

ROLLING FIRE DOORS

Installation guidelines, NFPA updates,
and business potential for dealers

By Vicki Jones, Editor



Last year, the number of wildfires that raged across the country was staggering. According to the National Interagency Fire Center, in 2021 there were 58,985 wildfires and over seven million acres that burned nationwide.

In California alone, 297 fires burned 1,171 acres of nonfederal land in January 2021 according to the Cal Fire website statistics. That is 20 times the acreage of the five-year previous average for January. By August, California was facing “unprecedented fire conditions” as the Dixie Fire, McFarland Fire, Caldor Fire, and others raged on.

Firefighter testimonial

D+AS spoke with Fire Captain Don Torres, who has served as a firefighter for 26 years and is currently based in San Jose, California.

“When I first started, we probably had 60,000 calls a year. Now we’re up to 100,000 calls. I’ve never seen one department have to respond to this many fires in one year. Plus, we are now regularly asked to travel to other locations to assist fire teams across the state and country,” said Torres. “That wasn’t necessary in previous years.”

In addition to the hundreds of thousands of acres being burned, a depressing number of structures were destroyed or damaged in 2020 and 2021. The National Fire Protection Association (NFPA) report from September 2021 revealed that in 2020, property damage in the United States was estimated at \$21.9 billion.

Cal Fire reports that 3,629 structures were damaged or destroyed in 2021. When you compare these numbers to 2013—when 456 structures were damaged or destroyed—you can see the disparity and reasons for concern.

If it weren’t for the significant innovations in rolling fire doors in the past 25 years and the key installation and inspection guidelines related to fire door installation, then these numbers could be even more devastating.

The “right” fire door

Fire-rated doors help compartmentalize a building, prevent the spread of smoke and flames, and protect egress routes. However, they must be properly specified, installed, and maintained to provide the necessary protection and the potential for a safe escape.

“I’ve seen fully closed fire doors offer the protection that it promised under heavy fire conditions,” said Torres. “The key is to install a properly rated door for the application and to

maintain the doors regularly.”

According to Fire Chief Pete Mellits, Vice President of Civil Engineering for Century Engineering, there are notable differences between fire-resistant, fire-rated, and fireproof doors.

“Fire-resistant doors will burn slowly due to material treatments. Fire-rated doors will burn, but the door material has an estimated time period of how long it takes fires to burn through (pre-determined via testing). Typically, 30-minute, one hour, or two-hour rated doors are available,” Mellits said.

“Fireproof doors are made from materials that will support combustion, but will eventually succumb to the heat from fire over several hours,” he added.

Thus, no door is entirely fireproof. However, properly installing the right fire-rated door and maintaining it regularly can be critical in preventing the spread of fire, smoke, and fumes.

Maintenance is critical

“If fire doors and their assemblies are not working properly, a facility is at great risk—of citations and fines, and of putting your building’s occupants in harm’s way,” said Torres. “The biggest challenge is ongoing maintenance. I would recommend having someone on staff who is knowledgeable about how to establish a maintenance program.”

Failure to provide routine maintenance and lubrication can lead to issues that may prevent a closing mechanism from working properly. Mellits said that dealers can help mitigate these things from happening by offering a semi-annual or annual inspection program.



Top five years with largest wildfire acreage burned since 1960

	Acres burned (millions)	Number of fires
2015	10.13	68.2
2020	10.12	59.0
2017	10.03	71.5
2006	9.87	96.4
2007	9.33	67.8

Source: NICC Wildland Fire Summary and Statistics annual reports

Note: Number of fires in thousands

“The bottom line,” said Torres, is not to wait until the fire inspection and fines. Be proactive and make door maintenance a priority.”

If facilities don’t pass the annual inspections, then there are consequences. Mellits said that there may be an initial warning with a time period to correct the issue. That can progress to a fine and time to correct the issue. “Or, depending on the issue, temporary or permanent evacuation of the structure,” he said.

Trained fire door installers can help

As the percentage and prevalence of fires persist, the need for fire-rated doors increases and so does the need for dealers that are experienced and trained in installing fire doors.

That’s where you come in!

For dealers that are considering expanding into the fire door installation business, now may be the ideal time. “Right now, there is a high demand for fire door installations. We get calls all the time asking for dealer recommendations for applications requiring the installation or maintenance of commercial fire doors,” said Greg Matias, director of regulatory compliance and validation testing for The Genie Company.

“Another huge motivator is that we are seeing dealers bidding large jobs that include fire doors. There may be only one or two fires door in a job with dozens of standard doors, but if the dealer is not prepared to bid on fire doors, they may lose the entire job,” Matias said.

New and old fire door applications require unique skills and knowledge, and installations require extensive drop-testing. They also should involve regular maintenance via inspections (at least annually).

The good news is that regularly scheduled fire door testing and maintenance visits mean consistent business for a door dealer and, ultimately, a steady flow of dollars to your pocket.

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Q&A WITH INDUSTRY EXPERT STEVE HAHN



To gain insights into the fire door industry and to get a better grasp of the training and knowledge required to become a fire door installer and/or inspector, we turned to rolling door veteran and expert Steve Hahn for answers.

Steve has been in the rolling door industry since 1974 and is a former DASMA Rolling Door Division chair and ARDI president. He has also been a member of the NFPA 80/105 and 80A Technical Committees since 1992 and serves on three UL Standards Technical Panels. Since 2000, he has been the product manager for Lawrence Roll-Up Doors and a member of the senior management team.

1. Are there certain markets where rolling fire doors are more common?

Hahn: It's been my experience that most major metropolitan areas and industrial centers more consistently have a larger demand for rolling fire door products, but many smaller markets frequently utilize them as well for commercial, retail, and institutional buildings.

2. What is the distinction between fire-resistant, fire-rated, and fireproof?

Hahn: These are somewhat subtle, yet fairly complicated differences. In our industry, rolling fire doors are commonly fire protection rated—typically referred to as fire rated—and not fire resistant or fireproof.

3. How are fire ratings determined?

Hahn: Ratings are based on successful testing to an established standard. With rolling fire doors, the typical standard is UL 10B. A

complete fire door is installed on a wall and subjected to a fire test for periods of time at predetermined temperatures (up to 4 hours and 2000 degrees Fahrenheit). After the fire test, the door is then subjected to a hose stream test for up to about 8 minutes at 45 PSI water pressure for a typical 3- or 4-hour labeled door.

4. What have been the top four most significant innovations for rolling fire doors in the last 10-15 years?

Hahn: Most of the significant innovations in fire door products probably occurred before that time—such as easily or automatically resettable fire door closing systems, labeled retrofit fire door operators, S-label fire doors, insulated fire doors.

But what has changed more recently is the number of manufacturers who now offer those newer generation products instead of the traditional tension release and gear drop out systems us industry veterans remember so “fondly!”

I think there has also been somewhat of a reinvention of the overall industry concerning fire doors. The industry continues to step up and make itself better. Fire door products are generally the best they've ever been, and educational and training efforts are at their highest.

5. How often does a fire door need to be inspected and tested?

Hahn: A fire door must be inspected and tested at least annually. It must also be properly maintained. Necessary repairs should be made without delay and repaired with parts obtained from the original door manufacturer.



As a part of the initial installation, the annual inspection, or after repairing or retrofitting, the fire door must be drop tested twice—once to demonstrate proper operation and full closure and again to verify it was properly reset.

Competitors' parts that may “look” compatible may in reality “perform” very differently. The one exception is that a labeled retrofit fire door operator from someone other than the original fire door manufacturer can be installed on an existing fire door.

6. What should installers do if the fire door cannot be repaired with parts that are listed or labeled, obtained from the original door manufacturer, or retrofitted?

Hahn: Per NFPA 80, the fire door should be replaced.



7. What should we know about NFPA 80, Standard for Fire Doors and Opening Protectives?

Hahn: It was first published in 1897 and is one of the oldest standards. The current standard regulates the installation, testing, and maintenance of fire protection and fire resistance rated products, including all types of fire doors, windows, dampers, and curtains.

Its companion document NFPA 105, Standard for Smoke Door Assemblies and Other Opening Protectives, regulates S-Label doors, dampers, and curtains. They can be viewed for free online or purchased from NFPA.

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8. What key changes to NFPA 80 requirements for rolling fire doors were approved in 2022? How was DASMA involved?

Hahn: The most significant change involving rolling fire doors resulted from a DASMA proposal. Many door dealers, end users, and Authorities Having Jurisdiction may not yet be aware that the 2022 edition of NFPA 80 requires inspections and testing to be performed by a Trained Rolling Steel Fire Door Systems Technician (TRSFSDST).

NFPA 80 defines a TRSFSDST as a technician employed in the rolling steel fire door industry with documented training by a recognized industry organization or by a manufacturer of a listed rolling steel fire door. It may take some time for this requirement to be adopted into codes and be enforced, but dealers should start to prepare for this.

9. How steep is the learning curve for installing, testing, and maintaining fire doors?

Hahn: This varies depending on the type of installation. For example, a new installation versus maintaining and testing older or previously installed fire doors would require different knowledge and skillsets.

It is sometimes difficult to find installation/ OGM instructions for guidance on older fire doors with traditional closing systems in particular. Some manufactures are very cooperative about sharing their information. Lawrence Doors, for example, has a Fire Door Testing Resources section on our website with archived instructions for many different types of fire doors.

10. Are there any risky conditions installers should specifically look for during their inspections?

Hahn: NFPA 80, DASMA and similar manufacturers' drop test forms outline all the items to be checked, but here are two that are very common:

1. Fusible links that are painted or otherwise coated and cables or sash chains that are kinked or twisted can prevent automatic closing and must be replaced.
2. Through-wall sleeves that are not open and clear of obstructions can create an at-risk condition and prevent an otherwise properly installed and operational fire door from closing automatically in the event of a fire. What is considered an acceptable sleeve is described in NFPA 80.

11. What is the biggest rolling fire door installation mistake that dealers make?

Hahn: Unfortunately, there are two common critical mistakes that can adversely affect the performance of a rolling fire door in a fire condition, and both are related to incorrectly installing the fusible link release cable or chain.

NFPA 80 requires a fusible link to be located within 12" of the ceiling on both sides of the wall (but not in the triangular dead-air space 4" back from the wall or 4" down from the ceiling).

Also, the linkage cable or chain must be routed to make sure that the door will close when any fusible link separates, and that includes the link on the opposite side of the wall. I'm aware of too many cases where this is not done correctly.

12. If a door dealer was to add fire doors to their product offerings, how many can they typically expect to sell in a year?

Hahn: This is largely a function of the size of the dealer, where they are located, and the type of work they pursue (replacement versus new construction).

13. What are three key add-on sales for rolling fire doors?

Hahn: Customers only buy fire doors because they are required by code, so it's a bit more difficult to upsell. As with any product, care-

fully evaluate the application and make sure what you sell is correct and appropriate.

Asking specific questions can sometimes present opportunities to upsell and avoid problems after the fact: How frequently will the door be used? Will it remain open except in an event of a fire? Is an air-leakage-rated S-label door required? Will the door be connected to an alarm system or detectors? Is the customer insured by a company that will require an FM-approved door?

14. What is the number one fact about rolling fire doors that dealers need to know?

Hahn: Rolling fire doors are a critical component of a life safety system. Consequently, they need to be installed correctly, tested annually, and maintained in accordance with all the requirements of NFPA 80 (and NFPA 105 for S-label doors) to ensure the best possibility of performing as intended in a real fire condition.

Selling them comes with a greater responsibility and liability, but it can also provide a great business opportunity for a professional door dealer. ■

ARE YOU LIVING IN A HOTSPOT? States with the most burned acreage in 2021

State	Number of fires	Number of acres burned
California	9,260	2,233,666
Oregon	2,202	828,777
Montana	2,573	747,678
Washington	1,863	674,222
Arizona	1,773	524,428
Idaho	1,332	439,600
Alaska	384	253,357
Texas	5,576	168,258
Kansas	55	163,982
New Mexico	672	123,792
Total for all 50 U.S. States:	58,948	7,124,554

Source: Insurance Information Institute