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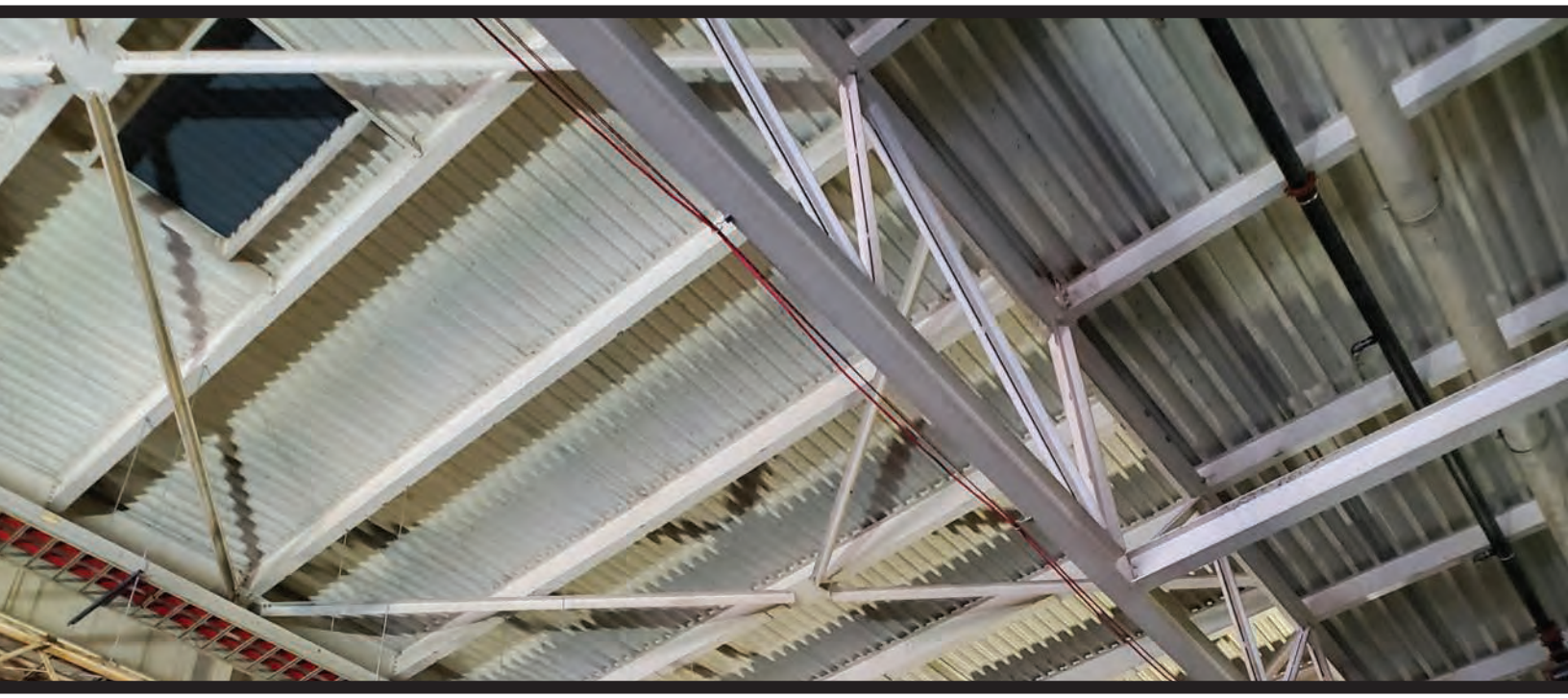

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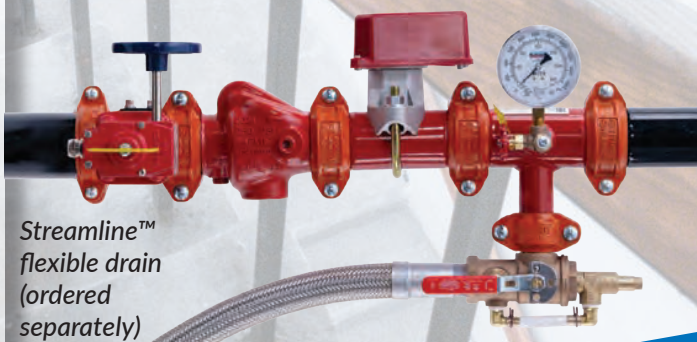

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In this Edition

April

Obstructed Construction

Riser Rooms

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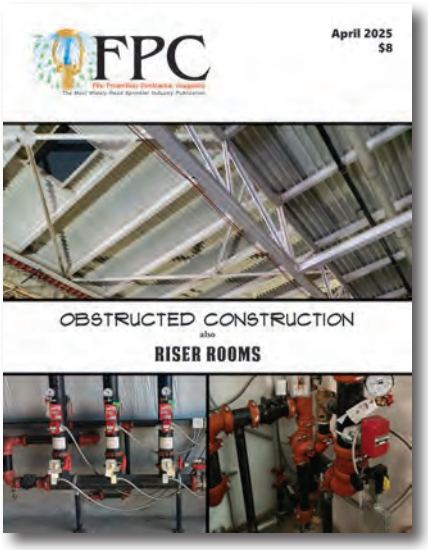
~ On the Cover ~



Cover photos courtesy of Tim Brunett, Triton Fire Group, Inc. and David Cook, Aegis Fire Protection, LLC. See our feature articles beginning on page 12. This edition is packed full of so much good stuff you will not want to skip a single page!

COLUMNS

NEWS

DEPARTMENTS

Guest Editorial

Some Residential Fire Sprinklers Talking Points

By Paul Eichler, Delaware Fire Sprinkler Coalition, (302) 359-3057, ike653@hotmail.com

[Edited for space, for more, contact Paul.]

Fortunately, there have been many constructive conversations lately about residential fire sprinklers, so I put together a brief list of conversation points.

Communities known for requiring residential fire sprinkler systems include: City of Newark, Delaware; City of Lewes, Delaware; Town of Milton, Delaware; City of Delaware City (townhomes); Bucks County, Pennsylvania; City of Scottsdale, Arizona; State of Maryland; State of California; Washington, D.C.

Advocacy Resources:

Home Fire Sprinkler Coalition: https://homefiresprinkler.org

National Fire Sprinkler Association: https://nfsa.org

https://www.linkedin.com/posts/national-fire-sprinkler-association_nfsa-featured-on-viewpoint-with-dennis-quaid-activity-7282117186393931776-jVl_?utm_source=share&utm_medium=member_android

National Fire Protection Association Fire Sprinkler Initiative: https://www.nfpa.org/education-and-research/home-fire-safety/fire-sprinkler-initiative

NFPA|Burn Survivor Stories:

United States Fire Administration home fire sprinklers.

Phoenix Society Phoenix Society for Burn Survivors.

Common Voices, A Fire Safety Coalition.

Additional Information:

NFPA Research, "U.S Experience with Sprinklers" Tucker McGee, April 1, 2024 – "…when sprinklers were present, the civilian fire death and injury rates per fire were 90% and 32% lower, respectively. In addition, the rate of firefighter injuries per fire was 35% lower.

"Sprinklers operated in 95% of the home structure fires in which systems were present…

"They were effective at controlling the fire in 98% of the fires in which they operated.

"Sprinklers save lives and reduce injuries and property loss. From 2017 to 2021, the civilian death and injury rates in home structure fires where sprinklers were present were 89% and 31% lower, respectively, than in home structure fires with no automatic extinguishing system (AES). In addition, the average property loss per home structure fire was 55% lower in reported home fires where sprinklers were present compared to fires in homes with no sprinkler systems and the firefighter injury rate was 48% lower.

"In reported home structure fires where sprinklers were present, the fire was confined to the object or room of origin 96% of the time, compared to 72% in homes with no AES."

According to past information from the Delaware Insurance Commissioner's Office, 19 insurance companies that offer homeowners' coverage in Delaware offer a discount on the annual premium, ranging from 2% to 20% for homes that have a residential fire sprinkler system.

By Paul Eichler, Delaware Fire Sprinkler Coalition, 302) 359-3057, ike653@hotmail.com. [Edited for space, for more, contact Paul.]

***FPC* magazine,** **Fire Protection Contractor**
ISSN: 1043-2485

Volume 48, No. 4
Since 1978

EDITOR & PUBLISHER *Brant R. Brumbeloe* | **ASSOCIATE EDITOR & PRODUCTION MANAGER** *Tami L. Collins*
ASSOCIATE EDITOR & OFFICE MANAGER *Leigh Petersen* | **ASSOCIATE EDITOR & OFFICE ASSISTANT** *En Brumbeloe*
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FPC/Fire Protection Contractor is published for the benefit of fire protection contractors, engineers, designers, sprinkler fitters, apprentices, fabricators, manufacturers, and distributors of fire protection products used in automatic fire sprinkler systems.

Circulation: Last month, March 2025, our circulation was 1,750 copies and 59 digital subscriptions. We have subscribers throughout the United States and Canada and several foreign countries and territories.

Readership: Fire sprinkler contractors and systems designers make up most of our circulation. Readers include architects, engineers, fabricators, manufacturers, suppliers, unions, fitters, universities, libraries, etc., totaling over 40 categories.

Subscription Rates: In the U.S.: 3 years/$171, 2 years/$124, 1 year/$68. Mexico and other countries, $145 per year (payable in U.S. dollars), First Class International. Canadian rates are (USD): 3 years/$272, 2 years/$192, 1 year/$102 (5% GST included). Digital rates: $55 per year.

Advertising deadlines for display ads is the first of each month for insertion in the following month's issue.

Submittals: All letters, articles, and photographs are welcome and should be directed to Editor's attention. Material will not be returned unless accompanied by self-addressed, stamped envelope.

Disclaimer: The information contained herein is correct to the best of our knowledge. *FPC* will not knowingly publish false information, but individual authors and letter writers are responsible for the facts they represent. Recommendations and suggestions are made without guarantee as to result since conditions of use are beyond our control. The contents are intended only as a source of information.

FPC/Fire Protection Contractor is published monthly in Auburn, California; Phone: (530) 823-0706, Website: www.fpcmag.com, E-mail: info@fpcmag.com by Haden B. Brumbeloe & Associates, Inc. Periodicals postage paid at Auburn, California and additional mailing offices.

POSTMASTER: Send address changes to
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Auburn, CA 95604-0370

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Letters

Readership Survey on *FPC* magazine

1. What do you think is the biggest problem/concern in the fire sprinkler industry today?

Educating code officials on the critical value of automatic fire sprinkler systems and follow-up enforcement. Also, a general education to the public that will help in this crucial effort.

2. What would you like to see covered (or covered more in depth) in FPC?

More actual success stories where fire sprinklers made a difference.

More People news is always appreciated.

3. What field of the fire sprinkler industry do you work in? (Manufacturer, designer, pipefitter, business owner, etc.)

Manufacturing, retired.

4. Would you recommend FPC *to others?:*

Absolutely. It remains a great window to our Industry.

5. Any other comments or suggestions?:

Great job keeping us informed. I've been a supporter and subscriber to *FPC* for nearly 50 years.

Submitted by:
— George Von Gnatensky
TOLCO
tolcogvg@aol.com

CORRECTION/EDIT:

On the Table of Contents page of our March 2025 edition, we left off a cover photo credit. We'd like to add **Henry Fontana, Branch Manager, VFS Fire & Security Services, A Fortis Brand** as a contributor to the list.

We appreciate you, Henry!

~On the Cover~

Cover photos from Reliable Automatic Sprinkler Co. and Victaulic. See the Dry Pipe feature articles starting on page 14. Our History feature begins on page 20. Russ Leavitt reminds us not to ignore the small stuff on page 22. Also, catch the many opportunities coming up in both the Calendar and Seminars & Events columns! Don't put this edition down until you have read every page!

Corrections Policy:

It is the policy of *FPC/Fire Protection Contractor* magazine to publish corrections to all errors of substance.

Please report errors by E-mail: info@fpcmag.com, or by writing to: Brant R.Brumbeloe, Editor, *FPC/Fire Protection Contractor* magazine, PO Box 370, Auburn, CA 95604.

Advertisers Index

National

Warehouse Fires

An article posted March 4, 2025, on www.ctif.org, said a recent report analyzed the 2022 fire that destroyed a 1.2 million square foot Walmart distribution center in Plainfield, Indiana, highlighting unique challenges.

Warehouses this size are often referred to as "mega-warehouses."

This report was recently published in an in-depth article on www.firehouse.com.

The report emphasized the need for specialized training, **enhanced fire protection systems,** and more.

The ***2024 Mega-Warehouse Fire Incident Report,*** conducted by the **National Fallen Firefighters Foundation,** provides a comprehensive analysis of the fire.

Despite advanced fire protection systems and a robust response from the Plainfield Fire Territory (PFT), the incident resulted in the destruction of the facility. The report aims to provide critical lessons and recommendations.

It was noted that:

Firefighters encountered difficulty locating and shutting down the appropriate **sprinkler** valves, **as the building had 30 roof-level sprinkler systems.**

Despite the initial success of the sprinklers, the re-emergence of flames and rapid fire spread overwhelmed the fixed fire systems. Efforts to regain control by restarting the fire pumps proved ineffective. Eventually, a defensive firefighting strategy was adopted, but the fire consumed the entire facility, resulting in its total loss.

Fire Protection Systems: While the facility was equipped with advanced fire suppression systems, including ESFR (Early Suppression Fast Response) sprinklers and CMDA (Control Mode Density Area) sprinklers, these systems failed to prevent the catastrophic fire.

Vertical Fire Spread: Analysis suggests the fire likely shouldered undetected on upper levels for 30 to 40 minutes, potentially finding a path to ignite combustible goods above. **The fire pumps were shut down just as this secondary fire began to develop, rendering the upper-level sprinklers ineffective.**

The report calls for a re-evaluation of fire suppression strategies, particularly for multi-level rack storage systems.

Other Recommendations include: **Enhanced Fire Protection Systems – Reassess sprinkler design and fire suppression methods to better handle complex rack storage environments;** and, more on Prevention and Inspections, including conducting rigorous maintenance and inspections to identify and address vulnerabilities in fire protection systems.

California

Vacant Commercial Properties

The City of Stockton, California, estimates there are around 250 vacant commercial properties city-wide.

This according to an item by Gabriel Porras posted March 6, 2025, on www.abc10.com. City leaders in Stockton are working on a plan to start charging fees to owners of vacant buildings.

Michael Huber, Executive Director of the Downtown Stockton Alliance, estimates that around 30 to 40 of them are in the 123 square block downtown district he represents.

"A lot of times, people will buy a building down here because they think they got a good deal on it, and then when they go in to do the rehabilitation, they realize they have to do earthquake, **fire sprinklers...** and so sometimes the cost pushes them away," said Huber. "When you have empty buildings, you have blight and you have the risk of unshel-

tered getting in and starting a fire inside."

For those reasons, city staffers proposed an ordinance that would require owners to register their vacant properties, maintain them and pay fees, starting at $250 for year one and reaching $1,000 by year three.

The majority of councilmembers expressed support for the ordinance but asked city staffers increase the fees before bringing it back for a likely approval.

"You can't just buy a building and have it be derelict in our community," said Stockton Mayor Christina Fugazi.

"That's the fear, is that some of these beautiful buildings will be burned down and then have to be removed. That's not what we want. We want a beautiful, thriving downtown," said Huber.

Minnesota

NFSA Testifies in Favor of Retrofit Bill

During the week of March 3, 2025, a bill that would appropriate funding to expand retrofitting residential high-rise buildings with lifesaving **fire sprinklers** was heard in both the Minnesota House and Minnesota Senate's Housing Committees.

On March 5, Rep. Mohamud Noor presented House File 1334, co-authored by Rep. Spencer Igo, State Rep. Michael Howard, and Rep. Samakab Hussein.

The following day, Senator Zaynab Mohamed presented Senate File 1895, co-authored by Senator Doron Clark and Senator Rich Draheim.

Testifying in support were the **National Fire Sprinkler Association's Tom Brace and Tim Butler, Craig Bistodeau with Sprinkler Fitters Local 417 Training,** Minneapolis Fire Department Chief Bryan Tyner, Hopkins Mayor Patrick Hanlon, Hopkins Fire Department Deputy Fire Chief Mike Wenshau, and Minnesota Housing Agency's Dan Kitzberger.

All testifiers spoke about the importance of fire sprinklers in saving lives. In both committees the bill was laid over for possible inclusion in the committee's omnibus bill.

Nevada

Fix Rural Schools

An article by Hillary Davis posted March 5, 2025, on www.lasvegassun.com, Las Vegas, Nevada, highlights the need to fix schools including the installation of **fire sprinklers.**

In a Nevada Assembly Committee of Government Affairs hearing, lawmakers considered Assembly Bill 224. The proposal calls for the state to sell $100 million in bonds to help the smallest, neediest school districts replace or repair their schools.

For example, White Pine Middle School lacks a stable foundation, consistent heating and cooling, **fire sprinklers,** a fully functional gym and locker rooms, outdoor play space, parking, fencing, and a secure front entrance. Its roof leaks and its floors are full of asbestos. It was built in 1913 as a high school.

David E. Norman Elementary School, which dates to 1909, is a mile away and in similar condition.

The White Pine School District estimates a new combination elementary-middle school in Ely would cost $98.5 million.

Argentina

NFPA Says That San Juan Has Agreed to Use Key Codes and *Standards*

A March 6, 2025, article by Isabelle Crow, on www.fireandsafetyjournalamericas.com, said the National Fire Protection Association has announced that the San Juan Province of Argentina has signed a regulatory agreement to reference four key NFPA codes and *Standards* in its provincial regulations.

The move, which took place in October 2024, represents a step forward in ensuring the safety of lives and property in the region- where nearly one million people reside.

Olga Caledonia, Director of International Development at NFPA said, "This is a monumental step forward in safety for the people of Argentina.

"Each of these newly referenced NFPA codes and *Standards* addresses a unique and critical aspect of fire and life safety,

from ensuring the systems meant to alert people of a fire or other emergency are in place to ensuring we have the appropriate and most advanced fire suppression systems working properly to help save lives and property."

NFPA 25, ***Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems,*** provides the minimum requirements for inspecting, testing, and maintaining water-based fire protection systems, such as fire sprinklers, standpipes, and fire pumps.

Compliance with NFPA 25 helps maximize system integrity to avoid failure and ensure fast, effective response in the event of a fire.

NFPA 20, ***Standard for the Installation of Stationary Pumps for Fire Protection,*** outlines the requirements for the selection and installation of pumps to ensure that water-based fire protection systems will function properly and deliver adequate and reliable water supply.

NFPA 13, ***Standard for the Installation of Sprinkler Systems,*** is the industry benchmark for the design and installation of automatic fire sprinkler systems. The *Standard* addresses sprinkler system design approaches, system installation, and component options.

NFPA 72, ***National Fire Alarm and Signaling Code,*** provides the latest safety provisions to meet ever-changing fire detection, signaling, and emergency communication demands.

In addition to the core focus on fire alarm systems, NFPA 72 also includes requirements for mass notification systems used for natural disasters, violent events, and other emergency scenarios.

This new agreement to start using NFPA 25, 20, 13, and 72 is the first of its kind in the San Juan Province and demonstrates authorities' dedication to improving fire safety and protecting its citizens.

The NFPA has also announced that testimonies from San Juan authorities and safety professionals have confirmed their commitment to this ongoing effort.

Victor Heredia is one of those professionals, as the CEO of San Juan-based fire protection engineering firm VINOX and a member of NFPA, who said, "In our province, a tremendous amount of industrial development has recently begun, including exponential growth of mining facilities located in remote and in some cases high-altitude areas.

"That is why it was decided to reference these international *Standards* from NFPA."

An investment in education: The NFPA has also announced that beyond referencing these codes and *Standards*, the San Juan Province is also investing in training.

Approximately 40 fire and life safety professionals from across the province, in both the public and private sectors, will receive training on each of these four NFPA codes and *Standards*. This training is being provided through Argentina-based company Fire/Safety Report.

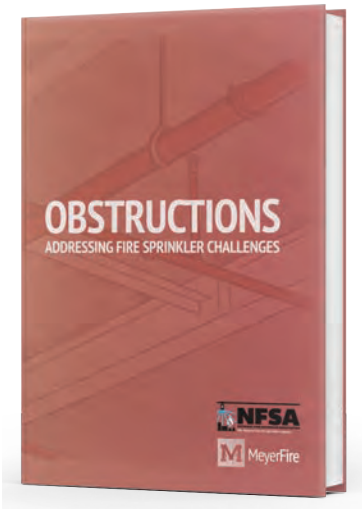
Director, Fire/Safety Report, Walter Grijalvo's said, "It's not enough to simply say, `Start using these codes.'

"Providing expert training and education will greatly increase the speed at which the use of these codes and *Standards* can have a real, positive impact on the safety of people and protection of property in San Juan, Argentina."

❑

Please send your news, analysis, and opinions to: info@fpcmag.com

Literature



Obstruction Rules Made Simple: *NFSA and MeyerFire's new book by Jeffrey M. Hugo, CBO, and Joseph Meyer, P.E. helps you master sprinkler obstructions.*

You walk into a building and instinctively look up – because that's what sprinkler professionals do. You see open bar joists, approximately 20" deep, with a corrugated pan deck above. Your eyes scan further, spotting a branch line of sprinklers positioned about 4" above an HVAC duct. But then – something catches your attention. A row of light fixtures is directly below the sprinklers. If you're like most in the fire sprinkler world, your mind instantly goes to the "beam rule" or the "three times rule."

But do those rules apply here? That's where the National Fire Sprinkler Association (NFSA) and MeyerFire's latest book on obstructions comes in. Designed as a highly visual step-by-step guide, this book simplifies obstruction rules and walks users through a structured approach to evaluating sprinkler layout challenges. Rather than guessing or relying on instinct, the book helps professionals systematically apply NFPA 13's obstruction criteria with confidence.

Step-by-Step Approach to Obstructions: The book's methodology starts the sprinkler professional above to get a better fundamental understanding of the space itself. From there, the book lays out a clear 10-step process:

1. Understand the space – What is going on in this space? What is the architectural, mechanical, electrical, plumbing, and other systems layout? Did the floor plan or shop drawings reflect this scenario?

2. Determine sprinkler requirements – Are sprinklers necessary? Do the codes and standards require sprinklers in this area? Does NFPA 13 exempt this space from sprinklers?

3. Identify the occupancy classification – Based on the use of the space, what hazard classification, or if it is a storage occupancy, what is being stored, classified as a commodity?

4. Evaluate construction type – Is the ceiling construction considered obstructed or unobstructed?

5. Assess combustibility – Are the surface materials in the space combustible, limited combustible, or noncombustible?

6. Plan sprinkler layout and positioning – Review the size, type, and position of the sprinkler and compare it to NFPA 13. Is it the right sprinkler type and placement?

7. Analyze obstructions relative to the deflector – Is the obstruction within the first 18" or beyond? If beyond, how wide is the obstruction?

8. Review general obstruction rules – Review (2025 NFPA 13) Chapter 9.5 for general obstruction rules for all sprinklers.

9. Determine specific sprinkler obstruction rules – Review and apply the specific obstruction rules per each sprinkler. Rules like the "3x rule," "4x rule," partition rule, beam rule, and others.

10. Finalize the layout based on the obstruction evaluation – Evaluate to ensure compliance with NFPA 13.

Why This Book Matters: Every sprinkler designer, plan reviewer, and installer has faced the headache of determining whether an obstruction requires adjustment. With MeyerFire and NFSA's expertise, this guide provides clarity on when and how NFPA 13's obstruction rules apply. It doesn't just teach you the rules – it gives you a repeatable framework to analyze any scenario.

Due out in Summer 2025, through: www.nfsa.org and www.meyerfire.com.

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Obstructed Construction:

Tales From the Roof Pockets

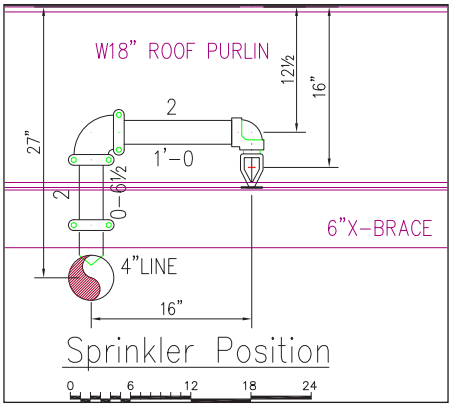
By Tim Brunett

In the greater Detroit area, there is a wide inventory of industrial buildings created to support the automotive industry. These structures were designed to carry all manner of equipment, so the steel is heavy, tall, deep, and braced like an iron spider's dream web.

When the buildings turn over and get used for storage, repurposing of the areas creates opportunities and headaches. Smart developers tear out all the unused mechanical and electrical systems, leaving a blank canvas to protect the latest storage commodities. Now comes the fun part.

To design and install new ESFR systems in these obstruction conditions takes an odd route through the NFPA *Codes* and one's imagination. Our in-house slang for these extreme roof conditions is "roof pockets." One of the latest installs started with a high roof area recently cleared of a heavy equipment trestle.

Because of the roof height, the ESFR protection provided was planned to be the Tyco K33.6 (TY9286). The centerline of thermal sensing element to ceiling distance must be 17" or less, in accordance with the Tyco data sheet. That makes it so each beam pocket requires a sprinkler as the starting point for any design. The beam pockets are formed by 18" deep beams, 7'-6" on center. The design gets complicated by the 6" sway bracing along the bottom of the steel.

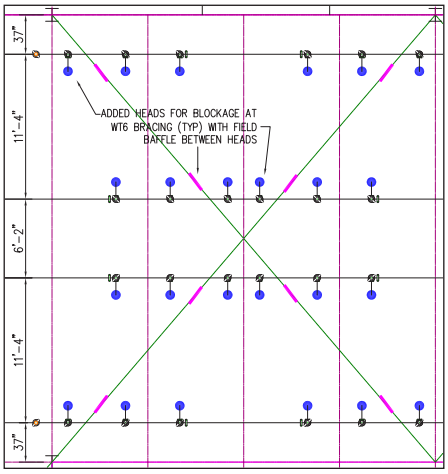


Each sprinkler had to be placed in the correct X, Y, and Z configuration to meet all criteria:

- Not too far from the deck
- In every pocket
- Move the branchline to be excluded as an obstruction (use arm-overs)
- Add heads for obstructions (the x-bracing)
- When placed too close together, correct for the over-spray (install baffles)

The included sketches show the final layout pattern and obstruction mitigation we used. We started by placing the heads in the correct layout, then adding heads for the heads blocked by the 6" x-bracing, then adding baffles standing on the x-bracing between the nearby heads. The net layout for the ESFR heads in this difficult region went at an average of 44 square feet per head. Although it looks crazy, we think it closes any possible argument for coverage, placement, or shadows from blockages.

Enjoy your next design headache, friends. I need a nap.



About the Author:

Tim Brunett is President of Sales/Technical for the Triton Fire Group, Inc. with operations in Michigan, Ohio, Indiana, Iowa, Illinois, Virginia, and Georgia. Since 2005, Triton Fire Group provides all aspects of fire protection sprinkler systems, working across all of North America.

For more information visit: www.tritonfire.com.

Thoughts on Obstructed Construction

By Ken Wagoner, SET

One of the first things I learned with regard to 'construction type' as far as NFPA 13 goes, is that it has absolutely no direct connection to the construction types identified in the building codes. For NFPA 13 purposes, the construction is either "obstructed" or "unobstructed." Those two designations have to do with the ability of the construction to permit heat to accumulate in a sufficient amount to activate the fire sprinkler.

If you have "obstructed" construction, the deflector must be no more than 22" down from the deck above and no more than 6" down from the framing member above. The heat should accumulate enough in such a condition to activate the sprinkler.

If the construction is "unobstructed" the sprinkler must be no more than 12" down from the desk above. In this case, the flow of heat will accumulate enough for a sprinkler so located to activate.

A great friend and sprinkler professional, Steven Scandaliato, once taught me that if the sprinkler is expected to cover an area outside of its listing, and is not in the correct position to activate in the case of a fire, then what's the point?

About the Author:

Ken Wagoner, SET, is the owner of Parsley Consulting, and has over 39 years of experience in automatic sprinkler system and fire alarm system design, plan review, and construction management. He has served, and serves on, several committees for NFPA and has published many articles on seismic bracing, hydraulic calculations, system design, and the plan review process.

Ken has presented and taught classes sponsored for the San Diego Fire Protection Association and the American Fire Sprinkler Association.

For more information contact: Ken Wagoner, SET, Parsley Consulting, 500 West Mechanic Street, Harrisonville, MO 64701-2235; (760) 745-6181, www.parsleyconsulting.com.

Understanding Obstructed vs. Unobstructed Construction in NFPA 13 (2025 Edition)

By Eduardo Lopez

According to NFPA 13 (2025 edition), obstructed construction refers to structures where elements impede the flow of heat or the operation of sprinklers. The *Standard* provides specific criteria to define unobstructed construction, but in real-world applications, ceilings often become a complex network of structural and mechanical components. Given this definition, consider the following question: Would the structure shown in *Image 1* qualify as unobstructed construction?

Image 1

Some might argue that if it meets the technical requirements for unobstructed construction, it should be classified as such. However, how many of us actually take the time to measure each structural element across an entire space? Wouldn't the classification change just a few meters away? Fortunately, in most cases structures are uniform, allowing us to measure at one point and project those measurements across the rest of the ceiling.

The Evolution of Understanding Obstructed Construction

When I started designing 17 years ago, I was taught that obstructed construction was determined by measuring between main structural axes (see *Image 2* on opposite page). However, this approach led me to question: What about the joists? (*Image 2*). Based on that perspective, one might classify a structure as unobstructed, but rotating the view 90° (*Image 3* on opposite page) could suggest the opposite. In such cases, it becomes necessary to verify whether at least 70% of the area is open, as per NFPA 13 guidelines.

The real challenge arises when this type of structure is designed for a building where ESFR sprinklers will be installed. Many designers distribute sprinklers without considering the structure, leaving potential obstructions for the installer to resolve. However, a good design must come from good engineering, acknowledging that structural elements and suspended installations can interfere with sprinkler performance.

Real-World Examples: Why Structural Coordination Matters

I recall an installation where we did not design the sprinkler system but were responsible for the installation. As part of a value engineering review, we requested the plans and discovered that the structural details were missing. Upon further inquiry, we obtained the structural drawings and integrated them into our sprinkler design. The result? Joists were positioned exactly where some sprinklers had been planned, creating significant installation challenges. Fortunately, we identified this issue before manufacturing the piping, allowing us to make the necessary adjustments.

In another case, a consultant requested that we remove the structure from the plans, arguing that the sprinkler layout was difficult to read. We complied. However, when a second consultant reviewed the plans, they criticized the design, claiming it had been done without considering the structure. Our response was clear: we had only removed the structural elements as per the original request – but we had never designed without them.

Best Practices for Sprinkler Layout to Avoid Obstructions

A well-planned sprinkler layout must account for both fire risk and structural constraints. The following practical steps can help ensure a smooth and obstruction-free installation:

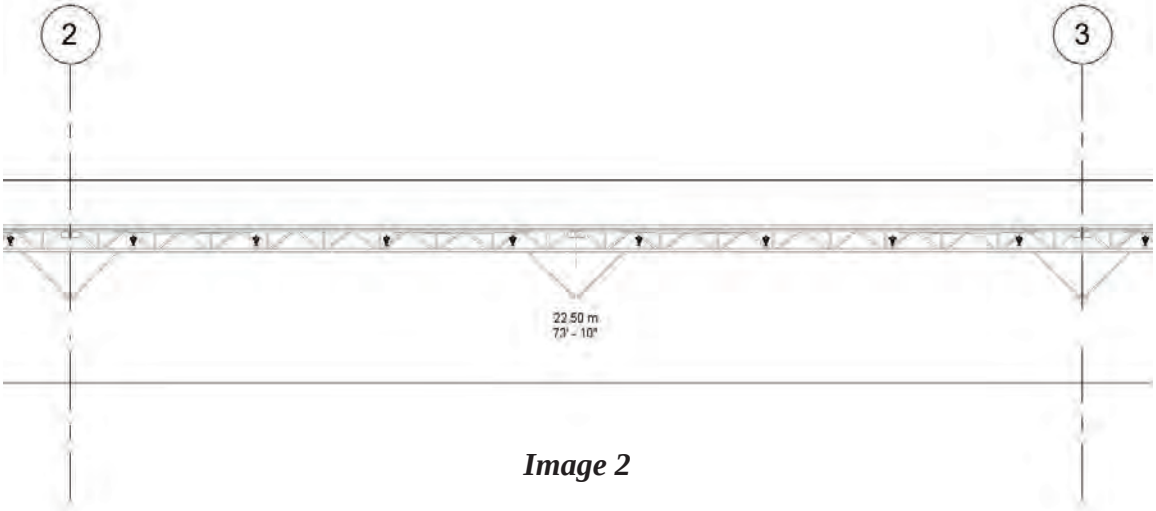


Image 2

1. Request Structural Drawings from the BIM Coordinator or Project Manager
    a. Make it clear that you cannot begin sprinkler layout without this information.
    b. Ensure you receive the frozen model (finalized structural model) to avoid future discrepancies.
2. Identify the Structural System
    a. Joists? Less problematic.
    b. Beams and girders? Check the depth (cant) of each element, as this will dictate sprinkler placement relative to the ceiling.
3. Confirm Facility Coordination Priorities
    a. Ask the BIM manager: Which systems take precedence?
    b. While sprinklers should ideally have priority over HVAC and electrical systems, this is not always the case – especially in clean rooms or office spaces.
4. Distribute Sprinklers by Bays or Between Axes
    a. Use a copy-paste approach to apply your layout across similar areas. Replicate your layout across similar areas, ensuring that bays are equidistant while still taking the time to review your work.
    b. Be cautious at building edges, as these zones often require special adjustments.
    c. Always ensure compliance with NFPA 13 spacing requirements.
5. Check Sprinkler Positioning Against Structural Elements
    a. Ensure that sprinklers are not obstructed by beams, ducts, or other installations.
6. Maintain Coordination with Other Systems (even if it's not your responsibility)
    a. While it may not be within your scope, keeping an eye on other facility systems allows you to proactively address potential conflicts.
    b. This not only enhances coordination but also demonstrates a commitment to protecting the client's investment.

Final Thoughts: Engineering with Purpose

Our goal should always be to design a sprinkler system that benefits the end user. This means:

1. Leveraging all available project data to create an accurate layout.
2. Raising concerns early when structural conflicts arise.
3. Communicating effectively with clients, project managers, and BIM coordinators.

At the end of the day, fire protection is about more than just compliance, it's about saving lives, protecting property, ensuring business continuity, and safeguarding our clients' investments.

About the Author:

Eduardo Lopez is a licensed engineer (NICET #130312, CFPS 4229, CETRACI S03983714) with Baja Design Engineering in Mexicali, Baja California. He may be reached at: Office: +52 (686) 905-9855, Cell 011 52 (427) 290-9839, elopez@bajadesign.com.mx.

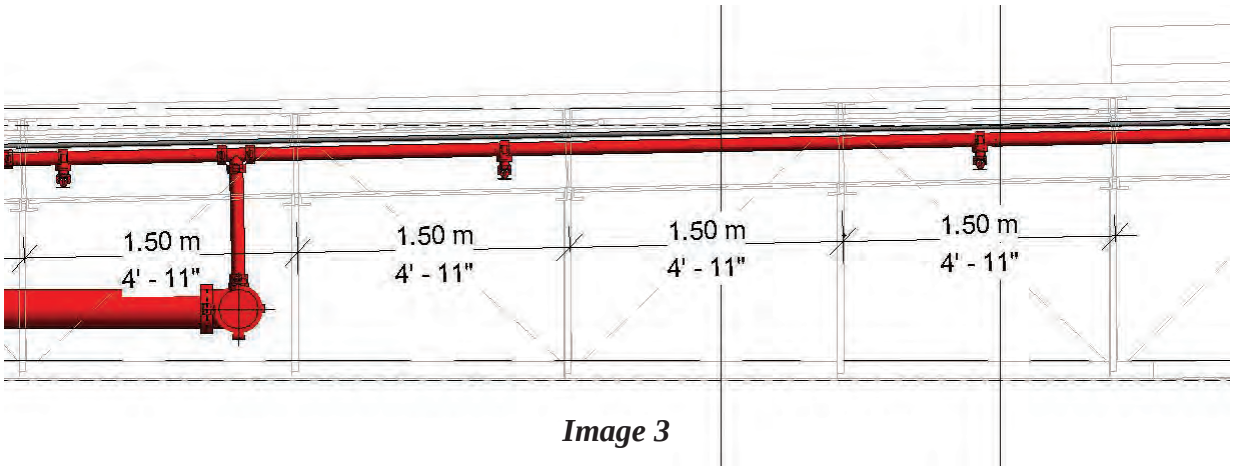


Image 3

The *Sprinkler Performance Under Non-Sloped Obstructed Ceiling Construction* Report

From FM Global

When it comes to proper ceiling-level sprinkler installation, one of the most important first steps to gain information on is the type of ceiling construction the sprinkler protection will be installed under.

With unobstructed ceiling construction (i.e., unobstructed construction), the heat from a fire is able to spread out under the ceiling with minimal redirection of the thermal layer. However, with obstructed ceiling construction (i.e., obstructed construction), the vertical members of the ceiling's structural support can interfere with the ability of the thermal layer from the fire reaching ceiling-level sprinklers in a timely manner. This could potentially delay the operation of the ceiling sprinklers, thus resulting in the need for the installing contractor to install the sprinklers on a spacing that is different than what is recommended for sprinklers installed under unobstructed construction. In some cases it could simply mean that the sprinklers being installed under obstructed construction can still be on the same spacing as those under unobstructed construction, but have to be positioned vertically no more than 6" below the plane created by the underside of the ceiling's structural members. In other cases, it could require the sprinklers to be installed within each channel that forms the obstructed ceiling construction.

This technical report was written by FM based on full-scale fire testing and computer modeling simulations to determine the impact of ceiling-level sprinkler performance in the presence of obstructed construction when the ceiling is relatively flat. A subsequent report was also written based on full-scale fire testing and computer modeling simulations for sloped ceilings (unobstructed and obstructed) having a pitch of either 2-in-12 or 4-in-12. Both of these reports were submitted to the NFPA 13 to help update the 2025 Edition of NFPA 13 to reflect these findings.

In addition to NFPA 13, the guidelines in FM Property Loss Prevention Data Sheet 2-0, *Installation Guidelines for Automatic Sprinklers*, reflect the results from this test program and address the installation recommendations for ceiling-level sprinklers in the presence of obstructed construction for both non-storage as well as storage occupancies.

For more information contact: Wes Baker, Staff Vice President, Sr. Engineering Technical Specialist, FM, Chief Engineers Group, 270 Central Ave., Johnston, RI 02919; (401) 415-2280, www.FM.com, weston.baker@fmglobal.com.

"This could potentially delay the operation of the ceiling sprinklers, thus resulting in the need for the installing contractor to install the sprinklers on a spacing that is different than what is recommended for sprinklers installed under unobstructed construction."

Obstructed Construction

By Adam Tuomala

I think it's prudent to state from the beginning that there is much to be said on this topic, and it can easily get confusing. The quick and fast answer is that there is no quick and fast answer. There are far too many scenarios that require careful consideration than can be addressed in this short article.

Even though NFPA 13 makes many references and examples to assist in the identification of construction types and the proper design approach of the sprinkler system, it also needs to be considered that not all shoes fit neatly in the same shoebox. So rather than delving into *Standards* and repeating code, it may serve the reader better to not only look at some basic construction definitions, but also performance objectives.

Obstructed construction is generally defined as panelized or other construction that impedes the heat flow or water distribution in a manner that materially affects the ability of sprinklers to control or suppress a fire.

Defining ceiling construction may seem straightforward, and there are two basic categories to consider: obstructed construction and unobstructed construction. While the *Standard* intends to simplify the identification of the type of construction, there are many other terms within NFPA that are also recognized and require the designer's attention. After the construction type has been determined, the designer still needs to adhere to the obstruction tables as well as the sprinkler heads' listing. There are many specific application sprinklers that have vastly different applications and installation requirements, and just because the *Standard* may state one thing, the actual sprinkler listing may be different and takes precedence over the *Standard*.

Performance objective: The intent is to have the sprinklers located within the heated gas layer of a fire so that a sprinkler can operate within its response time index (RTI) and that the spray pattern will not be adversely affected by structural members or other obstructions that may negatively affect the spray pattern development of the discharging sprinkler.

The sprinkler head deflector placement below the ceiling has a direct and significant impact on the sprinkler's ability to perform as listed. Obviously, the lower the deflector is from the ceiling, the longer it will take for heated gases to build up and 'fuse' or 'activate' the sprinkler head. This scenario will slow the response time and allow the fire to possibly propagate into other areas.

Structural engineers today are using materials that are lighter, can span further distances, and have different shapes than we've traditionally used in the past. The trusses, beams, girders, columns, and types of materials selected will all have an impact on the system design and need to be considered for each project. It's also not unusual to have several types of construction within a structure, i.e., a pre-engineered metal building (PEMB) with a wood framed mezzanine designed to support heavy machinery. In this case, you could have an unobstructed roofline and obstructed construction under the mezzanine. Unfortunately, not all buildings are simple beam and girder construction with I-beams and Z-purlins spaced symmetrically, which would make the layout much easier to determine.

NFPA 13 makes some specific allowances for obstructed construction, and it's not practical to attempt to go into all the different scenarios outlined in the *Standard*. This is where the designer must do the legwork to properly determine the correct design approach on each and every project. Again, some projects are simple, and others will require a time investment.

There are many different factors that go into the design of every project. Control mode, suppression mode, construction type, construction materials, fireproofing insulation, sloped ceilings, ceiling heights, commodities, storage and/or storage arrangements, draft stops, sprinkler head selection, and on and on.

I would encourage everyone to familiarize themselves with industry standard construction terms and do some basic research and study of structural drawings and elements. This will assist you in understanding the basic design parameters for the project. Do yourself a favor and spend some time in the beginning identifying types of construction and features before you start the design. This will probably save you time and eliminate mistakes that can sometimes be easily overlooked.

A few construction terms that are commonly encountered are: beam and girder construction, concrete tee construction, composite wood joist construction, panel construction, semi-mill construction, wood joist construction, bar joist construction, steel purlin construction, and truss construction. All of which may or may not be considered obstructed construction, depending on the size and how the elements are assembled, including shapes, depths, and distances of the members from each other.

Take some time and look closely at the structural drawings and do some pre-planning before you get started. I would also state how critical it is to read and understand the sprinkler data sheets. These will include the listing criteria and specify anything you need to know when selecting a specific sprinkler head.

About the Author:

Adam Tuomala, NICET – IV WBSL, RME-G, SCR-G, ECR, FEL-K, is the owner of Phoenix Fire Protection in Lago Vista, Texas. For more information visit: www.phoenixfirepros.com, phoenixfirepros@gmail.com.

Riser Assemblies

Tales From the Vertical

By Tim Brunett

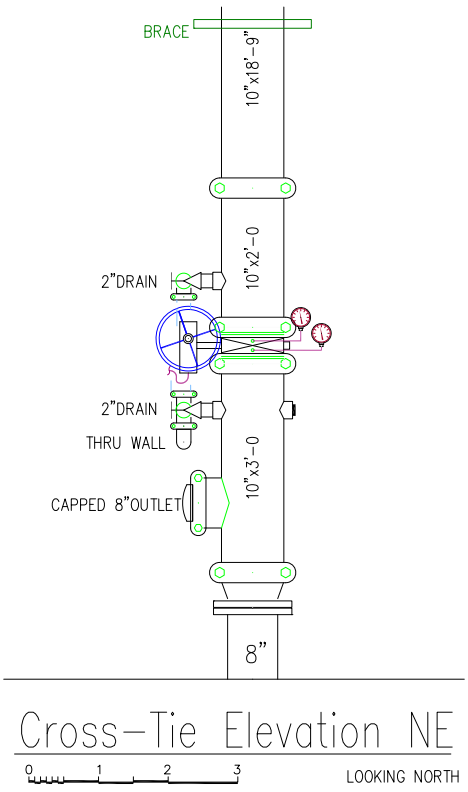
Our understanding and use of the term "sprinkler riser" has evolved.

When we design and install control valving assemblies, they are built for a specific purpose – backflow units for the city water feed, riser check assemblies for system control, sometimes small control assemblies for equipment like paint booths.

When we design systems on a common campus, the buildings are often interconnected with high pressure private water lines. This allows a fire pump from one end of the campus to send water to other buildings, and share water fed backward from the pump in the other end of the same site. The underground connection lines are significantly less than multiple pumps, virtually no maintenance, and provide redundant water supplies to all the buildings on that site.

These high-pressure X-ties (cross-connections) do well with some extra hardware, like the added ground tie-downs.

The primary control valve is surrounded by an upper drain with gauge to see the interior building state, as well as a lower drain and gauge set to verify the underground condition. Isolating buildings or chasing leaks in the underground becomes simple.



We add capped outlets on these high pressure x-ties to allow flushing, both from the underground, and from the inside spine-loop (as pictured below).

Happy vertical pipes, friends.

About the Author:

Tim Brunett is President of Sales/Technical for the Triton Fire Group, Inc. with operations in Michigan, Ohio, Indiana, Iowa, Illinois, Virginia, and Georgia. Since 2005, Triton Fire Group provides all aspects of fire protection sprinkler systems, working across all of North America.

For more information visit: www.tritonfire.com.

We add capped outlets on these high pressure x-ties to allow flushing, both from the underground, and from the inside spine-loop.

Riser Rooms

#1 This is a wet fire sprinkler system in a bank building.

Additional comments: 1) It would have been nice if they used galvanized pipe from the ductile underground pipe to the backflow. 2) It is nice they used a backflow preventor that is listed to be in the vertical position. 3) We would have preferred to use a concentric reducer in lieu of a reduced grooved coupling. 4) They used slip fittings for the drain. It seems like the industry is split with only part of the industry using slip fittings. 5) We see, most of the time, a test and drain used in lieu of the drain valve. 6) The gauge and flow switch are higher than 7'. This creates maintenance concerns. 7) It would be nice to have more room to operate the control valves.

#2 This is an old dry pipe valve on a dry system in an unheated storage building.

Additional comments: 1) It would be nice if the ball drip was piped outside. 2) Having the discharge pipe on the reduced pressure, not piped outside, can create problems. 3) We have not used this many flanged fittings in many years. 4) The fire alarm wiring should be installed in flex fittings. 5) Having the main drain piped into the floor drain creates a mess and potential problems.

#3 These are wet fire sprinkler systems installed in a large warehouse.

Additional comments: 1) One pipe stand is not strapped down to prevent upward lift. 2) The flex pipe on drains is a newer item we are starting to see more often. 3) Not all of the systems have hydraulic placards. 4) It would be nice to have riser numbers with a matching map of the building.

— David Cook, CPE
Sales Manager/Aegis Fire Protection, LLC
Lenexa, KS

He is not here, but is risen!

— Luke 24:6 a

According to Isaiah 53, Jesus Christ is the promised Messiah and Savior of the World.

When Jesus laid down His life on the cross, He paid the full penalty for sin by offering the perfect, spotless sacrifice.

Subsequently, by raising from the dead, the Lord defeated the power of sin and death and purchased, for all who believe in Him, eternal life in Christ Jesus.

Jesus said to her, "I am the resurrection and the life. He who believes in Me, though he may die, he shall live. And whoever lives and believes in Me shall never die. Do you believe this?"

— John 11:25-26
New King James Version

Happy Easter!

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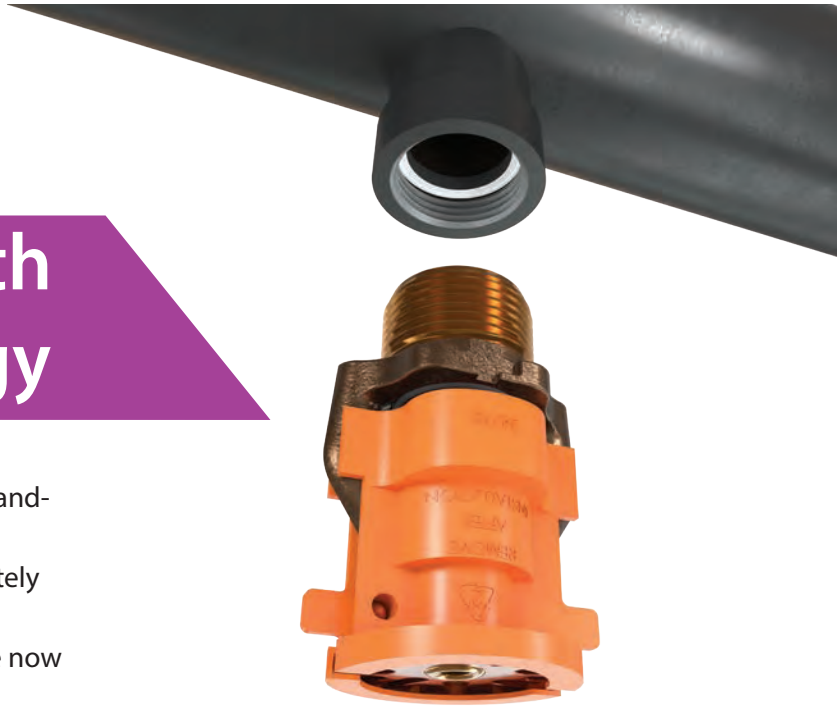

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InstaSeal's revolutionary "Torque-Assist" cap allows for hand-tightening, while InstaSeal gaskets seal the connection upon sprinkler installation. This exciting process completely eliminates the need for wrenches and sealants, meaning fitters can maximize their efficiency. InstaSeal fittings are now available in ½", ¾" and 1" sizes for your next project!

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Select Viking sprinklers are compatible with the advanced InstaSeal technology through the addition of new "Torque-Assist" caps.

Look for the compatibility icon to ensure the correct sprinklers are being ordered for a job requiring InstaSeal technology.

No sealants needed

InstaSeal technology eliminates the need for messy traditional sealants like thread tape or pipe dope

Torque-Assist cap

The protective "Torque-Assist" sprinkler cap makes it a truly seamless experience for contractors to hand-wrench

Hand-Tightening encouraged

Wrenching is no longer required! Maximize sprinkler fitting efficiency with hand-tightening

Listed and Approved

A growing number of products within the InstaSeal family are FM Approved and UL Listed with Viking sprinklers

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Allison Calder has joined The Reliable Automatic Sprinkler Co. Inc. as Technical Services Manager. Based in Central Texas, Allison will support contractors, AHJs, and specifying professionals across the Central United States, providing technical expertise and education on Reliable's fire protection products and systems. Calder reports to George Nicola, Technical Services Director at Reliable.

Allison brings a strong background in fire protection, with over a decade of experience in roles including fire sprinkler design, estimating, project management, and branch operations. She holds a Bachelor of Science in Architecture from Wentworth Institute of Technology and an Associate Degree in Fire Protection Engineering Technology from Delaware Technical Community College. Allison's unique combination of technical knowledge and practical experience with AHJs, engineers, and municipalities positions her to make a significant impact at Reliable.

Her passion for fire protection began in high school when she volunteered as a firefighter, helping her community and learning new skills. Before joining Reliable, Allison served as Branch Manager for Oliver Fire Protection and Security's New Jersey office. Allison is an outdoorsperson, recently completing a four and a half month hike of the Pacific Crest Trail, gaining fresh energy and perspective for this role.

"Allison is a talented fire protection professional with an eye for detail," said George Nicola, Technical Services Director at Reliable. "We are excited to have her as a member of the Reliable Technical Services team."

For more information visit: www.reliablesprinkler.com.

Reliable's New Sales Personnel

Jeff Zeller has been promoted to Outside Sales Representative at the Reliable Automatic Sprinkler Co. Inc., covering Southern California. Jeff brings 20 years of operations and customer service experience to his new role, most recently in Reliable's Brea Distribution Center. A native of Southern California, Jeff enjoys golfing and motorcycling.

Nathan Glander has joined Reliable as an Outside Sales Representative, based in Scottsdale, Arizona, covering Las Vegas and the state of Arizona. Nathan brings 10 years of sales and management experience to this role. Now residing in Scottsdale, Nathan is originally from the Pacific Northwest. He holds a BS in Business from Western Oregon University.

Joshua Schmidt has joined Reliable as a Sales Representative covering the Dallas/Fort Worth metropolitan area, Arkansas, and Louisiana. Reporting to Regional Manager Ryan McIntyre, Joshua brings firefighting and paramedic experience to his new role. Before his firefighting career, Joshua also worked in sales, making this transition an excellent fit. Outside of work, he enjoys staying active through tennis and soccer, often playing alongside his wife in community leagues.

Thomas Tracy has joined Reliable as a Sales Representative for the Northern Illinois and Wisconsin markets. Reporting to Regional Manager Dave Rosso, Thomas joins Reliable with over 11 years of experience in the construction and fire sprinkler industries. He recently served as Chairman of the Illinois Burn Prevention Association. A graduate of the University of Michigan, Thomas brings invaluable expertise and community commitment to the team.

"We are thrilled to fill these key positions with such talented individuals, knowing they will deliver the level of customer service and technical expertise you expect from Reliable," commented Reliable Vice President of U.S. Sales, **Tom P. Field**. "We welcome these professionals to their roles and look forward to their future success."

About Reliable: The Reliable Automatic Sprinkler Co. Inc. is a USA-based manufacturer and distributor of fire protection equipment. For over 100 years, Reliable has manufactured high quality, innovative fire sprinklers, valves, and special systems. Reliable also distributes a full line of best-in-class system components. All Reliable products are backed with premier customer service and technical support. Reliable's headquarters is in Liberty, South Carolina, with regional sales and distribution centers located throughout North America and around the world.

For more information visit: www.reliablesprinkler.com.

Nate Rea has been promoted to the role of Territory Manager-Sprinkler reporting to Dave Weinrich, Director of Sprinkler Sales, with Bull Moose Tube Company (BMT).

Nate has over 18 years of experience within the industry and with BMT, helping to expand our sales territories and taking our business to new heights. His expertise and commitment to his customers have given him a reputation of excellence and propelled him to the expansion of his role and responsibilities.

The Territory Manager role will be responsible for execution of sales strategies that will build a high-quality sales pipeline and maximize share within the assigned territory or accounts. Nate will oversee the territory encompassing Minnesota, Wisconsin, Michigan, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas, Kentucky, Tennessee, Arkansas, Louisiana, Oklahoma, and Texas.

We are excited to see what he will achieve in his new role!

For more information contact: Bull Moose Tube Company, 1819 Clarkson Road, St 300, Chesterfield, MO 63017; 800-325-4467, www.bullmooseindustries.com.

❑

"If we abide by the principles taught in the Bible, our country will go on prospering and to prosper; but if we and our posterity neglect its instructions and authority, no man can tell how sudden a catastrophe may overwhelm us and bury all our glory in profound obscurity."

— Daniel Webster

Jargon Monoxide

By Russell Leavitt

A fellow NFPA Board Member sent me words of advice that were given to him by a friend. I found it insightful. It addresses a behavior of which I have been guilty and caused me to consider changing how I communicate within my company.

Author Jason Braun writes that there is a deadly practice within many companies. It is not the typical bad practices we face, like making poor hires or trying to execute on a broken business model. He calls it "Jargon Monoxide," which he describes as a "steady stream of meaningless corporate gibberish that seeps into meetings, e-mails, and strategy presentations, suffocating clear thinking and real action."

We have all heard it and some of us have used it. Consider the leadership coach who insists, "We need to leverage cross-functional synergies to enhance stakeholder engagement," or a consultant who claims, "Our approach is to drive transformational outcomes via customer-centric innovations." The problem is nobody knows what these "experts" are talking about.

Jargon monoxide is what happens when we prioritize sounding smart over being smart. Just like carbon monoxide, this jargon monoxide is odorless, invisible, and it poisons our ability to think clearly and execute quickly.

It starts with one person trying to sound more competent than they are. Instead of saying, "We need to sell more," he or she says, "We must drive topline revenue expansion by leveraging omnichannel opportunities."

When hearing such gibberish, we do not want to show our ignorance by asking what the heck it means, so before we know it, our communication is filled with things like, "We need to optimize synergies to unlock value through scalable innovation." When this happens, we have an organization where people talk in circles, that is filled with meetings that take twice as long as they should, and in the end, nobody does anything but talk.

Keep in mind, jargon monoxide is multiple things, each more toxic than the last.

It starts with convoluted nonsense. This is when a simple idea gets buried under unnecessary complexity. A project manager could say, "We need to install pipe faster." However, he or she says, "We're optimizing throughput via enhanced queue management solutions." If our statement could double as an instruction manual for a nuclear reactor, we are in trouble before we even begin.

Then, we have meaningless sentences that sound impressive but say absolutely nothing. Think of a manufacturer CEO stating, "We're driving a paradigm shift in agile methodologies to disrupt legacy frameworks." What does that even mean? Yet, everyone nods affirmatively as if we perfectly understand.

We also use phrases or words designed to make those outside our team stupid. For example, a CFO says, "We need to enhance our liquidity position through a more favorable capital structure optimization process." Translation: "We need more cash." If a smart person outside our space does not understand what we are saying, we are not communicating – we are keeping others out.

Finally, there's the jargon blender. This is when we just throw together every buzzword we can think of and hope no one notices. Consider a mission statement that states something like, "Our mission is to empower scalable, AI-driven, next-gen solutions to revolutionize the digital ecosystem"? What?

Now, consider that these things are not just annoying but are actively making our businesses worse. How?

- Jargon monoxide wastes time. Meetings take much longer than needed.
- Jargon monoxide leads to bad decisions. When ideas aren't clearly explained, nobody can tell the good ones from the bad.
- Jargon monoxide destroys morale. Nobody wants to work at a company where leadership speaks in riddles.
- Finally, it pushes customers away. If our marketing sounds like a legal contract, customers will go somewhere else.

How do we stop jargon monoxide? Call it out!

The next time someone says, "We need to align cross-functional synergies," stop them and ask, "What does that actually mean?" If they can't explain it in simple terms, they probably don't understand it themselves.

Communicate in simple terms. If an e-mail reads like a legal memo, rewrite it. Cut the fat – if a sentence can be five words instead of 15, make it five. Remember, simplicity is a Superpower!

Great companies move fast, and fast companies communicate clearly. Jargon monoxide is a sign of a slow, bureaucratic culture – one that's more interested in looking smart than being effective. Great leaders do not hide behind complexity. They say what they mean, get to the point, and expect their teams to do the same.

So, the next time we hear someone say, "We need to unlock synergies through innovative, best-in-class solutions," take a deep breath and say, "Seems to me, we could just get to work."

Right on Jason Braun!

About the Author:

Russ Leavitt is the Executive Chairman of Telgian Holdings. With over 40 years of experience, he holds a Level IV certification from NICET in Fire Sprinkler Layout and Certified Fire Protection Specialist (CFPS) designation. He is a Board Member and Chair of the National Fire Protection Association (NFPA), and the Chair of the NFPA 13 Sprinkler System Discharge Criteria technical committee. He also serves on the NFPA 13 Installation committee, as well as the NFPA 3, NFPA 4, and NFPA 25 technical committees. Russ conducts seminars internationally on a variety of fire and life safety related subjects and has authored a number of articles and training materials.

For more information visit: www.telgian.com.

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AFSA Greater Bay Area Hosts Back-to-Back Training Events for AHJs and Fitters

The AFSA Greater Bay Area Chapter recently held two highly successful training events in Livermore, California, bringing together fire protection professionals from across Northern and Central California for education, networking, and hands-on learning.

On February 27, 2025, the Pye Barker-sponsored *AHJ Fire Sprinkler System Training* welcomed 102 Fire Marshals, Plan Reviewers, Fire Inspectors, and other AHJs for a full-day course led by John Denhardt, P.E. The session focused on fire sprinkler system plan review and hydraulic calculations, equipping attendees with crucial skills to improve knowledge, code compliance, and fire safety enforcement. The day concluded with a networking happy hour, sponsored by Victaulic, where attendees continued discussions in a more relaxed setting.

The following day, on February 28, the Chapter hosted a Cal Fire Approved CEU *Fitter Class*, drawing 89 fitters eager to expand their knowledge. Also taught by Denhardt, this session covered fire pump installation and sprinkler systems installation, providing attendees with 0.8 Cal Fire CEUs toward their certifications. Held at Las Positas College, the training emphasized hands-on learning and industry best practices.

These back-to-back events underscore the Greater Bay Area Chapter's ongoing commitment to providing high-quality education and professional development for fire protection professionals. The overwhelming turnout and engagement highlight the industry's dedication to staying informed and up to date on fire safety practices.

The AFSA Greater Bay Area Chapter extends its gratitude to Pye Barker Fire & Safety, Victaulic, and all participants for making these events a success.

For more information visit: www.afsa-gba.org.

NFSA Brings the Fire Sprinkler Concept to NAHB's Int'l Builders' Show

The National Fire Sprinkler Association (NFSA) was thrilled to once again exhibit at the National Association of Home Builder's Show in Las Vegas during the last week of February. More than 81,000 residential construction professionals attended the show and the NFSA booth was always busy.

A big thank you to our manufacturers for having the vision that we need to be there and for the funding that allowed for our presence, and to NFSA Contractor, Supplier, and Manufacturer members who joined us to help staff the booth. We had great conversations with builders throughout the week, and many advancements have been made connecting projects to contractors, suppliers and manufacturers.

For more information visit: www.nfsa.org.

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C-Aire Compressors' New Zero Loss Tank Drain

Quietly and efficiently drain your tank with zero air loss using C-Aire's new Zero Loss Tank Drain Kit (ZLOSS-K). This innovative solution includes everything you need for a professional installation.

• Quiet and Efficient: "Zero loss" means that no air pressure is wasted.

• Easy to Install: The kit includes all necessary hoses and hardware.

• Fully Pneumatic: No electricity needed.

The drain comes preassembled with thread tape for a fast and easy installation process. C-Aire's Zero Loss Kit can be retrofitted on any tank-mounted fire protection air compressor from any brand. To order the kit pre-installed from the C-Aire production facility, simply add a "Z" to the end of the model number or ask our team when ordering.

You may visit the website to watch our step-by-step installation video guide to see how easily this kit can be installed on your air compressor system. The Zero Loss Tank Drain Kit helps maintain your compressor's efficiency while automatically removing condensation without wasting compressed air.

Note: Always follow proper safety procedures during installation. Isolate power and depressurize the system before beginning installation.

For more information contact: C-Aire Compressors, 380 W 1st St., Dresser, WI 54009-9042; (651) 462-3440, sales@caireinc.net.

Viking's New FM Approved and UL Listed EA-1 Electronic Accelerator

Viking Group is proud to introduce the EA-1 Electronic Accelerator, an FM Approved and UL Listed innovation designed to augment the performance of Viking dry and preaction systems for both new installations and retrofit applications.

The EA-1 Electronic Accelerator is engineered for faster, more dependable system activation, reducing response times to under four seconds. By sampling air or nitrogen pressure twice per second using an advanced internal pressure transducer, the EA-1 detects pressure drops exceeding 0.1 PSI per second with exceptional accuracy, ensuring rapid operation when needed most. The EA-1 also functions as an air supervisory switch, eliminating the need for a separate component and simplifying system design.

"The EA-1 Electronic Accelerator is the intelligent choice for enhancing fire protection performance," said Martin Workman, Sr. Vice President – Product Experience. "Faster activation times, precision monitoring, and seamless integration allows customers to more easily achieve the highest standards of safety and efficiency."

The EA-1 is approved for use with Viking Model VXD and Model F Deluge Valves for Double Interlock Preaction Systems with electric/pneu-lectric release, and is compatible with Viking Model VXR and Model F Dry Valves. It seamlessly integrates with the VFR-500 Release Control Panel, which can monitor up to four dry pipe systems or two preaction systems. A solenoid valve is required for installation. Additionally, built-in low- and high-pressure supervisory alarms provide enhanced system monitoring and protection.

For more information visit: www.vikinggroupinc.com. ❑

Architects – Viewpoints

By James E. Art, FPE

The architect can have a big influence on a project. Not only do they put the concept down as a drawing and write the specifications, often they chose the contractor, award the contract, decide who has the right of way, supervise the installation, coordinate the trades, do the inspections, and pay for the finished work.

But to them, fire protection may be an afterthought.

When I was the Fire Protection Engineer for the City of Oakland, I started to notice a strange phenomenon. Often, a young architect would present very pretty plans that could not be built as shown because they violated parts of the building or fire codes.

"I asked, "How many code classes do the architects take?" and was surprised at the answer. He said, "None.""

The line work was good, the lettering was excellent (this was before Computer Aided Drawing was the rule – I'm not old, I'm experienced!). But the building was over area for construction type, unless it was fire sprinklered. Or the doors to the public assembly might swing inward where "in direction of exit travel" was required. Or they'd show every light and HVAC grill, but not the required fire sprinkler locations. Or required fire rated walls were not indicated.

After a few young architects, I started to ask, "When did you graduate from UC Berkeley?" and they'd reply "Last year, or the year before." The University of California was just north of Oakland.

One day I called the Architecture Department at the school.

The Department Head was too busy to answer the phone, but eventually he did call back.

I asked, "How many code classes do the architects take?" and was surprised at the answer. He said, "None."

I said, "Why? How can an architect do his job if he doesn't understand the rules?"

His answer was: "That's just it. Architects will have to learn, so I do not have to take the time to teach that. Architecture should be a five-year course, but UC does it in four, and much of the first year is common core. So, I only have about three years to teach them color appreciation, the aesthetics of space, how to do architecture that has an impact."

I expected him to also say adapting the space to the intended use, but he did not.

So, architects are often not taught the codes. Fire protection is one of the basic concepts of the codes. Likely they do not have much understanding of the various fire sprinkler concepts. These become things they must learn over time during their practice.

What can we do? If there's a School of Architecture near you, please call them and see if they teach the codes, or tell them about fire protection. If they don't teach codes, encourage them to do so.

Perhaps let me know what you find.

Many architects want to understand, so they can do their jobs better with less hassle.

I offer a fire sprinkler design class, mostly for engineers, designers, and Authorities Having Jurisdiction. When I gave the class to an engineering firm in San Francisco, we invited the SF Fire Prevention Bureau to send representatives, and they did.

One of the sessions is *Code Requirements and Trade-Offs*.

Sprinklers can often pay for themselves with extra stories, increased areas, reduced fire ratings, or increased travel distances, etc.

So, I offered just the *Code Trade-Offs* as a combined class, and recruited architects and others to that session with the designers. Several architectural firms sent their youngest, newest designer, but they did send someone.

As more and more architects better understand fire protection, the sprinkler contractor's job will become easier!

About the Author:

James E. Art is a Registered Fire Protection Engineer, with over 25 years of experience. A graduate of the Illinois Institute of Technology Fire Protection Engineering program, he does expert witness work; design review and inspection for cities, architects, engineers; code consulting; High Piled Storage Fire Code Reports; Alternate Means and Methods Requests; hydraulic calculations, and sprinkler design.

You may contact him at: (925) 846-5060. No Texts.

Other Voices is* FPC's *opinion piece section; FPC welcomes all voices, viewpoints, and opinions on matters concerning fire sprinkler contracting and the fire sprinkler industry!

Memoriam

Robert J. Neubert

A Legacy of Service and Leadership

The fire protection industry lost a true leader with the passing of Robert J. Neubert. A Marine Corps veteran of the Korean War, Bob exemplified discipline and commitment both in service and throughout his career.

Following in his father's footsteps, he built a lasting legacy in the plumbing and fire protection industry, founding R.J. Neubert & Associates in 1970.

Over the course of 45 years, his company became a trusted name in fire sprinkler contracting, recognized for its quality and integrity. His contributions not only advanced fire prevention Standards but also strengthened the industry as a whole.

Beyond his professional work, Bob was a dedicated member of the Rotary Club and actively involved in his Catholic parish.

His generosity, mentorship, and unwavering sense of service left a lasting impression on colleagues, friends, and family alike. Those who had the privilege of working with him remember not just his expertise but also his leadership and kindness.

His impact on fire protection and the lives he touched will not be forgotten.

The Sacramento Valley Chapter of the American Fire Sprinkler Association Trade Show

March 6, 2025, 3:00-7:00 PM, The Venue at Thunder Valley Casino Resort, Lincoln, California

(With apologies to the 50+ people photographed that are not shown.)

David Thompson, Jeff Zeller, and Mark A. Connor
Reliable Automatic Sprinkler Co. Inc.
www.reliablesprinkler.com

Edward Aguilar and Justin Miller
Caddy nVent
www.nVent.com

David Solis and Evan Ross
Victaulic Company
www.victaulic.com

Anthony Bucklin and James Yost
Talco Fire Systems
www.talcofire.com

Jeff Hill, Clint Williamson, and Dave Fremont
General Air Products
www.generalairproducts.com

Damon Cook, Augustine Rayan, and Rob Warren
Viking Group
www.vikinggroupinc.com

Tomomi Inoue and Matt Morgan
Senju Fire Protection Corp.
www.senjusprinkler.com

John Farmer and Vanessa Farmer
www.TheBrownCo.net
www.FirePumpAcademy.com

Marcela Livernois, Collin Bryant, and Jeff Smith
Cla-val, www.cla-val.com

Roxie & Ernie Rice
Firefighters Burn Institute
www.ffburn.org

Michelle Smith and Peter Luzaich
American Tank
www.watertanks.com

Paula Conroy and Lisa Gallegos
First Service Insurance
www.firstserviceweb.com

Randy Nichols
Potter Roemer
www.potterroemer.com

Bradley Board
Metraflex
www.metraflex.com

Dennis Sekermestrovich
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www.duyar.com

Why Traditional NFPA 13 Sprinkler Systems Fall Short in Attic Applications

By Karl Wiegand, P.E.

Using traditional standard coverage sprinklers to meet NFPA 13 *Standard for the Installation of Sprinkler Systems* requirements in combustible attic spaces can present a series of challenges throughout the layout and installation process.

While it is possible to layout an attic sprinkler system using a traditional NFPA 13 standard sprinkler system, it is often an inefficient solution that can have greater ramifications on the system, including large amounts of sprinklers, multiple large branch lines, and a demanding hydraulic design. Using specialty-listed attic sprinklers, such as low-flow or back-to-back sprinklers, enables layout technicians to provide better fire protection while reducing the overall system cost.

Heat Distribution in Remote Areas

NFPA 13's hydraulic remote area guidelines assume fires will spread evenly, resulting in a relatively square-shaped heat distribution. This is because most applications have smooth flat ceilings or smooth sloped ceilings where heat and smoke tends to distribute evenly from the source across the affected area. Thus, NFPA 13 requires that hydraulic remote areas be designed as rectangles, with the critical distance – the longer side – being 1.2*√ (total remote area). The critical distance is measured along the length of the sprinkler system branch lines, accounting for the even heat distribution while providing a safety factor in case the fire spreads faster in one direction.

The Difference with Attics

The presence of trusses in attics causes fires to behave differently. Instead of the smooth, even heat distribution observed in most applications, an attic fire will channel in between the truss members up to the peak and then run along the length of the ridge. This means heat will move quickly parallel to the slope of the roof, but very slowly perpendicular to the slope of the roof.

Due to the way heat moves in these spaces, technicians must follow two rules when laying out any attic system:

1. Provide sprinklers close to the peak and other high points. Since heat collects in high points first, positioning sprinklers near those spots causes them to activate faster.
2. Position sprinklers close together perpendicular to the slope. Heat does not move quickly perpendicular to the slope, so the fire will have more time to grow before sprinklers operate if they are positioned farther apart in this direction.

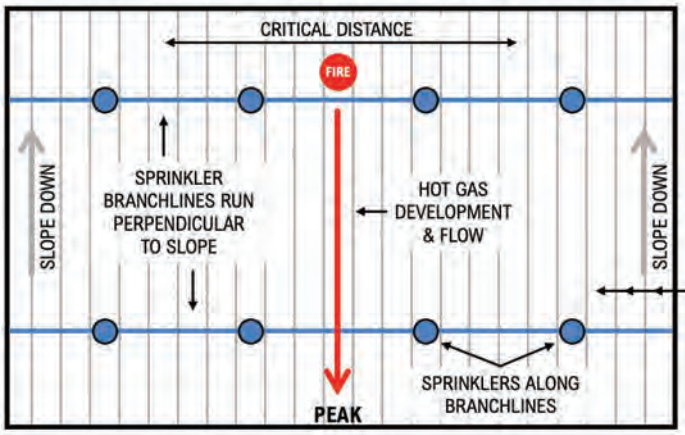
Key Challenges in Attic Sprinkler Design Under NFPA 13

Layout challenges in NFPA 13 attic sprinkler systems are influenced by two key factors. First, NFPA 13 does not effectively account for which sprinklers will operate in attic spaces. Not all sprinklers will activate in the rectangular hydraulic remote areas assumed by NFPA 13. If a fire starts near the peak, heat will spread along the ridgeline, only activating sprinklers along the ridgeline. If a fire starts close to an eave, the sprinkler on either side of the fire source could possibly activate before the heat moves to the peak and causes sprinklers under the ridgeline to operate. Second, standard spray sprinklers use a square spray pattern that is not effective in attics. To effectively protect these applications, sprinklers must have a rectangular spray pattern, throwing wider in the direction where heat travels faster (parallel to the slope) and narrower in the direction it does not (perpendicular to the slope).

Limitations of Standard Spray Sprinkler Positioning

Standard spray attic system layout and hydraulics are inefficient at every step of the process.

First, we can expect every standard spray sprinkler to overdischarge in an attic. NFPA 13 limits the space an individual standard spray sprinkler can protect to 120 sq. ft., the minimum pressure permitted to operate a sprinkler is 7 psi – which means



<<< When applying NFPA 13 design to applications with critical distances, there will be sprinklers in the remote area where heat will not collect. In attic applications, we can expect the sprinklers immediately on either side of the fire source to activate as well as those along the peak due to the way heat channels in the space. (Source: Victaulic)

5.6K sprinklers will require a minimum flow of 15 GPM. Attics are light hazard applications, so a 120 sq. ft. protection area will only need 12 GPM. Even at maximum spacing, the first sprinkler will always over-discharge by 25%.

Second, it is very difficult to achieve maximum spacing with these sprinklers. Standard spray sprinklers can normally be spaced up to 15' apart, but can only be 10' apart perpendicular to the slope in attics. If sprinklers are more than 8' apart, then an additional hydraulic design penalty is required, which increases the starting pressure to 20 psi. Sprinkler spacing parallel to the slope is also affected by design limitations. A row of sprinklers is required 1" to 12" below the peak, which can throw off sprinkler spacing parallel to the slope and require additional sprinkler branch lines. With these rules, standard spray sprinklers often cannot be spaced effectively to have individual sprinklers protect 120 sq. ft. spaces, exacerbating the over-discharge issue.

Third, NFPA 13's rectangular remote area mandates a 30% design increase for both sloped ceiling applications and situations where dry systems are present, which are both standard in attic applications. This brings the remote area to a 2,535 sq. ft. minimum, causing there to be many under-spaced and over-discharging sprinklers in the remote area. These factors can raise the system's hydraulic demand into the 400s and 500s GPM. In the worst cases, we may even see it reach 600 GPM.

Fourth, systems with high hydraulic demand require significant amounts of large piping. We see this occur because additional branch lines are often necessary to comply with spacing requirements. Also, the critical distance in an application with a 2,535 sq. ft. remote area is about 60'. At least eight sprinklers will be required per branch line to account for the space's critical distance.

Balancing Protection and Practicality with Attic Sprinklers

Compared to traditional standard coverage sprinklers, attic sprinklers are better suited to protect attic areas using fewer sprinklers. These types of sprinklers have purposely rectangular-shaped spray patterns to cover greater areas, which enhances distribution efficiency. Attic sprinklers are also better at controlling hydraulic demand in remote areas. This is because attic system hydraulic remote areas require sprinklers on the ridge and only a small number of sprinklers off the ridge (when present) to account for a fire starting elsewhere.

The inefficiencies of standard spray sprinklers can trigger greater ramifications on the overall system design and installation by increasing the total number of sprinklers and distribution piping needed to effectively protect the space. Greater hydraulic demand can also translate to larger distribution piping and valves and possibly the need to install a fire pump, which further adds to a project's material and labor costs. Specialty-listed attic sprinklers are an effective alternative to streamline sprinkler system layout and prevent material and labor cost escalations.

About the Author:

Karl Wiegand, P.E., is a Senior Application Engineer at Victaulic, where his primary duties consist of training, technical support, research and development, and representing Victaulic within the fire protection industry. Over the last 15 years, Wiegand has held positions on NFPA 15, NFPA 24, and NFPA 750, as well as AWWA's Backflow and Water Metering committees. Wiegand continues to represent the sprinkler industry on NFPA 16, 101, 820, and 5000, AWWA's Fire Protection Committee, and Underwriters Laboratory's UL199 STP.

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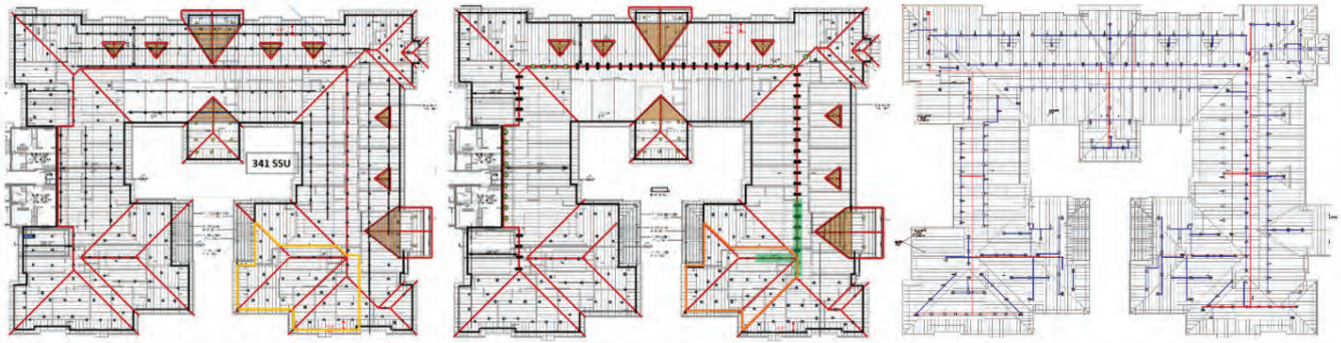

Dry System Shown	Prescriptive Method	Back-To-Back System	Low Flow System
# Sprinklers	341 SSU	GAP - 148 BB - 43 DS - 19 Total - 210	RE - 168 DS - 87 Total - 255
Estimated System Demand	480+ GPM (1817+ LPM)	340+ GPM (1287+ LPM)	160+ GPM (606+ LPM)

In an attic laid out with three different systems, standard coverage sprinklers require the greatest amount of sprinklers and highest flow rate. Back-to-back systems require the lowest number of sprinklers and a reduced flow rate compared to the prescriptive NFPA 13 method. Low-flow systems utilize more sprinklers than back-to-back systems but provide significantly lower water supply requirements. (Source: Victaulic)

Calendar

April 2-3, 2025
Fire Sprinkler International 2025
Salzburg, Austria
deedundon@outlook.com
www.firesprinklerinternational.com

April 2-4, 2025
OFSA's 7th Annual Boondoggle
Hard Rock Hotel & Casino, Tulsa, OK
www.ofsa.info

April 8, 2025
24th IFPA/SFPE Chicago Chapter Fire Protection Product Show
Vendors contact:
jennifer.block@victaulic.com
Others contact:
IFPAChicago@gmail.com

April 8-10, 2025
AGC Annual Convention
Columbus, OH
AGC Convention Services
meetings@agc.org

April 9-10, 2025
2025 SFPE European Conference & Expo on Fire Safety Engineering
Sheraton Grand Hotel & Spa
Edinburgh, UK
www.sfpe.org/europe25/home

April 15, 2025
Tech Tuesday: EOD Case Studies
12:30-1:30 p.m., Virtual
www.nfsa.org/technical-tuesdays

May 5, 2025
Tony Bice Memorial
Benefitting Children's of Alabama /Camp Conquest, and UAB and University of South Alabama Health Univ. Hospital Regional Burn Center
Hoover Country Club, Hoover, AL
Alabama Fire Sprinkler Association
(334) 546-3815, afsaexdir@aol.com
www.alfiresprinkler.org

May 6, 2025
Common Voices 8th Golf Classic
Benefitting Common Voices
Nashville, TN
National Fire Sprinkler Association
www.NFSA.org, 800-683-NFSA (6372)

May 7-9, 2025*
Annual Seminar and North American Fire Sprinkler Expo
Music City Center
JW Marriott, Nashville, TN
NFSA, www.nfsa.org

May 11-17, 2025
Home Fire Sprinkler Week
www.homefiresprinkler.org

May 15, 2025
Rocky Mountain Fire Prot. Expo
Thornton, CO
www.cofireprotection.org

May 20, 2025
Tech Tuesday: Obstructions
12:30-1:30 p.m., Virtual
www.nfsa.org/technical-tuesdays

May 20-22, 2025
Fire Pump Applications, Inspection & Testing (2.5-Day)
Stillwater, OK
Oklahoma State University (OSU)
(405) 744-5715, ceatfire@okstate.edu
www.ceat.okstate.edu

June 3, 2025
Illinois Burn Prevention Golf Invitational
Benefitting Camps, Scholarships, and Burn Units
Mistwood Golf Club, Romeoville, IL
www.ilburnpreventionassoc.com
(224) 422-0646, IBPAGolf@gmail.com

June 3-5, 2025
Fire Protection & Loss Control
Stillwater, OK
Oklahoma State University (OSU)
(405) 744-5715, ceatfire@okstate.edu
www.ceat.okstate.edu

June 5-8, 2025
14th Annual Texas Skins And Fins
Benefitting Association Programs
South Shore Harbour Resort
League City, TX
FSCATX, (512) 844-6632
info@fscatx.org, www.fscatx.org

June 16-18, 2025*
NFPA Conference & Expo®
Las Vegas, NV
www.nfpa.org

June 23-24, 2025
Inspect., Test., & Maintenance of Auto Sprinkler Systems (IT&M)
Stillwater, OK
Oklahoma State University (OSU)
(405) 744-5715, ceatfire@okstate.edu
www.ceat.okstate.edu

June 25, 2025
28th Dean Cornwell Golf Classic
Benefitting Association Programs
Twelve Stones G.C., Goodlettsville, TN
Tennessee Fire Spk. Contractors Assoc.
Brian Biggs, (615) 642-9717
biggs@nfsa.org, www.tfsca.com

June 25-27, 2025
Fire Pump Applications, Inspection & Testing (2.5-Day)
Stillwater, OK
Oklahoma State University (OSU)
(405) 744-5715, ceatfire@okstate.edu
www.ceat.okstate.edu

July 22-25, 2025*
Southern Fire Sprinkler Summit
Theme = Caddyshack
Hilton Pensacola Beach, Pensacola, FL
Ellen Ballard, (318) 841-1494
www.southernfiresprinklersummit.org

September 16-18, 2025
SubExcel
Oklahoma City, OK
American Subcontractors Assoc.
ASAtoday@asa-hq.com
www.asaonline.com

September 24, 2025
32nd Annual AFSA-Virginia Burn Survivors Golf Tournament
Benefitting Burn Survivors Foundation
Williamsburg National Golf Club
Williamsburg, VA
Bob Beckwith
bbeckwith@cavalierfire.com
Hooper Loscomb
timothy.loscomb@eaglefire.com

**FPC* plans to attend

September 24-25, 2025
24TH INTERNATIONAL WATER MIST CONFERENCE
Hyatt Regency Hotel, Manchester, UK
www.iwma.net

October 5-11, 2025
FIRE PREVENTION WEEK

October 14-19, 2025*
AFSA44 CONVENTION, EXHIBITION, & APPRENTICE COMPETITION
Washington, D.C.
www.firesprinkler.org

October 20-24, 2025
CASA ANNUAL CONFERENCE
Vancouver, BC
www.casa-firesprinkler.org

October 30, 2025
WOMEN IN CONSTRUCTION 19TH ANNUAL CONFERENCE
Renaissance Arlington Capital View
Arlington, VA
www.womeninconstructionconference.com

November 5-7, 2025
DESIGN-BUILD CONFERENCE & EXPO
MGM Grand, Las Vegas, NV
www.dbia.org/design-build-conference-expo

Other Dates by Organization

Fire Tech Productions
www.firetech.com
Apr. 29: *Fire Pump Maintenance,* Indianapolis, IN
May 7: *Inspect/Test. of Fire Pumps,* Atlanta, GA
Jun. 3: *Inspect/Test. Fire Spk. Sys.,* Caledonia, MI
Jun. 3: *Fire Pump Maintenance Master,* Atlanta, GA
Jun. 23: *I&T Fire Alarm Systems,* Indianapolis, IN
Jul. 14: *Inspect/Test. Fire Spk. Sys.,* Indianapolis, IN
Jul. 16: *Inspect/Test. of Fire Pumps,* Indianapolis, IN
Aug. 12: *Fire Pump Maintenance,* Indianapolis, IN
Sep. 16: *Insp./Test. of Fire Pumps,* Indianapolis, IN
Oct. 7: *Inspect/Test. Fire Spk. Systems,* San Antonio
Oct. 14: *Fire Pump Maint. Master,* Atlanta, GA
Nov. 11: *Fire Pump Maintenance,* Atlanta, GA
Dec. 1: *Inspect/Test. Fire Spk. Systems,* Atlanta, GA
Dec. 3: *Inspect/Test. of Fire Pumps,* Atlanta, GA

Fire Smarts LLC – Live Online
www.firesmarts.com
Apr. 17: *Seismic Protection for Fire Sprinkler Sys.*
Apr. 30: *Intro to Spec. Haz. Fire Suppression Sys.*
May 14: *Fire Alarm Interconnectivity to the Fire Sprinkler System*
May 28: *Fire Protection Requirements for Automated Storage and Retrieval Systems (ASRS)*
May 28: *Equivalent Means and Methods with an Emphasis on Full-Scale Fire Tests*
Jun. 4: *NFPA 13D Res. Fire Sprinkler Systems*
Jul. 9: *Intro to Fire Sprinkler Systems*
Jul. 30: *Hydraulic Calculations for Fire Protection*
Aug. 13: *Intro to Fire Alarm Systems*
Aug. 20: *Fire Spk. Sys. Requirements for Storage*
Sep. 3: *NFPA 20 – Fire Pumps*
Sep. 10: *Fire Pump Testing and Analysis*
Sep. 10: *NFPA 14 Standpipe Systems*
Sep. 24: *Understanding and Applying NFPA 25*
Oct. 1: *Water-Based Fire Protect. Sys. Freeze Protect.*
Oct. 8: *Seismic Protection for Fire Sprinkler Systems*
Oct. 22: *Fire Alarm Interconnectivity to the Fire Sprinkler System*
Nov. 12: *Res. Fire Sprinklers: Homes to High-Rise*
Nov. 19: *Intro to Spec. Haz. Fire Suppression Sys.*
Dec. 10: *Fire Protection Requirements for Automated Storage and Retrieval Systems (ASRS)*
Dec. 10: *Equivalent Means and Methods with an Emphasis on Full-Scale Fire Tests*

NFSA Tech Tuesdays (Virtual 12:30-1:30 p.m.)
www.nfsa.org/technical-tuesdays
Apr. 15: *Tech Tuesday: EOD Case Studies*
May 20: *Tech Tuesday: Obstructions*
Jun. 17: *Tech Tuesday Live NFPA Conference*
Jul. 15: *Tech Tuesday: Data of System Failures*
Aug. 19: *Tech Tuesday: NFPA 13D*
Sep. 16: *High-Piled Storage Process*
Oct. 21: *Hydraulic Supplement*
Nov. 18: *Field Inspections*
Dec. 16: *Special Designs*

Oklahoma Fire Sprinkler Association
The *Alarm, Locksmith, and Fire Sprinkler Committee* remaining dates for 2025 meetings: **Apr. 9, May 7, Jun. 4, Jul. 9, Aug. 6, Sep. 10, Oct. 8, Nov. 5, Dec. 10.**

Also Visit:

ACADEMY OF FIRE SPRINKLER TECHNOLOGY
www.firesprinkleracademy.com
AMERICAN FIRE SPRINKLER ASSOCIATION
www.firesprinkler.org
AMERICAN SUBCONTRACTORS ASSOCIATION
www.asaonline.com
BLAZEMASTER®: www.blazemastertraining.com
CANADIAN AUTOMATIC SPRINKLER ASSOCIATION
www.casa-firesprinkler.org
FERGUSON FIRE & FABRICATION
2025 Trade Pro Tour TBD
www.ferguson.com
FIRE PUMP ACADEMY
https://firepumpacademy.net
FIRE SMARTS: www.firesmarts.com
FMI: www.fminet.com
NATIONAL FIRE PROTECTION ASSOCIATION
www.nfpa.org
NATIONAL FIRE SPRINKLER ASSOCIATION
www.nfsa.org
OKLAHOMA FIRE SPRINKLER ASSOCIATION
www.ofsa.info
OKLAHOMA STATE UNIVERSITY
www.ceat.okstate.edu
SENECA POLYTECHNIC
www.senecapolytechnic.ca

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Nonresidential Construction Spending Up

National nonresidential construction spending increased 0.1% in January, according to an Associated Builders and Contractors (ABC) analysis of data published by the U.S. Census Bureau. On a seasonally adjusted annualized basis, nonresidential spending totaled $1.248 trillion.

Spending was up on a monthly basis in 12 of the 16 nonresidential subcategories. Private nonresidential spending was unchanged, while public nonresidential construction spending was up 0.2% in January.

"Nonresidential construction spending rebounded slightly in January, yet this report is far from encouraging," said ABC Chief Economist Anirban Basu. "Data center construction spending increased another 1.9% for the month, accounting for more than three-fourths of the monthly increase in nonresidential activity. While that segment is so hot that it can melt through the effects of high interest rates, many other categories appear to be frozen in place. Even manufacturing, which still accounts for nearly $1 in every $5 of nonresidential construction spending, is virtually unchanged since May of last year.

"Despite high interest rates and the looming effects of tariffs and heightened economic uncertainty, contractors remain optimistic. Nearly 65% of contractors expect their sales to increase during the first half of 2025, according to the January reading of ABC's Construction Confidence Index. That said, it's possible that the February reading of ABC's CCI will show increased pessimism given declines in other economic confidence indicators."

Construction Industry Outlook

According to Deloitte (www2.deloitte.com): Overall, the U.S. construction industry is likely to record moderate growth in the medium term with slowing inflation and a supportive monetary policy.

As engineering and construction (E&C) firms plan for the upcoming year, there are four key areas that may help them capitalize on the projected industry.

Managing the labor mismatch: E&C firms will likely use a variety of strategies to build an agile workforce.

Increasing technological integration: Evolving technologies can continue to transform E&C operations across the value chain.

Financial considerations: E&C firms strive to drive growth from strategic divestitures, capital allocation strategies, and the growing role of private equity.

Industrial policies: E&C firms are likely to remain agile in the face of an evolving policy landscape.

❑

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SALES

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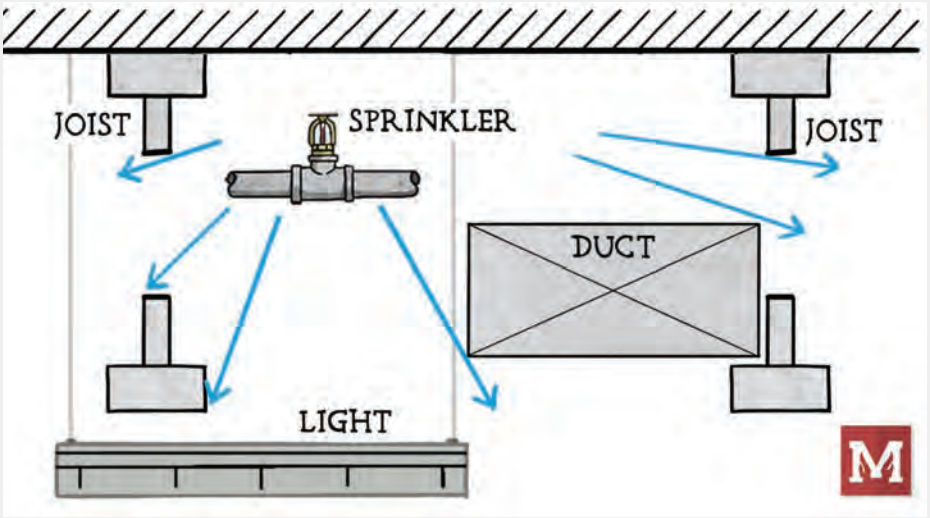
Notebook



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Obstruction Rules Made Simple

NFSA and MeyerFire's new book by Jeffrey M. Hugo, CBO, and Joseph Meyer, P.E., helps you master sprinkler obstructions.

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>>>NFSA Testifies for Retrofit Bill in Minnesota, including NFSA's Tom Brace and Tim Butler, Craig Bistodeau with Sprinkler Fitters Local 417 Training, Minneapolis Fire Chief Bryan Tyner, Hopkins Mayor Patrick Hanlon, Hopkins Deputy Fire Chief Mike Wenshau, and Minnesota Housing Agency's Dan Kitzberger.

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Riser Advisor

This wet fire sprinkler system is installed in an office-warehouse building.

1) One system does not have a control valve, main drain, or hydraulic placard.

2) It would be nice if the pipe stand was bolted down to the floor.

3) It would be nice if the ball drip was piped outside.

4) It would look cleaner if the pipes going through wall had wall plates.

— David Cook, CPE, Sales Manager
Aegis Fire Protection, LLC, Lenexa, KS

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