturer	8.5
Electrical connections	Annually	8.1.1.2.2
Engine lubricating oil	50 operating hours or annually	8.1.1.2.17
Engine oil filter	50 operating hours or annually	8.1.1.2.18
Fuel filter	50 operating hours or annually	8.1.1.2.19
Fuel tank — check for water and foreign materials	Annually	8.1.1.2.9
Measure back pressure on engine turbo	Annually	8.1.1.2.14
Power transmission components with elastomeric materials (including torsional couplings)	5 years or per manufacturer	8.1.1.2.24
Pressure gauges and sensors	Annually	8.1.1.2.23
Pump and motor bearings and coupling	Annually or as required	8.1.1.2.3
Sacrificial anode	Annually	8.1.1.2.21

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 14:42:50 EDT 2023

Committee Statement

Committee Statement: This aligns with added positive displacement pump testing.

Response Message: FR-66-NFPA 25-2023

Public Input No. 162-NFPA 25-2023 [Section No. 8.1.1.2 [Excluding any Sub-Sections]]



First Revision No. 77-NFPA 25-2023 [New Section after 8.2.2]

8.2.3 Circulation Relief Valves.

8.2.3.1

Where installed, circulation relief valves shall be inspected at the same frequency as no flow (churn) tests are conducted.

8.2.3.2

The inspection shall verify that water flows through the valve when the fire pump is operating at shutoff pressure (i.e., churn) to prevent the pump from overheating.

8.2.3.3

Upon completion of any fire pump test, the closure of the circulation relief valve shall be verified.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Fri Oct 06 14:47:28 EDT 2023

Committee Statement

Committee Statement: These requirements have been removed from Chapter 13 and placed in Chapter 8.

Response Message: FR-77-NFPA 25-2023



First Revision No. 107-NFPA 25-2023 [Section No. 8.2.2]

8.2.2*

The pertinent visual observations specified in the following checklists shall be performed weekly:

- (1) Pump house conditions are determined as follows:
 - (a) Heat is adequate, not less than 40°F (4°C) for pump room with electric-motor- or diesel-engine-driven pumps with engine heaters.
 - (b) Heat is adequate, not less than 70°F (21°C) for pump room with diesel-engine-driven pumps without engine heaters.
 - (c) Ventilating louvers are free to operate.
 - (d) Excessive water does not collect on the floor.
 - (e) Coupling guard is in place.
- (2) Pump system conditions are determined as follows:
 - (a) Pump suction and discharge and bypass valves are fully open.
 - (b) Piping is free of leaks.
 - (c) Suction line pressure gauge reading is within acceptable range.
 - (d) System line pressure gauge reading is within acceptable range.
 - (e) Suction reservoir has the required water level.
 - (f) Wet pit suction screens are unobstructed and in place.
 - (g) Waterflow test valves are in the closed position, the hose connection valve is closed, and the line to test valves is free of water.
 - (h) Suction pressure regulating valve is fully open.
- (3) Electrical system conditions are determined as follows:
 - (a) Controller pilot light (power on) is illuminated.
 - (b) Transfer switch normal pilot light is illuminated.
 - (c) Isolating switch is closed — standby (emergency) source.
 - (d) Reverse phase alarm pilot light is off, or normal phase rotation pilot light is on.
 - (e) Oil level in vertical motor sight glass is within acceptable range.
 - (f) Power to pressure maintenance (jockey) pump is provided.
- (4) Diesel engine system conditions are determined as follows:
 - (a) Fuel tank is at least two-thirds full.
 - (b) Controller selector switch is in auto position.
 - (c) Batteries' (2 two) voltage readings are within acceptable range.
 - (d) Batteries' (2 two) charging current readings are within acceptable range.
 - (e) Batteries' (2 two) pilot lights are on or battery failure (2 two) pilot lights are off.
 - (f) All alarm pilot lights are off.
 - (g) Engine running time meter is reading.
 - (h) Oil level in right angle gear drive is within acceptable range.
 - (i) Crankcase oil level is within acceptable range.
 - (j) Cooling water level is within acceptable range.
 - (k) Electrolyte level in batteries is within acceptable range.
 - (l) Battery terminals are free from corrosion.
 - (m) Water-jacket heater is operating.

(5)* Steam system conditions: Steam pressure gauge reading is within acceptable range.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25-2023_Chapter_8_2_2_2_h_.docx	Revised text.	

Submitter Information Verification

Committee: INM-AAA
Submittal Date: Thu Oct 12 12:54:02 EDT 2023

Committee Statement

Committee Statement: The standard was previously silent on suction pressure regulating valves and new sections for the inspection, testing and maintenance of these valves are necessary.
Response Message: FR-107-NFPA 25-2023



First Revision No. 36-NFPA 25-2023 [Section No. 8.3.2.1.2 [Excluding any Sub-Sections]]

For fire pump installations that were installed ~~under~~ according to a standard (1993 and earlier editions of NFPA 20) that did not prohibit a design that required operation of a pressure main relief valve to keep the discharge pressure below the rating of the system components, the pressure main relief valve and circulation relief valve shall be permitted to operate as designed during a no-flow test.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 17:03:32 EDT 2023

Committee Statement

Committee Statement: For the 1993 and earlier editions of NFPA 20, the main relief could be tied back into the suction. For these installations, the circulation relief may need to operate to cool the pump.

Response Message: FR-36-NFPA 25-2023

Public Input No. 25-NFPA 25-2023 [Section No. 8.3.2.1.2]



First Revision No. 106-NFPA 25-2023 [Section No. 8.3.2.9]

8.3.2.9*

The pertinent visual observations or adjustments specified in the following checklists shall be conducted while the pump is running:

- (1) Pump system procedure is determined as follows:
- (a) Record the pump starting pressure from the pressure switch or pressure transducer.
 - (b) Record the system suction and discharge pressure gauge readings.
 - (c) Inspect the pump packing glands for slight discharge.
 - (d) Adjust gland nuts if necessary.
 - (e) Inspect for unusual noise or vibration.
 - (f) Inspect packing boxes, bearings, or pump casing for overheating.
 - (g) Record pressure switch or pressure transducer reading and compare to the pump discharge gauge.
 - (h) For pumps that use electronic pressure sensors to control the fire pump operation, record the current pressure and the highest and the lowest pressure shown on the fire pump controller event log.
 - (i) For electric motor and radiator cooled diesel pumps, check the circulation relief valve for operation to discharge water.
 - (j) * Bleed or drain suction pressure regulating valves to ensure that the sensing line, speed controls, and connections are clear and the valve is operational.

A.8.3.2.9(1)(j)

Suction pressure regulating valves are unique to fire pump assemblies and should be verified as open and operating properly. This can be accomplished by bleeding the $\frac{1}{2}$ in. (15 mm) drain valve every time the fire pump is operated or tested monthly and annually.

- (2) Electrical system procedure is determined as follows:
- (a) Observe the time for motor to accelerate to full speed.
 - (b) Record the time controller is on first step (for reduced voltage or reduced current starting).
 - (c) Record the time pump runs after starting (for automatic stop controllers).
- (3) Diesel engine system procedure is determined as follows:
- (a) Observe the time for engine to crank.
 - (b) Observe the time for engine to reach running speed.
 - (c) Observe the engine oil pressure gauge, speed indicator, water, and oil temperature indicators periodically while engine is running.
 - (d) Record any abnormalities.
 - (e) Inspect the heat exchanger for cooling waterflow.
- (4) Steam system procedure is determined as follows:
- (a) Record the steam pressure gauge reading.
 - (b) Observe the time for turbine to reach running speed.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25-2023_Chapter_8_3_2_9_1_j_.docx	Revision clarification	
Submitter Information Verification		
Committee: INM-AAA		
Submittal Date: Thu Oct 12 12:42:13 EDT 2023		
Committee Statement		
Committee Statement:	The standard was previously silent on suction pressure regulating valves and new sections for the inspection, testing and maintenance of these valves are necessary. This section aligns with manufacturer's recommendations to ensure the valve is not closed because of corrosion or obstructions in the sensing line.	
Response Message:	FR-106-NFPA 25-2023	



First Revision No. 93-NFPA 25-2023 [Section No. 8.3.5.6]

8.3.5.6

Flow rates shall be as specified while operating at the system design pressure.

[~~20: 14.2.6.6.5.1~~ Tests shall be performed in accordance with HI 3.6, *Rotary Pump Tests* :
[~~20: 14.2.6.4.3.5~~]

8.3.5.7

Tests shall be performed in accordance with HI 3.6, *Rotary Pump Tests*.

[~~20:14.2.6.4.3.5~~ 14.2.6.6.5.2]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 23:39:23 EDT 2023

Committee Statement

Committee Statement: Updated extract.

Response Message: FR-93-NFPA 25-2023

**First Revision No. 94-NFPA 25-2023 [Section No. 8.3.5.7]****8.3.5.8**

Positive displacement pumps intended to pump liquids other than water shall be permitted to be tested with water. ~~; however, the pump performance will be affected, and manufacturer's calculations shall be provided showing the difference in viscosity between water and the system liquid. [20: 14.2.6.4.3.6] [20: 14.2.6.6.1]~~

8.3.5.9

Pump performance will be affected by testing with water , and manufacturer's calculations shall be provided showing the difference in viscosity between water and the system liquid. ~~[20:14.2.6.4.3.6 14.2.6.6.2]~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 23:41:37 EDT 2023

Committee Statement

Committee Statement: Updated extract.

Response Message: FR-94-NFPA 25-2023



First Revision No. 89-NFPA 25-2023 [Section No. 8.3.5.8]

8.3.5.10 ~~Annual~~ Activation Test for Water Mist Positive Displacement Pumping Units.

8.3.5.10.1

Annually and after every system modification , an automatic pump activation test for systems with automatic nozzles shall be conducted using a test connection that simulates the smallest system nozzle in the hydraulically most remote area discharged at system maintenance pressure/standby pressure: one of the following methods:

- (1) A test connection that simulates the smallest system nozzle in the hydraulically most remote area discharged at system maintenance pressure/standby pressure
- (2)* A test orifice in the pump header designed to simulate the flow rate discharged from the smallest nozzle K-factor in the most hydraulically remote area

A.8.3.5.10.1(2)

The intent of this test is to verify the timely operation of the pumping unit to achieve the system design pressure when the smallest nozzle in the hydraulically most remote area is activated. It is not intended to require the orifice to be located in the most remote location of the system. The test orifice at the pump test header is designed by the system manufacturer to simulate the flow rate from the smallest nozzle K-factor in the most hydraulically remote area. The orifice accounts for friction loss and elevation.

8.3.5.10.2

The pumping unit shall achieve the system design discharge pressure within the time specified in the listing but not greater than 60 seconds after the start of flow from the smallest nozzle.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 22:17:13 EDT 2023

Committee Statement

Committee Statement: The changes describe options for how the pumping unit can be evaluated to demonstrate that it can achieve the system design pressure.

Response Message: FR-89-NFPA 25-2023

Public Input No. 33-NFPA 25-2023 [Section No. 8.3.5.8]

Public Input No. 190-NFPA 25-2023 [Section No. 8.3.5.8]

**First Revision No. 37-NFPA 25-2023 [Section No. 8.3.7.1.1.1]****8.3.7.1.1.1***

The interpretation of the gross flow test performance relative to ~~acceptably~~ meeting the demands of all connected fire protection systems shall be the basis for determining acceptable performance of the pump assembly and connected water supply.

A.8.3.7.1.1.1

The gross performance of the fire pump is not necessarily an indication of a deficient pump and could be a result of a degraded or obstructed water supply. Where the gross performance of the fire pump does not meet the demand of the fire protection systems downstream, the water supply should be evaluated.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 17:08:10 EDT 2023

Committee Statement

Committee Statement: The added Annex material provides clarification for analyzing pump test results.

Response Message: FR-37-NFPA 25-2023

Public Input No. 123-NFPA 25-2023 [Section No. 8.3.7.1.1.1]

**First Revision No. 69-NFPA 25-2023 [Section No. 8.3.7.2.3]****8.3.7.2.3**

The fire pump test results shall be considered acceptable if all of the following conditions are satisfied:

- (1) Fire pump meets the flow and pressure requirements of the most demanding system(s) supplied by the fire pump based on owner-provided system design information
- (2)* Fire pump supplies 100 percent of rated flow
- (3)* Net pressure at each flow point is at least 95 percent of one of the following:
 - (a) Original manufacturer's pump curve
 - (b) Original unadjusted field test curve
 - (c) Test curve generated from the fire pump nameplate
- (4) Requirements of 8.1.5 are met

8.3.7.2.3.1

The fire pump assembly shall be considered acceptable where the water supply is not capable of providing flow rates beyond rated flow of the fire pump, requirements of 8.3.3.1 shall not be required if the fire pump assembly can provide system demand and at least 95 percent of 8.3.7.2.3(3) (a), 8.3.7.2.3(3) (b), or 8.3.7.2.3(3) (c) at rated flow.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 16:11:15 EDT 2023

Committee Statement

Committee Statement: This permits the fire pump to be considered acceptable based on the highest flow rate available provided it meets the system demand.

Response Message: FR-69-NFPA 25-2023



First Revision No. 83-NFPA 25-2023 [Section No. 10.1.1.2]

10.1.1.2

Table 10.1.1.2 shall be used to determine the minimum required frequencies for inspection, testing, and maintenance.

Table 10.1.1.2 Summary of Water Spray Fixed System Inspection, Testing, and Maintenance

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
Inspection		
Backflow preventer	—	Chapter 13
Check valves	—	Chapter 13
Control valves	—	Chapter 13
Deluge valve	—	Chapter 13
Detection systems and components	—	<i>NFPA 72</i>
Detector check valves	—	Chapter 13
Drainage	Quarterly	10.2.7
Fire pump system	—	Chapter 8
Fittings	Annually	10.2.3, 10.2.3.1
Fittings (rubber-gasketed)	Annually and after each system activation	10.2.3.1
Gravity tanks	—	Chapter 9
Hangers, braces, and supports	Annually and after each system activation	10.2.3.2
Heat (deluge valve house)	—	Chapter 13
Nozzles	Annually and after each system activation	10.2.4
Piping	Annually and after each system activation	10.2.3.1
Pressure tank	—	Chapter 9
Strainers	Mainline — annually and after each system activation	—
	Others — per manufacturer's instruction	10.2.6
Suction tanks	—	Chapter 9
Water supply piping	—	10.2.5.2
UHSWSS — controllers	Start of each shift	10.4.3
UHSWSS — detectors	Monthly	10.4.2
UHSWSS — valves	Start of each shift	10.4.4
Operational Test		
Backflow preventer	—	Chapter 13
Check valves	—	Chapter 13
Control valves	—	Chapter 13
Deluge valve	—	Chapter 13
Detection systems	—	<i>NFPA 72</i>
Detector check valve	—	Chapter 13
Fire pump system	—	Chapter 8
Gravity tanks	—	Chapter 9
Main drain test	—	Chapter 13
Manual release	Annually	10.3.5

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
Nozzles	Annually	Section 10.3
Pressure tank	—	Chapter 9
Strainers	Annually	10.2.6
Suction tanks	—	Chapter 9
Waterflow alarm	—	Chapter 13
Water spray system test	—	Chapter 13
Water supply flow test	—	Chapter 7
UHSWSS	Annually	Section 10.4
UHSWSS — detectors	Monthly	10.4.2
Valve status test	—	Chapter 13
Maintenance		
Backflow preventer	—	Chapter 13
Check valves	—	Chapter 13
Control valves	—	Chapter 13
Deluge valve	—	Chapter 13
Deluge valve enclosures	—	Chapter 4
Detection systems	—	<i>NFPA 72</i>
Detector check valve	—	Chapter 13
Fire pump system	—	Chapter 8
Gravity tanks	—	10.2.9, Chapter 9
Pressure tank	—	10.2.9, Chapter 9
Strainers	Annually	10.2.1.4, 10.2.1.6, 10.2.6
Strainers (baskets/screen)	5 years	10.2.1.4, 10.2.1.7, A.10.2.6
Suction tanks	—	Chapter 9
Water spray nozzles	Annually	10.2.4

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Mon Oct 09 17:55:28 EDT 2023

Committee Statement

Committee Statement: This revision aligns the requirements in Table 10.1.1.2 with the requirements in 10.4.2.

Response Message: FR-83-NFPA 25-2023

[Public Input No. 156-NFPA 25-2023 \[Section No. 10.1.1.2\]](#)



First Revision No. 84-NFPA 25-2023 [Section No. 11.1.1.2]

11.1.1.2

Table 11.1.1.2 shall be used to determine the minimum required frequencies for inspection, testing, and maintenance.

Table 11.1.1.2 Summary of Low-, Medium-, and High-Expansion Foam and Foam-Water Sprinkler System Inspection, Testing, and Maintenance

<u>System/Component</u>	<u>Frequency</u>	<u>Reference</u>
Inspection		
Control valve(s)	—	Chapter 13
Deluge/preaction valve(s)	—	Chapter 13
Discharge device location (spray nozzle)	Monthly	11.2.4.1.1
Discharge device location (sprinkler)	Annually	11.2.4.1.1
Discharge device position (spray nozzle)	Monthly	11.2.4.1.3
Discharge device position (sprinkler)	Annually	11.2.4.1.3
Drainage in system area	Quarterly	11.2.7
Fire pump(s)	—	Chapter 8
Foam concentrate pump(s)	—	Chapter 8
Fittings corrosion	Annually	11.2.11
Fittings damage	Annually	11.2.11
Foam concentrate storage	Annually	11.2.9
Gauges	—	Chapter 13
Hangers/braces/supports	Annually	11.2.12
Pipe corrosion	Annually	11.2.11
Pipe damage	Annually	11.2.11
Proportioning system(s) — all	Monthly	11.2.8
Standard pressure proportioning pickup tube	10 years	11.2.8.5.2
Line proportioner pickup tubes	Annually	11.2.8.6.3
Foam tank inspection	Annually	11.2.9
Proportioning head	Annually	11.2.8.5.2
Water-powered proportioner pump leakage	Monthly	11.2.8.6.8
Water-powered proportioner pump valve position	Monthly	11.2.8.6.8
Water-powered proportioner pump oil level	6 months	11.2.8.6.8
Water-powered proportioner pump shock absorbers	6 months	11.2.8.6.8
Strainer(s) — mainline	Annually	Chapter 7
Strainer(s) — discharge device	Annually	11.2.6.1
Foam concentrate strainers	Annually	11.2.6.4
Water supply piping	—	Chapter 7
Water supply tank(s)	—	Chapter 9
Waterflow devices	—	Chapter 13

<u>System/Component</u>	<u>Frequency</u>	<u>Reference</u>
Supplementary hoses	Annually	11.2.4.4
Auxiliary drain signage	Annually	Chapter 13
Supplementary hose stream nozzles	Annually and after each use	Chapter 6
Supplementary hose stream storage	Annually	Chapter 6
Fixed foam discharge outlet	Annually	11.2.4.2
Vapor seals	Annually	11.2.4.2.4
Fire department hose connections	Annually	Chapter 6
Hydraulic design information sign	Annually	Chapter 5
Underground piping	10 years	11.2.11
Foam dam	—	11.2.15
Pressure foam maker	Annual	11.2.4.2.5
Rupture disk	Annual	11.2.4.2.5.5
Alarm devices	—	11.1.3
Operating instructions and training	Annually	11.2.17
High pressure cylinders	Annually	11.2.14
Foam in surrounding space of bladder	Annually	11.2.9.8
Test		
Backflow preventer(s)	Annually	Chapter 13
Complete foam-water sprinkler system(s) (operational test)	Annually	444 11.3.10.2
Control valve(s)	—	Chapter 13
Deluge/preaction valve(s)	—	Chapter 13
Detection system	—	11.1.3
Discharge device location	Annually	11.3.10.2.7
Discharge device obstruction	Annually	11.3.10.2.7
Discharge device position	Annually	11.3.10.2.7
Fixed foam discharge outlet water flow	Annually	11.3.11
Pressure foam maker water flow	Annually	11.3.11.6
Fire pump(s)	—	Chapter 8
Foam concentrate pump(s)	—	Chapter 8
Manual actuation device(s)	Annually	11.3.10.4
Proportioning system(s) — all	Annually	11.3.2
Valve status test	—	Chapter 13
Water supply flow test	5 years	Chapter 7
Water supply tank(s)	—	Chapter 9
Waterflow alarm devices	—	Chapter 13
Supplementary hose streams	5 years	Chapter 6
Supplementary hose stream nozzles	—	Chapter 5 Chapter 23 of NFPA 1962 NFPA 1930
Foam concentrate	Annually	11.3.1.1
Monitors	Annually	11.3.7

<u>System/Component</u>	<u>Frequency</u>	<u>Reference</u>
Oscillating monitor's range of motion	Annually	11.3.7.2
Oscillating monitor full flow	5 years	11.3.7.3
Water-powered foam proportioning pump operation	2 months	11.3.4
Water-powered powered foam proportioning pump filters	6 months	11.3.4
Water-powered foam proportioning pump operation at specified rate of flow	Annually	11.3.4
Water-powered foam proportioning pump screwed connections	6 months	11.3.4
Water-powered foam proportioning pump valves	6 months	11.3.4
Bladder tank hydrostatic test	10 years	11.3.5.1
Foam concentrate tank hydrostatic test	10 years	11.3.5.1
High pressure cylinder	—	11.3.5.4
Maintenance		
Backflow preventer(s)	—	Chapter 13
Bladder sight glass cleaning	10 years	11.4.3.2
Check valve(s)	—	Chapter 13
Control valve(s)	—	Chapter 13
Deluge/preaction valves	—	Chapter 13
Detection system	—	<i>NFPA 72</i>
Detector check valve(s)	—	Chapter 13
Fire pump(s)	—	Chapter 8
Foam concentrate strainer(s)	Annually	Chapter 8
Metallic atmospheric and pressure vessel storage tanks drain/flush	10 years	11.4.3.1
Foam concentrate pump(s)	5 years	Chapter 8
In-line balanced pressure type	—	—
Balancing valve diaphragm	5 year	11.4.4.3.3
Line type	—	—
Pressure vacuum vents	5 years	11.4.4.6
Proportioning system(s) standard pressure type	—	—
Ball drip (automatic-type) drain valves	5 years	11.4.4.1
Standard balanced pressure type	—	—
Balancing valve diaphragm	5 years	11.4.4.2.3
Strainer(s) — mainline	—	Chapter 7
Water supply	—	11.4.2
Water supply tank(s)	—	Chapter 9
Hose valves	—	Chapter 13
Pressure gauges	—	Chapter 13
Fixed foam discharge outlet	—	11.4.4.8

<u>System/Component</u>	<u>Frequency</u>	<u>Reference</u>
Pressure foam maker	—	11.4.4.9
Monitors	—	11.4.4.7
Monitor nozzles	—	11.4.4.7
Supplementary hoses	—	11.4.4.11
Supplementary hose nozzles	—	11.4.4.12
Rupture disks	—	11.4.4.9.1
Water-powered foam concentrate proportioning pump shaft lubrication	6 months	11.4.4.5
Water-powered foam concentrate proportioning pump oil change	5 years	11.4.4.5
Water-powered foam concentrate proportioning vane replacement	Manufacturer's <u>recommendation specification</u>	11.4.4.5
Auxiliary drains	—	Chapter 13

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Mon Oct 09 18:01:33 EDT 2023

Committee Statement

Committee Statement: This revision corrects the section reference in the table. This is editorial.

Response Message: FR-84-NFPA 25-2023

Public Input No. 183-NFPA 25-2023 [Section No. 11.1.1.2]

**First Revision No. 96-NFPA 25-2023 [Section No. 11.3.3]****11.3.3 Mobile Apparatus Proportioners.****11.3.3.1**

Mobile apparatus proportioner testing shall verify the foam proportioning system meets the requirements of ~~20 18~~ .11.2 of ~~NFPA 1901~~ NFPA 1900 .

11.3.3.2

If inspection determines that the foam concentrate type or viscosity has been changed without recertification of the system in accordance with ~~20 18~~ .10.1 of ~~NFPA 1901~~ NFPA 1900 , the system shall be type tested and recertified by the foam proportioning system manufacturer.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 23:47:31 EDT 2023

Committee Statement

Committee Statement: Reference update.

Response Message: FR-96-NFPA 25-2023

**First Revision No. 97-NFPA 25-2023 [Section No. 11.3.8]****11.3.8** Hoses.**11.3.8.1**

Supplementary hoses shall be tested in accordance with ~~NFPA 1962~~ NFPA 1930 .

11.3.8.2

Hoses manufactured in accordance with standards other than ~~NFPA 1962~~ NFPA 1930 shall be tested in accordance with the manufacturer's specifications.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 23:48:29 EDT 2023

Committee Statement

Committee Statement: Reference update.

Response Message: FR-97-NFPA 25-2023



First Revision No. 98-NFPA 25-2023 [Section No. 11.3.9]

11.3.9 Hose Nozzles.

Hose nozzles shall be tested in accordance with Chapter 5 23 of ~~NFPA 1962~~ NFPA 1930 .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 23:49:44 EDT 2023

Committee Statement

Committee Statement: Reference update.

Response Message: FR-98-NFPA 25-2023

**First Revision No. 99-NFPA 25-2023 [Section No. 11.4.4.4]****11.4.4.4 Mobile Apparatus Proportioning.**

Mobile apparatus proportioning systems shall be maintained in accordance with ~~20 18~~ .9.4.2 of ~~NFPA 1901~~ NFPA 1900 .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 23:50:50 EDT 2023

Committee Statement

Committee Statement: Reference update.

Response Message: FR-99-NFPA 25-2023



First Revision No. 100-NFPA 25-2023 [Sections 11.4.4.11, 11.4.4.12]

11.4.4.11 Supplementary Hoses.

Hoses shall be maintained in accordance with ~~NFPA 1962~~ NFPA 1930 or the manufacturer's ~~recommendations~~ instructions .

11.4.4.12 Supplementary Hose Stream Nozzles.

Nozzles shall be maintained in accordance with ~~NFPA 1962~~ NFPA 1930 .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 23:51:46 EDT 2023

Committee Statement

Committee Statement: Reference update.

Response Message: FR-100-NFPA 25-2023

**First Revision No. 60-NFPA 25-2023 [Section No. 12.2.1.1.1]****12.2.1.1.1**

Any water mist nozzle that shows signs of any of the following shall be replaced (see A.5.2.1.1.1):

- (1) Leakage
- (2) Corrosion detrimental to nozzle performance
- (3) Physical damage
- (4) Loss of fluid in the glass bulb heat responsive element
- (5)* Loading detrimental to nozzle performance
- (6) Painting, unless painted other than that applied by the ~~water mist~~ nozzle manufacturer, detrimental to nozzle performance

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 13:04:28 EDT 2023

Committee Statement

Committee Statement: These revisions provide consistency with sprinkler requirements in Chapter 5.

Response Message: FR-60-NFPA 25-2023

**First Revision No. 61-NFPA 25-2023 [Section No. 12.2.1.1.7]****12.2.1.1.7**

Open nozzles, including their strainers, shall be removed, inspected, and cleaned during the flushing procedure for the mainline strainer after the discharge of water from installed nozzles.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 13:30:12 EDT 2023

Committee Statement

Committee Statement: The inspection and cleaning of nozzles and strainers is required after any water flow through the system and is not limited to occurrences of system flushing. A water mist nozzle has a higher risk of obstructive material clogging the orifices.

Response Message: FR-61-NFPA 25-2023

[Public Input No. 45-NFPA 25-2023 \[Section No. 12.2.1.1.7\]](#)



First Revision No. 62-NFPA 25-2023 [Section No. 12.2.2.1]

12.2.2.1

~~Mainline strainers and filters shall be flushed until clear after each operation or flow test.~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 13:39:16 EDT 2023

Committee Statement

Committee Statement: This is a testing requirement covered by 12.3.3.

Response Message: FR-62-NFPA 25-2023

[Public Input No. 53-NFPA 25-2023 \[Section No. 12.2.2.1\]](#)

[Public Input No. 49-NFPA 25-2023 \[Section No. 12.2.2.1\]](#)



First Revision No. 63-NFPA 25-2023 [Section No. 12.3.2.1]

12.3.2.1

Water mist nozzles installed to protect spray areas and mixing rooms in resin application areas without protective coverings shall be capable to operate and protect the hazard with an overspray residue in the event of a fire.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 13:48:51 EDT 2023

Committee Statement

Committee Statement: This provides clarification as to the types of application areas.

Response Message: FR-63-NFPA 25-2023

[Public Input No. 61-NFPA 25-2023 \[Section No. 12.3.2.1\]](#)

**First Revision No. 64-NFPA 25-2023 [Section No. 12.3.3]****12.3.3 Strainers and Filters.**

Mainline System strainers (basket or screen) shall be flushed until clear after each operation or flow test.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 13:50:58 EDT 2023

Committee Statement

Committee Statement: System strainers are to be flushed after each operation regardless of location. The use of the term system strainers is consistent with NFPA 750.

Response Message: FR-64-NFPA 25-2023

Public Input No. 55-NFPA 25-2023 [Section No. 12.3.3]

**First Revision No. 65-NFPA 25-2023 [Section No. 12.3.16]****12.3.16 Water Mist System with Open Nozzles .**

Water mist systems shall be operated annually in accordance with 12.3.16.1 through 12.3.16.8 and the manufacturer's instructions.

12.3.16.1 Test Preparation.

Precautions shall be taken to prevent damage to property during the test. (*See also A.10.3.2.*)

12.3.16.2 Operational Test Performance.**12.3.16.2.1**

Operational tests shall be conducted to ensure the water mist system responds as designed, both automatically and manually.

12.3.16.2.2

Where the nature of the protected property is such that water cannot be discharged into the occupancy or onto the hazard, an operational test shall be conducted from a test connection with an orifice designed to simulate the flow rate ~~equivalent to the friction loss for or greater than the flow produced from~~ the total number of nozzles within the protected space .

12.3.16.3* Response Time.**12.3.16.3.1**

Under test conditions, the detection systems; shall operate with the specifications from the acceptance test and 12.3.7.

12.3.16.3.2

The response times shall be recorded.

12.3.16.4 Discharge Time.

The time lapse between operation of detection systems and water delivery time to the protected area shall be recorded.

12.3.16.5* Discharge Patterns.**12.3.16.5.1**

The water discharge patterns from all of the open water mist nozzles shall be observed to ensure that patterns are not impeded by plugged nozzles, to ensure that nozzles are correctly positioned, and to ensure that obstructions do not prevent discharge patterns from fully developing. (*See also 13.4.4.2.3.1.*)

12.3.16.5.2

Where the nature of the protected property is such that water cannot be discharged, the nozzles shall be inspected for proper orientation and the system tested with air to ensure that the nozzles are not obstructed.

12.3.16.5.3

Where obstructions occur, the piping and nozzles shall be cleaned and the system retested.

12.3.16.6 Pressure Readings.**12.3.16.6.1**

Pressure readings shall be recorded at the hydraulically most remote nozzle or test connection to ensure the water flow has not been impeded by partially closed valves or by plugged strainers or piping.

12.3.16.6.2

For water mist systems with a deluge valve, a second pressure reading shall be recorded at the deluge valve to ensure the water supply is adequate.

12.3.16.6.3

Readings shall be compared to the hydraulic design pressures to ensure the original system design requirements are met and the water supply is adequate to meet the design requirements.

12.3.16.6.3.1

Where the hydraulically most remote nozzle is inaccessible, nozzles shall be permitted to be checked visually without taking a pressure reading on the most remote nozzle.

12.3.16.6.3.2

Where the reading taken at the riser indicates that the water supply has deteriorated, a gauge shall be placed on the hydraulically most remote nozzle and the results compared with the required design pressure.

12.3.16.7 Multiple Systems.

The maximum number of systems expected to operate in case of fire shall be tested simultaneously to inspect the adequacy of the water supply.

12.3.16.8 Return to Service.

After the full flow test, the water mist system shall be returned to service in accordance with the manufacturer's instructions.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 13:55:43 EDT 2023

Committee Statement

Committee Statement: The title was revised to clarify the section is applicable to open nozzle systems. The subsections include conditions for when water flow is not possible.

This clarifies how to conduct the test and provides an alternate method of discharging water in the scenario where normal discharge would damage equipment.

Response Message: FR-65-NFPA 25-2023

[Public Input No. 50-NFPA 25-2023 \[Section No. 12.3.16.2.1\]](#)

[Public Input No. 37-NFPA 25-2023 \[Section No. 12.3.16 \[Excluding any Sub-Sections\]\]](#)



First Revision No. 85-NFPA 25-2023 [Section No. 13.1.1.2]

13.1.1.2

Table 13.1.1.2 shall be used to determine the minimum required frequencies for inspection, testing, and maintenance.

Table 13.1.1.2 Summary of Valves, Valve Components, and Trim Inspection, Testing, and Maintenance

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
Inspection		
Alarm valves		
Exterior	Quarterly	13.4.1.1
Interior	5 years	13.4.1.2
Strainers, filters, orifices	5 years	13.4.1.2
Backflow prevention assemblies		
Reduced pressure	Weekly	13.7.1
Reduced-pressure detectors	Weekly	13.7.1
Interior	5 years	13.7.1.3
Check valves — interior	<u>5 years</u>	<u>13.4.2.1</u>
~~Interior~~	~~5 years~~	~~13.4.2.1~~
Control valves		
All valves except locked or supervised	Weekly	13.3.2.1
Locked or supervised	Monthly	13.3.2.1.1
Electrically supervised	Quarterly	13.3.2.1.2
Dry pipe valves/ quick-opening devices		
Enclosure (during cold weather)	—	Chapter 4
Exterior	Monthly	13.4.5.1.2
Interior	Annually	13.4.5.1.3
Strainers, filters, orifices	5 years	13.4.5.1.4
~~Low temperature~~ <u>Low-temperature</u> alarm	Annually	Chapter 4
Deluge valves		
Enclosure (during cold weather)	Daily/weekly	Chapter 4
Exterior	Monthly	13.4.4.1.1
Interior	Annually/ ~~5 years~~	13.4.4.1.2
Strainers, filters, orifices	5 years	13.4.4.1.3
Fire department connections	Quarterly	13.8.1
Gauges	Monthly/quarterly	13.2.4
Hose valves <u>and hose connections</u>	~~Quarterly~~ <u>Annually</u>	13.6.1
Preaction valves		
Enclosure (during cold weather)	—	Chapter 4
Exterior	Monthly	13.4.3.1.1
Interior	Annually/ ~~5 years~~	13.4.3.1.2
Strainers, filters, orifices	5 years	13.4.3.1.3
Pressure-regulating <u>devices</u> and relief valves		
Master pressure-regulating - <u>reducing valve</u>	Weekly	13.5.4.1
~~Sprinkler system pressure~~ <u>Pressure-reducing valve</u>	Quarterly	13.5.1.1

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
~~Hose connection pressure~~ <u>Pressure-reducing hose connection</u> ~~regulating~~	Annually	13.5.2.1
~~Hose rack pressure regulating~~ <u>Pressure-reducing hose valve with hose rack assembly</u>	Annually	13.5.3.1
Fire pump circulation relief <u>valve</u>	~~With no-flow test~~ <u>—</u>	~~13.5.6.1~~ <u>Chapter 8</u>
~~Fire pump main~~ <u>Main</u> pressure-relief <u>valve</u>	With fire pump test	13.5.6.2
Valve supervisory signal initiating device	Quarterly	13.3.2.1.3
Supervisory signal devices (except valve supervisory switches)	Quarterly	13.2.5.1
Air compressors and nitrogen generators	Monthly	13.10.2
Waterflow alarms	Quarterly	13.2.3
Testing		
Backflow prevention assemblies	Annually	13.7.2
Control valves		
Operation and position	Annually	13.3.3.1
Valve status test	After ~~the~~ control valve <u>is</u> closed and reopened	13.3.3.4
Supervisory	Semiannually	13.3.3.5
Deluge valves		
<u>Solenoid supervisory switch</u>	<u>Quarterly</u>	<u>13.4.4.2.14</u>
Trip test	Annually/3 years	13.4.4.2.3
Dry pipe valves/ quick-opening devices		
Air leakage	3 years	13.4.5.2.9
Priming water	Quarterly	13.4.5.2.1
Low <u>and high</u> air pressure alarm	Annually	13.4.5.2.6
Quick-opening devices	Quarterly	13.4.5.2.4
Trip test	Annually	13.4.5.2.2
Full-flow trip test	3 years	13.4.5.2.2.2
Gauges	5 years	13.2.4.2
Main drains	Annually/quarterly	13.2.2
Preaction valves		
Priming water	Quarterly	13.4.3.2.1
Low air pressure alarms	Quarterly	13.4.3.2.11
Trip test	Annually/3 years	13.4.3.2.2 and 13.4.3.2.3
Air leakage	3 years	13.4.3.2.6
~~Low-temperature~~ <u>Low-temperature</u> alarm	Annually	13.4.3.2.12
Pressure- <u>regulating devices</u> and relief valves		
Master pressure- ~~regulating~~ <u>reducing</u> <u>valve</u>	Quarterly/annually	13.5.4.2 and 13.5.4.3
~~Sprinkler systems pressure~~ <u>Pressure-reducing valve</u>	Annually/5 years	13.5.1.3 and 13.5.1.2

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
~~Hose connection pressure regulating~~ <u>Pressure-reducing hose valve</u>	Annually/5 years	13.5.2.3 and 13.5.2.2
~~Hose rack pressure regulating~~ <u>Pressure-reducing hose valve with rack assembly</u>	Annually/5 years	13.5.3.3 and 13.5.3.2
Fire pump circulation relief valve	~~With churn test~~ <u>Annually</u>	~~13.5.6.1.2~~ <u>Chapter 8</u>
~~Fire pump pressure~~ <u>Pressure</u> relief valves	~~With fire pump test~~ <u>Annually</u>	13.5.6.2.3
Air compressors and nitrogen generators	Annually	13.10.3
Hose valves	Annually/3 years	13.6.2
Waterflow alarms	Semiannually	13.2.3
Supervisory signal devices (except valve supervisory switches)	Annually	13.2.5.2
Maintenance		
Alarm valves	Per manufacturer	13.4.1.3
Backflow prevention assemblies	Per manufacturer	13.7.3
Check valves	Per manufacturer	13.4.2.2
Control valves (outside screw and yoke)	Annually	13.3.4
Deluge valves	Annually/5 years	13.4.4.3
Dry pipe valves/ quick-opening devices	Annually	13.4.5.3
Hose valves	As needed	13.6.3
Preaction valves	Annually/5 years	13.4.3.3
Air compressors and nitrogen generators	Per manufacturer	13.10.4
<u>Vapor corrosion inhibitor</u>	<u>Per manufacturer</u>	<u>13.10.4.3</u>

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25-2023_13_1_1_2_PI_87_169_TG4.docx	Table 13.1.1.2 Revisions	

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Mon Oct 09 18:08:42 EDT 2023

Committee Statement

Committee Statement: Matches with changes in defined terms, frequencies, and requirements in the standard.

Response Message: FR-85-NFPA 25-2023

Public Input No. 87-NFPA 25-2023 [Section No. 13.1.1.2]

Public Input No. 169-NFPA 25-2023 [Section No. 13.1.1.2]

Public Input No. 32-NFPA 25-2023 [New Section after 13.1.1.2]

**First Revision No. 40-NFPA 25-2023 [Section No. 13.2.3.6]****13.2.3.6***

Testing waterflow alarm devices on dry pipe, preaction, or deluge systems shall be accomplished by using any of the ~~bypass connection~~ following methods:

- (1) Opening the bypass connection
- (2) Opening the inspector's test connection
- (3) Using the automated test equipment in accordance with Section 4.7

A.13.2.3.6

Opening the inspector's test connection can cause the system to trip accidentally. When conducting more frequent testing of waterflow alarms, bypass or automated test equipment might be used to avoid tripping of the valve. When conducting the annual trip test and 3-year full flow testing, using the inspector's test connection could be a means to test the waterflow alarm.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 17:50:49 EDT 2023

Committee Statement

Committee Statement: All methods to test were not captured in the existing text. Annex helped clarify the acceptable testing methods.

Response Message: FR-40-NFPA 25-2023

Public Input No. 147-NFPA 25-2023 [Section No. 13.2.3.6]

Public Input No. 148-NFPA 25-2023 [Section No. A.13.2.3.6]



**First Revision No. 41-NFPA 25-2023 [Sections 13.2.3.7.1.2, 13.2.3.7.1.3,
13.2.3.7.1.4]**

13.2.3.7.1.2*

Interruption of the signal sent by the vane-type waterflow alarm device is permitted in accordance with ~~13.2.3.7.1.3~~ and ~~13.2.3.7.1.4~~ :

A.13.2.3.7.1.2

~~Whenever the signal between the waterflow alarm device and the fire alarm control panel or bell is interrupted, there should be an indication either at the fire alarm control panel or the device, or both. Without some sort of indication, the signal can be left interrupted after the test to maintenance, essentially impairing the device itself. There are many ways to indicate signal interruption, including but not limited to initiation of audible and visual trouble condition or a light near the waterflow alarm device.~~

13.2.3.7.1.3

Interruption of the waterflow alarm circuit shall be accomplished using a device listed for the purpose.

13.2.3.7.1.4

Interruption of the waterflow alarm circuit shall result in an audible and visual trouble signal in accordance with ~~NFPA 72~~ or the adopted fire code, or other approved indication at the switch signal in accordance with ~~NFPA 72~~ or the adopted fire alarm code, or other approved indication at the switch.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 17:54:22 EDT 2023

Committee Statement

Committee Statement: Deleted text was confusing. NFPA 72 adequately addresses disconnecting the alarm/flow switch circuit. Certain jurisdictions require a certified alarm technician to perform functions in the fire alarm control unit. (FACU).

Response Message: FR-41-NFPA 25-2023

[Public Input No. 126-NFPA 25-2023 \[Section No. 13.2.3.7\]](#)



First Revision No. 42-NFPA 25-2023 [Section No. 13.2.4.2]

13.2.4.2*

Gauges shall be replaced ~~every~~ 5 years after the date of installation or tested ~~every 5 years~~ by comparison with a calibrated gauge every 5 years .

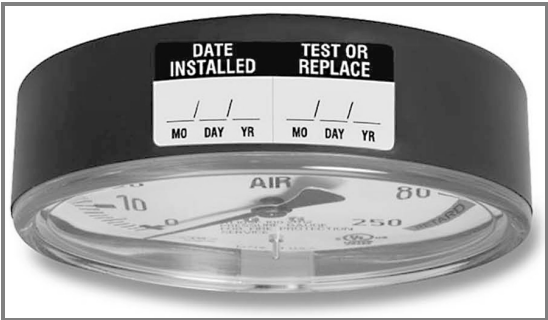
A.13.2.4.2

The gauge is permitted to have an accuracy level of ± 3 percent of the maximum (i.e., full-scale) gauge reading. For example, a gauge having 200 psi (13.8 bar) maximum range installed on a system with 60 psi (4.1 bar) normal pressure can be permitted if the gauge reads from 54 psi to 66 psi (3.7 to 4.5 bar). Gauges located on riser manifolds can be replaced with new gauges or compared to a calibrated gauge from the same three-way test outlet. Where multiple system risers are supplied by a common water supply source with gauges located at the same elevation, are not divided by a check valve, and the gauges for all systems read ± 3 percent of the other(s), only one gauge ~~shall be required~~ needs to be tested to determine if a replacement is required.

The date of manufacture marked on gauges does not limit when they can be used. These devices have an unlimited shelf life. Where gauges are replaced in lieu of tested, the 5-year replacement interval begins on the date of installation.

One way to aid in compliance and enforcement involves installing an adhesive label on the sprinkler gauge, on which the date of installation and the date to test or replace is recorded (see Figure A.13.2.4.2 for an example of a typical sprinkler gauge label).

Figure A.13.2.4.2 Sprinkler Gauge Label.



Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
NFPA_25_New_Figure_A.13.2.4.2.docx	New Annex Figure	

Submitter Information Verification

Committee: INM-AAA
Submittal Date: Wed Oct 04 17:59:30 EDT 2023

Committee Statement

Committee Statement: The accuracy of gauges is important when testing and evaluating water-based systems. This language clarifies the requirement to replace or compare installed gauges to a calibrated gauge.

Response Message: FR-42-NFPA 25-2023

[Public Input No. 22-NFPA 25-2023 \[Section No. 13.2.4.2\]](#)

[Public Input No. 24-NFPA 25-2023 \[New Section after 13.2.4.2\]](#)

[Public Input No. 23-NFPA 25-2023 \[New Section after 13.2.4.2\]](#)

**First Revision No. 43-NFPA 25-2023 [Section No. 13.4.3.1.2.1]****13.4.3.1.2.1**

~~Internal inspection of valves that can be reset without removal of a faceplate shall be permitted to be conducted every 5 years.~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 19:18:41 EDT 2023

Committee Statement

Committee Statement: Internal inspections of valves are to look for blockage, worn or damaged parts and gaskets, and any corrosion buildup. These issues do not just go away because a valve can be externally reset and thus this functionality should not permit an annual inspection to extend out to 5 years.

Response Message: FR-43-NFPA 25-2023

[Public Input No. 94-NFPA 25-2023 \[Section No. 13.4.3.1.2.1\]](#)

**First Revision No. 44-NFPA 25-2023 [Section No. 13.4.3.3.2.1]****13.4.3.3.2.1**

~~Interior cleaning and parts replacement or repair shall be permitted every 5 years for valves that can be reset without removal of a faceplate.~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 19:27:38 EDT 2023

Committee Statement

Committee Statement: Internal inspections of valves are to look for blockage, worn or damaged parts and gaskets, and any corrosion buildup. These issues do not just go away because a valve can be externally reset and thus this functionality should not permit an annual inspection to extend out to 5 years.

Response Message: FR-44-NFPA 25-2023

[Public Input No. 96-NFPA 25-2023 \[Section No. 13.4.3.3.2.1\]](#)

**First Revision No. 45-NFPA 25-2023 [Section No. 13.4.4.1.2.1]****13.4.4.1.2.1**

~~Internal inspection of valves that can be reset without removal of a faceplate shall be permitted to be conducted every 5 years.~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 19:28:27 EDT 2023

Committee Statement

Committee Statement: Internal inspections of valves are to look for blockage, worn or damaged parts and gaskets, and any corrosion buildup. These issues do not just go away because a valve can be externally reset and therefore this functionality should not permit an annual inspection to extend out to 5 years.

Response Message: FR-45-NFPA 25-2023

[Public Input No. 95-NFPA 25-2023 \[Section No. 13.4.4.1.2.1\]](#)

**First Revision No. 115-NFPA 25-2023 [Section No. 13.4.4.2.3]****13.4.4.2.3* Annual Full Flow Trip Test.**

Except as provided by 13.4.4.2.3.1 and 13.4.4.2.3.2, each deluge valve shall be trip tested annually at full flow in warm weather and in accordance with the manufacturer's instructions.

13.4.4.2.3.1*

Where the nature of the protected property is such that water cannot be discharged for test purposes, an annual trip test shall be permitted to be conducted in a manner that does not necessitate discharge in the protected area.

13.4.4.2.3.2

Where the nature of the protected property is such that water cannot be discharged unless protected equipment is shut down (e.g., energized electrical equipment), a full flow system test shall be conducted at the next scheduled shutdown.

13.4.4.2.3.3

For full flow tests in accordance with 13.4.4.2.3.2, the test frequency shall not exceed 3 years.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Nov 14 08:59:00 EST 2023

Committee Statement

Committee Statement: Added heading to align with the requirements of the MOS.

Response Message: FR-115-NFPA 25-2023

**First Revision No. 116-NFPA 25-2023 [Section No. 13.4.4.2.4]****13.4.4.2.4 Open Spray Nozzles or Sprinklers.**

During the annual full flow test, the water discharge patterns from all of the open spray nozzles or sprinklers shall be observed to ensure that patterns are not impeded by plugged nozzles, that nozzles are correctly positioned, and that obstructions do not prevent discharge patterns from wetting surfaces to be protected.

13.4.4.2.4.1

Where the nature of the protected property is such that water cannot be discharged, the nozzles or open sprinklers shall be inspected for correct orientation.

13.4.4.2.4.2

Where the nature of the protected property is such that water cannot be discharged unless protected equipment is shut down (e.g., energized electrical equipment), all open spray nozzles or sprinklers shall be inspected in accordance with 13.4.4.2.4 during the full flow system test conducted at the next scheduled shutdown.

13.4.4.2.4.3

Where misalignment or obstructions occur, the piping and sprinklers or nozzles shall be adjusted and/or cleaned to correct the condition, and the system shall be retested.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Nov 14 09:02:25 EST 2023

Committee Statement

Committee Statement: Added heading to align with the requirements of the MOS.

Response Message: FR-116-NFPA 25-2023



First Revision No. 114-NFPA 25-2023 [Sections

13.4.4.2.8, 13.4.4.2.9, 13.4.4.2.10]

13.4.4.2.8 Multiple Systems:

The maximum number of systems expected to operate in case of fire shall be tested simultaneously to inspect the adequacy of the water supply.

13.4.4.2.9 Manual Operation:

Manual actuation devices shall be operated annually.

13.4.4.2.10 Return to Service:

After the annual trip test, the system shall be returned to service in accordance with the manufacturer's instructions.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Nov 14 08:54:32 EST 2023

Committee Statement

Committee Statement: The headings are not necessary and have been removed to align with the requirements of the MOS.

Response Message: FR-114-NFPA 25-2023

**First Revision No. 46-NFPA 25-2023 [New Section after 13.4.4.2.13]****13.4.4.2.14**

A solenoid supervisory switch monitoring the position of a coil shall be tested quarterly.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 19:31:19 EDT 2023

Committee Statement

Committee Statement: NFPA 13 requires solenoid supervisory switch monitoring which will require testing. This test frequency aligns with manufacturers recommendations.

Response Message: FR-46-NFPA 25-2023

Public Input No. 31-NFPA 25-2023 [New Section after 13.4.4.2.13]

**First Revision No. 47-NFPA 25-2023 [Section No. 13.4.5.2.6]****13.4.5.2.6**

Low and high air pressure alarms, if provided, shall be tested annually in accordance with the manufacturer's instructions.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 19:42:55 EDT 2023

Committee Statement

Committee Statement: This aligns with NFPA 13 and 72 requirements.

Response Message: FR-47-NFPA 25-2023

Public Input No. 86-NFPA 25-2023 [Section No. 13.4.5.2.6]

**First Revision No. 76-NFPA 25-2023 [Section No. 13.5]****13.5* ~~Pressure-Reducing Valves~~ Regulating Devices and Relief Valves.****A.13.5**

It is important to test pressure-regulating devices at the maximum anticipated flow rates. Minimum flow can be from a sprinkler for combined systems or from a 1 1/2 in. (40 mm) hose connection on standpipe systems that do not supply sprinklers. This can require a sustained flow to demonstrate the continued performance of the pressure-regulating device at the minimum flow rate.

13.5.1 Inspection and Testing of ~~Sprinkler~~ Pressure-Reducing Valves.

~~Sprinkler pressure~~ Pressure -reducing valves shall be inspected and tested ~~as described in accordance with 13.5.1.1 and through 13.5.1.2~~ 13.5.1.4.

13.5.1.1

All valves shall be inspected quarterly to verify ~~that the valves they~~ they are in the following condition:

- (1) In the open position
- (2) Not leaking
- (3) Maintaining downstream pressures in accordance with the design criteria
- (4) ~~Handwheels~~ Having installed and unbroken handwheels

13.5.1.2

Each control valve shall be operated annually through its full range and returned to its normal position.

13.5.1.3

A partial flow test adequate to move the valve from its seat shall be conducted annually.

13.5.1.4

A full flow test shall be conducted on each valve at 5-year intervals and shall be compared to previous test results.

13.5.1.4.1

Adjustments to the valve shall be made in accordance with the manufacturer's instructions.

13.5.2 Hose Connection Pressure-Regulating Devices.**13.5.2.1**

~~All devices~~ Pressure-reducing hose valves shall be inspected annually to verify the following:

- (1) The handwheel is not broken or missing.
- (2) The outlet hose threads are not damaged.
- (3) No leaks are present.
- (4) The hose adapter and the cap are not missing.

13.5.2.2*

Each pressure-reducing hose valve shall be operated annually through its full range and returned to its normal position.

A.13.5.2.2

A test cap should be used when exercising the pressure-reducing hose valve and have a pressure rating greater than or equal to the maximum anticipated pressure at the hose valve. Paragraph 13.5.2.2 does not require a full flow test.

13.5.2.3*

A full flow test at maximum flow rate shall be conducted on each device at 5-year intervals and shall be compared to previous test results .

A.13.5.2.3

PRV devices can A bench test is an acceptable method to test pressure-reducing hose valves that cannot be bench tested in accordance with the manufacturer's instructions or tested in place on the system . To test in place, a gauge is connected on both the inlet side and the outlet side of the device, and flow readings are taken using a pitot tube or a flowmeter. Water is discharged through a roof manifold, if available, or through hose to the exterior of the building. Another acceptable method for systems having at least two risers is to take one standpipe out of service and use it as a drain by removing PRV pressure-regulating devices and attaching hoses at the outlets near the ground floor level. When testing in this manner, a flowmeter should be used and a hose line utilized should be used to connect the riser being tested and the drain riser.

Readings are to be compared to the system's hydraulic demands at the test location. Field-adjustable valves are to be reset in accordance with the manufacturer's instructions. Nonadjustable valves should be replaced. Extreme caution is necessary because of the high pressure involved when testing.

13.5.2.3.1

The results of the flow test shall be compared to previous test results.

13.5.2.3.2

Adjustments to the pressure-reducing hose valve shall be made in accordance with the manufacturer's instructions.

13.5.2.3.3

A tag shall be attached to the valve indicating the date of the test, the flow, the inlet pressure, and the outlet pressure recorded during the test.

13.5.2.4

A tag shall be attached to the valve indicating the date of the test, the flow in gpm (lpm) , the static and residual inlet pressures , and the residual outlet pressure recorded during the test.

13.5.2.4

A partial flow test for pressure-reducing valves adequate to move the device from its seat shall be conducted annually.

13.5.3 Pressure-Reducing Hose Valve with Hose Rack Assembly.

13.5.3.1

The hose rack assembly shall be inspected and tested in accordance with NFPA 1930 .

13.5.3.2

The pressure-reducing hose valve shall be inspected and tested in accordance with 13.5.2 .

13.5.3 Hose Rack Assembly Pressure-Regulating Devices.

13.5.3.1

~~All devices shall be inspected annually to verify the following:~~

~~The handwheel is not missing or broken.~~

~~No leaks are present.~~

13.5.3.2

~~A full flow test shall be conducted on each device at 5-year intervals and compared to previous test results.~~

13.5.3.2.1

~~Adjustments shall be made in accordance with the manufacturer's instructions.~~

13.5.3.3

~~A partial flow test for pressure-reducing valves adequate to move the device from its seat shall be conducted annually.~~

13.5.4 Master Pressure-Regulating Devices Reducing Valves .**13.5.4.1**

Devices Master pressure-reducing valves shall be inspected weekly to verify ~~that the devices are in~~ the following condition :

(1)* Normal downstream pressures are maintained.

A.13.5.4.1(1)

Pressures downstream of the master PRV pressure-reducing valve should not exceed the maximum pressure rating of the system components.

(2) Normal supply pressure is maintained.

(3) Devices and associated trim components are free of physical damage and are not leaking.

13.5.4.2*

A partial flow test adequate to move the valve from its seat shall be conducted quarterly.

A.13.5.4.2

The partial flow test of the master PRV pressure-reducing valve can be performed during the quarterly main drain test. (See 13.2.2.2.)

13.5.4.3

~~A full flow test shall be conducted on each valve annually and shall be compared to previous test results~~ at maximum and minimum anticipated flow rates on each valve .

13.5.4.3.1

Where pressure-reducing valves are arranged in series, the downstream pressure-reducing valve shall be tested at both the discharge pressure from the upstream pressure-reducing valve and with the upstream pressure-reducing valve bypass open. [14: 12.6.5.1.1]

13.5.4.3.2

The results of the flow test shall be compared to previous test results.

13.5.4.4

When valve adjustments are necessary, they shall be made in accordance with the manufacturer's instructions.

~~13.5.5 Pressure-Reducing Valves:~~**~~13.5.5.1~~**

~~All pressure-reducing valves installed on fire protection systems not covered by 13.5.1 ; 13.5.2 ; 13.5.3 ; or 13.5.4 shall be inspected in accordance with 13.5.1.1 :~~

~~13.5.5.2~~

~~All pressure-reducing valves installed on fire protection systems not covered by 13.5.1 ; 13.5.2 ; 13.5.3 ; or 13.5.4 shall be tested in accordance with 13.5.1.3 :~~

~~13.5.5 Fire Pump Relief Valves:~~**~~13.5.5.1 Circulation Relief Valves:~~****~~13.5.5.1.1~~**

~~Where installed, circulation relief valves shall be inspected on the same frequency as the no-flow (churn) test.~~

~~13.5.5.1.2~~

~~The inspection shall verify that water flows through the valve when the fire pump is operating at shutoff pressure (i.e., churn) to prevent the pump from overheating.~~

~~13.5.5.1.3~~

~~On completion of any fire pump test, the closure of the circulation relief valve shall be verified.~~

13.5.5 Main Pressure Relief Valve.**13.5.5.1**

Where installed, main pressure relief valves shall be inspected during any fire pump test.

13.5.5.2

The inspection shall verify ~~that the pressure downstream of the relief valve fittings in the fire pump discharge piping does not exceed the pressure for which the system components are rated:~~ the following conditions:

- (1) Devices and associated trim components are free of physical damage and are not leaking .
- (2) The pressure downstream of the relief valve fittings in the fire pump discharge piping does not exceed the pressure for which the system components are rated.

13.5.5.3

~~During the annual fire pump flow test, the~~ The pressure relief valve shall be verified annually to be correctly adjusted and set to relieve at the correct pressure and to close below that pressure setting.

13.5.6 Maintenance.

All damaged or missing components noted during ~~the~~ inspections ~~specified in 13.6.1 through 13.6.2.2~~ shall be repaired or replaced in accordance with the manufacturer's instructions.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Fri Oct 06 13:49:19 EDT 2023

Committee Statement

Committee Statement: The requirements for pressure-regulating devices were revised to correlate with all installation documents referenced by NFPA 25 and correlated the specific terms

referenced in the section to the definitions in Chapter 3. Additionally, redundant requirements have been deleted and fire pump specific sections have been relocated to Chapter 8.

Response
Message: FR-76-NFPA 25-2023

**First Revision No. 80-NFPA 25-2023 [Section No. 13.6.1.1]****13.6.1.1**

Hose valves shall be inspected ~~quarterly~~ annually to verify ~~that the valves are in the~~ following conditions :

- (1) Hose caps are in place and not damaged.
- (2) Hose threads are not damaged.
- (3) Valve handles are present and not damaged.
- (4) Gaskets are not damaged or showing signs of deterioration.
- (5) No leaks are present.
- (6) Valves are not obstructed or otherwise not capable of normal operation.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Mon Oct 09 17:05:32 EDT 2023

Committee Statement

Committee Statement: Annual inspection of hose valves and hose connections is more appropriate annually rather than quarterly due to the secondary function of standpipes and there is no evidence that quarterly inspection is needed.

Response Message: FR-80-NFPA 25-2023

**First Revision No. 81-NFPA 25-2023 [Section No. 13.6.1.8]****13.6.1.8***

Hose valves shall be inspected to ensure that restricting devices are present, where required .

A.13.6.1.8

NFPA 1 and NFPA 14 permit the removal of restricting devices in existing systems.

13.6.1.9

Where approved by the authority having jurisdiction, existing hose valve restricting devices shall be permitted to be removed and not be recorded as a deficiency.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Mon Oct 09 17:09:39 EDT 2023

Committee Statement

Committee Statement: Modifying 13.6.1.8 is a clarification to indicate “where required” since not all hose valves utilize restricting devices. Add annex language to clarify the removal of restricting devices based on installation and fire code requirements.

Response Message: FR-81-NFPA 25-2023



First Revision No. 48-NFPA 25-2023 [New Section after 13.8.5.1]

13.8.5.2

Where the length of the piping from the fire department connection to the fire department check valve is 48 in. (1.2 m) or less and can be visually inspected internally and externally, the 5-year hydrostatic test shall not be required.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 19:50:29 EDT 2023

Committee Statement

Committee Statement: The new requirement provides a practical allowance of inspecting short sections of the fire department connection piping in lieu of hydrostatic testing, which has proven to be difficult in the field.

Response Message: FR-48-NFPA 25-2023

Public Input No. 163-NFPA 25-2023 [New Section after 13.8.5]

**First Revision No. 50-NFPA 25-2023 [Section No. 13.10.2]****13.10.2** Inspection.

Air compressors and nitrogen generators dedicated to water-based fire protection systems shall be inspected monthly to verify the following:

- (1) Air compressor or nitrogen generator is free of physical damage.
- (2) Power wiring to the air compressor is intact and free of physical damage.
- (3) Piping from the air compressor or nitrogen generator to the fire protection system is intact and free of physical damage.
- (4) The means of anchoring the air compressor or nitrogen generator to the structure or to the system piping is secure, tight, and free of physical damage.
- (5) Air compressors requiring oil have the required amount of oil in the oil reservoir.
- (6) Corrosion-inhibiting equipment is intact and free of physical damage.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 20:37:12 EDT 2023

Committee Statement

Committee Statement: This aligns with the new NFPA 13 allowance for Vapor Corrosion Inhibitor equipment.

Response Message: FR-50-NFPA 25-2023

Public Input No. 167-NFPA 25-2023 [Section No. 13.10.2]



First Revision No. 49-NFPA 25-2023 [New Section after 13.10.4.2]

13.10.4.3

Where required for corrosion mitigation, corrosion-inhibiting equipment and products shall be maintained in accordance with the manufacturer's instructions.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 20:03:19 EDT 2023

Committee Statement

Committee Statement: Corrosion inhibitors can be required by installation standards to treat unusually corrosive environments and is important to maintain when used for this purpose.

Response Message: FR-49-NFPA 25-2023

Public Input No. 168-NFPA 25-2023 [Section No. 13.10.4]

**First Revision No. 58-NFPA 25-2023 [New Section after 14.2.1.5]****14.2.1.6***

An auxiliary antifreeze system connected to a wet pipe sprinkler system shall not be required to comply with Section 14.2 .

A.14.2.1.6

An auxiliary antifreeze system connected to a wet pipe sprinkler system should not require an internal assessment because other portions of the system (i.e., cross main and branch line) can be used to meet the requirements of Section 14.2 . Stand-alone antifreeze systems should be drained before conducting the internal assessment; the solution can be placed back into the system without replacing the antifreeze solution if it meets the requirements outlined in 5.3.4 .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 10:58:39 EDT 2023

Committee Statement

Committee Statement: When an auxiliary antifreeze system is added to a wet system it is still considered one system and therefore any part of the system can be checked during the internal assessment of 14.2. Draining the antifreeze can take extensive time and resources as well as there is the possibility of spillage and contamination of the solution.

Response Message: FR-58-NFPA 25-2023

Public Input No. 142-NFPA 25-2023 [New Section after 14.2.1.5]



First Revision No. 87-NFPA 25-2023 [Section No. 14.3.1]

[Detail FR-117](#)

[Detail FR-86](#)

14.3.1*

An obstruction investigation shall be conducted for system or yard main piping wherever any of the following conditions exist:

- (1) Defective intake for fire pumps taking suction from open bodies of water
- (2) Discharge of obstructive material during routine water tests
- (3) Foreign materials in fire pumps, dry pipe valves, or check valves
- (4) Foreign material in water during drain tests or plugging of inspector's test connection(s)
- (5) Unknown materials heard in the system piping during draining, refilling, or otherwise flowing water through the system
- (6) Plugged sprinklers
- (7) Foreign organic or inorganic material with the potential to obstruct pipe or sprinklers found in the pipe
- (8) Failure to flush yard piping or surrounding public mains following new installations or repairs
- (9) Record of broken public mains in the vicinity
- (10) Abnormally frequent false tripping of a dry pipe valve(s)
- (11) System returned to service after an extended shutdown (i.e., greater than 1 year)
- (12) Reason to believe that the sprinkler system contains sodium silicate or highly corrosive fluxes in copper systems
- (13) System supplied with raw water via the fire department connection
- (14) ~~Leakage~~ Pinhole leaks or leakage caused by internal corrosion
- (15*) A 25 percent increase or a 5-second increase for portions of systems protecting dwelling units in the total water delivery time for dry pipe systems and double interlock preaction systems, with normal air pressure on the system and starting at the time of fully opened inspection test connection, when compared to the original system acceptance test

~~Failure to maintain a nitrogen supply, except in instances of preplanned impairments, installed in accordance with NFPA 13 when a Hazen-Williams C value of 120 is used for dry and preaction systems.~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 10 21:34:06 EDT 2023

Committee Statement

Committee Statement: This section has been deleted as the loss of nitrogen is not an indicator of corrosion sufficient to warrant an obstruction investigation. The existing annex note from (16) has been relocated to new 4.1.5.1(1).

Response Message: FR-87-NFPA 25-2023

[Public Input No. 116-NFPA 25-2023 \[Section No. 14.3.1\]](#)



First Revision No. 59-NFPA 25-2023 [Section No. 14.4]

14.4 Ice Obstruction.

~~Dry pipe or preaction sprinkler system piping that protects or passes through refrigerated spaces maintained at temperatures below 32°F (0°C) shall be inspected internally on an annual basis for ice obstructions at the point where the piping enters the refrigerated area.~~

14.4.1

Dry pipe or preaction sprinkler system piping that protects or passes through refrigerated spaces maintained at temperatures below 32°F (0°C) shall be inspected internally on an annual basis for ice obstructions at the point where the piping enters the refrigerated area.

14.4.2

Alternative nondestructive examinations shall be permitted.

14.4.3

~~All penetrations into the refrigerated spaces shall be inspected, and, if an ice obstruction is found, additional pipe shall be examined to ensure that no additional ice obstructions or ice blockages exist.~~

14.4.3.1

If an ice obstruction is found, additional pipe shall be examined to ensure that no additional ice obstructions or ice blockages exist.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 12:19:00 EDT 2023

Committee Statement

Committee Statement: Editorial to be consistent with other sections of the chapter.

Response Message: FR-59-NFPA 25-2023

[Public Input No. 90-NFPA 25-2023 \[Section No. 14.4.2\]](#)

[Public Input No. 89-NFPA 25-2023 \[Section No. 14.4.1\]](#)

[Public Input No. 88-NFPA 25-2023 \[Section No. 14.4 \[Excluding any Sub-Sections\]\]](#)



First Revision No. 19-NFPA 25-2023 [New Section after 15.6.2]

15.6.3 Frozen System Piping.

15.6.3.1

When the piping between the water supply and any discharge devices or hose connections of a water-based fire protection system is found to be frozen, the system shall be considered impaired.

15.6.3.2*

Frozen system components shall be completely thawed out or replaced and the system restored to service.

A.15.6.3.2

Frozen water-based fire protection system piping could occur in unexpected freezing weather conditions, especially in regions that are not considered cold climates. Once a frozen system or a partially frozen system is discovered, the system is considered impaired and impairment procedures need to be implemented immediately.

The following steps should be taken to restore the system to service:

- (1) The frozen system piping should be completely thawed out. Thawing out piping can involve either totally heating the building, including all blind and concealed spaces containing frozen piping, or disassembling the pipes, taking them into a heated area, and using a safe heat source to thaw the pipes. It's necessary to make sure no potential ice plugs remain in the system.
- (2) The affected pipe, fittings, and components should be visually inspected to determine if there is any breakage or deformities. Depending on the length and severity of the freezing event, damage to the system can be extensive. Once the piping is thawed out completely, check for damage. Typical damage to frozen sprinkler system piping can include cracked or broken valves and fittings, split piping, damaged sprinklers, and damage to any other system component subjected to system water pressure. Access to as much of the system piping as possible for this examination is recommended, even if cutting open drywall ceilings and walls is necessary.
- (3) All sprinklers should be visually inspected to determine if the operating element is still intact or if there is any evidence of stress at the seat.
- (4) Once all broken or deformed pipe, fittings, components, and sprinklers have been replaced, it's necessary to perform an air test to identify system parts that might not have appeared visibly damaged and replace them before performing a hydrostatic test.
- (5) An air pressure test should be conducted to ensure the entire system is intact, as follows:
 - (a) For metallic piping systems, an air pressure test at 40 psi (3.2 bar) for 2 hours is recommended. The system should be permitted to lose up to 3 psi (0.2 bar) during the duration of the test. The source of air leaks should be identified and repaired if the system loses more than 3 psi (0.2 bar) during this test. An odorant such as peppermint extract can be used to find the general area of the air leak, and spraying fittings and joints with a soapy solution can find the exact source of the air leak.
 - (b) For nonmetallic piping systems, an air pressure test should be performed in accordance with the manufacturer's instructions.
- (6) Once the system is fully repaired and passes the air test, a hydrostatic test complying with the appropriate installation standard is needed before restoring the system to service.
- (7) Complete restoration of service procedures provided in Section 15.7 .

Submitter Information Verification

Committee: INM-AAA

Submission Date: Wed Oct 04 11:34:30 EDT 2023

Committee Statement

Committee Statement: Systems can freeze in cold weather and guidance was needed on how to handle these unique occurrences.

Response Message: FR-19-NFPA 25-2023

[Public Input No. 172-NFPA 25-2023 \[New Section after 4.1.2.5.2\]](#)

[Public Input No. 173-NFPA 25-2023 \[New Section after A.4.1.2.2\]](#)



First Revision No. 2-NFPA 25-2023 [Section No. A.1.1.3.1]

A.1.1.3.1

The requirement to evaluate the adequacy or accuracy of the design or installation of the system or the capability of the fire protection system to protect the building or its contents is not a part of the periodic inspection, testing, and maintenance requirements of this standard. While this standard does not require an inspector to evaluate the adequacy or accuracy of a system, it does not prohibit the inspector or inspection organization from making recommendations or observations to the owner of a system related to the need for evaluations or modifications in the interest of fire and life safety. Recommendations and observations should not be a part of the inspection report. Examples of items not covered by this standard include the evaluation of unsprinklered areas and the spacing of sprinklers. However, such evaluation is the responsibility of the property owner or designated representative as indicated in 4.1.7 and 4.1.8. An example of a hazard evaluation form can be found in Annex E.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 03 13:14:44 EDT 2023

Committee Statement

Committee Statement: NFPA 25 is written to the owner as an ITM document and recommendations can assist the owner in maintaining their system. Additional language was added as not to deter the inspector from making recommendations.

Response Message: FR-2-NFPA 25-2023

[Public Input No. 64-NFPA 25-2023 \[Section No. A.1.1.3.1\]](#)



First Revision No. 18-NFPA 25-2023 [Section No. A.3.3.8]

A.3.3.8 Deficiency.

This standard classifies abnormal conditions as either noncritical or critical deficiencies and impairments. The use of the phrase *fire protection system or unit* is a broad reference to those terms used in the titles of Chapter 5 through 12. ~~Some~~ In installation standards, some fire protection features are ~~referenced~~ referred to as systems ~~in the installation standards~~ (e.g., sprinkler, standpipe, water-spray, foam-water, water mist), ~~or some are~~ referred to as units (e.g., fire pumps), and others use neither term (e.g., private fire service mains, water tanks). For the purpose of this standard, the ~~word term~~ unit refers to a fire pump and its connections required by NFPA 20, a water storage tank and its connections required by NFPA 22, or a private fire service fire main and its connections required by NFPA 24. The use of the ~~word term~~ unit in the definitions of impairment, deficiency, critical deficiency, and noncritical deficiency is not referring to an individual component such as a sprinkler, valve, fitting, switch, or piece of pipe.

While conducting inspections and tests, various abnormal conditions might be encountered. Abnormalities or conditions requiring correction are classified as ~~an~~ impairments, ~~critical deficiency~~ deficiencies, or noncritical ~~deficiency~~ deficiencies. The classification is intended to provide guidance in responding to these conditions.

For example, an impairment should be addressed promptly by either immediately correcting the condition or implementing the impairment procedures found in Chapter 15. Critical and noncritical deficiencies should be corrected as soon as practical after considering the nature and severity of the risk. It should be noted that many jurisdictions have requirements for the timely correction of impairments and/or deficiencies.

Table A.3.3.8 provides examples for classifying conditions needing repair or correction that are identified during inspections and tests of water-based suppression systems or units (e.g., fire pump, water storage tank, private fire service main). It is not the intent of Table A.3.3.8 to specify a required classification. Table A.3.3.8 does not consider every variation of conditions needing repair or correction. The nature of the hazard or the life safety exposure of the occupancy should be considered when using Table A.3.3.8 to assign a classification. For example, several painted sprinklers in a large warehouse might be classified as noncritical, whereas a single painted sprinkler in a hospital patient sleeping room might be classified as critical.

Some conditions are more easily classified. A shut water control valve supplying a system, a portion of a system, or a unit is considered an impairment, whereas a missing water control valve sign is noncritical in nature. However, most classifications require a careful level of judgment, and in some cases further investigation might be needed. For example, where a main drain test on a sprinkler system shows a drop of more than 10 percent in full flow pressure, the classification is dependent on such issues as the full flow pressure in relation to the system demand. The classification could be noncritical, critical, or an impairment, depending on the impact to the performance or operation of the system.

Where Table A.3.3.8 shows more than one classification, the intent is to demonstrate that the proper classification should consider the context in which the condition exists. It is important to note that many conditions will require the system to be impaired ~~to~~ for it to be corrected and for the impairment procedures found in Chapter 15 to apply.

Table A.3.3.8 should be used with careful judgment and the understanding that assigning a classification might require input from the authority having jurisdiction.

Table A.3.3.8 Water-Based Fire Protection System Inspection and Testing Findings

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Chapter 5: Sprinkler Systems — Inspection					
All sprinklers	Leaking — spraying or running water	5.2.1.1.1		X	
All sprinklers	Leaking — slowly dripping water	5.2.1.1.1			X
All sprinklers	Foreign material attached or suspended from sprinkler	5.2.1.1.1		X	X

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
All sprinklers	Heavily loaded, corroded, or painted; improper orientation; glass bulb has lost fluid; damaged	5.2.1.1.1		X	
All sprinklers	Lightly or moderately loaded, corroded, or painted	5.2.1.1.1			X
Concealed sprinkler coverplates	Caulked or glued to ceiling	5.2.1.1.1	X		
Escutcheons and coverplates	Missing recessed or flush escutcheons; concealed coverplate with deflector and operating element in correct position	5.2.1.1.5			X
Escutcheons and coverplates	Missing recessed or flush escutcheons; concealed coverplate with deflector and operating element not in correct position	5.2.1.1.5		X	
All sprinklers	Minimum clearance to storage not maintained	5.2.1.2		X	
Spare sprinkler cabinet	Cabinet missing; temperature above maximum permitted; ~~not proper~~ improper number and type; missing wrench for each type	5.2.1.4			X
Pipe and fittings	Leaking — slowly dripping and/or moisture on surface	5.2.2.1			X
Pipe and fittings	Leaking — spraying or running water	5.2.2.1		X	
Pipe and fittings	Mechanical damage	5.2.2.1		X	X
Hangers and seismic braces	Loose	5.2.3.2			X
Hangers and seismic braces	Damaged or unattached	5.2.3.2		X	X
Hydraulic design information sign	Not attached properly; illegible; missing	5.2.5			X
Heat tracing	Not in accordance with manufacturer's instructions	5.2.6		X	
Information sign	Not attached; illegible; missing	5.2.7			X
General information sign	Not attached; illegible; missing	5.2.8			X

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Antifreeze information sign	Not attached; illegible; missing	5.2.9			X
Chapter 5: Sprinkler Systems — Testing					
Antifreeze systems	Solution does not meet requirements of 5.3.4(4)	5.3.4		X	
Antifreeze systems	Solution is inadequate to prevent freezing	~~5.3.4.4~~ 5.3.4.2.1	X		
Sprinkler	Sprinkler(s) fails laboratory testing	5.3.1	X	X	
Chapter 6: Standpipe and Hose Systems — Inspection					
Hydraulic design information sign	Missing	6.2.2			X
Pipe and fittings	Leaking — slowly dripping and/or moisture on surface	6.2.4			X
Pipe and fittings	Leaking — spraying or running water	6.2.4		X	
Pipe and fittings	Mechanical damage	6.2.4		X	X
Hangers and supports	Damaged; missing	6.2.4		X	X
Hose	Cuts; couplings not of compatible threads	6.2.5 and ~~NFPA 1962~~ NFPA 1930	X	X	
Hose	Deterioration; no gasket or damaged gaskets	6.2.5 and ~~NFPA 1962~~ NFPA 1930		X	
Hose	Mildew present; corrosion present; hose not connected	6.2.5 and ~~NFPA 1962~~ NFPA 1930		X	X
Hose nozzle	Missing; broken parts; thread gasket damaged	6.2.6 and ~~NFPA 1962~~ 1930	X	X	
Hose storage	Hose not properly stored; improperly racked or rolled; nozzle clip missing; nozzle not contained; damaged; obstructed; failure to rotate	6.2.7 and ~~NFPA 1962~~ 1930	X	X	
Cabinet	Corroded or damaged parts; not easy to open; not identified; door glazing in poor condition; lock not functioning in break glass type; physically obstructed; valve, hose nozzle, fire	6.2.8 and ~~NFPA 1962~~ NFPA 1930		X	

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
	extinguisher, and so on not readily accessible				
Chapter 6: Standpipe and Hose Systems — Testing					
Hose storage device	Rack will not swing out of cabinet at least 90 degrees	6.2.7 and ~~NFPA 1962~~ <u>NFPA 1930</u>			X
Standpipe system	Test results did not provide design pressure at required flow	6.3.1	X	X	
Hydrostatic test of manual and semiautomatic dry standpipe systems	Leakage in piping	6.3.2.1			X
Chapter 7: Private Fire Service Mains — Inspection					
Exposed piping	Leaking — slowly dripping and/or moisture on surface	7.2.2.1.2			X
Exposed piping	Leaking — spraying or running water	7.2.2.1.2		X	
Exposed piping	Mechanical damage; corroded; ~~not~~ ~~properly~~ <u>improperly</u> restrained	7.2.2.1.2		X	X
Mainline strainers	Plugged or fouled	7.2.2.3.2	X		
Mainline strainers	Corroded	7.2.2.3.2		X	
Dry barrel, wet barrel, and wall hydrant	Inaccessible; barrel contains ice; cracks in barrel	7.2.2.4 and 7.2.2.5	X		
Dry barrel, wet barrel, and wall hydrant	Barrel contains water; improper drainage from barrel; leaks at outlets or top of hydrant	7.2.2.4 and 7.2.2.5		X	
Dry barrel, wet barrel, and wall hydrant	Unusable outlets, nozzle threads, or operating nut	7.2.2.4 and 7.2.2.5	X		
Dry barrel, wet barrel, and wall hydrant	Worn but usable outlets, nozzle threads, or operating nut; missing wrench	7.2.2.4 and 7.2.2.5			X
Dry barrel; ~~wet barrel~~ ; and wall hydrant	Barrel contains water; improper drainage from barrel leaks at outlets or top of hydrant	~~7.2.2.4 and~~ ~~7.2.2.5~~		X	
<u>Wet barrel hydrant</u>	<u>Leaks at outlets or top of hydrant</u>	<u>7.2.2.5</u>		<u>X</u>	

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Monitor nozzles	Missing; damaged	7.2.2.7	X		
Monitor nozzles	Corroded; leaking	7.2.2.7		X	
Hose/hydrant houses	Inaccessible	7.2.2.8	X		
Hose/hydrant houses	Damaged	7.2.2.8		X	
Hose/hydrant houses	Not fully equipped	7.2.2.8			X
Chapter 7: Private Fire Service Mains — Testing					
Underground and exposed piping	Test results show deterioration in water supply when compared to previous results	7.3.1.1	X	X	X
Dry barrel and wall hydrant	Hydrant did not flow clear or did not drain within 60 minutes	7.3.2.1 and 7.3.2.4			X
Monitor nozzles	Did not flow acceptable amount of water	7.3.3	X		
Monitor nozzles	Nozzle patterns not adequate/adjustable	7.3.3			X
Monitor nozzles	Failure of oscillating mechanism	7.3.3.2	X		
Monitor nozzles	Did not operate throughout their full range	7.3.3.2		X	
Chapter 8: Fire Pumps — Inspection					
Pump house/room	Ventilating louvers not free to operate	8.2.2(1)(c)		X	
Pump house/room	Heat not adequate, inadequate, temperature less than 40°F (4°C)	8.2.2(1)(a)	X	X	
Pump house/room	Heat not adequate, inadequate, temperature less than 70°F (21°C) for diesel pumps without engine heaters	8.2.2(1)(b)	X	X	
Pump house/room	Excessive water on floor	8.2.2(1)(d)		X	
Pump house/room	Coupling guard not in place	8.2.2(1)(e)		X	
Pump system	Suction or discharge not fully open	8.2.2(2)(a)	X		
Pump system	Bypass valves not fully open	8.2.2(2)(a)		X	
Pump system	Pipe leaking	8.2.2(2)(b)		X	
Pump system	Suction line and system line pressure not	8.2.2(2)(c) and 8.2.2(2)(d)	X	X	X

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
	~~normal~~ <u>abnormal</u>				
Pump system suction	Reservoir empty	8.2.2(2)(e)	X		
Pump system	Suction reservoir does not have required water level; wet pit suction screens missing	8.2.2(2)(e)		X	
Pump system	Wet pit suction screens obstructed	8.2.2(2)(f)	X		
Pump system	Waterflow test valves open; hose connection valve open; test line contains water	8.2.2(2)(g)		X	X
Electrical power to pump system	No electrical power provided — controller pilot light not illuminated; transfer switch pilot light not illuminated; isolating switch not closed; reverse phase alarm pilot light on; normal phase light is off	8.2.2(3)	X		
Electrical power to pump system	Electrical power provided — controller pilot light not illuminated; transfer switch pilot light not illuminated; normal phase light is not illuminated	8.2.2(3)			X
Electric pump system	Oil level in vertical motor sight glass ~~not~~ <u>normal</u> <u>abnormal</u>	8.2.2(3)(e)		X	
Pressure maintenance (jockey) pump	No power	8.2.2(3)(f)			X
Diesel engine system	Fuel tank less than two-thirds full	8.2.2(4)(a)		X	
Diesel engine system	Fuel tank empty	8.2.2(4)(a)	X		
Diesel engine system	Controller selector switch not in auto position	8.2.2(4)(b)	X		
Diesel engine system	Battery voltage readings ~~not normal~~ <u>abnormal</u>	8.2.2(4)(c)	X	X	
Diesel engine system	Battery charging current ~~not normal~~ <u>abnormal</u>	8.2.2(4)(d)		X	
Diesel engine system	Battery failure pilot lights on	8.2.2(4)(e)	X		
Diesel engine system	Battery pilot lights off	8.2.2(4)(e)		X	
Diesel engine system	Alarm pilot lights are on	8.2.2(4)(f)		X	
Diesel engine system	Engine running time meter not reading	8.2.2(4)(g)			X
Diesel engine system	Oil level in right angle gear drive ~~not~~	8.2.2(4)(h)			X

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
	~~normal~~ <u>abnormal</u> (i.e., not at level mark, but visible in sight glass)				
Diesel engine system	Oil level in right angle gear drive below low level (i.e., not visible in sight glass or below one finger knuckle from inspection hole)	8.2.2(4)(h)		X	
Diesel engine system	Crankcase oil level ~~not normal~~ <u>abnormal</u>	8.2.2(4)(i)			X
Diesel engine system	Crankcase oil level below low level	8.2.2(4)(i)	X		
Diesel engine system	Cooling water level ~~not normal~~ <u>abnormal</u>	8.2.2(4)(j)			X
Diesel engine system	Cooling water level not visible	8.2.2(4)(j)		X	
Diesel engine system	Electrolyte level in batteries below top of battery plates	8.2.2(4)(k)		X	
Diesel engine system	Battery terminals corroded	8.2.2(4)(l)		X	
Diesel engine system	Water-jacket heater not operating	8.2.2(4)(m)		X	
Steam system	Steam pressure gauge reading ~~not normal~~ <u>abnormal</u>	8.2.2(5)		X	
Chapter 8: Fire Pumps — Testing					
Fire pump test	Pump did not start automatically	8.3.2.2	X		
Fire pump test	Pump failed to run for 10 minutes	8.3.2.3		X	
Fire pump test	Pump failed to run for 30 minutes	8.3.2.4		X	
Fire pump test — pump system	System suction and discharge gauge reading, or pump starting pressure, outside the acceptable range	8.3.2.9(1)		X	
Fire pump test — pump system	Pump packing gland discharge ~~not acceptable~~ <u>unacceptable</u> ; unusual noise or vibration; packing boxes, bearings, or pump casing overheating	8.3.2.9(1)		X	
Fire pump test — electrical-motor-driven system	Time for motor to accelerate to full speed, time controller is on first step, or time pump runs after starting ~~not acceptable~~ <u>unacceptable</u>	8.3.2.9(2)	X		

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Fire pump test — diesel- engine-driven system	Time for engine to crank and time for engine to reach running speed ~~not~~ <u>acceptable unacceptable</u> (engine is required to reach rated speed within 20 seconds in accordance with 11.2.4.1.4 of NFPA 20)	8.3.2.9(3)		X	
Fire pump test — diesel- engine-driven system	Low rpm and does not meet system demand	8.3.2.9(3)	X		
Fire pump test — diesel- engine-driven system	Low rpm and meets system demand	8.3.2.9(3)			X
Fire pump test — diesel- engine-driven system	Low oil pressure; high temperature; high cooling water pressure	8.3.2.9(3)		X	
Fire pump test — steam system	Gauge reading and time for turbine to reach running speed ~~not~~ <u>acceptable unacceptable</u>	8.3.2.9(4)		X	
Fire pump annual test	Circulation relief valve and/or pressure relief valve did not work properly at churn condition	8.3.3.10(1)	X	X	
Fire pump annual test	Pressure relief valve did not work properly at each flow condition	8.3.3.12	X	X	
Fire pump annual test (with transfer switch)	Overcurrent protective devices opened when simulating a power failure condition at peak load; power not transferred to alternate source; pump did not continue to perform at peak load; pump did not reconnect to normal power after removing power failure condition	8.3.3.13	X		
Fire pump annual test	Alarms did not properly operate	8.3.3.14		X	
Fire pump annual test	Parallel or angular alignment ~~not~~ <u>correct incorrect</u>	8.3.6.4		X	
Fire pump annual test	Flow test does not meet most demanding system flow and pressure requirements	8.3.7.2.3(1)	X	X	

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Fire pump annual test	Flow test results not within 5 percent of acceptance test or nameplate	8.3.7.2.3(3)			X
Fire pump annual test	Voltage readings at motor not within 5 percent below or 10 percent above rated (nameplate)	8.3.7.2.9		X	
Diesel fuel annual test	Diesel fuel tested for degradation and failed	8.3.4	X		
Chapter 9: Water Storage Tanks — Inspection					
Water level	Water level and/or condition ~~not correct~~ <u>incorrect</u>	9.2.1		X	
Water level	Tank is below the designed water level	9.2.1	X		
Water temperature	Heating system not operational, water temperature below 40°F (4°C)	9.2.3		X	
Water temperature	Water temperature at or below 32°F (0°C)	9.2.3	X		
Exterior	Tank exterior, supporting structure, vents, foundation, catwalks, or ladders (where provided) damaged	9.2.4.1			X
Exterior	Area around tank has fire exposure hazard in form of combustible storage, trash, debris, brush, or material	9.2.4.2			X
Exterior	Accumulation of material on or near parts that could result in accelerated corrosion or rot	9.2.4.2			X
Exterior	Ice buildup on tank and support	9.2.4.2		X	
Exterior	Erosion exists on exterior sides or top of embankments supporting coated fabric tanks	9.2.4.2		X	X
Exterior	Expansion joints leaking or cracking	9.2.4.3		X	
Exterior	Hoops and grilles of wooden tanks in poor condition	9.2.4.4			X
Exterior	Exterior painted, coated, or insulated surfaces of tanks or supporting structure degraded	9.2.4.5			X

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Interior	Pitting, corrosion, spalling, rot, or other forms of deterioration; waste materials exist; aquatic growth; local or general failure of interior coating	9.2.5.3			X
Interior	Voids beneath floor, with sand in middle of tanks on ring-type foundations	9.2.5.5			X
Interior	Heating system components or piping in poor condition but working	9.2.5.6			X
Interior	Heating system components or piping in poor condition and not working	9.2.5.6	X	X	
Interior	Blockage of antivortex plate	9.2.5.7	X		
Interior	Deterioration of antivortex plate	9.2.5.7		X	
Chapter 9: Water Storage Tanks — Testing					
Interior testing	Tank coating did not pass adhesion, coating thickness, or wet sponge test	9.2.6			X
Interior testing	Tank walls and bottoms did not pass ultrasonic test	9.2.6			X
Interior testing	Tank bottom seams did not pass vacuum-box test	9.2.6			X
Level indicator	Lacked freedom of movement, or not accurate	9.3.1		X	X
Heating system	Not in working order	9.3.2	X	X	
Low-temperature alarm	Low-water-temperature alarm did not pass test	9.3.3		X	
High-temperature alarm	High-water-temperature limit switch did not pass test	9.3.4			X
Water level alarms	High- and low-water-level alarms did not pass test	9.3.5		X	
Chapter 10: Water Spray Fixed Systems — Inspection					
Pipe and fittings	Mechanical damage; missing or damaged paint or coating; rusted or corroded; ~~not properly~~ <u>improperly</u>	10.2.3.1		X	X

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
	aligned or trapped sections; low-point drains not functioning; improper location of rubber-gasketed fittings				
Hangers and seismic braces	Damaged or missing; not securely attached to structural or piping; missing or damaged paint or coating; rusted or corroded	10.2.3.2		X	X
Water spray nozzles	Discharge devices missing	10.2.4.1	X		
Water spray nozzles	Discharge devices ~~not~~ properly positioned or pointed in design direction; loaded or corroded	10.2.4.1		X	
Water spray nozzles	Caps or plugs (if required) not free to operate as intended	10.2.4.1.1	X		
Water spray nozzles	Missing caps or plugs (if required)	10.2.4.1.1		X	
Strainers	Plugged or fouled	10.2.6	X		
Strainers	Damaged or corroded	10.2.6		X	
Drainage	Trap sumps and drainage trenches blocked; retention embankments or dikes in disrepair	10.2.7			X
Ultra-high-speed	Detectors have physical damage or deposits on lenses of optical detectors	10.4.2		X	
Ultra-high-speed	Controllers found to have faults	10.4.3		X	
Chapter 10: Water Spray Fixed Systems — Testing					
Operational test	Heat detection system did not operate within 40 seconds; flammable gas detection system did not operate within 20 seconds	10.3.3.1	X		
Operational test	Nozzles plugged	10.3.3.3.1	X		
Operational test	Nozzles ~~not~~ correctly <u>incorrectly</u> positioned	10.3.3.3.1		X	
Operational test	Pressure readings not comparable to original design requirements	10.3.3.4		X	
Operational test	Manual actuation devices did not work properly	10.3.5	X		

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Ultra-high-speed operational test	Response time was more than 100 milliseconds	10.4.5.2	X		
Chapter 11: Foam-Water Sprinkler Systems — Inspection					
Foam-water discharge devices	Missing	11.2.4.11	X		
Foam-water discharge devices	~~Not properly~~ Improperly positioned or pointed in design direction; loaded or corroded	11.2.4.1.1		X	
Foam-water discharge devices	Caps or plugs (if required) not free to operate as intended	11.2.4.1.2	X		
Foam-water discharge devices	Missing caps or plugs (if required)	11.2.4.1.2		X	
Foam-water discharge devices	Incorrect foam concentrate for application and devices	11.2.4.1.4		X	
Fixed foam discharge outlet	Corrosion	11.2.4.2.2			X
Fixed foam discharge outlet	Damaged; painted; orifice plate or jet orifice missing; clogged	11.2.4.2.2	X		
Fixed foam discharge outlet	Vapor seal not present	11.2.4.2.4		X	
Pressure foam maker	Orifice clogged	11.2.4.2.5	X		
Pressure foam maker	Check valve not operating freely	11.2.4.2.5.1	X		
Pressure foam maker	Rupture disc burst	11.2.4.2.5.5		X	
Pressure foam maker	Liquid level below injection line	11.2.4.2.5.7		X	
Pressure foam maker	Damaged or corroded	11.2.4.2.5.8			X
Pressure foam maker	Air intake damaged, clogged, or missing	11.2.4.2.5.9	X		
Foam concentrate strainers	Blowdown valve open or not plugged	11.2.6.4		X	
Drainage	Trap sumps and drainage trenches blocked; retention embankments or dikes in disrepair	11.2.7			X
Proportioning systems (all)	Valves not in correct open/closed position in	11.2.8.3	X		

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
	accordance with specified operating conditions				
Standard pressure proportioner	Automatic drains (ball drip valves) not free or open, external	11.2.8.5.2			X
Bladder tank proportioner	Water control valve to foam concentrate in "closed" position	11.2.8.6.2	X		
Line proportioner	Strainer damaged or corroded; pressure vacuum vent not operating freely	11.2.8.6.3		X	
Line proportioner	Strainer plugged or fouled	11.2.8.6.3	X		
Standard balanced pressure proportioner	Sensing line valves not open; no power to foam liquid pump	11.2.8.6.4	X		
Standard balanced pressure proportioner	Strainer plugged or fouled	11.2.8.6.4	X		
Standard balanced pressure proportioner	Strainer damaged or corroded; pressure vacuum vent not operating freely; gauges damaged or not showing proper pressures	11.2.8.6.4		X	
In-line balanced pressure proportioner	Sensing line valves at pump unit or individual proportioner stations not open; no power to foam liquid pump	11.2.8.6.5	X		
In-line balanced pressure proportioner	Strainer damaged or corroded; pressure vacuum vent not operating freely; gauges damaged or not showing proper pressures	11.2.8.6.5		X	
In-line balanced pressure proportioner	Strainer plugged or fouled	11.2.8.6.5	X		
Orifice plate proportioner	No power to foam liquid pump	11.2.8.6.6	X		
Orifice plate proportioner	Strainer damaged or corroded; pressure vacuum vent not operating freely; gauges damaged or not showing proper pressures	11.2.8.6.6		X	
Orifice plate proportioner	Strainer plugged or fouled	11.2.8.6.6	X		

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Wide-range proportioner	Reference marks not aligned	11.2.8.6.7		X	
Wide-range proportioner	Proportioner installed backwards	11.2.8.6.7	X		
Proportioning systems (all)	Foam concentrate in tank below the design requirements	11.2.9.1	X		
Proportioning systems (all)	Corrosion on foam concentrate tanks	11.2.9.2			X
Bladder tank proportioner	Foam in water surrounding bladder	11.2.9.8	X		
Pipe and fittings	Mechanical damage; rusted or corroded; not properly aligned or trapped sections; low-point drains not functioning; improper location or poor condition of rubber-gasketed fittings	11.2.11.2, 11.2.11.4, 11.2.11.5, and 11.2.11.6		X	X
Hangers and seismic braces	Damaged or missing; not securely attached to structure or piping; missing or damaged paint or coating; rusted or corroded	11.2.12		X	X
Foam contamination	Foam types mixed or water intrusion	11.2.13.1.2		X	
Foam dam	Damaged or clogged drains within dam	11.2.15	X		
Chapter 11: Foam-Water Sprinkler Systems — Testing					
Foam concentrate	Fails quality testing	11.3.1.3		X	
Operational test	Foam sample failed concentration test	11.3.2.2	X		
Hydro test	Tank fails test	11.3.5.1	X		
Operational test	Fire detection system did not operate within requirements of <i>NFPA 72</i>	11.3.10.2.5		X	
Operational test	Nozzles plugged	11.3.10.2.7.1	X		
Operational test	Nozzles not correctly positioned	11.3.10.2.7.1		X	
Operational test	Pressure readings not comparable to original design requirements	11.3.10.2.8		X	
Operational test	Manual actuation devices not working properly	11.3.10.4	X		
Fixed foam discharge	Orifice plugged	11.3.11.1	X		

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
outlet					
Foam dam	Failed to retain water	11.3.11.5.1	X		
Pressure foam maker	Plugged	11.3.11.6.2	X		
Chapter 13: Common Components and Valves — Inspection					
Alarm devices	Physical damage	13.2.3.1 and 13.2.3.2		X	X
Gauges	Not operating or damaged	13.2.4.1.1			X
Gauges	Not showing normal water/air pressure	13.2.4.1.2 and 13.2.4.1.3	X	X	X
Gauges	Freezer — system pressure lower than compressor	13.2.4.1.4	X		
Control valve	Improper closed position	13.3.2.2	X		
Control valve	Improper open position	13.3.2.2		X	
Control valve	~~Not~~ <u>accessible</u> <u>Inaccessible</u> ; no appropriate wrench (if required); no identification	13.3.2.2			X
Control valve	Not sealed, locked, or supervised	13.3.2.2		X	
Alarm valve	External physical damage; trim valves not in appropriate open or closed position; retard chamber or alarm drain leaking	13.4.1.1		X	
Valve enclosure	Upon visual observation, enclosure not maintaining minimum 40°F (4°C) temperature	4.1.2.5	X	X	
Valve enclosure	Low-temperature alarms (if installed) are physically damaged	4.1.2.5.1 and 4.1.2.5.2		X	
Preaction valve and deluge valve	External physical damage; trim valves not in appropriate open or closed position; valve seat leaking	13.4.3.1.1 and 13.4.4.1.1		X	
Preaction valve and deluge valve	Electrical components not in service	13.4.3.1.1 and 13.4.4.1.1	X		
Dry pipe valve/quick- opening device	External physical damage; trim valves not in appropriate open or closed position; intermediate chamber leaking	13.4.5.1.2		X	
Sprinkler pressure- reducing control valves	Not in open position	13.5.1.1	X		

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Sprinkler pressure-reducing control valves	Not maintaining downstream pressures in accordance with design criteria	13.5.1.1	X	X	X
Sprinkler pressure-reducing control valves	Leaking; damaged; hand wheel missing or broken	13.5.1.1		X	
Hose connection pressure-reducing valves	Hand wheel missing; hose threads damaged and ~~not usable~~ unusable ; reducer missing	13.5.2.1	X		
Hose connection pressure-reducing valves	Hand wheel broken; hose threads damaged but usable; leaking	13.5.2.1		X	
Hose connection pressure-reducing valves	Cap missing	13.5.2.1			X
Hose rack assembly pressure-reducing valve	Hand wheel broken or missing; leaking	13.5.3.1		X	
Hose valves	Leaking; visible obstructions; caps, hose threads, valve handle, or cap gasket damaged or in poor condition; no restricting device	13.6.1		X	
Backflow prevention assemblies	Reduced-pressure assemblies; differential-sensing valve relief port continuously discharging	13.7.1.1		X	
Fire department connection	~~Not accessible~~ Inaccessible ; damaged couplings and ~~not usable~~ unusable	13.8.1	X		
Fire department connection	Damaged couplings but usable; clapper ~~not operating properly~~ improperly or missing	13.8.1		X	
Fire department connection	Check valve leaking; automatic drain ~~not operating properly~~ improperly or missing	13.8.1			X
Fire department connection	Missing identification sign	13.8.1			X

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Chapter 13: Common Components and Valves — Testing					
Main drain	More than 10 percent drop in full flow pressure	13.2.2.3	X	X	X
Alarm devices	Water motor and gong not functioning without an additional electrically supervised waterflow device	13.2.3.1.2		X	
Alarm devices	Water motor and gong not functioning with an additional electrically supervised waterflow device	13.2.3.1.2			X
Alarm devices	Pressure switch or vane-type switch not functioning; no alarm	13.2.3.2.2		X	
Gauges	Not replaced or calibrated in 5 years; not accurate within 3 percent of scale	13.2.4.2 and 13.2.4.3			X
Control valve	Valve not operating through its full range	13.3.3.1	X		
Control valve	No spring or torsion felt in rod when opening post indicator valve	13.3.3.2	X		
Supervisory switches	No signal from two revolutions of hand-wheel from normal position or when stem has moved one-fifth of distance from normal position	13.3.3.5.2			X
Supervisory switches	Signal restored in position other than normal	13.3.3.5.3		X	
Preaction valve	Priming water level ~~not correct~~ incorrect	13.4.3.2.1		X	
Preaction valve	Three-year air leakage test failed	13.4.3.2.6		X	X
Preaction valve	Low air pressure switch did not send signal; no alarm	13.4.3.2.11		X	
Preaction and deluge valve	Low-temperature switch did not send signal; no alarm	13.4.3.2.12 and 13.4.4.2.14		X	
Preaction valve	Automatic air maintenance device did not pass test	13.4.3.2.13			X
Deluge valve	Annual full flow trip test revealed plugged nozzles; manual actuation devices did not operate properly	13.4.4.2.4	X		
Deluge valve	Pressure reading at hydraulically most remote	13.4.4.2.7		X	

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
	nozzle and/or at valve not ~~compatible~~ incompatible with original design values				
Dry pipe valve	Priming water level not ~~correct~~ incorrect	13.4.5.2.1		X	
Dry pipe valve	Does not trip during test	13.4.5.2.2	X		
Quick- opening device	Quick-opening device did not pass test	13.4.5.2.4		X	
Dry pipe valve	Low air pressure switch did not send signal; no alarm	13.4.5.2.6		X	
Dry pipe valve	Low-temperature switch did not send signal; no alarm	13.4.5.2.7		X	
Dry pipe valve	Automatic air maintenance device did not pass test	13.4.5.2.8		X	
Dry pipe system	Three-year leakage test failed	13.4.5.2.9		X	X
Sprinkler pressure- reducing control valves	Test results not comparable to previous results	13.5.1.2	X	X	X
Hose connection pressure- regulating valves	Test results not comparable to previous results	13.5.2.2	X	X	X
Hose rack assembly pressure- regulating valve	Test results not comparable to previous results	13.5.3.2	X	X	X
Hose valves (Class I and Class III standpipe systems)	Annual test revealed valve leaking or difficult to operate	13.6.2.1.1		X	
Hose valves (Class II standpipe systems)	Test revealed valve leaking or difficult to operate	13.6.2.2.1		X	
Backflow prevention assemblies	Did not pass minimum flow requirement for forward flow test	13.7.2.1	X	X	
Air compressors and nitrogen generators	Unit does not start at required air pressure; unit does not restore normal supervisory air pressure in required time frame; unit overheats while operating	13.10.3		X	X

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Chapter 14: Internal Piping Condition and Obstruction Investigation — Testing					
Assessment of internal condition	Assessment revealed presence of MIC, zebra mussels, rust, or scale	14.2.1		X	

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25-2023_A_3_3_8_PI_63_TG1.docx	Table Revisions	

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 11:09:06 EDT 2023

Committee Statement

Committee Statement: Deficiency examples for wet barrel and dry barrel hydrants were separated so that examples aligned with the correct referenced sections. Water in a wet barrel hydrant is not considered a deficiency.

Response Message: FR-18-NFPA 25-2023

[Public Input No. 63-NFPA 25-2023 \[Section No. A.3.3.8\]](#)

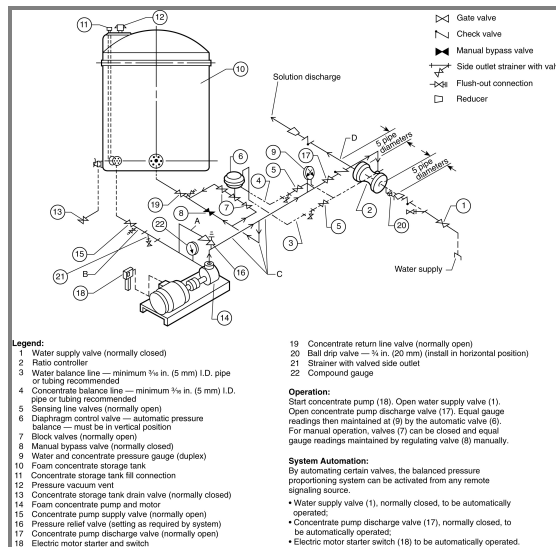
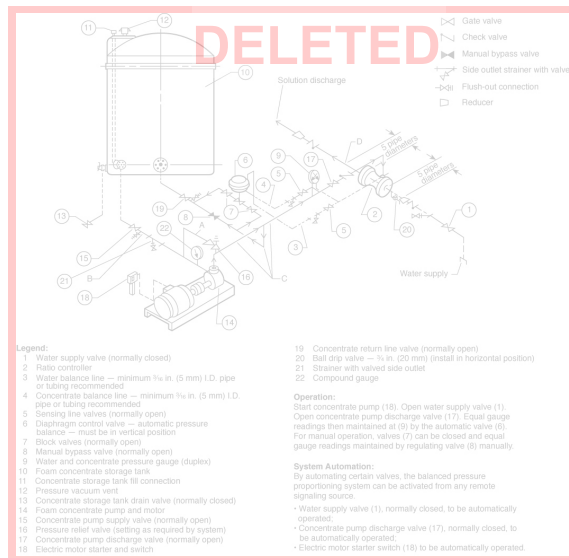


First Revision No. 53-NFPA 25-2023 [Section No. A.3.3.34.4]

A.3.3.32.4 Standard Balanced Pressure Proportioner. [Link](#)

Water and foam concentrate-sensing lines are directed to the balancing valve and maintain the foam liquid at a pressure equal to that of the water pressure. The two equal pressures are fed to the proportioner proper and are mixed at a predetermined rate. See Figure A.3.3.32.4.

Figure A.3.3.32.4 Standard Balanced Pressure Proportioner.



Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 00:28:27 EDT 2023

Committee Statement

Committee Statement: The manual bypass valve should normally be closed.

Response Message: FR-53-NFPA 25-2023

[Public Input No. 17-NFPA 25-2022 \[Section No. A.3.3.34.4\]](#)



First Revision No. 57-NFPA 25-2023 [Section No. A.5.2.5]

A.5.2.5

The hydraulic design information sign should be secured to the riser with durable wire, chain, or equivalent. If a hydraulic design information sign is missing, it can be difficult to otherwise obtain such information. Engaging the building owner could aid in locating this information as they might be able to locate previous owners or the installing contractor. If the required information is not accessible, then the system might have to be evaluated in accordance with Chapter 30 of NFPA 13. (See Figure A.5.2.5.)

Figure A.5.2.5 Sample Hydraulic Design Information Sign. [13:Figure A.29.4]

This system as shown on company
print no dated
for
at contract no
is designed to discharge at a rate of gpm/ft²
(L/min/m²) of floor area over a maximum area of
ft² (m²) when supplied with water at a rate of
gpm (L/min) at psi (bar) at the base of the riser.
Hose stream allowance of gpm (L/min)
is included in the above.
Occupancy classification
Commodity classification
Maximum storage height

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 02:05:10 EDT 2023

Committee Statement

Committee Statement: This may assist the owner and contractor with some of the possible steps that can be taken to replace the hydraulic design information sign with the appropriate information.

Response Message: FR-57-NFPA 25-2023

[Public Input No. 140-NFPA 25-2023 \[Section No. A.5.2.5\]](#)



First Revision No. 24-NFPA 25-2023 [Section No. A.5.2.8]

A.5.2.8



The sign referenced in 5.2.8 should satisfy the requirements of 4.1.10 and 5.2.7. The general information sign should be secured to the riser with durable wire, chain, or equivalent. (See Figure A.5.2.8.) If a general information sign is missing, it can be difficult to otherwise obtain such information. Engaging the building owner could aid in locating this information as they might be able to locate previous owners or the installing contractor. If the required information is not accessible, then the system might have to be evaluated in accordance with Chapter 30 of NFPA 13. See Figure A.5.2.8.

Figure A.5.2.8 Sprinkler System General Information. [13:Figure A.29.6]

SPRINKLER SYSTEM — GENERAL INFORMATION	
for	

Pipe schedule system	☐ Yes ☐ No
High-piled storage	☐ Yes ☐ No
Rack storage:	☐ Yes ☐ No
Commodity class:	_____
Max. storage height	_____ ft m
Aisle width (min.)	_____ ft m
Encapsulation	☐ Yes ☐ No
Solid shelving:	☐ Yes ☐ No
Flammable/combustible liquids:	☐ Yes ☐ No
Other storage:	☐ Yes ☐ No
Hazardous materials:	☐ Yes ☐ No
Idle pallets:	☐ Yes ☐ No
Antifreeze systems	☐ Yes ☐ No
Location:	_____
Dry or aux systems	☐ Yes ☐ No
Location:	_____
Where injection systems are used to treat MIC or corrosion:	
Type of chemical:	Concentration: _____ For proper disposal, see: _____
Name of contractor or designer: _____	
Address: _____	
Phone: _____	
Date:	_____
Flow test data:	_____
Static:	_____ psi bar
Resid:	_____ psi bar
Flow:	_____ gpm lpm
Pitot:	_____ psi bar
Date:	_____
Location:	_____
Location of aux/low point drains:	

Dry pipe/double interlock preaction valve test results	
Original main drain test results:	
Static:	_____ psi bar
Residual:	_____ psi bar
Venting valve location:	

The sign should include the following information:

- (1) Name and location of the facility protected
- (2) Edition of NFPA 13
- (3) Occupancy classification
- (4) Commodity classification
- (5) Presence of high-piled and/or rack storage
- (6) Maximum height of storage planned
- (7) Aisle width planned
- (8) Encapsulation of pallet loads
- (9) Presence of solid shelving
- (10) Flow test data
- (11) Presence of flammable/combustible liquids
- (12) Presence of hazardous materials
- (13) Presence of other special storage
- (14) Location of venting valve
- (15) Location of auxiliary drains and low point drains on dry pipe and preaction systems
- (16) Original results of main drain flow test
- (17) Original results of dry pipe and double interlock preaction valve test
- (18) Name of installing contractor or designer
- (19) Indication of presence and location of antifreeze or other auxiliary systems

- (20) Where injection systems are installed to treat microbiologically influenced or other corrosion, the type of chemical, concentration of the chemical, and location of information as to the proper disposal of the chemical
- (21) Indication of presence of nitrogen where used to allow for increased C value in dry or preaction systems

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 13:00:14 EDT 2023

Committee Statement

Committee Statement: Added annex text to clarify what information should be included on the general information sign. Where signs are missing, this language provides guidance on the steps that can be taken to recreate the required information.

Response Message: FR-24-NFPA 25-2023

[Public Input No. 141-NFPA 25-2023 \[Section No. A.5.2.8\]](#)

[Public Input No. 135-NFPA 25-2023 \[Section No. A.5.2.8\]](#)

**First Revision No. 34-NFPA 25-2023 [Section No. A.5.3.1.1.2]****A.5.3.1.1.2**

Examples of these environments are paper mills, packing houses, tanneries, alkali plants, organic fertilizer plants, foundries, forge shops, fumigation areas, pickle and vinegar works, stables, storage battery rooms, electroplating rooms, galvanizing rooms, steam rooms of all descriptions including moist vapor dry kilns, salt storage rooms, locomotive sheds or houses, driveways pool equipment rooms , areas ~~exposed to outside weather, areas~~ around bleaching equipment in flour mills, ~~and~~ portions of ~~any~~ areas where corrosive vapors prevail, and outdoor installations with corrosive environments .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 16:39:57 EDT 2023

Committee Statement

Committee Statement: Not all driveways and outdoor areas are exposed to corrosive environmental conditions. Therefore, the generic reference to these locations has been removed from the list of examples in favor of specifically identifying outdoor areas with a corrosive environment. A good example of this is an open parking garage next to an ocean where wind born salt deposits can coat the fire protection system piping resulting in external corrosion.

Response Message: FR-34-NFPA 25-2023

Public Input No. 120-NFPA 25-2023 [Section No. A.5.3.1.1.2]



First Revision No. 55-NFPA 25-2023 [Section No. A.5.3.4]

A.5.3.4



Sampling from the top and bottom of the system ~~helps to~~ determines if the solution has settled. Antifreeze solutions are heavier than water. If the antifreeze compound is separating from the water due to poor mixing, it will exhibit a higher concentration in the lower portion of the system than in the upper portion. If the concentration is acceptable near the top, but too low near the water connection, it might mean the system is becoming diluted near the water supply. If the concentration is either too high or too low in both the samples, it might mean the wrong concentration was added to the system.

Two or three times during the freezing season, test samples can be drawn from Valve B as shown in Figure 8.6.3.1 of NFPA 13, especially if the water portion of the system has been drained for maintenance or repairs. A small hydrometer can be used so that a small sample is sufficient. Where water appears at Valve B, or where the sample indicates that the solution has become weakened, the entire system should be emptied and refilled with acceptable solution as previously described.

~~See Figure A.5.3.4 for expected minimum air temperatures in 48 of the United States and parts of Canada where the lowest one-day mean temperature can be used as one method of determining the minimum reasonable air temperature. In situations where the piping containing the antifreeze solution is protected in some way from exposure to the outside air, higher minimum temperatures can be anticipated.~~

Where systems are drained ~~in order~~ to be refilled, it is not typically necessary to drain drops. Most systems with drops have insufficient volume to cause a problem, even if slightly higher concentration solutions collect in the drops. For drops ~~in excess of greater than~~ 36 in. (915 mm), ~~consideration should be given to~~ draining drops should be considered if there is evidence that unacceptably high concentrations of antifreeze have collected in these long drops.

When emptying and refilling antifreeze solutions, every attempt should be made to recycle the old solution with the antifreeze manufacturer rather than discard it.

Figure A.5.3.4 Isothermal Lines — Lowest One-Day Mean Temperature (°F).



The internal temperature and duration of exposure that water-filled piping could be subjected to, under freezing conditions, in an unconditioned space should be carefully considered and approved by the AHJ. [13: A.16.4.1.1.1]

Dependable sources of information on historic temperatures include the following:

- (1) National Oceanic and Atmospheric Administration — National Climatic Data Center
- (2) National Weather Service
- (3) Plant Hardiness Zone Maps (See Oregon State University.)
- (4) American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
- (5) Other approved sources

[13: A.16.4.1.1.1]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Oct 05 01:29:00 EDT 2023

Committee Statement

Committee Statement: Guidance on freeze protection were updated to correlate with NFPA 13

Response Message: FR-55-NFPA 25-2023

[Public Input No. 99-NFPA 25-2023 \[Section No. A.5.3.4\]](#)



First Revision No. 39-NFPA 25-2023 [Section No. A.7.3.1]

A.7.3.1

Full flow tests of underground piping can be accomplished by several methods including, but not limited to, flow through yard hydrants, fire department connections once the check valve has been removed, main drain connections, and hose connections. The flow test and measurements should be conducted in accordance with A.5.2.2.2 of NFPA 13 and NFPA 291 to try to reach the greatest system demand flow for degradation analysis.

Full flow tests of underground piping can also be accomplished during a five-year standpipe flow test or an annual fire pump flow test. A separate analysis should be performed in conjunction with these tests to determine if ~~there's~~ there is a deterioration of the available water flow and pressure from the water supply. Additional test gauges might be needed and placed at appropriate locations on the underground piping to perform the separate analysis.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 04 17:24:53 EDT 2023

Committee Statement

Committee Statement: This corrects the reference from NFPA 13 and emphasizes that a full flow test meeting maximum system demand is recommended for comparison for determining deterioration.

Response Message: FR-39-NFPA 25-2023

Public Input No. 71-NFPA 25-2023 [Section No. A.7.3.1]



First Revision No. 88-NFPA 25-2023 [Section No. D.5.1]

D.5.1 Yard Mains.

Yard mains should be flushed thoroughly before flushing any interior piping. Flush yard piping through hydrants at dead ends of the system or through blowoff valves, allowing the water to run until clear. If the water is supplied from more than one direction or from a looped system, close divisional valves to produce a high-velocity flow through each single line. A velocity of at least 10 ft/sec (3 m/sec) is necessary for scouring the pipe and for lifting foreign material to an aboveground flushing outlet. Use the flow specified in Table D.5.1 or the maximum flow available for the size of the yard main being flushed.

Connections from the yard piping to the sprinkler riser should be flushed. These are usually 6 in. (150 mm) mains. Although flow through a short, open-ended 2 in. (50 mm) drain can create sufficient velocity in a 6 in. (150 mm) main to move small obstructing material, the restricted waterway of the globe valve usually found on a sprinkler drain might not allow stones and other large objects to pass. If the presence of large size material is suspected, a larger outlet is needed to pass such material and to create the flow necessary to move it. Fire department connections on sprinkler risers can be used as flushing outlets by removing the clappers. Yard mains also can be flushed through a temporary Siamese fitting attached to the riser connection before the sprinkler system is installed. [See Figure D.5.1.]

Figure D.5.1 Arrangement for Flushing Branches from Underground Mains to Sprinkler Risers.

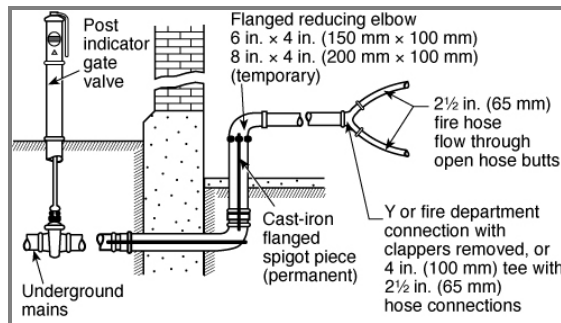


Table D.5.1 Flushing Rates to Accomplish Flow of 10 ft/sec (3 m/sec)

	<u>Steel</u>			<u>Copper</u>			<u>CPVC</u>	<u>Polybutylene</u>	
<u>Pipe Size (in.)</u>	<u>SCH 10 (gpm)</u>	<u>SCH 40 (gpm)</u>	<u>XL (gpm)</u>	<u>K (gpm)</u>	<u>L (gpm)</u>	<u>M (gpm)</u>	<u>CPVC SDR 13.5 (gpm)</u>	<u>CTS (gpm)</u>	<u>IPS (gpm)</u>
3/4	—	—	—	14	15	16	19	12	17
1	29	~~24~~ 27	30	24	26	27	30	20	27
1 1/4	51	47	52	38	39	41	48	30	43
1 1/2	69	63	70	54	55	57	63	42	57
2	114	105	114	94	96	99	98	72	90
2 1/2	170	149	163	145	149	152	144	—	—
3	260	230	251	207	212	217	213	—	—
4	449	396	—	364	373	379	—	—	—
5	686	623	—	565	582	589	—	—	—
6	989 ^a	~~880~~ 900	—	807	836	846	—	—	—
8	~~1665~~ 1666 ^b	~~1560~~ 1595 ^c	—	1407	1460	1483	—	—	—
10	2632 ^b	~~2440~~ 2517 ^c	—	2185	2267	2303	—	—	—
12	—	~~3520~~ 3579 ^d	—	—	—	—	—	—	—

For SI units, 1 gpm = 3.785 L/min.

^a 0.134 wall pipe.

^b 0.188 wall pipe.

- c

Schedule 30 pipe.
- d

0.330 wall pipe.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25-2023_Annex_D_D_5_1_PI_19_TG4.docx	Revisions to Table D.5.1	

Submitter Information Verification

Committee: INM-AAA
Submittal Date: Tue Oct 10 21:41:26 EDT 2023

Committee Statement

Committee Statement: The values in the table were modified to obtain flow rates of 10 ft/sec. for steel pipe of commonly use internal diameters.
Response Message: FR-88-NFPA 25-2023

Public Input No. 19-NFPA 25-2022 [Section No. D.5.1]



First Revision No. 90-NFPA 25-2023 [Chapter I]

Annex I Informational References

I.1 Referenced Publications.

The documents or portions thereof listed in this annex are referenced within the informational sections of this standard and are not part of the requirements of this document unless also listed in Chapter 2 for other reasons.

I.1.1 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 1, *Fire Code*, 2024 edition.

NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam*, 2024 2024 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2022 2025 edition.

NFPA 13R, *Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*, 2022 2025 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 2019 2024 edition.

NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection*, 2022 edition.

NFPA 16, *Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems*, 2019 edition ~~(withdrawn)~~. ~~(withdrawn)~~

NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection*, 2022 2025 edition.

NFPA 22, *Standard for Water Tanks for Private Fire Protection*, 2018 2023 edition.

NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*, 2022 2025 edition.

NFPA 70E[®], *Standard for Electrical Safety in the Workplace[®]*, 2024 2024 edition.

NFPA 72[®], *National Fire Alarm and Signaling Code[®]*, 2022 2025 edition.

NFPA 110, *Standard for Emergency and Standby Power Systems*, 2022 2025 edition.

NFPA 291, *Recommended Practice for Water Flow Testing and Marking of Hydrants*, 2022 2025 edition.

~~NFPA 551, *Guide for the Evaluation of Fire Risk Assessments*, 2022 edition.~~

NFPA 750, *Standard on Water Mist Fire Protection Systems*, 2023 edition.

NFPA 780, *Standard for the Installation of Lightning Protection Systems*, 2023 edition.

NFPA 1930, *Standard on Fire and Emergency Service Use of Thermal Imagers, Two-Way Portable RF Voice Communication Devices, Ground Ladders, and Fire Hose, and Fire Hose Appliances*, 2025 edition.

~~NFPA 1962, *Standard for the Care, Use, Inspection, Service Testing, and Replacement of Fire Hose, Couplings, Nozzles, and Fire Hose Appliances*, 2018 edition.~~

"Antifreeze Systems in Home Fire Sprinkler Systems — Literature Review and Research Plan," Fire Protection Research Foundation, June 2010.

"Antifreeze Systems in Home Fire Sprinkler Systems — Phase II Final Report," Fire Protection Research Foundation, December 2010.

"Antifreeze Solutions Supplied through Spray Sprinklers — Interim Report," Fire Protection Research Foundation, February 2012.

"Fire Pump Field Data Collection and Analysis Report," available for download at www.nfpa.org/foundation, 2011.

NFPA's Future in Performance Based Codes and Standards, July 1995.

NFPA Performance Based Codes and Standards Primer, December 1999.

I.1.2 Other Publications.

I.1.2.1 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

IEEE/ASTM SI 10, *American National Standard for Metric Practice*, 2016.

I.1.2.2 AWWA Publications.

American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235.

Manual of Water Supply Practices — M42 Steel Water-Storage Tanks, 2013.

I.1.2.3 BSI Publications.

British Standards Institution, 389 Chiswick High Road, London, W4 4AL, United Kingdom.

EN 12259-1, *Fixed firefighting systems — Components for sprinkler and water spray systems — Part 1: Sprinklers*, 1999 edition.

I.1.2.4 CGA Publications.

Compressed Gas Association, ~~14501 George Carter Way, Suite 103, Chantilly, VA 20151~~ 8484 Westpark Drive, Suite 220, McLean, VA 22102.

CGA C-6, *Standard for Visual Inspection of Steel Compressed Gas Cylinders*, ~~2019~~ 2022.

I.1.2.5 FM Publications.

FM Approvals LLC, 1151 Boston-Providence Turnpike, P.O. Box 9102, Norwood, MA 02062.

FM Approvals Standard 5560, *Water Mist Systems*, 2012 edition.

I.1.2.6 FSSA Publications.

Fire Suppression Systems Association, 3601 E. Joppa Road, Baltimore, MD 21234.

FSSA Cylinder Service Guide.

I.1.2.7 Hydraulic Institute Publications.

Hydraulic Institute, 300 Interpace Parkway, Building A, 3rd floor, Parsippany, NJ 07054.

Hydraulic Institute Standards for Centrifugal, Rotary and Reciprocating Pumps, 1983.

I.1.2.8 IMO Publications.

International Maritime Organization, 4 Albert Embankment, London SE1 7SR, United Kingdom.

MSC.1/Circular 1432, *Guidelines for the Maintenance and Inspection of Fire Protection Systems and Appliances*, 2012.

I.1.2.9 ISO Publications.

International Organization for Standardization, ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland.

ISO/IEC 17025, *General Requirements for the Competence of Testing and Calibration Laboratories*, 2017.

I.1.2.10 SFPE Publications.

Society of Fire Protection Engineers, 9711 Washingtonian Blvd, Suite 380, Gaithersburg, MD 20878.

~~*Engineering Guide: Fire Risk Assessment*, 2006.~~

Engineering Guide to Performance-Based Fire Protection, 2007.

SFPE Handbook of Fire Protection Engineering, 2016.

I.1.2.11 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 2167, *Water Mist Nozzles for Fire Protection Service*, ~~2017~~ 2021.

UL 2901, *Antifreeze Solutions for Use in Fire Sprinkler Systems*, ~~2019~~ 2022.

Comparative Fire Performance Tests Using Water and Antifreeze Solutions Discharged from Standard Spray Sprinklers, 2020.

I.1.2.12 U- S- Government Publications.

U- S- Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

Title 49, Code of Federal Regulations, "Transportation."

Title 49, Code of Federal Regulations, Part 180.205, "General Requirements for Requalification of Specification Cylinders."

Title 49, Code of Federal Regulations, Part 180.209, "Requirements for Requalification of Specification Cylinders."

I.1.2.13 Other Publications.

Budnick, E. K., P.E., "Automatic Sprinkler System Reliability," *Fire Protection Engineering*, Society of Fire Protection Engineers, 2001.

Fire Protection Equipment Surveillance Optimization and Maintenance Guide, Electric Power Research Institute, July 2003.

Dungan, K. W., P.E., "Performance-Based Inspection, Testing, and Maintenance," *Fire Protection Engineering*, Society of Fire Protection Engineers, 2016.

Koffel, W. E., P.E., *Reliability of Automatic Sprinkler Systems*, Alliance for Fire Safety, 2005.

I.2 Informational References.

The following documents or portions thereof are listed here as informational resources only. They are not a part of the requirements of this document.

I.2.1 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 1, *Fire Code*, ~~2021~~ 2024 edition.

NFPA 25 Handbook, *ITM of Water-Based Fire Protection Systems*, 2020 edition.

I.2.2 Other Publications.**I.2.2.1 AWWA Publications.**

American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235.

AWWA D101, *Inspecting and Repairing Steel Water Tanks, Standpipes, Reservoirs, and Elevated Tanks, for Water Storage*, 1986.

I.2.2.2 SFPE Publications.

Society of Fire Protection Engineers, 9711 Washingtonian Blvd, Suite 380, Gaithersburg, MD 20878.

Engineering Guide: Fire Risk Assessment, ~~2006~~ 2022 .

I.2.2.3 SSPC Publications.

Society for Protective Coatings, 800 Trumbull Drive, Pittsburgh, PA 15205.

SSPC Painting Manual, Volume 1, Good Painting Practice , Chapter 3, "Special Pre-Paint Treatments," 1993.

SSPC-PA 1, *Shop, Field, and Maintenance Coating of Metals*, 2016.

SSPC-PA 9, *White (or Colored) Vinyl Paint*, ~~2015~~ 2018 .

SSPC-SP 6, *Commercial Blast Cleaning*, 2007.

SSPC-SP 8, *Pickling*, 2004.

SSPC-SP 10, *Near-White Blast Cleaning*, 2015.

I.2.2.4 US Government Publications.

U- S- Government Publishing Office, 732 North Capitol Street, NW, Washington, DC ~~20402~~ 20401-0001 .

Federal Specification TT-P-86, *Specifications for Vinyl Resin Paint*, M-54, 1995.

I.3 References for Extracts in Informational Sections.

NFPA 11 , *Standard for Low-, Medium-, and High-Expansion Foam* , 2024 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, ~~2022~~ 2025 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, ~~2019~~ 2024 edition.

NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection*, 2022 edition.

NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection*, ~~2022~~ 2025 edition.

NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*, ~~2022~~ 2025 edition.

NFPA 1142, *Standard on Water Supplies for Suburban and Rural Firefighting*, 2022 edition.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25-2023_Annex_I_Reference_Updates.docx	Reference Updates	

Submitter Information Verification

Committee: INM-AAA
Submittal Date: Tue Oct 10 22:42:14 EDT 2023

Committee Statement

Committee Statement: Updated references.
Response Message: FR-90-NFPA 25-2023
Public Input No. 185-NFPA 25-2023 [Section No. I.1.2.11]