



**Proposed Updates to NFPA 13, 2025 Edition**




EUROPEAN FIRE SPRINKLER NETWORK

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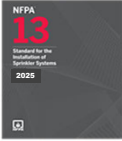
**Proposed Updates to NFPA 13, 2025 Edition**

**Important Dates:**

- First Draft Public Input Closing Date: June 1, 2022
- First Draft Report Posting Date: March 9, 2023
- Public Comment Closing Date: May 31, 2023
- Second Draft Report Posting Date: February 28, 2024

**Motions Committee Report (NITMAM)**

- NITMAM Closing Date: March 27, 2024
- NITMAM Posting Date: May 8, 2024



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IT'S A BIG WORLD.  
LET'S PROTECT IT TOGETHER.

**DISCLAIMER**

This seminar and its content is not a formal interpretation issued pursuant to NFPA regulations. Any opinion expressed is the personal opinion of the author and presenter and does not necessarily present the official position of the NFPA and its Technical Committees.

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**Bob Caputo, CFPS, CET**  
**American Fire Sprinkler Association**  
**President (for Life)**

Bob Caputo, President of the American Fire Sprinkler Association, is chair of the NFPA 24 and NFPA 291 Technical Committee and a member of multiple NFPA technical committees, including NFPA 13 and NFPA 25.

Caputo is a member of the Industry Advisory Board at Oklahoma State University School of Fire Protection Engineering. A contributor of the NFPA 13, NFPA 25, the Fire Protection (14<sup>th</sup> edition) Handbooks, and the NFPA Inspection Manual. A senior member of NFPA and AFSA faculties, Caputo has written and presented seminars throughout the world on fire protection and life safety systems and is a regular speaker at AFSA and NFPA conventions.

Caputo's industry distinctions include "Fire Prevention Officer of the Year" from San Diego County in 1994; "Man of the Year" from Fire Protection Contractor magazine in 1997; and the Henry S. Parmelee award from AFSA in 2017. Caputo is a U.S. Navy veteran and former volunteer fire fighter.

bcaputo@firesprinkler.org | P: 214-349-5965 x124 | American Fire Sprinkler Association



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### NFPA Standards Development

- ☒ Standards are updated every 3 to 5 years.
- ☒ Approximately 8,880 volunteers serve on NFPA Technical Committees.
- ☒ Technical Committees represent a balanced variety of interests. Approximately 260 Technical Committees are responsible for document development.
- ☒ AFSA representation
  - ◆ 55 Committees
  - ◆ 44 Documents
  - ◆ 118 Seats (Principal/Alternate)

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### NFPA Standard Development Process

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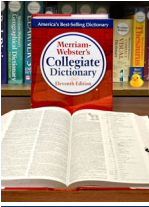
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## New Definitions

Chapter 3



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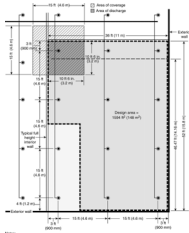
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## Area of Discharge

- ☒ Floor area covered by a sprinkler
- ☒ Assigned to the design area

**3.3.8 Area of Discharge.**  
 The floor area covered by a sprinkler that takes into account any walls or obstructions whose summation determines the remote area.



**Section 3.3.8**

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## Panel Construction

- ☒ Moved from the annex to the body
- ☒ Capable of trapping heat
- ☒ Maximum 300 ft<sup>2</sup> (28 m<sup>2</sup>)
- ☒ Missing Information
  - ◆ No unfilled penetrations at roof interface
  - ◆ Beams permitted to be spaced more than 7.5 ft (2.3 m) apart



**3.3.237 Panel Construction.**  
 Ceiling panels formed by members capable of trapping heat to aid the operation of sprinklers and limited to a maximum of 300 ft<sup>2</sup> (28 m<sup>2</sup>) in area.

**Section 3.3.237**

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**Automatic Breach Control Valve** 10



- ☒ Designed to shut off water supply during catastrophic event
- ☒ **Not permitted to be installed on sprinkler systems**
  - ◆ Not listed for fire protection use
  - ◆ How do you determine catastrophic loss?

Section 3.3.241.2



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**Dwelling Unit** 11

- ☒ New annex language added
- ☒ Common areas for residential use are a part of the dwelling unit
- ☒ Examples:
  - ◆ Lounges
  - ◆ Group kitchens
  - ◆ Laundry spaces



Section A.3.3.69



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**Supplemental Sprinklers**

*New Term, Old Concept*

12



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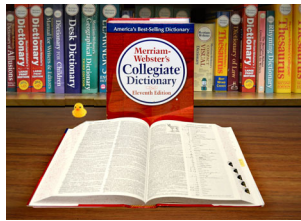
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### Supplemental Sprinkler

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#### 3.3.220.3.6 Supplemental Sprinkler.

A sprinkler that is installed below an obstruction. (AUT-SSD)



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Section 3.3.220.3.6

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### Supplemental Sprinklers

14

- ☒ Can be QR ordinary temperature
- ☒ Should be the same K-factor, orientation, and coverage type as ceiling



Photo: Scott Gray, Board of the SprinklerCo, Inc.



Section 9.5.5.3.3

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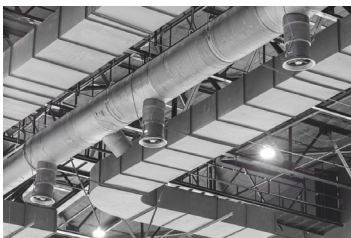
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### Supplemental Sprinklers

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7 new rules for the spacing & location of supplemental sprinklers under various obstructions added to this section



Section 9.5.5.3.4.2

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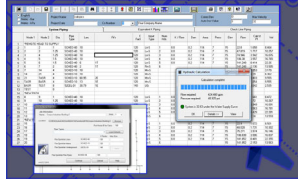
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### Design Approaches for Supplemental Sprinklers

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When required to be included in the hydraulic calculations in accordance with 28.3.4.7.4.3, the design approach for supplemental sprinklers shall be permitted to be based on the hazard located directly below the obstruction.



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Section 19.5

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### Supplemental Sprinklers – Hydraulic Consideration

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28.3.4.7.4.1 Supplemental sprinklers under the obstruction shall not be required to be included in the hydraulic calculation of the ceiling sprinklers.

28.3.4.7.4.2 Where the piping to sprinklers under obstructions follows the same sizing pattern as the branch lines, no additional hydraulic calculations shall be required for sprinklers under obstructions.

28.3.4.7.4.3 Where the requirements of 28.3.4.7.4.2 are not met, a level of supplemental sprinklers shall be calculated to verify pipe sizes.

- (A) The number of supplemental sprinklers shall include up to a maximum of four adjacent sprinklers attached to a branch line.
- (B) For density/area applications, the area of coverage of each sprinkler shall only include the footprint of the obstruction it is protecting.
- (C) For density/area applications, the design criteria shall be in accordance with Section 19.5.
- (D) For CMSA and ESFR sprinklers, the discharge pressure shall be in accordance with 20.16.4.
- (E) The level of supplemental sprinklers shall not be required to be balanced with the overhead system.



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Section 28.3.4.7.4

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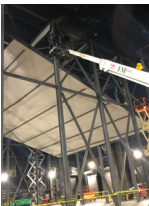
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### Sloped Ceilings

Based on Fire Protection Research Foundation

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## Blocking

- ☒ Previously “firestopped”
- ☒ Eliminates confusion
- ☒ Uses equivalent construction materials
- ☒ Limits channeling of heat at the ceiling level
- ☒ Small openings at roof interface can be ignored

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Section 3.3.22

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## Sloped Ceilings and Obstructed Construction

- ☒ Slopes not exceeding 1 in 12
  1. 1 to 12 in. (25 mm to 300 mm) below deck (each channel)
  2. Max depth < 18 in. (450mm)
    - ◆ Up to 6 in. (150mm) below member
  3. Max depth >18 in. (450 mm) & <24 in. (600 mm)
    - ◆ Up to 6 in. 150 mm below
    - ◆ 400 ft<sup>3</sup> (11.3267 m<sup>3</sup>) max (blocking)
  4. Composite wood joists
    - ◆ 400 ft<sup>3</sup> (11.3267 m<sup>3</sup>) max
    - ◆ 6 in. (150 mm) below, but <22 in. (550 mm) from deck

Section 10.2.6.1.2.1

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21

## Sloped Ceilings and Obstructed Construction

- ☒ Slopes not exceeding 2 in 12
  1. 1 to 12 in. (25 mm to 300 mm) below deck (each channel)
  2. Max depth < 12 in. (300 mm)
    - ◆ Up to 6 in. below member
  3. Max depth >12 in. (300mm) and <24 in. (600 mm)
    - ◆ Up to 6 in. (150 mm) below
    - ◆ 400 ft<sup>3</sup> (11.3267 m<sup>3</sup>) max (blocking)
  4. Composite wood joists
    - ◆ 400 ft<sup>3</sup> (11.3267 m<sup>3</sup>) max
    - ◆ 6 in. (150 mm) below, but <22 in. (550 mm) from deck

Section 10.2.6.1.2.2

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22

### Sloped Ceilings and Obstructed Construction

- ☒ Slopes not exceeding 4 in 12
  1. 1 (25 mm) to 12 in. (300 mm) below deck (each channel)
  2. Max depth < 12 in. (300 mm)
    - ◆ Up to 6 in. (150 mm) below member
    - ◆ 300 ft<sup>3</sup> (8.5 m<sup>3</sup>) max (blocking)



Section 10.2.6.1.2.3

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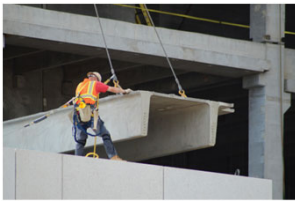
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### Sloped Ceilings and Obstructed Construction



- ☒ Slopes exceeding 4 in 12
  - ◆ 1 (25 mm) to 12 in. (300 mm) below deck (each channel)

Section 10.2.6.1.2.4

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24

### Design Area Shape Factors

$$L = 1.2\sqrt{\text{Remote Area}}$$

- ☒ Unobstructed construction with slopes greater than 2 in 12 → **1.4**
- ☒ Obstructed construction with slopes greater than 4 in 12 → **1.4**
- ☒ All other scenarios remain at 1.2



Section 28.3.4.2.1

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## Sprinkler Location Requirements

To omit or not to omit...

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## Closets

- ☒ "Check your doors at the door"
- ☒ Should only need to meet the definition of "compartment"
- ☒ Needed to correlate with NFPA 13R/13D



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Section 9.2.5.1



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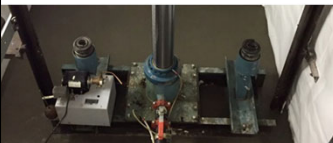
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## Elevator Pits




**9.2.14 Elevator Hoistways and Machine Rooms.**  
~~Sprinklers shall not be required in locations complying with 9.3.6.3, 9.3.6.6, or 9.3.6.7.2.~~

**9.2.14.1**  
~~Sprinklers shall not be required in locations complying with 9.3.6.3, 9.3.6.6, or 9.3.6.7.29.3.6.~~

**9.2.14.2**  
Sprinklers shall not be required in elevator pits.

27

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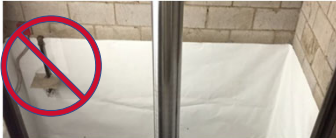
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## Elevator Pits

9.2.14 Elevator Hoistways and Machine Rooms.  
 Sprinklers shall not be required in locations complying with 9.3.6.3, 9.3.6.6, or 9.3.6.7.2.

9.2.14.1  
 Sprinklers shall not be required in locations complying with 9.3.6.3, 9.3.6.6, or 9.3.6.7.2.9.3.6.

9.2.14.2  
 Sprinklers shall not be required in elevator pits.



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Section 9.2.14.2 & 9.3.6

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29

## Elevator Hoistways


9.3.6....

Sprinklers **not required in the hoistway** of passenger elevators where hoistway is of noncombustible or limited-combustible construction & the car enclosure meets ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators. (Limited Combustibility)*

Sprinklers are required in the elevator machine rooms, machinery spaces, control rooms, and control spaces where combustible hydraulic fluid is used.

Sprinklers not required in elevator hoistways where hydraulic fluid is used.

Where provided sprinklers in elevator machine rooms, machinery spaces, control rooms, control spaces, or hoistways required to be standard response.



Section 9.3.6.2

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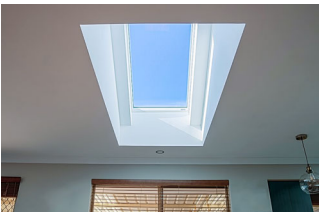
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## Skylights – when to omit the sprinkler



- ☒ All skylights are ceiling pockets
- ☒ Not all ceiling pockets are skylights
- ☒ If skylight exceeds 32 ft² (3 m²) use ceiling pocket rules
  - ◆ Less than 3 ft (1m) deep
  - ◆ No more than 1,000 ft³ (28.3168 m³) combined volume

Section 9.3.16.2

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31

### Intermediate Temperature Sprinklers



Ordinary or intermediate-temperature sprinklers are permitted to be used throughout buildings and compartments.



Section 9.4.2.1

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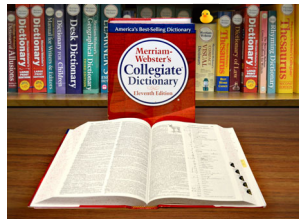
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### Alcoves

#### 3.3.5\* Alcove.

An area in a compartment or corridor that is set back from the rest of the wall it is located along. (AUT-SSI)



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Section 3.3.5

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### Below Alcoves & Soffits



- ☒ For light hazard occupancies
- ☒ 18 in. (450 mm) clearance does not need to be maintained
- ☒ Limitations
  - ◆ 10 ft (3 m) ceiling height
  - ◆ 50 ft<sup>2</sup> (4.5 m<sup>2</sup>) area
  - ◆ 1 in. (25 mm) clearance is maintained



Section 10.2.7.3.1.3

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**General Requirements**  
The "Owner's Certificate"

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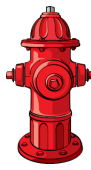
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**Owner's Certificate**

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**4.2 Owner's Certificate.**  
The owner(s) of a building or structure where the fire sprinkler system is going to be installed or their authorized agent shall provide the sprinkler system installer with the following information prior to the layout and detailing of the fire sprinkler system (see Figure A.28.1(b)):

- (1) Intended use of the building, including the materials within the building and the maximum height and arrangement of any storage configuration
- (2) A preliminary plan of the building or structure along with the design concepts necessary to perform the layout and detail for the fire sprinkler system
- (3) Water supply information as identified in 6-2.2 Determination and confirmation of the water supply including any necessary adjustments
- (4) Any special knowledge of the water supply, including known environmental conditions that might be responsible for corrosion, including microbologically influenced corrosion (MIC)
- (5) Whether seismic protection is required and the applicable short period response parameter
- (6) Any special knowledge of the general environment in which the system will be installed that might be responsible for corrosion, including airborne chemicals that could contact system components or chemical solutions that might be exposed to the sprinkler system components



Section 4.2

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**System Area Limitations**

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☒ Currently limited to


- ◆ 52,000 ft<sup>2</sup> (4380 m<sup>2</sup>) for LH/OH
- ◆ 40,000 ft<sup>2</sup> (3720 m<sup>2</sup>) for EH/Storage

☒ WHY?!?


- ◆ Pipe schedule method origin

☒ Ideas

- ◆ Use as a nominal value
- ◆ Allow unlimited areas?
- ◆ Allow increase when electrically supervised?



Section 4.1.1




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## System Types and Components

New technologies

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## Corrosion Inhibitors

- ☒ Listed
- ☒ Additive to the system to limit corrosion reactions
- ☒ Future changes
  - ◆ C Value of 120 for dry and preaction
  - ◆ Retroactive?
  - ◆ Corresponding ITM requirements in NFPA 25



38

Section 7.8.3



38

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## Reorganization of Dry Pipe Requirements

- ☒ Water delivery time requirements were getting confusing.
- ☒ Clarified requirements for single and multi-orifice ITCs to get rid of the "junk drawer" approach.



39

Section 8.2



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**New System:  
Vacuum/Negative Pressure Systems**

- ☒ Uses specially listed sprinklers
  - ◆ Vacuum pressure
- ☒ Listed system
  - ◆ Follow manufacturer's instructions
- ☒ Reserved section held for second draft additions



Section 8.11

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**Installation of Piping, Valves, and Appurtenances**

*Trust but verify...*



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**Documentation Cabinet**

- ☒ Installed at an approved location
- ☒ Large enough to contain all documentation (see chapter 29)
- ☒ Electronic formats permitted



Section 16.11.1.3

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43

## Pressure Gauges

2X WORKING PRESSURE

1.5X WORKING PRESSURE




Section 16.13.3

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## Seismic Protection

Shaking up the requirements



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## Revised Tables

Diameter of Pipe (in/mm) Being Braced	Lateral Sway Brace Spacing (m)				
	6.1	7.6	9.1	11	12
80	924 332	599 351	475 283	407 247	341 205
90	1007 310	665 333	529 300	450 253	374 217
100	1090 287	730 305	586 277	496 230	409 195
125	1396 221	937 113	746 112	629 102	520 105
150 and larger*	1690 170	1094 126	866 122	731 121	604 102

Note: ASTM A106 Grade B or ASTM A53 Grade B has an  $F_y = 241 \text{ N/mm}^2$ . An  $F_y = 207 \text{ N/mm}^2$  was used also as a conservative value to account for differences in material properties as well as other operational stresses.  
 \*Larger load values for larger diameter pipe can be used when justified by engineering analysis.


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Chapter 18

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46

### Seismic Coefficient

$$F_{pw} = C_p W_p$$

*\*\*No more  $C_p$  tables\*\**

$$C_p = 0.754 S_{DS}$$

$$F_{pw} = 0.754 S_{DS} W_p$$


<https://www.seismicmaps.org/>

Section 18.5.9.3

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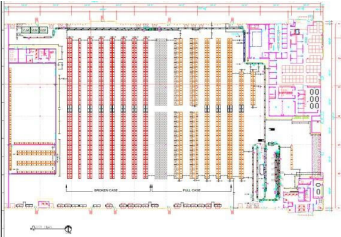
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47

### Plans & Calcs - Storage Floor Plan



An approved storage floor plan showing all areas of the building designed for storage in accordance with Chapters 20 - 26 and for miscellaneous tire storage

Mounted in an approved location

Section 28.2

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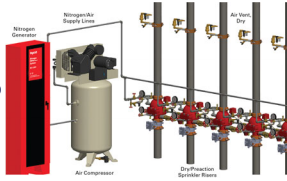
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### System Acceptance - 30-Minute Fill Test

- ☒ Verification of 30-minute fill in the field
- ☒ Systems maintained at or below 5°F (-15°C) permitted to reach set pressure within 60 minutes.



Section 29.2.3.2.4

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**Venting** 49



Manual air vents need to be operated when filling the system

 Section 29.2.3.6

49

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For additional questions regarding the content in today's presentation, please contact:

**Engineering and Technical Services**  
**American Fire Sprinkler Association**  
[technical@firesprinkler.org](mailto:technical@firesprinkler.org)  
[bcaputo@firesprinkler.org](mailto:bcaputo@firesprinkler.org)

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51

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