

**AFSA CELEBRATES NEW LAB  
20 WITH RIBBON CUTTING**

MAY/JUN 2024

# SPRINKLER AGE

OFFICIAL PUBLICATION OF THE AMERICAN FIRE SPRINKLER ASSOCIATION

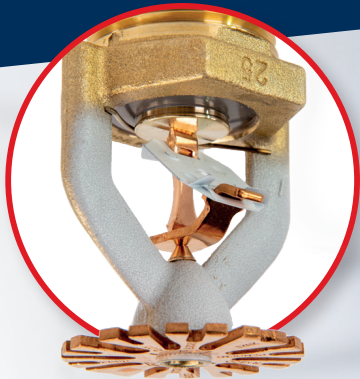
VOL 43/03



## NFPA STANDARDS UPDATE

# Maximize Storage. Minimize Wasted Space.

cULus Listed ESFR Sprinklers for Roof Deck Heights up to 48 ft.



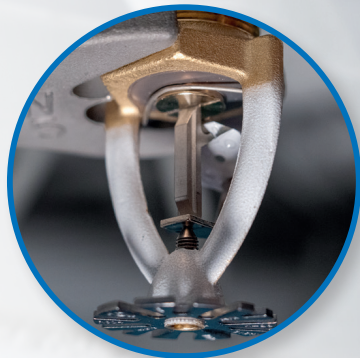
## Model P25

- 40 ft. tall storage
- 5 ft. min. aisle width
- 50 psi operating pressure
- Single- and double-row open frame racks



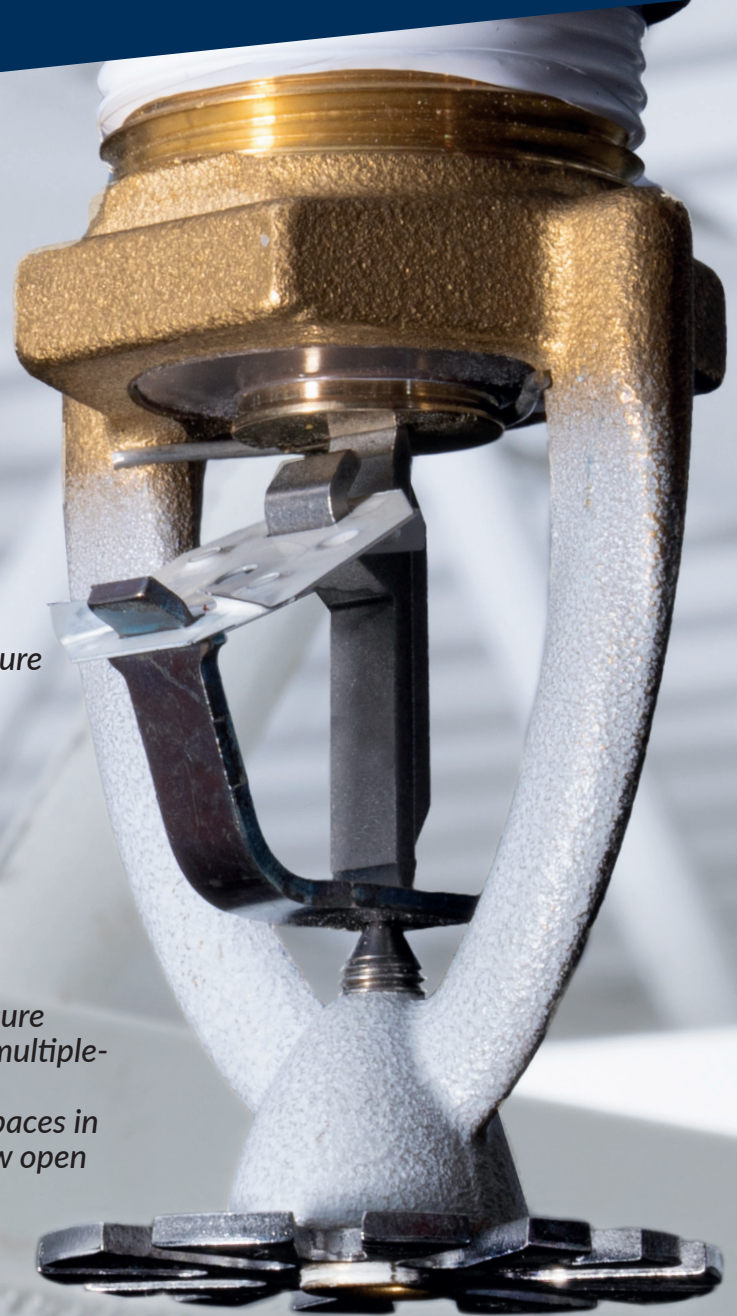
## Model N28T6

- 43 ft. tall storage
- 4 ft. min. aisle width
- 35 psi operating pressure
- Single-, double-, and multiple-row open frame racks



## Model N28T3

- 43 ft. tall storage
- 4 ft. min. aisle width
- 35 psi operating pressure
- Single-, double-, and multiple-row open frame racks
- 3 in. transverse flue spaces in single- and double-row open frame racks



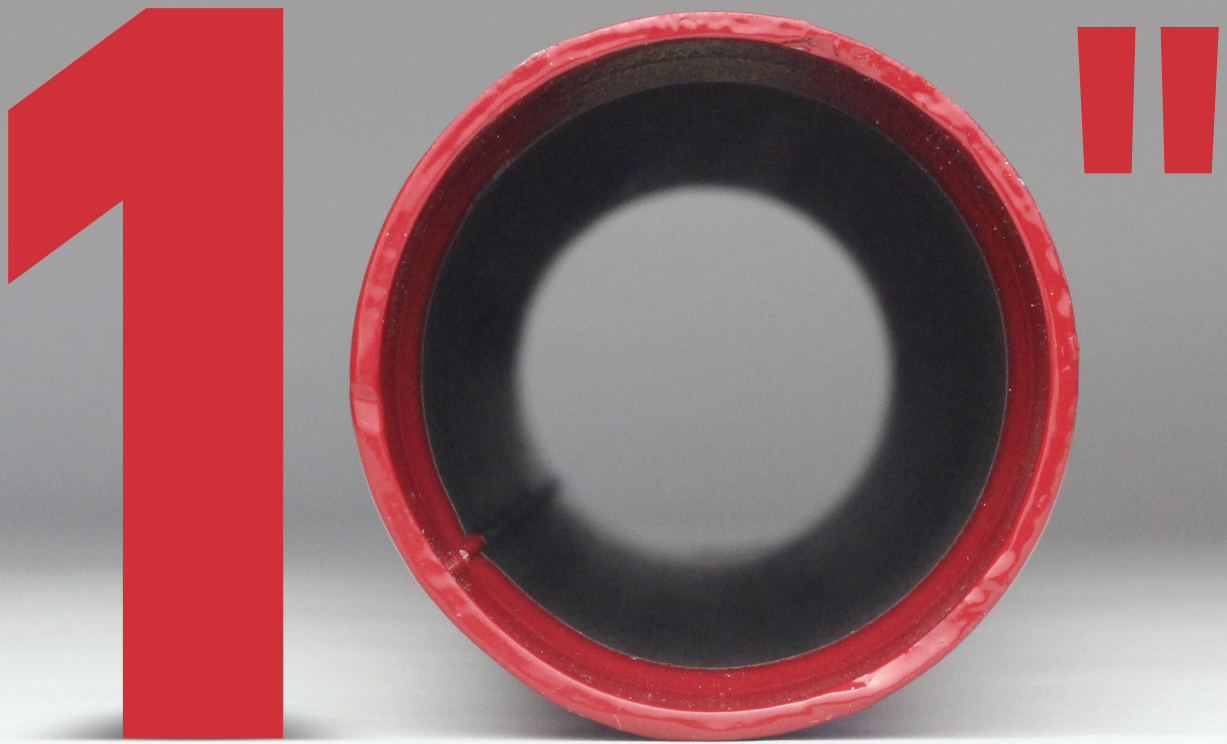
- See Reliable Technical Bulletins 070 and 082 for complete details and limitations.
- Reliable has developed, and ASTM International has published, an Environmental Product Declaration (EPD) for the Model P25, N28T6 and N28T3 sprinklers.

**Reliable**<sup>®</sup>

[reliablesprinkler.com](http://reliablesprinkler.com)

See Our  
48' Lineup





# Our **NEW** plant in **Sinton, Texas** produces 5", 6", 8", and 10" **SPRINKLER PIPE.**

Our new mill expands our overall product capabilities, giving us the most comprehensive range of sprinkler pipe in the industry:

- Diameters from 1" to 10" NPS.
- Schedule 10, 30, 40, and Eddy Flow (size dependent)
- Lengths up to 25', with custom lengths available

Plus a variety of finishing options – not to mention our exclusive EddyGuard II® MIC antimicrobial coating to help ensure reliable flow for years.

It's all available to you from a single, responsive supplier...making your pipe selection job much easier.

## Plants located coast-to-coast...



## for fast delivery anywhere!



**BULL MOOSE**  
TUBE



[BullMooseTube.com](http://BullMooseTube.com) | 800.325.4467

# Metal Face Storz FDC Connections

"Fire Hydrants & Fire Department Connections (COMMUNITIES) should not be inherently vulnerable to poor design." — Dave Harrington

## TIME WILL TAKE ITS TOLL on Gaskets & Moving Parts

The major design flaws with the FDC Storz adapter are the Locking Device & the Storz Gasket. Locks can stay locked, and gaskets can deteriorate or be removed completely. Issues with these two factors will prevent the use of the Sprinkler system.

History shows that a Metal Face Storz is required on permanent outdoor installations: HPHA, case in point. That's why Harrington is introducing a complete line of Metal Face Storz connections, tailored to meet your



diverse needs. This design ensures a more secure and tamper-resistant Storz Cap, preventing the introduction of foreign debris into the line.

During fire department hook-up, the fire hose coupling gasket seals against the FDC Metal Face Storz, as the hose coupling's locking device is engaged during the process.

All Storz heads are forged and anodized for extended durability. Elbows and 150# flanges are powder coated for a high-quality finish.

## NOT A NEW IDEA. THE RIGHT IDEA.



- Metal Face Seal • No Locking Devices
- High-torque Cap Removal

A "Locking Device"  
Is on All 4" & 5" Storz  
Hose Couplings.  
Standard Since 1993.

## IT'S ABOUT TIME!



**Harrington**  
STORZ CONNECT

To Improve Your Emergency Response Connections,  
SPECIFY HARRINGTON METAL FACE STORZ.

2630 West 21st Street, Erie, PA 16506 • 800.553.0078  
info@harrinc.com • hydrantstorz.com



## FEATURES

### 12 | ELEVATING EDUCATION AT AFSA43

Technical, Managerial, and AHJ Seminars Abound at Convention

### 16 | NFPA 25: THE BATTLE CONTINUES

Who is Qualified to Inspect?

### 18 | CLEMENTS ELECTED TO AFSA BOARD

Contractor to Serve as an At-Large Director

### 20 | AFSA'S "FIRE SPRINKLER PLAYGROUND" NOW OPEN

Ribbon Cutting and Reception Held for New Training Lab

### 22 | COMBUSTIBLE AND FLAMMABLE LIQUIDS CODE

NFPA 30, Chapter 16, 2024 Edition

### 24 | NITROGEN GENERATORS FOR DRY PIPE SYSTEMS

Examining N<sub>2</sub> Migration and Efficacy

### 32 | CONTINUING A LEGACY

The Joe Heinrich Young Professional of the Year Award Elevates Excellence

### 34 | CHANGES TO AIRCRAFT HANGAR FIRE PROTECTION

NFPA 409 Launched a Risk-Based Approach in the 2022 Edition

### 40 | IGNITING PASSION AND SAVING LIVES

Virginia Chapter Career Fair Sparks Interest in the Next Generation

### 42 | AFSA REJUVENATES TAC

Technical Advisory Council to Establish Technical Positions for the Codes and Standards Development Process

### 44 | THUNDER VALLEY TRADE SHOW TRIUMPH

Sacramento Valley Chapter Event Draws International Audience

### 46 | NFPA ANNOUNCES NEW ENTITY

NFPA Global Solutions™ to Advance Safety

### 47 | FULL SERVICE COLLECTION SOLUTION

New Member Benefit: KBM

### 48 | AND THEN THERE WERE TWO

ABC NCC Competition Showcases Fire Sprinkler Industry

### 49 | CHAPTER HOSTS CAREER DAY

Chesapeake Bay Promotes Industry to High Schoolers



**ON THE COVER:** Students learning ITM in AFSA's new state-of-the-art training lab. Also in this issue: NFPA standards update.

### 6 CHAIR'S MESSAGE

### 8 PRESIDENT'S REPORT

### 10 FLASHPOINT

### 50 TECHNICAL CHALLENGES

### 52 AFSA NEWS

### 52 CALENDAR

### 53 CHAPTER NEWS

### 53 ASSOCIATION NEWS

### 54 AFSA CHAPTERS

### 55 NEW MEMBERS

### 56 U.S. CONSTRUCTION

### 57 PEOPLE IN THE NEWS

### 58 PRODUCT NEWS

### 60 INDUSTRY NEWS

### 62 INDEX OF ADVERTISERS

## Our Mission

AFSA is the voice of the merit shop fire sprinkler contractor. We educate and train the industry while promoting fire protection systems to save lives and property.

## Our Vision

To be a relentless force for a world free from the devastation caused by fires in commercial and residential structures.

**SPRINKLER AGE**, (ISSN 0896-2685) is published bi-monthly for \$33.95 per year by the American Fire Sprinkler Association, Inc., 1410 East Renner Road, Suite 150, Richardson, Texas 75082. Periodicals postage paid at Dallas, Texas and additional mailing offices.

**POSTMASTER:** Send address changes to SPRINKLER AGE, 1410 East Renner Road, Suite 150, Richardson, Texas 75082.

Follow us on



# CHAIR'S MESSAGE

The American Fire Sprinkler Association (AFSA) and the National Fire Protection Association (NFPA) are synonymous with the gold standard in providing excellence in training for the NFPA codes. NFPA has had a legacy in code development, saving lives and property since 1896. Our partnership goes back to 1981 when AFSA was incorporated as the open shop training association for our fitters, apprentices, and designers.

Our standards for life safety and property protection come from NFPA. They are the association that brings all facets of our industry into the process. A majority of our Authorities Having Jurisdiction (AHJs) use the NFPA standards and sit on many committees to be a part of the development of new standards.

Every year, AFSA is represented at its annual conference. This year, AFSA's Technical Training Specialist Eric Andresen, WBITM, and Director of Engineering & Technical Services Victoria Valentine, P.E., FSFPE, will be presenting seminars, and AFSA's membership team will have a booth during the expo. I believe this is an important relationship we are excited to continue to support, with our staff and members serving on many committees. One commitment AFSA made was to bring back the Technical Advisory Council (TAC) with our Contractor Member Parks Moore, P.E., serving as chair.

AFSA has over 1,000 AHJ members, the majority of whom use the NFPA Life Safety Codes in their jurisdictions. It is more important than ever to continue to build on our strong AFSA-NFPA partnership. I encourage our AHJ members to stop by our booth at this year's NFPA conference in Orlando, June 17-19. I look forward to being a part of this very successful conference and supporting NFPA in its mission and ours of saving lives and property.

Our president, Bob Caputo's, vision of offering our members a state-of-the-art, hands-on training facility was unveiled on April 30 at AFSA Headquarters in Richardson. In conjunction, AFSA hosted our Board and committee meetings and the Mid-Year Chapter Leadership Conference, all within the same week. I want to thank the many volunteer fire sprinkler company members for donating their labor to install all the equipment. We could not have made this happen without your dedication. I thanked all who were involved on April 30.

Our staff, volunteer committee members, and Board members are always working to recognize excellence in our association, offer new and innovative products for our members, and sustain being industry leaders in fire protection systems. It's an exciting time at AFSA, and I am proud to share this new training lab with our volunteers, who give their time and talents to improve our association and our members. ■

## Thank You to the AFSA Lab Donors!

AGF Manufacturing	Firetrol - Austin	Rocky Mountain Fire Sprinkler
American Automatic Fire Sprinkler	General Air Products, Inc.	Safe Signal Sprinkler
Americana AVK	Hose Monster	Spears Manufacturing
ARGCO	Hydro Pumps	SPP Pumps
ASC Engineered Solutions	JFV Engineering, Inc.	Talco Fire Systems
Atlanta Winsupply	Johnson Controls (Tyco)	Tornatech, Inc
BAVCO	Kennedy Valve Manufacturing Co.	Victaulic Company
BlazeMaster Fire Protection Systems (Lubrizon)	Loos Wire Rope Company	Viking Supply Net
C-Aire Compressors, Inc.	Rick Matsuda	VSC Fire & Security
Consolidated Fire Protection	George McGregor	Wheatland Tube
Core & Main Fire Protection	Metraflex	
Eastex Tool	Mongiovi & Sons	
Engineered Corrosion Solutions	PHD Manufacturing	
Ferguson Fire & Fabrication	Potter Electric Signal Co.	
Fire Tech Systems, Inc.	Reed Pipe Tools & Vices	
	Reliable Automatic Sprinkler	



**LINDA M. BIERNACKI**  
AFSA BOARD CHAIR

## EDITORIAL: 214-349-5965

**BOB CAPUTO, CFPS**, Publisher, ext. 124  
bcaputo@firesprinkler.org

**D'ARCY G. MONTALVO**, Editor, ext. 115  
dmontalvo@firesprinkler.org

## ADVERTISING: 214-349-5965

**CLARISSA RIOS**, Communications Coordinator, ext. 134  
crios@firesprinkler.org

## CIRCULATION: 214-349-5965

**D'ARCY G. MONTALVO**, Editor, ext. 115  
dmontalvo@firesprinkler.org

## AFSA BOARD OF DIRECTORS

**LINDA M. BIERNACKI**, Chair, 318-841-0330

**PAUL DELORIE**, First Vice Chair, 603-432-8221

**JAY STRICKLAND**, Second Vice Chair, 301-474-1136

**ROD DIBONA**, Treasurer, 605-348-2342

**JEFF PHIFER**, Secretary, 803-438-2994

**JACK A. MEDOVICH, P.E.**, Immediate Past Chair, 804-222-1381

**BROOKS BAYNE**, 503-692-9284

**TOMMY CLEMENTS**, 804-459-2218

**LYLE HALL**, 858-513-4949

**CHRIS JOHNSON**, 727-5821-9339

**R. DONALD (DON) KAUFMAN**, 505-884-2447

**MICHAEL F. MEEHAN**, 804-459-2200

**WAYNE WEISZ**, 209-334-9119

## AFSA LEADERSHIP

**BOB CAPUTO, CFPS**, President, ext. 124

**JOHN AUGUST DENHARDT, P.E., FSFPE**, Vice President, Engineering & Technical Services, ext. 121

**MEDA MERRITT**, Vice President, Membership, ext. 133

**MELISSA ATHENS**, Vice President, Finance, ext. 112

**LESLIE CLOUNTS**, Director, Education Services, ext. 130

**ROGER GRAGG**, Director, Marketing & Information Technology, ext. 116

*Sprinkler Age* is devoted to the professional development of the fire sprinkler industry. Deadline is 1st of the month preceding publication.

Published by American Fire Sprinkler Association, 1410 East Renner Road, Suite 150, Richardson, TX 75082. Call (214) 349-5965, FAX (214) 343-8898, or email [sprinklerage@firesprinkler.org](mailto:sprinklerage@firesprinkler.org) for information.

Copyright © American Fire Sprinkler Association, Inc. All rights reserved. PRINTED IN USA. Unless expressly stated otherwise, all editorial and advertising material published is the opinion of the respective authors and/or companies involved and should not be construed as official action by or approved by Publisher or the Association.

*Sprinkler Age* is a membership benefit, provided free of charge to AFSA members. For information on non-member and/or foreign subscription rates, call (214) 349-5965.

## ABOUT AFSA MEMBERSHIP

AFSA annual membership dues are a sliding scale for Contractors and Associates and a flat fee for Authorities Having Jurisdiction. (Members receive a free subscription to *Sprinkler Age*.) Write or call AFSA for membership information. See AFSA's website at [firesprinkler.org](http://firesprinkler.org).

# CASE CLOSED

All the tools needed for a perfect joint, EVERY TIME!



TC-AQRSK



## Quick Release™ Tubing Cutter

Produces a square cut on PVC/CPVC so the pipe bottoms out in the fitting for best fit.

TC4QPVC



## Deburring Tools

Deburr and chamfer to manufacturers' standards in seconds.

DEB4 creates a smooth pipe end so solvent spreads evenly as pipe is joined. Fits six sizes of 1 1/4" - 4" PVC, CPVC, PP and ABS pipe.

For deburring 1/2", 3/4", and 1" PVC, CPVC, PE, ABS and PP pipe in IPS or CTS, choose DEB1IPS or DEB1CTS, both with knurled grips for slip resistance.

DEB4



DEB1IPS



## Internal Pipe Cutter

Conveniently cut from the inside using a saw-toothed blade. Exclusive, adjustable guide doubles as a depth gauge.

IC1SL



Adjustable Guide

## Plastic Pipe Joint Kits

Catalog No.	Item Code	Description
TC3PDEB1	04147	TC3QPVC, DEB4 & DEB1IPS-INT with Carrying Case
TC3-636SK	04155	TC3QPVC, DEB4 & IC1SL with Carrying Case
TC4-636SK	04156	TC4QPVC, DEB4 & IC1SL with Carrying Case
TC2PPSK	04157	TC2QPVC, DEB4 & DEB1IPS with Carrying Case
TC-AQRSK	04162	TC2QPVC, TC4QPVC, DEB4 & DEB1IPS with Carrying Case



PIPE TOOLS & VISES  
SINCE 1896

## Reed Manufacturing

Erie, PA 16502 USA

800-666-3691 • +1 814-452-3691

reedsales@reedmfgco.com

www.reedmfgco.com



0124-SPRK-CPVC

# PRESIDENT'S REPORT

I normally avoid writing about politics and its impact on our members, specifically as it relates to organized labor. However, I cannot ignore the clear and present threats to open shop construction, especially fire sprinkler work, which is under attack as much today as ever. As a former fire sprinkler company owner (primarily in the Southern California markets), I was lulled to sleep on this issue through the late '80s and '90s because there were very few projects of any size or location where we were not invited to bid or negotiate. Yes, there were and are regions today where union labor signatory companies have an advantage, including downtown Los Angeles, San Francisco, the Strip in Las Vegas, St Louis, Mo., and the City of Philadelphia, just to note a few. That said, the open shop labor movement appeared to be gaining speed everywhere well into the 2000s to the point where, statistically, across new construction nationwide, union labor accounted for less than 15% of all construction work.

When I joined the AFSA team over three years ago, I truly believed we were past the point of having to be on our toes and vigilant about threats from organized labor, allowing us to focus our attention solely on education and training for our members. I was wrong! Now is the time for us to wake up to the reality that this fight is far from over. In fact, organized labor's activism has been reinvigorated and is threatening your right to work and survive as a merit shop contractor. If we don't get serious about these threats and act now, I fear we will lose serious ground.

The belief in a free enterprise system where all qualified contractors can compete for work is a cornerstone of AFSA's bylaws and core values. We sell our products and services at market value prices in the hope of generating profits to reinvest in our business and our people. We understand organized labor has a product to sell and support, and it has the right to compete as well. Unfortunately, they see open-shop contractors as an enemy to conquer, so they don't play as fairly as we'd like. Their tactics include playing politics and politicians by promoting and supporting legislation intended to exclude open shop contractors from participation. They have large sums of money to contribute to politicians who support legislation favoring union-only labor agreements as they pressure state and local governments to do the same.

Like many of you, I recently watched our president give a speech about the Francis Scott Key Bridge in which he stated the bridge would be rebuilt with federal funds and by good union workers. Setting aside the fact that the project should be rebuilt in large part with insurance company money and fines from the company that owns the ship that took down that bridge, the fact is that we are all taxpayers and should have equal opportunity to compete for any government-funded project. It is unethical, to say the least, when the administration signs an executive order mandating PLAs (project labor agreements) on all government projects over \$35 million. AFSA staff are frequently asked by members for advice related to their decision to sign (or not sign) a PLA required to participate in a project they have been chasing. Our response is simple: if you sign a PLA, you may as well sign a labor

agreement with the local union in your area... you're in now. Is that a bad thing? Not if you've decided your company will be better off as a signatory contractor. The training is good, and you don't have to manage apprenticeship training programs as you do now as an open shop contractor. You can stop worrying about pay rates or which fitter or foreman is better than another one. They all earn the same rate of pay, even if they don't produce the same amount of work, provide the same level of leadership, or generate the same profits for your company. Life is always about choices and consequences, and we believe in your right to both.

Let's talk about some of the other ways we are under attack. A new OSHA rule signed into law beginning May 1, 2024, allows OSHA inspectors to bring a third-party reviewer onto your job sites. This new rule isn't about OSHA inspectors visiting your job site; rather, it opens the door for union organizers to walk your jobs along with your friendly OSHA inspector, who might criticize your safety practices and your work and recruit your people. This has the strong potential to bring disruptions and lost time, not to mention the potential violations they may decide you're guilty of in the name of safe working conditions. Of course, we support safety first on every job site, but this has the potential to be a wolf in sheep's clothing in terms of just creating havoc for the purpose of harassing merit shop companies.

In addition, many states and regions are looking at and adopting fitter licensing and/or certifications, as well as certification of ITM and service technicians. These programs are strongly promoted by organized labor, and what concerns us the most is the rhetoric that if someone has a journey card as a sprinkler fitter, he/she is automatically qualified and knowledgeable to perform inspections and testing of these systems. We disagree because inspection and testing are specialized functions and should always be performed by knowledgeable people. How does being qualified to twist pipe translate to being qualified to inspect and test water-based fire protection systems? It does not take 5,000 man-hours to learn how to effectively inspect a wet pipe sprinkler system in accordance with NFPA 25. Building and system owners deserve better from our industry in terms of being provided with required fire and life safety inspection and testing at fair market pricing levels.

AFSA was founded to support merit shop fire sprinkler contractors with training and educational programs, and I think we do that very well. However, our livelihood is still under attack, and we must

**Continued on page 47**

**BOB CAPUTO, CFPS**  
AFSA PRESIDENT







# VAPOR Pipe Shield

A less expensive, more effective corrosion mitigation solution for dry pipe and pre-action fire sprinkler systems.

Full system protection.

With Purge:

**10**  
Days

Without Purge:

**21**  
Days

Tested and proven.



To Learn More

# FLASHPOINT

**O**ver the last two months or so, I have had the pleasure of presenting over a dozen times on NFPA 25. I have the strong feeling that the contractors' need for ITM training is due to the increased awareness and enforcement by AHJs and the desire for contractors to expand services that generate recurring revenue. Conducting these sessions, there are many individuals who do not fully understand the scope of NFPA 25. Utilizing the 2023 edition, let's look at the scope.

## 1.1 Scope.

*This document establishes the minimum requirements for the periodic inspection, testing, and maintenance of water-based fire protection systems and the actions to undertake when changes in occupancy, use, process, materials, hazard, or water supply that potentially impact the performance of the water-based system are planned or identified.*

The scope of NFPA 25 is intended to help users determine if they are using the correct standard and summarize what the document addresses. The enhanced content in NFPA Link® offers great information for the users of this document. (I have taken the liberty to emphasize some items and delete specific references that are not relevant to this discussion.)

Several important terms are used in this section. **Minimum requirements are the basis for the rules that this standard sets forth.** However, nothing prohibits the user from exceeding them. "Periodic" establishes that the requirements are performed on a set frequency. The phrase "actions to undertake" signifies that further requirements are provided in the document. Lastly, the phrase "planned or identified" implies the following: (1) there are requirements that are meant to be observed as the changes are planned, and (2) these actions are meant to be followed anytime those changes are discovered, even if they were intended to be dealt with beforehand. **Primary among these is the requirement that the owner have the system evaluated before making changes to the use, occupancy, hazard, or water supply.**

**The minimum requirements specified in NFPA 25 must be met for a system to comply with this standard.** It is permitted to utilize alternative means of compliance using a performance-based program that could result in less frequent ITM activities.

The owner has the responsibility for compliance with NFPA 25 requirements. Utilizing the 2023 edition, let's look at the following.

**4.1.1\* Responsibility for Inspection, Testing, Maintenance, and Impairment.**

*The property owner or designated representative shall be responsible for the proper inspection, testing, maintenance, and impairment management of water-based fire protection systems in accordance with this standard.*

Minimum requirements are clearly stated, but often, the owner does not want to comply due to the perceived cost of compliance. Many do not understand the cost of non-compliance. The scope also clearly puts the responsibility for ITM activities on the owner of a protected property. Only AHJs can

enforce the requirements of NFPA 25. An owner may retain the services of a service provider to perform a task, some tasks, or all tasks that are required by NFPA 25, but usually, this is not required by the AHJ. In my opinion, the following statement is the most critical issue service providers have with ITM.

Ensure the owner, you, and your employees fully understand the scope of work that is covered under your proposal and contract.

Do what you have been contracted for fully and to the best of your ability. Nothing more, nothing less. Make sure the owner knows what is not included in your scope of work but is required by NFPA 25. For example, a statement like the following might be on a proposal: "Perform Inspection, Testing, and Maintenance of one 500 gpm @75 psi Patterson diesel-driven fire pump system. A written report will be provided. All work will be completed in accordance with NFPA 25, 2023 edition."

This statement on face value looks well done. But I ask that when you are contracted for services like the above, you fully complete the scope of work required by the contract. Did you change the diesel engine's oil, oil filters, fuel filters, service the battery, and coolant system, or is that work completed by others? Was the excluded work documented in the contract? Words have meaning in a contract, and the legal side of the business looks at the words, not what a service provider typically does. While these "other" tasks are not difficult and possibly not in your normal area of work activities, the owner still needs them completed to comply with NFPA 25. This is an opportunity to work with another service provider to offer enhanced services to your customer. It is a win-win situation; the owner has one service provider and can show compliance with NFPA 25. The service provider can increase their payment for work completed and follow their contracted scope of work.

AFSA's ITM training programs are an excellent way to bring new talent to this area of your business. Our training program covers the technical requirements of NFPA 25. In my opinion, a valuable part of the program also includes understanding the difference between the scope of NFPA 25 and the scope of work dictated by the contract with the owner. I have been using the following language a lot lately, which summarizes this well: "Nothing in NFPA 25 is required to be completed by the service provider. Nothing! Unless your scope of work and contract make it the service provider's responsibility. Ensure you are being compensated for what you are going to do and be clear of what you are not going to do." ■



**JOHN AUGUST DENHARDT, P.E., FSPPE**  
AFSA VICE PRESIDENT OF ENGINEERING  
& TECHNICAL SERVICES

# VK5141 K28 Glass Bulb ESFR Pendent Sprinkler



**UL Listed ESFR  
can Reduce Aisle  
Widths to as  
Narrow as 5 ft!**

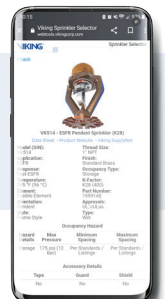
The NEW UL Listed K28 VK5141 ESFR glass bulb sprinkler makes it easier than ever to maximize your storage capabilities! Facilities will find the new K28 allows for aisle widths as narrow as five feet!

With the new VK5141, Viking offers a complete lineup of robust ESFR storage sprinklers suitable for a variety of storage applications.

Learn more on our website at [vikinggroupinc.com](http://vikinggroupinc.com).



Viking's revolutionary Sprinkler Selector ensures that you can find the right sprinkler for the job — every time. Get started today by visiting [webtools.vikingcorp.com/sprinklerselector](http://webtools.vikingcorp.com/sprinklerselector).



# ELEVATING EDUCATION AT AFSA43

## TECHNICAL, MANAGERIAL, AND AHJ SEMINARS ABOUND AT CONVENTION

**T**ake your education to new heights at AFSA43: Convention, Exhibition, and Apprentice Competition, to be held Sept. 18-21, 2024, at The Gaylord Rockies Resort & Convention Center in Denver. This year, the American Fire Sprinkler Association's (AFSA) annual convention heads to the Mile-High City for expert instruction, entertainment, networking, and North America's largest fire sprinkler exhibition.

Offering over 55 seminars and over 70 hours of education, this year's seminars provide CEUs, CPDs, and Contact Hours. Sprinkler fitter and Authority Having Jurisdiction (AHJ) seminars are pending CAL FIRE-approved sprinkler fitter CEUs and ICC CEUs. Seminars are organized into tracks, making it easy to customize your schedule to maximize your learning experience.

"I'm excited to welcome everyone to Denver and AFSA43," states AFSA's Region 2 Director and Convention Committee Chair Don Kaufman, president of Kaufman Fire Protection in Albuquerque, N.M. "We've got a great line-up of seminars, a packed exhibit hall, and networking events in a beautiful setting. You won't want to miss this year's convention in the beautiful Rockies!"

### INSTALL/DESIGN TRACK

The Install/Design track focuses on the design and installation of water-based fire protection systems. Seminars include forensic examination, Myth Busters: CPVC Fire Sprinkler Systems Edition, Pipe size estimating and quick calcs, and fabrication and material listing best practices.

Seminars in this track include "The Evolution of Seismic Coefficient  $C_p$ " by John Deutsch, ASC Engineered Solutions. The course covers the overall objective of why and how sway bracing is done. The course explains the history of the ASCE 7 formula and how it is used to create the 2022 edition of NFPA 13 Table 18.5.9.3. It will cover how to calculate lower seismic forces using the ASCE 7 formula and possibly reduce the number of sway braces required or possibly even eliminate the need to install sway braces. A look into how the 2022 edition of ASCE 7 will change how NFPA determines the seismic coefficient in the future. This course will introduce the new NFPA 200 standard.

### INSPECTION, TESTING, AND MAINTENANCE (ITM) TRACK

AFSA's ITM track provides information for water-based inspectors and focuses on NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*,



The luxurious Gaylord Rockies, headquarter hotel for AFSA, is the setting for seminars, exhibits, networking, and social events.

and NFPA 915, *Standard for Remote Inspections*. Topics in this track include NFPA 25 and the Service Technician; ITM: What Can We Do to Improve Reliability?; and NFPA 915: What it Means to Your Business.

The ITM track also includes an update to NFPA 25 provided by Eric Andresen, WBITM, and Josh McDonald, MSET, CFPS, CWBSP, WBITM, with AFSA Engineering & Technical Services. The functions and capabilities of AFSA's new training lab will also be discussed.

### "OTHER" TECHNICAL TRACK

This track includes seminars on other technical topics of interest to those in the fire protection industry: NFPA 770: Local Application Design Considerations; Retrofitting Sprinklers in Historic Properties; Design and Calculations for Foam-Water Systems; Update on Suppression Research from NFPA's Fire Protection Research Foundation (FPRF); and Protection of Lithium-Ion Cells.

In this track, the latest in automated storage and retrieval systems (ASRS) will be discussed by Tracey Bellamy, PE, FSFPE, CFPS, CWBSP and Russ Leavitt, CFPS, SET with Telgian Corp. Telgian has been the global leader in full-scale fire testing for ASRS systems for the last two years. This seminar will cover what has been learned so far and where the research is headed.

### BUSINESS MANAGEMENT TRACK

This track is intended for management staff and offers seminars on avoiding a lawsuit, turning deficiencies into dollars,

recruiting high school students, developing targeted and effective training, creating a winning environment in your organization, sales estimating, mobile inspections, design management, and more.

“Working Successfully With Independent Designers” by Steve Leyton, Protection Design and Consulting, will be offered within this track. As the complexity of fire sprinkler design increases and more considerations are included in the building and fire codes for sprinklers, the practice of design has evolved. Today, more agencies nationwide are requiring sprinkler design documents to be included with architectural permit submittals, and contractors are turning to subcontractors to provide services that were historically furnished in-house. This presentation is an overview and open discussion of the benefits and challenges of working with independent designers. This presentation will include discussions on both third-party engineers of record and freelance designers working for and within the contracting industry.

### ASK THE EXPERTS!

Back by popular demand, this panel discussion will be expanded and scheduled for the final day of the convention, Saturday, Sept. 21. This expert panel will feature representatives from NFPA, FPRF, Underwriters Laboratories (UL), AFSA, and more. Submit your burning questions in advance or bring them to the seminar to have them answered once and for all!

### AHJ TRACK

AFSA43 has designed a full day of education for Authorities Having Jurisdiction (AHJ). On Friday, Sept. 20, the day begins with seminars including Coordination in the Field, Expectations of the AHJ and Contractor, and Installation Practices—Enforcement vs. Application. After a free lunch is provided, AHJs are invited to attend AFSA43’s General Session. This is followed by the Exhibit Grand Opening Reception to view the latest products and services for the fire sprinkler industry.

AHJs are also welcome to attend the “Ask the Experts” panel discussion on Saturday, Sept. 21, and tour the exhibition for a second day. An added bonus on Saturday is the opportunity to observe the top seven fire sprinkler apprentices in the nation vie for first place at AFSA’s 31st National Apprentice Competition (NAC), which will be held in the middle of the exhibit hall.

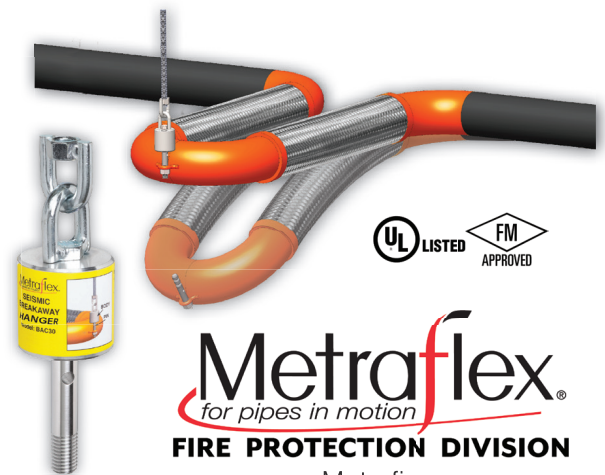
Chief Fire Marshal David Lowrey, with the Boulder, Colo. Fire-Rescue will present the “Plan Review: Working Plan Requirements.” This seminar will cover the necessary information required for an NFPA 13 fire sprinkler shop drawing submittal so a formal review can be commenced. Expect to learn why the plan information is more than data presented on a design and installation document. Each subject line will be discussed in order to explain the rationale for the requirement and its long-term benefit to the building owner, sprinkler contractor, community, ITM service providers, future fire inspectors of the building, and fire investigators.



## Trusted, Proven Protection for Fire Sprinkler Systems.

The **Fireloop®** expansion U-Loop® is a highly flexible joint with 360-degree movement, with sizes able to accommodate movements up to  $\pm 45$  inches. It meets NFPA13 guidelines, is UL listed, and FM Approved.

Install with the **Seismic Breakaway Hanger**, an engineered release mechanism, to ensure full-rated movement.



**Metraflex®**  
for pipes in motion  
**FIRE PROTECTION DIVISION**  
www.Metrafire.com



**AFSA43 attendees can enjoy multiple restaurants and bars during their stay at The Gaylord Rockies.**

## **NEW! SPECIALTY MINI TRACKS**

New this year are specialty mini-tracks: Fire Pumps, Storage, and Updates. The Fire Pumps track includes the seminars “Fire Pumps—Good, Bad and Ugly” and others on arc flash and pump sizing and selection. One seminar to be presented is “Smart Fire Pump Systems: The Future of Fire Protection,” by Seth Bays, digital sales specialist for FireConnect, a division of the digital innovation team at Peerless Pump. This seminar will go into depth as to what makes a smart fire pump system. Additionally, using case studies, Bays will highlight how cloud-based technology enables smart emergency response, helps identify potentially serious system performance issues earlier than conventional methods, ensures regulatory compliance, and can even reduce water usage through real-time data tracking and analysis. Lastly, related developments within NFPA and FM standards will be reviewed that are pushing the industry forward with the enablement of IOT devices and solutions.

The Storage track includes “In-Rack Options Independent of Ceiling Sprinklers” and the multi-rack storage project by NFPA’s FPRF, which will review the latest findings from the Foundation and new design schemes that will be available in the 2025 edition of NFPA 13.

Featured seminars for the Updates Track include updates to NFPA 13, 2025 edition, for both Installation and Discharge. Also featured are updates for NFPA 14, NFPA 20, and NFPA 200. The “Updates to NFPA 13, 2025 Edition” seminar in this track will include the results of any certified amending motions (CAMs) that were debated during the NFPA Technical Meeting this year.

## **FOCUS ON FITTERS**

A track especially designed for sprinkler fitters will be offered this year to offer more training for your team. These seminars have been submitted to CAL Fire for credit approval. Seminars include Installation Practices—Enforcement vs. Application; NFPA 14, 13, and 25 PRV Acceptance Testing and ITM; and Updates to NFPA 13: Installation.

“Coordination in the Field” will be a panel presentation to include an AHJ, contractor, foreman, and designer, moderated by AFSA’s Senior Director of Engineering & Technical Services

Victoria B. Valentine, P.E., FSFPE. No matter the amount of planning for a project, there are always items that need additional coordination in the field. This could be obstructions that are unique in shape or location, change orders, or product availability. Multiple parties involved in a project will always lead to multiple ways to resolve the situation.

## **THE GAYLORD ROCKIES WELCOMES AFSA**

The headquarters hotel for AFSA43 is the luxurious Gaylord Rockies Resort & Convention Center. Offering scenic mountain views, five beautiful restaurants, a fitness center, a world-class spa, and the exciting Arapahoe Springs Water Park, The Gaylord Rockies has everything for AFSA43 attendees in one convenient location.

The AFSA group rate for The Gaylord Rockies Resort & Convention Center is \$259 per night plus tax for single/double rooms. Guests are welcome to stay at the hotel from Sept. 17 – Sept. 22. Reservations must be made by Thursday, Aug. 21, to secure the convention group rate. After Aug. 21, group room rates are based on availability. To reserve your hotel, use the hotel reservation link listed on your registration confirmation page after you register for AFSA43.

## **HOTEL RESERVATION & ATTENDEE LIST ALERT**

AFSA is made aware of third-party vendors soliciting AFSA exhibitors and attendees posing as our housing vendor or attendee list distributor. These companies mislead you into thinking they are working on our behalf. Companies that use this tactic include Exhibitor Hotel Reservation Services (EHR), Global Housing, and National Travel Associates. They are not endorsed by or affiliated with AFSA or its show. Entering into financial agreements with such companies can have costly consequences, such as no hotel reservations, no free networking meals, no complimentary internet access, or a mailing list. Please note attendee lists are distributed onsite. To receive full AFSA hotel benefits, book directly with the hotel by phone or using the link found on AFSA’s convention website, [www.firesprinkler.org/AFSA43/](http://www.firesprinkler.org/AFSA43/).

## **ADVENTURE AWAITS!**

AFSA43 attendees should bring their sense of adventure to Denver as we’ll be in the great outdoors on The Gaylord Rockies’ Great Lawn for this year’s Opening Party on Sept. 19. The next evening, AFSA Chair of the Board Linda Biernacki will host attendees at the Exhibit Grand Opening Reception, featuring delicious appetizers and cocktails. To wrap up this year’s event, the Awards Party will be held Sept. 21 at The Gaylord Rockies’ Grand Pavilion.

It’s also going to be an adventure for the top seven sprinkler fitter apprentices in the nation as they compete in AFSA’s 31st Annual National Apprentice Competition. In addition to the expense-paid trip to Denver, these finalists will receive cash prizes and tools. The first-place apprentice’s name is also engraved on the Robert L. McCullough Training for Excellence Award. This award honors past AFSA Chair of the Board and Apprenticeship

& Education Chair McCullough for his dedication to the competition and training. The award features the winning apprentice from each NAC, is displayed each year at the competition, and is housed at AFSA's national office in Richardson, Texas.

### AFSA43 SPONSORSHIP AND EXHIBITOR OPPORTUNITIES

AFSA43 is expected to attract over 600 decision-makers from all corners of the country, many of whom are looking for innovative products and services to help make their companies more competitive. AFSA has sponsorships to fit every budget. AFSA43 sponsors enjoy visibility, recognition, and access to convention attendees. Benefits are provided throughout the convention with online exposure, increased visibility, and face-to-face opportunities. AFSA also offers a pre-event sponsored blog post as an "a-la-carte" option for companies.

There is still time to secure a booth in the exhibition hall! Benefits are plentiful for exhibitors, including unopposed exhibit hours, the Exhibition Grand Opening Reception, and free passes for the second day of exhibits. For more details on sponsoring or exhibiting, visit [www.firesprinkler.org/sponsorship](http://www.firesprinkler.org/sponsorship) or contact AFSA's Manager of Meetings & Events Jessica Thomason via email at [jthomason@firesprinkler.org](mailto:jthomason@firesprinkler.org) or phone at (214) 349-5965 ext. 118.

### MEMBERSHIP HAS ITS BENEFITS

If you aren't currently an AFSA member, there isn't a better time to join than now! Membership provides a range of benefits



and services to support you, your employees, your business, and the industry. One of the top benefits of AFSA membership is the ability to register for AFSA43 at a discounted price! For more information on AFSA membership, visit [www.firesprinkler.org/join-afsa/](http://www.firesprinkler.org/join-afsa/).

### REGISTRATION NOW OPEN

AFSA43 attendee registration is now open! Visit AFSA43's official website at [www.firesprinkler.org/afsa43/](http://www.firesprinkler.org/afsa43/) to view more details and register for both the convention and hotel. Earlybird registration, offering the best prices on AFSA43 registration, ends July 8.

Don't miss out on the fire sprinkler industry's best event of the year! AFSA and The Gaylord Rockies Resort are thrilled to see you in the Mile-High City! ■



*Your Complete Source for Backflow Parts & Accessories*

[www.bavco.com](http://www.bavco.com)

- Complete Inventory
- Product Knowledge
- Same Day Shipping
- In Stock When You Need It

**West Coast - Long Beach, CA**  
(800) 458-3492 • [info@bavco.com](mailto:info@bavco.com)

**Central - San Antonio, TX**  
(866) 318-0274 • [txinfo@bavco.com](mailto:txinfo@bavco.com)

**East Coast - Charlotte, NC**  
(844) 202-1618 • [ncinfo@bavco.com](mailto:ncinfo@bavco.com)

# Need Backflow Repair Parts?

## BAVCO IS YOUR SOLUTION!



# NFPA 25: THE BATTLE CONTINUES

## WHO IS QUALIFIED TO INSPECT?

**RUSS LEAVITT, CFPS, SET** | TELGIAN CORPORATION

**T**here is a movement taking place in jurisdictions throughout the United States to limit those who can perform water-based system inspections and testing to individuals who have completed an approved sprinkler fitter apprenticeship program. The reasons center on the idea that only someone who is trained in the installation of water-based suppression systems has sufficient knowledge and skill to satisfactorily evaluate the condition of an existing system. This is simply untrue and is just another chapter in the ongoing challenge of educating stakeholders regarding the purpose of the inspections and tests mandated by NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*.

On the surface, this campaign has some appeal to the enforcement community because it focuses on the idea that the training and knowledge possessed by journeyman pipe fitters provide them with the ability to determine if a system is installed properly. In fact, the argument is made by some that NFPA 25 does not go far enough with its requirements and that the scope of the system inspections and tests should be expanded to include design and installation issues. It is shocking that this message is still promulgated and at times accepted, by those in our industry who, frankly, should know better.

From the first edition (1992) of NFPA 25, it was never the intent for the inspections and tests specified by the standard to address the compliance of a system or its components to the installation standards or fire codes. To reinforce this, the technical committee included language in 2011 stating that the “standard addresses the operating condition of fire protection systems”<sup>1</sup> while adding that the standard does not require the inspector to “verify the adequacy of the design of the system.”<sup>2</sup> The 2023 edition expanded further on the topic by adding “installation” to the design exception.

The simplest explanation for limiting the scope of NFPA 25 is largely based on economics, or in other words, the return on the owner’s investment in system maintenance. Using sprinkler systems as an example, historical data shows that up to 80% of system failures can be attributed to a lack of maintenance. By taking steps to ensure the sprinkler system



**Educating stakeholders regarding the purpose of the inspections and tests mandated by NFPA 25 is an ongoing challenge.**

operates when a fire occurs, we make significant progress toward reducing the losses from fire. The technical committee has always recognized that the focus is on eliminating losses that occur when systems do not operate as intended.

However, this limitation does not mean that the standard ignores losses that can occur where a system provides inadequate protection. It directs the owner to have a system evaluated whenever changes occur to the property, its use, storage of materials, or the water supply. That said, the service provider or the inspector is not charged with identifying changes or conducting any subsequent evaluation that may be needed. This evaluation is usually performed or managed by someone who is trained in the design of fire protection systems, such as a certified layout technician, qualified consultant, or professional engineer.

With these things in mind, there are practical reasons for limiting the scope of the inspections and tests to address the operating condition of the system. Some of these reasons include:

- An understanding that NFPA 25 assumes that the original design basis and installation were approved and accepted by all interested stakeholders. This is the only assumption that is reasonable when a building is occupied.



- Recognizing that installation standards are typically not retroactive. For example, NFPA 13, *Standard for the Installation of Sprinkler Systems*, contains a clause that states provisions of the standard do not apply to facilities that were approved for construction or installation prior to the effective date of its issuance.<sup>3</sup> Therefore, if an inspector was to determine the correctness of a system design or installation, he or she must know what edition of the applicable installation standard was in effect at the time of construction, any amendments that were adopted by the Authority Having Jurisdiction (AHJ), or variances that were granted to the property.

An illustration of the difficulty in trying to determine the correctness of a system design or installation is found with obstructions to sprinkler discharge. The rules for obstructions have significantly changed in complexity and number over the years. It is simply not reasonable for someone to know what rules to consider, and it is not practical to identify the correct application of the rules from the floor level. For this reason, the technical committee removed obstructions from the sprinkler inspection scope with the 2008 edition of the standard.

- Deciding where to draw the line when addressing design or installation concerns is untenable. For example, if you were to inspect for the correctness of sprinkler spacing or area of coverage, do you inspect for the maximums/minimums allowed by the standards or for compliance with the limits dictated by the hydraulic calculations? Even something as seemingly straightforward as unsprinklered areas is fraught with decisions regarding specific areas such as concealed spaces, building exterior projections, or bathrooms and closets in dwelling units. The phrase “going down a slippery slope” is a cliché but nonetheless an accurate consideration when trying to navigate this challenge.

It must be acknowledged that the argument for increasing the scope is easy to make. Who does not want to advocate for as much protection from loss as possible? However, the debate for requiring more in-depth inspections and tests must consider the negative consequences that will result. These consequences are not just about higher contractor or service provider liability. An expanded scope will also increase the cost for property owners while providing little benefit. As a result, it is highly possible that we could see a decrease in compliance, which would mean a decrease in the successful operation and performance of fire protection systems.

Evidence shows that having completed an apprenticeship program for fire protection system installation does not alone qualify an individual for inspecting or testing a system to the requirements of NFPA 25. In fact, the installation knowledge held by a journeyman pipefitter/installer could actually create greater personal or employer legal exposure, especially if it were combined with the broader scope of inspections and tests being contemplated. My experience indicates that inspectors whose background is in system installation often need significant training to ensure that they work within the scope of the standard. Programs such as AFSA’s ITM Inspector Develop-

ment program are designed specifically for the role and are much better suited to developing a professional water-based system inspector than any fitter apprentice course.

In conclusion, the campaign to require inspectors to compete a pipefitter apprenticeship program is short-sighted and does not solve the challenge of developing qualified water-based ITM inspectors. It is almost incomprehensible that a contractor or ITM service provider would support such a move, whether or not they are a signatory business. As an industry, we must educate stakeholders regarding the purpose of NFPA 25 and the consequences of changing its scope. This is needed to ensure that fire protection systems are as effective as can be reasonably expected. It is time to ratchet up our involvement. The worst thing we can do is sit by and watch it happen. If we fail to stop this movement, it will be a big setback for effective fire protection and life safety. ■

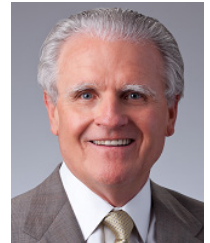
---

#### REFERENCES:

1. Section 1.1.3 NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, 2011 edition
2. Section 1.1.3.1 *ibid.*
3. Section 1.4 NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2022 ed.

---

**ABOUT THE AUTHOR:** Russ Leavitt, CFPS, SET, is executive chairman and board member of Telgian Holdings, Inc. In addition to serving on the board of directors as chair of the National Fire Protection Association (NFPA), Leavitt has served as the chair of the NFPA 13 Technical Committee for Fire Sprinkler System Discharge Criteria and continues to serve as a principal member. He is also a principal member of the NFPA Technical Committee for Installation and a principal member of NFPA 3 and NFPA 4. Leavitt also represents NFPA 13 on the Technical Committee for NFPA 909, *Code for the Protection of Cultural Resource Properties*, and NFPA 914, *Code for the Protection of Historic Structures*.



Throughout his career, Leavitt has authored numerous articles and training guides, including AFSA’s ITM Inspector Development Training program and online hydraulics training program. In addition, he is a major contributor to several NFPA Handbooks and served as the subject matter expert for numerous NFPA live and online training programs. Leavitt shares his more than 40 years of experience in the fire protection industry by conducting training presentations for many professional and industry organizations including AFSA, NFPA, and the Society of Fire Protection Engineers (SFPE).

In 2013, he received the AFSA Henry S. Parmelee Award. He is also the recipient of the NFPA Standards Council Special Achievement Award in 2018 for his leadership of the task group which completely reorganized NFPA 13 for the 2019 edition.

Leavitt is a Level IV NICET certified technician and Certified Fire Protection Specialist who holds fire protection contracting licenses in multiple states. He is a graduate of the University of Nevada, Las Vegas.

# CLEMENTS ELECTED TO AFSA BOARD

## CONTRACTOR TO SERVE AS AN AT-LARGE DIRECTOR

The Board of Directors of the American Fire Sprinkler Association (AFSA) has elected Tommy Clements, president of VSC Fire & Security, Inc., Ashland, Va., as an At-Large Director. Clements is a former Nuclear Submarine Officer for the US Navy, having served onboard the USS Alabama ballistic missile submarine and in Navy Recruiting as head of enlisted recruiting in the Southeast United States. After his military service, Clements worked as a program manager on satellite defense and space shuttle programs before entering the construction industry as a development consultant to owners of casinos, resort hotels, and residential properties. He joined VSC in 2017 following its acquisition of Arkansas Automatic Sprinklers/United Fire Suppression, where he had served as the CEO since leading a sponsor-backed acquisition in 2009. Following Markel's acquisition of VSC, Clements relocated to Richmond to assume the role of COO and was promoted to president in 2022. He took on the additional role of CEO in 2023. Clements has a degree in Electrical Engineering from Mississippi State University and an MBA from the Stetson School of Business and Economics at Mercer University.

"I'd like to welcome Tommy as our newest board member," says AFSA Chair of the Board Linda Biernacki, president of Fire Tech Systems, Inc., Shreveport, La. "He will join a very active Board, and we look forward to his contributions to the many important committees we have to enhance our products for our members."

### CONTRIBUTING TO THE INDUSTRY

Clements became involved with AFSA through Arkansas Automatic Sprinkler. "Bob Walton encouraged me to get involved in the association. The first convention I attended was in San Diego in 2009, and it was like drinking water from a fire hose—there was tons of information and knowledge to gain. I immediately saw what Bob was talking about."

Since then, Clements has attended every convention but one. "At those events, I made connections with other industry professionals across all levels," he remembers. "I became interested in contributing more to the association on a national level and was honored to have been selected to serve as a committee member in 2014."

In serving on the Board, Clements looks forward to having a deeper understanding of the association and the ability to help chart its path.

"It's interesting for me, having been a small contractor and now a large one, you see both aspects of what AFSA can do for you, and it's not much different," Clements comments. "There are fundamental needs for all contractors that don't change due to size, like recruiting and training employees."

Clements has served on most of AFSA's committees, including Contractor Support & Advisory, Public Education & Awareness, Membership, and Insurance & Safety. He currently serves on the Legislative committee. "Particularly for the merit shop/open shop contractor, there are a lot of legislative challenges in front of us. As an organization, we need to be able to speak in concert with other organizations with the same interests, such as ABC, to protect the way we do business and the type of businesses we are."

Clements notes that all of the trades are facing the issue of talent and acquisition. "That's our biggest challenge. There's a lot of effort being made by AFSA and our chapters, such as the Virginia Chapter's work with Henrico County," he notes. "I think the industry continues to be in an enviable position of increasing requirements, which will drive an increased need for our services by our clientele and customer base, and we have to be prepared to meet that need."

### AN HONOR TO SERVE

"It's a tremendous honor to be nominated and elected to the Board," Clements summarizes. "I hope that during my service, I can press for the things that are most critical for the industry moving forward. The current Board is a wonderful cross-section of the industry, and I think that Chair Biernacki is a fantastic business person and has obviously shown her ability to lead, and I look forward to serving with her during her term."

AFSA members are encouraged to voice any questions or suggestions to any Board or staff member. If you have a question or comment, see the list of contacts located at the front of every issue of *Sprinkler Age* or visit [www.firesprinkler.org/board-of-directors/](http://www.firesprinkler.org/board-of-directors/). ■



CLEMENTS



EVERY DAY, ON EVERY PROJECT  
WE WORK FOR YOU.



SPRINKLER FITTING SYSTEMS



# FLEX TO FIT YOUR NEEDS

## SERIES VS2 STANDARD COVERAGE SPRINKLER

JOIN US AT THE NFPA EXPO  
BOOTH #1817

The only flexible, UL Listed K5.6 Standard Coverage sprinkler enabling no equivalent length calculations past the branch line.

- ✓ One assembly with one field connection
- ✓ Built to simplify or eliminate hydraulic calculations
- ✓ Reduced pipe preparation and field work



K5.6 | Quick & Standard Response

SCAN TO  
LEARN MORE



# AFSA'S "FIRE SPRINKLER PLAYGROUND" NOW OPEN

## RIBBON CUTTING AND RECEPTION HELD FOR NEW TRAINING LAB

CLARISSA RIOS | AMERICAN FIRE SPRINKLER ASSOCIATION

It's official! On April 30, 2024, the American Fire Sprinkler Association (AFSA) revealed its new state-of-the-art training facility after day two of quarterly Board meetings. The event included delicious food and drinks and allowed guests to tour AFSA headquarters and the new training lab. The night was undeniably a success and the perfect launch for the lab, which was commemorated with an official ribbon cutting surrounded by friends and family of the fire sprinkler industry.

"After a very long year of construction, building, and begging, the AFSA training center and lab are finally a reality. During our recent open house and ribbon-cutting ceremony, the AFSA Board of Directors, chapter leaders from across the country, and members of our various steering committees were treated to an awesome grand opening," comments AFSA President Bob Caputo, CFPS.

### LAB RIBBON CUTTING AND RECEPTION

Upon arrival, guests were greeted with open bars and quality catering from celebrity Chef Kent Rathbun. A BBQ pit was placed outside, and fresh food was cooked on-site. A food display was served as delicious décor with an eye-catching table-long charcuterie board for guests to enjoy. The catering team circled the room with tasty hors d'oeuvres all evening. Also on display was the ARGCO new demonstration trailer, traveling around the country to help recruit the next generation of fire sprinkler professionals!

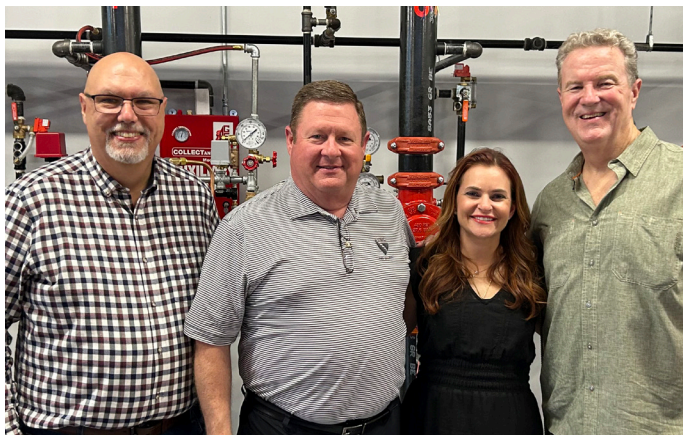
Attendance exceeded expectations and included the Board, committee members, chapter leadership, friends, and family.

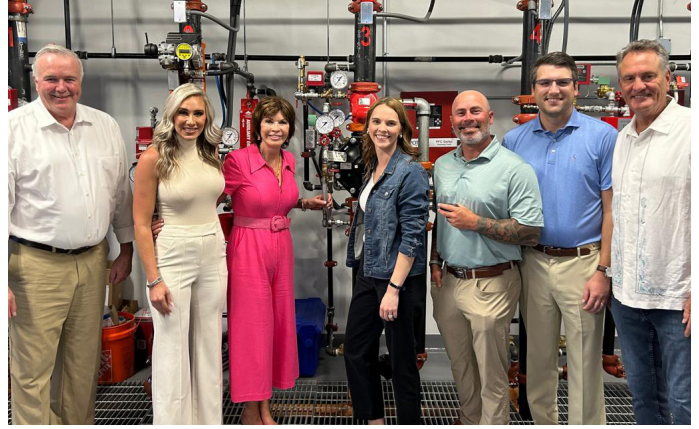


From l to r: Russ Leavitt, Telgion Corporation, joined AFSA Chair Linda Biernacki and AFSA's Bob Caputo and Josh McDonald to officially open the lab.

AFSA staff hosted the event, welcoming guests and giving tours of the office and the new "playground."

Appreciation and gratitude are expressed throughout the AFSA network for all the contributions to the lab. AFSA Chair of the Board Linda Biernacki describes how the "pride and appreciation that we, AFSA Associate and Contractors members, have for the industry is like no other. We do not 'provide' in this industry. We *love* this industry. It's in our blood and our family for generations. As a unit, we all come together and create a gold-standard environment that cannot be beat. Now that the lab is complete, let us say, "Wow, how amazing!"





The lab has two walls lined with functional fire sprinkler risers surrounding a training center with a classroom setup for hands-on and interactive training. A glass barrier separates the classroom design from the spray room. The spray room, which sits on an approximately 4,000-gallon pool, provides a space for demonstrating the operating characteristics of various sprinklers. All of which can be controlled by a tablet. Hydrant flow testing, standpipe flow testing, and fire pump testing can all be conducted. Behind the spray room, the pump room features a 500 gpm horizontal split case electric fire pump, a 50 gpm inline electric fire pump for NFPA 13R applications, and a pump and tank set up for an NFPA 13D application.

The lab is unique in all it offers and in the hands that helped build it. “There are no words to truly describe our appreciation of the industry involvement that came together to build the state-of-the-art training center to support our members’ training and educational needs,” says AFSA Manager of Engineering & Technical Services, McDonald, MSET, CFPS, CWBSP, WBITM. “We cannot thank our associates and members enough for the way they were ready to jump right in to donate monetary funds, equipment, time, and labor. It really shows how dedicated they are to ensure there are qualified fire protection professionals in the workforce and how they realize how imperative hands-on training is.”

All in all, the lab reception was a big hit. “The reactions and conversations on how to expand our living lab are very exciting for the industry,” says McDonald. “The lab helps build the confidence of apprentices and even seasoned veterans. Participants

can truly understand how each piece of equipment works to provide the vital property and life safety function that everyone in our industry aims to furnish.”

“I want to thank all of our manufacturers and suppliers who have generously donated in-kind materials, making this lab one of the few places members and AHJs can see, touch, and learn about every type of product they will encounter in the field,” states Caputo. “We wouldn’t have been able to build this amazing facility without the help of Mike Watts and his installation team from Firetrol (Austin), as well as the team from American Automatic Sprinkler (Ft. Worth). Steve Schwartz with Consolidated Fire Protection has been wiring up our alarm stuff for the finishing touches. Together with AFSA staff members Kevin Hall, Josh McDonald, and Eric Andresen, this vision became a reality—and that reality is we now have the best-in-class fire sprinkler training program in the USA.” [For a full list of donors to date, please see the Chair’s Message on page 6 of this issue.]

## VISIT AND STAY TUNED

Monitor AFSA social platforms to stay updated on all that’s going on with the lab and what’s to come. “I think it’s fair to say those in attendance for our open house, and those who will attend training here in the years to come, will find their expectations exceeded when it comes to an excellent place to learn and develop professional skills,” Caputo concludes. “I want to thank everyone who chipped in to make this a reality... THANK YOU! Come visit!” ■



# COMBUSTIBLE AND FLAMMABLE LIQUIDS CODE

NFPA 30, CHAPTER 16, 2024 EDITION

MARTIN WORKMAN & DARBY NAPIERLSKI, M.S. | VIKING GROUP, INC.

For the most part, ignitable liquids are out of the scope of NFPA 13, *Standard for the Installation of Sprinkler Systems*,—when working with flammable or combustible liquid storage, NFPA 30, *Combustible and Flammable Liquids Code*, is the suitable reference document. NFPA 30 contains a surplus of information about the correct storage or handling of ignitable liquids, and the standard addresses many occupancies that have ignitable liquids while providing direction concerning quantities allowed on site (referred to as a Maximum Allowable Quantities or MAQ). When you exceed the MAQ, NFPA 30 has a complete chapter dedicated to which sprinkler or foam water-sprinkler designs need to be utilized.

Chapter 16 of NFPA 30, entitled “Automatic Fire Protection for Control Areas, Liquid Storage Rooms, and Liquid Warehouses,” has been renamed. Previously, its title was “Automatic Fire Protection for Inside Liquid Storage Areas.” The latest title better addresses areas that are used for storage of ignitable liquids. There have been many discussions about whether or not an area was actually storing ignitable liquids because the area wasn’t technically a warehouse. The simple way to look at this scenario is this: if it quacks like a duck and walks like a duck, it’s a duck. (Storage stays the same path.)

## CLASS IDENTIFICATION AND COMPREHENSION

When first reading Chapter 16, readers will find that it begins by stating that it does not apply to Class 1A liquids. This is due to the fact that there haven’t been any full-scale fire tests on Class 1A liquids. To have protection schemed in NFPA 30 requires there to have been full-scale fires—each table will reference the full-scale fire test from which it is pulling the protection. Consider Class 1A as the most hazardous of the flammable liquid group of fuels/chemical. The other classes of liquids are Class 1B, 1C, Class 11 (Class 2), and Class 111A and 111B (Class 3A and 3B). (It is necessary to clarify their reference, otherwise one may read them as “class eleven and class one-hundred and eleven.”)

## TERMINOLOGY AND REFERENCES AS IT RELATES TO LIQUIDS

Chapter 16 is full of terms that are specific to ignitable liquids and to packaging types that are unique as well. Some



Figure 1. Wet foam sprinkler system.

containers are defined by their acronym, which is used throughout the standard/chapter. For instance, “IBC” stands for “Intermediate Bulk Container,” which is a container that has a capacity not greater than 793 gallons. There are metal and non-metallic IBCs, and the composite IBCs are generally referred to as plastic totes. “Relieving style container” is a term defined in Chapter 16, as well. This is a container that has a means of relieving pressure due to heat, avoiding a rupture or a rocketing event.

The chapter also defines when a material is a liquid or not via a simple chart located early on in the standard which points out a material’s viscosity and behavior when heated. If the product remains a gel or solidifies when heated, it’s not considered a liquid. It’s important to think of a liquid that freely spreads across a horizontal surface—a large container that spills or loses its contents makes for a large area to protect.

One other important term throughout is “water-miscible liquid,” which means the liquid readily mixes with water. Picture this scenario: vodka (water-miscible liquid) and water are contained together in a glass, and motor oil (a non-water-miscible liquid) and water are contained together in a second glass. The vodka readily mixes with the water while the motor oil separates

itself from the water in a different layer. There comes a point where you've added so much water to a miscible ignitable liquid that it won't burn, whereas with non-water-miscible liquids, the water simply floats the liquid and spreads it around.

## **AUTOMATIC SPRINKLER AND FOAM-WATER SPRINKLER SYSTEMS**

The chapter includes information regarding protection for sprinkler and foam-water sprinkler systems. NFPA 30, Chapter 16 allows all sprinkler system types (except dry systems and double interlocked preaction systems) for standard Class 1B through 111B liquids. The delay in each type of system is too great to protect ignitable liquids. In areas subject to freezing, a single interlocked preaction system would be utilized. Some people argue that non-interlocked and single are the same, but this is not the case. "Single interlocked" means that the detection operates before the sprinkler on the system, delivering water or foam solution upon sprinkler operation.

There have been some notable changes in Chapter 16 regarding foam-water sprinkler systems. The charts in Chapter 16 that reference foam were developed via full-scale fire testing with fluorinated foam concentrates. There has been an act of Congress eliminating fluorinated foams from government use, which was quickly followed by individual states restricting or disallowing the use of fluorinated foam concentrates, which were always known as AFFF or AR-AFFF. Knowing that legislation was ahead of technology, the committee added statements for the use of non-fluorinated foam concentrates, which basically directed you back to the manufacturer for their listed densities but no value less than what was indicated on the protection tables. The chapter always required the user to refer to the manufacturer of foam concentrate for minimum listed densities for the discharge device and the specific fuel/chemical it is protecting. The foam manufacturers have been working in recent years to provide listed concentrates that are not fluorinated and that have densities like those of the AFFF concentrates. As the standard points out, you will need to contact the foam concentrate manufacturer to determine if their foam concentrate is suitable for the protection of ignitable liquid storage.

The protection tables in NFPA 30 contain a lot of information. When determining a design, begin with the group of liquids a project falls into, followed by the capacity of what's being protected, then the container type, whether or not it's packaged (is it in a carton?), ceiling heights, storage heights, ceiling protection, in-rack protection (if applicable), then finally applicable notes and fire test reference. If you do have rack protection, what layout will you use and what scheme?

The flow charts earlier in the chapter will typically place you where you want to be, but it's important to read the title of the table and its references.

## **FACTORY MUTUAL INVOLVEMENT IN CHAPTER 16**

It is difficult to protect ignitable liquids in plastic containers. The first special rack arrangement for plastic containers was provided by Factory Mutual in the early to mid-1990s. The product

being protected was motor oil in plastic containers. This was where most of us recognize the birth of in-rack scheme A, which utilized horizontal barriers and, in some cases, vertical barriers, and closely spaced quick response sprinklers. Horizontal barriers are used frequently in Chapter 16; this contains the liquid and allows for sprinkler operation quite rapidly. Chapter 16 has several rack schemes as well as sprinkler layouts that are prescribed in the protection of rack storage. As we all know, no one likes horizontal barriers, but, in many cases, they are a necessary evil and, in some cases, allow for greater separation of in-rack sprinklers (such as extended coverage sprinklers) specifically tested for ignitable liquids.

Factory Mutual has provided much of the new data found in Chapter 16. One that comes to mind is the distilled spirits in wooden barrel protection schemes. The chapter defines a small distilled spirits facility as one under 7,500 ft<sup>2</sup>. A table is provided for barrel storage in a small distilled spirits facility. There is also direction provided for barrels stored on end, meaning "standing up," or "on side," or "laying down."

NFPA 30, and Chapter 16 in particular, concerns itself with the spill or spreading fire. One way to handle ignitable liquids is to design containment and drainage of the liquid. For most ignitable liquid storage warehouses, that is impractical—most are rented locations or are land-bound where they cannot create a separate bund area in which to drain the combustible liquid. When you have mixed storage, ignitable liquids and standard Class A fire material, you may have to segregate the ignitable liquids from the Class A materials.

A lot of people think that an ESFR sprinkler is like a roofer's card: it covers everything... or so we think. Many spec warehouses are equipped with ESFR sprinklers to make them ready to rent, but, in some protection schemes in Chapter 16, there is not an ESFR sprinkler option.

NFPA 30 Chapter 16 has many references to its annexes, and most are to Annex A, which is the typical additional explanatory material. Remember Annexes are not enforceable in the standard, but are there to help make the standard easier to understand. Appendix E has the reference fire tests utilized in the development of the protection tables.

Most of us don't use NFPA 30 as often NFPA 13—the above was a quick walk through the standard where fire sprinkler protection is prescribed. I would encourage the reader to reference the *Combustible and Flammable Handbook* for additional explanation of the other chapters in NFPA 30. ■

---

**ABOUT THE AUTHORS:** Martin Workman, senior vice president of product experience for the Viking Group, Inc., has worked in the fire sprinkler industry since 1984. He has worked in several capacities in fire sprinkler contracting, fitter, designer, and estimator. Workman joined Viking's Technical Services department with a focus on special hazard systems in 1997. He serves on several NFPA committees such as NFPA 11, NFPA 13, NFPA 30, NFPA 409, NFPA 415, NFPA 418, NFPA 423, and NFPA 502. Workman currently participates in product development, technical services, digital product development, training, and business development at the Viking Corporation.

Darby Napieralski is the manager of marketing communications for Viking Group, Inc. She has worked for Viking since 2019 and enjoys working on projects such as video production, product launch campaigns, internal and external communications operations, tradeshow initiatives, and much more.

# NITROGEN GENERATORS FOR DRY PIPE SYSTEMS

## EXAMINING N<sub>2</sub> MIGRATION AND EFFICACY

MARK HOPKINS, P.E., FSFPE | SUMMIT FIRE CONSULTING

**N**itrogen generators are intended to provide nitrogen with 98% purity to mitigate corrosion and provide supervisory gas to ensure fire sprinkler system piping integrity. This article discusses recently completed testing conducted to look at nitrogen migration in sprinkler systems. By examining different nitrogen purge methods and their outcomes, the study offers new insights into the practical performance of these systems and informs on common methods in corrosion control strategies.

### BACKGROUND

At this point, most people in the fire protection industry have seen the corrosion triangle presented, and it has been compared to the fire triangle, which makes sense given that both fire and corrosion are oxidation-reduction or re-dox reactions. In general, we understand and easily recognize that corrosion naturally occurs when metal, air (oxygen), and water exist together. Corrosion exists in dry pipe and preaction sprinkler systems primarily due to this simple relationship.

System design and material selections have changed, resulting in trapped water in almost every system. Residual water from

hydrostatic testing often cannot be entirely drained and can remain in system piping. Additionally, water vapor (humidity) is carried into the system through the air supply, which condenses in the piping. Both are regular culprits. Corrosion in sprinkler systems is inevitable; it's natural, and it's basic science.

The idea of using nitrogen or some other inert gas to supervise the integrity of sprinkler systems is not a novel concept. The use of nitrogen as a supervisory gas for sprinkler systems has become well-established and broadly an accepted practice throughout the sprinkler industry. This was not always the case; its widely accepted use was met with initial skepticism.

Bottled nitrogen had been introduced to the sprinkler industry in the 1970s. However, its use was somewhat limited and selectively applied, largely influenced by cost and practicality considerations. Air compressors and plant air supplies remained the workhorses for providing supervisory air (gas) in dry pipe and preaction sprinkler systems, and for the most part, still do serve this purpose.

While working on the development of a corrosion investigation and mitigation protocol for a statewide agency in the mid-2000s, a proposal was made for the use of bottled nitrogen as the standardized supervisory gas for all new dry pipe and preaction systems and those requiring remediation. This proposal was met with strong opposition by many of the stakeholders involved. There were rumblings about the availability of nitrogen bottles, the inability to get deliveries when needed, and the cost of its use. Many roadblocks were identified, and few solutions were offered in return. As a result, best practice recommendations were proposed, which included the use of air dryers with bottled nitrogen proposed as an alternative option.<sup>1</sup> Ironically, some of the people voicing the biggest opposition were later involved in producing nitrogen generators a short time later.

### NITROGEN GENERATORS IN FIRE PROTECTION

Nitrogen generators entered the fire sprinkler industry approximately 15 years ago. These first-generation systems were installed as approved alternatives to conventional air supplies, with the equipment being installed using the “new technology” provision of NFPA 13, *Standard for the Installation of Sprinkler Systems*,<sup>2</sup> since there were no listing standards

## HIGHER STANDARDS NOTE

For May/June issue of *Sprinkler Age*, the “Higher Standards” column written by AFSA Senior Manager of Engineering & Technical Services Kevin Hall, M.Eng, P.E., ET, CWBSP, PMSFPE, typically serves as a voting guide for the certified amending motions (CAMs) being debated at the NFPA Technical Meeting in June. Due to posting dates set by NFPA, the CAMs were not available at the time of publication. AFSA will still be supplying a voting guide, so visit its booth (#1028) in the NFPA Expo Hall for a copy. Instead of the voting guide, this issue’s column space has been given to guest author Mark Hopkins, P.E., FSFPE, who walks us through some new research that will challenge current allowances in NFPA 13 and might necessitate a tentative interim amendment (TIA) to modify when the C Value of 120 can be used in systems using nitrogen. ■





Figure 1. Nitrogen purity observed near ambient levels.



Figure 2. Nitrogen purity at the generator.

available. The new technology section is found in NFPA 13 (2022 edition), section 1.7. In essence, the nitrogen generators were considered a type of air compressor.

The initial information that circulated through the sprinkler industry regarding the use of nitrogen generators referenced 95% purity (fpsCMI, 2008). Most subsequent literature now references 98% purity. The appeal of nitrogen relates to its ability to slow the rate of corrosion. Some argue that it “stops corrosion,” but it is, in my humble opinion, misleading and more appropriately characterized as slowing corrosion to a negligible rate. Corrosion will persist whether 98% or 95% nitrogen purity is targeted. The big difference being that rates of corrosion are drastically different based on the purity. The corrosion rate for 98% purity provides meaningful life expectancy predictions for sprinkler systems, while the use of nitrogen at 95% purity provides a marginal increase beyond the use of compressed air.

The first test standard for nitrogen generators used in fire protection systems was developed by FM Global from 2012 through 2014, with the Approval Standard 1035, Nitrogen Generators, being issued in December 2014. David Fuller of FM Global identified that the need for its development stemmed from clients using nitrogen generators [(FM Global, 2014)]. Fuller also noted that bottled nitrogen or plant-supplied nitrogen had been a suggested supervisory gas for dry pipe and preaction sprinkler systems since 2001 (FM Global, 2001).

Nitrogen generators use compressed air and force it through a membrane to separate and dispel oxygen and retain nitrogen.

Because the process is slow and will not meet NFPA 13 fill time requirements, nitrogen generators include a traditional air compressor to meet fill time requirements and replenish with nitrogen over a short period afterwards. There are several different methods used for nitrogen generation and purging.

In the 2022 edition of NFPA 13, the use of nitrogen generation at 98% purity was determined to provide sufficient corrosion control to permit the use of a Hazen-Williams C-Value of 120 to be used in hydraulic calculations as part of the design of dry pipe and preaction systems. This has drawn attention to the use of nitrogen generators, especially given the hydraulic advantage this provides over air compressors.

The use of nitrogen generators has not been a smooth ride for everyone. Contractors, engineers, and owners have identified a variety of issues with nitrogen generation systems. Some installations have been successful, and corrosion is appropriately managed. However, in other instances, corrosion develops (in new systems) or persists (in existing systems). In any regard, it has not been a path filled with sunshine and roses.

There has been anecdotal feedback from owners and maintenance contractors that nitrogen generation systems are not the panacea that was promised. It has been identified that some systems cannot achieve 98% purity, ever. Some systems have even indicated ambient or near ambient levels of nitrogen (78.5-80%). Figure 1 shows nitrogen readings at approximately ambient levels. Nitrogen purity was measured at 98.8% at the nitrogen generator, as shown in Figure 2. There is no bias towards South-Tek Systems. These photos were provided by a maintenance contractor who

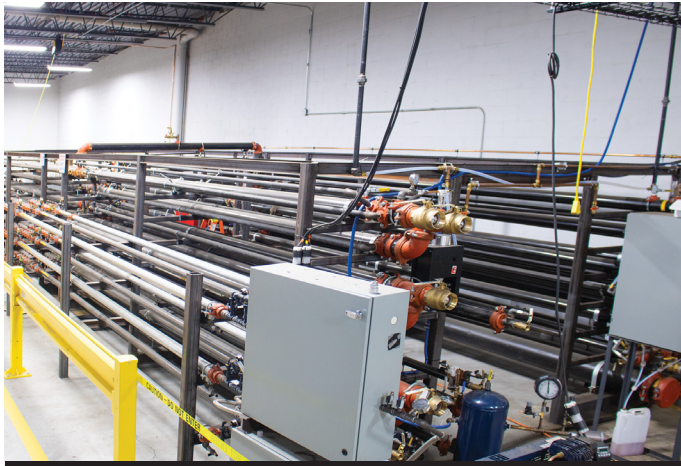


Figure 3. The nitrogen efficacy test rig.

indicated that there were similar findings with equipment produced by other manufacturers as well.

As an industry, we are left answering questions like: What is going on with these systems? Is nitrogen ever reaching 98% purity throughout a sprinkler system? What is acceptable performance for these systems? Are these experiences the exception or the rule? But, to answer these questions and the myriad other questions relating to nitrogen system performance and its ability to mitigate corrosion, insight into the performance of these systems was needed.

### NITROGEN (N<sub>2</sub>) EFFICACY TESTING

To this end, Summit Fire Consulting and TERP consulting conducted a series of nitrogen efficacy tests in conjunction with General Air Products, Inc. (GAP) at their facility in Exton, Pa. Over the course of the past year or so, three consecutive long-term tests were conducted to look at migration of nitrogen in sprinkler systems and the effect of different purge methods. The questions relating to whether the purge valve must be located at the riser or remotely in the system, whether a nitrogen reserve (reservoir) tank is needed, and is 98% nitrogen achieved throughout the systems in two weeks (or six weeks) as claimed, have been circulating through the industry for over the past decade at minimum. The purpose of this nitrogen efficacy testing was intended to begin answering some of these questions.

### THE TEST RIG

GAP had previously conducted nitrogen efficacy tests to look at the performance of the equipment that they manufacture and how it compares to the new Vapor Pipe Shield product. A 1,000-gallon test rig was built in the GAP research and development (R&D) area to examine how vapor phase corrosion inhibitors can move through sprinkler systems. The test rig was configured in a modular arrangement to allow testing of 1,000-gallon, 500-gallon, or 250-gallon dry pipe sprinkler system arrangements. Figure 3 shows the test rig in the GAP R&D space.

To limit the amount of space needed in the R&D area, the system piping had to be configured in a manner to minimize its overall footprint, allow for test measurements to be made throughout, incorporate different pipe diameters, and control specific variables such as leak rate. The test rig is split into two halves, referred to as the serpentine and the ladder systems, which are intended to simulate different system configurations that are actually used in the field. As shown in Figure 3, the test rig has an aisle in the center to allow for access to the equipment and test ports.

The test rig is illustrated in elevation view in Figure 4, showing the two 500-gallon sub systems referred to as the ladder side and the serpentine side along with the interconnecting bridge pipe spanning the center aisle.

The 500-gallon “serpentine” system was used for these nitrogen efficacy tests. It represents a tree system with a single-centered cross main and distributed branch lines. The 500-gallon system size was selected since it aptly represents the majority of dry pipe and preaction sprinkler systems actually designed and installed. Most systems are 500 gallons or less in volume. There are others that are much larger than this, but these are not the norm.

This system was comprised of schedule 10, black steel, roll-grooved pipe, consisting of 4, 3, 2, 1.5, and 1-in. diameter pipe sections. It has a series of piping levels labeled A through H. Each level includes a series of test ports to allow for the sampling of nitrogen through the entire test rig and allow for insight into the migration of nitrogen over time. Each test port has a discrete alpha-numeric designation representing its location in the system (e.g., S-A-4: Serpentine Port A 4).

Figure 5 provides an example of test port locations distributed throughout one of the levels in the serpentine sub-system. This represents level C which includes eight sample ports at intermediate (1, 3, 5 and 7) and end of line (2, 4, 6, and 8) locations.

### TEST PROTOCOL AND PURPOSE

The first step was the development of a test protocol for the testing. The purpose of the testing was to evaluate the 98% N<sub>2</sub> saturation and propagation effectiveness of the different purge methods in the mock sprinkler system. This took several months and multiple iterations to complete. The initial plan was to look at two system purge configurations (“standard” and “breathable”), but the final plan included tests to evaluate the three main system purge configurations as follows:

- Test 1 – Standard Purge
- Test 2 – Breathable (a.k.a. “breath and purge” or “fill and purge”)
- Test 3 – Continuous Purge

The actual testing took approximately eight months to complete, with each individual test lasting eight weeks. Nitrogen readings were made either every week (Tests 2 and 3) or every other week (Test 1), beginning two weeks after the start of testing and ending at week eight.

**Test 1 – Standard Purge Method** This method of purging uses a remotely located purge valve (vent), which has an orifice to automatically bleed oxygen and residual moisture from the

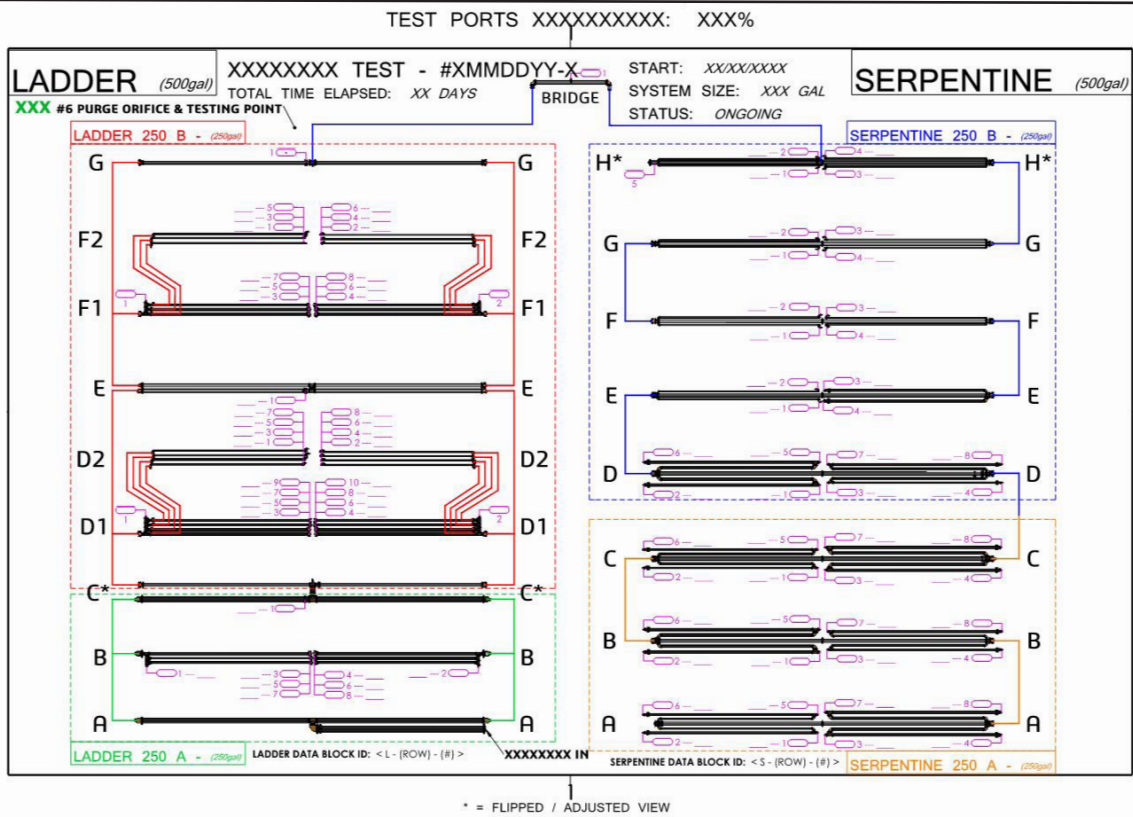


Figure 4. Illustrative representation of the 1,000-gallon test rig.

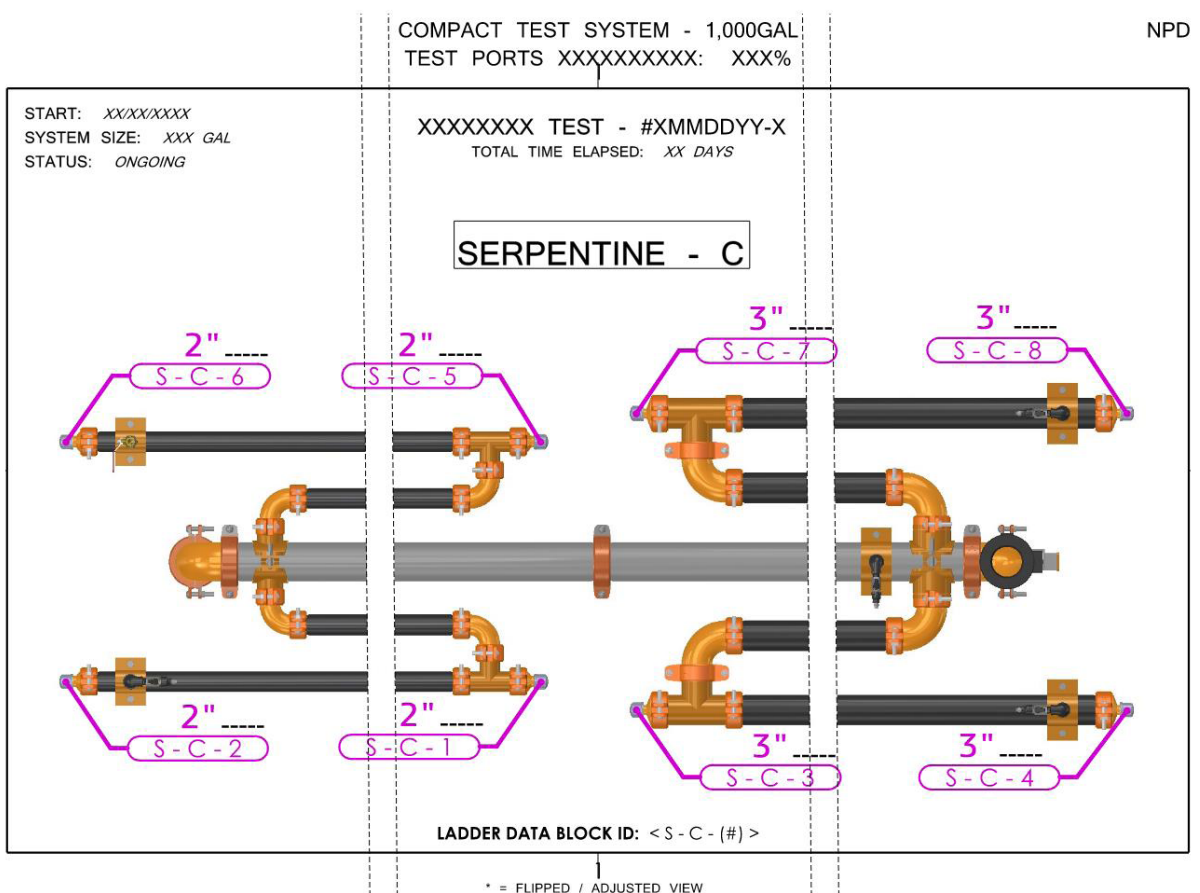


Figure 5. Serpentine system level C test ports.

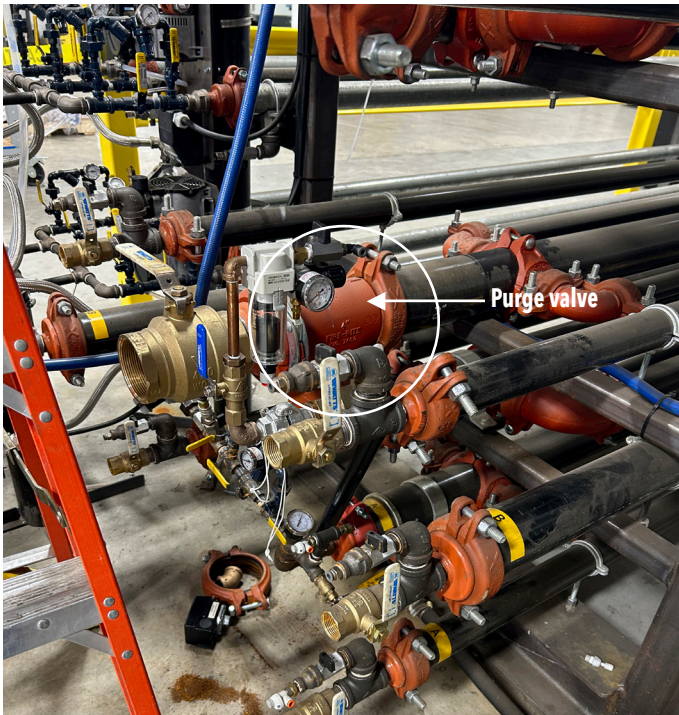


Figure 6. Breathable purge valve for Test 2.



Figure 7. Continuous purge valve for Test 3.

system while the nitrogen generator is in operation. The purge valve is opened and remains operational for two weeks after the system has been pressurized and switched to nitrogen mode. This valve is designed to maintain system pressure while operating and distributing nitrogen to the system. The design also includes a float valve to allow for automatic closing if the dry pipe or preaction valve trips and the purge valve is left open.

The purge valve also incorporates a sampling port to allow for the attachment of a portable nitrogen analyzer if the system does not incorporate a feature for automatic measurement (auto purge valve). For the purposes of this testing, the purge valve was located at the bridge sample port at the end of the system.

Some manufacturers using the standard purge method have claimed that a minimum nitrogen concentration of 98% will be



Figure 8. Nitrogen generator used for testing.

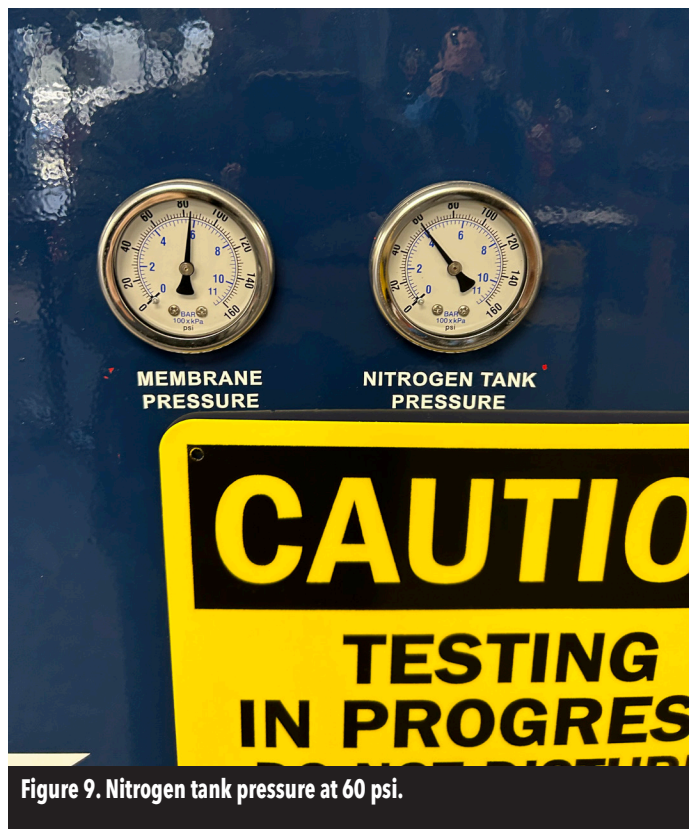


Figure 9. Nitrogen tank pressure at 60 psi.

achieved after two weeks. This was not found to be the case through this testing.

**Test 2 – Breathable Purge Method** This method of purging uses a process referred to as “breathe and purge” or “fill and purge breathing,” requiring “small” fluctuations in the supervisory pressure of approximately three to five (3-5) psi. The manufacturer using this approach recommends locating the purge at the beginning of the system near the riser unless otherwise defined in the engineering design drawings. A backpressure regulator is used to prevent complete system depressurization. Similar to the other purge valves, the breathable purge vent is equipped with a levered float valve to prevent the passage of water through the vent if the dry pipe or preaction valve trips. A small orifice allows for oxygen to be purged from the system to achieve a minimum of 98% nitrogen purity.

The breathe and purge process operates over the first 14 days, with the system pressure fluctuating between the high- and low-end breathing pressures. The purge valve for the breathable purge test was located near the air maintenance device at the system supply on level A of the test rig. Figure 6 shows the purge valve used for Test 2.

The manufacturer using this method of purging has made claims that venting in this manner will result in 98%+ nitrogen concentration or nearly complete removal of oxygen (<2% remaining) from the sprinkler system over a short period of time, typically less than two weeks (14 days). This was also not found to be the case through this testing.

**Test 3 – Continuous Purge Method** This method of purging is similar to the standard purge method in regard to having the purge valve remotely located in the system. The difference in this method is that the purge valve has an adjustable flow control and letter designations to set a small continuous purge flow while in operation. The flow is determined based on the system volume, in this case 500 gallons. The purge automatically bleeds oxygen and residual moisture from the system while the nitrogen generator is in operation. The purge valve is opened and remains operational for two weeks after the system has been pressurized and switched to nitrogen mode.

This purge valve is designed to maintain system pressure while operating and distributing nitrogen to the system. The design also includes a float valve to allow for automatic closing if the dry pipe or preaction valve trips and the purge valve is left open. The purge valve also incorporates a sampling port to allow for the attachment of a portable nitrogen analyzer if the system does not incorporate a feature for automatic measurement (auto purge valve). For this test, the purge valve was located at the bridge sample port at the end of the serpentine sub-system. Figure 7 shows the purge valve for Test 3.

The manufacturer using the continuous purge method has claimed that a minimum nitrogen concentration of 98% will be achieved in approximately six weeks. This is longer than the other claims and appears to be closer to actual system performance. However, 98% nitrogen purity was not actually achieved using this purge method.



Figure 10. Nitrogen purity at 99.2%.

## THE NITROGEN SUPPLY

The nitrogen generator used for these tests was the NGP-1000D-M3 with a 30-gallon N<sub>2</sub> reserve tank. This generator has both an air reserve tank and a nitrogen reserve tank. It has a maintenance capacity of 6,500 gallons and a fill capacity of 925 gallons at 40 psi. Figure 8 shows the nitrogen generator used for the testing.

The generator was set up to have a pressure of approximately 60 psi in the nitrogen tank, and the air maintenance device was set to provide a pressure of 40 psi to the system. Figure 9 shows a pressure of 60 psi in the nitrogen tank for the tests. It also shows a nitrogen membrane pressure of approximately 80 psi.

The nitrogen generator was connected to the test rig through a 30-ft long 1/2-in. hose and an air maintenance device (AMD) calibrated to 40 psig.

The nitrogen purity was set at approximately 99.2 to 99.5% to provide the maximum possible opportunity for achieving 98% purity throughout the duration of all tests. Figure 10 shows a nitrogen purity of 99.2% measured at the supply.

## THE RESULTS

After the system was set up and configured in nitrogen mode, it was left alone for two weeks. A technician and an engineer met each morning to observe and log the test rig pressure, the nitrogen pressure, and purity at the generator.

**Test 1 – Standard Purge Method** A summary of the results for Test 1, Standard Purge Method, is provided in Table 1. The standard purge method achieved an average nitrogen purity of approximately 93.5% after two weeks and an average nitrogen purity of approximately 97.3% after eight weeks.

	2 weeks		8 weeks	
	N <sub>2</sub> Purity	Test Port	N <sub>2</sub> Purity	Test Port
N2 Generator	98.5%		99.3%	
Purge	98.7%		98.4%	
Inlet	99.4%		99.3%	
A Level	98.1%	A2	96.6%	A6
B Level	98.2%	B6	97.4%	B3
C Level	97.1%	C1	98.1%	C4
D Level	90.4%	D3	96.3%	D8
E Level	98.1%	E4	96.6%	E1
F Level	82.9%	F4	98.8%	F2
G Level	92.3%	G4	95.9%	G1
H Level	91.0%	H4	98.6%	H2
High	98.2%		98.8%	
Average	93.5%		97.3%	
Low	82.9%		95.9%	

**Table 1. Standard purge method results at two and eight weeks.**

**Test 2 – Breathable Purge Method** A summary table of the results for Test 2 is provided in Table 2. The breathable purge method achieved an average nitrogen purity of approximately 82.8% after two weeks and an average nitrogen purity of approximately 89.4% after eight weeks.

**Test 3 – Continuous Purge Method** A summary table of the results for Test 3 is provided in Table 3. The continuous purge method achieved an average nitrogen purity of approximately 86.3% after two weeks and an average nitrogen purity of approximately 97.3% after eight weeks.

**Comparison of Results** Figure 9 shows a comparison of the average nitrogen purity levels for each of the purge methods after two weeks. The comparison of test results after two weeks demonstrates that the standard purge method provides the best initial performance. The continuous purge method provides moderate initial performance. However, the breathable purge only provides minimal benefit after two weeks.

Figure 10 shows a comparison of the average nitrogen purity levels for each of the purge methods after eight weeks.

The results of the tests show that both the standard purge and continuous purge methods achieve an average nitrogen

	2 weeks		8 weeks	
	N <sub>2</sub> Purity	Test Port	N <sub>2</sub> Purity	Test Port
N2 Generator	99.3%		99.3%	
Purge	84.6%		99.0%	
Inlet	94.4%		99.2%	
A Level	87.6%	A2	97.3%	A7
B Level	86.7%	B6	98.7%	B5
C Level	87.5%	C1	95.8%	C2
D Level	86.3%	D3	95.4%	D4
E Level	86.0%	E3	98.1%	E4
F Level	85.7%	F4	99.0%	F2
G Level	85.4%	G3	95.0%	G1
H Level	85.1%	H3	98.9%	H4
High	87.6%		99.0%	
Average	86.3%		97.3%	
Low	85.1%		95.0%	

**Table 3. Continuous purge method results at two and eight weeks.**

	2 weeks		8 weeks	
	N <sub>2</sub> Purity	Test Port	N <sub>2</sub> Purity	Test Port
N2 Generator	98.5%		99.2%	
Purge	98.3%		99.1%	
Inlet	97.3%		99.1%	
A Level	89.4%	A2	97.5%	A7
B Level	87.5%	B6	96.6%	B5
C Level	85.7%	C1	92.9%	C2
D Level	82.6%	D3	91.1%	D4
E Level	79.3%	E4	87.8%	E1
F Level	79.1%	F4	84.8%	F3
G Level	79.2%	G4	83.8%	G3
H Level	79.2%	H4	80.8%	H1
High	89.4%		97.5%	
Average	82.8%		89.4%	
Low	79.1%		80.8%	

**Table 2. Breathable purge method results at two and eight weeks.**

purity of approximately 97.3% after eight weeks. However, the breathable purge method only achieved an average nitrogen purity of approximately 89.4% after eight weeks.

Purely looking at the purge valve port measurements after two weeks, both the standard purge and breathable purge methods provide 98+% nitrogen purity measurements. All three methods achieve 98+% nitrogen purity at the purge valve test port after five weeks. However, there is a disconnect between the actual performance of the systems as a whole from simply measuring nitrogen purity at the purge valve test port and claiming the system is achieving the same level of nitrogen purity throughout the system.

Fick's Laws of Diffusion establishes that nitrogen (any gas) will move from areas of high concentration to areas of low concentration. The testing shows that this holds true but how long it takes for nitrogen to reach all areas of the systems is the real question.

Nitrogen follows the path of least resistance between the system fill and the purge valve. If the purge valve is located remotely, nitrogen with 98% purity is established along the path from the fill through the main to the remotely located purge valve. However, the branch lines are left sitting at lower levels of nitrogen purity for extended periods of time (e.g., nitrogen percentages in the 80s and low 90s). This was demonstrated through Tests 1 and 3. This is also why purging at the beginning of the system is a problem; 98% purity is reached along the path of least resistance between the fill and the purge valve locations, but nitrogen migration throughout the rest of the system takes much longer, as demonstrated in Test 2. In some parts of the system, the nitrogen purity was marginally above ambient level after eight weeks.

## SUMMARY

In no way, shape, or form does this testing answer every question, but it provides insight into the performance of nitrogen systems, which purge configurations perform better

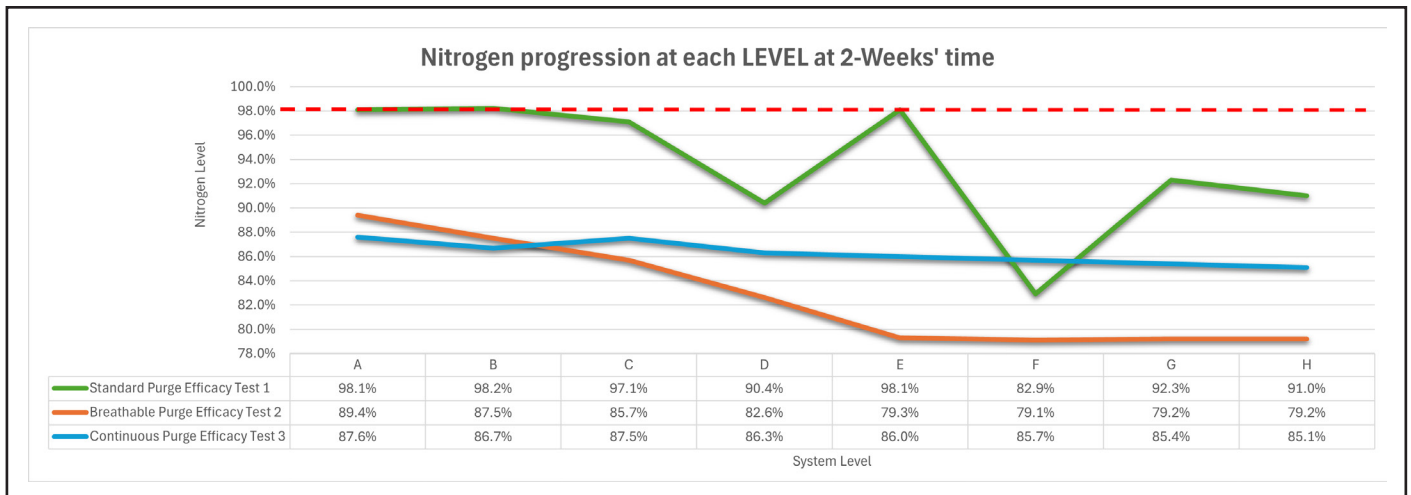


Figure 11. Comparison of nitrogen purity levels after two weeks.

than others, and whether 98% is being achieved throughout the systems, not just at the point of purge.

There is credibility to locating the purge valve remotely in the system. The results for the tests using the standard and continuous purge methods demonstrate that there is a benefit over having the purge near the system riser using the breathable purge method.

Where do we go from here? A full test report documenting these tests is currently in development and will be available in the next couple of months. Additional articles relating to this testing will be prepared and issued to call attention to the important findings observed through this testing. There is discussion of conducting additional tests to look at how long it actually takes to reach 98% nitrogen purity levels throughout the entire system. ■

**FOOTNOTES:**

<sup>1</sup> Recommendations also included the use of schedule 40 black steel pipe with cut grooves, the recommendation for back pitching all dry pipe preaction system piping regardless of the potential for freezing, the installation of low point drains with enforcement of periodic draining, and others.

<sup>2</sup> The New Technology section was added to the 2002 edition of NFPA 13, *Standard for the Installation of Sprinkler Systems*.

**BIBLIOGRAPHY:**

- FM Global. (2001). FM Global Property Loss Prevention Data Sheet 2-1. Prevention and Control of Internal Corrosion in Automatic Sprinkler Systems. Norwood, MA, USA: FM Global.
- FM Global. (2014). Nitrogen Generator Standard Nears Completion. Approved Product News, 30(2), 12-15.
- fpsCMI. (2008). White Paper. Using Nitrogen Gas in Dry and Preaction Fire Sprinkler Systems. St. Louis, MO, USA: Fire Protection Systems Corrosion Management, Inc. (fpsCMI).

**ABOUT THE AUTHOR** Mark Hopkins, P.E., FSFPE, is the engineering director and industry liaison with Summit Fire Consulting. He has both B.S. and M.S. degrees in fire protection engineering from the University of Maryland at College Park and has over 30 years of experience. Hopkins has been a member of numerous NFPA technical committees, including, but not limited to, NFPA 13 and 25. He has authored many technical articles, newsletters, and other publications. Hopkins was the author of a chapter on corrosion in sprinkler systems, for the 21st edition of the NFPA *Fire Protection Handbook*, and a contributing author for chapters 28 and 29 of the 2019 edition of the *NFPA 13 Handbook*.

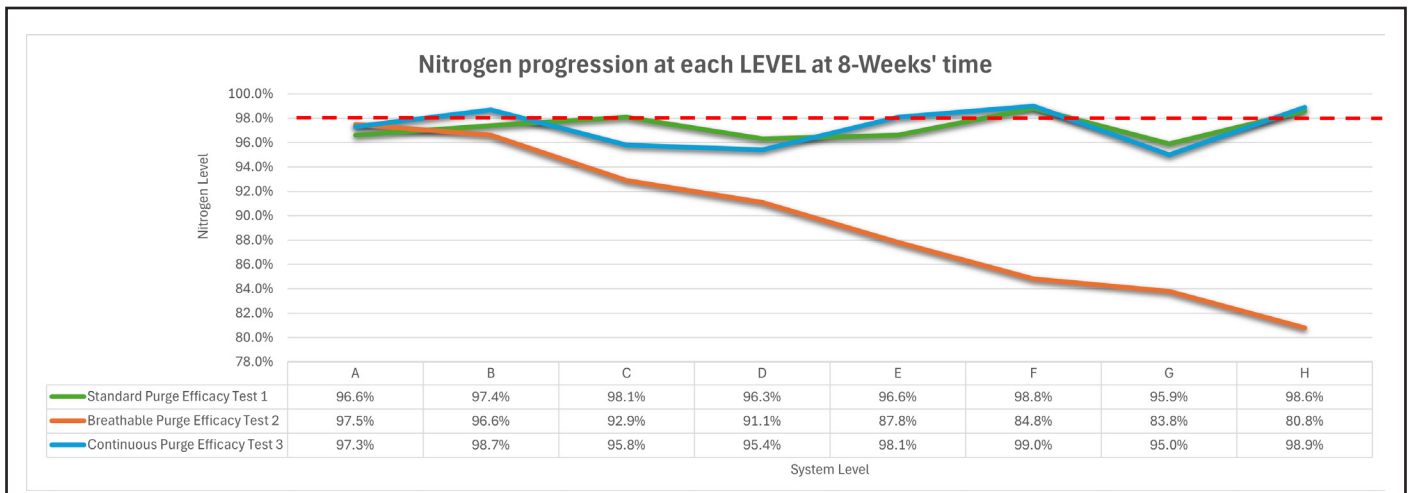


Figure 12. Comparison of nitrogen purity levels after eight weeks.

# CONTINUING A LEGACY

## THE JOE HEINRICH YOUNG PROFESSIONAL OF THE YEAR AWARD ELEVATES EXCELLENCE

**MINDY McCULLOUGH BUCKLEY** | ALLSOUTH SPRINKLER COMPANY

For years, the American Fire Sprinkler Association (AFSA) has been at the forefront of honoring individuals through its prestigious Young Professional of the Year (YPY) Award. Today, we stand on the threshold of a new chapter as we celebrate the achievements of past winners and unveil a significant change in the award's name to honor a distinguished individual who has left an indelible mark on the industry: Past AFSA Chair of the Board Joe Heinrich, who recognized the importance of the industry's next generation.

In the realm of fire safety, recognizing the dedication and innovation of young professionals is paramount. Established in 2016, the Young Professional of the Year Award honors the contributions of a promising young professional in the fire sprinkler industry who embodies the mission of AFSA's NextGen Initiative (NGI): "To contribute to the success of early career and forward-thinking fire sprinkler industry individuals through education, networking, and professional development opportunities, while maintaining a collaborative work environment focusing on building and nurturing industry relationships."

This award serves to reaffirm the growing importance of fire sprinkler knowledge in the world of business and construction management among the next generation of industry leaders to promote the emergence of young, talented professionals in the field of fire protection, thus fostering interest in the fire sprinkler profession and a future career in this field of expertise, and inspire fire protection companies and the fire protection community to invest even more in the development and excellence of the profession.

### ELEVATING EXCELLENCE: CELEBRATING PAST ACHIEVEMENTS

Before diving into the exciting announcement, let us take a moment to reflect on the outstanding individuals who have been recipients of the Young Professional of the Year Award. Over the past eight years, this honor has been presented to a select group of professionals who have demonstrated exceptional leadership, innovation, and commitment to advancing fire safety practices within their companies and communities.

Among the past winners, we find passionate fire sprinkler individuals like Scott Cox, winner of the 2021 award. Cox's journey since receiving the award has been nothing short of remarkable. He shares, "Winning the award has strengthened

my relationship with AFSA and its membership nationally. It has propelled my involvement with AFSA on a national level, and I have since joined several national AFSA committees." His recognition has not only expanded Cox Fire Protection's visibility but has also fostered valuable connections across the country.

Tiffany Iacolucci, recipient of the 2017 award, has embarked on a journey marked by innovation, leadership, and community engagement. Since receiving the award, she has overseen a transition to remote work at Moore Fire Protection, preparing the company for the unexpected challenges of COVID-19. This foresight has allowed them to flourish, expanding their talent pool nationwide and bolstering their team's strength and diversity. Iacolucci's promotion to vice president of business performance in 2020 underscores her significant contributions to the company's growth and operational efficiency.

Jamil Shamoan, recipient of the 2020 award, has achieved remarkable milestones since receiving the honor. His company has seen an 85% increase in revenue from 2020, and it is on track to double by the year's end. Expansions include opening a branch in Los Angeles and relocating to a new building in San Diego. The team has grown from 88 employees in 2020 to 142 in 2024. Shamoan has graduated from two apprenticeship programs and celebrated many family milestones like his 25th wedding anniversary, his children's educational achievements, and his wife's academic pursuits. He was also invited by Duyar on a manufacturer expedition tour in Turkey and appointed to the board of his church.

Adam Levine, P.E., the 2023 recipient of the AFSA Young Professional of the Year Award, shares his gratitude, stating, "Receiving the AFSA 2023 Young Professional of the Year Award was one of the most meaningful moments of my career thus far. It was a distinct honor to have my work acknowledged alongside my esteemed colleagues, with the support of the AFSA community. In the months that followed last year's AFSA convention, Capitol







Iacolucci received the Young Professional of the Year Award from 2017 AFSA NextGen Chair Meaghen Wills at AFSA36.

Fire Sprinkler has continued to thrive in the NYC tri-state market. Personally, I remain engaged as an enthusiastic member of various industry associations and committees, including the AFSA Technical Advisory Council, where I contribute to the development of the AFSA's technical positions on the NFPA standards. On the home front, I'm blessed to have my wife and three children who supply me with endless amounts of joy."

**TRIBUTE TO EXCELLENCE: THE JOE HEINRICH YOUNG PROFESSIONAL OF THE YEAR AWARD**

Earlier this year, the fire protection community suffered a great loss with the passing of Joe Heinrich, the AFSA Board member who founded the NextGen Initiative. The initiative began in 2014 during an AFSA committee meeting where Heinrich discussed with Meaghen Wills, Anchor Fire Protection, Perkiomenville, Pa., the imperative of cultivating the next generation of industry leaders. Inspired, Wills spearheaded the establishment of a task group for the NextGen Initiative. This initiative, aimed at fostering the next generation of leaders in the industry, flourished under Heinrich's guidance. In honor of his legacy, the AFSA Board of Directors has voted to rename the Young Professional of the Year Award to the Joe Heinrich Young Professional of the Year.

"In renaming this award, we honor not just a name, but a legacy—a legacy of excellence, passion, and commitment," says Wills. "May this new title serve as a beacon, guiding future recipients to embody the same spirit that Joe exemplified in their lifetime."

As the award nominations continue to grow each year, so does the NextGen Initiative. Heinrich's unwavering commitment to mentor the group fueled its rapid expansion and ignited a growing passion for involvement that continues to grow exponentially.

Katie Meehan, chair of the NextGen Initiative, reflects on the initiative's growth: "It's really amazing to see how the next generation of the sprinkler industry has grown. Six years ago, we could look around at the national convention and count the amount of young people in attendance. That number has exploded, and it's exciting to see it continue to climb. The committee members who serve on the NGI have done an amazing job furthering our mission of attracting young people to our



Levine is proud to be a YPY award recipient and notes he's honored to work alongside his peers within the AFSA community.

industry. I believe the award is one of the reasons for the growth. This incredible honor gives people something to work for, aspire to receive, and another reason to push themselves."

Linda Biernacki, AFSA Chair of the Board, and president, Fire Tech Systems, Inc., Shreveport, La., adds, "As Chair, I am very committed to continuing Joe's legacy and expanding our reach into high schools and technical schools to further our efforts to introduce careers in the fire sprinkler industry."

**LOOKING AHEAD: CONTINUING THE LEGACY**

As we move forward, we honor Heinrich's memory and his profound impact on the fire protection industry. The renaming of the Young Professional of the Year Award to The Joe Heinrich Young Professional of the Year Award is a testament to his enduring legacy. As we celebrate the achievements of past winners and honor the memory of him, let us reaffirm our commitment to fostering the next generation of leaders and innovators in the fire sprinkler industry. ■

**EDITOR'S NOTE:** For more information about AFSA's NextGen Initiative, visit [www.firesprinkler.org/nextgen](http://www.firesprinkler.org/nextgen). AFSA members may nominate someone for The Joe Heinrich Young Professional of the Year Award online at [www.firesprinkler.org/awards/](http://www.firesprinkler.org/awards/). While nominations are accepted all year, the deadline for each year's award is March 31.

**ABOUT THE AUTHOR:** Mindy McCullough Buckley has been in the fire protection industry since 2006. Working alongside her brother, she is an owner and the CFO of Allsouth Sprinkler Company. Buckley is a member of AFSA's NextGen Initiative workgroup and its Public Education & Awareness and Membership committees.

# CHANGES TO AIRCRAFT HANGAR FIRE PROTECTION

## NFPA 409 LAUNCHED A RISK-BASED APPROACH IN THE 2022 EDITION

JACK POOLE, P.E., FSFPE | POOLE FIRE PROTECTION, INC.

The approach to hangar fire protection seems to be coming full cycle. The question often asked, as it relates to fire protection for aircraft hangars, is: “Why do I need a foam fire suppression system?” In 2019, prior to the development of the 2022 edition of NFPA 409, *Standard for Aircraft Hangars*, that was the question specifically carried to the technical committee from the aviation industry. Furthermore, the aviation industry indicated that they had significantly more aircraft damage and clean-up costs from unwanted foam system discharges than they have had from actual fires.

The most recent version of NFPA 409 was published in 2022. The revisions to the 2022 edition included both new provisions and updates to existing sections of NFPA 409, with Chapter 1 adding new sections on the application and retroactivity. However, the most significant changes made to the 2022 edition were the additions of Chapter 4, titled “Fire Protection Approaches,” and Chapter 5, “Performance-Based Design Approach.” These two new chapters were introduced and now allow for an evaluation of the fire risks and fuel spill hazards for an aircraft hangar through a risk-based or performance-based design approach. The new protection method, known as an ignitable liquid drainage floor assembly, was added as an alternative to low-level foam fire suppression. Lastly, changes were made to include new inspection, testing, and maintenance requirements.

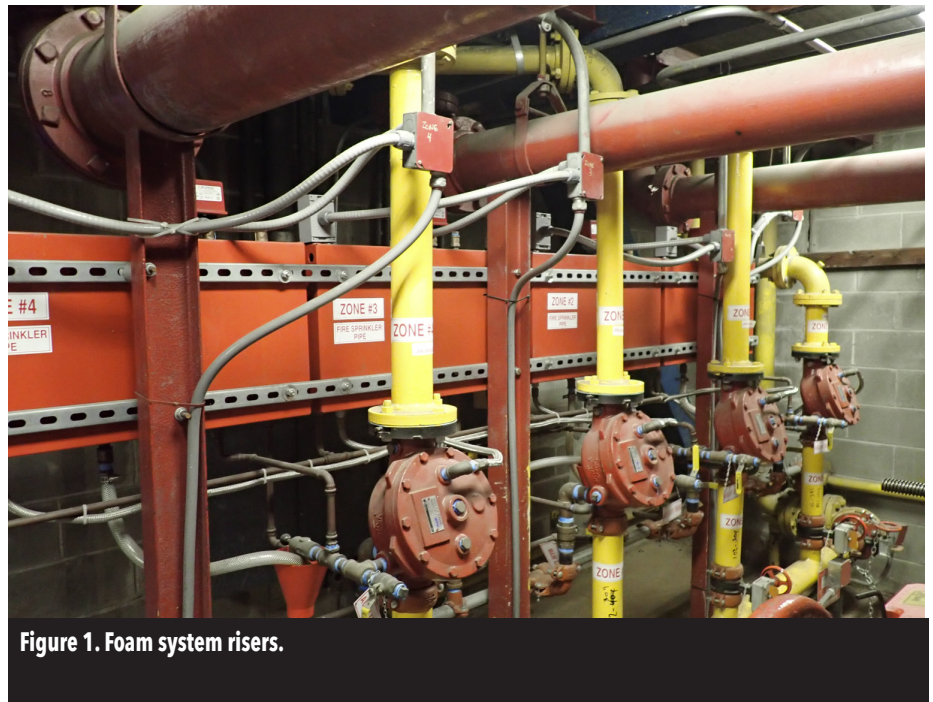


Figure 1. Foam system risers.

### FIRE CONTROL VS. FIRE EXTINGUISHMENT

In order to understand these changes, we need to provide a little background and history on the use of firefighting foams for ignitable liquids, but before we even go there, we need to clarify the difference between “fire control” and “fire extinguishment.” Fire control refers to the ability to slow the spread of the fire, usually by isolating it from adjacent fuel or applying a fire suppression agent. Fire extinguishment refers to the ability to completely put out the fire and end the fire event.

### FIRE EXTINGUISHMENT AGENTS

One of the known potential hazards in a hangar is the fuel that may be present in

the fuel cells of the aircraft, which is WHY the foam fire suppression requirements exist in NFPA 409. Control of fuel spill, Class B fires can be accomplished in several ways. Class B fires are especially dangerous, as larger Class B fires cannot easily be extinguished with the most common fire suppressant: water. Water is inexpensive, reliable, proven, easy to transport, can be heated after being frozen without breakdown, and is generally easily accessible and effective at fighting Class A fires by means of cooling and pre-wetting adjacent fuel packages. Water can absorb a large amount of thermal energy before boiling and being converted to steam. Water has the advantage of being readily available, with a high heat-absorbing capacity as compared to

other agents, but it cannot be effectively used on many Class B, C, D, or K fires.

While water has several advantages to extinguishing Class A fires, when used on Class B fires, water will simply displace pools of ignitable liquids. This technique has been used as a strategy to clear egress paths that may be blocked by an ignitable liquid pool. However, if done unintentionally or not carefully managed, adjacent items may become soaked in ignitable fuels, or the burning fuels may be displaced, significantly spreading a fire. Therefore, the pool generally needs to remain in the position where it is burning and combated without being displaced. This technique requires the use of special agents such as foam, wet chemical, or large amounts of carbon dioxide. In addition to the effect of spreading ignitable liquid pool fires using water, which almost certainly would not extinguish the fire but would likely make the fire significantly worse, water application also may drive ignitable liquids into adjacent water sources such as streams, creeks, rivers, lakes, and municipal water supplies.

The most effective ways to control or extinguish a Class B fire is to remove its oxygen supply by smothering the fire, remove the fire's ignitable liquid fuel, prevent the release of ignitable vapors, or some combination of all these strategies. Foam can be used to control or even outright extinguish a Class B fire, as foam both isolates oxygen and cools the surface of the fuel.

There are several types of Class B foams—aqueous film-forming foams (AFFF), fluoroprotein (FP), film-forming fluoroprotein (FFFP), protein (P), alcohol-resistant AFFF (AR-AFFF), medium- and high-expansion foam, and fluorine-free foams (F3). These foams generally work by using one or more of the following extinguishment methods: smothering, separating fuel from oxygen, cooling, and suppressing the release of flammable vapors. Prior to the development of AFFF in the mid-1960s, protein-based foams were the most common of these agents. Protein-based foams use naturally occurring protein-based surfactants and metal salts. The agent required the use of a powder foam concentrate and was far



Figure 2. Ground-level foam monitor.

more labor-intensive than alternative foam agents available today. This powder form and natural origin differentiates them from synthetic foam agents like AFFF and AR-AFFF that use synthetic chemical surfactants. Efforts were also made to develop FP foams, and while these agents were more effective than some protein foams, FP foam agents lacked effective film-forming capabilities. Accordingly, FP formulations with fluoroproteins that could form films (FFFP) were also developed and tested. While these FFFP agents could form a film across ignitable liquid spills, non-protein AFFF showed far more promise and had far superior results.

### THE ADVANTAGES OF AFFF

Out of all foams, AFFF has been shown to be the most effective at controlling and extinguishing Class B fires. AFFF is a synthetic firefighting foam developed for Class B fires, consisting of a fluorochemical and hydrocarbon surfactants combined with high boiling point solvents and water. AFFF has a low viscosity and spreads rapidly across the surface of most hydrocarbon fuels, forming a water film beneath the foam to cool the fuel, smother the fire, and stop the formation of flammable vapors. When AFFF is applied to a fire, an aqueous film is created, which rapidly spreads across the surface of the fuel; the film is also able to “heal” or “reseat”

itself when broken. These properties give AFFF a very rapid “knockdown” speed, which often is critical to controlling the fire and thereby protecting life and property. Additionally, because AFFF can form a blanket faster than some of the alternative foam agents, less of the agent (foam concentrate) will be required, potentially resulting in a shorter application time and a smaller quantity of water needed. The rapid suppression and self-healing capabilities of AFFF are particularly significant in confined areas with large amounts of combustible and/or explosive materials.

### FIGHTING CLASS B FIRES

Class B fires involve flammable or combustible liquids or gases. Per NFPA 30, *Flammable and Combustible Liquids Code*, a “flammable” liquid is a liquid with a flash point below 100°F, while a “combustible” liquid has a flash point at or above 100°F. Both of these types of liquids are ignitable liquids. NFPA 30, Section 3.3.21 defines flash point as “the minimum temperature of a liquid of which sufficient vapor is given off to form an ignitable mixture with the air, near the surface of the liquid or within the vessel used.” In plain terms, it is the temperature at which a liquid will flash or catch fire if exposed to an ignition source. Liquids like gasoline, aviation gas, rubbing alcohol, acetone, paint thinner, and turpentine are all



**Figure 3. Elevated-level foam monitor.**

common flammable liquids. Fuel oil, diesel and jet fuel, kerosene, and linseed oil are common combustible liquids.

Another challenge associated with fighting Class B fires is that when water is applied to a flammable liquids fire, water will sink to the bottom of the fuel, allowing the fuel to continue to burn on top. A particularly dangerous manifestation of this phenomenon occurs when water sinks to the bottom and then becomes heated, resulting in a change in physical state from a liquid to a vapor (steam). The general rule is that one cubic foot of water will become approximately 1,700 ft<sup>3</sup> of steam. This sudden conversion and expansion can result in an explosion that spreads burning liquid and debris over a large area or results in a “boil over” of the fuel over the sides of a container. This then leads to ignited fuel coming out of the container and spreading to other areas.

In short, Class B fires are ignitable liquid fires that can be particularly challeng-

ing to control and hazardous to life and property. Among other things, ignitable liquids often are stored in large quantities, such as in aircraft fuel cells or storage tanks, and those liquids, if dispersed, while ignited can spread the fire to other locations. Furthermore, the most common fire suppressant—water—generally will exacerbate a Class B fire rather than control it. Agents, such as AFFF, are therefore required to control Class B fires.

AFFF was developed in the 1960s in response to notable Class B fires experienced by the United States military during World War II. However, AF contains pre- and poly fluoroalkyl substances (PFAS), a group of synthetic chemicals that have a negative effect on both human health and the environment.

PFAS is used routinely in “firefighting foams” or simply “foams.” However, the most prevalent firefighting foam used on Class B fires is generally a type of AFFF with long carbon chain fluorosurfactants,

commonly referred to as the C8 foams. It is important to note that there are some types of AFFF that contain short-chain fluorosurfactants or fluorine-free compounds known as the C6 foams.

Shortly after the introduction of AFFF in the 1960s, it soon overtook the protein-based foams that previously were in widespread use due to their vapor-containing properties. As AFFF was in part made with a liquid concentrate rather than the powders found in earlier “chemical” foams, AFFF and similar agents were less vulnerable to environmental conditions while being stored. Class B fires involve ignitable liquids and are extremely dangerous and hazardous to victims, as well as first responders during fire control, rescue, fire extinguishment, and overhaul operations. If any competent ignition sources, including the original fire, are not properly separated from the fuel, the fuel vapors can be ignited. Consequently, a fire resulting from ignitable liquid vapors from a sizeable spill of ignitable liquids can result in the devastating loss of property and severe injuries, up to and including the loss of firefighters’ and others’ lives. Historical records demonstrate that prior to the widespread adoption of AFFF, there were several significant monetary losses as well as multiple fatal incidents.

After AFFF entered the civilian firefighting markets, most public and private sector agencies made the conversion from protein-based foams to AFFF for several of the reasons briefly discussed above. Eventually, AFFF became the primary foam to be used for containment/ extinguishment of Class B fires, with exceptional results. AFFF can be deployed and applied in one-third of the time with a one-third of the foam concentrate used as compared to similar foam agents. This allows firefighters to deploy the foam more rapidly, to cover a larger surface area more effectively, and to deploy a more impregnable foam blanket, all with the same or less foam concentrate. By minimizing the amount of foam concentrate to suppress a potential fire, firefighting efforts in situations where access to foam concentrate is limited, such as on ships, can be more effective. Also, requiring less foam concentrate to be brought to the scene of a fire

allows the firefighting resources that would have been responsible for transporting the additional foam concentrate to remain available to respond to other fire incidents if needed. AFFF's performance and safety have been demonstrated to be far superior to any foam or other agent used to combat Class B fires in the past or presently. Furthermore, to my knowledge, agents currently being developed to replace AFFF have yet to demonstrate superior or equal firefighting abilities, most notably the ability to create an aqueous film at the fuel vapor-air interface and self-heal. In addition to AFFF's cooling ability, this namesake film-forming ability results in the creation of a barrier that suppresses the ignitable vapors across the entire surface of the liquid. The aqueous film will also "heal" itself if the surface layer is disturbed, as can happen for a variety of reasons during fire events. Such disruptions in a foam blanket may be caused by inadvertent water application, falling debris, or inattentive individuals accidentally stepping through the blanket.

Although alternative firefighting technologies like fluorine-free foams (F3) have been available on the market, results from laboratory tests and field tests indicate that using currently available technology, many F3 foams do not have the same characteristics and therefore do not perform as well as AFFF, thus posing a safety risk to first responders when compared to AFFF. This diminished effectiveness is due in part to the inability of F3 to form an aqueous film layer over the fuel. F3 foams have also been shown to break down much faster than AFFF in the presence of an external fire, significantly reducing the duration of the protection provided by F3 foam blankets. F3 foams that have been developed cannot meet the requirements of the Department of Defense specifications that are set forth in MIL-PRF-24385F. This standard is also referenced by several other entities, such as the Federal Aviation Administration (FAA) and the National Fire Protection Association (NFPA).

NFPA 409 has historically (until the 2022 edition) required various fire protection options using firefighting foam systems. The

requirements for foam fire protection systems in NFPA 409 (e.g., low expansion, high expansion) are largely based on large-scale fire tests (~900 ft<sup>2</sup> pool fire tests) conducted by FM Global in the 1970s; however, it is a challenge to replicate these large-scale pool fire tests today. There have traditionally been no avenues for evaluating alternative fire protection methods for possible inclusion in NFPA 409. While systems such as water mist, encapsulating agents, compressed air foam, clean agents, and other solutions have been proposed, the path to understanding their effectiveness in protecting an aircraft hangar is unclear. Therefore, as reflected by the changes made in the 2022 edition of NFPA 409, it is necessary to develop an alternative evaluation method that can be used to assess the hazards and risks present, as well as the performance of other technologies on the assumed aircraft hangar fire scenarios.

Acknowledging the extensive research that has been performed, the number of unwanted foam system activations in an aircraft storage or servicing area/hangar bay far exceeds the number of fuel spills and ignitable liquid fires in the aircraft storage or servicing

area/hangar bay. For this reason, combined with the environmental challenges and legislation on PFAS substances, the industry is seeing a paradigm shift regarding the use of foam in hangars.

In the aviation industry, the safety of aircraft hangars, and the aircraft that are in them, are of the utmost importance. In many cases, the cost of the aircraft stored or being serviced in a hangar far exceeds the cost of the hangar itself, especially for military fighter jets or wide-body passenger aircraft. The fixed foam systems were added in NFPA 409 for medium and large-sized hangars in the 1980s to suppress large-scale liquid fuel pool fires, despite little evidence that large spills and fires even occurred in hangars. To my knowledge, as a principal member of NFPA 409 for more than three decades, the requirement for fixed foam systems was driven by the large quantity of fuel that may be present in the aircraft fuel cells and the potential for a large unwanted fuel spill.

Over the years, the installation of these fixed foam systems has resulted in numerous unwanted foam system activations, leading

**SELF-SUFFICIENT  
BY NATURE**

**TRUSTED  
AND  
PROVEN**

**DUYAR FLOW METER**  
Grooved and Buttweld

From casting to testing, **Duyar** valves and fire protection products are being engineered and manufactured in Istanbul by passionate engineers & technicians since 1965.

  
[duyarvana](https://www.duyarvana.com) | [duyar.com](https://www.duyar.com)

  
**FM**  
APPROVED

  
**DUYAR**  
Since 1965

to damage to the aircraft and equipment in the hangar, significant environmental contamination and clean-up costs, business interruption and discontinuity of operations, and even personal injury and death. These unwanted fixed foam system discharges were initiated for a variety of reasons, such as: water intrusion into electrical activation equipment, power outages or spikes, utilizing a barbecue grill in the hangar bay, regular system testing and maintenance, and accidentally pulling a manual release station, just to name a few.

## NEW RISK-BASED APPROACH IN NFPA 409

Going back to the point that there is little or no evidence of large fuel spill fires occurring in hangars and the numerous unwanted discharges of these fixed foam systems has driven the NFPA 409 technical committee to permit a risk-based approach option. The risk-based approach, also known as the *fire risk assessment method*, and the participating stakeholders may wish to consider the following factors when performing a fire risk assessment for an aircraft hangar to be able to fully evaluate the hazards, risks, costs, the operations and business interruption from an unwanted fuel spill and fire in the aircraft storage or servicing area/hangar bay:

- size (area & height), separation (from adjacent structures), and value of hangar;
- type, quantity, size, and value of aircraft;
- type and quantity of fuel in aircraft;
- characteristics of occupants and risk from fire;
- hangar bay operations and activities;
- risk of flammable or combustible liquid spills;
- fire threat, control of ignition sources, and housekeeping;
- construction and compartmentation for the hangar and hazards present;
- life safety and means of egress from the hangar bay and adjacent areas;
- life safety of emergency responders, the public, and building occupants;
- fire suppression systems, fire alarm & detection systems, and fire protection equipment;

- local firefighting capabilities, resources, and response time;
- life safety or risk to first responders;
- owner, operator, and/or tenant fuels spill and fire event history;
- business interruption and continuity of service;
- redundant infrastructure;
- redundant equipment and replacement aircraft;
- business interruption economic loss;
- economic loss other than aircraft or hangar;
- evaluation of insurance;
- regulatory and reputation impact;
- potential environmental impact; and
- life cycle costs of fire protection features.

This new approach or technology of allowing a risk-based approach for both new and existing aircraft hangars has resulted in owners and operators throughout the aviation industry transitioning rapidly to build new hangars without foam and removing foam from existing hangars. The 2022 edition of NFPA 409 allows multiple approaches for fire protection without fixed foam systems, the risk-based/fire risk assessment approach, a complete performance-based design approach, or the legacy prescriptive-based approach, as well as alternate technologies such as the ignitable liquid drainage floor assembly.

This new risk-based approach, after the development of a complete assessment to fully evaluate the hazards, risks, costs, and operations and business interruption from an unwanted fuel spill and fire in the aircraft storage or servicing area/hangar bay, has allowed the aircraft storage or servicing area/hangar bay to be protected with a water-only fire suppression system, bringing the protection for aircraft hangars full cycle, as some of the original fire protection systems required for aircraft hangars were water-only systems. Acknowledging the focus of the risk-based approach is to evaluate all potential aircraft maintenance and service activities being performed in the aircraft storage or servicing area/hangar bay that may cause an unwanted fuel spill and an associated fire. If the risk of an unwanted fuel spill and an associated fire cannot be managed to an acceptable level by all stakeholders, including the Authority Having Jurisdiction (AHJ),

then a foam fire suppression system or an ignitable liquid drainage floor assembly may still be required. However, based on my experience of performing fire risk assessments for aircraft hangars, adequate safety measures and precautions have been put in place when maintaining, servicing, or repairing aircraft to avoid an unwanted fuel spill and an associated fire, ultimately allowing the fixed foam fire suppression system to be eliminated. In lieu of the fixed foam fire suppression system, the fire risk assessment may require enhancements to some administrative procedures, an increased number of portable or wheeled fire extinguishers, along with training for employees on the portable and wheeled extinguishers, and maybe even some early warning detection, such as flame detection, to provide early warning to the building occupants, and the fire department/first responders.

No matter what approach the hangar owner/operator wants to utilize, the first step should be consulting with a qualified, licensed fire protection design professional (licensed fire protection engineer) who is familiar with the aircraft hangar fire protection and life safety features and the local AHJs to select the best method to both maintain safe fire protection and reduce risk of accidental foam discharge. ■

### ABOUT THE AUTHOR:

Jack Poole, P.E., FSPPE, is a principal of Poole Fire Protection, Inc. in Olathe, Kan. He graduated from the University of Maryland (UMD) in 1986 with a Bachelor of Science degree in Fire Protection Engineering and is a registered Professional Engineer (P.E.) in Fire Protection, licensed in 49 states, Washington, D.C., and one territory. He is a member of the NFPA Standards Council, chairs NFPA 72 SIG-PRO and NFPA 520, and serves on many other NFPA technical committees. Poole is an SFPE Fellow and the current SFPE president. He also is chair of the UMD Fire Protection Engineering (FPE) Board of Visitors, member of the UMD A. James Clark School of Engineering Board of Visitors, member of the Kansas State Board of Technical Professions, distinguished alumni of UMD, past co-chair of the UMD FPE Alumni Club, and a member of the UMD FPE Curriculum Advisory Committee. Poole serves on the board of directors for the Automatic Fire Alarm Association and is chair of its Training Committee. He is a member of AFSA, NFSA, and is a past chair of the Oklahoma State University Fire Protection and Safety Engineering Technology Industrial Advisory Board.

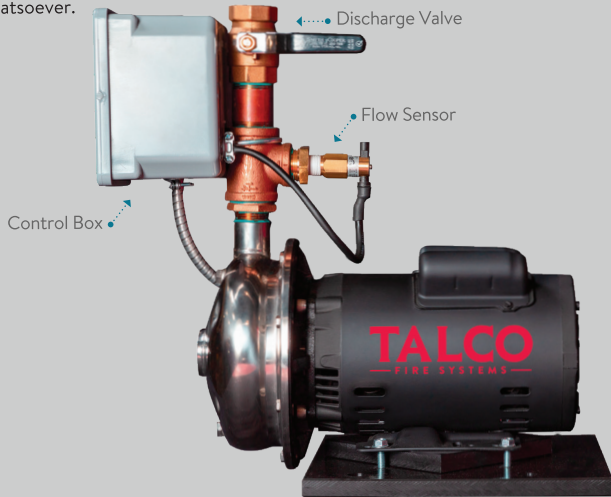


## THE TRUSTED SOURCE FOR ANY FIRE PUMP APPLICATION

### INTRODUCING

#### NFPA-13D Flow to Start (FTS) Fire Pump Package

Our new FTS is designed to activate only when the pump demand is present, eliminating the need for a pressure switch, check valve, or any adjustments whatsoever.



#### NFPA-13D Home Hydrant®

The most complete and compact residential fire pump system on the market.

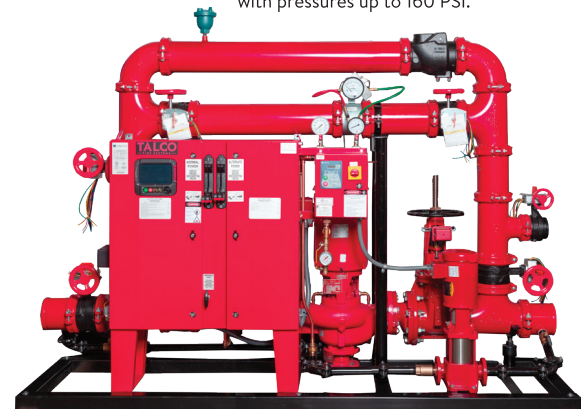


#### ULV-R/NFPA-20 Fire Pump Package

- Perfect for NFPA-13R Multi-Family Residential
- 230 Volt, Single-Phase Electric Motor/Controller. Custom Voltage/Phase Options Available
- Hand-built and tested by expert craftsmen.
- Measures 33"d x 78"h x 32"w

#### ULR Fire Pump Package

- Fully NFPA 20 & NFPA 13R compliant.
- Flow rates range from 50 to 1500 GPM with pressures up to 160 PSI.



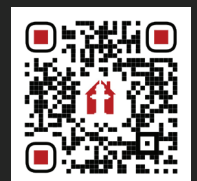
Reliable. Innovative. Experienced.



THOROUGHLY TESTED, SHIPS COMPLETELY ASSEMBLED, READY TO INSTALL



[www.talcofire.com](http://www.talcofire.com)



SCAN ME Cut Sheets / Submittal info available

Talco Fire Systems 6040 NE 112<sup>th</sup> Ave. Portland, OR 97220

503-688-1231 • 800-878-8055

# IGNITING PASSION AND SAVING LIVES

## VIRGINIA CHAPTER CAREER FAIR SPARKS INTEREST IN THE NEXT GENERATION

MARYCATHERINE COYLE | EAGLE FIRE, INC.

**O**n February 27, 2024, the American Fire Sprinkler Association (AFSA) Virginia Chapter held its Third Annual Fire Protection Career Fair at the Henrico County Adult Education Center, located at the Regency Mall. The event was a resounding success, drawing around 300 high school students from Henrico County, eager to explore career options in the fire and life safety industry.

The career fair showcased the industry's importance in saving lives and protecting property through interactive displays and hands-on experiences. Students had the opportunity to engage with 14 member companies, including industry leaders like VSC Fire-Security, Summit, Eagle Fire, BFPE, Cavalier Fire Protection, Hydro Tec, Aci, Professional Fire, Hiller Systems, American Fire Systems, Ferguson Fire and Fab, Hajoca, Tyco and Viking. The focus was not just on talking about the greatness of the industry but on allowing students to experience it firsthand.

From tabletop displays of equipment to simulators that activated fire sprinklers, working fire alarm panels, AutoCAD, and 3D design stations, and even Virtual Reality experiences, the fair aimed to make learning as interactive as possible. The goal was clear: to educate students about the critical role of fire

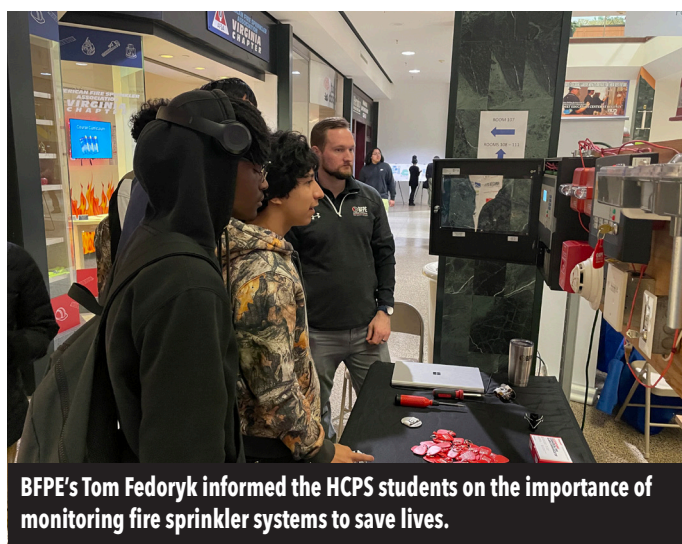
protection systems and to inspire them to consider careers in this dynamic field.

One of the most significant outcomes of the career fair was the partnership between the AFSA Virginia Chapter and Henrico County Public Schools (HCPS). This collaboration has proven to be instrumental in bridging the gap between education and industry, ensuring that students are aware of the diverse career opportunities available within the fire sprinkler industry.

Many students attending the fair were surprised to learn about the breadth of career options within the industry, with some not even aware that such a field existed. This lack of awareness highlights the importance of events like the Fire Protection Career Fair in exposing students to potential career paths early on.

Moreover, the fair wasn't just about showcasing the industry—it was also about providing tangible opportunities for students. Some attended simply to explore, while others were actively seeking summer employment, internships, or full-time positions upon graduation. Regardless of their intentions, all students were warmly welcomed by industry professionals eager to share their knowledge and expertise.

The involvement of manufacturing companies like Tyco and Viking further underscored the industry's commitment to



BFPE's Tom Fedoryk informed the HCPS students on the importance of monitoring fire sprinkler systems to save lives.



Cavalier Fire's Bob Beckwith and Jill Mott explained AFSA's apprenticeship program and the many career paths available in the fire sprinkler industry.





Jason Dixon with VSC Fire & Security showed fire panel demonstrations to students.



Kayl Emanuel-Rios with Eagle Fire talked to students about her experiences working in the life safety field.

education and workforce development. By participating in the fair and having product demonstrations, these companies showcased their dedication to nurturing the next generation of fire protection professionals.

As the demand for skilled workers in the fire sprinkler industry continues to grow, initiatives like the Fire Protection Career Fair are more crucial than ever. By igniting passion and providing students with the tools and resources they need to succeed, these events play a vital role in shaping the future of the industry.

In conclusion, the Fire Protection Career Fair was not only a showcase of the industry's importance but also a testament to its commitment to education and innovation. By inspiring the next generation of fire protection professionals, events like these ensure that our communities remain safe and secure for years to come. ■



Shawn Wax (left) and Allen Hayes (right) with Summit Companies spoke to students about career opportunities.

**ABOUT THE AUTHOR:** MaryCatherine Coyle is a skilled talent acquisition manager at Eagle Fire, Inc., with over six years of recruiting experience and two-and-a-half years dedicated to the fire protection industry. Holding an MBA in HR management, she blends academic expertise with practical insights to excel in her role. Coyle volunteers as the social media coordinator for the AFSA Virginia Chapter, where she plays a key role in community engagement. She is committed to advancing talent and fostering connections within the fire protection industry.



The career fair had over 300 students attend and learn about career possibilities designing, installing and inspecting life safety systems.



Chris Amorese with Tyco Fire Products deciphered the mystery of the devices laid out on his table and the various careers offered by suppliers.

# AFSA REJUVENATES TAC

## TECHNICAL ADVISORY COUNCIL TO ESTABLISH TECHNICAL POSITIONS FOR THE CODES AND STANDARDS DEVELOPMENT PROCESS

The American Fire Sprinkler Association (AFSA) is pleased to announce that it has reinvigorated its Technical Advisory Council (TAC) to establish AFSA positions on technical changes to the documents that affect the sprinkler industry. The TAC is comprised of 15 contractor voting members and advisors from ex-officio associate members. This group will propose, discuss, and debate the merits of proposed changes to NFPA standards and direct AFSA representatives on NFPA committees through consensus. The TAC will have representatives from each AFSA region.

The TAC's first meeting was held March 19-20, 2024, at AFSA headquarters in Richardson, Texas, led by TAC Chair E. Parks Moore, P.E., CFPS, SET, S&S Sprinkler, Inc., A Pye-Barker Fire & Safety Company, Mobile, Ala. "I am honored to have been selected to lead the TAC," states Moore. "The Council gives AFSA members a voice in the standards and codes development process, and I encourage members to reach out to their TAC representative with questions, comments, and concerns for us to address at future meetings."

First established in May 1985, the TAC allowed AFSA to address technical issues and NFPA codes and standards related to the fire sprinkler industry. Past AFSA Chair of the Board and AFSA Life Member Don Becker helped establish the TAC and served as its first Chair.

One of the TAC's original tasks was to rewrite and update all the apprenticeship courses. At that time, AFSA



didn't have the staff manpower to accomplish this monumental project. The council members rewrote the first books until an Apprenticeship & Education committee was created. The TAC's role in the association continued to grow until it was evident that a formal department was needed. AFSA established its Technical Services Department in 1996.

Today, the department serves as a resource for NFPA standards related to fire sprinklers. Three professional engineers on staff provide 75 years of combined experience in developing, interpreting, and applying code and standard requirements. Since 2020, AFSA Engineering & Technical Services staff has been growing its representation on NFPA technical committees (55 committees/45 documents/118

seats) and UL Technical Committees (12 committees).

"With the re-establishment of the TAC, it is now time to return those seats to our members under the direction of the TAC," says AFSA's Senior Manager of Engineering & Technical Services Kevin Hall, M.Eng, P.E., ET, CWBSP, PMSFPE, and staff liaison to the TAC. "I'm excited to get more of our members involved and educated on the standard development process. This Council provides an excellent opportunity for all AFSA members to bring their technical ideas to the table and collaborate with some of the greatest minds in the fire sprinkler industry."

Members of AFSA's TAC are appointed for a two-year term with no limit on the number of terms a member

may serve. Voting members of the TAC are the following:

- E. Parks Moore, Chair, S&S Sprinkler Co. (Pye-Barker) (National Scope);
- Chris Champion, Eastern Fire and Safety (Region 6, Alternate: Thomas Carlock);
- Christopher Caputo, Metro Fire Equipment (Region 2);
- Jason Gill, Crews and Gregory Fire Sprinkler, Inc. (Region 6, Alternate: Bob Beckwith);
- Matthew Heidler, Johnson Controls Fire Protection (National Scope, Alternate: Kevin Galligan);
- Chris Johnson, Piper Fire Protection (Region 5);
- Chris Kachura, VSC Fire and Security (National Scope, Alternate: Andrew Hafner);
- Adam Levine, Capitol Fire Sprinkler (Region 6);
- Jeff Lewis, VSC Fire and Security (Region 6, Alternate: David Victor);
- Dale Lindh, Summit Companies (National Scope, Alternate: Paul Szafranski);
- Eric Rieve, Rieve Fire Protection (Region 7, Alternate: Connor Rieve);
- Steven Scandaliato, SDG, LLC (Region 4);
- Taylor Schumacher, Security Fire Sprinkler (Region 3, Alternate: Calen Schumacher);
- Steve Ulmer, APi Group (National Scope);
- Byron Weisz, Cen-Cal Fire Systems, Inc. (Region 1, Alternate: Erik Weisz); and
- Kevin Hall, Staff Liaison, American Fire Sprinkler Association.

Ex-Officio members of AFSA's TAC are the following:

- AFSA Manufacturers/Supplier Council Chair Phil Schechinger, ASC Engineered Solutions;
- AFSA Manufacturers/Supplier Council Vice Chair Andy Kaempfer, Safe Signal;
- Kerry Bell, UL Solutions;
- Kevin Kelly, Victaulic;
- Melisa Rodriguez, Johnson Controls
- Cary Webber, Reliable Automatic Sprinkler Co.; and
- Martin Workman, Viking Corporation.

Ex-Officio alternate members include the following:

- Jeff Hebenstreit, UL Solutions;
- Alaina Schwall, Victaulic;
- Brandon Telford, Reliable Automatic Sprinkler Co.; and
- Katie Teunessen, Viking Corporation.

### GET INVOLVED!

TAC meetings are open to all AFSA members in good standing. Please feel free to reach out to your regional representative and discuss any issues that the TAC should hear. While the number of voting members on the TAC is currently restricted to

15 contractor companies, there are still opportunities for interested AFSA members to participate.

If any member is interested in serving on an NFPA or UL technical committee, they should reach out to Hall via email at [khall@firesprinkler.org](mailto:khall@firesprinkler.org) or any member of AFSA's Engineering & Technical Services staff via email at [technical@firesprinkler.org](mailto:technical@firesprinkler.org). AFSA representatives on NFPA and UL technical committees will be appointed through the TAC going forward. ■

**FPC**  
Fire Protection Contractor magazine  
The Most Widely-Read Sprinkler Industry Publication

February 2024 \$8  
NFPA 25  
Standard for the Installation, Testing, and Maintenance of Water-Based Fire Protection Systems  
NFPA 25  
TRENDS IN CONSTRUCTION

March 2024 \$8  
RESIDENTIAL  
History and Photos

April 2024 \$8  
Next Gen  
Report: Sac Valley AFSA Show

**PUBLISHED MONTHLY FOR:**  
*FIRE SPRINKLER CONTRACTORS • DESIGNERS • ENGINEERS • AHJS • FIRE PROFESSIONALS, AND OTHERS*

**Start Your Subscription Today!**

**PRINT** **DIGITAL**

*Since 1978*  
**FPC/FIRE PROTECTION CONTRACTOR**  
magazine  
[www.fpcmag.com](http://www.fpcmag.com)

# THUNDER VALLEY TRADE SHOW TRIUMPH

## SACRAMENTO VALLEY CHAPTER EVENT DRAWS INTERNATIONAL AUDIENCE

PAULENE NORWOOD | AFSA SACRAMENTO VALLEY CHAPTER

On Thursday, March 7, 2024, the Sacramento Valley Chapter of the American Fire Sprinkler Association (AFSA) held its 12th Annual Trade Show at Thunder Valley Casino Resort in Lincoln, Calif. The show hosted 52 exhibitors—manufacturers and suppliers in the fire sprinkler industry from across the United States, United Kingdom, and Canada. Over 600 people attended the trade show—fire sprinkler contractors, designers, fitters, apprentices, office staff, and fire personnel. As in past years, the show offered appetizers and a raffle held every half hour with the main prizes: an iPad, a large-screen television (donated by Assured Partners of CA Insurance), and a Hawaiian trip for two.

The chapter held seminars prior to the trade show for 128 participants on “Applying NFPA 25—California Edition” and “Fire Pump Installation,” both presented by AFSA’s Vice President of Engineering & Technical Services John Denhardt, P.E., FSFPE.

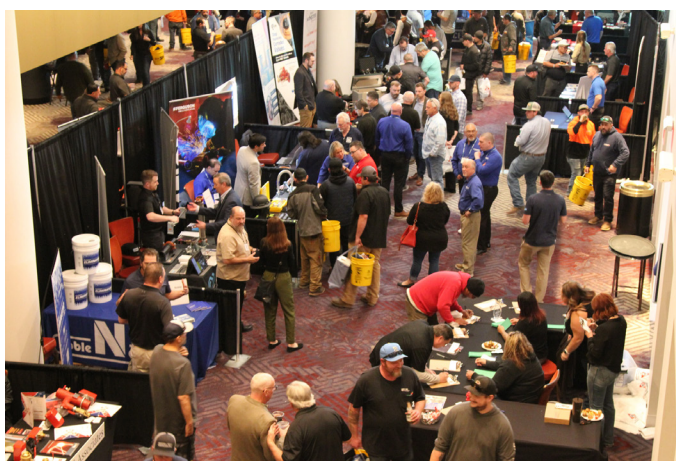
“This was our first time exhibiting at this event,” commented Jo Huggins, senior marketing executive at Plumis. “Having traveled over from the UK, this show was the perfect place to showcase our new fire suppression technology as we gear up to launch in the US. It was well attended by a wide range of professionals within the industry, and we made lots of useful contacts on the day. Thank you to the organizers for putting on a fantastic event. We look forward to the next one!”



The Sacramento Valley Chapter's 12th Annual Trade Show was a great success with over 600 people in attendance.

Don Smith, commercial lines broker for Assured Partners of California Insurance, stated, “What can I say? Wow! The 2024 show was one of the best trade shows to date. The Sacramento Valley Chapter keeps fine-tuning and improving this event year over year, and the venue was packed once again.”

He continues, “Paulene and her team are on top of their game. We truly value their friendship, business acumen, and leadership. Thank you for all that you do for the members and AFSA.”



The trade show featured a packed exhibit hall with 52 manufacturers and suppliers.



The chapter held a raffle every half hour with a multitude of prizes, including a Hawaiian vacation for two.



The trade show provided ample opportunities to meet and reconnect with fellow fire protection industry professionals.

Bryan Tilos, outside sales representative for Core and Main Fire, always looks forward to this event. “The chapter puts on an amazing trade show. We get to see new innovations and offerings from over 50 vendors, and I always meet new contacts. I love seeing this industry grow year over year.”

Steve Brown, Engineered Corrosion Solutions, agrees. “It was a great show and great turnout, as usual. This event is a great opportunity to meet with current and new customers. The contractors were all having a good time and enjoying the show as well.”

“At the trade show, attendees enjoyed a vibrant mix of networking opportunities, delicious cuisine, exciting prizes, and attractive swag, all amidst the energetic atmosphere of Thunder Valley Casino Resort,” comments Vanessa Farmer with The Craig Brown Company/Fire Pump Academy. “The venue’s ambiance, combined with the assistance from coordinators and the chance to socialize with industry peers, contributed to a memorable and enjoyable event!”

### JOIN THE CHAPTER FOR THIS AND OTHER EVENTS

The chapter looks forward to hosting the show once again in 2025! Stay updated on this and other chapter events by visiting the chapter’s website at [www.sacvalleyafsa.org/](http://www.sacvalleyafsa.org/). ■



Seminars were held prior to the trade show on “Applying NFPA 25–California Edition” and “Fire Pump Installation.”



**RISERPACK®**

WITH

# PRESSURE REDUCING VALVE



### Model 8511Z

The AGF RiserPACK Model 8511Z is a 2½” floor control assembly. It features a flow switch, pressure gauge with test valve, hose test, TEST<sub>AND</sub>DRAIN valve with pressure relief valve and drain trim, optional stainless steel drain line, and a Pressure Reducing Valve.

[www.agfmfg.com](http://www.agfmfg.com)

# NFPA ANNOUNCES NEW ENTITY

## NFPA GLOBAL SOLUTIONS™ TO ADVANCE SAFETY

The National Fire Protection Association® (NFPA®), a global self-funded nonprofit organization devoted to eliminating death, injury, property, and economic loss due to fire, electrical, and related hazards, has announced the establishment of NFPA Global Solutions™. In support of the NFPA mission, NFPA Global Solutions is a fully-owned NFPA corporation that will offer compliance solutions, digital products, and advisory services that extend beyond the traditional products and services offered by NFPA. NFPA also announced a new business line within NFPA Global Solutions called NFPA Global Advisors™. NFPA Global Advisors will help governments and companies around the world improve safety through the implementation of the NFPA Fire & Life Safety Ecosystem™. While NFPA codes and standards are used and applied globally today, this entity will help expand that system of safety in each area outlined in the ecosystem cogs.

This expansion under NFPA President and CEO Jim Pauley's leadership is part of an ambitious plan to further the NFPA mission via acquisitions and new offerings to serve the broader safety needs across the globe to tackle persistent and emerging challenges.

NFPA Global Solutions will be led by Carlos Correia, formerly NFPA vice president of strategic initiatives. As president of NFPA Global Solutions, Correia will oversee the entity's growth, including acquisitions, innovation, and scaling within related sectors. Additionally, Keith Williams, former CEO of UL, and Michael Wallace, former executive director of business development for Carrier Corporation, have been appointed as independent board members.

"The nature and intensity of safety risks continue to evolve," says Pauley. "NFPA Global Solutions and NFPA Global Advisors allow us to further advance the NFPA mission and support our customers and stakeholders to enhance fire, life, and electrical safety, in alignment with the NFPA Fire & Life Safety Ecosystem, a framework that identifies the components that must work together to minimize risk and help prevent loss."

NFPA Global Solutions is dedicated to aiding companies in demonstrating compliance to standards and regulations, helping promote innovation, safety, and acceptance in the marketplace. NFPA Global Solutions will introduce digital products to assist NFPA customers and stakeholders in mitigating risks, enhancing safety, and creating operational efficiency.



NFPA Global Advisors offers services to help governments and companies establish and/or improve their systems of safety. NFPA Global Advisors will work with those entities to create action plans around each cog of the NFPA Fire & Life Safety Ecosystem, with the overall objective of increasing safety for people and property. ■

---

**ABOUT NFPA:** Founded in 1896, NFPA is a global self-funded nonprofit organization devoted to eliminating death, injury, property, and economic loss due to fire, electrical, and related hazards. The association delivers information and knowledge through more than 300 consensus codes and standards, research, training, education, outreach, and advocacy, and by partnering with others who share an interest in furthering the NFPA mission. For more information, visit [nfpa.org/](http://nfpa.org/). All NFPA codes and standards can be viewed online for free at [nfpa.org/freecaccess/](http://nfpa.org/freecaccess/).

---

**ABOUT NFPA GLOBAL SOLUTIONS:** Established in 2024, NFPA Global Solutions is a separate, fully-owned NFPA corporation dedicated to advancing safety by offering compliance solutions, digital products, and advisory services that are designed to advance fire, life, and electrical safety across the globe. NFPA Global Solutions will introduce new offerings via acquisitions and new businesses that extend beyond the traditional products and services offered by NFPA. NFPA Global Advisors, the first business within the NFPA Global Solutions umbrella, was launched in March of 2024 to support governments and companies in implementing the NFPA Fire & Life Safety Ecosystem. For more information, visit [nfpaglobalsolutions.com/](http://nfpaglobalsolutions.com/).

---

**ABOUT NFPA GLOBAL ADVISORS:** NFPA Global Advisors is a business within NFPA Global Solutions that helps governments and companies around the world establish and/or improve their systems of safety by implementing the NFPA Fire & Life Safety Ecosystem. NFPA Global Advisors was established in March 2024. For more information, visit [nfpaglobalsolutions.com/](http://nfpaglobalsolutions.com/).

# FULL SERVICE COLLECTION SOLUTION

## NEW MEMBER BENEFIT: KBM

The American Fire Sprinkler Association (AFSA) is excited to announce another member benefit. Kearns, Brinen & Monaghan (KBM), a collection vendor, has teamed up with AFSA, offering exclusive benefits to all AFSA members. KBM takes pride in providing clients with the highest retention and recovery in the industry. AFSA members will receive custom collection solutions and a discounted contingent rate.

### YOUR FULL-SERVICE COLLECTION SOLUTION

With 20 years of experience, KBM is the top choice for all third-party commercial collection solutions. Spend less time chasing bad debt and more time making your customers safe and happy!

- *Unmatched Recovery*—Turn your past-due receivables into cash flow without any upfront costs.
- *Fully Contingent*—No collection, no charge! Only pay on the accounts you get paid on.
- *Resources & Experience*—KBM Utilizes a variety of resources paired with experience to maximize recovery
- *Retention & Respect*—Collect from your customers and continue doing business with them. Our collection strategies are meant to save the relationship, not harm it.

“Bad debt doesn’t have to be the cost of doing business,” says Ron Buker, vice president of sales, KBM. Our partnership with AFSA is to maximize the recovery of

all members while being a resource for all their cash flow needs.”

“We’ve never had much success with using a collections agency until we started using KBM,” comments one KBM client. “They were successful in collecting a broad range of debts that I frankly thought would never get paid.”

“Many of the accounts who would not respond to our repeated efforts to make contact were very responsive to KBM when they made contact,” says another client of KBM. “My boss is only sorry that we didn’t engage KBM earlier.”

### FREE QUOTE AVAILABLE

To sign up for a quote, visit <https://kbmcollect.com/collection-services-for-afsa/>. For questions or customizing a collection strategy, contact Buker at (864) 269-0900 or email [rbuker@kbmcollect.com](mailto:rbuker@kbmcollect.com). ■



## PRESIDENT'S REPORT CONT.

Continued from page 8

stand together if we hope to continue to prosper. Fortunately, we have a great partner in ABC (Associated Builders and Contractors), which is much larger, well-versed, and funded in the political and legislative arena as they fight to support open shop labor. I want to encourage every AFSA member to join your local ABC chapter. They do not have a national membership, but members receive critical updates on ABC's legislative activities and keep up to date on local and national issues that directly impact your right to operate your business. AFSA supports ABC's efforts by signing onto every political action letter ABC sends to Congress and local representatives. We hope more of our members will do the same. We cannot ignore the efforts of politicians to exclude us and diminish our opportunities as a return favor for union support in the form of campaign contributions and PAC funding. We cannot afford to wait and see as this becomes more pervasive in terms of the impact on our business health.

As the president of AFSA, I am not anti-union; I am pro-choice regarding your choice to have a direct relationship with your employ-

ees. We believe in providing fair wages, benefits, and formal training programs to grow your people and business. We believe in the benefits of fire sprinkler systems and their need in every occupied building, including single-family homes. Our members and chapters must be united and strong to survive unfair rules that seek to box us out or force us to sign mandated agreements that only serve to increase the cost of building without adding quality or value. We hope every AFSA member who reads this column will reinvigorate their activity with their local chapter and encourage their competitors to become AFSA members. We need you more now than ever. We must fight this problem before it becomes too large to handle. We have a critical election in November, and its outcome is too close to call. I don't know how things will turn out, but we must prepare and plan for success regardless of the results. We can never allow the circumstances or the choices others would make for us to be the determining factor in our success. Reach out to your chapter leaders and AFSA staff to let us know what's happening in your region and how we can help! ■

# AND THEN THERE WERE TWO

## ABC NCC COMPETITION SHOWCASES FIRE SPRINKLER INDUSTRY

DAVID VICTOR | VSC FIRE & SECURITY.

**O**n March 14 of this year, Associated Builders and Contractors (ABC) held its National Craft Competition (NCC) at the Gaylord Palms Convention Center in Kissimmee, Fla. There were 15 different construction trades competing for gold, silver, and bronze medals in each of those trades. It is a six-hour hands-on competition that is viewed by the public. Local high schools are bused to this event to see the best of the best compete in their respective trades as third-year apprentices. The Fire Sprinkler competition has been a part of the NCC for decades. I have been the project manager for this competition since 2016. I have had to limit the number of competitors in the past to 12 due to limited space. I have never had fewer than seven competitors. The competitions I have been involved with have also taken place in Ft. Lauderdale, Fla., Long Beach, Calif., and San Antonio, Texas.

Last year, in Kissimmee, I had 10 competitors. This year, I had two! Yes, two. Originally, we had four commit to compete in December 2023, but those two dropped out in January 2024. Had ABC's NCC known we would be down to two for the Fire Sprinkler competition, this event would've been canceled for 2024. But there were already too many pieces in motion to cancel the competition. So, two competed, and one medal was awarded.

We all are very aware that the entire construction industry is hurting for labor. Particularly young labor, to fill those positions that are being vacated by an older group looking to retire. The fact that we had only two competitors from the entire country compete in a national competition is a commentary on just how bad it is in the fire sprinkler industry. Could it have been the cost of entering a competitor in the event? Possibly. But I see plenty of participants at national fire sprinkler events. So, company dollars are being spent there. Could it have been the demand for labor on jobs? Could companies not afford to send a worker away for four days to compete? Maybe. Or is it that we just don't have enough people enrolled in the apprenticeship program to even send to this competition? Very likely. And that is a real problem!

I am not able to conjure up a solution to this. I am simply pointing out a real problem. Next year, the competition will take place in Las Vegas. The ABC NCC will enter the convention hall at Mandalay Bay at the end of February 2025 and set up another competition for 15 different trades. My hope is that the fire sprinkler trade will continue to be one of those competitions. My hope is that this past year was an anomaly. My hope is that I will



**Saylor P. Jacobs, BFPE International, ABC Greater Baltimore Chapter, won the Gold medal and Safety Award in the Fire Sprinkler Competition.**

have to limit participation due to space limitations. My hope is that we will award three medals to participants.

I understand that the American Fire Sprinkler Association (AFSA) has its own apprenticeship competition at its annual convention. But that is preaching to the choir. Everyone there lives and breathes fire sprinklers, so participation is logical. This ABC event presents the fire sprinkler trade as one of the multitudes of construction trades. We need to do what we can to show that the fire sprinkler industry can stand equal to the other construction trades on a national level. ■

**ABOUT THE AUTHOR:** David Victor is the operations manager for the Baltimore Division of VSC Fire and Security and is NICET IV certified in Water-Based System Layout. He has served as the ABC Greater Baltimore Chapter Craft Competition project manager since 2008 and ABC NCC project manager since 2016. Victor has also served as the AFSA Chesapeake Bay Chapter treasurer since 2008.



# CHAPTER HOSTS CAREER DAY

## CHESAPEAKE BAY PROMOTES INDUSTRY TO HIGH SCHOOLERS

DANIELLE FOWLER | AFSA CHESAPEAKE BAY CHAPTER

**O**n February 22, 2024, the Chesapeake Bay Chapter of the American Fire Sprinkler Association (AFSA) hosted a fire sprinkler career day at the CAT North Technical High School in Anne Arundel County, Md. The chapter visited the school in November 2023 to bring awareness to the fire sprinkler industry to those students and, because of the overwhelming response, hosted a job fair and demo day complete with contractors, vendors, demonstrations, and resume collections for employment. The students were engaged and very interested in finding out what the fire sprinkler industry has to offer.

Over 70 students were in attendance with curriculums in electrical, plumbing, welding, and CAD. The intent of the original visit was to ensure these young people were aware that their experience in those high school classes could prepare them for a career in the fire sprinkler industry. Many of these young people were unaware of what opportunities are available right out of high school and for their futures. This is the audience and section of the next generation that we need to educate and bring awareness of our industry.

“I went to the tech school expecting to energize these students, and their enthusiasm and dedication to their trade ended up energizing me! I walked away feeling much more assured about our community’s future in the construction industry,” notes Dave Victor, treasurer of AFSA Chesapeake Bay Chapter and operations manager at VSC Fire & Security.

### CAT NORTH TECHNICAL HIGH SCHOOL

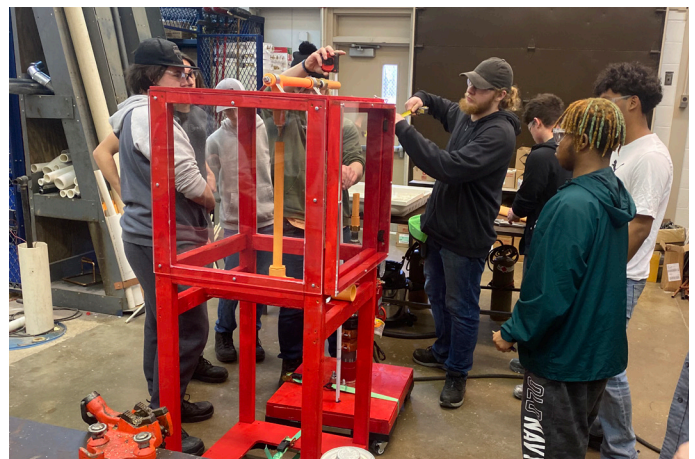
The mission at CAT North Technical High School is to “inspire, educate, and prepare life-long learners and future professionals through hands-on Career and Technical Education.” At the school, all students are welcomed as unique, diverse individuals who have the capacity to be successful at CAT North.

According to Principal Joe Rose on the school’s website, “Each day, I look forward to strengthening the relationships that I have begun building with all of our wonderful students, families, business partners, and talented staff members. As we continue our commitment to helping all students develop their technical, academic, and social proficiencies, students will be better prepared to effectively negotiate the demands associated with living in an ever-changing 21st century. Beyond the rigors of their academic program, it is our goal to prepare every student with the essential employability skills and certifications in order to be productive members of society.”

### CHAPTER CONTINUES ITS REACH

The chapter is planning more career and awareness days throughout the area to enable these students to see the future available in the fire sprinkler industry. While we still have a lot of work to do to get our next generation active in the fire sprinkler industry, with combined educational efforts, we can make a difference and secure the future. ■

**ABOUT THE AUTHOR:** Danielle Fowler is the executive director of the AFSA Chesapeake Bay Chapter and northeast sales manager at Potter Electric Signal Co., LLC. For more information about the chapter and its events, visit [www.afsachesapeakechapter.org/](http://www.afsachesapeakechapter.org/).



AFSA's Chesapeake Bay Chapter's career day, which included pipe threading and standpipes, showcased the fire sprinkler industry to students at CAT North Technical High School.

# TECHNICAL CHALLENGES

## CAN YOU MEET THE CHALLENGE?

AFSA's Engineering & Technical Services Department staff present technical challenges here for you and your co-workers. These exercises are also excellent preparation for professional certification tests and may count as CEUs. Check with your certification organization. Answers to this issue's questions will be presented in the next issue.

## MARCH/APRIL ANSWERS

The following questions are based on NFPA 25, 2023 edition.

1. Given a wet sprinkler system with a 10-ft length of 2<sup>1</sup>/<sub>2</sub>-in. schedule 10 black steel piping with two grooved elbows in the pipe, what is the equivalent length of this pipe for hydraulic purposes? (Assume the elbows have an equivalent length per their listing of 4.3 ft of schedule 40 black steel pipe, C = 120.)

*Reference - 28.2.3.1.3.1.*

*(2.635 in./2.469 in.) raised to the 4.87 power = 1.37*

*4.3 ft x 1.37 = 5.9 ft*

*2 x 5.9 ft = 11.8 ft*

*10 ft + 11.8 ft = 21.8 ft*

- A. 10.0 ft                      B. 14.3 ft  
C. 18.6 ft                      D. 21.8 ft

2. Given a dry sprinkler system with a 10-ft length of 3-in. schedule 10 galvanized steel piping with two grooved elbows in the pipe, what is the equivalent length for this pipe for hydraulic purposes? The air supply for this dry sprinkler system is an air compressor. (Assume the elbows have an equivalent length per their listing of 5 ft of schedule 40 black steel pipe, C = 120.)

*Reference - 28.2.3.1.3.1 and 28.2.3.1.3.2.*

*(3.26 in./3.068 in.) raised to the 4.87 power = 1.34*

*1.34 x .713 = .96*

*5 ft x .96 = 4.8 ft*

*10 ft + 4.8 ft + 4.8 ft = 19.6 ft*

- A. 10.0 ft                      B. 19.6 ft  
C. 20.0 ft                      D. 23.4 ft

3. Given a dry sprinkler system with a 50-ft length of 2-in. schedule 40 black steel piping with two threaded cast iron elbows in the pipe, what is the equivalent length for this pipe for hydraulic purposes?

*Reference - 28.2.3.1 and 28.2.3.1*

*5 ft x .713 = 3.57 ft*

*2 x 3.57 ft = 7.1 ft*

*50 ft + 7.1 ft = 57.1 ft*

- A. 50.0 ft                      B. 57.1 ft  
C. 60.0 ft                      D. 70.4 ft

4. A 2-in. wet sprinkler system riser contains a control valve, check valve, vane-type water flow switch, and a test and drain

assembly. What equipment needs to be included in the hydraulic loss for the hydraulic calculation?

*28.2.4.8.1. Pipe friction loss shall be calculated in accordance with the Hazen-Williams formula with C values from Table*

*28.2.4.8.1, as follows:*

*(1) Pipe, fittings, and devices such as valves, meters, flow switches in pipes 2 in. (50 mm) or less in size, and strainers shall be included, and elevation changes that affect the sprinkler discharge shall be calculated.*

- A. Control valve, check valve, water flow switch, and test and drain assembly  
B. Control valve, check valve, and water flow switch  
C. Control valve and check valve  
D. Control valve, check valve, and test and drain assembly

5. A 10-ft piece of 1<sup>1</sup>/<sub>2</sub>-in. schedule 40 black steel pipe has a threaded cast iron 1<sup>1</sup>/<sub>2</sub>-in. x 1<sup>1</sup>/<sub>4</sub>-in. reducing elbow on the end. For hydraulic calculations, what size fitting is used to determine the equivalent length?

*28.2.4.8.1. (6) The loss of reducing elbows based on the equivalent length value of the smallest outlet shall be calculated.*

- A. 1<sup>1</sup>/<sub>4</sub> in.                      B. 1<sup>1</sup>/<sub>2</sub> in.  
C. 1<sup>3</sup>/<sub>4</sub> in.                      D. 2 in.

## MAY/JUNE QUESTIONS

For this issue, we are going to challenge your memory and thought process. We might make you chuckle. References are always to the latest NFPA standard.

1. The title of NFPA 20 is:

- A. *Standard for the Installation of Fire Pumps*  
B. *Standard for the Installation of Pumps for Fire Protection*  
C. *Standard for the Installation of Stationary Pumps for Fire Protection*  
D. *Standard for the Design and Installation of Fire Pumps*

2. NFPA 420 is a new proposed *Standard on Fire Protection of Cannabis Growing and Processing Facilities*.

- A. True                      B. False

3. NFPA 88A, 2023 edition is the *Standard for Parking Garages*. Does it require all new parking garages to be sprinklered?

- A. Yes                      B. No

4. NFPA 200 is a new proposed, *Standard for Hanging and Bracing of Fire Suppression Systems*. This standard will eventually have control of all hanging, bracing, and seismic requirements in NFPA 13.

- A. True                      B. False



**FERGUSON**  
FIRE & FABRICATION

# PROGRAMMED FOR **PRODUCTIVITY**



**SCAN TO  
LEARN MORE**

We offer a variety of digital tools and services for fire protection pros on the go. From easy online ordering through the Ferguson app and real-time access to associate expertise with Text-2-Counter to precision fabrication schedules and quotes from Firelist, you'll benefit from all our technology when you partner with us.

VISIT US ONLINE AT [FERGUSON.COM/FIRE](https://www.ferguson.com/fire)

©2024 Ferguson Enterprises, LLC 0324 6180410

## CALENDAR

### JULY 2024

8 - 9

- Beginning ITM Workshop  
AFSA Headquarters, Richardson, TX  
[www.firesprinkler.org/programs/beginning-itm-workshop/](http://www.firesprinkler.org/programs/beginning-itm-workshop/)

10 - 12

- Advanced Hydraulic Calculations Workshop  
AFSA Headquarters, Richardson, TX  
[www.firesprinkler.org/programs/advanced-sprinkler-hydraulic-calculations-workshop/](http://www.firesprinkler.org/programs/advanced-sprinkler-hydraulic-calculations-workshop/)

10 - 12

- Intermediate ITM Workshop  
AFSA Headquarters, Richardson, TX  
[www.firesprinkler.org/programs/intermediate-itm-workshop/](http://www.firesprinkler.org/programs/intermediate-itm-workshop/)

15 - 26

- Beginning Design School - In Person  
AFSA Headquarters, Richardson, TX  
[www.firesprinkler.org/calendarevent/beginning-design-school-in-person/](http://www.firesprinkler.org/calendarevent/beginning-design-school-in-person/)

22 - Aug. 2

- Intermediate Design School  
AFSA Headquarters, Richardson, TX  
[www.firesprinkler.org/calendarevent/intermediate-design-school-2/](http://www.firesprinkler.org/calendarevent/intermediate-design-school-2/)

23 - 24

- Fire Pump ITM Workshop  
AFSA Headquarters, Richardson, TX  
[www.firesprinkler.org/programs/fire-pump-itm-workshop/](http://www.firesprinkler.org/programs/fire-pump-itm-workshop/)

25

- Introduction to the Fire Sprinkler Industry  
AFSA Headquarters, Richardson, TX  
[www.firesprinkler.org/programs/introduction-to-the-fire-sprinkler-industry/](http://www.firesprinkler.org/programs/introduction-to-the-fire-sprinkler-industry/)

### AUGUST 2024

19- 20

- Fire Pump ITM Workshop  
AFSA Headquarters, Richardson, TX  
[www.firesprinkler.org/programs/fire-pump-itm-workshop/](http://www.firesprinkler.org/programs/fire-pump-itm-workshop/)

21-23

- Intermediate ITM Workshop  
AFSA Headquarters, Richardson, TX  
[www.firesprinkler.org/programs/intermediate-itm-workshop/](http://www.firesprinkler.org/programs/intermediate-itm-workshop/)

### SEPTEMBER 2024

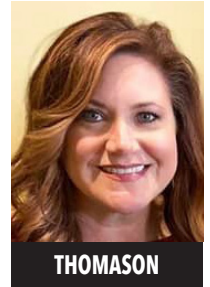
4

- Introduction to the Fire Sprinkler Industry  
AFSA Headquarters, Richardson, TX  
[www.firesprinkler.org/programs/introduction-to-the-fire-sprinkler-industry/](http://www.firesprinkler.org/programs/introduction-to-the-fire-sprinkler-industry/)

Seminars subject to change. Call (214) 349-5965 to confirm locations and times.  
For more events and details, visit [firesprinkler.org](http://firesprinkler.org) and click on "Events" and "Events List."

## THOMASON JOINS AFSA

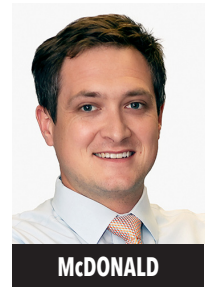
The American Fire Sprinkler Association (AFSA) welcomes the latest addition to the team, Jessica M. Thomason, serving as AFSA's manager of meetings and events. Thomason coordinates various meetings, events, and programs for the organization in her role. She also plans and executes AFSA's annual convention and exhibition and board meetings.



"We're so very pleased to welcome Jessica to Team AFSA," says AFSA President Bob Caputo, CFPS. "As our new manager of meetings and events, she takes on a huge role with loads of expectations. However, she brings over 25 years of experience and knowledge to the party, and we have 100% confidence and faith in her ability to take our events to new and exciting levels for AFSA members. I hope everyone will join me in cheering Jessica on as we welcome her and her talents to this great association."

## MCDONALD CONTINUES TO RAISE THE BAR

AFSA is proud to announce that Joshua McDonald, MSET, CFPS, CWBSP, WBITM, manager of technical services and engineering, has passed the Fundamentals of Engineering examination (FE). This represents the first step in his process of becoming a professional engineer (P.E.). This credential characterizes highly respected knowledge and experience in specific engineering fields. McDonald continues to uphold a solid education and training background; he is looking forward to the next testing period to become a licensed Fire Protection Engineer (FPE). AFSA and its members are fortunate to have industry experts like McDonald lead training programs and continue to advance their skills and expertise in the fire sprinkler industry.



"Passing the Fundamentals of Engineering exam is a huge accomplishment for Josh. He is on the path to becoming a licensed Professional Engineer. He has accomplished this while working full-time and dedicating extra time to our new training facility," says John Denhardt, Vice President of Engineering & Technical Services, P.E., ET, CWBSP, FSFPE. "Congratulations, Josh. I could not be prouder of you!"

## NOMINATE FOR PARMELEE AWARD

June 30 is the deadline to nominate someone for the 2024 Henry S. Parmelee Award—AFSA's highest honor—given in recognition of an outstanding individual who has dedicated themselves to the professional advancement of the fire sprinkler industry and the goal of fire safety through automatic sprinklers. AFSA members may visit [www.firesprinkler.org/awards/](http://www.firesprinkler.org/awards/) to read the eligibility rules and to nominate someone. The award will be presented at AFSA43: Convention, Exhibition, and Apprenticeship Competition, Sept. 18-21, 2024, at the Gaylord Rockies in Denver. ■

# CHAPTER NEWS



**AFSA's Chesapeake Bay Chapter members recently met to plan the year's training events and meetings.**



**AFSA's Minnesota-Dakotas Chapter recently held two training events for members.**

## CHESAPEAKE BAY

The Chesapeake Bay Chapter convened on March 27 to plan upcoming events. Committees provided updates, and members discussed new business, including future training events and meetings. AFSA's Vice President of Engineering & Technical Services John Denhardt, P.E., FSFPE, was also in attendance. Visit [AFSACHesapeakeChapter.org/](https://AFSACHesapeakeChapter.org/).

## LOUISIANA

Mark your calendars for the "Caddyshack" Southern Fire Sprinkler Summit from July 22-25, 2025, to be held at the Hilton Pensacola Beach Hotel in Florida. The event is a joint effort of AFSA's Alabama, Arkansas, Georgia, and Louisiana chapters. More details will be posted soon at <https://southernfiresprinklersummit.org/>.

## MINNESOTA-DAKOTAS

AFSA's Minnesota-Dakotas Chapter held two training events. AFSA Vice President of Engineering & Technical Services John Denhardt, P.E., FSFPE, spoke at the first event in Sioux Falls, S.D. The second training was held on March 15 in St. Cloud, Minn., with three speakers: Marc Haug with Allied Fire Protection, Gary Ford with Metro Testing, and John Pritchard with Lubrizol. These two continued education training sessions had great turnouts. The Minnesota-Dakotas Chapter is busy planning future events and recruiting! For more information, contact Chapter Executive Director Tina Hoff via email at [tina@alliedfirepro.com](mailto:tina@alliedfirepro.com).

## VIRGINIA

Mark your calendar for AFSA's Virginia Chapter's 31st Annual 2024 Burn Survivor's Foundation Golf Tournament on Oct. 9. The event is hosted to benefit the Central Virginia Burn Camp 501(c)3 and the Old Dominion Firefighters Burn Foundation 501(c)3. The entry deadline is Sept. 6. Registration will begin at 9:30 a.m., lunch will be served at 10:30 a.m., and shotgun starts at noon. Dinner and awards are at 5:00 p.m. on the grounds to celebrate the winners. Donations are being accepted! Please let any



**At its meeting, Minnesota-Dakotas Chapter Chair Marc Haug and Executive Director Tina Hoff manned an AFSA table full of information and goodies.**

committee member know of anything that can be donated, such as sports tickets, autographed sports memorabilia, or gift cards to various merchants or retailers. If you have questions or comments, contact Bob Beckwith ([bbeckwith@cavalierfire.com](mailto:bbeckwith@cavalierfire.com)) or Hooper Loscomb ([timothy.loscomb@eaglefire.com](mailto:timothy.loscomb@eaglefire.com)). Visit [VirginiaAFSA.org](https://VirginiaAFSA.org/). ■

# ASSOCIATION NEWS

## FSCATX

Skins & Fins registration is now open! The Fire Sprinkler Contractors Association of Texas (FSCATX) is hosting an event for all contractors and vendors. Experience contractor training, a three-hour vendor expo, an appreciation lunch, a Top Golf event, and a fishing tournament. For more information, visit [fscatx.org/](https://fscatx.org/). ■

# AFSA CHAPTERS

## ALABAMA

Lee Seewald – Pres.  
202-252-5101  
Greg Willis – Exec. Dir.  
334-567-4257

## ARIZONA

Jason Williams – Chair  
480-421-8411  
Denniece Cooper – Exec. Dir.  
480-282-5393

## ARKANSAS

Dennis Morrall – Chair  
901-734-4796  
Coleman Farrar – Exec. Dir.  
479-461-3863

## CHESAPEAKE BAY

Jason Martin – Chair  
240-848-2710  
Danielle Fowler – Exec. Dir.  
410-972-1122

## COLORADO

Roger Wallace – Chair  
719-337-6550  
Kim Cook – Exec. Dir.  
704-213-4368

## DALLAS-FORT WORTH

CJ Bonczyk – Chair  
817-529-1693

## FLORIDA

Bob DiModica – Chair  
239-514-7155  
Jessica Cox – Exec. Dir.  
813-784-3624

## GEORGIA

Allen Cagle – Chair  
770-554-5285  
Tracy Williams – Exec. Dir.  
770-355-0774

## GREATER BAY AREA

Dave Karrick – Chair  
925-417-5550  
Alicia Karrick – Exec. Dir.  
510-398-9185

## GREATER KANSAS CITY

Mark McKenzie – Chair  
913-432-6688  
Brett Heinrich – Exec. Dir.  
785-825-7710

## ILLINOIS-INDIANA

Skyler Bilbo – Chair  
217-342-2242  
Mitch Bortner – Vice Chair  
206-348-0078

## LOUISIANA

Randy Laguna – Chair  
504-464-6236 ext 224  
Ellen Ballard – Exec. Dir.  
318-688-8800

## MICHIGAN

Doug Irvine, Jr. – Chair  
616-784-1644

## MINNESOTA-DAKOTAS

Marc Huag – Chair  
701-232-7008  
Tina Hoff – Exec. Dir.  
701-709-1899

## NEW ENGLAND

Lisa DiRienzo – Chair  
508-298-2134  
Cheryl Tsetsilas – Exec. Dir.  
603-890-3331

## NEW JERSEY

Thomas Bowlby, Jr. – Chair  
908-226-5313  
Victor Lugo – Exec. Dir.  
201-635-0400

## NEW MEXICO

Paul Chavez – Chair  
505-898-9197  
Jeriod Towery – Vice Chair  
505-410-4007

## NORTH CAROLINA

Jason Graham – Chair  
919-533-2356  
John Turnage – Exec. Dir.  
919-624-3456

## OHIO

Scott Huber – Exec. Dir.  
513-942-1500

## PACIFIC NORTHWEST

Chris Russell – Chair  
360-734-4940  
Ron Greenman – Exec. Dir.  
253-576-9700

## SACRAMENTO VALLEY

Jordan Hopkins – Chair  
Paulene Norwood – Exec. Dir.  
916-296-0635

## SAN DIEGO

Mark Scott – Chair  
619-778-2377  
Rhonda Gudger – Exec. Dir.  
951-326-4600

## SCHUYLKILL

Christopher Campion, Jr. – Chair  
732-798-0911  
Meaghen Wills – Exec. Dir.  
610-754-7836

## SOUTH CAROLINA

Tyler Blume – Chair  
864-909-2643  
Ashley McAdams – Exec. Dir.  
864-561-4088

## SOUTHERN CALIFORNIA

Vahe Zohrabian – Exec. Dir.,  
Treasurer  
818-822-1797

## TENNESSEE

Casey Milhorn – Chair  
615-349-5278  
David Pulliam – Exec. Dir.  
901-484-0605

## UTAH ROCKY MOUNTAIN

Mark Winder, Jr. – Chair  
385-630-8064  
Brent Heiner – Exec. Dir.  
801-544-0363

## VIRGINIA

Bob Beckwith – Chair  
540-659-4675  
Steve McGee – Exec. Dir.  
757-544-0520

# AFSA AFFILIATE MEMBERS

## OKLAHOMA AFFILIATE

ofsa.info  
Tim Hollon – Pres.  
918-851-2416

## TEXAS AFFILIATE

fscatx.org  
David Stone – Pres.  
713-466-9898  
Sarah Kiefer – Exec. Dir.  
512-844-6632



# AFSA NEW MEMBERS

New members as of April 23, 2024

## ASSOCIATES

Arbiter Inc., Washougal, WA  
Exact Pipe Tool, Akron, OH  
Flow: Standpipe Flow Testing, Richmond, VA  
Kearns Brinen & Monaghan, Greenville, SC

## CONTRACTORS

Alliance Insurance Group, Arvada, CO  
AM-PM Alarms, LLC, Plano, TX  
Bay Fire Sprinklers INC, Castroville, CA  
Diamond Fire Protection Co., Lake Elsinore, CA  
Fire & Safety Commodities, Inc, Laplace, LA  
National Fire Sprinkler Design LLC, Sutton, MA  
Outlaw Fire Protection, Marion, OH  
Trekline Solutions, Pompano Beach, FL

## DESIGNERS

Tetra Protection Inc., Ottawa, ON

## FACILITY MANAGERS

Maiya Mitchell, West Milton, NY

## AHJS

Russell Alexander, Fountain Inn, SC  
Chad Arp, Canton, GA  
Kenneth Atherton, Linthicum Heights, MD  
Michael Baj, Rochester, NY  
Ethan Borrero, Redmond, OR  
Chris Boyd, Oroville, CA  
Robert Camps, Gilbert, AZ  
Todd Conner, Rockledge, FL  
Rebecca Crosby, Florence, AZ  
Joshua Cunningham, Charlotte, NC  
Robert Dallimore, San Marcos, TX  
Clayton Dignam, Porterville, CA  
Elizabeth Forbes, Winter Park, FL  
Mike Froelich, Toledo, OH  
Lauren Gilbert, Las Vegas, NV  
Ricardo Gonzalez, Anaheim, CA  
Wilson Green, Conway, AR  
Dustin Hamer, Las Vegas, NV  
Donald Harris, Langhorne, PA  
Chris Hatfield, Logan, WV  
Tyler Hays, Pleasanton, CA  
Zared Ibarra, San Bernardino, CA  
Rick Irons, Henderson, NV  
Nikki Kelly, Rockledge, FL  
Robert Kessenich, Janesville, WI  
Mary Kratovel, Burgaw, NC  
Cheyenne Kyle, Porterville, CA  
Thomas Lewry, Glens Falls, NY  
Daniel Louder, Georgetown, DE  
Matthew Lyman, Wahiawa, HI  
Marcello Maggio, Rockledge, FL  
Claire Mahlmeister, Walker, MI  
Keith Maine, South Kingstown, RI  
Curtis Markloff, San Bernardino, CA  
Donald Mastro, Hazlet, NJ  
Kenneth McGowan, Potsdam, NY  
Michael McHugh, Wahiawa, HI  
Ryan McLaurin, Titusville, FL  
Alberto Miranda, El Segundo, CA  
Thomas Morgan, Waxhaw, NC  
Mark Mosher, Gloversville, NY  
John Naylor, Reading, PA  
Michael Paruti, Fairfax, VA  
Alex Payne, Belleville, WI  
Greg Piche, West Palm Beach, FL  
Jason Pierce, Kirkland, WA  
Kevin Ritton, Oneonta, NY  
Rodney Ryalls, Burkburnett, TX

Ryan Schartel, Philadelphia, PA  
Marc Sciacca, Rockledge, FL  
Michael Secor, Buffalo, NY  
Stephen Seminsky, Follansbee, WV  
Spencer Slayton, Syracuse, NY  
Renie Soriano, Wahiawa, HI  
Harold St. Clair, Las Vegas, NV  
Thomas Thomson, Richmond, VA  
Ben Toney, Tampa, FL  
Benjamin Ufland, Rockledge, FL  
Daniel Urbancic, Henderson, NV  
Nancy Van Voorhees, Buffalo, NY  
Kyle Watson, Henderson, NV  
Mechelle West, Richardson, TX  
James Wilhelm, Hagerstown, MD  
Anthony Williams, Baton Rouge, LA  
Jonathan Williams, Charlottesville, VA  
Michael Williams, Centennial, CO  
David Williamson, Charlotte, NC  
Dave Zipoli, Deerfield Beach, FL  
Daniel Zunzunegui, Marco Island, FL  
Steven Zwally, Kure Beach, NC

# U.S. CONSTRUCTION REPORTS

## CONSTRUCTION STARTS FELL 8% IN FEBRUARY

Total construction starts fell 8% in February to a seasonally adjusted annual rate of \$1.07 trillion, according to Dodge Construction Network. Nonresidential building starts dropped 16%, while nonbuilding starts lost 3%, and residential starts fell by 2%.

For the 12 months ending February 2024, total construction starts were up 2% from the 12 months ending February 2023. Nonresidential building starts were down 2% while residential starts were 4% lower, and nonbuilding starts up 19% on a 12 month rolling sum basis.

"Construction activity was hit hard by higher rates and more restrictive credit standards," said Richard Branch, chief economist for Dodge Construction Network. "Starts struggled over the past several months as the lagged effect of higher rates impacted projects moving forward through the planning process. Additionally, the significant deficit of skilled labor led to further delays—especially in the manufacturing sector. While optimism should prevail in the second half of the year as the Federal Reserve begins to cut rates, some sectors like commercial, will make little headway over the remainder of the year." ■

## CONSTRUCTION STARTS LOSE 1% IN MARCH

Total construction starts fell 1% in March to a seasonally adjusted annual rate of \$1.06 trillion, according to Dodge Construction Network. Nonresidential building starts fell 9%, while nonbuilding starts improved by 7%, and residential starts moved 1% higher. On a year-to-date basis through March total construction starts were up 13% from the first three months of 2023. Residential starts were up 24%, while nonbuilding starts gained 16% and nonresidential building starts rose 2%.

For the 12 months ending March 2024, total construction starts were up 1% from the 12 months ending March 2023. Nonresidential building starts were down 8% while residential starts were flat, and nonbuilding starts were up 18% on a 12-month rolling sum basis.

"The construction sector has hit a soft patch to start 2024," said Richard Branch, chief economist for Dodge Construction Network. "However, this should not be overly surprising given high rates and restrictive credit. There are bright spots though as single family starts are moving higher and federal dollars are lifting nonbuilding starts. The recent hot inflation readings likely mean that rate cuts won't happen until later in the year, and as a result, the commercial and multifamily sectors will continue to languish." ■

## MONTHLY SUMMARY OF CONSTRUCTION CONTRACT VALUE

Prepared by Dodge Data & Analytics

### MONTHLY CONSTRUCTION STARTS

Millions of Dollars, Seasonally Adjusted Annual Rate

	Feb 2024	Jan 2024	% Change
Nonresidential Building	\$ 406,518	\$ 483,277	-16
Residential Building	\$ 392,329	\$ 398,769	-2
Nonbuilding Construction	\$ 275,087	\$ 282,877	-3
Total Construction	\$ 1,073,934	\$ 1,164,923	-8

### THE DODGE INDEX

(2000=100, Seasonally Adjusted)

### YEAR-TO-DATE CONSTRUCTION STARTS

Unadjusted Totals, in Millions of Dollars

	2 Mos. 2024	2 Mos. 2023	% Change
Nonresidential Building	\$ 67,624	\$ 53,586	26
Residential Building	\$ 62,378	\$ 47,247	32
Nonbuilding Construction	\$ 42,464	\$ 35,222	21
Total Construction	\$ 172,465	\$ 136,054	27

## MONTHLY SUMMARY OF CONSTRUCTION CONTRACT VALUE

Prepared by Dodge Data & Analytics

### MONTHLY CONSTRUCTION STARTS

Millions of Dollars, Seasonally Adjusted Annual Rate

	March 2024	Feb 2024	% Change
Nonresidential Building	\$ 363,194	\$ 398,535	-9
Residential Building	\$ 399,714	\$ 394,837	1
Nonbuilding Construction	\$ 297,894	\$ 278,794	7
Total Construction	\$ 1,060,802	\$ 1,072,166	-1

### THE DODGE INDEX

(2000=100, Seasonally Adjusted)

March 2024.....224  
February 2024.....227

### YEAR-TO-DATE CONSTRUCTION STARTS

Unadjusted Totals, in Millions of Dollars

	3 Mos. 2024	3 Mos. 2023	% Change
Nonresidential Building	\$ 96,192	\$ 94,112	2
Residential Building	\$ 97,648	\$ 78,442	24
Nonbuilding Construction	\$ 66,918	\$ 57,782	16
Total Construction	\$ 260,759	\$ 230,336	13



# PEOPLE IN THE NEWS

## NIBCO PROMOTES MURPHY

NIBCO INC. has announced the promotion of Christine Murphy to director of supply chain planning. In her new role, she will be responsible for supply chain planning, vendor-managed inventory demand planning, and material and vendor master data management.



MURPHY

Murphy joined NIBCO in 1994 as a credit analyst. During her career at NIBCO, she held several positions including senior corporate accountant, supply chain analyst, supply chain planner, project manager-supply management, data management analyst, and manager of demand planning. She was promoted to her most recent role of senior manager of demand planning and supply chain data services in March 2019.

Murphy holds a bachelor's degree in accounting from The University of Iowa and is a certified management accountant (CMA) and certified supply chain professional (CSCP). She completed the "Women in Leadership" certificate program from Valparaiso University in 2023. She is a member of the NIBCO 25-Year Club, the company's club for recognizing associates with 25 years or more of service. Visit [NIBCO.com/](http://NIBCO.com/).

## NFPA CONE CALORIMETER RECOGNIZED WITH 2024 DINENNO PRIZE

The National Fire Protection Association® (NFPA®) has announced that the development and deployment of the Cone Calorimeter will be recognized with the 2024 Philip J. DiNenno Prize. In addition, NFPA announced that Dr. Vytenis Babrauskas and Dr. Marc Janssens will be honored as "DiNenno Prize Laureates" for their contributions to developing and deploying this groundbreaking technology. The formal presentation of the DiNenno Prize and recognition of Dr. Babrauskas and Dr. Janssens will take place at the NFPA Stars at Night awards ceremony during the annual NFPA Conference & Expo® (C&E) in Orlando on Sunday, June 16, 2024.

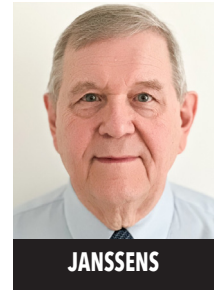
Dr. Vytenis Babrauskas, president of Fire Science and Technology, Inc., was the inventor of the original Cone Calorimeter. Dr. Marc L. Janssens, institute engineer at Southwest Research Institute,

played a central role in developing international standards for the Cone Calorimeter.

The Cone Calorimeter has had a significant impact on public safety, including the product used worldwide as a regulatory test method for building products, consumer products, and transportation; how materials perform when exposed to external radiation representative of real-scale fire conditions, it is possible to develop new materials that are less flammable. It also provides a powerful tool for scientists and



BABRAUSKAS



JANSSENS

safety engineers to characterize combustible materials. To learn more, visit [NFPA.org/](http://NFPA.org/). ■



**In Stock and Ready to Ship**  
**American Made & Melted**  
**Sch 10 and Sch 40**



**Quality hydrotested ERW Sch 10 and Sch 40 A795/A135 Type E Grade A black steel pipe for new construction and retrofit fire sprinkler systems**

10', 10' 6" and 21' lengths available  
 UL listed and FM approved  
 Shipped anywhere in the continental US

**Ask about our Sch 40 and Sch 80 Nipples:  
 Carbon Welded, Galvanized, and Zinc-Plated**



2282 University Drive  
 Lemont Furnace, PA 15456  
 724.438.7600  
[sales@fayettepipe.com](mailto:sales@fayettepipe.com)



[www.fayettepipe.com](http://www.fayettepipe.com)

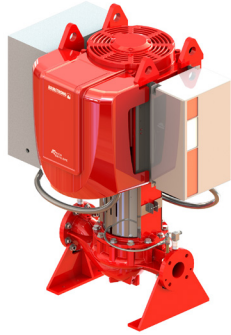
# PRODUCT NEWS

## ARMSTRONG'S NEW FIRE MANAGER ENHANCES FIRE PUMPS

Armstrong Fluid Technology announced the launch of Fire Manager, a cloud-based service that enables Active Performance Management in its industry-leading Design Envelope Fire Pumps.

The new service proactively tracks and manages pump performance and provides early diagnostic warnings and timely automated reports that help customers make informed decisions and take immediate action to deliver the most efficient and safest fire safety system performance.

Fire Manager records data points on municipal supply pressure, generates digital recordings of pump operation, provides pump analytics to support condition-based maintenance, offers timely notifications for impending issues in pump performance, and increased reliability and safety supported by real-time and historic test and performance data. Visit [ArmstrongFluidTechnology.com/](http://ArmstrongFluidTechnology.com/).



## AGF'S 8511Z SPRINKLER FLOOR CONTROL WITH ZURN ZW5004 VALVE

AGF proudly announces the integration of its renowned, domestically made Model 8511 Sprinkler Floor Control manifold with the Zurn Model ZW5004 adjustable pressure-reducing valve, offering unmatched efficiency and reliability for the fire sprinkler industry.

The AGF Commercial RiserPACK Model 8511Z is meticulously crafted in the USA using high-quality schedule 10 pipe, ensuring superior durability and performance. This assembly incorporates the AGF Model 2511 TESTanDRAIN valve with a pressure relief valve and drain trim, flow switch, pressure gauge, and AGF Universal 3-way gauge valve, along with a 2 1/2-in. hose valve. The 8511Z manifold was designed specifically for



floor control applications where a downstream drain outlet, capable of full flow is required for Pressure Reducing Valve acceptance testing and future inspection and testing requirements.

The integration of the Zurn ZW5004 Valve adds another layer of functionality and versatility to the AGF solution. The ZW5004 Valve is a 2-1/2-in. Pressure-Tru® Valve featuring an angle body and grooved connections. Certified as a floor control valve, an indicating valve, and a check valve in automatic sprinkler systems, it is also listed as a standpipe valve for CLASS I and CLASS III systems. With the ability to regulate pressure under both FLOW and NO-FLOW conditions, the ZW5004 Valve offers unparalleled precision and control. Field adjustments are made effortlessly thanks to its low torque design, requiring only 9 ft lb of torque. Despite its compact profile, the larger handwheel ensures smooth operation, even in tight spaces.

The combined features of the Model 8511Z Sprinkler Floor Control and Zurn ZW5004 pressure reducing valve make them ideal for a wide range of applications, including retrofit projects and new installations. Their compatibility and superior performance ensure optimal flow performance, making them indispensable assets for any fire protection system. Visit [AGFMFG.com/](http://AGFMFG.com/).

## GENERAL AIR PRODUCTS' VAPOR PIPE SHIELD IS C-UL LISTED

Vapor Pipe Shield went through rigorous testing in order to receive its UL Listing and c-UL Listing. Testing included evaluation in categories such as high ambient temperature stability, temperature cycling stability, toxicity, and corrosion rate, among others. Failure in any of the tests during the UL evaluation process would have prohibited Vapor Pipe Shield's listing. View a full summary of the UL evaluation on the website.

Piped directly in-line between the air compressor and dry pipe valve, Vapor Pipe Shield is as easy to install as an Air Maintenance Device. Once installed, the VpCl® molecules are dispersed throughout the piping using the airflow provided by the dry or pre-action system and then adsorb to the metal surface of the piping system. There, these molecules form a one-molecule thick barrier—or protective shield—on

the metal that repels corrosive elements from contacting the pipe directly, stopping corrosion in its tracks. And because VpCl® molecules can also penetrate any standing water in the piping network, it doesn't matter how much oxygen or moisture is in the sprinkler system—oxygen and moisture are rendered irrelevant. Contact General Air Products Director of Marketing Jim Doherty at [jdoherthy@generalairproducts.com](mailto:jdoherthy@generalairproducts.com) or visit [GeneralAirProducts.com/](http://GeneralAirProducts.com/).



## FAYETTE PIPE LAUNCHES SCHEDULE 7 EZ-FLOW

Fayette Pipe announces the expansion of its product line with the introduction of Schedule 7 EZ-Flow fire protection pipe. The new American-made product is suitable for welding or roll grooving and is produced in accordance with the latest revision of ASTM A795/A135. It is available in 21-ft lengths and diameters of 1 1/4-in., 1 1/2-in., 2-in., and 2 1/2-in..

Schedule 7 joins the company's Schedule 10, 40, and 80 black steel pipe offerings, reinforcing Fayette Pipe's commitment to providing comprehensive solutions for fire sprinkler applications.

Fayette Pipe's Schedule 7 is produced from high-quality American-made coil and seam welded using Fayette Pipe's high-frequency electric resistance weld (ERW) pipe mill. It conforms to Grade A standards with nominal wall thickness as specified. It's also 100% hydro-tested and produced from 100% American-made steel. The finished product is coated with the industry-recognized black coating, known for its durability and ease of use, ensuring that the pipe consistently arrives at job sites or warehouses in optimum condition. The interior of each pipe is treated with Fayette Pipe's MIC Defense clear corrosion inhibitor. Visit [FayettePipe.com/](http://FayettePipe.com/).

## NEW TYCO NG-2 NITROGEN GENERATOR

Johnson Controls announces the launch of the new Tyco NG-2 Nitrogen Generator. Available in stand-alone or wall-mounted models, the NG-2 Nitrogen Generator is engineered to replace the oxygen inside a sprinkler system with nitrogen, helping stop pipe corrosion and extend the life of dry pipe and pre-action fire sprinkler systems. It leverages a combination of enhanced data management and simplified controls to allow for faster, easier and smarter installation and operation.

The Tyco NG-2 Nitrogen Generator is optimized with an internal redesign, expanded capacity and a suite of both new and enhanced features while maintaining the core advantages of the legacy model (NG-1). The core of these updates is the interactive human machine interface (HMI) touchscreen display. It serves as a single point of access to view and manage operations, maintenance and diagnostic insights.

With real-time information at their fingertips, users can perform regular operation tasks, alarm management, pressure readings and maintenance scheduling with ease, while also viewing historical data and quickly performing tasks like installation, setup and condensate management.

The NG-2 also features a more efficient internal design that allows for faster installation and minimizes connections in the cabinet to reduce complexity and maintenance. It has a total system capacity of up to 6,500 gallons (24,605 litres) and uses a new Tyco oxygen removal vent controller that monitors and controls the venting process for two or six dry pipe and pre-action sprinkler systems. With a wet pipe air vent and nitrogen inerting vent kit, the generator features a unique "fill and purge" breathing method that removes corrosive oxygen and introduces 98% purity nitrogen throughout the entire fire sprinkler system. It also eliminates the need for a nitrogen tank and reduces the overall equipment footprint. It's ideal for data centers, cold storage facilities, warehouses, museums, parking structures, mission-critical manufacturing, healthcare buildings, stadiums, and libraries. The product is FM approved, CE certified and UL 508 listed. Visit [Tyco-Fire.com/products-and-solutions/corrosion-solutions/](http://Tyco-Fire.com/products-and-solutions/corrosion-solutions/).

## NIBCO EXPANDS BENCHPRESS PRODUCT LINE

NIBCO INC. continues to expand its line of patented carbon steel fittings to bring more press options for plumbing and mechanical carbon steel pipe applications, as well as fuel and gas carbon steel pipe applications.

BenchPress and BenchPressG fittings allow for easy, clean and fast installation of residential, commercial and industrial carbon steel piping systems. These heavy-duty fittings feature stainless steel grip rings and separator rings to ensure premium performance. The new configurations include new sizes of reducing couplings, thread adapters, tees and flanges.

Available in 1/2-in. to 2-in. sizes, the BenchPress and BenchPressG fittings can



be installed within seconds and require no threading equipment and lubricants, while maintaining joint integrity and professional appearance. Visit [NIBCO.com/BenchPress/](http://NIBCO.com/BenchPress/).

## THE MOST VERSATILE PORTABLE ROLL GROOVER ON THE MARKET

**1" to 12" pipe  
Schedule 40  
up to 8"**

**Swap out shafts  
in 30 Seconds**

**Most Cost Effective  
in the Industry**



## GRUVMASTER

- Model G-1X Max Strength
- Model G-2X Lighter Weight
- for in-the-air grooving



# INDUSTRY NEWS



## RELIABLE RECEIVES "COOLEST THING MADE IN SC" AWARD

Reliable Automatic Sprinkler was recently recognized as one of four finalists in the South Carolina Manufacturers Alliance 2024 competition, "The Coolest Thing Made in SC."

Advancing from a field of 166 nominated products, fire sprinklers advanced through four rounds during the month of March. Over 218,000 votes were cast during the competition. Each of the four finalists were invited to the State Capitol where they were presented their award by South Carolina Governor Henry McMaster.

The South Carolina State Senate has also passed a resolution, which was sponsored by Senators Rice and Alexander, recognizing Reliable as "... a manufacturing company that brings great pride to the State of South Carolina." Visit [ReliableSprinkler.com/](https://ReliableSprinkler.com/).

## NFPA TO MEET JUNE 17-19 IN ORLANDO

The National Fire Protection Association (NFPA®) will host its annual Conference & Expo at the Orange County Convention Center in Orlando, FL on June 17-19, 2024. This comprehensive event brings together thousands of the industry's leading professionals who will attend more than 120 educational sessions addressing the latest issues, challenges, and trends in the world of fire, electrical, and life safety, including code compliance, emergency preparedness and response, emerging technologies, global issues, public education, building and life safety, fire protection systems, industrial hazards, electrical safety, and much more.

The NFPA Expo will feature more than 350 exhibitors, showcasing the products and services

needed to help meet and maintain compliance with prevailing codes and standards in the design, construction and operation of all buildings and facilities. A series of presentations and special events will address specific topic areas, including electric vehicle safety, wildfire virtual reality, and CRAIG 1300®, the digital tool that collects and analyzes community data in support of community risk reduction.

The NFPA Spotlight on Public Education (SOPE) will include eight education sessions covering a wide range of public health topics and community risk reduction, along with two 4-hour workshops. In addition, the NFPA Spotlight on Latin America will offer eight sessions addressing industry issues impacting Latin America.

New for 2024, all attendees will have unprecedented access to the NFPA Learning Annex, which will feature three theaters highlighting the latest trends, resources, and learnings in building and life safety, with a focus on natural disaster preparedness and recovery; the latest issues facing today's firefighters; and NFPA products and solutions. Learn more at [NFPA.org/](https://NFPA.org/).

## SFPE'S NEW FOUNDATION REPORT

The SFPE Foundation, a charitable organization dedicated to enhancing the scientific understanding of fire and its interaction with the social, natural, and built environments, proudly announces a new report that examines Building Information Modeling, commonly known as BIM, in relation to the fire engineering landscape.

The Integration of Building Information Modeling with Fire Protection Systems, Software, and Workflows is the culmination of a

year-long research project led by Stephen B. Roth, P.E., president and chief technology officer of Carmelsoft. The Foundation awarded a research grant to Roth, and he set out to investigate BIM software tools and schemas available to fire engineers (FEs).

Through interviewing over 40 stakeholders, Roth learned that improvements could be made to software, data, and interoperability to enhance the design experience and expand BIM adoption amongst FEs. Roth's recommendations include that equipment manufacturers design more usable Revit families and that updates be made to the IFC (Industry Foundation Classes) schema for better interoperability. The report also explores the future of BIM in fire engineering, which includes the adoption of artificial intelligence tools and digital twins of physical buildings for smarter firefighting.

Accompanying the report is a supplementary user guide that includes expectations and recommendations on overcoming some of the workflow bottlenecks that occur when fire engineers are using FE-related software tools. Readers who wish to focus on the practical application of the research should check out the user guide first. Visit [sfpe.org/foundation/](https://sfpe.org/foundation/).

## WINSUPPLY RECOGNIZING PERFORMERS AND COMMITMENT TO INNOVATION

Winsupply is recognizing its outstanding performers and showcasing its commitment to innovation. More than 650 Winsupply local companies, support service employees, and more than 200 vendor partners attended Winsupply's 2024 Annual Meetings and Vendor Showcase in March 2024 in Orlando, Fla.

The event aims to provide a platform for participants to network and gain insights into the latest trends and innovations in the industry. Throughout the week, there will be an Awards Gala where Winsupply's Company of the Year and other distinguished awards will be presented, a Town Hall meeting with Winsupply, Inc. leadership to discuss their perspectives on the future, a Vendor Showcase, numerous training classes, and more. The event presents a unique opportunity for Winsupply professionals and vendors to connect, share knowledge, and explore new growth opportunities in the industry. Visit [WinsupplyInc.com/](https://WinsupplyInc.com/).

# YOUR NEXT TOP DESIGNER STARTS HERE



American Fire  
Sprinkler Association



## Beginning DESIGN SCHOOL

Re-designed for a hybrid approach, with six live webinars offered first, followed by one week of in-person instruction. Students will study the installation & design approach requirements of NFPA 13 (2019), prepare system layout drawings, and perform hydraulic calculations by hand.

➤ July 15 -26 (IN PERSON)

➤ Oct. 29 -Nov. 22

[WWW.FIRESPRINKLER.ORG/DESIGN](http://WWW.FIRESPRINKLER.ORG/DESIGN)

## Intermediate DESIGN SCHOOL

Experienced layout technicians will find this blended learning course useful to understand the tools they utilize in-depth and gain a deeper knowledge of layouts for standpipe systems, fire pumps, seismic protection, and the design requirements for general storage.

➤ July 22 - Aug. 2

➤ Nov. 5 - 15

[WWW.FIRESPRINKLER.ORG/NEXTLEVEL](http://WWW.FIRESPRINKLER.ORG/NEXTLEVEL)

# INDUSTRY NEWS



## RIGID CELEBRATES 25 YEARS

RIDGID®, a part of Emerson's professional tools portfolio, is celebrating 25 years as the industry leader in pressing this year. The brand first introduced press technology to North America in 1999 and has continued to help professional tradespeople utilize the platform to drive jobsite efficiencies. This commitment has led RIDGID to become the a recognizable name in pressing, with a product portfolio of innovative solutions that help tradesmen and women achieve fast, secure, and flame-free connections.

RIDGID press tools have long been recognized for delivering unprecedented versatility on residential, commercial and industrial installations and for making quick and reliable connections on copper, carbon steel, stainless steel and PEX tubing. Its no-mess, flameless operation provides secure connections in less than five seconds—wet or dry—making them ideal for a variety of applications. Recently, the brand launched the RP 115 Mini Press Tool, allowing more tradespeople than ever to take advantage of pressing technology.

Other innovations that have left an impact on the North American market over the years have the first lithium-ion battery for press tools, the first press tool accessories for cutting strut and soil pipe, the first tools for pressing iron pipe, and the first swivel rings for access to tight spaces. Visit [RIDGID.com/](http://RIDGID.com/).

## NFPA'S NEW RESOURCES ON EVs

As electric vehicles (EV) enter our roadways, the National Fire Protection Association® (NFPA®) has introduced a series of free resources, guidelines, and information to help raise awareness about EV fires and safe EV charging practices at home.

According to the International Energy Agency, global sales of electric vehicles exceeded 10 million in 2022 and are expected to grow in the coming years. At the same time, consumer concerns

about the fire safety risk of EVs are increasing. Lithium-ion batteries, the most widely used and reliable source of energy for electric vehicles, are central to questions about safety.

The new online resources from NFPA feature detailed information about lithium-ion batteries, EV maintenance, and what tips consumers can follow to stay safe when charging their electric vehicle at home. Resources for safety educators and consumers, including a safety tip sheet and social media cards, are all free and downloadable. A free training course is also available to the public that helps address some of the common concerns and myths about owning an electrical vehicle, including safety features, charge types, and battery life.

NFPA recommends these tips when charging electric vehicles at home to help prevent fires: Before charging an electric vehicle at home, have a qualified electrician check your electrical system to see if it can handle charging. Install charging equipment in safe locations. Keep away from busy areas and things that could catch fire. Use devices that are listed by a qualified testing laboratory. Read and follow all manufacturer directions. Check chargers and cords for damage before using. Never use if damaged. Do not use more than one plug or extension cord with the charger. Keep charging items out of reach of children and animals when not in use. Cover the charging station outlet to keep water out. Download a free safety tip sheet at [nfpa.org/evsafetyinfo/](http://nfpa.org/evsafetyinfo/).

## ARMSTRONG CELEBRATES 90 YEARS

Armstrong Fluid Technology marked its 90th anniversary this April, celebrating a significant milestone of longevity and innovation in the fluid-flow systems industry. Since its founding in Toronto, Canada, in 1934 by Samuel Allan Armstrong, the company has expanded from the challenges of the Great Depression to become a leader in its field. Today, Armstrong operates eight manufacturing fa-

cilities across four continents, showcasing its global reach and commitment to excellence in design, engineering, and manufacturing.

The year 1952

saw the company, under the leadership of James Allan Cary Armstrong, adopt a series of strategic initiatives that reshaped its operations and facilitated international growth. These initiatives have been fundamental to Armstrong's development and success on a global scale.

The anniversary was celebrated by Armstrong's offices globally, with events reflecting the diverse cultural traditions of its international teams. These celebrations were a nod to the company's rich history and its future aspirations. Visit [ArmstrongFluidTechnology.com/](http://ArmstrongFluidTechnology.com/). ■



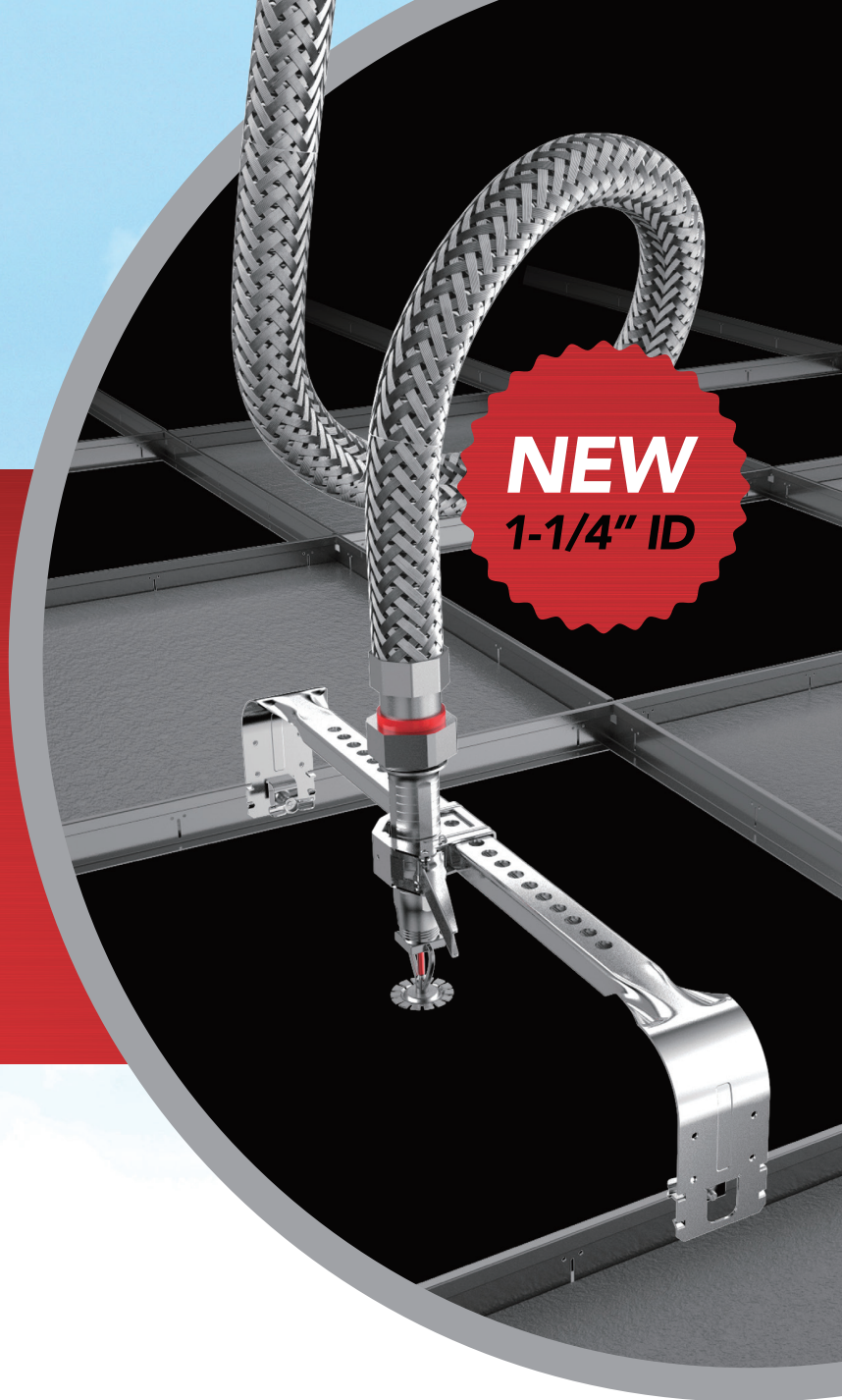
## ADVERTISERS

<b>AFSA43</b>	<b>BC</b>
<b>AGF MANUFACTURING, INC.</b>	<b>45</b>
<b>ARGCO</b>	<b>59</b>
<b>BAVCO</b>	<b>15</b>
<b>BULL MOOSE TUBE CO.</b>	<b>3</b>
<b>DUYAR</b>	<b>37</b>
<b>EASYFLEX</b>	<b>IBC</b>
<b>FPC MAGAZINE</b>	<b>43</b>
<b>FAYETTE PIPE</b>	<b>57</b>
<b>FERGUSON FIRE &amp; FABRICATION</b>	<b>51</b>
<b>GENERAL AIR PRODUCTS, INC.</b>	<b>9</b>
<b>HARRINGTON STORZ CONNECT</b>	<b>4</b>
<b>METRAFLEX</b>	<b>13</b>
<b>REED MANUFACTURING COMPANY</b>	<b>7</b>
<b>RELIABLE AUTOMATIC SPRINKLER CO.</b>	<b>IFC</b>
<b>TALCO</b>	<b>39</b>
<b>VICTAULIC</b>	<b>19</b>
<b>VIKING CORPORATION</b>	<b>11</b>

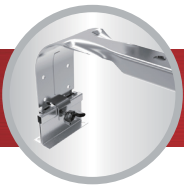


TAKE IT TO THE  
***NEXT LEVEL!***

WITH EASYFLEX'S **NEWLY UPGRADED**  
ULTRA PERFORMANCE FLEXIBLE SPRINKLER FITTINGS

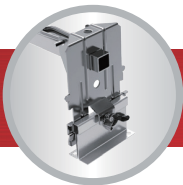


## BRACKET SYSTEMS



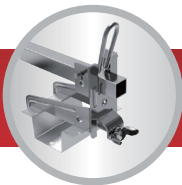
**OGSB**

FOR T-BARS



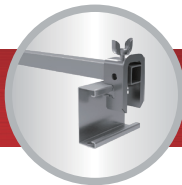
**TBS**

FOR T-BARS



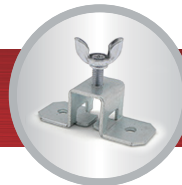
**HCB**

FOR HAT CHANNELS



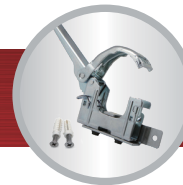
**MSB**

FOR METAL STUDS



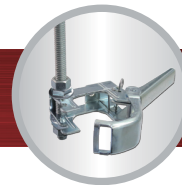
**WSB**

FOR WOOD BEAMS



**OSSBW**

FOR SIDE WALLS



**OSSBJ**

FOR SHELLS

info@easyflexusa.com • 888.577.8999 • easyflexusa.com



SEP 18-21

GAYLORD ROCKIES RESORT

2024

# DENVER



CONVENTION, EXHIBITION  
& APPRENTICE COMPETITION

# ADVENTURE AWAITS



[firesprinkler.org/AFSA43](https://firesprinkler.org/AFSA43)