



Second Revision No. 28-NFPA 25-2024 [Detail]

[Revise the title to remove relief valves]

13.5* Pressure-Regulating Devices~~and Relief Valves~~ .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 09:20:12 EDT 2024

Committee Statement

Committee Statement: The section on main relief valves has been deleted as the text is now located in chapter 8.

Response Message: SR-28-NFPA 25-2024



Second Revision No. 39-NFPA 25-2024 [Section No. 2.3.1]

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*, ~~2023~~ 2024a.

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

ASTM D6751, *Standard Specification for Biodiesel Fuel Blendstock (B100) for Middle Distillate Fuels*, ~~2023a~~ 2024.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 01 09:05:54 EDT 2024

Committee Statement

Committee Statement: Updated references.

Response Message: SR-39-NFPA 25-2024



Second Revision No. 40-NFPA 25-2024 [Section No. 2.3.3]

2.3.3 HI Publications.

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

HI 3.6, *Rotary Pump Tests*, ~~2016~~ 2022 .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 01 09:06:53 EDT 2024

Committee Statement

Committee Statement: Updated references.

Response Message: SR-40-NFPA 25-2024



Second Revision No. 34-NFPA 25-2024 [New Section after 3.3.10.2]

3.3.11 Dwelling Unit.

One or more rooms arranged for the use of one or more individuals living together, as in a single housekeeping unit normally having cooking, living, sanitary, and sleeping facilities that include, but are not limited to, hotel rooms, dormitory rooms, apartments, condominiums, sleeping rooms in nursing homes, and similar living units. [**13**, 2025]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 11:45:38 EDT 2024

Committee Statement

Committee Statement: The term Dwelling Unit is used in the document and therefore appropriate to have a defined term for Dwelling Unit.

Response Message: SR-34-NFPA 25-2024

Public Comment No. 88-NFPA 25-2024 [New Section after 3.3.10]



Second Revision No. 42-NFPA 25-2024 [Sections 3.4.1, 3.4.2]

3.4.1 Foam-Water Spray System.

~~A foam-water sprinkler system designed to use nozzles rather than sprinklers~~ pipng network that employs open water spray nozzles or automatic water spray nozzles to discharge a foam solution . [11, 2024]

3.4.2 Foam-Water Sprinkler System.

~~A piping network employing that employs automatic sprinklers, nozzles or other discharge devices, connected to a source of foam concentrate and to a water supply~~ open sprinklers to discharge foam solution . [11,2024]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 01 09:20:33 EDT 2024

Committee Statement

Committee Statement: Updated extracted definitions to align with revisions made by the standard responsible for the definition.

Response Message: SR-42-NFPA 25-2024



Second Revision No. 43-NFPA 25-2024 [Section No. 3.5.5.1]

3.5.5.1 Circulation Relief Valve.

A valve separated from and independent of the main relief valve, used to cool a pump by discharging a small quantity of water. ~~This valve is separate from and independent of the main relief valve.~~ [20, 2025]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 01 11:18:44 EDT 2024

Committee Statement

Committee Statement: Updated extracted definition to align with revisions made by the standard responsible for the definition.

Response Message: SR-43-NFPA 25-2024



Second Revision No. 44-NFPA 25-2024 [Section No. 3.6.2.6.3]

3.6.2.6.3 Rated Pressure.

~~The~~ For fire pumps, the net pressure (differential pressure) at rated flow and rated speed as marked on the manufacturer's nameplate. [20, 2025]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 01 11:22:37 EDT 2024

Committee Statement

Committee Statement: Updated extracted definition to align with revisions made by the standard responsible for the definition.

Response Message: SR-44-NFPA 25-2024



Second Revision No. 45-NFPA 25-2024 [Section No. 3.6.4 [Excluding any Sub-Sections]]

A system, that is commonly activated by heat from a fire and discharges water over the fire area, that consists of an integrated network of piping designed in accordance with fire protection engineering standards and that includes a water supply source, a control valve, a waterflow alarm, and a drain. The portion of the sprinkler system above ground is a network of specifically sized or hydraulically designed piping installed in a building, structure, or area, generally overhead, and to which sprinklers are attached in a systematic pattern. [13, 2025]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 01 11:23:47 EDT 2024

Committee Statement

Committee Statement: Updated extracted definition to align with revisions made by the standard responsible for the definition.

Response Message: SR-45-NFPA 25-2024



Second Revision No. 46-NFPA 25-2024 [Section No. 3.6.4.3]

3.6.4.3 Dry Pipe Sprinkler System.

A sprinkler system employing automatic sprinklers that are attached to a piping system containing air-~~or nitrogen~~, nitrogen, or other approved gas under pressure, the release of which (as from the opening of a sprinkler) permits the water pressure to open a valve known as a dry pipe valve, and the water then flows into the piping system and out the opened sprinklers. [13, 2025]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 01 11:24:53 EDT 2024

Committee Statement

Committee Statement: Updated extracted definition to align with revisions made by the standard responsible for the definition.

Response Message: SR-46-NFPA 25-2024



Second Revision No. 1-NFPA 25-2024 [Section No. 4.1.1.3]

4.1.1.3*

Inspection, testing, and maintenance shall be performed by qualified personnel for the specific tasks performed in accordance with this standard.

A.4.1.1.3

The following are examples of qualified personnel:

~~Is certified~~ Certified by a nationally recognized fire protection certification organization acceptable to the authority having jurisdiction

~~Is registered~~ Registered, licensed, or certified by a state or local authority to perform inspection, testing, and maintenance of water-based fire protection systems

Many required ITM frequencies, such as daily, weekly, and monthly inspections to verify proper valve position or required air and water pressure maintenance, can be performed by building maintenance personnel, while other required functions should be performed by personnel with specialized knowledge and training. Examples of ITMs that would typically require more qualified personnel include but are not limited to conducting and evaluating annual fire pump tests, trip testing valves, and foam systems tests. Many locations might not have municipal AHJ interaction/oversight (or contact with insurance company risk consultants acting as AHJs, etc.). In these cases, ITM tasks that could adversely affect system performance should be completed by qualified personnel with specialized knowledge and training that is acceptable to the AHJ. This could include personnel that are registered, licensed, or certified by a nationally recognized fire protection certification organization, state, or local authority. Such qualified personnel typically have the competency to not only complete the ITM task but also understand the intended system performance criteria and potential impact of the work being completed.

4.1.1.3.4

~~Qualified personnel shall meet at least one of the following qualifications:~~

~~Meets the requirements and training for a given field acceptable to the authority having jurisdiction~~

~~Is certified by a nationally recognized fire protection certification organization acceptable to the authority having jurisdiction~~

~~Is registered, licensed, or certified by a state or local authority to perform inspection, testing, and maintenance of water-based fire protection systems~~

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25_SR-1_4.1.1.3.docx		

Submitter Information Verification

Committee: INM-AAA

Submission Date: Wed Sep 25 09:49:32 EDT 2024

Committee Statement

Committee Statement: The prescriptive requirements for qualified personnel are not appropriate for inspection test maintenance documents and should be left to the local jurisdictions to apply through the legislative process. However, the existing language are good examples of qualifications and moved to the annex.

Response SR-1-NFPA 25-2024

Message:

[Public Comment No. 38-NFPA 25-2024 \[Section No. 4.1.1.3\]](#)

[Public Comment No. 73-NFPA 25-2024 \[Section No. 4.1.1.3.1\]](#)



Second Revision No. 2-NFPA 25-2024 [Section No. 4.1.4]

4.1.4 Notification of Impairment, System Shutdown, or Testing.

The property owner or designated representative shall notify the authority having jurisdiction; ; the fire department, if where required; ; and the alarm-receiving facility when an impairment is identified or before testing or shutting down a system or its supply.

4.1.4.1

The notification of an impairment shall be required for both preplanned and emergency impairments.

4.1.4.1.1

Additional information required by 15.5.2 as applicable shall be included in the notification.

4.1.4.2

The notification of system shutdown or test shall include the purpose for the shutdown or test, the system or component involved, the estimated time of shutdown or test, and the expected duration of the shutdown or test.

4.1.4.3

The authority having jurisdiction, the fire department, and the alarm-receiving facility shall be notified when the system, supply, or component is returned to service or when the test is complete.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25_SR-2_4.1.4.docx		

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 09:54:17 EDT 2024

Committee Statement

Committee Statement: The local fire department should be notified upon identification of impairments, to reduce the possibility of loss due to a fire event.

Response Message: SR-2-NFPA 25-2024

Public Comment No. 51-NFPA 25-2024 [Section No. 4.1.4]



Second Revision No. 5-NFPA 25-2024 [New Section after 4.1.5.1]

4.1.5.2*

Where impairments, critical deficiencies, or noncritical deficiencies are identified in water-based fire protection systems maintained in accordance with NFPA 25, both of the following shall apply:

- (1) Deficiencies shall be corrected or repaired in a time frame approved by the AHJ.
- (2) Until impairments are corrected or repaired, an approved impairment program shall be implemented in accordance with Chapter 15.

A.4.1.5.2

A generally accepted practice is for critical deficiencies to be corrected or repaired within 30 days, noncritical deficiencies should be corrected or repaired within 90 days, and impairments should be corrected as soon as practical. [1: A.13.1.9]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 12:57:36 EDT 2024

Committee Statement

Committee Statement: Provides language to assist the owner in understanding the time frames to make necessary corrections or repairs.

Response Message: SR-5-NFPA 25-2024

Public Comment No. 72-NFPA 25-2024 [New Section after 4.1.5.1]



Second Revision No. 6-NFPA 25-2024 [Section No. 4.1.10.1]

4.1.10.1

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

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 13:02:50 EDT 2024

Committee Statement

Committee Statement: The general information sign is required by NFPA 13 and includes more data than what is required by the NFPA 25 information sign, which is required at all system risers. The information sign required by NFPA 25 should be installed at the same locations.

Response Message: SR-6-NFPA 25-2024

[Public Comment No. 74-NFPA 25-2024 \[Section No. 4.1.10.1\]](#)

[Public Comment No. 14-NFPA 25-2024 \[Section No. 4.1.10.1\]](#)



Second Revision No. 49-NFPA 25-2024 [Section No. 4.1.11.1]

4.1.11.1

~~An antifreeze~~ For existing, nonlisted, premixed antifreeze solutions that are permitted to remain in a system per 5.3.4.4.2 and 5.3.4.4.3, ~~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.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 02 11:48:38 EDT 2024

Committee Statement

Committee Statement: There are now two paragraphs which call for antifreeze signs. The new paragraph 4.1.11.2 calls for a sign when listed antifreeze solutions are utilized as per 5.3.4.4, and the existing paragraph 4.1.11.1 discusses the signage requirements for existing antifreeze solutions that are permitted to remain in a system as per 5.3.4.4.2 and 5.3.4.4.3. Therefore, the annex text was relocated to apply to both sections.

Response Message: SR-49-NFPA 25-2024

[Public Comment No. 15-NFPA 25-2024 \[Sections 4.1.11.1, 4.1.11.2\]](#)



Second Revision No. 47-NFPA 25-2024 [Section No. 4.1.13.3]

4.1.13.3

~~System~~ Sprinkler 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: Tue Oct 01 11:26:33 EDT 2024

Committee Statement

Committee Statement: Updated extracted definition to align with revisions made by the standard responsible for the definition.

Response Message: SR-47-NFPA 25-2024



Second Revision No. 3-NFPA 25-2024 [Section No. 4.3.6]

4.3.6

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

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 10:27:05 EDT 2024

Committee Statement

Committee Statement: The requirements to maintain the records is already covered in 4.3 and the addition of the documentation cabinet is not necessary since 4.3 provides different options on how to maintain the records.

Response Message: SR-3-NFPA 25-2024

[Public Comment No. 6-NFPA 25-2024 \[Section No. 4.3.6\]](#)

[Public Comment No. 52-NFPA 25-2024 \[Section No. 4.3.6\]](#)



Second Revision No. 51-NFPA 25-2024 [Section No. 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	—	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 7, and 5.2.9 <u>8</u>
Pipe and fittings	Annually	5.2.2
Sprinklers	Annually	5.2.1
<u>Sprinklers (electrically operated)</u>	<u>Annually</u>	<u>5.2.1.5</u>
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
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

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
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 described 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
Stock of spare sprinklers	—	<u>5.4.1.6</u>
Valves (all types)	—	Chapter 13
Investigation		
Obstruction	—	Chapter 14

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25-2023_Chapter_5_Table_5_1_1_2_VP.docx	Table Revisions	

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 02 13:52:45 EDT 2024

Committee Statement

Committee Statement: Updated table based on requirement revision and alpha reorganization.

Response Message: SR-51-NFPA 25-2024



Second Revision No. 4-NFPA 25-2024 [Section No. 5.2.1.1.5]

5.2.1.1.5

~~Escutcheons~~ Where escutcheons and coverplates for recessed, flush, and concealed sprinklers ~~that~~ are found to be missing or ~~that~~ show signs of any of the following deficiencies, they shall be replaced with their listed escutcheons or coverplates: that are part of the listed sprinkler assembly:

- (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 escutcheons and coverplates for recessed, flush, and concealed sprinklers are found to be adhered or attached to the ceiling or wall, they shall be replaced.

A.5.2.1.1.5.1

Common examples would be gluing, caulking, or any methods outside of the manufacturers intended design.

5.2.1.1.5.2

Where the listed escutcheon or coverplate from a listed sprinkler assembly is required to be replaced in accordance with 5.2.1.1.5 or 5.2.1.1.5.1 and is no longer commercially available, the sprinkler assembly shall be replaced.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25_SR-4_5.2.1.1.5.docx		

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 12:34:44 EDT 2024

Committee Statement

Committee Statement: The addition of the new section in the standard addresses coverplates or escutcheons that are adhered or attached to the ceiling or wall and makes it a requirement to have them replaced which aligns with the deficiencies found in Table A.3.3.8. The performance of the sprinkler may be impacted by the escutcheon or coverplate which is part of the listed assembly. The escutcheon or coverplate must be installed in accordance with manufacturers instructions.

Response Message: SR-4-NFPA 25-2024

[Public Comment No. 50-NFPA 25-2024 \[Section No. 5.2.1.1.5\]](#)

[Public Comment No. 16-NFPA 25-2024 \[Section No. 5.2.1.1.5\]](#)



Second Revision No. 9-NFPA 25-2024 [Section No. 5.2.1.1.7]

5.2.1.1.7 Sprinkler Guards.

5.2.1.1.7.1

Where installed, ~~a~~ sprinkler guards shall be inspected from the floor level annually.

5.2.1.1.7.2

~~A damaged~~ Damaged sprinkler guards shall be replaced with ~~a~~ guards listed for the sprinkler.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 22:25:05 EDT 2024

Committee Statement

Committee Statement: This change corrects the language from being a singular phrase to a plural phrase to clarify that this requirement applies to any sprinkler equipped with a guard located in an accessible space must be inspected for damage that could cause an obstruction to the sprinkler discharge pattern.

Response Message: SR-9-NFPA 25-2024

Public Comment No. 40-NFPA 25-2024 [Section No. 5.2.1.1.7]



Second Revision No. 10-NFPA 25-2024 [Section No. 5.2.7]

5.2.7 Information Sign:

The information sign required by 4.1.10 shall be inspected annually to verify that it is provided, securely attached, and legible.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 22:38:11 EDT 2024

Committee Statement

Committee Statement: This change was made to clarify that an inspector does not need to inspect for both the information sign and the general information sign. It clarifies that the inspection for the information sign per the requirements found in 4.1.10 are only necessary where the general information sign required by NFPA 13 was not a requirement at the time of system acceptance.

Response Message: SR-10-NFPA 25-2024



Second Revision No. 11-NFPA 25-2024 [Section No. 5.2.8]

5.2.7* General Information Sign.

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

The sign referenced in 5.2.7 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.5.2.7.) 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.

Figure A.5.2.7 Sprinkler System General Information. [13:Figure A.29.6]

SPRINKLER SYSTEM — GENERAL INFORMATION			
for _____			
Pipe schedule system	☐ Yes	☐ No	Date: _____
High-piled storage	☐ Yes	☐ No	Flow test data:
Rack storage:	☐ Yes	☐ No	Static: _____ psi bar
Commodity class: _____			Resid: _____ psi bar
Max. storage height _____ ft m			Flow: _____ gpm lpm
Aisle width (min.) _____ ft m			Pitot: _____ psi bar
Encapsulation ☐ Yes ☐ No			Date: _____
Solid shelving: ☐ Yes ☐ No			Location: _____
Flammable/combustible liquids: ☐ Yes ☐ No			
Other storage: ☐ Yes ☐ No			Location of aux/low point drains: _____
Hazardous materials: ☐ Yes ☐ No			
Idle pallets: ☐ Yes ☐ No			
Antifreeze systems ☐ Yes ☐ No			Dry pipe/double interlock preaction valve test results
Location: _____			Original main drain test results:
Dry or aux systems ☐ Yes ☐ No			Static: _____ psi bar
Location: _____			Residual: _____ psi bar
			Venting valve 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: _____			

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

5.2.7.1

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]

5.2.7.2

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

5.2.7.3

Where the general information sign was not required at the time of system acceptance, only the information sign required by 4.1.10 shall be inspected annually to verify that it is provided, securely attached, and legible.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 22:38:49 EDT 2024

Committee Statement

Committee Statement: This change was made to clarify that an inspector does not need to inspect for both the information sign and the general information sign. It clarifies that the inspection for the information sign per the requirements found in 4.1.10 are only necessary where the general information sign required by NFPA 13 was not a requirement at the time of system acceptance. Renumber section 5.2.8 and its subsection to 5.2.7, since the existing 5.2.7 has been deleted. Renumber subsequent sections.

Response Message: SR-11-NFPA 25-2024

Public Comment No. 2-NFPA 25-2024 [Sections 5.2.7, 5.2.8]



Second Revision No. 12-NFPA 25-2024 [New Section after 5.3.1.1.6]

5.3.1.1.1.7

Where sprinklers have been installed for 50 years in dwelling units, one of the following shall occur:

- (1) The sprinklers shall be replaced with fast-response sprinklers.
- (2) Representative samples of the sprinklers shall be tested for thermal sensitivity such that the RTI does not exceed 65 (meters-seconds)^{1/2} .

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
A_Comparison_of_Old_Standard_Response_Sprinklers_and_New_Fast_Response_Sprinklers.pdf	Include attached test results as part of the substantiation.	

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 22:43:56 EDT 2024

Committee Statement

Committee Statement: Furnishings in dwellings have changed over the last 50 years resulting in higher heat release rates and faster moving fires. The fast response sprinklers are more effective in keeping the area tenable to allow escape compared to sprinklers of 50 years prior. As indicated in the report submitted to support this revision the temperature at which standard response sprinklers were activating in the testing, the temperatures in the room exceeded temperatures that are acceptable for improving occupant survivability in dwelling units.

Response Message: SR-12-NFPA 25-2024

Public Comment No. 89-NFPA 25-2024 [New Section after 5.3.1.1.1]



Second Revision No. 13-NFPA 25-2024 [Section No. 5.3.4.4.1 [Excluding any Sub-Sections]]

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

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 22:53:56 EDT 2024

Committee Statement

Committee Statement: It is determined that the new listed solution performs better than the legacy solutions and should not require additional approval from the AHJ where used to replace nonlisted antifreeze solutions.

Response Message: SR-13-NFPA 25-2024

[Public Comment No. 49-NFPA 25-2024 \[Section No. 5.3.4.4.1 \[Excluding any Sub-Sections\]\]](#)

[Public Comment No. 83-NFPA 25-2024 \[Section No. 5.3.4.4.1 \[Excluding any Sub-Sections\]\]](#)



Second Revision No. 52-NFPA 25-2024 [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 <u>9</u>
Control valves	—	Chapter 13
Gauges	—	Chapter 13
Hose	Annually	6.2.5 <u>6</u>
Hose nozzle	Annually and after each use	6.2.6 <u>7</u>
Hose storage device	Annually	6.2.7 <u>8</u>
Hydraulic design information sign	Annually	6.2.2
Hose valves and hose connections	—	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 1930
Hose connection pressure-regulating 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-reducing valve	—	Chapter 13
Master pressure-reducing valve	—	Chapter 13
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

Committee: INM-AAA

Submittal Date: Wed Oct 02 14:03:03 EDT 2024

Committee Statement

Committee Statement: Updated table based on requirement revision.

Response Message: SR-52-NFPA 25-2024



Second Revision No. 15-NFPA 25-2024 [Section No. 6.2.4]

6.2.4* Piping: Pipe and Fitting.

A.6.2.4

The conditions described in 6.2.4 can have a detrimental effect on the performance and life of pipe by affecting corrosion rates or pipe integrity or otherwise rendering the pipe ineffectual.

6.2.4.1*

Piping Pipe and fittings shall be inspected annually ~~for the following conditions:~~ from the floor level.

~~Damaged piping~~

~~Damaged control valves~~

~~Missing or damaged pipe support device (i.e., missing or damaged hanger or seismic brace)~~

~~Damaged supervisory signal initiating device~~

A.6.2.4.1

Surface corrosion not impacting the integrity of the piping strength or raising concern of potential leakage should not warrant the replacement of piping. A degree of judgment should be applied in determining the extent of corrosion that necessitates replacement.

6.2.4.2

~~Where any deficiency is noted, the appropriate corrective action shall be taken.~~

6.2.4.2

Piping shall not be used to support nonsystem components.

6.2.4.3*

Pipe and fittings installed in concealed spaces, such as above suspended ceilings, shall not require inspections.

A.6.2.4.3

Additional examples include some flooring and ceiling or roof and ceiling assemblies, areas under theater stages, pipe chases, and other inaccessible areas.

6.2.4.4

Pipe and fittings installed in areas that are inaccessible for safety considerations due to process operations shall be inspected during each scheduled shutdown.

6.2.5* Hangers, Braces, and Supports.

Pipe hangers, braces, and supports shall be inspected annually from the floor level.

A.6.2.5

The conditions described in 6.2.5 can have a detrimental effect on the performance of hangers and braces by allowing failures if the components become loose.

6.2.5.1

Hangers, braces, and supports shall not be damaged, loose, or unattached.

6.2.5.2

Hangers, braces, and supports that are damaged, loose, or unattached shall be replaced or refastened.

6.2.5.3*

Hangers, braces, and supports installed in concealed spaces, such as above suspended ceilings, shall not require inspection.

A.6.2.5.3

Additional examples of hangers and seismic braces installed in concealed areas include some floor/ceiling or roof/ceiling assemblies, areas under theater stages, pipe chases, and other inaccessible areas.

6.2.5.4

Hangers, braces, and supports installed in areas that are in accessible for safety considerations due to process operations shall be inspected during each scheduled shutdown.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25_SR-15_6.2.4.docx		

Submitter Information Verification

Committee: INM-AAA
Submittal Date: Wed Sep 25 23:08:17 EDT 2024

Committee Statement

Committee Statement: Control valves and supervisory signal initiating devices are covered in Chapter 13. Language from Chapter 5 for inspection of piping and hangers was pulled into Chapter 6 for consistency and clarity.
Response Message: SR-15-NFPA 25-2024

Public Comment No. 57-NFPA 25-2024 [Section No. 6.2.4.1]



Second Revision No. 16-NFPA 25-2024 [Section No. 6.2.5]

6.2.6 Hose.

6.2.6.1

Hose shall be inspected annually for the following conditions as required by 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

~~Hose test outdated~~

6.2.6.2

Where any deficiency is noted, the appropriate corrective action shall be taken.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 23:36:05 EDT 2024

Committee Statement

Committee Statement: As determined by the technical committee on similar issues, past due inspections and tests are not deficiencies and are addressed through the enforcement of the fire code. The party inspecting the hose do not have the power to police conformance with the standard for tasks that they might not be contracted to perform. Additionally, NFPA 1930 addresses testing requirements for hose.

Response Message: SR-16-NFPA 25-2024

[Public Comment No. 58-NFPA 25-2024 \[Section No. 6.2.5\]](#)



Second Revision No. 17-NFPA 25-2024 [Section No. 6.3.1.2.1]

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.

A.6.3.1.2.1

Section 6.3.1.2.1 is not intended to flow test both vertical and horizontal standpipe systems if installed in the same building, but only to flow test the most demanding system of the two. All other hose valve and pressure regulating valve testing required by Chapter 13 is not changed by this testing.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 23:38:10 EDT 2024

Committee Statement

Committee Statement: If a horizontal and vertical standpipes are installed in the same building, only the more demanding standpipe would be required to be flow tested. To conduct a flow test on both standpipes is costly and not needed. Also, language was added to clarify that this does not change the flow testing existing requirements for hose valves and pressure reducing valves in chapter 13.

Response Message: SR-17-NFPA 25-2024

Public Comment No. 63-NFPA 25-2024 [Section No. 6.3.1.2.1]



Second Revision No. 53-NFPA 25-2024 [Section No. 7.1.1.2]

7.1.1.2

Table 7.1.1.2 shall be used to determine the minimum required frequencies for inspection, testing, and maintenance.

Table 7.1.1.2 Summary of Private Fire Service Main Inspection, Testing, and Maintenance

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
Inspection		
Backflow preventer	—	Chapter 13
Check valve	—	Chapter 13
Control valve	—	Chapter 13
Fire department connection	—	Chapter 13
Hose houses	Quarterly	7.2.2.8
Hydrants (dry barrel and wall)	Annually and after each operation	7.2.2.4
Hydrants (wet barrel)	Annually and after each operation	7.2.2.5
Hydrants (dry)	Quarterly, annually	7.2.2.6; 7.2.2.6.3
Mainline strainers	Annually and after each significant flow	7.2.2.3
Monitor nozzles	Semiannually	7.2.2.7
Pipe and fittings (exposed)	Annually	7.2.2.1
Valve supervisory devices	—	Chapter 13
Test		
Backflow preventer	—	Chapter 13
Control valve	—	Chapter 13
Hydrants (flow test)	Annually	7.3.2, 7.2.2.6.5
Monitor nozzles (flow test, range, operation)	Annually	7.3.3
Piping (exposed and underground) (flow test)	5 years	7.3.1
Valve status test	—	Chapter 13
Valve supervisory devices	—	Chapter 13
Maintenance		
Backflow preventer	—	Chapter 13
Check valve	—	Chapter 13
Control valve	—	Chapter 13
Dry hydrant (water supply, clearance)	Quarterly	7.2.2.6.1, 7.2.2.6.2
Hydrants	Annually	7.4.2
Mainline strainers	Annually and after each operation	7.2.2.3
Monitor nozzles	Annually	7.4.3

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 02 14:04:46 EDT 2024

Committee Statement

Committee Statement: Updated table based on requirement revisions.

Response Message: SR-53-NFPA 25-2024



Second Revision No. 54-NFPA 25-2024 [Section No. 8.1.1.2 [Excluding any Sub-Sections]]

The minimum frequency of inspection, testing, and maintenance shall comply with the manufacturer's instructions 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
<u>Circulation relief valve</u>	=	<u>8.2.3.3</u>
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
<u>Main relief valve</u>	=	<u>8.2.4</u>
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
Pump house/room environmental conditions	—	8.3.6.3
Pump operation (no flow)	Weekly/monthly	8.3.2, 8.3.5
Pump performance (flow)	Annually	8.3.3, 8.3.5
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

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
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: Fri Oct 04 10:57:26 EDT 2024

Committee Statement

Committee Statement: Updated table based on requirement revisions.

Response Message: SR-54-NFPA 25-2024



Second Revision No. 18-NFPA 25-2024 [New Section after 8.2.3.3]

8.2.4 Main Pressure Relief Valve.

8.2.4.1

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

8.2.4.2

The inspection required in 8.2.4.1 shall verify 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.

8.2.4.3

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.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 23:46:31 EDT 2024

Committee Statement

Committee Statement: This language was previously located in Chapter 13, but is specific to fire pumps, so it is more appropriate in Chapter 8. The circulation relief valve was already moved to Chapter 8 in the First Draft.

Response Message: SR-18-NFPA 25-2024

Public Comment No. 35-NFPA 25-2024 [New Section after 8.2.3]



Second Revision No. 19-NFPA 25-2024 [Section No. 8.2.3.3]

8.2.3.3

Upon completion of any fire pump test, it shall be verified that the ~~closure of the~~ circulation relief valve ~~shall be verified~~ closed automatically and discharge stopped at normal supply pressure .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 23:49:45 EDT 2024

Committee Statement

Committee Statement: If the circulation relief valve does not fully close automatically and is attached to a water supply tank for example the tank may end up draining without anyone noticing creating an impairment.

Response Message: SR-19-NFPA 25-2024

Public Comment No. 20-NFPA 25-2024 [Section No. 8.2.3.3]



Second Revision No. 20-NFPA 25-2024 [Section No. 8.3.2.1.3 [Excluding any Sub-Sections]]

For positive displacement pumps, the pressure relief valve shall operate ~~during a no-flow test~~ as designed .

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 23:51:38 EDT 2024

Committee Statement

Committee Statement: The language uses the same language from 8.3.2.1.2 to maintain consistency, avoid conflict with the retroactivity sections of the applicable design standard, and to permit legacy installation testing to operate as originally designed.

Response Message: SR-20-NFPA 25-2024

Public Comment No. 1-NFPA 25-2024 [Section No. 8.3.2.1.3 [Excluding any Sub-Sections]]



Second Revision No. 48-NFPA 25-2024 [Sections 8.3.5.3, 8.3.5.4, 8.3.5.5]

8.3.5.3

The pump flow test for positive displacement pumps shall be accomplished using a flowmeter or orifice plate installed in a test loop back to the supply tank, to the inlet side of a positive displacement water pump, or to drain. [20:14.2.6.4 ~~6~~ .3-2]

8.3.5.4

The flowmeter reading or discharge pressure shall be recorded and shall be in accordance with the pump manufacturer's flow performance data. [20:14.2.6.4 ~~6~~ .3-3]

8.3.5.5

If orifice plates are used, the orifice size and corresponding discharge pressure to be maintained on the upstream side of the orifice plate shall be made available to the authority having jurisdiction. [20:14.2.6.4 ~~6~~ .3-4]

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 01 11:29:39 EDT 2024

Committee Statement

Committee Statement: Updated extract cross references.

Response Message: SR-48-NFPA 25-2024



Second Revision No. 21-NFPA 25-2024 [Section No. 8.3.7.2.3.1]

8.3.7.2.3.1*

~~The fire pump assembly~~ When the suction supply does not provide enough volume to test the fire pump beyond 100 percent of its rated capacity, the test shall be considered acceptable ~~where the water supply is not capable of providing flow rates beyond rated flow of~~ provided the fire pump; ~~assembly meets all other requirements of 8.3.7.2.3~~ 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.

A.8.3.7.2.3.1

In cases where water supplies do not permit flow testing beyond rated capacity it should not be considered a failure of the fire pump. To provide a graph of the test results, the pump is permitted to be tested at churn, system demand, and 100 percent of its rated capacity.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
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Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 23:55:16 EDT 2024

Committee Statement

Committee Statement: NFPA 20 permits the fire pump to operate at a lower flow when the water supply cannot meet 150% of the rated pump capacity. This requirement permits testing the pump to the system demand but not less than 100% of rated pump capacity.

Response Message: SR-21-NFPA 25-2024

Public Comment No. 86-NFPA 25-2024 [Section No. 8.3.7.2.3.1]



Second Revision No. 56-NFPA 25-2024 [Section No. 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 <u>and position</u> (spray nozzle)	Monthly	11.2.4.1.1
Discharge device location <u>and position</u> (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 <u>Semiannually</u>	11.2.8.6.8
Water-powered proportioner pump shock absorbers	6 months <u>Semiannually</u>	11.2.8.6.8
<u>Water-powered foam proportioning pump filters</u>	<u>Semiannually</u>	<u>11.2.8.6.8</u>
Strainer(s) — mainline	Annually	Chapter 7
Strainer(s) — discharge device	Annually <u>After each use</u>	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
Supplementary hoses	Annually <u>—</u>	11.2.4.4 <u>Chapter 6</u>
Auxiliary drain signage	Annually <u>—</u>	Chapter 13
Supplementary hose stream nozzles	Annually and after each use <u>—</u>	Chapter 6
Supplementary hose stream storage	Annually <u>—</u>	Chapter 6
Fixed foam discharge outlet	Annually	11.2.4.2
Vapor seals	Annually	11.2.4.2.4
Fire department hose connections	Annually <u>—</u>	Chapter 6
Hydraulic design information sign	Annually <u>—</u>	Chapter 5 <u>4</u>
Underground piping	10 years	11.2.11

<u>System/Component</u>	<u>Frequency</u>	<u>Reference</u>
Foam dam	—	11.2.15
Pressure foam maker	Annually	11.2.4.2.5
Rupture disk	Annually	11.2.4.2.5.5
Alarm devices	—	11.1.3 <u>NFPA 72</u>
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	11.3.10.2
Control valve(s)	—	Chapter 13
Deluge/preaction valve(s)	—	Chapter 13
Detection system	—	11.1.3 <u>NFPA 72</u>
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 23 of NFPA 1930
Foam concentrate	Annually	11.3.1.1
Monitors	Annually	11.3.7
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 <u>Quarterly</u>	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 <u>Semiannually</u>	11.3.4
Water-powered foam proportioning pump valves	6 months <u>Semiannually</u>	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	— <u>5 years/12 years</u>	11.3.5.4
<u>Underground piping</u>	<u>10 years</u>	<u>11.2.11.8</u>
Maintenance		
Backflow preventer(s)	—	Chapter 13

<u>System/Component</u>	<u>Frequency</u>	<u>Reference</u>
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 <u>11.2.6.4</u>
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	— <u>Per manufacturer</u>	11.4.4.8
Pressure foam maker	— <u>Per manufacturer</u>	11.4.4.9
Monitors	—	11.4.4.7 <u>Chapter 7</u>
Monitor nozzles	—	11.4.4.7 <u>Chapter 7</u>
Supplementary hoses	—	11.4.4.11 <u>NFPA 1930</u>
Supplementary hose nozzles	—	11.4.4.12 <u>NFPA 1930</u>
Rupture disks	— <u>Per manufacturer</u>	11.4.4.9.1
Water-powered foam concentrate proportioning pump shaft lubrication	6 months <u>Semiannually</u>	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 specification <u>Per manufacturer</u>	11.4.4.5
Auxiliary drains	—	Chapter 13

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25-2023_Chapter_11_Table_11_1_1_2.docx	Table revision clarification	

Submitter Information Verification

Committee: INM-AAA
Submission Date: Fri Oct 04 11:38:37 EDT 2024

Committee Statement

Committee Statement: Updated table based on requirement revisions.

Response Message: SR-56-NFPA 25-2024



Second Revision No. 57-NFPA 25-2024 [Section No. 12.1.1.2]

Table 12.1.1.2 shall be used to determine the minimum required infrequencies for inspection, testing, and maintenance.

Table 12.1.1.2 Summary of Water Mist System Inspection, Testing, and Maintenance

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
Inspection		
Additive storage cylinders	Quarterly/semiannually	12.2.7
Air compressors and receivers	—	Chapter 13
Backflow preventers	—	Chapter 13
<u>High-pressure storage cylinder assemblies (gas and water)</u>		
<u>Securement</u> Compressed gas storage cylinders, hoses, support, and restraint	Quarterly/annually/ every 5 years	12.2.5.1.1, 12.2.5.1.2 2
<u>External</u>	<u>Every 5 years</u>	12.2.5.3, <u>2</u>
<u>Specification, capacity and pressure rating</u>	<u>Annually</u>	12.2.5.9 <u>3</u>
Compressed gas storage cylinder valve and <u>Cylinder pressure</u>	Semiannually/annually <u>Monthly/semiannually</u>	12.2.5.4.1, 12.2.5.4.4, <u>2</u>
<u>Discharge pressure</u>	<u>Annually</u>	12.2.5.4.2, <u>3</u>
<u>Manually operated indicating control valves</u>	<u>Semiannually</u>	12.2.5.8
<u>Hoses</u>	<u>Annually</u>	<u>12.2.5.9</u>
<u>Filters</u>	<u>Quarterly/annually</u>	<u>12.2.5.7</u>
Control equipment	—	<i>NFPA 72</i>
Detection systems	—	<i>NFPA 72</i>
Enclosure features, interlocks	Semiannually	12.2.11
Fire pump system	—	Chapter 8
Gauges (piping system)	—	Chapter 13
Hangers, braces, and supports	Annually and after each system discharge or activation	12.2.4
Internal piping conditions	—	Chapter 14
Nozzles	Annually and after each system discharge or activation	12.2.1
Pneumatically operated valves and tubing	Semiannually	12.2.6
Pneumatically operated standby pumps	Monthly	12.2.9
Strainers and filters	After each system discharge operation or activation <u>flow test</u>	12.2.2
System control valves	—	Chapter 13
System piping, tubing, and fittings	Annually and after each system discharge or activation	12.2.3
Water recirculation tanks	Monthly/quarterly/annually	12.2.8
Water storage cylinders (high pressure)	Quarterly/semiannually/annually	12.2.5.1.2, 12.2.5.4, 12.2.5.4.3, 12.2.5.5, 12.2.5.6, 12.2.5.7, 12.2.5.8
Water storage tanks	—	Chapter 9
Water supply	Quarterly/annually	12.2.10
Testing		
Additives and injection system	Annually	12.3.4, 12.3.5
Air compressors and receivers	Annually	Chapter 13
Backflow preventers	—	Chapter 13

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
Compressed gas storage cylinder	5–12 years	12.3.6
Control equipment	— <u>Annually</u>	12.3.7
Detection systems	— <u>Annually</u>	12.3.8
Fire pump system	—	Chapter 8, 12.3.9
Gauges (piping system)	—	Chapter 13
Hoses	5 years	12.3.10
Interlocks	Annually	12.3.11
Nozzles, automatic	At 10 years and every 5 years thereafter	12.3.1.2
Nozzles, automatic (harsh environments)	At 5 years and every 5 years thereafter	12.3.1.3
Nozzles, open	At 10 years and every 5 years thereafter	12.3.2.3
Nozzles, open (harsh environments)	Annually	12.3.2.2
Pneumatic valves	Semiannually	12.3.12
Pneumatic valve solenoid releases	Annually	12.3.13
Pneumatically operated standby pumps	Annually	12.3.14
Strainers and filters	Annually <u>After each operation or flow test</u>	12.3.3
System control valves	Annually	12.3.15
Water mist system	Annually	12.3.16
Water recirculation tanks	Annually	12.3.17
Water storage cylinders (high pressure)	5–12 years	12.3.18
Water storage tanks	—	12.3.19 Chapter 9
Water supply	Annually	12.3.20
Maintenance		
Air compressors and receivers	—	Chapter 13
Backflow preventers	—	Chapter 13
Control equipment	—	NFPA 72
Detection systems	—	NFPA 72
Fire pump system	—	Chapter 8
Pneumatically operated standby pumps	Every 5 years	12.4.3
Strainers and filters	Annually and after each system discharge <u>After each operation or flow test</u>	12.2.2
Water mist system	Annually	12.4.1
Water tanks	Annually	12.4.1

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Fri Oct 04 13:22:31 EDT 2024

Committee Statement

Committee Statement: Updated table based on requirement revisions.

Response Message: SR-57-NFPA 25-2024



Second Revision No. 55-NFPA 25-2024 [Section No. 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	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 alarm	Annually	Chapter 4
Deluge valves		
Enclosure (during cold weather)	Daily/weekly	Chapter 4
Exterior	Monthly	13.4.4.1.1
Interior	Annually	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 and hose connections	Annually Quarterly	13.6.1
Preaction valves		
Enclosure (during cold weather)	—	Chapter 4
Exterior	Monthly	13.4.3.1.1
Interior	Annually	13.4.3.1.2
Strainers, filters, orifices	5 years	13.4.3.1.3
Pressure-regulating devices and relief valves		
Master pressure-reducing valve	Weekly	13.5.4.1
Pressure-reducing valve	Quarterly	13.5.1.1
Pressure-reducing hose connection	Annually	13.5.2.1
Pressure-reducing hose valve with hose rack assembly	Annually	13.5.3.1
— Fire pump circulation relief valve	—	Chapter 8
— Main pressure relief valve	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 or nitrogen generators	Monthly	13.10.2

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
<u>Corrosion inhibitor systems</u>	<u>Per manufacturer</u>	<u>13.11</u>
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 control valve is closed and reopened	13.3.3.4
<u>Supervisory Valve supervisory signal initiating device</u>	Semiannually	13.3.3.5.1
Deluge valves		
Solenoid supervisory switch	Quarterly	13.4.4.2.14
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 and high 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 and high air pressure alarms	Quarterly	13.4.3.2.11
<u>Solenoid supervisory</u>	<u>Quarterly</u>	<u>13.4.4.2.14</u>
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 alarm	Annually	13.4.3.2.12
Pressure-regulating devices and relief valves		
Master pressure-reducing valve	Quarterly/annually	13.5.4.2 and 13.5.4.3
Pressure-reducing valve	Annually/5 years	13.5.1.3 and 13.5.1.2
Pressure-reducing hose valve	Annually/5 years	13.5.2.3 and 13.5.2.2
Pressure-reducing hose valve with rack assembly	Annually/5 years	13.5.3.3 and 13.5.3.2
Fire pump circulation relief valve	—	Chapter 8
Pressure relief valves	Annually	13.5.6.2.3
Air compressors and or nitrogen generators	Annually	13.10.3
Hose valves	Annually/3 years	13.6.2
Waterflow alarms	<u>Quarterly/</u> 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

<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
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 or nitrogen generators	Per manufacturer	13.10.4
Vapor corrosion inhibitor <u>Corrosion-inhibiting systems</u>	Per manufacturer	13.10.4.3 <u>11</u>

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Fri Oct 04 11:28:44 EDT 2024

Committee Statement

Committee Statement: Updated table based on requirement revisions.

Response Message: SR-55-NFPA 25-2024



Second Revision No. 24-NFPA 25-2024 [Section No. 13.2.3.7.1 [Excluding any Sub-Sections]]

During testing and maintenance, vane-type waterflow alarm devices shall remain in service unless impairment procedures are followed in accordance with *NFPA 72* or ~~the adopted~~ approved fire alarm code.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 08:24:34 EDT 2024

Committee Statement

Committee Statement: Editorial clean up and consistency.

Response Message: SR-24-NFPA 25-2024



Second Revision No. 23-NFPA 25-2024 [New Section after 13.2.3.7.1.1]

13.2.3.7.1.2

Waterflow alarm circuits shall remain in service and not be interrupted or disabled except as permitted by *NFPA 72* or approved fire alarm code.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 08:18:24 EDT 2024

Committee Statement

Committee Statement: This requirement is to prevent service personnel from improperly disabling waterflow alarm devices by removing wiring or other system components.

Response Message: SR-23-NFPA 25-2024

[Public Comment No. 64-NFPA 25-2024 \[New Section after 13.2.3.7.1.1\]](#)

[Public Comment No. 91-NFPA 25-2024 \[New Section after 13.2.3.7.1.1\]](#)



Second Revision No. 22-NFPA 25-2024 [Section No. 13.2.4.2]

13.2.4.2*

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

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 00:02:09 EDT 2024

Committee Statement

Committee Statement: The addition of “every” makes it clear that the 5 year requirement is reoccurring and not a one time replacement.

Response Message: SR-22-NFPA 25-2024

[Public Comment No. 81-NFPA 25-2024 \[Section No. 13.2.4.2\]](#)



Second Revision No. 37-NFPA 25-2024 [New Section after 13.4.3.2.11]

13.4.3.2.12

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

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 13:22:34 EDT 2024

Committee Statement

Committee Statement: This aligns the solenoid testing for a solenoid on a preaction valve with that of a solenoid valve on a deluge valve. This test frequency aligns with the manufacturer's recommendations.

Response Message: SR-37-NFPA 25-2024

Public Comment No. 60-NFPA 25-2024 [New Section after 13.4.3.2.11]



Second Revision No. 25-NFPA 25-2024 [Section No. 13.4.3.2.11]

13.4.3.2.11

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

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 08:32:49 EDT 2024

Committee Statement

Committee Statement: When high pressure alarms are provided, they need to be tested quarterly to align with low air pressure alarm testing.

Response Message: SR-25-NFPA 25-2024

[Public Comment No. 59-NFPA 25-2024 \[Section No. 13.4.3.2.11\]](#)



Second Revision No. 26-NFPA 25-2024 [Section No. 13.4.4.2.14]

13.4.4.2.14

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

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 08:47:54 EDT 2024

Committee Statement

Committee Statement: Editorial change to align with 13.4.3.2.12.

Response Message: SR-26-NFPA 25-2024



Second Revision No. 27-NFPA 25-2024 [Section No. 13.5.5]

~~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 the following conditions:~~

~~Devices and associated trim components are free of physical damage and are not leaking.~~

~~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~~

~~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.~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 09:16:10 EDT 2024

Committee Statement

Committee Statement: The main relief valve section has been moved to chapter 8 as it only applies to fire pumps. Other small relief valves, such as those on a sprinkler system do not need to be tested and will typically fail in the open position.

Response Message: SR-27-NFPA 25-2024

[Public Comment No. 36-NFPA 25-2024 \[Section No. 13.5.5\]](#)



Second Revision No. 29-NFPA 25-2024 [Section No. 13.6.1]

13.6.1 Inspection.

13.6.1.1

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

- (1) Hose ~~caps are~~ connection thread protection is in place ~~and not damaged~~.
- (2)* Hose connection caps not rated for pressures have an opening of at least 1/8 in. in diameter.

A.13.6.1.1(2)

The hole provides a means of indication that the valve is not closed.

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

~~13.6.1.2~~

~~Hose valves shall be inspected to ensure that hose caps are in place and not damaged.~~

~~13.6.1.3~~

~~Hose threads shall be inspected for damage.~~

~~13.6.1.4~~

~~Valve handles shall be present and not damaged.~~

~~13.6.1.5~~

~~Gaskets shall be inspected for damage or deterioration.~~

~~13.6.1.6~~

~~Hose valves shall be inspected for leaks.~~

~~13.6.1.7~~

~~Hose valves shall be inspected to ensure no obstructions are present.~~

13.6.1.2*

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

13.6.1.3

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.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25_SR-29_13.6.1.docx		

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 09:58:17 EDT 2024

Committee Statement

Committee Statement: The requirement for a hose cap in Section 13.6.1.1 was modified to align with NFPA 14. NFPA 14 requires thread protection and not threaded caps on hose connections since threaded caps are not tested in the listed assembly. The annex note was to provide additional information as to why the hole is required.

Damaged thread protection could lead to potential mechanical damage to threads.

Hose valves are prone to damage or tampering and the quarterly frequency should not have been changed to annually in the first draft.

Subsequent sections were removed due to redundancy.

Response Message: SR-29-NFPA 25-2024

[Public Comment No. 55-NFPA 25-2024 \[Section No. 13.6.1\]](#)

[Public Comment No. 47-NFPA 25-2024 \[Section No. 13.6.1.1\]](#)

[Public Comment No. 62-NFPA 25-2024 \[Section No. 13.6.1.1\]](#)

[Public Comment No. 54-NFPA 25-2024 \[Section No. 13.6.1.1\]](#)



Second Revision No. 30-NFPA 25-2024 [Section No. 13.8.5.2]

13.8.5.2*

Where the length of the piping from the fire department connection to the fire department check valve is ~~48 10 in. ft~~ (4-2 3.048 m) or less and can be visually inspected internally and externally, the 5-year hydrostatic test shall not be required.

A.13.8.5.2

It could be difficult to properly hydrostatically test FDC piping. This requirement is intended to allow inspection of accessible piping up to 10 ft (3.048 m) in length. This inspection could be accomplished using a push-style video camera to inspect the pipe internally. This allowance should not replace the requirements for external inspections required by 13.8.5.2 .

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
NFPA_25_-_SR30.docx		

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 10:35:27 EDT 2024

Committee Statement

Committee Statement: An internal and external inspection of a 10 foot piece of piping for a fire department connection is reasonable to replace a hydrostatic test because it aligns with other system pipe inspecting practices. This method addresses the practical challenges associated with hydrostatically testing FDC piping, which can be difficult to perform accurately with lengths under 10 feet. It involves performing a visual inspection internally and externally. This method ensures that the internal condition of the piping can be assessed without the need for a hydrostatic test. Equipment for internal inspection of 10 ft. of piping is readily available.

Response Message: SR-30-NFPA 25-2024

[Public Comment No. 75-NFPA 25-2024 \[Section No. 13.8.5.2\]](#)

[Public Comment No. 30-NFPA 25-2024 \[Section No. 13.8.5.2\]](#)

[Public Comment No. 82-NFPA 25-2024 \[Section No. 13.8.5.2\]](#)



Second Revision No. 31-NFPA 25-2024 [New Section after 13.10.4.3]

13.11 Corrosion-Inhibiting Systems.

13.11.1 Inspection.

Corrosion-inhibiting equipment shall be intact and free of physical damage.

13.11.2 Testing.

Corrosion-inhibiting equipment shall be tested in accordance with the manufacturer's instructions.

13.11.3 Maintenance.

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: Thu Sep 26 10:52:27 EDT 2024

Committee Statement

Committee Statement: Provides requirements for corrosion inhibiting systems which are recognized by NFPA 13.

Response Message: SR-31-NFPA 25-2024

Public Comment No. 84-NFPA 25-2024 [Section No. 13.10.2]



Second Revision No. 32-NFPA 25-2024 [Section No. 13.10.4.3]

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: Thu Sep 26 11:07:49 EDT 2024

Committee Statement

Committee Statement: This section is redundant and is covered by the previous sections.

Response Message: SR-32-NFPA 25-2024

[Public Comment No. 85-NFPA 25-2024 \[Section No. 13.10.4.3\]](#)



Second Revision No. 38-NFPA 25-2024 [Section No. 14.3.1]

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 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.

A.14.3.1(16)

Where nitrogen is used to allow for an increased C-value in accordance with NFPA 13, the nitrogen supply should be as follows:

- (1) From a listed nitrogen generator permanently installed
- (2) 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
- (3) Provided with a means of verifying nitrogen concentration for each system where an increased C-value is used
- (4) Installed per the manufacturer's instruction
- (5) Maintained in accordance with this standard

In situations where nitrogen is used to mitigate corrosion and extend system-life, the piping network should be investigated when the nitrogen system is impaired.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Tue Oct 01 08:45:12 EDT 2024

Committee Statement

Committee Statement: This requirement will help significantly in ensuring that corrosion inhibiting systems when used to allow for an increased C-value in accordance with NFPA 13, will be maintained properly and potentially help minimize obstructions caused by corrosion.

Response Message: SR-38-NFPA 25-2024

[Public Comment No. 65-NFPA 25-2024 \[Section No. 14.3.1\]](#)



Second Revision No. 36-NFPA 25-2024 [New Section after 14.4.1]

14.4.2

Following two successive annual ice obstruction inspections with no ice noted, and where nitrogen has been maintained in the piping at 98 percent or greater concentration or the air supply has been maintained by a listed air compressor/dryer package since the last ice plug inspection, the interval of subsequent inspections shall be permitted to be increased to three years.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 12:12:10 EDT 2024

Committee Statement

Committee Statement: Nitrogen systems and air dryers maintain a low dew point in the system and reduce the risk of ice obstructions forming. Opening the pipe to inspect for ice and letting the nitrogen/dry air out can be detrimental to keeping the pipe clear.

Response Message: SR-36-NFPA 25-2024

Public Comment No. 90-NFPA 25-2024 [Section No. 14.4]



Second Revision No. 35-NFPA 25-2024 [Section No. 15.6.3]

4.1.2.6 ~~Frozen System Piping~~ Systems Containing Ice .

4.1.2.6.1

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~~ contain ice , the system shall be considered impaired.

4.1.2.6.2*

~~Frozen system~~ System components found to contain ice shall be completely thawed out or replaced and the system restored to service.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
25_SR-35_15.6.3.docx		

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Thu Sep 26 12:00:11 EDT 2024

Committee Statement

Committee Statement: Chapter 15 is an inappropriate location for this section as the chapter deals with handling impairments and not causes of impairments.

Response Message: SR-35-NFPA 25-2024



Second Revision No. 8-NFPA 25-2024 [Section No. A.1.4]

A.1.4

The liter and bar units, which are not part of but are recognized by SI, commonly are used in international fire protection. These units are provided in Table A.1.4 with their conversion factors.

Table A.1.4 Metric Conversions

<u>Name of Unit</u>	<u>Unit Symbol</u>	<u>Name of Unit</u>	<u>Unit Symbol</u>	<u>Conversion Factor</u>
liter	L			1 gal = 3.785 L
liter per minute per square meter	L/min-m ²			1 gpm/ft ² = 40.746 L/min-m ²
cubic decimeter	dm ³			1 gal = 3.785 dm ³
pascal	Pa			1 psi = 6894.757 Pa
bar	bar			1 psi = 0.0689 bar
bar	bar			1 bar = 10 ⁵ Pa
<u>Length</u>	<u>Millimeter</u>	<u>mm</u>		1 in. = 25.4 mm
	<u>Meter</u>	<u>m</u>		1 ft = 0.3048 m
<u>Area</u>	<u>Square millimeters</u>	<u>mm²</u>		1 in. ² = 645.2 mm ²
	<u>Square meter</u>	<u>m²</u>		1 ft ² = 0.0929 m ²
<u>Volume</u>	<u>Cubic millimeter</u>	<u>mm³</u>		1 in. ³ = 163387.1 mm ³
	<u>Cubic meter</u>	<u>m³</u>		1 ft ³ = 0.02832 m ³
	<u>Liter</u>	<u>L</u>		1 gal = 3.785 L
<u>Fluid capacity</u>	<u>Liter</u>	<u>L</u>		1 cup = 0.236588 L
	<u>Cubic decimeter</u>	<u>dm³</u>		1 gallon = 3.785 dm ³
	<u>Liter per minute</u>	<u>L/min</u>		1 gpm = 3.785 L/min
<u>Flow</u>	<u>Liter per second</u>	<u>L/s</u>		1 gal/sec = 3.785 L/s
	<u>Cubic meters per minute</u>	<u>m³/min</u>		1 ft ³ /min = 0.0283168 m ³ /min
<u>Pressure</u>	<u>Bar</u>	<u>bar</u>		1 psi = 0.0689476 bar
	<u>Kilopascal</u>	<u>kPa</u>		1 psi = 6.89476 kPa
<u>Discharge density</u>	<u>Millimeter/minute</u>	<u>mm/min</u>		1 gpm/ft ² = 40.746 mm/min
	<u>Liter/minute/m²</u>	<u>(L/min)/m²</u>		1 gpm/ft ² = 40.746 (L/min)/m ²
<u>K-factor</u>	<u>K-factor</u>	<u>L/min/(bar)^{1/2}</u>		1 gpm/(psi) ^{1/2} = 14.285 L/min/(bar) ^{1/2}
<u>Temperature</u>	<u>Fahrenheit</u>	<u>°F</u>		F° = 9/5 × C° + 32
	<u>Celsius</u>	<u>°C</u>		C° = 5/9 (F° - 32)
<u>Velocity</u>	<u>Meters per second</u>	<u>m/s</u>		1 ft/sec = 0.3048 m/s
	<u>Watts</u>	<u>W</u>		1 Btu/hr = 0.293071 W
<u>Energy</u>	<u>Kilowatts (1000 watts)</u>	<u>kW</u>		1 hp = 0.7457 kW
	<u>Megawatts (1000 kW)</u>	<u>MW</u>		1 hp = 0.0007457 MW

Note: For additional conversions and information, see IEEE/ASTM SI 10, *American National Standard for Metric Practice*.

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Second Revision No. 59-NFPA 25-2024 [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. In installation standards, some fire protection features are referred to as systems (e.g., sprinkler, standpipe, water-spray, foam-water, water mist), 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 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 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 impairments, critical deficiencies, or noncritical 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 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
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 <u>Escutcheions</u>	Gaulked <u>Adhered</u> or <u>glued attached to the</u>	5.2.1.1.5, 1	X		

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
and coverplates	ceiling or wall				
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; 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 <u>7</u>			X
Antifreeze information sign	Not attached; illegible; missing	5.2.9 <u>8</u>			X
Chapter 5: Sprinkler Systems — Testing					
Antifreeze systems	Solution does not meet requirements of 5.3.4	5.3.4		X	
Antifreeze systems	Solution is inadequate to prevent freezing	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

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Hangers and supports	Damaged; missing	6.2.4		X	X
Hose	Cuts; couplings not of compatible threads	6.2.5 <u>6</u> and NFPA 1930	X	X	
Hose	Deterioration; no gasket or damaged gaskets	6.2.5 <u>6</u> and NFPA 1930		X	
Hose	Mildew present; corrosion present; hose not connected	6.2.5 <u>6</u> and NFPA 1930		X	X
Hose nozzle	Missing; broken parts; thread gasket damaged	6.2.6 <u>7</u> and NFPA 1930	X	X	
Hose storage	Hose improperly racked or rolled; nozzle clip missing; nozzle not contained; damaged; obstructed; failure to rotate	6.2.7 <u>8</u> and NFPA 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 extinguisher, and so on not readily accessible	6.2.8 <u>9</u> and NFPA 1930		X	
Chapter 6: Standpipe and Hose Systems — Testing					
Hose storage device	Rack will not swing out of cabinet at least 90 degrees	6.2.7 <u>8</u> and NFPA 1930			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; improperly 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 <u>Leaks at outlets or top of hydrant</u> <u>Wet barrel hydrant</u>	7.2.2.4 and 7.2.2.5		X	

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
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 and wall hydrant	Barrel contains water; improper drainage from barrel leaks at outlets or top of hydrant	7.2.2.4		X	
Wet barrel hydrant	Leaks at outlets or top of hydrant	7.2.2.5		X	
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 inadequate, temperature less than 40°F (4°C)	8.2.2(1)(a)	X	X	
Pump house/room	Heat 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 abnormal	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>
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) <u>and</u> 8.2.2(2)(f)		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 abnormal	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 abnormal	8.2.2(4)(c)	X	X	
Diesel engine system	Battery charging current abnormal	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 abnormal (i.e., not at level mark, but visible in sight glass)	8.2.2(4)(h)			X
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 abnormal	8.2.2(4)(i)			X

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Diesel engine system	Crankcase oil level below low level	8.2.2(4)(i)	X		
Diesel engine system	Cooling water level abnormal	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 abnormal	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 unacceptable; 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 unacceptable	8.3.2.9(2)	X		
Fire pump test — diesel-engine-driven system	Time for engine to crank and time for engine to reach running speed unacceptable (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	8.3.2.9(4)		X	

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
	running speed unacceptable				
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 incorrect	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	
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 incorrect	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	9.2.4.2			X

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
	of combustible storage, trash, debris, brush, or material				
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
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

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
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; improperly aligned or trapped sections; low-point drains not functioning; improper location of rubber-gasketed fittings	10.2.3.1		X	X
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 improperly 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		

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Operational test	Nozzles plugged	10.3.3.3.1	X		
Operational test	Nozzles incorrectly 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		
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	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 accordance with specified operating conditions	11.2.8.3	X		
Standard pressure proportioner	Automatic drains (ball drip valves) not free or open, external	11.2.8.5.2			X

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
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		
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; improperly aligned or trapped sections; low-point drains not	11.2.11.2, 11.2.11.4, 11.2.11.5, and 11.2.11.6		X	X

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
	functioning; improper location or poor condition of rubber-gasketed fittings				
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 incorrectly 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 outlet	Orifice plugged	11.3.11.1	X		
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	Inaccessible; 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	13.4.1.1		X	

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
	closed position; retard chamber or alarm drain leaking				
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		
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 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	Inaccessible; damaged couplings and unusable	13.8.1	X		
Fire department connection	Damaged couplings but usable; clapper operating improperly or missing	13.8.1		X	

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Fire department connection	Check valve leaking; automatic drain operating improperly or missing	13.8.1			X
Fire department connection	Missing identification sign	13.8.1			X
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 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 and high 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 15		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		

<u>Item</u>	<u>Finding</u>	<u>Reference</u>	<u>Impairment</u>	<u>Critical Deficiency</u>	<u>Noncritical Deficiency</u>
Deluge valve	Pressure reading at hydraulically most remote nozzle and/or at valve incompatible with original design values	13.4.4.2.7		X	
Dry pipe valve	Priming water level 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 and high air pressure switch alarms 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	13.5.1.2.4	X	X	X
Hose connection pressure-regulating valves	Test results not comparable to previous results	13.5.2.2.3 and 13.5.2.3.1	X	X	X
Hose rack assembly pressure-regulating valve	Test results not comparable to previous results	13.5.3.1.2	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
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	

Submitter Information Verification

Committee: INM-AAA

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Committee Statement

Committee Statement: Updated table based on requirement revision.

Response Message: SR-59-NFPA 25-2024



Second Revision No. 50-NFPA 25-2024 [Section No. A.4.1.11.1]

A.4.1.11



Systems installed in accordance with the 2007 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 standard~~ 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.~~

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Oct 02 12:08:39 EDT 2024

Committee Statement

Committee Statement: There are now two paragraphs which call for antifreeze signs. The new paragraph 4.1.11.2 calls for a sign when listed antifreeze solutions are utilized as per 5.3.4.4, and the existing paragraph 4.1.11.1 discusses the signage requirements for existing antifreeze solutions that are permitted to remain in a system as per 5.3.4.4.2 and 5.3.4.4.3. Therefore, the annex text was relocated to apply to both sections.

Response Message: SR-50-NFPA 25-2024

[Public Comment No. 17-NFPA 25-2024 \[Section No. A.4.1.11.1\]](#)



Second Revision No. 7-NFPA 25-2024 [Section No. A.4.3.1.1]

A.4.3.1.1

Records required to be maintained should be transferred to the new property owner when a property changes ownership.

A document cabinet was introduced in the 2025 edition of NFPA 13 and, as such, should not be expected to be present on systems installed prior. The documents that should be maintained by the owner include hard or electronic copies of as-built drawings, original acceptance tests, manufacturers data sheets, owners certificate, hydraulic data plates and any other documents related to the fire sprinkler system that could be of importance.

Submitter Information Verification

Committee: INM-AAA

Submittal Date: Wed Sep 25 22:05:50 EDT 2024

Committee Statement

Committee Statement: Technology continues to advance providing alternative means of maintaining system records. The specific reference to a document cabinet was moved to the annex because it was not required until the 2025 edition of NFPA 13.

Response Message: SR-7-NFPA 25-2024

Public Comment No. 61-NFPA 25-2024 [Section No. 4.3.6]



Second Revision No. 14-NFPA 25-2024 [Section No. A.5.4.1.6.5]

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. Some sprinklers do not require wrenches, such as sprinklers that only require hand-tight installation, use couplings, or use alignment tools. Wrenches not approved by the sprinkler manufacturer should not be used for installation. 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 Sep 25 23:01:41 EDT 2024

Committee Statement

Committee Statement: There are listed sprinklers available that do not require a sprinkler wrench for install. Some sprinklers have different tools or methods of installation that do not require wrenches but when wrenches are used they should be approved by the sprinkler manufacturer to avoid damaging the sprinkler during the installation or removal for testing.

Response Message: SR-14-NFPA 25-2024

[Public Comment No. 79-NFPA 25-2024 \[Section No. A.5.4.1.6.5\]](#)



Second Revision No. 33-NFPA 25-2024 [Section No. A.15.6.3.2]

A.4.1.2.6.2

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-~~ 2.8 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.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
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Committee Statement

Committee Statement: Metric conversion correction.
Response Message: SR-33-NFPA 25-2024

Annex C Possible Causes of Pump Troubles

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

This annex is extracted from NFPA 20.

C.1 Causes of Pump Troubles.

This annex contains a partial guide for locating pump troubles and their possible causes (see Figure C.1). It also contains a partial list of suggested remedies. (For other information on this subject, see *Hydraulic Institute Standards for Centrifugal, Rotary and Reciprocating Pumps ANSI/HI 1.4, Rotodynamic Pumps for Installation, Operation, and Maintenance*.) The causes listed here are in addition to possible mechanical breakage that would be obvious on visual inspection. In case of trouble, it is suggested that those troubles that can be ~~inspected~~ checked easily should be corrected first or eliminated as possibilities.

Figure C.1 Possible Causes of Fire Pump Troubles.

	Suction		Pump										Driver and/or Pump				Driver			
Fire pump troubles	1	Air drawn into suction connection through leaks																		
	2	Suction pipe too small or badly installed																		
	3	No priming at suction pipe																		
	4	Not sufficient or uneven displacement																		
	5	Stalling box too deep or packing improperly resistant.																		
	6	Water near air tight to seal disturbed																		
	7	Air taken into pump through stuffing boxes																		
	8	Inlet valve disarranged																		
	9	Heavy rings worn																		
	10	Improper design																		
	11	Pump diameter improper																		
	12	Poorly placed delivery pipe																		
	13	Gears galled defective, permitting internal leakage																		
	14	Large discharge and misaligned pumps																		
	15	Loose packing around shaft causing leakage																		
	16	Incorrect make adjustment (vertical shaft) (about 95° pump drive)																		
	17	Pump is frozen																		
	18	Pump shut or small steam connect bent or worn																		
19	Pump not primed																			
20	Seal ring possibly causing a sucking force, preventing priming																			
21	Excessive bearing friction due to lack of lubrication, wear																			
22	Friction between bearings due to lack of lubrication, wear																			
23	Making wrong turn against stationary element																			
24	Pump and driver misaligned																			
25	Foundation not light																			
26	Engine cooling system obstructed																			
27	Thrust driver?																			
28	Lack of lubrication																			
29	Speed too low																			
30	Wrong direction of rotation																			
31	Speed too high																			
32	Read motor voltage different from line voltage																			
33	Read electrical circuit, observed relay system																			
Pump or driver overloads			X	X	X															
Pump unit will not start			X	X																
No water discharge		X	X	X		X														
Pump is noisy or vibrates			X	X		X	X													
Too much power required			X	X		X	X													
Discharge pressure not constant for same gain		X		X		X	X													
Pump loses suction after starting		X	X	X		X	X													
Insufficient water discharge		X	X	X		X	X													
Discharge pressure too low for gain desired						X	X	X	X	X	X	X	X				X	X	X	

C.1.1 Air Drawn into Suction Connection Through Leak(s).

Air drawn into suction line through leaks causes a pump to lose suction or fail to maintain its discharge pressure. Uncover suction pipe and locate and repair leak(s).

C.1.2 Suction Connection Obstructed.

Examine suction intake, screen, and suction pipe and remove obstruction. Repair or provide screens to prevent recurrence. (See 4.16.8 of NFPA 20.)

C.1.3 Air Pocket in Suction Pipe.

Air pockets cause a reduction in delivery and pressure similar to an obstructed pipe. Uncover suction pipe and rearrange to eliminate pocket. (See 4.16.6 of NFPA 20.)

C.1.4 Well Collapsed or Serious Misalignment.

Consult a reliable well drilling company and the pump manufacturer regarding recommended repairs.

C.1.5 Stuffing Box Too Tight or Packing Improperly Installed, Worn, Defective, Too Tight, or of Incorrect Type.

Loosen gland swing bolts and remove stuffing box gland halves. Replace packing.

C.1.6 Water Seal or Pipe to Seal Obstructed.

Loosen gland swing bolt and remove stuffing box gland halves along with the water seal ring and packing. Clean the water passage to and in the water seal ring. Replace water seal ring, packing gland, and packing in accordance with manufacturer's instructions.

C.1.7 Air Leak into Pump Through Stuffing Boxes.

Same as the possible cause in C.1.6.

C.1.8 Impeller Obstructed.

Does not show on any one instrument, but pressures fall off rapidly when an attempt is made to draw a large amount of water.

For horizontal split-case pumps, remove upper case of pump and remove obstruction from impeller. Repair or provide screens on suction intake to prevent recurrence.

For vertical shaft turbine-type pumps, lift out column pipe(*see Figure A.7.2.2.1 and Figure A.7.2.2.2 of NFPA 20*) and pump bowls from wet pit or well and disassemble pump bowl to remove obstruction from impeller.

For close-coupled, vertical in-line pumps, lift motor on top pull-out design and remove obstruction from impeller.

C.1.9 Wearing Rings Worn.

Remove upper case and insert feeler gauge between case wearing ring and impeller wearing ring. Clearance when new is 0.0075 in. (0.19 mm). Clearances of more than 0.015 in. (0.38 mm) are excessive.

C.1.10 Impeller Damaged.

Make minor repairs or return to manufacturer for replacement. If defect is not too serious, order new impeller and use damaged one until replacement arrives.

C.1.11 Wrong Diameter Impeller.

Replace with impeller of proper diameter.

C.1.12 Actual Net Head Lower than Rated.

Check impeller diameter and number and pump model number to make sure correct head curve is being used.

C.1.13 Casing Gasket Defective, Permitting Internal Leakage (Single-Stage and Multistage Pumps).

Replace defective gasket. Check manufacturer's drawing to see whether gasket is required.

C.1.14 Pressure Gauge Is on Top of Pump Casing.

Place gauges in correct location. [*See Figure A.6.3.1(a) of NFPA 20*].

C.1.15 Incorrect Impeller Adjustment (Vertical Shaft Turbine-Type Pump Only).

Adjust impellers according to manufacturer's instructions.

C.1.16 Impellers Locked.

For vertical shaft turbine-type pumps, raise and lower impellers by the top shaft adjusting nut. If this adjustment is not successful, follow the manufacturer's instructions.

For horizontal split-case pumps, remove upper case and locate and eliminate obstruction.

C.1.17 Pump Is Frozen.

Provide heat in the pump room. Disassemble pump and remove ice as necessary. Examine parts carefully for damage.

C.1.18 Pump Shaft or Shaft Sleeve Scored, Bent, or Worn.

Replace shaft or shaft sleeve.

C.1.19 Pump Not Primed.

If a pump is operated without water in its casing, the wearing rings are likely to seize. The first warning is a change in pitch of the sound of the driver. Shut down the pump.

For vertical shaft turbine-type pumps, check water level to determine whether pump bowls have proper submergence.

C.1.20 Seal Ring Improperly Located in Stuffing Box, Preventing Water from Entering Space to Form Seal.

Loosen gland swing bolt and remove stuffing box gland halves along with the water-seal ring and packing. Replace, putting seal ring in proper location.

C.1.21 Excess Bearing Friction Due to Lack of Lubrication, Wear, Dirt, Rusting, Failure, or Improper Installation.

Remove bearings and clean, lubricate, or replace as necessary.

C.1.22 Rotating Element ~~Binds~~ Binding Against Stationary Element.

~~Inspect~~ Check clearances and lubrication and replace or repair the defective part.

C.1.23 Pump and Driver Misaligned.

Shaft running off center because of worn bearings or misalignment. Align pump and driver according to manufacturer's instructions. Replace bearings according to manufacturer's instructions. (See Section 6.5 of NFPA 20.)

C.1.24 Foundation Not Rigid.

Tighten foundation bolts or replace foundation if necessary. (See Section 6.4 of NFPA 20.)

C.1.25 Engine-Cooling System Obstructed.

Heat exchanger or cooling water systems too small-~~Cooling~~ or cooling pump faulty. Remove thermostats. Open bypass around regulator valve and strainer. ~~Inspect~~ Check regulator valve operation. ~~Inspect~~ Check strainer. Clean and repair if necessary. Disconnect sections of cooling system to locate and remove possible obstruction. Adjust engine-cooling water-circulating pump belt to obtain proper speed without binding. Lubricate bearings of this pump.

If overheating still occurs at loads up to 150 percent of rated capacity, contact pump or engine manufacturer so that necessary steps can be taken to eliminate overheating.

C.1.26 Faulty Driver.

~~Inspect~~ Check electric motor, internal combustion engine, or steam turbine, in accordance with manufacturer's instructions, to locate reason for failure to start.

C.1.27 Lack of Lubrication.

If parts have seized, replace damaged parts and provide proper lubrication. If not, stop pump and provide proper lubrication.

C.1.28 Speed Too Low.

For electric motor drive, ~~confirm~~ check that rated motor speed corresponds to rated speed of pump, voltage is correct, and starting equipment is operating properly.

Low frequency and low voltage in the electric power supply prevent a motor from running at rated speed. Low voltage can be due to excessive loads and inadequate feeder capacity or (with private generating plants) low generator voltage. The generator voltage of private generating plants can be corrected by changing the field excitation. When low voltage is from the other causes mentioned, it ~~can~~ might be necessary to ~~replace~~ change transformer taps or increase feeder capacity.

Low frequency usually occurs with a private generating plant and should be corrected at the source. Low speed can result in older type squirrel-cage-type motors if fastenings of copper bars to end rings become loose. The remedy is to weld or braze these joints.

For steam turbine drive, ~~confirm~~ check that valves in steam supply pipe are wide open; boiler steam pressure is adequate; steam pressure is adequate at the turbine; strainer in the steam supply pipe is not plugged; steam supply pipe is of adequate size; condensate is removed from steam supply pipe, trap, and turbine; turbine nozzles are not plugged; and setting of speed and emergency governor is correct.

For internal combustion engine drive, ~~confirm~~ check that setting of speed governor is correct; hand throttle is opened wide; and there are no mechanical defects such as sticking valves, timing off, or spark plugs fouled, and so forth. ~~The latter can~~ These problems might require the services of a trained mechanic.

C.1.29 Wrong Direction of Rotation.

Instances of an impeller turning backward are rare but are clearly recognizable by the extreme deficiency of pump delivery. Wrong direction of rotation can be determined by comparing the direction in which the flexible coupling is turning with the directional arrow on the pump casing.

With a polyphase electric motor drive, two wires must be reversed; with dc driver, the armature connections must be reversed with respect to the field connections. Where two sources of electrical current are available, the direction of rotation produced by each should be ~~inspected~~ checked.

C.1.30 Speed Too High.

See that pump- and driver-rated speed correspond. Replace electric motor with one of correct rated speed. Set governors of ~~variable-speed~~ drivers for correct speed. Frequency at private generating stations ~~can~~ might be too high.

C.1.31 Rated Motor Voltage Different from Line Voltage.

For example, a 220 V or 440 V motor on 208 V or 416 V line. Obtain motor of correct rated voltage or a larger size motor. (*See Section 9.4 of NFPA 20.*)

C.1.32 Faulty Electric Circuit, Obstructed Fuel System, Obstructed Steam Pipe, or Dead Battery.

~~Inspect~~ Check for break in wiring open switch, open circuit breaker, or dead battery. If circuit breaker in controller trips for no apparent reason, make sure oil is in dash pots in accordance with manufacturer's specifications. Make sure fuel pipe is clear, strainers are clean, and control valves are open in fuel system to internal combustion engine. Make sure all valves are open and strainer is clean in steam line to turbine.

C.2 Warning.

Chapters 6 9 and 7 10 of NFPA 20 include electrical requirements that discourage the installation of disconnect means in the power supply to electric-motor-driven fire pumps. This requirement is intended to ensure the availability of power to the fire pumps. When equipment connected to those circuits is serviced or maintained, the employee can have unusual exposure to electrical and other hazards. It can be necessary to require special safe work practices and special safeguards, personal protective clothing, or both.

C.3 Maintenance of Fire Pump Controllers After a Fault Condition.

C.3.1 Introduction.

In a fire pump motor circuit that has been properly installed, coordinated, and in service prior to the fault, tripping of the circuit breaker or the isolating switch indicates a fault condition in excess of operating overload.

It is recommended that the following general procedures be observed by qualified personnel in the inspection and repair of the controller involved in the fault. These procedures are not intended to cover other elements of the circuit, such as wiring and motor, which can also require attention.

C.3.2 Caution.

All inspections and tests are to be made on controllers that are de-energized at the line terminal, disconnected, locked out, and tagged so that accidental contact cannot be made with live parts and so that all plant safety procedures will be observed.

C.3.2.1 Enclosure.

Where substantial damage to the enclosure, such as deformation, displacement of parts, or burning has occurred, replace the entire controller.

C.3.2.2 Circuit Breaker and Isolating Switch.

Examine the enclosure interior, circuit breaker, and isolating switch for evidence of possible damage. If evidence of damage is not apparent, the circuit breaker and isolating switch can continue to be used after closing the door ~~is closed~~.

If there is any indication that the circuit breaker has opened several short-circuit faults, or if signs of possible deterioration appear within either the enclosure, circuit breaker, or isolating switch (e.g., deposits on surface, surface discoloration, insulation cracking, or unusual toggle operation), replace the components. Verify that the external operating handle is capable of opening and closing the circuit breaker and isolating switch. If the handle fails to operate the device, this would also indicate the need for adjustment or replacement.

C.3.2.3 Terminals and Internal Conductors.

Where there are indications of arcing damage, overheating, or both, such as discoloration and melting of insulation, replace the damaged parts.

C.3.2.4 Contactor.

Replace contacts showing heat damage, displacement of metal, or loss of adequate wear allowance of the contacts. Replace the contact springs where applicable. If deterioration extends beyond the contacts, such as binding in the guides or evidence of insulation damage, replace the damaged parts or the entire contactor.

C.3.2.5 Return to Service.

Before returning the controller to service, ~~inspect~~ check for the tightness of electrical connections and for the absence of short circuits, ground faults, and leakage current.

Close and secure the enclosure before the controller circuit breaker and isolating switch are energized. Follow operating procedures on the controller to bring it into standby condition.

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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 edition.

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

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

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 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).

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

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

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

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

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

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

NFPA 291, *Recommended Practice for Water Flow Testing and Marking of Hydrants*, 2025 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.

"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, 8484 Westpark Drive, Suite 220, McLean, VA 22102.

CGA C-6, *Standard for Visual Inspection of Steel Compressed Gas Cylinders*, 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~~ 2021 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 :~~

ANSI/HI 1.4, *Rotodynamic Pumps for Installation, Operation, and Maintenance*, 2018.

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 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*, 2021.

UL 2901, *Antifreeze Solutions for Use in Fire Sprinkler Systems*, 2022.

Comparative Fire Performance Tests Using Water and Antifreeze Solutions Discharged from Standard Spray Sprinklers, 2020.

I.1.2.12 US Government Publications.

US 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*, 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 Evaluation of Steel Water Tanks, Standpipes, Reservoirs, and Elevated Tanks, for Water Storage and Related Facilities*~~, 1986 2024 .

I.2.2.2 SFPE Publications.

Society of Fire Protection Engineers, 9711 Washingtonian Blvd, Suite 380, Gaithersburg, MD 20878.

Engineering Guide: Fire Risk Assessment, 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 2024 .

~~SSPC-PA 9, *White (or Colored) Vinyl Paint*, 2018 :~~

SSPC-SP 6, *Commercial Blast Cleaning*, 2007.

SSPC-SP 8, *Pickling*, 2004.

SSPC-SP 10, *Near-White Blast Cleaning*, 2015 2024 .

~~**I.2.2.4 US Government Publications:**~~

~~US Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 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*, 2025 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 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*, 2025 edition.

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

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

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