UPDATES TO NFPA 13, 2028 EDITION

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SAN ANTONIO, TX

AFSA American Fire Sprinkler Association

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AMERICAN FIRE SPRINKLER ASSOCIATION

Kevin Hall, M.Eng., P.E., ET, CWBSP, PMSFPE, is the director of engineering for the American Fire Sprinkler Association (AFSA). He is a member of several National Fire Protection Association (NFPA) technical committees responsible for developing the model codes and standards, including, NFPA 1 *Fire Code*, NFPA 13/13R/13D *Installation of Sprinkler Systems*, NFPA 20 *Installation of Stationary Fire Pumps for Fire Protection*, NFPA 14 *Installation of Standpipe and Hose Systems*, NFPA 25 *Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, and NFPA 200 *Hanging, Bracing, and Anchorage of Water-Based Fire Protection Systems*. He also represents AFSA on numerous UL technical committees responsible for revising and maintaining the product standards used in the sprinkler industry. He earned his Bachelor of Science and Master of Engineering degrees from the University of Maryland College Park in fire protection engineering. He is a registered professional engineer in Delaware and Maryland, NICET III certified in water-based system layout, a certified water-based system professional through NFPA, and a professional member of the Society of Fire Protection Engineers (SFPE) where he serves as an At-Large Board Member and Chair of the Constitution and Bylaws Committee for the Chesapeake Chapter. In 2021, he was recognized as one of SFPE's "5 Under 35" award recipients. Prior to his association and committee work, he worked for Reliance Fire Protection in Baltimore, Maryland as a project manager overseeing projects of various sizes and complexity.

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HOUSEKEEPING ITEMS

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National Fire Protection Association
The authority on fire, electrical, and building safety

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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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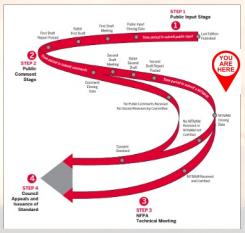
NFPA Standards Development Process

- 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
  - 62 Committees
  - 47 Documents
  - 117 Seats (Principal/Alternate)



6

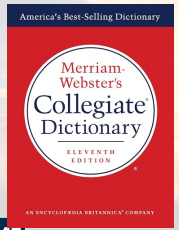
Qualified Personnel

- Acceptance testing is part of installation
- "or under direct supervision of qualified personnel"

SR-1039 and SR-1116 Section 1.2.2

7

New Definitions



- Automated Storage and Retrieval Systems
  - Fire Extinguishment
- Flexible Coupling
- In-Rack vs. Intermediate-Level
- For dry systems
  - Air Maintenance Device
  - Plant (Shop) Air
  - **Air?**

Chapter 3

8

It's Pneumatic!

Global FR-1229

9

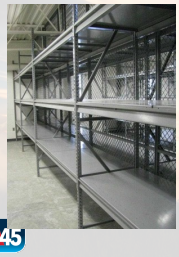
The Owner's Certificate

- Space for the owner to sign the certificate
- Currently, no mandate in the standard
- 2028 edition ➔ Sign it!

Section 4.2.1

10

Miscellaneous Storage



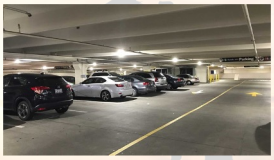
- Miscellaneous ≠ Low-piled
- Miscellaneous storage
  - Ignore solid shelving
  - In-rack sprinklers not required
  - Clarified, not new!

Section 4.3.1.4.5

11

Occupancy Classification

- Parking structures?
  - Ordinary Hazard (Group 2)
- EV present?
  - Ordinary Hazard (Group 2)
- Charging stations?
  - Ordinary Hazard (Group 2)
- **Data Centers?**
  - **Do your homework!**



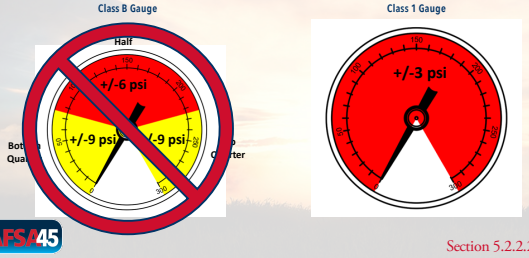
PC-55 and PC-56 Section A.4.3.3.2

12

SR-1110 Section 4.4.1

13

Waterflow Testing Gauges



Section 5.2.2.2.1

14

Dynamic O-Ring Sprinklers

- Not permitted

SR-1040 Section 7.2.7

15

Dry Pipe Water Delivery Times

Occupancy Hazard	Number of Orifices on System Test Connection	Maximum Time of Water Delivery (seconds)
LH, OH, EH, or High-piled Storage	1	60
OH, EH, or High-piled Storage	2	50
EH	4	45
High-piled storage	4	40

Table 8.2.4.2.3

16

Inspectors Test Connections

Fluid Delivery Calculations

- Single orifice permitted in field
- Establishes baseline for ITM
  - No specific time requirement

Field Verification

- Single or manifolded connections permitted
- Time requirements per table

SR-1106 and SR-1107 Section 8.2.4.3 and 8.2.4.4

17

Nitrogen for Increased C-Value

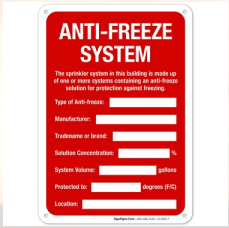
- SSI removed C-120 requirements
  - Added extensive annex notes on N2 benefits
- SSD retained C-120 allowance
  - Trust the science
- To be resolved by correlating committee
  - NITMAM?

SR-1073 Section 8.2.7.6 and Rejected PCs 129, 33, 77

18

Antifreeze Information Sign

- Manufacturer type and brand
- Minimum use temperature
- **Minimum design temperature**
- Volume
- Acceptable range of the refractive index or specific gravity



Section 8.6.1.5

19

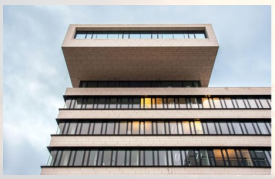
Expansion Tanks

- New guidance recommending BFP and expansion tank for antifreeze systems
- Set pressure requirements
  - Antifreeze information sign
  - Working plans

SR-1105, SR-1103, SR-1099 Section 8.6

20

Exterior Projections



- No protection required beyond exterior support beam
  - Must be 4 ft or less
- No protection if 30 ft above

Section 9.2.3.4 & 9.2.3.5

21

Narrow Spaces Along Walls

- No sprinklers required
- Treated as ceiling pockets
  - 1000 cu. ft
  - 24 in. width
  - ~~36 in. depth~~
  - Floor area protected from other sprinklers
  - Noncombustible finishes
  - Mirrors soffit rules

Section 9.2.19

22

ESFR Sprinklers and Unit Heaters

- Consider intermediate-temperature when centered between four sprinklers
- USE THE CORRECT TEMPERATURE RATING!

SR-1048 Section A.9.4.2.5(1)

23

Spacing, Positioning, Location, and Use

- Spacing
  - S, L, and Area of Coverage
- Positioning
  - Distance from the ceiling
- Location
  - Obstructions

Section 9.5

24

Calculating S, L, and A_S

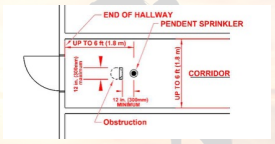
- Updated procedure to determine area of coverage
  - Focused on obstructions
  - Measurement to face of obstruction
  - Measurement to center of obstruction
  - Uprights/Pendents vs. sidewalls

SR-1057 Section 9.5.2.1.1

25

Corridor Obstructions

- Small obstructions at the end of corridor permitted to be ignored
  - Maximum 16 in. width
- No limit on corridor width
- Min 12 in. distance to obstruction
- Sprinkler no more than ½ S from back wall

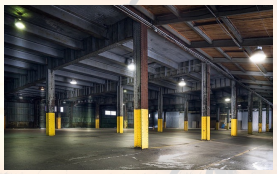


SR-1060 Section 9.5.4.2.1

26

ESFR Sprinklers – Vertical Obstructions

- Up to 12 in. wide
  - Locate 12 in. away horizontally
- Over 12 in. up to 24 in. wide
  - Locate 24 in. away horizontally
- More than 24 in. wide
  - Obstructed
  - Additional sprinkler needed
  - Space on opposite sides



Section 14.2.10.2.4

27

Special Sprinklers

- Combustible Concealed Space Sprinklers
- Attic Sprinklers
- Electrically Operated Sprinklers
- Specific Application Window Sprinklers

Chapter 15

28

Mundane Sprinklers

- Open Sprinklers/Nozzles
  - Moved to 9.4.1.6
- Old Style/Conventional Sprinklers
  - Moved to 9.4.1.7
- Dry Sprinklers
  - Moved to 9.4.7

Section 9.4

29

Protective Coverings

- Not just for spray booths anymore!
- Any environment with ~~excessive loading~~
  - Must maintain in accordance with NFPA 25
- **Loading sufficient to have a detrimental impact**

SR-1071 Section 16.2.4.1.1

30

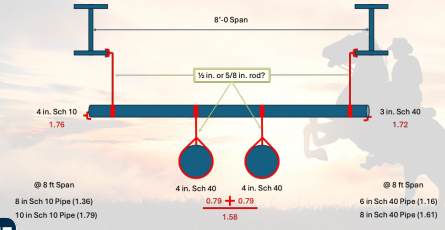
Pressure-Reducing Valves

- 10 psi safety margin no longer required
- Set to reduce pressure to system working pressure
  - Adjust for elevation!
- Pressure relief valve installed downstream as fail-safe
- **Master Pressure Control Valve**

SR-1094 Section 16.9.7

31

Supporting Multiple Pipes from a Single Trapeze



Section 17.3.11

32

Metric Corrections

- Nominal rod diameters expressed in M numbers instead of mm

Global SR

33

ASRS Storage

- Criteria for hazard analysis
- Systems intended to provide Control, Suppression, or Extinguishment
  - Some configurations require an extinguishment design

SR-1134 Section 20.20 and SR-1133 Section 26.10

34

Using CMSA/ESFR in Occupancy Classifications

- Permitted for
  - LH
  - OH
  - Storage arrangements with OH/EH
- Not permitted for EH
  - Extensive Shielding
  - Flammable/combustible liquids

Chapter 22 and 23

35

ESFR Designs (Less than 12)

- Mirrors FM criteria
- Additional requirements added in Chapter 24 for 9, 10, and 11 sprinkler designs
- Limitations on aisle width and temperature ratings
  - Ordinary temperature only

Chapter 24

36

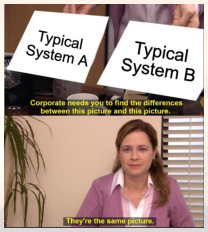
Special Occupancies

SR-1140 Chapter 27

37

Calculating Typical Systems

- Use common sense!



Section A.28.1.1.1(2)

38

Contractor's Material and Test Certificate

- Back in the body
- Task group assigned to review contents in form and Chapter 29

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Figure 29.1.1

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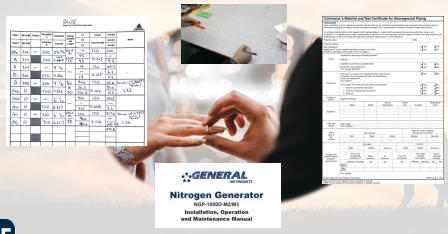
Drawings, Documents, and Instructions



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Section 29.3

40

Acceptance Testing in Freezers

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SR-1080 Section 29.2.1.6

41

Existing Dwelling Units

- For dwelling units only
- SR sprinklers required to be replaced with QR or residential sprinklers
- Only when work is being performed
  - Not retroactive

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Section 30.3.3 through 30.3.5

42

REQUIRED

FOR CEU CREDIT:

- ✓ Badge scanned at start of seminar
- ✓ Attend full seminar
- ✓ Complete survey 1 of 2 ways:
  - ✓ Survey link is emailed to attendees with scanned badges
  - ✓ Event app by EventsAir
    - Login to app
    - Navigate to seminar survey
  - ✓ Surveys close 10/31/26

Thank you!

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Scan QR code to submit questions for **Ask the Experts!**

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Thank you!

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2027 Training Schedule

WEBINARS

1/6	Updates to NFPA 20
1/20	Calculating Pressure Reducing Hose Valves
2/3	Consumer Alert: Nitrogen in Sprinkler Systems
2/17	Reviewing Hydraulic Calculations
3/3	Updates to NFPA 13, 2028 Ed.
3/17	Updates to NFPA 13R & 13D, 2028 Eds.
4/7	Topic Coming Soon
4/21	NFPA 25: Roles & Responsibilities
5/5	Standpipe Flow Test Procedures
5/19	Storage 101
6/2	NFPA Technical Meeting - Voting Guide
6/16	Topic Coming Soon
6/30	Topic Coming Soon
7/7	Updates to NFPA 14, 2027 Edition
7/21	Adjacent Hazards & Design Methods
8/4	Acceptance Testing
8/18	Modifications to Existing Systems
9/22	Topic Coming Soon
10/6	Seismic 101
10/20	Proposed Updates to NFPA 25, 2029 Ed.
11/3	Evaluating Fire Pump Flow Tests
11/17	Top 10 Tech Reviews
12/1	Designing Water Storage Tanks
12/15	Pump Room Layout

PROGRAMS

Feb 9 - Mar 5 Apr 20 - May 14 Aug 3 - Aug 27** Oct 26 - Nov 19	Beginning Design School*
Apr 26 - May 7 Nov 1 - 12	Intermediate Design School*
Feb 8 - 10** Apr 12 - 14 Jul 12 - 14 Oct 11 - 13	Sprinkler Hydraulics Calculations Workshop
Apr 19 - 21 Oct 18 - 20	Advanced Hydraulics Calculations Workshop
Feb 11** Apr 30 Jul 23 Sep 24	Introduction to the Fire Sprinkler Industry
Mar 1 - 3 May 17 - 19 Aug 16 - 18 Oct 18 - 20**	NFPA 25 Essentials Workshop
Jun 7 - 10 Sep 20 - 23	Experienced Inspector Skills Lab
Mar 4 - 5 May 20 - 21 Aug 19 - 20 Oct 21 - 22**	NFPA 25 Fire Pump Workshop
Spring Summer Fall	ITM Inspector Development Program* *This program is 20 months.*

** Hybrid course **At General Air Products Lab, Exton, PA*

AFSA46

September 8-11	Manchester Grand Hyatt San Diego, CA

For More Details Visit:
firesprinkler.org

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Dates subject to change. Programs subject to minimum registrations.

rev 9/14/2026

Virtual Instruction Path (VIP)

for Sprinkler Fitting Apprentices

Level 1 - Begins January 2027

Level 2 - Begins February 2027

Level 3 - Begins January 2027

Level 4 - Begins March 2027

www.firesprinkler.org/VIP

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HANDS-ON WORKSHOPS FOR 2027

FEATURING AFSA'S TRAINING LAB

NFPA 25 Essentials Workshop

Mar | May | Aug | Oct

Description: Understand roles, responsibilities, and NFPA 25 ITM procedures through hands-on testing of wet systems, dry systems, and fire pumps.

NFPA 25 Fire Pump Workshop

Mar | May | Aug | Oct

Description: Develop practical NFPA 25 fire pump ITM skills, including no-flow and full-flow testing, water supply graphing, and performance evaluation.

Introduction to the Fire Sprinkler Industry

Feb | Apr | Jul | Sep

Description: This course is designed for those new to the industry. An introductory, wide-ranging 8-hour course that provides a broad overview of core fire sprinkler industry concepts for those new to the field.

Experienced Inspector Skills Lab NEW

Mar | Sep

Description: Take your ITM expertise beyond the basics. Designed for experienced technicians, this course combines focused classroom instruction with hands-on system lab training to strengthen your application of current NFPA 25 inspection, testing, and maintenance requirements. Refine fire sprinkler testing practices, improve documentation, deliver more consistent service, and help reduce liability while reinforcing knowledge commonly covered on certification exams.

Learn more about AFSA's fire sprinkler lab featuring functional risers, a spray room, fire pumps, and an interactive classroom.

firesprinkler.org/lab