

National Fire Sprinkler Magazine

January-February 2024
No. 243



The Flagship Publication of The National Fire Sprinkler Association



CODES & STANDARDS

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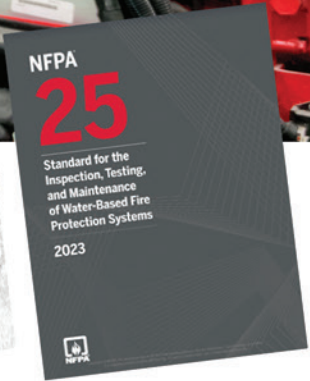
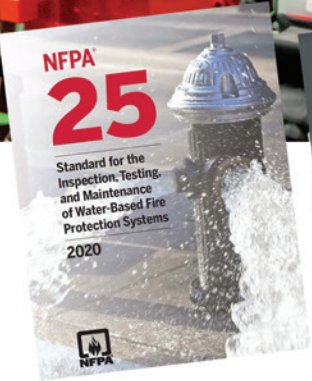
CONTROL VALVE

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IN CASE OF FIRE
DO NOT SHUT VALVE UNTIL FIRE IS ENTIRELY OUT!
WHEN VALVE IS SHUT FOR EMERGENCY REPAIRS OR FIRE NOTIFY

REQUEST DIRECTIONS - RESTORE PROTECTION QUICKLY



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ON THE COVER

NFSA proudly kicks off our premier issue of 2024 delving into the all-important nuances of Codes and Standards.

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National Fire Sprinkler Magazine (ISSN 1050-4958) (USPS 524-010), is published bimonthly (January/February, March/April, May/June, July/August, September/October, November/December) by the National Fire Sprinkler Association, Inc., 514 Progress Drive, #A, Linthicum Heights, MD 21090. Periodicals Postage is Paid at Linthicum Heights, MD, and at additional mailing offices.

Subscription free to NFSA members and member companies.

POSTMASTER: Send address changes to:

NFSA, 514 Progress Drive, Suite A,
Linthicum Heights, Maryland 21090

or update your membership profile at www.nfsa.org

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Our Allies and Outreach

From our early days, NFSA has always been more successful with our outreach because of our allies. I'm excited for 2024! I recently gave a speech to the Colorado Fire Protection Association, which became part of NFSA in October of 2023. During this speech, I spoke about how powerful our industry is when it is all aligned on the issues, from codes and standards to laws and regulations. However, when we are divided, the standards-making bodies and the legislators use it against us, and we can't move the needle at all.



There is no other industry I am aware of that champions for a cause more than NFSA. We sponsor and/or donate over \$500,000 dollars to other fire service and fire protection associations, and we raise over \$600,000 per year for burn survivors, burn camps, and advocacy groups. These allies push and promote our industry in the most genuine fashion because they have been impacted by fire. They would still do this if we didn't give them a dime, and their most common statement about our industry is "*I didn't know*".

Our allies with the Congressional Fire Services Institute, the National Fallen Firefighters Foundation, Common Voices, the National Association of State Fire Marshal's, and many, many more, help us promote our mission because it is pure, simply to protect lives and property. The partnerships we have are mutually beneficial to all involved for advocacy, outreach, and education.

I want to say thank you to the fire sprinkler industry for your generous contributions that promote the widespread acceptance of the fire sprinkler concept. It is an honor to serve in a role that can help so many across our country.

Speaking of giving, it's hard to believe that it's election time at NFSA. Thank you to those who not only give of their money in membership dues, but to those who give so much of their time. From our Board of Directors to our many councils and committees, there are tens of thousands of hours of time given by volunteers to make this industry better.

The election for NFSA's SAM (Supplier and Manufacturers Council) and the Contractors Council has just wrapped up. This year our Chair **Jim Boulanger**, Board Members **Jon Ackley**, and **Conor Kauffman** are up for re-election. The Nominating Committee will meet this month to recommend a Chair, Vice Chair, and Treasurer, as well as my position as President.

NFSA is a great organization that has advanced this industry greatly. We will continue to work with our allies and convert our adversaries to our allies. Happy New Year and I'll pray for a prosperous year for all.

A handwritten signature in black ink that reads "Shane Ray". The signature is fluid and cursive, with a large, stylized "S" and "R".

Shane Ray, President

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Leap Year

To our Fire Sprinkler Family, welcome to 2024, a leap year. Did you know leap years only come around every four years, and are a big deal, especially if you were born on February 29th? Those of you thinking we can just lobby congress and legislate away the leap year or add more Leap years just like Day Light Savings Time are wrong. We will always adjust the calendar because it takes 365 days and six hours for the earth to rotate around the sun. Every four years we make up for those six hours by adding a full day. So, if you were born, married, or plan to move on to heaven on February 29th you will always have to



wait another four years if you missed your big day. Imagine what it is like to be 40 years old and only have ten actual birthdays? Then again, at my age it is starting to sound like a pretty good idea.

This month your National Fire Sprinkler Magazine is kicking off the new leap year featuring articles and commentary surrounding our codes and standards. When I first entered the industry full time out of college, I was assigned to the design department. The first day I received an NFPA 13 red book full of the dos and don'ts of fire sprinkler design. It amazed me, there were so many rules for everything, aren't these just sprinklers, what is the big deal? A section on distance between heads and below decks. Rules for selection of sprinkler temperatures and what and where to earthquake brace. Rules to space heads off walls and even pipe schedule charts to determine pipe size. Rules on system size and classification of all hazards, we even had a schedule for how to size pipes and space heads in a Fur Vault, very strange. If that sounds a little old, just call me experienced.

Back then I asked my father and mentor who wrote this red book. Where did they get their authority? Why do I have to follow it? Such a rebel barely 6 months into design. The answer he gave me still resonates today.

I was told the entire industry; along with public input and multiple stakeholders, are all allowed at the table. A broad group comes together creating model codes under consensus agreement for the betterment of everyone. Insurance companies and fire department officials,

representatives from the hotel industry, as well as major manufacturers like Boeing and Dow Chemical, all get a say. Contractors and manufacturers of the products are at the table. Educational institutions and professional engineers and architects come together to create the codes everyone utilizes for life safety and property protection. I recall he told me the alternative would either be the government deciding everything for us, meaning technological innovation and change would be slow and bureaucratic, if it ever came. Or maybe unique specific self-interests would try to control the process for the betterment of themselves but not necessarily the entire public. I heard it was not a perfect system, but pretty darn close. He told me it is a great benefit to living in

"A broad group comes together creating model codes under consensus agreement for the betterment of everyone. Insurance companies and fire department officials, representatives from the hotel industry, as well as major manufacturers like Boeing and Dow Chemical, all get a say. Contractors and manufacturers of the products are at the table. Educational institutions and professional engineers and architects come together to create the codes everyone utilizes for life safety and property protection."

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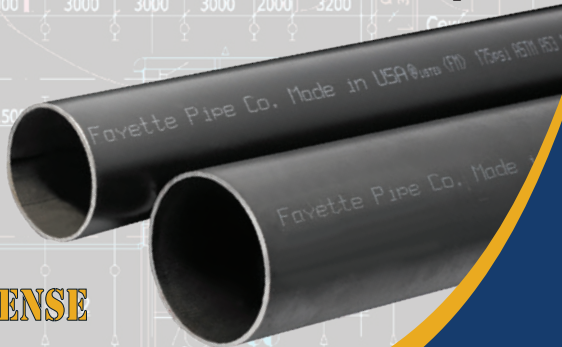
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From the Chair's Desk

Jim Boulanger

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a free country, all voices being represented. The process does work, as this six-month designer was lectured, then I was reminded to always follow those codes and finally to get back to work.

Today I am reminded codes still govern, and your NFSA is active representing your thousands of voices in the process through the Engineering and Standards committee. The E&S decisions are pushed forward to the governing NFPA code committees and our voice is heard. Today, like 40 years ago, special interests will always try to exert unbalanced influence using the codes and standards to promote their agenda. The battle goes on, not everyone loves fire sprinklers, they disagree where they should be installed and continue to even argue who should install them. The process does work, and will continue to provide outstanding rules, but only when you support your Association and stay involved will you be heard. Of course, I am also assuming my article reader is not a six-month apprentice designer acting like a rebel without an intelligent cause.

I leave you with one more thought. One NFSA contractor member volunteer did more than almost anyone I know in promoting the professionalism of our industry and specifically the Fire Sprinkler designer. Mike Friedman, PE worked tirelessly as a Board member and Chair of NFSA back in the 1980s promoting professionalism of the design and calculation of a fire sprinkler system. It was Mike who pushed for the early relationship with NICET and certification which allowed the industry to really step up and blossom in the design build world. I recently learned Mike passed away at the age of 87 in April. If ever a member poured his soul out for this industry, it was Mike Friedman, a friend and mentor. He will be missed.

All my best and happy leap year,

Jim

Runaway Meetings Are the Top Time Waster At Work

by Barbara Bartlein

A new nationwide survey finds that "runaway" meetings are the biggest time waster in the workplace. More than 27 percent of workers polled said meetings are the largest culprit for inefficiency and lack of productivity.

The survey was developed by Office Team, a staffing service specializing in skilled administrative professionals. With responses from 613 men and women, all 18 years or older, the findings are part of the "Office Team Career Challenge," a project to help administrative professionals advance their careers.

With today's lean staffing levels, there is increasing pressure for employees to manage their time effectively. Yet, many employers sabotage time management with runaway meetings and interruptions. Industry Week calls meetings "the Great White-Collar Crime" estimating they waste 37 billion dollars a year.

Some 'red flags' that can indicate a mismanaged meeting:

- **No one in charge.** If the leadership of the meeting isn't clear, there is a tendency for attendees to waste time, pontificate their points and not draw any conclusions.
- **Not starting on time.** This practice 'trains' employees to come late and expect additional time for socializing.
- **Lack of objectives or agenda.** With no clear purpose or agenda to follow, it is easy for the meeting to get off track. Participants may not be clear as to what needs to be discussed or for how long.
- **Lengthy guest list.** As a rule, the more people at a meeting, the less work accomplished. When the list of attendees is extensive, it is often because there is a focus on not excluding anyone, not because each member's participation is necessary.
- **Just part of the routine.** Regularly scheduled meetings can lose value as circumstances and staff change. All routine meetings should be periodically evaluated to determine whether they should be held at all.

To learn how to make meetings more productive, I contacted Chris Clarke-Epstein, CSP, who wrote the book, *I Can't Take Your Call Right Now, I'm In a Meeting*. The former president of the National Speaker's Association, she works with clients to help employees learn faster and work better. She offers concrete ideas to make your meetings more effective.

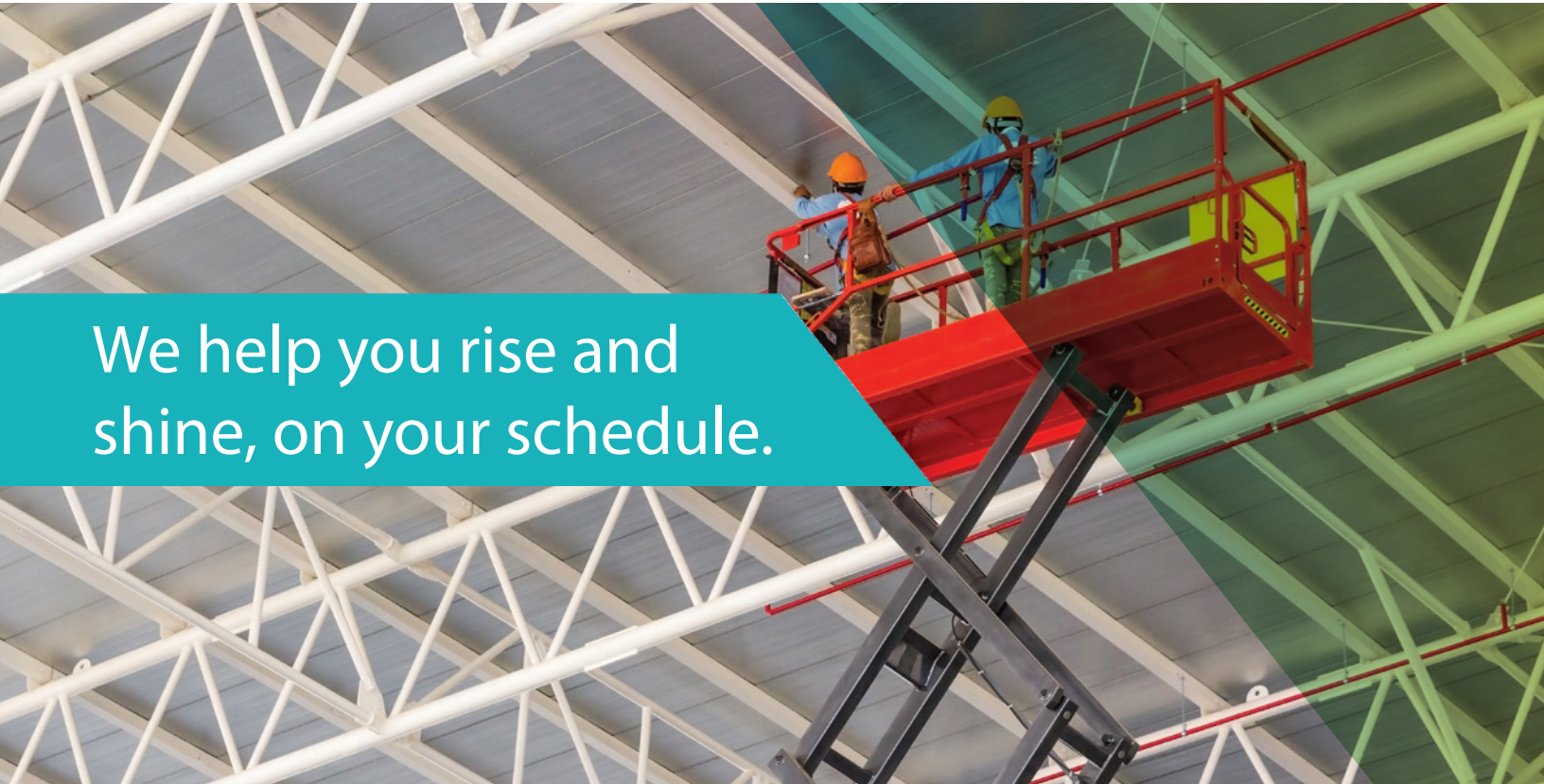
- **Idea #1:** Not every meeting should take place. The right

times to schedule a meeting are when conflicts need to be resolved, groups of people need to start working together or information needs to be shared at the same time. Meetings are a group activity so they can be effective when a group needs to reach consensus or rally around an idea or plan.

- **Idea#2:** The person who calls the meeting has more to do than reserve the room. They need to also consider other logistical issues, including time, equipment needed, and food/beverage. They need to take ownership of the content including preparation of an agenda and distribution of review materials. It is important to have a system to follow up on assignments and monitor the results of the meeting.
- **Idea #3:** Meetings are no better than the people attending them. According to the Warton Center for Applied Research, the primary cause of unproductive meetings is not having the right people in attendance. The most effective participants at any meeting are: people who have the information you need, people who can make decisions, and people who will implement the decisions.
- **Idea #4:** What gets recorded at a meeting has a chance of getting done. All meetings need some form of collective, agreed-upon memory. Without documentation, consensus can quickly evaporate. Meeting notes are needed to summarize the decisions made, itemize the actions agreed upon, fix accountability and document the deadlines for all actions.
- **Idea #5:** Meetings that end without assignments are doomed to be repeated. Groups are often very good at decision making and unbelievably poor at implementation. There needs to be an identified person to implement each decision within a specific timeframe. Watch to make certain that everyone is getting some of the responsibilities.
- **Idea #6:** Teams that evaluate their meetings have better meetings. Take two or three minutes at the end of each meeting to evaluate the process. Use index cards and answer the following questions: Were the meeting's objectives met? Was the meeting's format effective? Was the meeting of value?

The true value of any meeting is what happens after the meeting takes place. Make sure that individuals are held accountable for meeting results. And remember, if you don't measure it, it won't happen.

Article source: <https://www.articlegeek.com/>



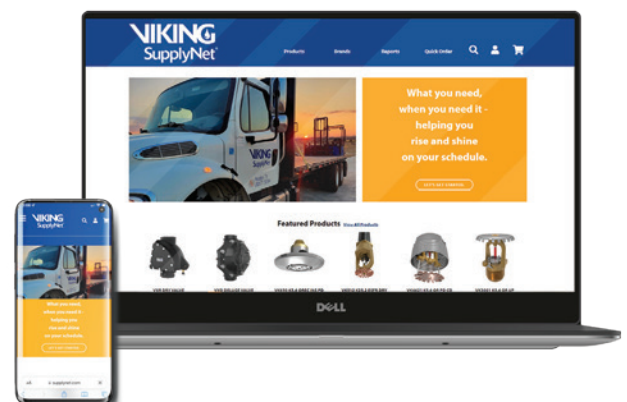
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Are My Sprinklers Mixed Up?

by Michael J. Joanis, P.E., *Chief Engineer*



Fire sprinklers have been around since 1874. During the past 150 years, the basic function has remained the same. Automatic sprinklers detect heat from a fire and operate, providing localized water to control a fire. This basic function has evolved over time.

Today's sprinklers come in many different application types, coverage areas, deflector orientations, discharge characteristics, thermal sensitivity, temperature ratings, ornamental finishes, corrosion resistance, and pipe threads. Sprinkler systems in buildings from thirty years ago may have had a couple of different types of sprinklers. To protect those same buildings today, the modern-day sprinkler system can utilize a dozen different sprinklers.

Mixing sprinklers with different thermal sensitivity (response type) or temperature rating on the same sprinkler system, in the same area, or in the same compartment can adversely affect the performance of the sprinkler system. Sprinkler “skipping” can occur and affect the ability of the sprinkler system to control the fire.

What is sprinkler skipping?

It is expected that heat from a fire will rise to the ceiling, expand horizontally, and operate the sprinkler(s) closest to the fire. Sprinkler skipping occurs when a sprinkler located farther away from the fire actuates prior to a sprinkler that is closer to the fire. Skipping can be temporary, meaning the sprinkler closer to the fire eventually operates but its activation is delayed. It can also be permanent, meaning the sprinkler closer to the fire does not operate at all.

Sprinkler skipping can be observed during fire testing when the sequence of the sprinkler operation is documented. We often see skipping during fire testing conducted for various storage applications. However, when sprinkler systems have been installed in buildings, it is often not possible to determine the order in which the sprinklers activated and whether skipping has occurred.

Sprinkler systems are designed and installed to control a fire. The intent is to quickly apply water to the fire. Sprinkler skipping delays or limits the application of water directly to the fire. This can cause more sprinklers to operate than necessary and change the order in which sprinklers operate. While it would provide



some ceiling cooling, skipping sprinkler activation allows the fire to grow larger than it would have had the sprinklers closest to the fire operated first.

Which sprinkler characteristics affect activation time and skipping?

The sprinkler's thermal sensitivity or response time index (RTI) has the largest effect on activation time. RTI is a measure of thermal responsiveness based on operating time, operating temperature, air temperature in the test oven, and the conductivity factor of the sprinkler. The procedure for the test is commonly referred to as the plunge test. The sprinkler is placed in the testing equipment and exposed to a controller airflow and temperature. The time for the sprinkler to activate is recorded.

Prior to the 1960s, sprinkler installations were typically driven by insurance company requirements for property protection and standard response sprinklers were used. In 1973, America Burning focused on improving building and fire codes to include sprinkler protection for life safety. In the 1980s, recognizing the life safety

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value of sprinklers, fast response sprinklers were developed.

Standard response sprinklers have an RTI of 80 (meters-seconds) $\frac{1}{2}$ or greater. Fast response sprinklers include residential, quick response, and ESFR with an RTI less than 50 (meters-seconds) $\frac{1}{2}$. These sprinklers are designed with a thermal sensitivity that allows faster operation than a standard response sprinkler when used in a similar fire scenario. For over 20 years, NFPA 13 has required fast-response sprinklers in all new light-hazard occupancies.

The sprinkler's temperature rating, to a lesser degree, can also affect the sprinkler activation time. Temperature rating is selected based on the hazard classification being protected and the highest expected ambient temperatures. Sprinkler temperature ratings, classifications, and color coding are detailed in NFPA 13, 2002 edition, Section 7.2.4.

For example, ordinary temperature rated sprinklers have a range from 135 to 170°F and are appropriate for ambient temperatures up to 100°F. Intermediate temperature rated sprinklers have a range from 175 to 225°F and are appropriate for ambient temperatures up to 150°F. High temperature rated sprinklers have a range from 250-300°F and are appropriate for ambient temperatures up to 200°F. The options go on from there, including extra, very, and ultra-high temperature rated sprinklers for ambient temperatures as high as 625°F.

What does NFPA 13 require to avoid skipping?

Relative to thermal sensitivity or response type, the basic requirement is to not mix sprinklers of different response types in the same compartment. This is found in **Section 9.4.3.2** for the use of sprinklers and thermal sensitivity. This section indicates when quick-response sprinklers are used, all sprinklers within the compartment shall be quick response. The section also provides the following three exceptions:

1. Where there are no listed quick-response sprinklers in the temperature range required.
2. In-rack sprinklers.
3. Sprinklers that carry a listing for both standard-response protection and quick-response protection at different areas of coverage.

Sections 9.4.3.5 and 30.3.5 also require that when existing light hazard systems are modified to use quick response or residential sprinklers, all sprinklers in a compartment shall be changed to quick response. This is to avoid mixing sprinkler response types in the same compartment when renovations are made to a portion of the system.

It is important to understand what the standard considers a compartment. Chapter 3 defines a compartment as a space completely enclosed by walls and a ceiling. Walls are allowed to have openings with a minimum lintel depth of 8 in. However, the total width of all openings in each wall is limited to less than 8 ft. in width. A single opening of 36 in. or less in width without a lintel is allowed when there are no other openings to adjoining spaces.

Chapter 14 for early suppression fast response (ESFR) sprinklers

takes a slightly different position relative to separating fast response ESFR sprinklers and standard response sprinklers. Rather than a compartment, draft curtains and a clear aisle are permitted to provide the required separation.

Relative to temperature classification, the intent is to provide the same sprinkler temperature classification throughout a compartment, unless there is an area with a higher ambient temperature that requires a higher sprinkler temperature classification. The following is a summary of the requirements and exceptions found in Section 9.4.2 for sprinkler location requirements and temperature ratings:

1. Ordinary and intermediate temperature rated sprinklers may be installed throughout buildings unless there is a specific requirement for higher temperature sprinklers. Because the response time of ordinary and intermediate temperature sprinklers is not that different, the standard permits both throughout the building.
2. Sprinkler temperature classification shall be based on the maximum ambient ceiling temperature in accordance with Table 7.2.4.1(a).
3. When allowed by the standard, high temperature sprinklers may be installed to protect ordinary hazard, extra hazard occupancies, and storage occupancies. There are specific design criteria for these hazards that include the use of high temperature sprinklers.
4. Sprinklers of intermediate and high temperature must be installed in specific locations at or near heat sources as required by **Section 9.4.2.5**. This includes heat sources such as unit heaters, steam piping, skylights, unconditioned attics, show windows, cooking equipment, diffusers, and walk in coolers or freezers.
5. Intermediate temperature sprinklers are permitted to be used throughout areas where residential, quick response, or ESFR sprinklers are installed.

Fire Sprinkler Institute Testing

During recent testing conducted by the NFSA's Fire Sprinkler Institute in Edina, MN, we had the opportunity to witness temporary sprinkler skipping firsthand. In a business occupancy, a private office was protected with a single fifty-year-old, standard response, ordinary temperature, standard spray sprinkler. Samples of these older standard response sprinklers were evaluated and had an average RTI of 223 (meters-seconds) $\frac{1}{2}$. The private office compartment had a single 36 in. wide opening with a 12 in. lintel above, open to the adjacent open office space. The adjacent open office space was protected with quick response, ordinary temperature, standard spray sprinklers.

When the fire was started in the private office compartment, a single quick response sprinkler located outside the office in the adjacent open office area activated first in all three tests. The standard response sprinkler located in the office experienced temporary skipping. It did operate, however, the ceiling temperatures in the office reached 600°F at the time of sprinkler activation. The fire was controlled with two sprinklers activated, even with the temporary



continued from page 12

skipping. However, the fire was less severe with only a 267°F sprinkler activation temperature and only one operated sprinkler, as demonstrated in an additional fire test with a quick response sprinkler in the office and no sprinkler skipping.

Summary

There are many distinct characteristics of automatic sprinklers on the market today. Mixing sprinklers with different response types and/or temperature ratings in the same compartment can cause sprinkler skipping. Sprinkler skipping will reduce effective control of the fire. NFPA 13 provides several requirements to reduce this risk. Before you design and install sprinklers of different response types or temperature ratings in the same compartment, make sure to follow the requirements of NFPA 13 to avoid sprinkler skipping. By doing so, you are supporting the NFSA mission to protect lives and property from fire through the widespread acceptance of the fire sprinkler concept. •

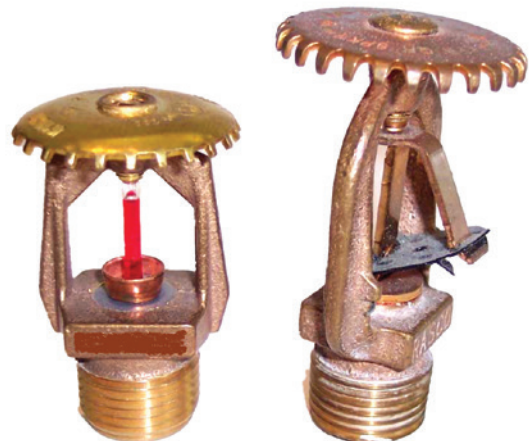
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Virtual Reality Reveals the Speed of Fire and the Power of Fire Sprinklers

Exposure to home fires puts responders at risk from fire, collapse and health hazards. Each new home built without home fire sprinklers makes the community less safe for all.

With HFSC's new virtual reality video you can help decision makers, stakeholders and others in your community understand what you know all too well: today's home fires are fast and deadly.

With user-controlled 360-degree full-room views, they'll experience actual house fires in virtual reality, feeling as if they are in the rooms. They'll see flashover in the unsprinklered room in

real time and watch a sprinkler automatically control the blaze in another.

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Scan this QR code with your smartphone to learn more.



2024 Codes and Their Standards

by John Swanson, *NFSA Codes and Standards Specialist*



This edition of Code Corner was written by John Swanson, Codes and Standards Specialist for the NFSA

Every three years, the International Code Council (ICC) and the National Fire Protection Association (NFPA) update their codes and standards so they reflect the most up-to-date procedures, practices and techniques related to the built environment, with the overall goal of improving safety. On one hand, it's important the codes and standards utilized throughout the built environment are updated to ensure they address modern construction techniques and practices. On the other hand, we all know how quickly technology can change. A lot can (and does) change in three years.

This article will review some of the significant changes to the model codes and standards that have changed between the 2021 and 2024 editions of the International Building Code (IBC), International Fire Code (IFC), NFPA 1, and NFPA 101, that directly impact the fire sprinkler industry.

2024 International Building Code

You may be thinking, I work as a sprinkler designer, I don't need to know what changed in the IBC or IFC. Here's just one scenario that outlines why changes in the model codes can directly impact the fire sprinkler designer, and sprinkler contractors in general. The 2021 IBC and IFC use the term Condition 1 or Condition 2 to apply the fire protection requirements based on the occupants' mobility, or lack thereof, and if the occupants need assistance with evacuation. These terms are used in the Group I-1 and Group R-4 occupancy definitions. Condition 2 applies to those occupancies where occupants require "limited verbal or physical assistance while responding to an emergency." However, the code never defined "limited verbal or physical assistance", so it was left up to the design professional and code official to make the determination. The 2024 IBC clarified and added a definition to assist with determining if the occupants need verbal or physical assistance with evacuation. This is important to the sprinkler designer because the Condition 1 or 2 classification can mean the difference between when an NFPA 13R system is required and when an NFPA 13D sprinkler system is permitted.



High-Rise Buildings

Another important change that occurred in the 2024 IBC was made to high-rise buildings. Design professionals and code officials may already be aware there's an entire section in IBC Chapter 4 dedicated to high-rise buildings (buildings with an occupied floor more than 75 ft. above fire department vehicle access). The change to the 2024 IBC says that the "high-rise" designation now also applies where an occupiable roof is located above the 75-foot point. This change will mean an existing building that under previous codes was not considered a high-rise, can be placed into the high-rise category (IBC Section 403) using the "change of occupancy" provision if the owner repurposes the roof to make it an occupied space and the roof is more than 75 feet above the lowest level of fire department vehicle access.

Incidental Use Areas and the IBC

Another change in the IBC impacting fire protection is related to the incidental use area provisions in Section 509. An incidental use area is a room, space or area considered to be an ancillary function associated with an occupancy that poses a higher level of risk to that occupancy. In other words, incidental use areas are a room or space that presents a higher risk in an occupancy. Examples include a furnace room where the furnace exceeds 400,000 BTUs per hour input, or a chemistry lab inside a high school. Historically, the code has required incidental use areas to be fire-separated or protected with fire sprinklers. In some limited situations, the code

continued on page 16

continued from page 15

will require both fire separation and sprinkler protection. The 2024 IBC now requires incidental use areas located in ambulatory care facilities to be separated from the rest of the building by a 1-hour fire barrier and protected with fire sprinklers. It's important to clarify that ambulatory care facilities include buildings used for medical, surgical, psychiatric, nursing, or similar purposes on less than a 24-hour basis, where the persons are rendered incapable of self-preservation. In other words, the occupant(s) need assistance evacuating. These occupancies do not include the standard doctors' or dentists' offices. However, it will likely include day-surgery centers where occupants are placed under general anesthesia.

2024 International Fire Code

Lithium-ion Batteries

Several changes were made in the 2024 IBC and IFC specific to the use and storage of lithium-ion batteries, including equipment utilizing lithium-ion batteries. In previous editions of the IFC, sprinkler protection was required when the lithium-ion batteries were used with an energy storage system. Now, fire sprinklers are required for Group B, F-1, M and S-1 that use or store these batteries, regardless of whether they are used in conjunction with an energy storage system or not. Examples include testing, research and development of batteries, manufacture of batteries, storage and/or sale, just to name a few. The issue of how to properly protect lithium-ion batteries using fire sprinklers will need to be addressed in another NFSA Technotes article.

The IBC and NFPA 13R Sprinkler Systems

Another significant change was made to the 2024 IBC and IFC relating to NFPA 13R sprinkler systems; specifically, when they are permitted based on the height of the building. Since the 2015 IBC, the codes have contained parameters for when NFPA 13R can be used, primarily dealing with podium-style buildings. The 2021 IFC allowed NFPA 13R sprinkler systems when all the following conditions were met:

1. Four stories or less above grade plane.
2. The floor level of the highest story is 30 feet or less above the lowest level of fire department vehicle access.
3. The floor level of the lowest story is 30 feet or less below the lowest level of fire department vehicle access.

However, there was an inadvertent mistake made when this section was changed between the 2018 and 2021 editions of the IBC and IFC. The problem with this revision is condition #2 limits most residential buildings protected with an NFPA 13R system to no more than three stories in height. The intent has always been to allow NFPA 13R up to, and including, four stories. Another important change that occurred in the 2021 editions clarified the number of stories of Group R occupancy must be measured from grade plane. Previous editions allowed the number of stories to be measured from the horizontal assembly creating the occupancy separation. NFSA's codes and standards team submitted a code

change for the 2024 IBC that was approved to modify Section 903.3.1.2 again and increase the 30 ft. requirement to 45 feet for Group R-2 occupancies. It's important to clarify that this change only applies to Group R-2 occupancies (not Group R-1). According to feedback NFSA received from contractors, developers, and design professionals, the 30 ft. requirement that was added to the 2021 IBC limits residential buildings on top of podiums, but also affects stand-alone R-2 multi-family occupancies. The 2024 change will allow NFPA 13R for four-story buildings. Based on typical floor ceiling assemblies and ceiling heights found in apartment buildings, the 30 ft requirement inadvertently limited NFPA 13R systems to three-stories, which was not the intent.

Floor Level Exit Signs

Another change that primarily will apply to Authorities Having Jurisdiction applies to floor level EXIT signs in Group R-1 (hotel/motel) occupancies. The 2024 IBC includes an exception for the elimination of floor level EXIT signs when the building is protected throughout with an NFPA 13 or NFPA 13R sprinkler system.

Spray Finishing Applications and Fire Protection

The IFC has contained fire protection requirements for spraying of flammable finishes (spray booths, rooms, etc.) for years. NFPA 13 and NFPA 33 contain installation requirements for sprinklers protecting ducts exhausting the flammable vapors from these spaces. But as was mentioned in the first part of this article, codes and standards must be updated so they reflect, and adequately address, new hazards that are introduced in the built environment. Over the past few years, inflatable and portable enclosures used for spraying flammable finishes have become available on the market. The problem with these spray enclosures is they often do not meet the criteria found in Chapter 24 of the IFC. The IFC and NFPA 33 require spray enclosures used for the application for flammable finishes to be noncombustible or limited combustible and equipped with fire protection in the spraying space and the exhaust duct. Inflatable spray enclosures often do not meet this requirement.

NFPA 1 - Fire Code

NFPA 1 also made several changes to the 2024 edition impacting the sprinkler industry and authorities having jurisdiction.

A new section was added to NFPA 1 allowing code related inspections for fire protection systems and equipment to be modified or delayed when approved by the authority having jurisdiction due to national, regional, or locally declared disasters.

The use of cooking equipment on decks and balconies of multi-family dwellings has been modified and reformatted. A new section was added allowing cooking appliances on decks and balconies when protected with a sprinkler system complying with NFPA 13 or NFPA 13R and sprinkler protection is provided on the



balconies and any overhanging structures. Cooking appliances are also permitted on decks and balconies of residential occupancies constructed of Type I or II construction when the appliance(s) are listed and labeled in accordance with UL 1026. The 2024 edition also clarified that a minimum clearance of 24 inches must be provided and maintained from the building and combustible materials.

Section 13.1.9 was reformatted to clarify that when impairments, critical deficiencies, or non-critical deficiencies are identified during maintenance of a fire protection system, the impairment(s) or deficiencies shall be corrected or repaired in a timeframe acceptable to the AHJ, and until impairments or deficiencies are addressed, an impairment plan or deficiency program must be implemented.

New language was added to clarify that private fire service mains must be inspected, tested, and maintained in accordance with NFPA 25. Previous editions of NFPA 1 simply required fire service mains to be “maintained”.

NFPA 101 – Life Safety Code

NFPA 101 – Life Safety Code added new criteria for “alternate care sites”. During the pandemic, a need arose for temporary medical clinics and/or care sites at locations not typically used for medical care. An example would be an arena converted for temporary use as a medical facility or hospital. Alternate care sites

are now defined as:

Any building, structure, or portion thereof not currently being used for health care that is temporarily reoccupied, converted, constructed, or relocated for health care use during an urgent need in capacity to provide additional capability for an affected community.

Lastly, NFPA 101 requires all new parking structures to be protected with an automatic sprinkler system, regardless of the square footage or number of stories. Many vehicles today are made of plastic materials and include products such as lithium-ion batteries, which presents more of a challenge to responding firefighters. This is also why the 2022 edition of NFPA 13 moved automobile parking garages from the ordinary hazard group 1 classification to ordinary hazard group 2.

Hopefully this article has provided you with some of the significant changes to the codes that directly impact fire sprinkler designers, contractors and authorities having jurisdiction. Some of these changes won't directly impact fire sprinkler designers or contractors, but nearly all the changes mentioned here will impact authorities having jurisdiction that are responsible for applying, interpreting, and enforcing the requirements in their respective communities. If you feel overwhelmed with all the changes that occur between the different codes and standards, you're not alone. But don't worry, NFSA's code development team is dedicated to staying up to date on these changes so you can do your job more effectively. •

The Truth Burns

Common Voices advocates set the stage for why a focus on the impact of fire is worth a glance. Pause and think about our instinct to survive and ask yourself why do we become complacent when it comes to fire safety? The myth “it’ll never happen to me”... sometimes, the truth burns.

In 2022, Common Voices launched a bold plan to capture the stories of all Common Voices advocates. The dream/plan is to have these stories provide the inspiration for a streaming service to create a Docu-series and/or a documentary called “The Truth Burns.” We believe that these stories are courageous, and that they can make a difference and prevent others from suffering similar tragedies. We hope you will join us in our efforts, share the links via all social media platforms, join our coalition with a donation. Working together, we can save lives, and we thank you for believing in our cause, supporting our advocates, and joining our movement for a Fire Safe America.

Our landing page for *The Truth Burns* can be found here:

<https://fireadvocates.org/the-truth-burns/>

 CommonVoices1

 CommonVoices1

fireadvocates.org

Fire Sprinklers Save Lives



Courageous stories that can make a difference and prevent others from suffering similar tragedies...



<https://fireadvocates.networkforgood.com/projects/125513-main-giving-page>



by Vickie Pritchett,
Vice President of Advocacy and Outreach

New Beginnings, Codes, & Aloha

Happy 2024! Bringing in a new year is always time for new beginnings, and I wish you, your family, and your organization/business much success in this new year. Most of all, I wish you plenty of the things that aren't things...time with those you care about and that care about you, and lots of ways to make a difference through your work and your life.

As we celebrate new beginnings, we also pause to acknowledge the foundation on which we are able to stand as the fire sprinkler industry. There is no better topic to highlight this than codes and standards. NFSA has long been known for leading in this arena, and today is no different. Jeff Hugo, Vice President of Codes and Standards, has an awesome team of professionals that focuses on codes and standards throughout the year. He is joined with extra help by NFSA's Chief Engineer Mike Joanis and his team. I listen as stories are shared about Russ Fleming and Ken Isman, and the



important role they played in the codes process, and I am proud to hear the many stories regarding current codes, with NFSA's team still leading the way!

Make sure you stay current with codes and standards by following the publications created by this team, whether it's contained in Tech Tuesdays, Tech Notes, or articles in NFSM or blogs, the team is always sharing what they know with those who need to know it! Their pocket guides make it easy, the latest guide focuses on NFPA 25 Inspection, Testing & Maintenance, check those out today.

I couldn't speak to the importance of codes and standards and not mention our advocates who make it real. Reflecting upon testimony provided during the codes process where fire sprinklers

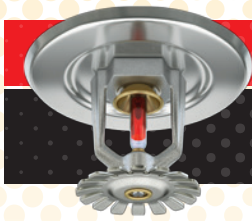
were included in the national minimum building code, it was advocates—those directly impacted by fire and the tragic loss delivered by it, that provided pivotal turning points. To hear a mother explain that the flowers at her daughter's funeral cost more than the fire sprinkler system would have that could have prevented her daughter's death sticks with me to this day. So, to all the advocates who have been directly impacted by fire who choose to share their stories so that others may learn I say thank you. Thank you for your courage, thank you for your dedication, thank you for making a difference each time you share.

In closing, I wish for you a happy and prosperous 2024! I hope that your plans for the year include our **2024 Business & Leadership Conference & Annual Seminar** at the beautiful Wailea Beach Resort in Maui, Hawaii. You'll note as you register that we are conducting a fundraiser for a local firefighter's family who was injured in the wildfire in 2023. Our hope is that he and his family will join us in person as we present the gift that we have raised by each of us giving a little extra when we register! Our speakers will be amazing, as we bring Rosa Say, bestselling author of *Managing with Aloha*, to kick us off at our Opening General Session. We are also planning to bring economic forecasts and national leaders who are part of Dr. Lori Moore-Merrell's *#FireServiceOneVoice* to the stage. You don't want to miss this conference, and I hope to see you there! The dates are May 8-10, 2024, and all things conference can be found here:



Until next time, stay safe,

Vickie



FIRE SPRINKLERS IN ACTION

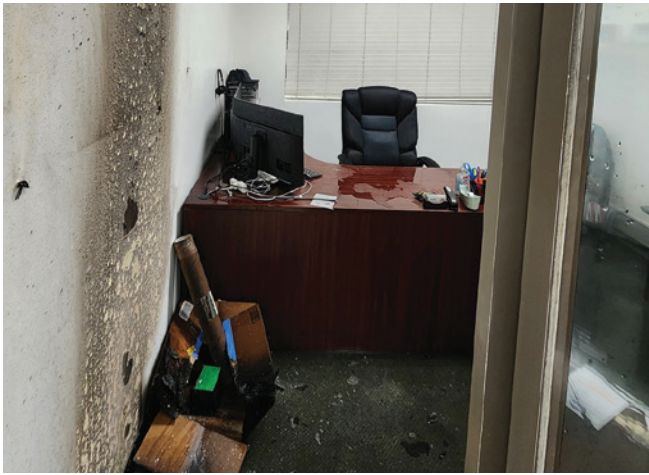
Editor's note: The following saves were submitted by our members. If you have a save you'd like to see featured, use this QR code or email me at genadio@nfsa.org. Please include photos if available!



COLORADO

Fire Sprinkler System Extinguishes Arson Fires

Thanks to the South Adams County, CO Fire Department's Chief of Fire Prevention Brittany Brown for sending us this sprinkler save.



On October 7th, the South Adams County Fire Department responded to a water flow alarm at an industrial trucking facility in Commerce City. Upon investigation they found two attempted fire starts upstairs in the office extinguished by fire sprinklers. Crews acted quickly turning the water off. The fire damage was minimal, and the sprinklers did their job!

It was later discovered that this was an attempted arson, and the investigation is ongoing by South Adams County Fire Prevention Bureau. The fire suppression company was contacted, and the sprinkler system put back into service the same day.



housekeeping carts.

The sprinkler system was vital in controlling the fire to the room of origin, not allowing the fire to grow and aided in the quick extinguishment of the fire.

ILLINOIS

Single Sprinkler Contains Resort Fire

Thanks to Beach Park, IL Fire Marshal Trudy Maatta for sending us this sprinkler save.

On October 26th, a true alarm came out for the Illinois State Beach Resort at 11:43am. Upon arrival, crews found a small fire in a second floor linen storage room. A single fire sprinkler was controlling the fire and crews were able to extinguish the remaining fire.

The activation of the fire sprinkler help contain the fire damage to the linen storage room with only smoke and water damage to the floors. The cause of the fire was a light ballast igniting room linens and paper products stored on a plastic rack and

MINNESOTA

Single Sprinkler Extinguishes Fire in Wood Supply Building

Thanks to South Metro Fire Department Fire Marshal Terry Johnson for submitting this save.

We had a fire sprinkler save in West St. Paul on Saturday, October 14th, South Metro Fire was dispatched to Navy Island Plywood, a wood products supplier. Crews were met by a worker who stated he was welding when the sparks started a fire inside the building. The worker tried to extinguish the fire with fire extinguisher but was unsuccessful.

Crews made entry to find smoke with little to no heat. Crews found a sprinkler-controlled fire inside a paint booth in the interior

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of the building. The sprinkler had extinguished the fire.

On a side note, the prevention division conducted fire extinguisher training to the employees of Navy Island Plywood this summer.

NORTH CAROLINA

1 Town, 2 Sprinkler Saves, 3 Days Apart

Thanks to Mooresville, NC Fire Marshal Jason Workman for sending in two sprinkler saves!



On October 15, 2023, at approximately 7:45 pm, a kitchen fire broke out in one of Mooresville's historic downtown commercial buildings.

The fire started in the cooking area of the restaurant and spread to the hood exhaust system when it activated the fire suppression system and one fire sprinkler. The combination of both the fire suppression system and the fire sprinkler system contained the fire until fire crews arrived to fully extinguish the fire. The fire was contained to the kitchen area and the hood exhaust system. The

continued on page 22

Fire Sprinklers in Action

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fire cause significant damage to the hood system and the roof top hood exhaust system.

Without the fire sprinkler system, this fire could have cause severe fire damage to multiple historic buildings, or even the entire block. Most of these buildings were erected in the early 1900s. Due to the older construction type, age of the building and occupancy use, this fire could have cause significant damage to not only this area of the downtown, but it also could have caused huge economic issues for the town with the loss of multiple business. Another great example of how fire sprinklers can protect and save property, no matter the age, use or construction type.

Value of Building \$1,428,700.00

Value of Contents \$150,000.00

Value Saved \$1,400,000.00



On October 18th, at approximately 3:45am, Mooresville Fire-Rescue was dispatched to a reported apartment fire.

Fire crews quickly arrived on scene to locate a kitchen fire that had been extinguished by the fire sprinkler system. Fire crews treated one patient that suffered smoke inhalation and was transported to the local hospital. The fire damage was minimal and contained the stove and cabinets above.

Having both fire sprinklers and working smoke alarms helped save this tenant's life. The smoke alarm was able to alert them quickly to the fire and the tenant was able to escape without further injuries. The fire sprinklers were able to control the fire early on and limited fire spread throughout the compartment.

In this incident, the location of the fire was next to the main exit of the apartment. Without the early detection of smoke and the operation of the fire sprinkler system, it may have caused more significant injuries or even death. Having both smoke alarms and fire sprinklers do in fact save lives!

Value of Building \$35,021,170.00

Value of Contents \$15,000.00

Value Saved \$35,011,170.00.

TEXAS

Fire Sprinkler System Holds Mall Fire in Check, Saves Puppies!

Thanks to Montgomery County, TX Fire Marshal Jimmy Williams for alerting us to this great sprinkler save posted by The Woodlands Fire Department on their Facebook page.



On October 9th, at 7:20am, TWFD was dispatched to a Fire Alarm/Waterflow at The Woodlands Mall. As the initial units went responding, security called and stated they had smoke inside the building and dispatch upgraded the call to full commercial structure response.

First arriving crews reported smoke on the second floor. Firefighters located the fire in the storage area of one of the occupancies being held in check by the fire sprinkler system. Firefighters extinguished the fire and then began salvage and overhaul. Fire damage was confined to the storage area of a GNC store with seven other businesses having light smoke and/or water damage. Fire cause appears accidental, a malfunction in a ventilation fan.

The mall will be open on its normal schedule, but the affected businesses will reopen as cleanup permits. Most importantly there were no reported injuries and all the animals at the Pet Fair store are doing great!

Single Sprinkler Extinguishes Apartment Kitchen Fire

Thanks to Fire Marshal Thomas Legler of the Lewisville, TX Fire Department for sending in this sprinkler save.

On September 2nd, the Lewisville Fire Department responded to a report of a fire alarm that was later upgraded to a structure fire. Upon arrival, crews found one fire sprinkler activated and a stove top fire extinguished. No other fire damage located in the apartment.

Value of Building \$65,189,325.00

Value Saved \$65,188,325.00

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CONFERENCE & EXPO

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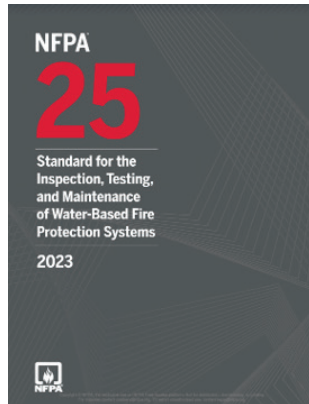
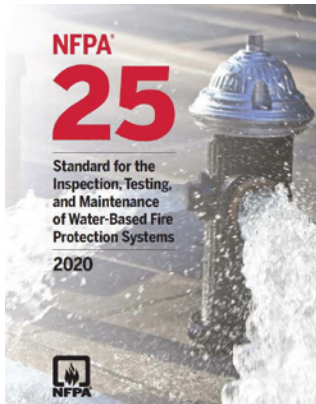
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LET'S PROTECT IT TOGETHER.®

Change Among Us

by Vince Powers, *Inspection, Testing, and Maintenance Specialist*



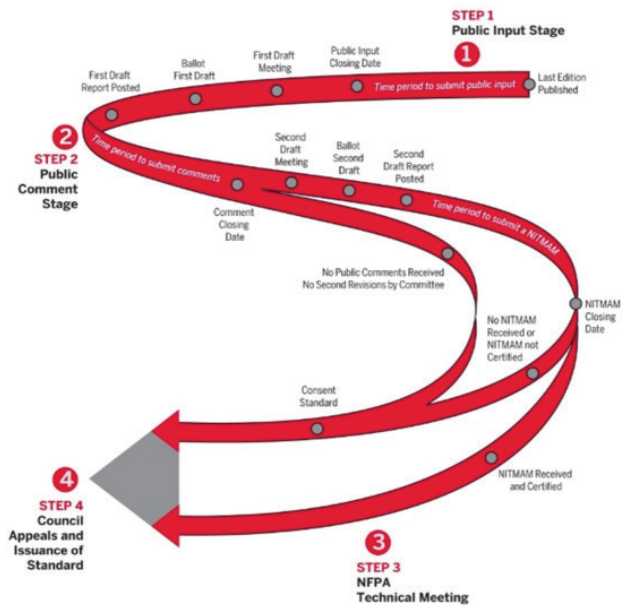
While most states are still in the 2018 codes (NFPA 1, The Fire Code and IFC, The International Fire Code) many are planning changes to 2021 or 2024. This would change which edition of NFPA 25, The Standard for Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, is enforced to either the 2020 or 2023 edition. In this article we are going to discuss the NFPA process and provide significant updates to the 2020 and 2023 edition of NFPA 25, while also discussing what the 2026 edition may bring. This is just a brief description of the changes and will not cover every change in each edition.



Many people comment or complain about what the standards say. Instead of complaining, get involved in the process. Anyone can suggest changes to any NFPA document, you do not have to have a membership to NFPA or even be in the industry. There is no cost for this, you just need to create an account. Once an account has been established you can begin the process. Essentially, there are four stages to the NFPA input process. These stages and the entire process can be found on NFPA's website.



The Standards Development Process



Now that we are aware that we all can have an impact, let us discuss the recent updates to NFPA 25. In most cases very few time requirements for how often a task is required are changed from edition to edition, much of the time the wording is what is changed. This can have major impacts on how we conduct inspection, testing or maintenance (ITM). As an example, in the 2014 edition Section 7.3.1 required flow testing of the private fire service main only when it served hydrants, the words “serving hydrants” was removed in the 2017 edition, which means that every private fire service main must be flow tested every five years. Every building has some sort of private fire service main; this is a huge change to the testing requirements.

Before getting into the specific NFPA 25 changes, let us look at how NFPA indicates where a change was made when using NFPA

1. Input Stage
2. Comment stage
3. Technical meeting
4. Council appeals and issue of standard

continued on page 26

codes and standards:

- Deletions to sections, figures or tables will have a shaded Δ . This symbol may also be placed throughout a chapter where it has been heavily modified.
- New sections, figures, and tables will be indicated by a bold, italic N in a gray box to the left of the new material.
- Deleted sections will have a bullet point (•) between the sections remaining.
- Where wording has been changed, not necessarily deleted, the words will be shaded.

More information regarding these symbols can be found on the back of the cover of the standard and are also at the bottom of the pages throughout the standards.

2020 Edition

Chapter 3 is the definitions chapter in all NFPA standards. In this edition, there were four definitions added.

1. **3.3.3 Automated Inspection and Testing**, which defines what automated inspection and testing is.

A placeholder was put into the 2014 edition and in the 2017 edition several requirements were added to Section 4.6.6 but there was no definition of what automated ITM was, so it was added to this edition.

2. **3.3.26 Lowest Permissible Suction Pressure**. This an extract from NFPA 20 and this change addresses the lowest permissible suction pressure at the fire pump suction flange that is approved by the Authority Having Jurisdiction.

Prior to this change, chapter 8 water supplies stated that 0 psi was the lowest permissible pressure and the section right after that stated that it could be lower where permitted by NFPA 20. The industry standard is that 20 psi should be the minimum, but this is not the NFPA requirement.

3. **3.3.42.6 Electrically Operated Sprinklers**. Relatively new to the industry and provides the definition of what an electronic sprinkler is.

Electrically operated sprinklers are primarily meant for storage applications and have been around for a handful of years, even though many in the industry have not seen them, the standards must attempt to keep up with existing technology.

4. **3.6.2.12 Variable Speed Pump**. Not necessarily new to the industry but defines variable speed fire pumps.

Not technically new to the industry, just not widely used. However, they are installed around the country and with no guidance on the testing procedures, the definition was added as well as testing requirements can be found in chapter 8.

5. **Section 4.1.2.5** relocated the requirement for owners to replace recalled or voluntary replacement equipment from the annex. As many know, an annex is not enforceable. Relocating this section to the owner's requirements helps

ensure that owners will replace these components when found.

6. There were few changes to chapter 5, one of the notable changes was the requirement to test dry sprinklers at 15 years. In the 2023 edition, this will increase to 20 years.
7. Dry hydrant ITM was added to chapter 6, this appurtenance is different from a dry barrel hydrant. These hydrants are found at ponds, cisterns, and other water supplies for the fire department to draft from and are now required to be properly maintained.

8. There were several changes to section 8.1, minimum requirements that address conducting inspections within the fire pump controller. These items are only required when the controller is unenergized. This also includes inspection, testing and checks that address several other items such as diesel batteries such as testing the specific gravity, and ensure that only distilled water only is used.

Several sections were added to the end of 8.3, testing for the requirements of remotely monitored automated testing. Section 8.3.3, annual flow testing includes four new sections. One is the requirement to flow a variable speed fire pump at seven points; churn, 25,50,75,100,150,125, and 150 percent then bypass the variable speed option and flow the pump at the traditional three points of churn, 100, and 150 percent. Making the requirement to conduct two flow tests.

Section 8.3.7.2.3, evaluating the test results was modified. In the 2017 edition, section 8.3.7.2.1 was added stating that velocity and pressure must be adjusted to determine compliance with section 8.3.7.2.3(2). When the changes were made to this section in the 2020 edition, subsection (2) should have been changed to subsection (3) but was an oversight. Technically, with this oversight speed and velocity cannot be adjusted to determine compliance.

One of the last notable changes is in section 8.3.7.2.4 (3). This section states that failure to provide maximum system demand shall be deemed an impairment, while subsection (5), degraded performance that provides system demand shall be considered a noncritical deficiency.

9. **Chapter 12** was heavily modified. Essentially this chapter was completely re-written. If you conduct ITM on water-mist systems, you should familiarize yourself with all the changes. Most of them were taken directly from NFPA 750 The Standard on Water Mist Fire Protection Systems.
10. **Chapter 13** had few changes, the most noteworthy is the addition of time requirements for waterflow alarms. NFPA 72 The National Fire Alarm and Signaling Code, requires contact closure of waterflow switch within 90 seconds, and NFPA 13, The Installation of Water-Based Fire Protection Systems having a 5-minute requirement for mechanical alarms. These requirements were finally brought into NFPA 25.

2023 Edition

1. Water to outlet (inspector's test valves) for dry and double interlock preaction systems in Chapter 14 Section 14.3.1(15) states when there is a 50% increase for water to reach the inspector's test valve an obstruction investigation is required. The 2023 edition will reduce that to 25% and adds additional language for dry systems protecting dwelling units as well as requirements for other hazard classifications.
2. Testing requirements to verify nitrogen systems are maintained at 98%. Many times, nitrogen systems are being installed, then forgotten about. If the system is not maintained at the correct levels of nitrogen, then it essentially is ineffective.
3. Fast response sprinklers will be extended to a 25-year testing requirement.
There is finally data collected to verify how well sprinklers operate through routine testing and at an extremely high pass rate the committee has increased the intervals for testing these type sprinklers.
4. There will be language stating that screwdrivers and other means to jam a paddle-type flow from operating is prohibited. As many often know, tools, quarters and other objects are used to prevent a flow switch from operating. The issue is that these things are often not removed prohibiting the switch from working and potentially restricting some flow past the paddle.
5. A complete rewrite of Chapter 11 (foam-water systems)
6. A label or tag will be required near a pressure reducing valve(s) to indicate the test results.
This requirement is also in the new edition of NFPA 14, The Standard for Installation of Standpipe and Hose Systems. With no data to compare to, the devices are tested but not often verified to be correct. This will help determine correct pressure and flow requirements.
7. Added detrimental to sprinkler performance for replacing sprinklers with paint on them.
Previous editions of 25 added this language to corrosion and loading, and clearly makes sense to add paint detrimental to sprinkler performance. There is guidance in the Annex to assist in determining what is and is not detrimental, such as a drop of paint on the frame of a sprinkler vs. paint on the operating element.
8. Head guards, where required, must be inspected. Never have head guards had a requirement to be inspected until this edition. Like the rest of the standard, the inspector does not verify where a head guard is required, but only verifies if it is installed that it is not damaged.
9. Moved all waterflow alarm device testing to chapter 13.

10. Added requirements to supervise alarm line valves. This is a requirement in NFPA 13 2022 edition. Often when requirements change in NFPA 13, the same changes will be adopted in NFPA 25.

2026 Edition

The first draft of NFPA 25 was held in Mesa, Arizona the first week of October 2023. There were approximately 150 public inputs with approximately 100 of them passing. The second draft will be held sometime in 2024, and final votes at the 2025 NFPA technical meeting.

Some of the potential changes include.

1. all dry, preaction, and deluge valves to have an internal inspection annually rather than five years which is currently required for preaction and deluge valves.
2. Testing of solenoid monitoring devices.
3. Total number of sprinklers installed in building to be noted on spare head cabinet list.
4. Definition of a system riser, many seasoned industry professionals will be surprised by this definition.
5. A document cabinet for the required documents in Section 4.3

13.4.4.1.2

The interior of the deluge valve and the condition of detection devices shall be inspected annually when the trip test is conducted.

13.4.4.1.2.1

Internal inspection of valves that can be reset without removal of a faceplate shall be permitted to be conducted every 5 years.

These are just a few mentions of the proposed changes for the 2026 edition of NFPA 25, remember there is a possibility of 100 changes to the document.

Again, this was just a brief overview of some of the existing and proposed changes for NFPA 25. If your state or local jurisdiction is adopting a new edition of the codes, this will affect the edition of the standards that will be enforced. As a contractor, it is important to understand the changes and how they may affect how business is conducted. All this information is available on the NFPA website if you are interested in knowing why something was changed in a previous edition.

Go to nfpa.org/25 (or any standard you want to view), click on the edition you are curious about and scroll down to find information on the first or second draft and read the report. For the 2026 edition, click the next edition and this will take you to view public inputs online (also known as terra view). From there you can see any proposed changes to the upcoming edition. This applies to all NFPA standards. If you have recommendations that will improve NFPA standards, then get involved. If you are a member of The National Fire Sprinkler Association, reach out to us for guidance and assistance in the code development process. •

Maui Awaits!

Registration is now open for our 2024 Annual Seminar and Business & Leadership Conference at the beautiful Wailea Beach Resort in Maui!

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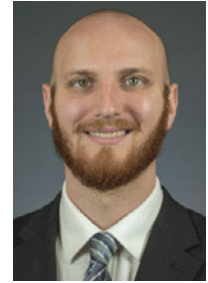
This gorgeous resort boasts 4-star amenities like a modern fitness center, championship-level golf courses and a tranquil spa.

Ignite your senses with diverse dining options, private floating cabanas and a vibrant luau show. Refresh in the sparkling waters of five pools, featuring the longest hotel water slide in all of Hawaii. Punctuate your day with a relaxing evening on your large balcony or oversized lanai, and enjoy stunning views, including vibrant Maui sunsets and an occasional humpback whale!

Use the convenient QR code to register:



NFSA Unveils Comprehensive Fire Protection Career Resources Page



by Michael Wilson, *NFSA Digital Marketing Manager*

The National Fire Sprinkler Association membership team has proudly unveiled a comprehensive resource page dedicated to career opportunities in the fire protection industry, marking a significant step in our ongoing efforts to promote this vital sector to emerging leaders. Developed by the NFSA Membership Team, this initiative stands as a testament to the Association's commitment to nurturing the next generation of industry professionals.

As the fire protection industry experiences rapid growth and evolution, there is an increasing demand for a diverse range of skilled professionals. This growth not only signifies the industry's vitality but also presents a unique opportunity for individuals seeking dynamic and impactful careers. The NFSA's new resource page is tailored to provide an in-depth perspective on the various roles available within the industry, encompassing areas such as design, technology, sales, and management. It emphasizes the critical importance of these professionals in enhancing public safety and advancing fire protection technologies.

The resource page serves as more than just a guide; it is a gateway to a rewarding career path that merges technical expertise with a profound commitment to safeguarding lives and properties. By highlighting the diverse career paths available within the industry, the NFSA aims to attract and develop top talent, ensuring that the fire protection sector continues to thrive and innovate. This initiative is particularly crucial as the industry seeks to adapt to emerging challenges and technological advancements, requiring a workforce that is not only skilled but also adaptable and forward-thinking.

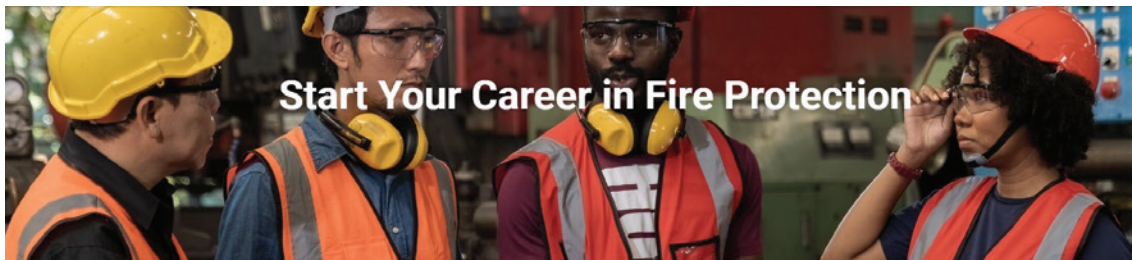
The NFSA's efforts in this regard are reflective of a broader trend within the fire protection industry, which is increasingly recognizing the importance of attracting and retaining talent in a competitive and rapidly changing job market. By providing resources and support for those interested in pursuing a career in

fire protection, the NFSA is playing a pivotal role in shaping the future of the industry.

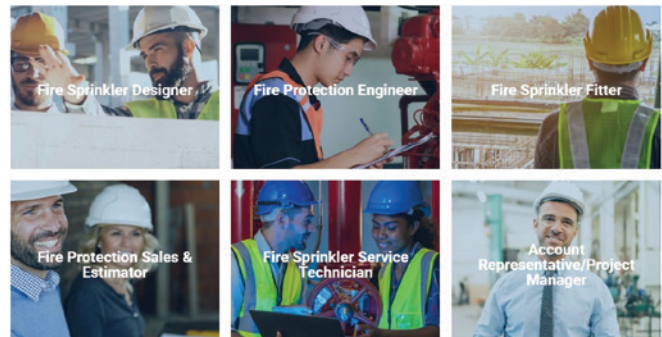
For more information on how the NFSA can assist in promoting the industry and its career opportunities to emerging leaders, the organization encourages interested parties to contact their membership team. Through this collaborative effort, the NFSA hopes to inspire a new generation of professionals who are passionate about making a difference in the field of fire protection.

Looking to Recruit? Feel Free to Use NFSA's Careers Page.

Individuals interested in sharing career opportunities within the fire protection industry are encouraged to visit the NFSA's comprehensive resource page at <https://nfsa.org/fire-protection-careers/>. This page is not just a repository of information, but a starting point for a fulfilling and impactful career in an industry that plays a crucial role in ensuring public safety and wellbeing. NFSA members are welcome to use the page in recruitment initiatives. •



Are you looking for an exciting career in the fire protection field? The fire protection industry has grown considerably over the years, and with that growth comes a strong demand for talent. Contractors and suppliers are searching for professionals to fill a variety of roles, from estimators to sales professionals, designers, and everything in between. With such a high demand, there has been no better time to get into this field.



Four Important Considerations When Selecting Fire Protection for Your Data Center

Beyond fire protection, today's systems offer benefits that contribute to sustainability and business continuity.

by Tim Broughton, *Global Product Manager for engineered fire suppression systems at Johnson Controls*
Dirk Laibach, *Senior Global Product Manager for water mist at Johnson Controls*

Data centers play an increasingly critical role in powering our modern world. As technologies like artificial intelligence (AI), the internet of things (IoT) and cloud computing rise to prominence for both businesses and consumers, the need for vast stores of data and computing power is fueling explosive demand for data centers. Accommodating this growth will take significant investment into new digital infrastructure, but it also requires securing the infrastructure we already have.

Fire protection is a key factor in safeguarding the critical information and computing resources housed in data centers. Fire can cause irreparable damage to servers, potentially leading to catastrophic losses in data like banking transactions, health records or intellectual property. Data centers require fire protection for the safety of people and property like any other building, but the need for data continuity and the consequences of data loss must be considered when choosing a fire protection solution.

Understanding today's fire suppression technologies and how they work can make it easier to spec the most suitable solution. It can also help businesses realize benefits that extend beyond fire protection, supporting goals like sustainability and improving business continuity. Here, we'll look at how the latest technologies can support the unique needs of data centers.

Reduce water use and potential water damage with water mist systems.

As the name suggests, water mist systems discharge a fine mist to extinguish and prevent fire growth. These systems use 80% less water than traditional fire sprinkler systems, which makes them ideal for large data centers looking to better manage water usage, whether to meet sustainability goals or to compensate for limited water infrastructure. Low-pressure water mist systems use potable water with no added chemicals, further reducing the environmental impact. They can also share the potable water supply with sprinkler systems located within the building. This

can provide significant space and cost savings compared to high-pressure systems, which require a dedicated water supply.

Water mist systems are often the most economical option for very large mission-critical data centers. The system pumps have a relatively small footprint, and these systems can be simpler to operate compared to other options.

Due to the small size of mist droplets and the latest low-flow capabilities, the potential water damage to a data hall is reduced. Still, it's critical that data racks are exposed to the least amount of water possible while still effectively suppressing fire. Typical water mist systems discharge 50 liters per sprinkler head, while leading low-flow water mist systems discharge only 24 liters per nozzle (the system's equivalent to a sprinkler head). These nozzles also use local activation, meaning water is only discharged on the affected areas, helping to keep the data center operational.

When selecting a water mist system, it's important to look for the lowest flow per nozzle to minimize overall water in the data hall. FM Approval is also important, ensuring you have an Approved system specifically for protecting data centers. Data center operators should also choose pre-action systems, which keep water out of the pipes until activated.

Protect the most sensitive equipment with gas suppression systems and acoustic nozzles.

Instead of water, these clean agent fire suppression systems use gaseous agents to quickly extinguish fires before flames break out. These systems are ideal for critical data centers where fast extinguishment is required to minimize risk to operations or loss of equipment and data.

When clean agent fire suppression systems are discharged, they do not cause damage to data racks and leave no harmful residues in the space. In this way, these systems can maximize data center uptime, reduce cleanup and help keep data safe.

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It should be noted that when gaseous systems discharge, there's a very high airflow rate that can produce sound. High levels of sound can cause HDD disc read/write failures, resulting in potential data loss. To best protect data, it's necessary that gaseous systems are equipped with acoustic nozzles, which attenuate sound. When selecting an acoustic solution, look for a partner who can provide a solution with room acoustic calculations that has been third party verified.

Proactively protect lithium-ion batteries with risk prevention systems.

Data racks are not the only equipment in data centers that require protection. Many data centers have backup energy sources on-site. Traditionally, these have been generators or uninterruptible power supply (UPS) systems that use lead-acid batteries. But recently, many facilities have transitioned to lithium-ion batteries.

Lithium-ion batteries are a cost-effective energy storage solution, but they require different fire protection than generators and data racks. Unfortunately, this is an often-overlooked fact. Lithium-ion batteries can become a fire risk if prevention systems are not

properly installed or maintained. Improper use can result in thermal runaway, a hazardous chemical reaction in a battery cell that can rapidly spread to adjacent cells. As the reaction spreads, the cells generate heat and smoke, increasing the potential for a fire to ignite. It is crucial to have early-warning detection to identify a battery failure before it happens and disconnect that battery.

Lithium-ion risk prevention systems monitor and mitigate battery failure before it poses a fire hazard. In the earliest stages of battery failure, flammable gases vent from cells. Lithium-ion risk prevention systems offer monitoring and reference sensors that continuously check battery racks for presence of these off-gases. If off-gas is detected, the sensors communicate with the battery management system to shut down the affected battery racks before thermal runaway can occur.

A fire risk assessment should be completed any time there's a change to the data center structure, such as changing the backup energy system. A risk assessment can determine if the fire protection system needs to be upgraded or modified. For example, NFPA 855 Standard for Installation of Stationary Energy Storage Systems (ESS) provides guidance on proper sprinkler system selection. This standard considers factors such as the maximum

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Water mist, off-gas detection, gas suppression systems, acoustic nozzles and sprinkler solutions are among the latest technologies capable of supporting the unique fire protection needs of data centers.



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stored energy of the ESS units, the design density of the sprinkler system and the overall area of the room being protected. With many technical factors involved, it's crucial to work with experts who can take all this into account and provide knowledgeable guidance.

Use economical sprinkler solutions for server-free areas.

Sprinkler systems are a cost-effective solution for quickly and effectively extinguishing fires. But, if used in a data hall, racks will be exposed to significant amounts of water that can cause damage. These systems can discharge roughly 80 liters of water from each sprinkler head per minute, making them more suitable for areas away from computers. However, some cloud data centers that work with less sensitive data that's replicated across several sites may prioritize protecting people and the building over protecting data. In these cases, sprinklers offer an economical solution.

Double interlock pre-action sprinkler systems are an excellent choice for such applications and have an added layer of protection (vs. single interlock) to avoid inadvertent water damage. Water is stored in a reservoir and isn't released into the system piping until two events occur:

1. The detection system needs to be activated
2. One or more sprinklers must operate

Sprinkler systems usually have a place within all types of data center facilities. They can be especially useful to help protect areas outside computer storage rooms, such as offices, break rooms and restrooms. Each data center will need to weigh the risks and determine which areas of their facility are best suited for these cost-effective solutions.

Complete your data center fire protection system with the right partner.

When it comes to protecting data centers and the critical computing resources within, there isn't a one-size-fits-all solution. Every data center will have areas with different fire hazards and needs. It is important to understand what is being protected in each area to make the most effective decisions about data center fire protection.

Each fire protection solution has its own advantages and drawbacks. And even though a fire suppression system may save a data center from fire, it could still pose a risk to the data being stored. Working with a fire protection partner who truly understands the unique goals and needs of data centers is the surest way to arrive at the best possible solution. The right partner will be able to offer a full portfolio of fire protection technologies that can address specific needs found throughout the data center.

Mitigating fire risk in a complex business doesn't need to be scary. With the right technology and expertise from an experienced partner, data centers can be assured they're equipped with the best possible solution to keep their business moving forward. •

Tim Broughton is global product manager, engineered systems at Johnson Controls. He brings 29 years of fire protection business experience to his role, during which time he's been instrumental in acquisitions and global product rollouts. He graduated from Brunel University with a BSc (hons) in Industrial Design.

Dirk Laibach has over 30 years of varied global experience in the fire suppression and detection industry, including 23 years in Water Mist. He's held positions of increasing responsibility with Siemens, KIDDE, FOGTEC Fire Protection, Marioff and currently as Senior Product Manager for Water Mist at Johnsons Controls. Through his involvement and membership in a number of trade associations, codes and standards organizations (CEN) and approval authorities (like VdS, FM) in Europe and the USA. He also has extensive relationships within the industry and AHJ bodies. Dirk holds a degree in electrical engineering (Dipl.-Ing.) from the University of Applied Sciences Düsseldorf, Germany, and is a VdS-certified engineer for Water Mist Fire Suppression Systems



Saco and Sprinklers

by David Pendleton, *Deputy Fire Chief, Saco Fire Department*

In the Fall 2018, the City of Saco, Maine embarked upon a collaborative project to update several sections of the City Code to align Saco's land use ordinances more closely with its 2018 Comprehensive Plan Update. The Saco Fire Department participated in this review process and was most committed to discussions about fire protection for new homes in subdivisions and new, detached accessory dwelling units.



The Planning Board and the Deputy Chief in charge of Fire Prevention worked diligently to examine the appropriateness of current guidance and to put forward these changes. The team worked well together throughout the review process and came to agree that residential fire sprinkler systems needed to be included in the Chapter updates. At that time, several Planning Board members suggested that residential fire sprinkler systems be required across the board, for every new one- and two-family dwelling. The Fire Department expressed sincere appreciation for the encompassing proposal, however, expressed that a phased approach would likely have the best chance of success.

Disappointing

At the time of these discussions, the developer had the option of either including residential fire sprinkler systems in new homes or installing a fire cistern within the new neighborhood (if the planned lots were proposed to be located more than 2,000 feet from an approved water supply). Much to the disappointment of the Fire Department, developers regularly chose the fire cistern option. Fire ponds had previously been a third option; however, their use was eliminated approximately ten years previously. The City was moving away from fire ponds because of concerns about these bodies of water being able to naturally maintain a sufficient supply of water for fire protection purposes. Fire ponds can experience infill from growing vegetation, from silting which reduces the available water depth, and from a reduced natural refill rate, which can be aggravated by drought. The Fire Department made the recommendation to move away from fire cisterns and fire ponds, discussing these concerns with the Planning Board and providing the option of residential fire sprinkler systems. Through

these discussions with the Planning Board members and the zoning ordinance revision stakeholders, the benefits of residential fire sprinkler systems was explored.

Included in the discussion was a description of how a residential fire sprinkler system works to immediately activate to suppress a developing fire to allow time for occupants to escape and to conserve property. Planning Board members agreed that the operation of a residential fire sprinkler system provided the best means of protecting lives and property within the home. Additional discussions spoke to how the water contained within a fire cistern or available from a fire hydrant on the public water supply, has no effect on controlling a developing home fire and protecting lives and property. The Fire Department explained that the water within a fire cistern or from a fire hydrant only becomes useful upon the arrival of fire department apparatus and crew when the available water can be utilized to apply to a growing fire. Whereas



the residential fire sprinkler system can immediately extinguish a developing fire, the fire expected to be controlled with water from a fire cistern, from a fire hydrant, or even from the water tank on a fire apparatus, only continues to grow, threaten lives, and cause additional property damage until the Fire Department arrives. The final language for the Subdivision Ordinance included the call for residential fire sprinkler systems in all new subdivision developments, whether within or outside of the public water system.

The parallel effort put forward by the Planning Board and the Fire Department was to address accessory dwelling units (ADUs).

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There was much discussion about both attached ADUs and detached ADUs and, in the end, it was agreed that both types should be protected by a residential fire sprinkler system. However, to limit the financial burden to those citizens with an existing home who might add an attached accessory dwelling unit, it was decided that only the newly created ADU and not the existing home was to be protected. Therefore, detached ADUs were to be protected with residential fire sprinkler systems.

Update adopted

On January 11, 2021, the Saco City Council adopted the updates to the Zoning, Site Plan Review, and Subdivision ordinances, which became effective ninety days later, on April 11, 2021. Shortly after Saco City Council's action, the Fire Department learned from the Office of the State Fire Marshal that in the case of a new, attached ADU, the existing home did in fact need to be protected by the residential fire sprinkler system. The City Planner quickly drafted new attached ADU language with the assistance of the Fire Department and the Planning Board and submitted the edits to the City Council for consideration. The City Council adopted the changes and the language within the Zoning Ordinance was adjusted for attached ADUs to reflect residential fire sprinklers are not required.

Fast forward twenty-eight months, and the consideration to expand residential fire sprinkler system coverage beyond new subdivision homes and detached ADUs, to include all new one- and two-family dwellings, became a possibility. The Fire Department proposed to update another Chapter of City Code, this time Chapter 102, Fire Prevention. Minor updates were drafted for Article II through Article IV of Chapter 102, none in the opinion of the Fire Department, which would cause concern or hesitation by the City Council to approve. However, Article I Fire Code was edited to add that all new one- and two-family dwellings would be protected by a residential fire sprinkler system, if adopted. The Fire Department anticipated opposition from developers, builders, and realtors and several from this group presented their opinions through e-mail and in person during public comment.

The City Council process for considering the updates to Chapter 102 called for the Fire Department to appear in Council Chambers on several occasions. The proposed changes were first introduced to the City Council as New Business on July 24, 2023, which was the first time the City Council would be reviewing these proposed changes. A First Reading occurred on September 18, 2023, and a Public Hearing was held on October 2, 2023. A City Councilor indicated that he had received by e-mail, several questions from a citizen for which he would like the Fire Department to provide a response. Several builders and developers and a realtor spoke in opposition at the public hearing, and the Fire Department did not have the opportunity to respond.

The Final Meeting

The Final Reading and City Council vote scheduled for October 16, 2023, was tabled until the October 23, 2023 City Council



meeting. At this last meeting some of the same builders, developers, and realtors spoke again in opposition, and one citizen spoke in support prior to the Fire Chief and Deputy Fire Chief in charge of Fire Prevention presenting to the City Council. The Fire Department spoke about the benefits for the citizens and the firefighters and responded to several questions from Councilors. Lastly, one of the Councilors addressed his fellow Councilors and the audience, and his testimony truly contained the descriptions needed to persuade those Councilors who may have been unsure to fully commit to and support the changes to Chapter 102, including the new residential fire sprinkler system details. The City Council voted 6-0 (with one Councilor absent that evening) to approve the proposed changes.

The Councilor who spoke in support had previously participated in the Zoning, Site Plan Review, and Subdivisions review process when the review initiated in 2018 and at the time was the City Council Liaison to the Planning Board. He was supportive of adding residential fire sprinkler system protection to one- and two-family dwellings in new subdivisions and in new detached ADUs. He was happy to serve as City Council Resource for the more recent Chapter 102 updates, and he went above and beyond to better educate himself about residential fire sprinkler systems to be able to counter the common myths. The Fire Department owes this Councilor a huge amount of gratitude for his support and many thanks to the entire City Council for their courage to approve the Chapter 102 changes, especially in these times when affordable housing is at the forefront of discussion in most municipalities across the nation.

The Saco Fire Department is extremely grateful that as of November 23, 2023, all new one- and two-family dwellings will be protected with a residential fire sprinkler system to better ensure the safety of Saco residents and the firefighters who may respond to a fire in any of these new homes in the future. This has only been possible because of the brave and proactive City Council which places safety above all other concerns. •



Connecting for Success - The Benefits of Joining NFSA's LinkedIn Group

In the world of professional networking, LinkedIn stands out as the top platform for career development and industry connections. While building a personal profile is essential, joining a LinkedIn Professional Group can be a game-changer. Our LinkedIn group is thriving, and I believe you should take part.

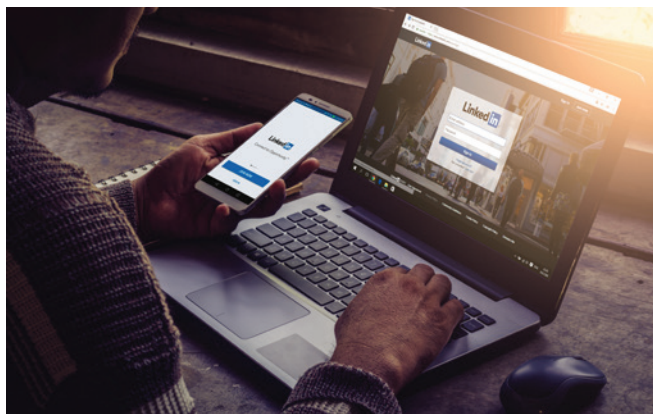
As of this writing, the National Fire Sprinkler Association LinkedIn Group has 16,896 members. The top five job descriptions of group members are Project Manager, President, Fire Specialist, Owner, and Fire Protection Engineer. Fire Marshal, Fire Chief and Firefighter are right behind them. If you are not a member of the group, what better reason to join? Not only will you be able to participate in industry-related discussions, garner insights on others' points of view and keep on top of the latest news and sprinkler saves, you might just find a prospective customer or collaborator amongst our members, who hail from countries around the world. Our LinkedIn group is constantly monitored, and members must be approved before joining. It's an important step to ensure that the group maintains its integrity and relevancy.

group for garnering valuable connections that can open doors to new opportunities.

A major benefit of joining the group is the ability to contact other group members. on LinkedIn, by default, you cannot send messages to people you don't know. But if you share a group, this option becomes available and presents a major benefit. You can get in touch with people that you wouldn't be able to approach otherwise.

Every time you post something in our group, your photo will be featured, and other members of the group can click through to your profile. By posting relevant content, you can position yourself as an expert in your field and chances are that curious members will visit your profile where they find your website. Even if you're not ready to post, just checking out what others are up to and interested in is a great way to get your finger on the pulse of the fire sprinkler industry.

Joining is easy! Just search for National Fire Sprinkler Association in Groups and hit that join button! I go into the group daily to review the join requests. I can't wait to see some member names pop up on my screen!•



So why should you join?

The NFSA Group is a great place for members to learn, share insights and experiences, and keep ahead of the latest trends. If you are participating in group discussions, you gain access to a wealth of knowledge that can keep you informed about the latest industry developments, best practices, and emerging technologies. I post fire sprinkler news, sprinkler saves and NFSA activities and events in the group daily. What we need to kick it up a notch is for our members to get involved. Comment on the daily posts, post a story about a new product, employee news and company activities. It's a great way to reach other group members and start a dialogue that may lead to new customers and followers of your own social media. Whether you're a newbie to the industry seeking mentors, or a seasoned professional who would like to expand your network, there's no better place than our LinkedIn

A BETTER WAY TO FLOW TEST WATER

THE RIPTIDE
FLOW TESTING SYSTEM™ ARGCO



NFSA's Annual Seminar and Business & Leadership Conference - Registration and Hotel Room Block Open!

We are thrilled to be in Maui for our **2024 Annual Seminar and Business & Leadership Conference** May 7-10 at the spectacular Wailea Beach Resort. It's extra special to us to be able to help the local economy after the devastating wildfire that destroyed part of the island. A subject close to all our hearts, it is truly serendipitous that this precious location was chosen to be the site of this year's seminar.

Registration for the seminar and the hotel room block are now open. The following are some of the highlights of what's expected to be a truly memorable event!

Keynote Addresses: Gain inspiration from thought leaders shaping the future of fire protection.

Technical Workshops: Dive deep into the latest advancements and industry-specific topics.

Networking Sessions: Connect with peers, industry professionals, and potential collaborators.

Tabletop Area: Explore the latest technologies and services from our NFSA SAM and Manufacturer Members.

A limited number of sponsorships and tabletops are available!

Details on the event site.

All this and the opportunity to play in a tropical paradise! Don't miss out!



NFSA Attends League of Cities Conference

NFSA has its largest presence to date this past November at the League of Cities conference in Atlanta, GA. President **Shane Ray**, Vice President of Advocacy & Outreach **Vickie Pritchett**, NFSA Southeast Regional Manager **Brian Biggs**, and NFSA Administrative Assistant **Tobi Hunter** were all in attendance for this national event. They staffed a booth throughout the Expo and Shane and Vickie were able to speak at the Small Cities Mayors reception (Small City is determined by 50,000 or less). They were encouraged by the conversations they had during the event, and express gratitude to the Manufacturers Council for their support of this expanded outreach. Building relationships is key, and sharing successful stories does have an impact in this setting.

Symposium in the Sun



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NFSA was proud to be part of the International Fire Chief's Association Symposium in the Sun this past November in Clearwater Beach, FL. Team NFSA was represented by President **Shane Ray**, Vice President of Advocacy & Outreach **Vickie Pritchett** (who serves as the Master of Ceremonies for the four-day conference), and Southeast Regional Manager **Brian Biggs**.

President Ray was honored to speak to the 550+ in the audience of the General Session this morning, and to have the opportunity to conduct a live fire sprinkler demonstration. It's always exciting to see "Partners in Progress" come to life, and there is no place to see *#FireServiceOneVoice* in action than at the symposium!

USFA's Summit on Fire Prevention and Control

NFSA President Shane Ray and Vice President of Advocacy and Outreach Vickie Pritchett were honored to represent NFSA at the U.S. Fire Administrator's 2nd Annual Summit on Fire Prevention and Control held this past week at the National Emergency Training Center in Emmitsburg, Maryland.

Hundreds of firefighting leaders and experts from across the nation were in attendance and thousands more tuned in virtually to discuss and listen to important topics in their field. Top government officials, including U.S. Secretary of Homeland Security Alejandro Mayorkas and FEMA Administrator Deanne Criswell, attended the summit. President Joe Biden was scheduled to speak in person, but due to the Israel-Hamas war, he spoke to the group virtually.

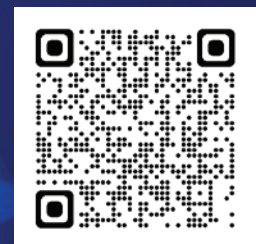
During President Ray's presentation to attendees, he emphasized

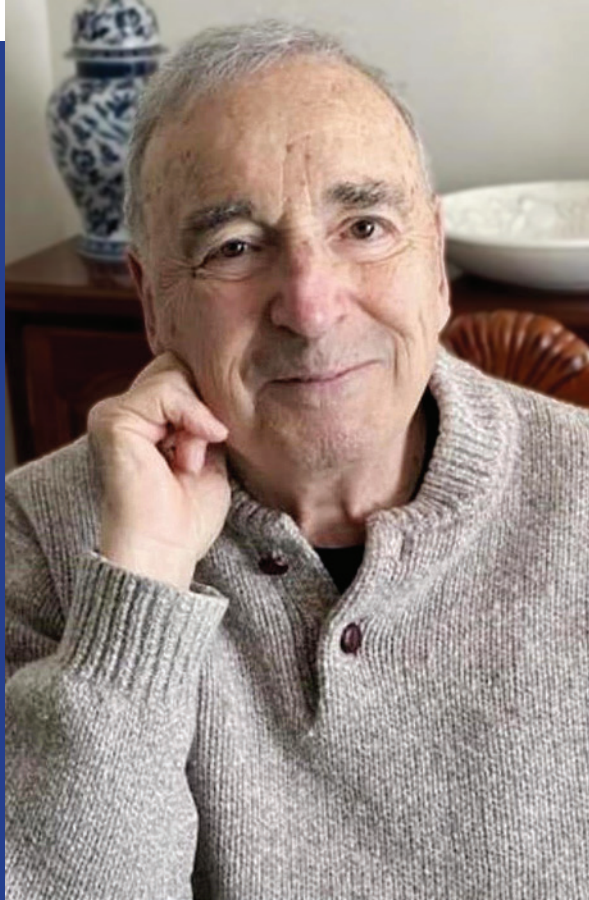


the success and importance of the Fire Service, One Voice initiative and the need for fire sprinklers in all residential structures. He made it a point to let the audience know that federal funding should not be going to any housing that is being built without sprinklers. President Ray also spoke in support of NERIS, the National Emergency Response Information System that is now in development. The system will allow for input of real-time data from the firefighting community, including fire sprinkler saves. The momentum of this national event is real, and NFSA is proud to be fully engaged and involved in the strategies developed because of this Summit. We appreciate Dr. Lori Moore-Merrell, her leadership, vision, and energy is critical as we work to make the United States safer. •



Did you know NFSA's LinkedIn Group has more than 11,000+ members? It's a great place to showcase your products and services. **Join today!**





Michael Friedman, PE

Michael J. Friedman passed away on Saturday April 22, 2023. We were saddened to hear of Mike's passing so many months later. We felt this tireless fire sprinkler advocate deserved a fitting tribute in the 2024 debut issue of National Fire Sprinkler Magazine.

From 1969-1993, Mike Friedman ran A.C. McDonald, Inc., a successful fire protection contracting company in Baltimore, Maryland. In 1993, he began a consulting firm specializing in training and education. From 1978-1993, Mike was a member of the NFSA Board of Directors, serving as Chairman for two terms.

He represented the fire sprinkler industry on many committees and projects. He is directly responsible for establishing the first national certification programs for Fire Protection Engineering Technicians under the National Institute of Certification in Engineering Technologies (NICET). The program continues today as one of the most recognized programs in the country for competency testing of fire sprinkler layout technicians and is the prerequisite to fire sprinkler contractor licensing in nearly every state that requires such licensing.

Mike traveled throughout North America delivering NFSA training seminars on topics of vital importance to the fire sprinkler industry. He is known as one of the pioneers bringing NFSA training and education to new heights within the industry.

Remembering a Friend

BY CECIL BILBO

It was just a little more than 20 years ago that I came to work at the NFSA. As the Director of Technical Services, I traveled the country teaching classes. Working for Russ Fleming and Ken Isman was a thrilling time in my career. As the entire Engineering Department traversed coast-to-coast, I ended up, more often than not, teaching with a guy named Michael J. Friedman, PE.

After just one trip, it was obvious why they had assigned me to teach with him; he was hard to get along with. It was true. He was arrogant, stubborn, and sometimes, he was downright obstinate. It wasn't long before we had a heated discussion in a room with 20 students... while the class was being taught. A little into the class, I called for a break. A couple of the students looked at me with their arms slightly raised and said, "Um.... We are gonna leave you two alone for a few minutes." It was towards the end of the day, and Mike left. We were in Orlando, and he just left. After break, I finished up the class and sent everyone off with their homework for the evening. As the students made their way into the hotel courtyard to work together, Mike came strolling back in. He had gone to the store. He handed me a bag and said, "Here, I got this for you." Inside the bag was a container of French vanilla flavored coffee creamer. It was a sort of peace offering. He knew that I liked it in my morning coffee, and this was his way of saying sorry for the earlier exchange. With what little I really knew about him; I was quite surprised. We went on the road and taught together for more than eight years. We became fast



friends. His arrogance was always present, but I learned that he had earned the right to be a bit smug. He was a hard worker with a backbone of steel.

I recently discovered that my good friend passed away. After 87 years of incredible living, he leaves behind the woman with whom he spent 65 years in marriage. He loved her so deeply that it was hard to watch him deal with the dreaded declines that age can force upon us. They had four children together, all girls! And they were his life's joy. It was wonderful to hear him talk about his entire family being together for seder, the feast that begins the Passover. He was so proud of the adults they had all become. It turns out that he had a heart of gold. Over the years, he got to know my children and watched them grow into adults. He advised my son as he went off to college. He took my youngest to a tourist zone and got her tickets to jump on a giant trampoline while attached to giant bungee cords. He told me often that he thought my oldest was beautiful and graceful and talented.

He called me after my father died and told me that if I ever needed someone that he would be there for me. And he was. When I had this crazy idea to start a formal education program for the design side of our industry, he was my most intimate supporter. When I announced my plans to the NFSA Staff, he stood up in the back of the room and said, "I'd like to contribute \$5,000 to your effort." That action led three others in that room to step forward with funding for the Academy. He encouraged me to work hard to get the school started. It had become personal to him that I succeed.

We had traveled so much together, that we started splitting meals at restaurants after class. He said, "If you tell ANYBODY that we do this, I'll kill you."

We golfed a lot. I'll never forget his Happy Gilmore-style golf stroke. He was 75 years old and swung his driver like it was a hockey stick. A swing that he was accustomed to after playing hockey in college. He loved hockey and once took me to a Chicago Blackhawks game. It was an exciting time: I caught a puck, a

player crashed through the glass on one play, and he taught me something I didn't know. A player had dropped his stick on the ice and was skating around on defense...without a stick. I asked him what the guy was doing. Mike told me that the player had a broken stick, and he couldn't play with a broken stick. He said that the player's body and skates still had value for defense while the puck was on their end of the rink. He said the player would run over in a second to grab a new stick. Just as he was done telling me that, the three strangers sitting next to me were asking each other, "Why doesn't that guy grab his stick?" So, I lean over and say, "Well ya' see...." That's just one example of how Mike often made me feel brilliant. In fact, I would say that Mike helped to me to grow as an instructor more than anyone I've worked with.

He graduated as a Civil Engineer out of Rensselaer Polytechnic Institute (something he and Russ Fleming have in common). He went on to get his master's degree at MIT. He worked in the US Nuclear program. He later became the owner of A.C. McDonald and joined the NFSA. He went on to become the Chairman of the Board at NFSA. He was partly responsible for the creation of the NICET Certification Program for Fire Sprinkler Design Technicians. After he sold his company to Grinnell, he spent much of his time mentoring and teaching people throughout the industry. And that's when I met him.

One of the things that I tell people, when I try to explain how incredibly fortunate I have been in my career is, "...and I got to travel the country teaching with an MIT Nuclear Engineering Graduate!" The last time we talked was in February. A he was fighting for his life, he took some time to help me with some work and didn't let on. I wish I had known what he was going through.

I picture myself as a wide-eyed four-year-old riding on my dad's shoulders, when I think of how Mike mentored me. I am truly privileged to say I stood on the shoulders of a giant in our industry. A grumpy, obstinate, sweet, giving giant.

I'll miss you, Michael. I hope the work I do makes you proud!•

CHAPTERS

CHAPTERS IN ACTION

FLORIDA

Seas the Success!

The *Seas the Day 2023* conference in Clearwater Beach, FL, proved to be a resounding success! Over 200 industry professionals attended, including speakers from various parts of the nation who generously shared their expertise. The week kicked off with the exciting Fire Product Challenge, featuring four hours of enjoyable interactions with vendors and challenging scenarios. Each stop provided valuable opportunities for learning and networking.

A highlight of the event was when Senator Jay Collins addressed our group. Senator Collins demonstrated a genuine concern for our state, veterans, and the future workforce, emphasizing our collective responsibility to become actively involved. FFSA President Robert Cariveau outlined ways for us to engage and extended an invitation to everyone to join the advocacy efforts in Tallahassee on January 17 - 18, 2024.

The conference was not only educational but also entertaining, set against the backdrop of a beautiful venue. The experience left us eager to return for future events.



ILLINOIS



NIFSAB Conducts Record Number of Side-by-Side Demonstrations in 2023

In 2023, the Northern Illinois Fire Sprinkler Advisory Board (NIFSAB) completed one of its busiest ever Fire Prevention Week (FPW) seasons, conducting fire sprinkler demonstrations at fire department open house events throughout the Chicagoland area during the months of September and October. Two of those days, October 7th and 11th, each featured eleven side-by-side fire sprinkler burn demonstrations and two fire sprinkler trailer demonstrations.

As a result of the busy FPW season, NIFSAB broke its annual record for side-by-side demonstrations, reaching a total of 62 in 2023, which also brought NIFSAB's organizational "career" total to 923.

Working with area fire departments, NIFSAB was able to educate thousands of attendees and a number of state legislators and local elected officials, demonstrating the quick response of home fire sprinklers in stark contrast to the speed of today's home fires reaching flashover.

NIFSAB also provided fire sprinkler trailer demonstrations for 25 other public education and fire department open house events throughout the year.



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PUGET SOUND

It was standing room only at the Puget Sound NFSA Chapter November meeting as members gathered to hear an update on seismic bracing from guest speaker John Deutsch, Seismic Hanger Sales Engineer at ASC Engineered Solutions. Mr. Deutsch also drew a crowd at the previous day's Columbia-Willamette NFSA Chapter meeting. Both Northwest chapters are gearing up for another round of informative speakers in 2024.



TEXAS

Leadership & State of the Fire Sprinkler Industry

NFSA Texas Chapter – First Meeting of 2024!

February 15, 2024: 11:00 a.m. - 1:00 p.m.

James Golinveaux, President of Viking Group will present the *2024 State of the Fire Sprinkler Industry & How to Lead Your Team into the Future!*



Save The Date For More In 2024!

The 2nd NFSA Texas Chapter Shootout / April 26, 2024



Soar Into 2024

Join the NFSA Texas Chapter and help you and your company *“Soar in 2024!”* The Texas Chapter will be providing leadership training, industry insider information, ready, aim, shoot fun, and “how to” events that allow your company to network and grow. All NFSA Members automatically qualify for NFSA Texas Chapter membership. *More information here:*



SPRINKLERING OF NEWS

■ NEW Victaulic RG3400 Roll Grooving Tool



The new RG3400 Roll Grooving Tool is Victaulic's best-in-class roll grooving tool for 1-12" OGS and 1" IGS. It incorporates all the necessary components to groove various pipe sizes and schedules into a single package for field and shop fabrication. The plug-and-play design includes an integrated motor, pipe stand, roll set package, pipe tape, and storage bag with accessories. The RG3400 streamlines operation while performing precise, consistent grooves with a simplified depth-setting procedure that makes adjusting between different pipe sizes and schedules easier. As Victaulic's quietest roll grooving tool yet, the RG3400 is ideal for use in occupied spaces where operating noise could be a disruption.

■ FPE and SFPE Foundation Advance Sustainability Objectives Through Numerous Initiatives

The Society of Fire Protection Engineers (SFPE) and the SFPE Foundation have made considerable progress advancing sustainability objectives for fire protection engineers.

Earlier in 2023, the SFPE Board of Directors approved a position statement titled *"Engineering a Sustainable and Fire Resilient Built Environment"* that acknowledges sustainability and fire resilience are important objectives for the built environment and that every project should balance these objectives. SFPE President, Jimmy Jönsson, FSFPE, along with Interim Chief Executive Officer, Chris Jelenewicz, PE, FSFPE, then authored the article "How SFPE is Developing Opportunities for the Fire Protection Engineering

Profession to Influence & Elevate Sustainability in the Built Environment" in support of this position that informs how fire protection engineers, architects, policymakers, researchers, code officials, fire service representatives, and sustainability professionals can engage in a meaningful dialogue on promoting sustainable and fire-resilient built environments.

To further adoption into the daily work of fire protection engineers, SFPE hosted three live webinars. Featuring SFPE expert members and sustainability professionals, each webinar is now available on-demand, including:

Sustainability and Fire Resilience: Setting the Scene

Fire Safety Perspectives Relative to the Three Pillars of Sustainability Research Directions in Sustainability and Fire

Additionally, SFPE has partnered with Fire-Safe Sustainable Built Environment (FRISSE) to host an engineering solutions symposium to be held on November 29-30, 2023, in Ljubljana, Slovenia, exploring design concepts, tools, and approaches for fire-safe buildings, while highlighting the role of fire safety in sustainable design and education. Speakers at the symposium will share engineering solutions on topics related to sustainable building design, reducing embodied carbon, fire performance of sustainable construction products, fire testing, fire service opportunities, holistic building performance design, building information modeling (BIM), and more. The event will also present insight into external living walls, battery/energy storage systems, façade systems, photovoltaics, mass timber, and more. To learn more or to register for the SFPE Engineering Solutions Symposium for Fire Safety and Sustainable Building Design, visit www.sfpe.org/fssbdsymposium today.

■ MicroBIM Releases Modern Fire Sprinkler Design Toolbox in the U.S.

MicroBIM (microbim.net) announced the release of MicroBIM Fire (MBF), a comprehensive selection of software tools used inside of Revit for the layout, calculation, coordination, and stock listing of fire sprinkler systems, in the U.S. The company updated its software plugin for the CAD program Revit (Autodesk) for U.S. designers by converting the design tools from the metric system to the imperial measurement system.

MBFire Revit add-in tools provide everything needed for efficient system modeling, shop drawing documentation, interactive hydraulic calculations, and accurate stock listing for Fire System design and fabrication. The comprehensive collection of fire sprinkler design tools is used by most of the market in Australia and New Zealand, where the company is based. The software has already been implemented by users in the U.S., including Ferguson Fire Design, a large fire sprinkler design firm that is part of Ferguson Fire & Fabrication.

MicroBIM Fire capabilities:

- Converts AutoCAD drawings into a fire model ready for coordination and fabrication quickly and efficiently.
- Automatically generates 3D fire models, saving man hours with automatic sprinkler layout and pipe routing tools.
- Simple hydraulic calculator performs live hydraulic calculations in Revit.
- Creates node drawings and input files automatically that can be opened in Hyena and FHC Canute.
- Provides 3D views of selected sprinklers and hose valves in operation.
- Optimizes calculation results with an interactive calculation engine, without leaving Revit.
- Effective space analysis tools help designers create spaces per architectural models, with room names and numbers.
- Generates a below ceiling or exposed sprinkler layouts, as well as concealed space sprinkler layouts, by analyzing architectural and structural Revit models.
- Automatically connects selected sprinklers to the nearest selected main.
- Create quick and accurate fabrication and material stock lists.

About MicroBIM

MicroBIM delivers products that boost efficiency, reliability, and productivity of tedious everyday BIM workflows, designed to revolutionize the construction industry worldwide. MicroBIM Fire (formally PipeFab) was created to make Revit more adaptable to Fire Design by streamlining the pipe fabrication process. The software solution has grown to a complete suite of Fire Design tools for modeling, fabricating and hydraulically calculating Fire systems.

New K3.7 Residential Concealed Pendant Sprinkler Offers Lower Flows and Design Flexibility

Hastings, Mich.— The Viking Corporation announced today a new sprinkler to round out its robust residential concealed sprinkler offering. The cULus Listed VK495 K3.7 Residential Concealed Pendant provides sprinkler designers more options than ever before when dealing with the variability in water supplies seen in residential sprinkler systems.

“The low-flowing K3.7 sprinkler is optimized at the 14’ x 14’ coverage area flowing only 10 gpm at 7.3 psi,” states Darren Palmieri, Viking’s General Manager – Residential Portfolio. “The K3.7 fills out our residential concealed pendant line perfectly, as we already offer a K3.0, K4.9 and K5.8. We now offer concealed sprinklers that are optimized for all the most commonly used coverage areas, making Viking a one-stop-shop for sprinkler designers.”

Viking’s glass bulb VK495 is available in brass or an Electroless Nickel PTFE (ENT) coating for applications in which corrosion might be of concern. The sprinkler is cULus Listed and has an Ordinary temperature rating of 155°F (68°C) and an Intermediate temperature rating of 200°F (93°C). Its protective cap prevents damage to the sprinkler during installation and ceiling finishing, and Viking’s line of cover plates offers multiple sizes, finishes and shapes.

To learn more about Viking’s wide-ranging product line featuring industry-leading residential sprinkler solutions, visit vikinggroupinc.com or contact your local Viking SupplyNet.

Viking is a global leader in the manufacture and distribution of innovative fire protection and life. •

SIMPLE MATH:
Fire Sprinklers + Firefighters = Unbeatable Team!



An Unbeatable Team!

Fire Sprinklers control and can often extinguish fires prior to firefighter arrival, allowing time for occupants to escape safely, limit property damage, and give firefighters the chance to finish the job safely. It really is that simple!

The more you know, the more you'll ask for **#fastestwater!**



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PEOPLE

Kyle Kittrell Receives National Award As Home Fire Sprinkler Advocate

The National Fire Protection Association (NFPA) Fire Sprinkler Initiative and the Home Fire Sprinkler Coalition (HFSC) have awarded Kyle Kittrell, with the 2023 Bringing Safety Home Award. This award recognizes outstanding efforts by a safety advocate who diligently promotes the importance of home fire sprinklers. It honors fire safety advocates in North America who diligently promote the importance of home fire sprinklers and use HFSC educational material, NFPA data, and Fire Sprinkler Initiative resources to educate decision-makers about the importance of home fire sprinklers.



Division Chief of Prevention Jason Turner, Jefferson City Fire Department nominated Kyle Kittrell for the Bringing Safety Home Award.

Jason Turner, Division Chief of Prevention, City Fire Department, nominated Kittrell because he was instrumental in convincing Habitat for Humanity to protect the 100-build home and future homes with fire sprinklers when he was a volunteer with the organization. Kittrell continued his mission in his current role as director at Transformational Housing. Kittrell educated about the life-saving benefits of home fire sprinklers and had the overwhelming support of local contractors and worked hard to see sprinklers installed in projects completed by both organizations. As a result, occupants and first responders will be protected from fire.

Kittrell is the first award recipient who is not a member of the fire service. He spent his career working as a civil engineer for the Missouri Department of Transportation. He had the opportunity to experience a live fire and sprinkler demonstration where two rooms were set on fire, one with a sprinkler. After he saw how quickly flashover occurred and how effectively the sprinkler

controlled the fire, he was convinced people who live in the Habitat for Humanity Homes had to be protected.

As the Bringing Safety Home Award recipient, Kittrell was awarded a \$1000 stipend to further fire sprinkler advocacy and educational efforts. Fire Chief Matthew Schofield, Jefferson City Fire Department and Turner presented Kittrell with the award during the City of Jefferson Council Meeting.

Viking SupplyNet Announces the Promotion of Matthew Meyers to Vice President – Sales

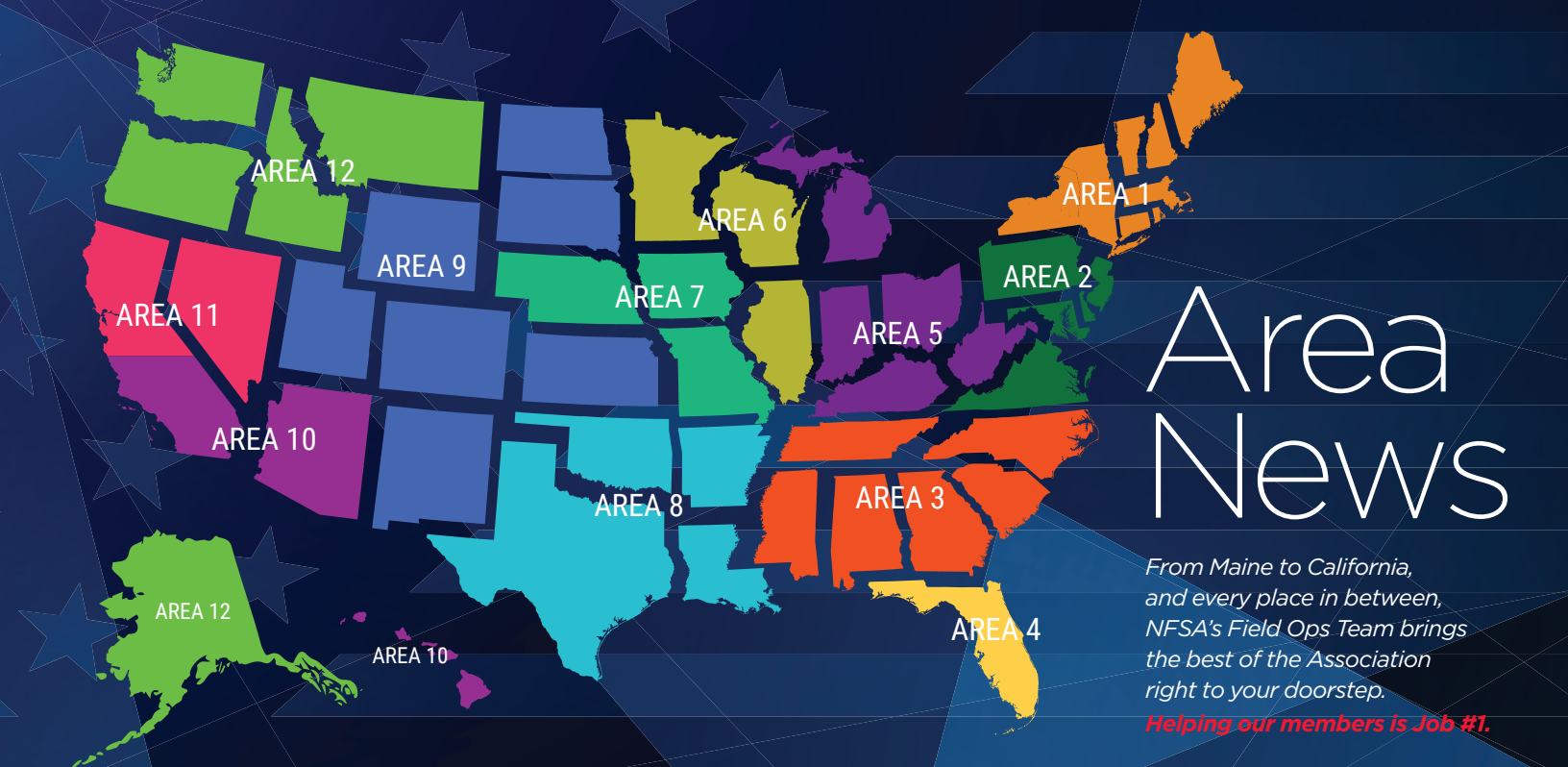
Viking SupplyNet is pleased to announce the promotion of Matthew Meyers to the position of Vice President - Sales. In his new role, Matt will assume expanded responsibilities for the entire United States sales team.



Matt Meyers proudly served in the United States Air Force with Security Forces, earning multiple Air Force Achievement Medals and an Army Accommodation Medal during his three deployments in the Middle East. Matt's dedication to excellence continued as he pursued higher education, obtaining a master's degree in business administration (M.B.A) from Texas A&M University-Commerce with a specialization in Finance.

With a career spanning more than twenty years in the fire protection industry, Matt's tenure at Viking has been defined by his unwavering dedication as Regional Sales Manager - South Central. He has consistently displayed a strategic approach and strong financial acumen, positioning him as a key driver of Viking SupplyNet's future sales expansion. •





Area News

From Maine to California, and every place in between, NFSA's Field Ops Team brings the best of the Association right to your doorstep.

Helping our members is Job #1.

AREA 4

CONNECTICUT, MASSACHUSETTS, MAINE, NEW HAMPSHIRE, NEW YORK, RHODE ISLAND, VERMONT

Florida Fire Sprinkler Association at Florida Fire Marshals Conference

FFSA had the honor of serving as a vendor at the 75th Annual Conference of the Florida Fire Marshals Association. The event was indeed a celebration, marked by the significant presence of fire marshals from various regions across the state.

A highlight of the week was the enlightening address by Deputy U.S. Fire Administrator Tonya Hoover. Additionally, it was a pleasure to listen to insights from our Director, Joanne Rice, and Assistant Director John Gatlin.



The conference boasted an impressive turnout, making it a highly successful and enjoyable event. We played some Sprinklo, gave away prizes and shared some training opportunities with our Florida AHJs. Heartfelt thanks to FFMA for inviting us to be part of this great conference.

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AREA 6

ILLINOIS, MINNESOTA, WISCONSIN

Fire Sprinkler Valve Trailer Training Reaches More Than 800 Firefighters in Chicagoland Area



In 2023, the Northern Illinois Fire Sprinkler Advisory Board provided fire sprinkler training to 834 firefighters in its fire sprinkler valve training trailer. Training sessions took place over 52 days at 18 different locations and reached representatives from 23 fire departments. A team of NIFSAB Executive Director Erik Hoffer and retired sprinkler fitters taught fire crews about the operation of wet, dry, pre-action, and residential fire sprinkler systems. Crews were given the opportunity to have hands-on training shutting down and draining the systems with a live fire and sprinkler activation in the trailer's burn room. A total of 246 fires and sprinkler activations occurred throughout the course of the training season. After beginning this type of training four years ago, NIFSAB has now reached 3,189 participants at 74 locations.

AREA 7

IOWA, KANSAS, MISSOURI

Fully-Sprinklered Building Debuts in Historic Downtown

Thanks to Nevada, Iowa's Director of Fire and EMS Ray Reynolds for sending us this great update on the city's effort to sprinkle its historic downtown.

It is a great day in Nevada as our first sprinklered second-floor R-2 housing units are coming under automatic fire sprinkler protection. This building will be remodeled with apartments and a potential VRBO apartment. These are some really nice spaces.

This is a great success for the safety of our downtown.



AREA 8

ARKANSAS, LOUISIANA, OKLAHOMA, TEXAS

Licensing Requirements

Many of NFSA's Area 8 – Fire Sprinkler Companies are licensed in several south-central states including Arkansas, Louisiana, Oklahoma, and Texas. Licensing requirements in the 4 South-Central states are strong and some of requirements are getting more stringent. This Regional Roundup will focus on the latest fire sprinkler licensing rules in each South-Central state.

Arkansas Licensing

Arkansas Fire Protection Licensing Board, Arkansas Department Of Labor & Licensing

Liability Insurance Requirements – Company Insurance Certificate Minimum \$1,000,000.00

Arkansas adopted their most recent Fire Sprinkler Rules on May 2, 2022. Arkansas requires a NICET III Certified RME Responsible Managing Employee for each licensed company and one licensed Inspector per company. Fitters must also be licensed. *Download Rules here:*



Louisiana Licensing

Louisiana State Fire Marshal

Liability Insurance Requirements – Company Insurance Certificate Minimum \$500,000.00

Louisiana Fire Sprinkler rules require NICET III Certification or Professional Engineer for a Company Qualifier/ Designer. Inspectors are also licensed with NICET I or other educational requirements. *Download via QR code:*



Oklahoma Licensing

Oklahoma Department Of Labor

Liability Insurance Requirements - \$0

Effective November 1, 2023: The Oklahoma Department of Labor Commissioner Leslie Osborn has adopted a new rule that all Applicants for Alarm, Locksmith, and Fire Sprinkler Industry Managers Licenses must take and pass a manager's examination as well as a technician's examination for every industry category in which the manager intends to work.

In addition to the new examination requirements, an applicant for Commercial Fire Sprinkler Manager must provide current NICET Level III or Level IV Certificate or wallet card for Water-Based System Layout or verified minimum of five years (10,000 hours) as a Commercial Fire Sprinkler Technician Level employee within the Fire Sprinkler Industry. An applicant for Residential Fire Sprinkler Manager must provide current NICET Level III or Level IV Certificate or wallet card for water-based System Layout or verified minimum of five years (10,000 hours) as a Technician Level employee within the Fire Sprinkler Industry or 5 years (10,000 hours) as a licensed plumber.

Oklahoma Department of Labor also announced an Update to the Fire Sprinkler Rules. *Download the November 2023 New Oklahoma Fire Sprinkler Rules via QR code:*



... The OKLAHOMA FIRE SPRINKLER ASSOCIATION has been very involved in strengthening their licensing and now asks everyone to **SAVE The Date** for the Sixth Annual Oklahoma Boondoggle scheduled for April 3-5, 2024, in Tulsa Oklahoma at the Hard Rock Hotel and Casino. ...

Texas Licensing

Texas State Fire Marshal

Liability Insurance Requirements – Company Insurance Certificate Minimum \$100,000.00 single/\$300,000.00 aggregate

The Texas State Fire Marshal adopted new Statutes as part of the 2023 Texas Legislature and new rules were posted November 2023. The main rule changes were updated NFPA code requirements for state building fire protection. *Download via QR code:*



AREA 12

ALASKA, IDAHO, MONTANA, OREGON, WASHINGTON

Around the Area

The 2024 legislative session convenes Washington state on Jan. 8 for a short (non-budget year) session; Idaho also convenes Jan. 8, Oregon convenes Feb. 1, and Alaska convenes Jan. 17. Montana does not meet in the even years. Northwest NFSA members should watch their inboxes for updates on any legislation affecting the sprinkler industry.

NFSA is partnering with the Washington State Association of Fire Marshals for a series of classes throughout 2024. Topics include fire sprinkler and alarm plan review, and an in-class and hands-on pumps class, and a seminar on sprinkler selection as well as other topics. NFSA members receive a discount; register on the WASFM website.

NFSA is partnering with the Southern Oregon ICC Chapter to present both a Plan Review and a Rough & Final Inspections class in Medford, Oregon in February.

Both the Puget Sound and Columbia-Willamette Chapters are setting up a great schedule of industry speakers for the 2024 round of meetings. If you have topics you'd like featured at an upcoming meeting, be sure to contact your Chapter Chairs or Regional Manager Suzanne Mayr. •



Northwest Regional Manager Suzanne Mayr promotes the fire sprinkler concept at the recent annual Washington State Fire Commissioners Association conference. The commissioners influence the policies of more than 300 fire districts in the state.





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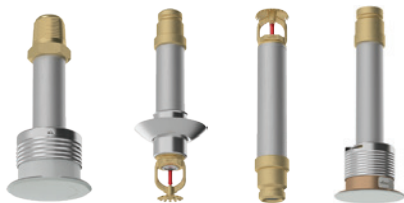
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