AFSA45
UPDATES TO
NFPA 14, 2027 EDITION
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Steve Leyton
SAN ANTONIO, TX
AFSA
American Fire Sprinkler Association

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Kevin Hall, M.Eng., P.E., ET, CWBSP, PMSFPE
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.
AFSA
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Steve Leyton, President
Protection Design & Consulting | San Diego, CA
Steve is the Founder and President of Protection Design and Consulting in San Diego, CA. He started his career in 1981 in the design/build fire sprinkler contracting industry and in 1995, opened Protection Design to focus on architectural and developer clients in addition to working with contracting community. His professional affiliations include membership in NFPA, International Code Council (ICC), American Fire Sprinkler Association (AFSA), National Fire Sprinkler Association (NFSA) and the California Fire Prevention Officers Northern and Southern Sections. He has served as a principal member of the NFPA 13 Technical Committee for Residential Sprinklers; currently serves as a principal member of the NFPA 420 Technical Committee (Fire and Life Safety in Cannabis Facilities), and since 2000 has been a member of and is currently Chairman of the NFPA 14 Technical Committee on Standpipes. Steve has participated in numerous advisory groups for the California State Fire Marshal's office, including Chair of the installation committee for the 2009 Residential Sprinkler Code Adoption Task Group and was Co-Chair of the ICC Ad-Hoc Committee on Residential Fire Sprinklers in 2005. His career experience encompasses a wide range of residential, commercial/industrial, institutional, and high-rise projects in the USA, Mexico, and Asia.
PROTECTION DESIGN AND CONSULTING
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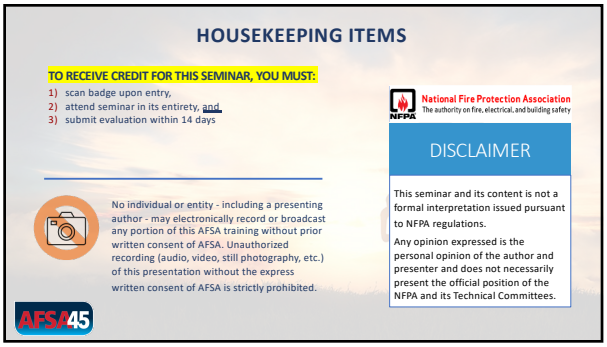
HOUSEKEEPING ITEMS
TO RECEIVE CREDIT FOR THIS SEMINAR, YOU MUST:
1) scan badge upon entry,
2) attend seminar in its entirety, and,
3) submit evaluation within 14 days
No individual or entity - including a presenting author - may electronically record or broadcast any portion of this AFSA training without prior written consent of AFSA. Unauthorized recording (audio, video, still photography, etc.) of this presentation without the express written consent of AFSA is strictly prohibited.
National Fire Protection Association
The authority on fire, electrical, and building safety
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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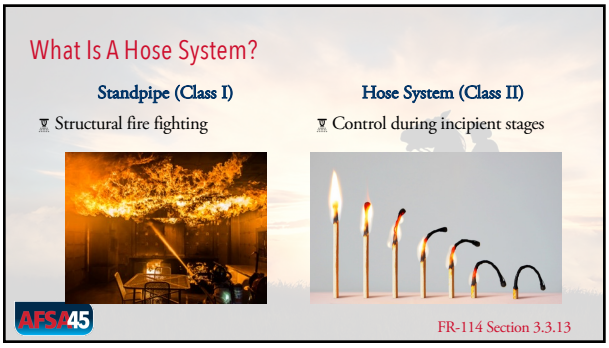
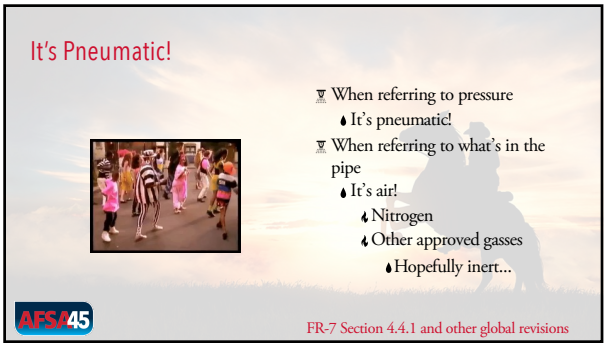

What Is A Hose System?
Standpipe (Class I)
Structural fire fighting
Hose System (Class II)
Control during incipient stages
FR-114 Section 3.3.13

5


It's Pneumatic!
When referring to pressure
It's pneumatic!
When referring to what's in the pipe
It's air!
Nitrogen
Other approved gasses
Hopefully inert...
FR-7 Section 4.4.1 and other global revisions

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Pipe Thickness

- Schedule 10 permitted up to 300 psi
- Pressures beyond 300, piping needs to be thick enough to withstand working pressure

FR-17 Section 7.2.3 & 7.2.4

7

Thread Protection

- Protect the threads!
  - With a cap
  - But put a hole in it
    - Nominal ¼ in.
  - Lockable caps need to be listed
- **Hole not required if cap is rated to hold pressure**

FR-18, FR-19, FR-20, and **SR-10**

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Fabricated FDC Manifolds

FR-21 Section 7.9.1.1

9

Listing Requirements

UL 668, *Hose Valves for Fire-Protection Service*

UL 405, *Fire Department Connections*

UL 1450, *Motor-Operated Air Compressors, Vacuum Pumps, and Painting Equipment*

FR-116 Section 7.1.2

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Listing Requirements

FM 1362, *Pressure Reducing Valves*

UL 1739, *Pilot-Operated Pressure-Control Valves for Fire Protection Service*

UL 1468, *Direct Acting Pressure Reducing and Pressure Restricting Valves*

FR-116 Section 7.1.2

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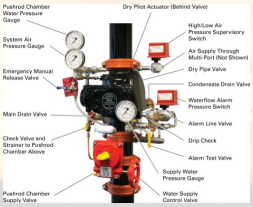
Supervisory Air

Pressure Switch/AMD

Figure Credit: Courtesy of Potter Electric Signal

Water Control Valve



FR-27 Section 8.3.2.1.4

12

Air Maintenance Device

FR-29 Section 8.3.2.2.8

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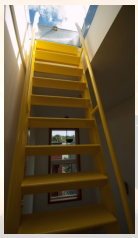
Nonoccupiable Roofs

- Clarified existing requirements
- Single standpipe require to extend through roof
  - One standpipe per building
  - Not applied to each stairwell
  - Not required where
    - Exit stair landing opens to roof
    - Roof is **accessible** from top hose connection



SR-20 Section 9.3.2.6

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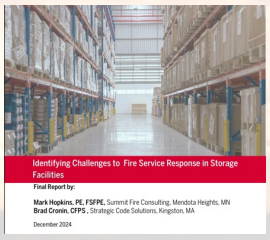
Large Storage Buildings

- Footprint over 300,000 sq. ft
- 200 ft travel distance
  - Exterior door to hose connection
  - Hose connection to hose connection



SR-21 Section 9.3.2.9

15

Pressure-Regulating Device Identification Sign

- Design flow rate
- Inlet pressure
- ~~Outlet pressure~~
- **Floor and floor elevation?**

FR-36 and SR-8 Section 8.7.4

16

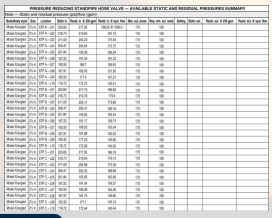
Identifying Floors Served by PRVs

- Indicate the floors where PRVs are installed
- Why is this important?
  - PRV rely on full system pressure
  - Cannot just pump to fire floor

FR-51 Section 9.9.5.3

17

Calculating Pressure-Reducing Hose Valves



- In addition to flowing system demand
- Supply calculations are required
  - Static pressure at inlet
  - Residual pressure with a single hose valve flowing (250 gpm)
  - Residual pressure flowing system demand
  - Used to determine PRV settings and acceptance test values

SR-57 Section 10.5 and **SR-55** Section 12.6.1.3

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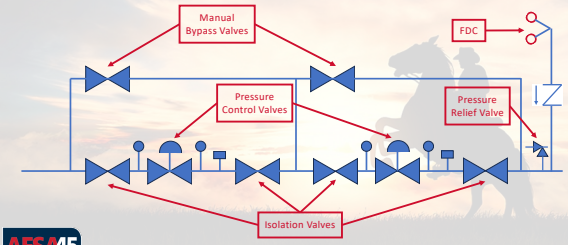
Master Pressure Control Valve Assembly



FR-106 Section 3.3.17 and FR-59 Section 10.2.5

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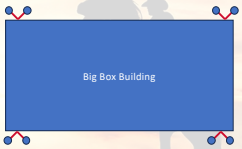
FDC Locations

- Additional FDCs required
  - High-rise buildings
  - 900+ ft perimeter
- FDCs must be remote from each other
  - Opposite corners
  - Opposite sides
  - Opposite ends



FR-65 through 69 Section 10.7.2.2

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FDC Sizing

- Number of inlets permitted to be split across multiple FDC locations
- EXCEPT HIGH-RISES
  - Individually sized
  - Supply system demand
    - Flow
    - Pressure

FR-71 Section 10.7.3.3

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Working Plans and Calculations

- Identify special info for flow testing
  - Do you need a pumper truck?
- Updates to hydraulic worksheets for standpipe specific requirements
  - No K-Factors!

FR-72 Section 11.1.2 and SR-47 Section 11.2

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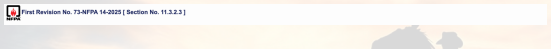
C Values



FR-73 Section 11.3.2.3

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Test Plans – Hydrostatic and Pneumatic

- Requires test plan to be submitted to owner's rep
  - Date, time, and duration
  - Test pressure
  - Affected areas
  - Emergency contact
  - Procedures and safety measures

FR-126 Section 12.4.2 & FR-78 Section 12.5.2.1

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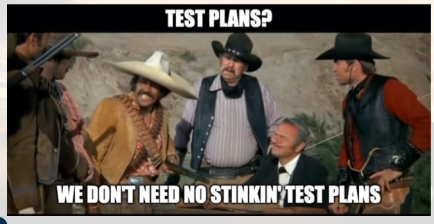
Test Plans – Hydrostatic and Pneumatic



SR-37 ~~Section 12.4.2~~ and SR-43 Section 12.1.2

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Standpipe Flow Testing Procedures

- Automatic
  - Supplied by connected water service and fire pumps
- Manual
  - Supplied by fire department pumper
  - Portable pump
  - Other approved means
- Substantial annex notes added

FR-79 and SR-45 Section 12.6.1

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Buildings Under Construction

- Replaces extracts with pointer to NFPA 241
- NFPA 241 includes
  - Fire Prevention Program
  - FPP Manager
  - Owner's responsibilities
  - Other requirements not pertaining to systems

CI-138 and SR-62 Chapter 13

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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!

Kevin Hall

Steve Leyton

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

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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