THE MAGAZINE OF EFFECTIVE COMPARTMENTATION

Life Safety DIGEST

SPRING 2018

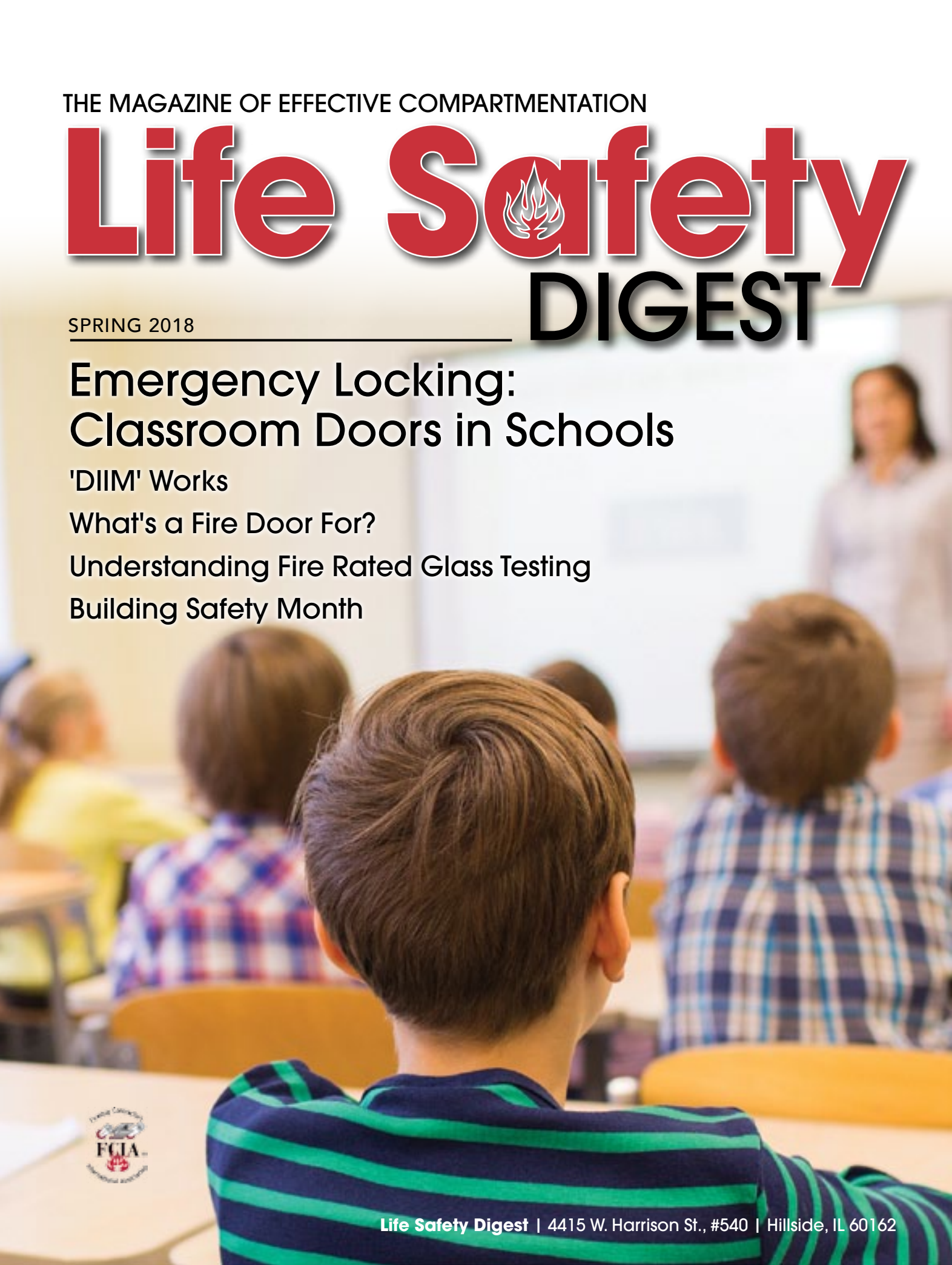
Emergency Locking: Classroom Doors in Schools

'DIIM' Works

What's a Fire Door For?

Understanding Fire Rated Glass Testing

Building Safety Month



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COVER STORY

20 Emergency Locking: Classroom Doors in Schools

By Keith Pardoe, FDAI, DAHC, CDC

Marjory Stoneman Douglas High School in Parkland, Florida is the latest tragic scene of a violent and deadly active school shooter incident. In one account of the incident, the assailant reportedly shot out the glass in a classroom door and extended the gun into the room through the opening in the door, shooting randomly; killing and wounding several students in the room. Read about safety and security in school buildings, especially with respect to Fire-Resistance-Rated Swinging Doors.

FEATURES:

DEPARTMENTS:

Life Safety DIGEST

SPRING 2018

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LIFE SAFETY DIGEST

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EDITOR'S MESSAGE

We can't tell you how much we enjoy assembling *Life Safety Digest*. This magazine, with a huge reach, is the only periodical that focuses not only on fire-resistance-rated and smoke-resistant assemblies, but also on how these assemblies are used in buildings. Everything from new construction to existing building repairs, replacements and maintenance/management, is in the scope of this quarterly publication.

Check out this issue's articles about Safety and Security in school buildings and their interaction with Fire-Resistance-Rated Swinging Doors. This article is quite timely given recent events in Florida.

Read about Fire-Rated Glazing assemblies and the International Code Council's Building Safety Month which promotes the role of the code official and codes in safe buildings.

And, there's a short article on the FCIA's method for properly Designed, Installed, Inspected, Maintained and Managed ('DIIM') Firestopping for safe buildings. We at FCIA believe this trend will continue to spread through the rest of the fire-resistance industry as general contractors, building owners and managers and code officials recognize the value of the method. In fact, in ICC Code Development Proposal F47-18 the topic of installation quality was submitted. Look for it in the ICC's Code Monograph. Watch for it at ICC's Committee Action Hearings in Columbus, OH by visiting www.ICCSafe.org during the week of April 15.

Life Safety Digest is always looking for writers. Do you have a passion for a topic? Email, call or write us the old-fashioned way. We look forward to hearing from you.

UNLIMITED?

Not when it comes to fire rated glass

Beware of advertisements urging designers to 'be unlimited' when using ceramics with 'fire ratings up to 3 hours.' The problem is that while ceramics are listed up to 3 hours, the IBC specifically limits is size and applications after 45 minutes. The code limits the use of ceramics to 100. sq. inches in 60/90/180 minute doors and ceramics cannot be used at all in 60/120 minute interior windows, sidelites and transoms regardless of whether sprinklers are employed or not.

For truly unlimited glazing, fire resistive products tested to ASTM E-119 like ***SuperLite® II-XL*** must be used. ***SuperLite® II-XL*** can be used up to the maximum size tested in all fire rated applications.

Here's a side by side comparison of fire protective vs. fire resistive glazing used in a 1-hour stairwell application:

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'DIIM' WORKS

The FCIA's Steering Committee worked with the fledgling membership to build the 'DIIM' for Firestopping. Future FCIA Boards enhanced the 'DIIM' and decided to focus on communicating the 'DIIM' to other fire-resistance-rated and smoke-resistant assembly industries, such as fire doors, fire dampers, fire-rated glazing and more.

The proper 'D'-Design, 'I'-Installation, 'I'-Inspection and 'M'-Maintenance of Firestopping has made a difference in the industry. But how has 'DIIM' made a difference?

For starters, the many Firestop Manufacturers have tested and listed products delivering many solutions for buildings worldwide.

Additionally, there are now over 130 FM 4991 Approved and UL/ULC Qualified Firestop Contractors worldwide, covering all 50 US States, as well as parts of Canada, the United Arab Emirates and Qatar. All around the world, these contractors are installing firestopping to audited processes. There are also many IAS AC 291 Accredited Special Inspection Agencies with inspectors who have passed the FM or UL/ULC Firestop Exam.

For Firestopping, the industry has built standards to provide quantified ways to build reliability of the installed firestopping.

'D'- Design-Through work with specifiers and designers, a detailed single section for firestopping is built – section 07-84-00 Specification – a clear and concise scope of work that neither confuses, nor conflicts, with other sections.

'I'-Installation - Better Installation of firestop materials that become firestop systems when installed by a Specialty Contractor with employees that possess the understanding that firestopping is installed to the exact parameters in specifications, manufacturers' installation instructions and the listings, provides continuity to breached fire-resistance-rated and smoke-resistant assemblies.

The FM 4991 Standard for the Approval of Firestop Contractors and UL / ULC Firestop Contractor Qualification Programs provide a way to quantify the Firestop Contractor's performance capability. This 3rd-party accreditation for Firestop Contractor companies requires that the company employ a person who has passed a Firestop Examination based on FCIA's Firestop Manual of Practice. The company also must pass a rigorous company audit of the firm's Quality Management System – the procedures used to get firestopping done right - both at the office and in the field.

By having the accreditation programs offered through FM and UL/ULC, this allows the process to be objective. A 3rd-party provides the quality audits, rather than FCIA or the company itself. FCIA does not accredit Members. FCIA does provide education for the **FM & UL/ULC Firestop Exams** that are used for both Contractor and Inspection Agency personnel.

FCIA developed, and continues to improve, the **Firestop Containment Worker Education Program**, a generic, step-by-step education program available for purchase by contractor and non-member organizations in several forms.

'I'-Independent Inspection – The 2012 International Building Code mandated 3rd-Party, independent Special Inspection for firestopping in Chapter 17 to ASTM E 2174, Standard Practice for the On-Site Inspection of Installed Firestops, and ASTM E 2393, Standard Practice for the On-Site Inspection of Fire-Resistive Joint Systems. FCIA Member Special Inspection Agencies with educated Special Inspectors review installed firestop systems.

Special Inspection Agencies can be Accredited to International Accreditation Services, IAS Accreditation Criteria AC-291 or other similar programs. According to the International Building Code's Chapter 17, Special Inspectors need to be competent and experienced in the same type and complexity of work inspected. Competence can be proven through passing the FM Firestop Exam, UL/ULC Firestop Exam OR the International Firestop Council Firestop Exam.

'M'-Maintenance and Management - Maintenance of existing fire-resistance-rated and smoke-resistant assemblies is required by the International Fire Code and NFPA 101 Life Safety Code. It's important to get this done to keep all systems working properly. FCIA members provide barrier management services worldwide to maintain fire-resistance-rated and smoke-resistant assembles in buildings.

At FCIA, the focus of our initiatives as an association has been the quality management system process for the Firestop Contracting company installing and the Inspection Agency reviewing, as well as educating about maintaining fire-resistance-rated and smoke-resistant assemblies in buildings to keep people safe. Yes, we've worked on the whole compartment with many other organizations. Some have even started working on the 'DIIM' for their own industries.

Other fire-resistance-rated and smoke-resistant assembly industries have incorporated pieces of the 'DIIM' for their industries. Doors have the Fire Door Inspection program for existing buildings. Fire Dampers are required to be inspected after installation and every 4 years in all occupancies but hospitals, which is 6 years. For FCIA, the association has built an FM 4991 Approved Contractor Program, an UL/ULC Qualified Firestop Contractor Program, an IAS AC 291 Accredited Inspection Agency Program, two exams for both the Contractor and Inspection Companies and has worked at the ICC and NFPA to refine the maintenance requirements for fire-resistance.

The goal for FCIA has been to build the 'DIIM' for firestop systems to develop a reliable installation that works when called on by fire. Better Contractors, better inspection and lifetime maintenance means safer buildings.

WRITTEN BY **LORI GREENE, DAHC/CDC, FDAI, CCPR**

WHAT'S A FIRE DOOR FOR?

In the last couple of years, the fire protection provided by a closed door has gotten a lot of press. In social media, fire departments have shared videos of rooms totally devastated during a fire juxtaposed beside a room with almost no damage because the door was closed. Firefighters are also learning more about how to use the position of a door to help limit the flow of oxygen to the fire and to deter the spread of smoke and flames.

In fact, Underwriters' Laboratories (UL) conducted research on the fire-safety benefits of closed doors and created a website to help educate the public. CloseYourDoor.org is the site used by UL to share their message of "Close Before You Doze", which teaches about the fire-safety benefits of sleeping with your bedroom door closed.

Stories of closed doors have been widely shared in the news media. Good Morning America and many other news outlets shared UL's program and the research behind it. There was another story of a dispatcher in Oklahoma City who saved lives by advising a woman and her children to go into a room in their burning home, close the door and wait for rescue.

But there have also been tragic stories in the news about the impact of doors left open during a fire, as seen recently in a Bronx apartment building where 13 people were killed. The door of the apartment where the fire began was left open, and the fire spread quickly up the open stairwell, preventing other occupants from evacuating.

Much of the news coverage and public education has addressed the value of closing residential bedroom doors, which are not typically fire door assemblies. There is much more that can be shared about fire doors, which are designed, tested and constructed to ensure that they will resist the spread of smoke and flames for a specific amount of time.

It's critical for the public to understand the basics of fire door assemblies, which protect building occupants in residential occupancies like apartments, hotels and dormitories, as well as in schools, hospitals, office buildings and other types of facilities.

An open fire door will allow smoke and flames to spread and compromise the means of egress. Closed and latched fire doors will help to compartmentalize the building. Allegion photo.

FIRE DOOR ASSEMBLIES IN SCHOOLS

In recently-constructed schools, colleges and universities, and other buildings required to comply with the International Building Code, fire doors are commonly found in stairwells; opening protectives in stairwell exit enclosures protect the means of egress. Fire doors might also be required for doors leading to incidental use areas that are more prone to fire, such as boiler rooms, transformer vaults, laboratories and vocational shops. Past building codes often required corridor walls to be constructed as fire barriers, so in existing buildings corridor doors leading to classrooms and offices might also be fire door assemblies.

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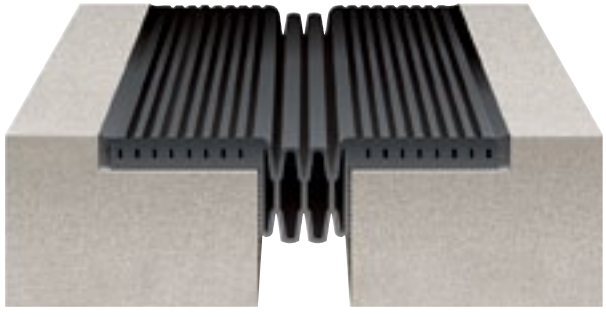

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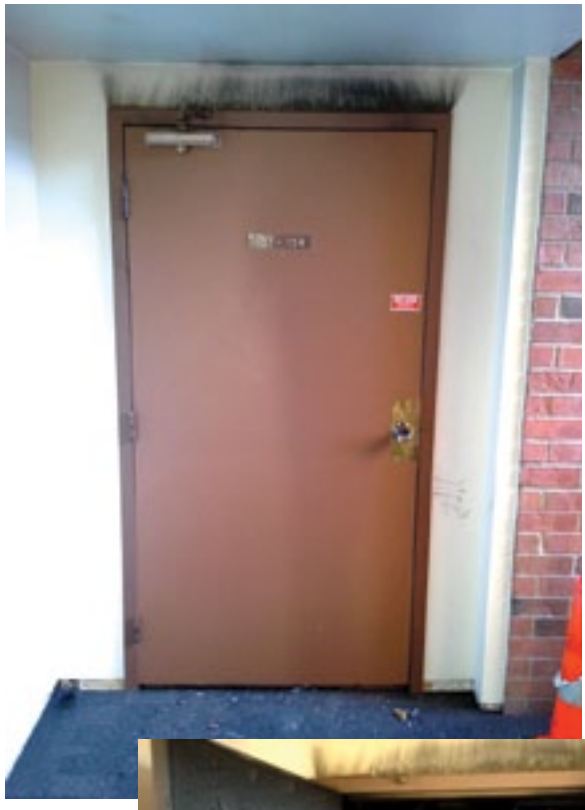
Fire door labels state the duration of the fire door test – between 20 minutes and 3 hours. A code-compliant fire door assembly is expected to protect the opening for this amount of time.
Allegion photo.

When fire door assemblies are installed correctly, the expectation is that the opening protectives will provide the amount of protection stated on the fire door label, as the assemblies have been tested and certified by a listing laboratory. The two test standards that are currently used in the US to test swinging fire door assemblies are UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies – and NFPA 252 – Standard Methods of Fire Tests of Door Assemblies. When each component of a fire door assembly is successfully tested to one of these test standards, it is then a listed assembly which bears a label on the door that states the duration of fire-resistance, which provides occupant protection – between 20-minutes and 3-hours.

Over time, however, damage, abuse and lack of maintenance can impact the performance of the fire door assembly. If the assembly is deficient, for example, and the door doesn't latch properly, or if the wrong type of glazing has been installed in the door, the assembly won't perform as designed and tested.

If a door closer is disabled or removed, or if the door is propped open with a wedge or other mechanical means, the door will likely be standing open if a fire occurs, providing no protection at all. In the case of the recent Bronx apartment fire, the open door allowed the fire to spread. Current codes require dwelling unit entrance doors to be fire doors. If the fire door assembly was working properly, the door would have automatically closed and latched as the apartment's residents fled, helping to contain the fire and protecting the means of egress. Current fire codes now require fire door assemblies to be inspected annually, to ensure that they are functioning properly and will provide the necessary level of protection if a fire occurs.



Photos courtesy of Scott Strassburg, Madison Fire Department.

According to the **National Fire Protection Association (NFPA)**, from 2011-2015, US fire departments responded to approximately 5,000 structure fires in educational properties each year. These fires caused an average of 1 civilian death, 70 civilian injuries and $70 million in direct property damage. Prior to the adoption of strict building codes and fire codes designed to protect life safety and provide for the safe evacuation of a building, school fires with a large loss of life were not uncommon. This year marks the 60th anniversary of the fire at Our Lady of the Angels School, where 95 children and teachers were killed. Today's code requirements for fire protection and egress would have likely reduced the number of fatalities in that fire.

U.S. SCHOOL FIRES, GRADES K-12, WITH 10 OR MORE DEATHS

Event	Date	Number of deaths
Consolidated School gas explosion New London, TX	March 18, 1937	294
Lakeview School Collinwood, OH	March 4, 1908	175
Our Lady of the Angels School Chicago, IL	December 1, 1958	95
The Cleveland School Kershaw County, South Carolina	May 17, 1923	77
Bath Consolidated School Bath, MI	May 18, 1927	46
Babbs Switch School Hobart, OK	December 24, 1924	32
St. John's Parochial School Peabody, MA	October 28, 1915	21
Cleveland Hill School Cheektowaga, NY	March 31, 1954	15

(Source: https://www.nfpa.org/News-and-Research/Fire-statistics-and-reports/Fire-statistics/Fires-by-property-type/Educational/School-fires-with-10-or-more-deaths)

In each of these tragedies, it is unlikely that there were either sprinklers or fire-resistance-rated construction in key areas of the buildings.

SCHOOL SECURITY VS. SAFETY

As the number of school shootings has increased in recent years, the focus on school security has also grown. Because of the budgetary constraints faced by most schools, some districts have been tempted to use security methods that don't comply with the requirements of the current model building and fire codes. The vast majority of these gadgets, known as classroom barricade devices or retrofit security devices, do not meet the model code requirements for egress, are not certified for use on fire doors and are not compliant with the accessibility standards, including the Americans with Disabilities Act (ADA). In response to the model code requirements prohibiting these security methods, some state legislators have attempted to undermine the adopted codes and have ignored the objections of state code officials, proposing bills which would force state codes to allow classroom barricade devices.

Allegion photos.

This push to relax the codes that have been in place for many decades prompted a considerable amount of discussion during the recent ICC Code Development Cycles.

The model codes that have been adopted in most US states are the International Building Code (IBC), the International Fire Code (IFC) and NFPA 101 – The Life Safety Code.

As code change proposals for the 2018 editions of the International codes were examined at length, the importance of building upon the existing requirements protecting life safety and egress became clear. In addition to maintaining the requirements of previous editions, each of these codes will now require classroom doors to be able to be unlocked from the outside with a key or other approved method. These codes ensure that building occupants can evacuate freely, that fire doors have hardware that has been tested and certified for use as part of a fire door assembly and that the doors and hardware comply with the ADA.

Allegion photo.

Marketing materials for classroom barricade devices tell a compelling tale…just purchase this product and the kids will be safe. What's not clear to many of the school administrators considering these security devices is that with reduced cost comes higher risk and potential liability. Installing unregulated devices that restrict egress, that have not been tested for use on fire doors and that do not meet the ADA standards can impact evacuation and fire protection. In addition, barricade devices could be used by an unauthorized person to secure a classroom and commit an assault or other crime. Barricading has delayed law enforcement response and has likely contributed to the loss of life in school shootings like those at Virginia Tech, the West Nickel Mines Amish School House and Platte Canyon High School. Code-compliant locks are readily available from established hardware manufacturers, and as the Sandy Hook Advisory Commission stated in their final report, ***"There has never been an event in which an active shooter breached a locked classroom door."***

EDUCATION AND AWARENESS

Clearly, more education is needed when it comes to fire doors and egress, as well as classroom safety and security and the protection that can be provided by a closed door. This information is readily available, but we need to continue to spread the word. UL's site, **CloseYourDoor.org,** includes statistics, tips and videos about why it's important to close residential doors when you go to sleep.

The Door Security and Safety Foundation has created a website, **LockDontBlock.org,** which is dedicated to educating about the dangers of barricade devices and the benefits of code-compliant classroom security.

The National Association of State Fire Marshals (NASFM) has posted a list of classroom security guidelines on their site – **FireMarshals.org.** Two organizations dedicated to school safety provide additional information about security and other applicable topics on their websites: Partner Alliance for Safer Schools (PASSK12.org) and the Secure Schools Alliance (SecureSchoolsAlliance.org).

How are **YOU** going to share this information with the people who need it?

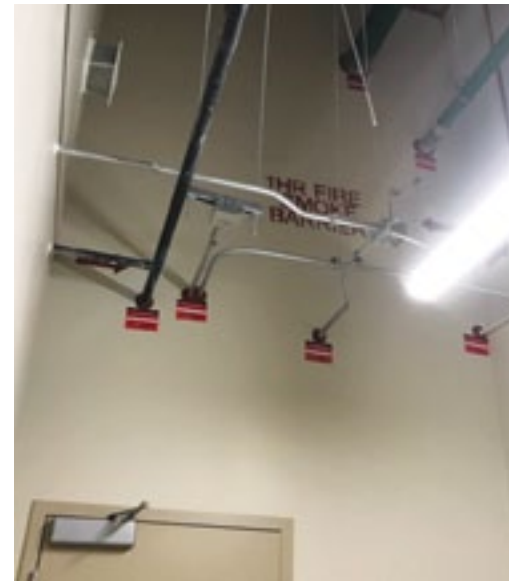
Fotalia photo.

Lori Greene, DAHC/CDC, FDAI, CCPR, is the Manager - Codes & Resources for Allegion. For more information about this topic and to download a free reference guide on codes, visit iDigHardware.com/guide.

The Value of the UL Qualified Firestop Contractor Program

Firestop systems remain important to the built environment. These systems serve as critical safeguards against the spread of heat, fire, gases or smoke through breaches in floors and walls. Proper materials are required for system success and correct installation is critical.

A contractor must properly select and install a firestop system to protect penetrations and joints within fire-resistance-rated wall and horizontal assemblies. The building codes require these breaches be protected and the UL Qualified Firestop Contractor Program denotes contractors providing additional quality assurance.



Confidence in Every Installation

The UL Qualified Firestop Contractor Program is voluntary and allows contractors to proactively demonstrate their commitment to the proper installation of firestop systems. These contactors have implemented a stringent quality management system which includes a review of project design and construction document requirements; installation, training, application and field quality; and documentation and record keeping.

To participate in the program a Qualified Firestop Contractor must:

1. Appoint and employ at least one designated responsible individual (DRI) with firestop expertise.
2. Pass the UL Firestop Exam.
3. Maintain a 10 element management system that is evaluated through an annual audit.

Benefits of Engaging a Qualified Contractor

UL currently certifies the products being used in firestop installations. This allows UL to apply its existing expertise in qualifying contractors to our stringent evaluation program. The benefits of working with a qualified contractor include:

- Increased confidence in the installation process – AHJ's, Architects, Building owners and Fire Marshals benefit knowing the contractor's installation processes have been reviewed and management system certified.
- Easy Identification of Contractors – Qualified contractors are listed in the UL Online Certifications Directory and easily searchable under the Qualified Firestop Contractor Program (RFTI), which currently lists some of the most capable contractors in the world.
- Superior Installations from the Start – The enhanced level of performance from qualified contractors helps reduce or eliminate non-conformance issues to keep the job moving forward without delay while providing potential cost saving.

To learn more about the UL Qualified Firestop Contractor Program, to find a qualified contractor, or to apply for the program please visit the website ul.com/firestopcontractor or email FireSafetyQuote@ul.com

WRITTEN BY **DIANA SAN DIEGO**

UNDERSTANDING FIRE-RATED GLAZING TESTING FOR WINDOWS, DOORS, WALLS AND FLOORS

Today's breed of fire-resistive glazing systems is appropriately referred to as "transparent walls," and offer many safety benefits while enhancing the feel and efficiency of a building's interior. SAFTI FIRST photo.

So, what makes fire-rated glazing different from regular glazing? During a fire, regular glazing will easily break or evacuate the opening, allowing the smoke and flames to quickly spread from one fire-resistance-rated compartment to another. At the other end of the spectrum is fire-rated glazing. Fire-rated glazing is designed to stay in the opening during a fire, keeping smoke and flames at bay.

Many of you are probably familiar with **fire-protective glazing,** namely wired and ceramic glazing. This type of glazing is typically fire-protection-rated up to 45-minutes and is capable of compartmentalizing smoke and flames – the visual elements of a fire. Today, more technologically advanced versions called **fire-resistive glazing** can be used in door, wall and floor applications for up to 2-hours of fire-protection. Fire-resistive glazing also compartmentalizes smoke and flames. Unlike fire-protective glazing, fire-resistive glazing limits the passage of radiant heat – allowing for safe egress and code compliance. Part of the pass-fail criteria for fire-barriers, smoke-barriers and fire-partitions is a maximum temperature-rise of the unexposed to fire-side of the test assembly.

While the demand for fire-resistive glazing has increased, so has the confusion surrounding it. Fire-rated glazing can be found in openings, doors, walls and floors. Since it is a life safety product, its use is governed by the requirements of the International Building Code (IBC) or other locally adopted codes. To understand the correct and code compliant applications of fire-rated glazing, it is important know how these products are tested. The testing determines the suitability of use for the products in specific applications.

FIRE-RATED GLAZING TESTING

All fire-rated glazing products used in the field must be first tested, and then installed to the manufacturers' tested and listed installation instructions. The products also need to be currently under the follow-up service of a nationally recognized testing laboratory. The follow-up service from the testing lab assures that the same product that was tested is still being manufactured and used at jobsites.

In the testing process, the Manufacturers of the fire-rated glazing products being tested are what is known as a 'fire-test sponsor'. These 'sponsors' hire the services of independent labs such as Intertek, UL, FM Approvals and others to test their products to certain standards and time durations. If the product passes the fire-test, it is given a listing.

Fire-Endurance Test. SAFTI FIRST photo.

FIRE-ENDURANCE TEST

The fire-endurance test determines the time a glazing product – installed as an assembly or system - can withstand fire and extreme heat, with temperatures reaching in excess of 1900° F. During this test, the prime source of heat—in this case, the test furnace —follows a fixed time and temperature curve designed to simulate a fire, where the temperature rises quickly, then gradually continues to increase. If the glazing remains in the frame for the duration of the test, it is certified with the endurance rating, ranging from 20-minutes to 3-hours. The glazing, framing size and type and glazing size are all key parameters stated in the listing. **It's the assembly that gets the rating, not just the product**

Hose Stream Test. SAFTI FIRST photo.

HOSE STREAM TEST

After the fire-endurance test, the glazing test specimen is subjected to a high-pressure water stream from 20 feet away at 30 psi. The hose stream test is a load or force applied to the assembly that simulates ceiling tiles and framing falling and hitting the assembly, showing that the fire-resistance remains during fire conditions.

ASTM E-119, Standard Test Methods for Fire Tests of Building Construction, requires no glazing loss, while NFPA 257, Standard on Fire Test for Window and Glass Block Assemblies, allows for 30% loss of glazing around the perimeter and 5% loss at the center.

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Radiant Heat Test. SAFTI FIRST photo.

RADIANT HEAT TEST

During the fire-endurance test, thermocouples are placed on the surface of the glazing on the non-fire side to measure the radiant heat that is transmitted through the glazing.

The average temperature of the radiant heat calculated from these readings cannot exceed 250° F above the initial starting temperature, about 75° F – even when the temperature on the fire-side reaches over 1900° F at two hours.

FIRE-RESISTANCE VS. FIRE-PROTECTION FOR WALLS, DOORS, HORIZONTAL ASSEMBLIES

Fire window assemblies are tested to either NFPA 257, Standard on Fire Test for Window and Glass Block Assemblies, or UL 9, Standard for Fire Tests of Window Assemblies. The glazing product is subject to the fire-endurance test and hose stream test.

Fire door assemblies, which include the door panel, sidelite and transoms, are tested to either NFPA 252, Standard Methods of Fire Tests of Door Assemblies, to UL 10 B, Standard for Fire Tests of Door Assemblies, or to UL 10 C, Standard for Positive Pressure Fire Tests of Door Assemblies.

In the late 1990s, the required fire-test method changed from neutral or negative pressure to positive pressure to more accurately simulate the conditions of a fire in the real world. Today, the IBC requires side-hinged or swinging fire doors to be tested with positive pressure, using either UL 10C or NFPA 252. Like fire window assemblies, fire door assembly testing includes the fire-endurance test and hose stream test. One key thing to note is that building codes throughout the US typically stipulate that 20-minute doors in smoke barriers and fire partition corridor walls are exempt from the hose stream test.

In certain applications, fire doors are also required to limit the transmission of heat from one side to the other to protect building occupants so they can safely exit the building. Known as temperature-rise doors, these doors carry a temperature-rise rating, in addition to the hourly rating. Temperature-rise ratings are either 250° F, 450° F or 650° F, indicating the maximum rise above ambient temperature on the non-fire side measured during the first 30-minutes of a standard fire-endurance test. A 250° F temperature-rise rating is considered to be the most stringent and would meet the requirements of a specification requiring 450° F or 650° F.

Fire-resistance-rated wall assemblies and walls incorporating fire-resistance-rated glazing are tested to ASTM E-119, Standard Test Methods for Fire Tests of Building Construction and Materials, or to UL 263, Standard for Fire Tests of Building Construction and Materials. The glazing product is subject to the fire-endurance test, the radiant heat test and the hose stream test. If the glazing product remains intact for 1) the fire test duration, 2) the hose stream test and 3) if it limits the average and individual point temperature rise to less than 250° F and 325° F, respectively, above ambient on the non-fire side, then the glazing product installed in a fire-rated glazing assembly, with framing assembled as per the listing, passes.

Horizontal Fire-Rated Glazing Assemblies are also tested to ASTM E-119, Standard Test Methods for Fire Tests of Building Construction and Materials, or UL 263, Standard for Fire Tests of Building Construction and Materials. The assembly is subject to the fire-endurance test and the radiant heat test. A load (typically 100 psf) is applied to the assembly for the entire duration of the test. If the assembly remains intact and limits the average and individual point temperature rise to less than 250° F and 325° F, respectively, above ambient on the non-fire side, the assembly passes.

Fire-resistive glazing floors tested to ASTM E-119/UL 263 allows daylight to penetrate further into the building while meeting fire-resistance-rated requirements. SAFTI FIRST photo.

WHEN IN DOUBT, ASK AN EXPERT

Never hesitate to consult a knowledgeable fire-rated glazing manufacturer if you have questions about product performance, allowed applications or if you need help understanding the code requirements. In some cases, it makes sense to involve the manufacturer in the early design phases, especially when dealing with highly technical products, such as fire-rated glazing. With ever-changing codes and rapid advances in material technology, having product and industry knowledge in the selection and use of fire-rated glazing products can help you save time, money and, most importantly, lives.

Diana San Diego has over 11 years of experience in the architectural glazing industry and over 13 years of experience in public relations and marketing. As the VP of Marketing at SAFTI FIRST, leading USA-manufacturer of fire rated glass and framing systems, she oversees the content management, media relations, promotional activities and communication initiatives for the company. She is also involved in creating and promoting SAFTI FIRST's various educational programs, including the AIA registered on-demand program "Designing with Fire Rated Glass". She can be reached at DianaS@safti.com.

SIDEBAR

FIRE-PROTECTIVE VS. FIRE-RESISTIVE GLAZING

Now that we've discussed the different ways that fire-rated glazing is tested, it's now easier to understand the two types of fire-rated glazing products. Knowing the difference between the two will assist in choosing the correct, and code approved, product for any application.

FIRE PROTECTIVE GLAZING

Fire-protective glazing is tested to **NFPA 252/257** or **UL 9/10B/10C** and is designed to compartmentalize smoke and flames – not radiant heat – and is therefore, subject to application, area and size limitations under the International Building Code (IBC). Fire-protective glazing is typically used in openings up to 45-minutes and cannot exceed 25% of the total wall area. Sometimes it is used as exterior openings, depending on fire separation distance between adjacent buildings. Fire protective glazing can also be used as sidelites and transoms up to 45-minutes and doorlites up to 3-hours. However, it is limited to 100 sq. in. doorlites in 60-, 90- and 180-minute doors due to radiant heat concerns.

Fire-protective glazing is marked with either a 'D' for door or 'O' for openings. An 'H' marking is added to show that the fire-protective glazing product meets hose stream, where it has been tested and passed. The fire-endurance rating is also indicated on the label.

Examples of fire-protective glazing include wired glazing, ceramics and specialty fire protective. Of all these options, ceramics are the most expensive, with the laminated ceramics costing as much as $100 per square foot.

FIRE- RESISTANCE-RATED GLAZING

Fire-resistance-rated glazing is tested to **ASTM E-119/ UL 263** and is designed to compartmentalize smoke and flames and to limit radiant heat transmission. **Unlike fire-protection-rated glazing, there are no size or application restrictions for fire-resistance-rated glazing.** When paired with an equally fire-resistance-rated framing system, it can be used in wall-to-wall and floor-to-ceiling applications because it is considered a "transparent wall," allowing for maximum clear views.

Fire-resistive glazing is marked with a 'W' for walls, and the fire-endurance rating is also on the label. It may look like a window or an opening, but the code recognizes this type of material, used as an assembly with appropriate framing, as a wall. The fire-rated-glazing assembly can be used in place of gypsum or masonry where a 1- or 2-hour fire-resistive-rating is required. But unlike gypsum or masonry walls, fire-resistive glazing is transparent – giving additional benefits such as vision, daylight and direct lines of sight.

Fire-resistance-rated glazing is also used in applications as fire-barriers (walls) and fire-resistance-rated horizontal assemblies.

Examples of fire-resistance-rated glazing include fire-resistive tempered glass and multi-laminate glass. During a fire, the intumescent interlayers react to heat exposure and then expand to form an insulating char and solid wall, effectively containing smoke and flames and significantly limiting the transmission of radiant heat. This gives building occupants either a safe path of egress or a haven where they can await rescue.

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WRITTEN BY **KEITH E. PARDOE, FDAI, DAHC, CDC**

EMERGENCY LOCKING: CLASSROOM DOORS IN SCHOOLS

Marjory Stoneman Douglas High School in Parkland, Florida is the latest tragic scene of a violent and deadly active school shooter incident. In one account of the incident, the assailant reportedly shot out the glass in a classroom door and extended the gun into the room through the opening in the door, shooting randomly and killing and wounding several students in the room. One teacher was killed outside his classroom door while trying to get students into his room. He unlocked the door, opening it to let students in.

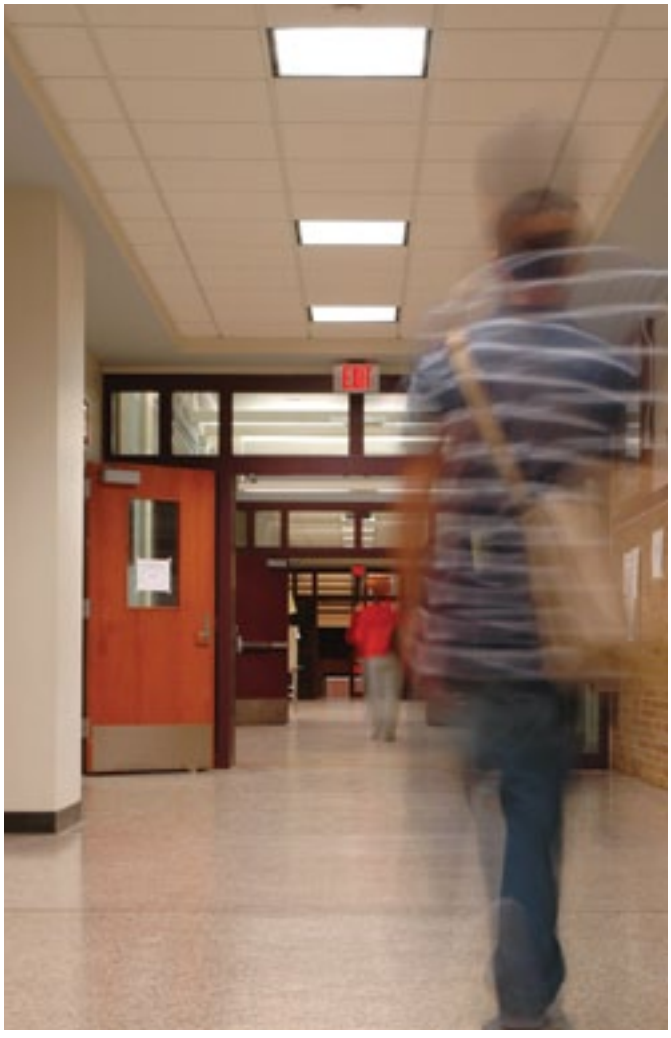
In its aftermath, public outrage has led to many conversations and debates about ways to prevent future incidents from occurring, as well as hardening construction in existing and new school buildings to better protect students, teachers and staff. While this is the most recent mass shooting incident to occur in a school, Sandy Hook and other tragic school shooting incidents in the past sparked the invention of devices intended to prevent doors from opening. These devices have become known as door barricade devices.

BACKGROUND

Door barricade devices are designed to do two things. First, they are used to allow people inside the rooms to "lock" closed doors without opening the doors and exposing themselves to potentially dangerous circumstances in the corridors. Many older existing classroom doors have a type of lockset that can only be locked and unlocked by inserting and rotating a key on the entry side (e.g., the corridor side) of the doors. Faculty and/or staff need to open the doors and step into the corridors to lock doors (against entry) with a key, thereby exposing themselves to danger.

The second purpose of some door barricade devices is to make doors more resistant to forced entry attacks by reinforcing a portion of the doors against battering by attackers.

There are many configurations of door barricade devices. Some are designed to fit over the top of hardware components (e.g., sleeves that fit over door closer arms), while others are designed to fit underneath doors. Bar-type door barricade devices use brackets to attach to door frames and to hardware components. Cables and brackets are used to make door barricade devices. Still others are comprised of pins, rods and levers that attach to the doors and extend into the floor.



Corridor in High School. mysmons/Bigstockphoto.com Photo

By employing or engaging door barricade devices, doors become fixed ("locked") in the closed position regardless of the status of the locking hardware installed on the doors. Most, if not all, door barricade devices do not require keys to secure doors, which makes them

an attractive means of locking doors in emergency situations. To be clear, door barricade devices make swinging doors inoperable, meaning they cannot be opened for entry or egress. It is equally important to know that first responders cannot disengage or release door barricade devices from the entry side (outside) doors, which prevent them from entering the classrooms.

Free, unobstructed egress is the core principle of the Life Safety Code, as well as other codes. Locking doors against egress is counter to that core principle. Using door barricade devices to make doors inoperable, even temporarily under the direst conditions, creates potentially dangerous scenarios. Consider the terrible consequences that might arise if an assailant were to use a door barricade device to prevent both people from escaping and first responders from intervening in time to rescue people. The potential consequences are sobering, aren't they?

Incidents such as active-shooter attacks, terrorist attacks and other acts of violence that compel lockdown protocols to be initiated in schools and businesses concern all of us. While securing doors during these types of incidents is only one step towards reaching a solution, we cannot overlook the consequences that improperly securing doors might unintentionally create.

For all these reasons, door barricade devices should be avoided, as there are commercial hardware products and solutions available that can provide increased security and first-responder access while maintaining life-safety features and functions – plus, they are code-compliant.

Fire Rated Cross Corridor Doors in High School. bobelias/Bigstockphoto.com Photo.

NFPA 101, LIFE SAFETY CODE, 2018

The 2018 Edition of NFPA 101 contains new provisions for locking classroom doors in educational occupancies—Kindergarten through Grade 12 schools—for new (Chapter 14) and existing (Chapter 15) construction. These new provisions and requirements are in Sections 14.2.2.2.4 and 15.2.2.2.4 respectively.

In the context of egress doors (e.g., exit access, exit, and exit discharge doors), the Life Safety Code is concerned about ensuring doors are unlocked in the direction of egress (see Section 7.2.1.6 Special Locking Arrangements). As mentioned earlier, door barricade devices make door leaves inoperable, locking them both against entry and against egress. Door barricade devices impede egress, which is dangerous.

Classroom Function Mortise Lock with Push Button Locking and Visual indicator. Mark Berger, Securitech, Photo

NOTE:

NFPA's codes and standards can be read online through their website. To jump directly to the web pages for NFPA 101, enter www.NFPA.org/101 in your preferred browser app. Choose the FREE ACCESS button, and follow the instructions to open the document. You will need to setup an NFPA website user account (*if you don't already have one*), but online access to NFPA's codes and standards is free to all interested parties. FYI, access directly to any NFPA document takes place by entering its number after the forward slash (e.g., NFPA.org/80) in the URL.

NFPA 101'S NEW CLASSROOM DOOR LOCKING PROVISIONS

When you turn to section 14.2.2.2.4 under New Educational Occupancies in the Life Safety Code and read the new provisions, you will see a list of ten conditions that must be met for new educational occupancies. The first condition requires the "…locking means…" (e.g., mechanical locksets, electrified locking components or a combination thereof) to "…be capable of being engaged, without opening the doors." The intent of this requirement is that the entry-sides of doors are lockable from inside the classroom without opening the doors. However, that point is not clearly stated in item 1.

Conditions 2 and 3 address the operation of the door from the classroom side. Namely, only one releasing operation is permitted to open doors for egress from classrooms. The intent of item 2 is that the doors are not locked against egress, but the phrasing of this requirement could be interpreted as allowing doors to be locked against egress. It states, "The unlocking and unlatching from the classroom side…" When the locking means is one of the modern classroom function locks, unlatching and opening doors from the classroom is always possible, and the entry-side of doors can remain locked. In other words, the act of opening a door for egress should not require unlocking unless that door is locked against egress (e.g., magnetically-locked doors).

An argument could be made that Condition 2 seems to allow for the application of door barricade devices, which is an unfortunate interpretation.

Condition 4 specifies the height dimension of "… the releasing mechanism" of the door. In this instance, the term releasing mechanism is subjective to the type of locking means installed on each door. For example, when mechanical mortise locks are used as the locking means, the lever trim of the locks become the releasing mechanism. Similarly, when magnetic locks are used as the locking means, the releasing mechanism might be a wall-mounted push button. There are other combinations of components that might be used to lock new classroom doors. One combination of components could be a mortise lock with a built-in switch that is interconnected to a magnetic lock. Rotating the inside lever, unlocks the magnetic lock immediately, and the door can be opened for egress.

Condition 5 requires remotely-locked doors to "… be unlockable" from the classroom side. It is unclear if this condition is intending for the entry-side of doors to be unlocked from the classroom side or the egress-side of the doors. Another interpretation of this condition is that the doors are locked against egress, in which case they would need to be unlockable for egress purposes. When the locking means is a magnetic lock, this condition makes sense.

Condition 6 ensures doors can be opened from the entry-side of the assemblies so that faculty, staff and first responders can enter the rooms.

Conditions 7 and 8 do not address door operation or function; they prohibit modifications to certain door hardware components (e.g., fire exit hardware, panic hardware and door closers), as well as modifications to fire door assemblies. Condition 7 only applies to doors that are equipped with fire exit hardware, panic hardware and door closers–the locking means cannot be accomplished by modifying these components. Many classroom doors are not fire-rated and are not equipped with these hardware components.

Condition 8 requires modifications to fire door assemblies to be performed in accordance with NFPA 80, Standard for Fire Doors and Other Opening Protectives. It bears mentioning that Condition 8 also references modifications to door hardware on fire-rated doors; NFPA 80 does not permit modifications of door hardware components themselves, only their installation on fire-rated door frames and doors is covered in NFPA 80.

Conditions 9 and 10 require the locking and unlocking of classroom doors to be included in the school's Emergency Action Plan, including the periodic training of staff in the operation of these doors.

EXISTING CLASSROOM DOORS

The issue of outfitting existing classroom doors with locking means that comply with these new provisions (see Section 15.2.2.2.4 under Existing Educational Occupancies) is more complex. Older existing classroom doors span several generations of products that were code-compliant at the time of construction. Many classroom doors that were installed in the 1950s, 1960s, 1970s, and 1980s are still in use today, but were not required to comply with today's codes and standards.

Changing out hardware components (e.g., mortise and bored locksets) or updating older existing doors to comply with today's new code requirements can be cost-prohibitive for some school districts. One possible solution might be to allow a second releasing operation on existing classroom doors, provided the releasing operations would be non-simultaneous. If such a change were to come about in the Code, school districts would have the option of adding an auxiliary locking component (e.g., classroom function deadlocks, stand-alone magnetic locks or other commercial locking hardware) to increase security of their doors.

Typical High School Classroom. dosecreative/Bigstockphoto.com Photo

Glass in existing classroom entry doors is problematic and a weakness that is difficult to overcome. Some sections of glass could be replaced with solid panels, that while not bullet resistant at least reduce the line-of-sight into the rooms. It might be necessary to replace some existing doors with new doors that have less glazed areas (or no glass at all).

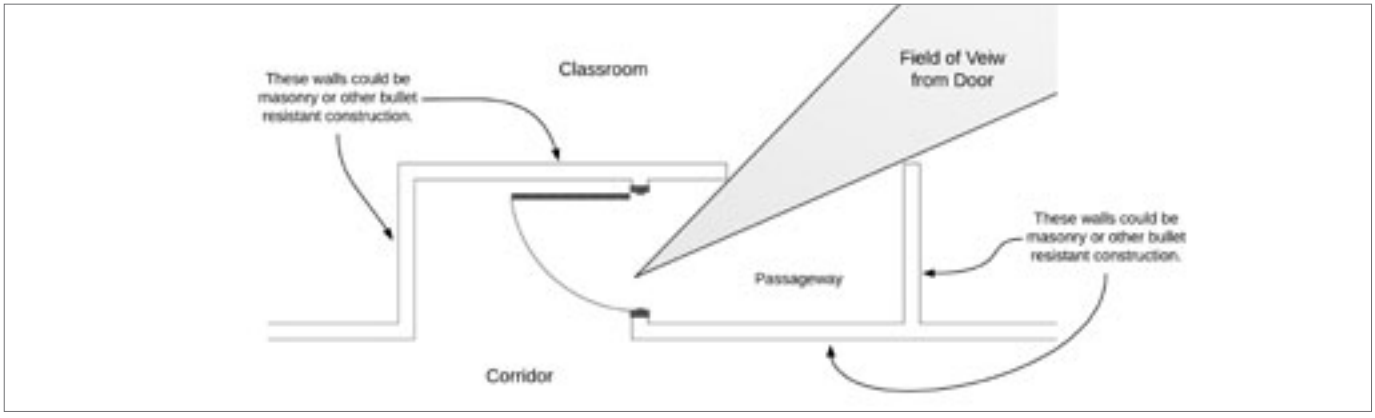
REDESIGNING CLASSROOM ENTRY DOORS

It might well be that the time has come to consider redesigning classroom door systems altogether.

For example, most classroom entry doors open directly into or from the rooms. Orienting door openings to be perpendicular to classrooms limits the line-of-sight from corridors. Another choice might be to create an L-shaped passageway on the classroom-side of the door assemblies, further reducing line-of-sight from corridors. A second door could be installed at the open ends of the passageways, creating vestibules between corridors and classrooms. In either case, wall construction of the passageways could be masonry or other materials that provide cover, as well as concealment, to the people in the rooms.

Lights (aka, windows) in door leaves and sidelight frames could have bullet-resistant glazing materials. Lights could be configured to prevent someone from reaching through window openings in door frames and doors to open the doors, or to continue shooting (as happened in Parkland, FL).

Classroom entry door function could be arranged for automatic-closing operation (regardless of fire-rating) and could be required to have positive latching hardware devices. In this case, doors could be held-open electrically and arranged to be released from a central location. These doors can be closed manually at any time.



One Possible Configuration of Future Classroom Doors. Pardoe Illustration.

There are number of modern classroom function locksets (mortise and bored designs) that can be locked from either side of the door. Keys on the classroom sides of the doors lock and unlock the entry sides of doors. It is important to know that the classroom side of the doors are not locked against egress. In other words, immediate and free egress from the classrooms is always possible, regardless of whether the entry-side of doors are locked or unlocked. Some modern classroom function locksets are available with electrified locking functions, which can be used for remote locking and unlocking from a centralized location (e.g., administration office). At least one new classroom lockset uses a push button to instantly lock the entry-side lever and to project a deadbolt.

Emergency Locking by Push Button. Mark Berger, Securitech, Photo.

Fire Exit Hardware with Integrated Deadbolt. Mark Berger, Securitech, Photo.

Another important and useful feature of some modern classroom function locksets is that they can be equipped with optional visual indicators on the classroom side of doors that shows when the entry-side of doors are locked. These visual indicators are extremely useful in stressful situations, especially under lockdown conditions.

When equipped with electrified locking hardware devices, classroom entry doors can be closed and locked remotely. Doors with electrified locking hardware could have credential readers (e.g., key pads, card readers and proximity readers) to allow faculty and first responders access during lockdown conditions.

New locking hardware products for schools are coming to market. One new product includes an integrated deadbolt function to fire exit hardware or panic hardware devices. The deadbolts provide additional security against entry (even forced entry), but automatically retract for free and immediate egress when the doors are opened from the egress side.

SUMMARY

Making our schools safe against violent acts such as happened in Parkland, FL, involves much more than improving the security of swinging doors. Human nature, however, is to do something, rather than nothing, when faced with terrible situations. Installing door barricade devices might seem to be an easy and inexpensive means of increasing security at first, but they are just as likely to compound the issues rather than solve them.

The good news is that there are many time-tested and proven commercial door, frame and hardware components that can be used to design the classroom door systems of the future, improving existing classroom doors.

Knowing that the 2018 edition of NFPA 101 contains new provisions for classroom door locking might lead to making better and more informed decisions. (By the way, the 2018 edition of the International Building Code contains similar provisions for classroom entry doors.) No doubt these new provisions will continue to evolve in the codes. Already, NFPA is accepting public input for the 2021 edition of NFPA 101. You can submit proposals through the NFPA website; the deadline for NFPA 101 is June 27th.

Keith E. Pardoe's, Founder and CEO of Door Safety, LLC (www.DoorSafety.com), career in the swinging door industry spans more than 30 years. He is a Fire Door Assembly Inspector (FDAI), a Distinguished Architectural Hardware Consultant (DAHC), and a Certified Door Consultant (CDC). Currently, he is the Chair of NFPA's Fire Door and Window technical committee; the committee responsible for NFPA 80 and NFPA 105. And, he is a member of the American Society for Healthcare Engineering's (ASHE) Faculty Team. You can reach him by email at Kpardoe@DoorSafety.com or through LinkedIn.

WRITTEN BY **FCIA STAFF**

ICC'S BUILDING SAFETY MONTH

The International Code Council originates a great thing for building safety awareness - Building Safety Month.

This year's theme is "**Building Codes Save Lives".**

Building Safety Month is an annual International campaign held during the month of May that raises awareness about building safety and the importance of current safety codes and the role of code officials in creating safe, sustainable structures that communities can rely on for generations to come.

During May, the Code Council, its 64,000 members and a diverse partnership of professionals from the building construction, design and safety community come together with corporations, government agencies, professional associations and non-profits to promote building safety through proclamations, informational events, legislative briefings and more.

"Building Safety Month brings attention to issues that are not regularly considered unless disaster strikes. Modern codes and standards incorporate the latest technology and provide the safest, most resilient structures for our families and communities to protect against building failures, hurricanes, tornadoes, floods, high-rise fires and other modern-day disasters," said Code Council Chief Executive Officer Dominic Sims, CBO. "Building codes really do save lives."

"The Code Council, in partnership with our members and stakeholders, works hard year-round to ensure that we work, live and play in strong, safe buildings. Through Building Safety Month activities, we recognize the dedication of our code officials and celebrate the fact that the International Codes result in the highest level of building safety in the industrial world," said Code Council Board President Jay Elbettar, P.E.

WEEKLY THEMES THROUGHOUT THE MONTH WILL SPOTLIGHT SPECIFIC AREAS OF BUILDING SAFETY.

- **Week One (May 1-5): Partnering with Code Officials to Build Stronger, Safer Communities** – This week urges building owners and managers – residential and commercial/industrial/institutional – to work with their building department to address structural stability, fire safety, exits and egress, sanitation and more.

- **Week Two (May 6-12): Advancing Resilient Communities Through Science & Technology** – Building Code Officials are up on the latest technologies that help keep buildings safe.

- **Week Three (May 13-19): Protecting Communities from Disasters** - Building regulation in the United States began in the late 1800s, when major cities began to adopt and enforce building codes in response to large fires in densely populated urban areas. The primary intent of early building codes was to reduce fire risk, but over time, their scope has broadened. Today, building codes are sets of regulations that address structural integrity, fire-resistance, safe exits, lighting, ventilation and construction materials. They specify the minimum requirements to safeguard the health, safety and general welfare of building occupants.

- **Week Four (May 20-26): Safeguarding Our Water** – There are many hazards when it comes to water. Safe pools, spas and conservation of the purity are all key elements of this week's theme.

- **Week Five (May 27-31): Improving Education & Training Standards for a Safer Tomorrow** - With powerful advancements in technology and frequent discoveries of new methods for solving age-old problems, the building industry, like many industries, is constantly changing. For building safety professionals worldwide, education and training are valuable and essential aspects of professional development. Those who consistently seek out avenues to expand their knowledge often see the most career success.

All these activities during Building Safety Month are aimed at keeping people safe in the built environment. The Building Safety Professionals worldwide work daily to provide protection to people in buildings. Join them in this quest. If you see a safety issue in a building, stop and tell someone.

To learn more about the details of the ICC's Building Safety Month campaign, visit buildingsafetymonth.org.

BRIGHT IDEAS

BUILD INSPIRED: BALANCING DESIGN FREEDOM WITH BUILDING PERFORMANCE.

At ROCKWOOL, we feel strongly that fire safety, design freedom and building performance can go hand-in-hand. Material section is the key. A wall assembly with non-combustible Comfortboard® 110 continuous exterior insulation, in combination with Comfortbatt® in the wall cavity, achieves an effective system that ensures excellent thermal performance, important passive fire protection, and greater occupant comfort. Pairing effectively with a wide range of claddings, there's no need to compromise aesthetics–the quintessential factor that makes architecture truly inspiring. ROCKWOOL stone wool insulation products for exterior wall assemblies are a part of many NFPA 285 systems and help meet LEED v4 goals. Discover true design freedom: www.rockwool.com or 1-800-265-6878.

JOINTMASTER® AT THE EXPLORATORIUM

JointMaster® provided the entire expansion joint and fire barrier package for The Exploratorium in San Francisco. Almost 1,500 linear feet of interior and exterior seismic expansion joints are used throughout the building.

Because the Exploratorium is built over the water, designers specified Fireline™ Water Guard® Fire Barrier be incorporated where specified. The patented Water Guard Fire Barrier features an integrated waterproof silicone cloth that protects the blanket system and fire-rating during and after construction. One-, two-, and three-hour rated systems are available, and can accommodate joint widths from 2"-32" wide.

For more information and fire-test results, visit www.inprocorp.com or call 800-222-5556.

SAFETY ACT DESIGNATION FROM THE U.S. DEPARTMENT OF HOMELAND SECURITY

Owens Corning Insulating Systems now offers Thermafiber® Perimeter Fire Barrier System components and Thermafiber Insolutions® Design and Installation Services awarded with SAFETY Act Designation by the Department of Homeland Security (DHS). In the high-stakes design scenario where commercial building occupants depend on Architects, Specifiers, Firestopping Contractors and Building Owners for their safety, the DHS SAFETY Act Designation provides added peace of mind because it is the most powerful liability protection available from third-party claims related to performance of anti-terrorism technology and professional services. For more details, visit www.thermafiber.com.

CODES AND STANDARDS NEWS

ICC CODE DEVELOPMENT CYCLE STARTS

FCIA put in a few strategic code development proposals at the International Code Council's (ICC) 2021 Code Development Process through its cdpACCESS Program. The proposals will be heard April 15-25 at ICC's Committee Action Hearings (CAH), held in Columbus, OH. Don't forget to tune in at www.ICCSafe.org to watch the proposals LIVE.

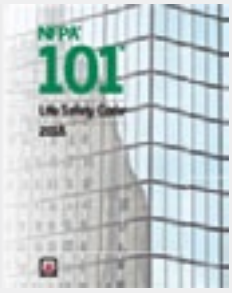
FCIA AT ICC'S CAH

FCIA continues its work making the 'IIM' from the 'DIIM', (see DIIM article, this issue) part of the International Building Code. In proposal FS47, FCIA proposes that firestopping for penetrations and joints be installed by contractors qualified by UL or FM Approvals or an Approved Agency (I-Installation). F47 applies to buildings 420' or greater in height. There's an exception for work that's of minor nature, is a repair or Alteration Level 1 as defined by the IEBC. UL Qualified or FM Approved Contractors exist in areas where 420' high buildings are located.

In **FS46,** FCIA put comments from ICC's 2018 Code Cycle in creating detailed requirements for identifying the firestop system using identification devices (I-Installation). In S21, FCIA proposes to add a special inspection requirement to Group R occupancies with occupant load greater than 250 (I-Inspection).

Finally, in **F-90**, FCIA adds to the International Fire Code a final point overlooked during the FCAC Chapter 7 reorganization during 2018's cycle. F90 states that in existing buildings during annual visual inspection, where firestop system design numbers are known, the system shall be inspected to the listing criteria and manufacturers installation instructions (M-Maintenance). Look for a report on the results in the next issue of Life Safety Digest.

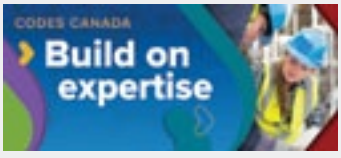
NFPA CODE DEVELOPMENT CYCLE GETTING STARTED



–NFPA 101, The Fire and Life Safety Code, plus NFPA 5000, Building Construction and Safety Code, have their revision cycles starting the week of July 26, 2018 with meetings of the Technical Committees.

FCIA AT NRC FOR NBC

The FCIA has spent time at the National Research Council of Canada for the National Building Code's 2020 Code Development Process. The committee heard several proposals about firestop inspection, the term 'firestop' or 'fire stop', maintaining fire-resistance in existing buildings, the requirement for a FM 4991 Approved or ULC Qualified Firestop Contractor in the codes, and more. Thanks to FCIA Canada Committee Chair Jim Smiley for his work at the NRC.



NFCA AT NRC & ICC TOO

The National Fireproofing Contractors Association has a few code change requests in at the National Building Code of Canada and the ICC as well. The proposals are focused on adding 3rd-party fireproofing inspection, defining the term 'Intumescent Fire-Resistant Materials' and fire-resistance for roof decks to improve fire- and life-safety in buildings.

A'18 AIA Conference on Architecture 2018
June 21–23, New York City

Early bird ends April 25. Register now!
conferenceonarchitecture.com

INDUSTRY NEWS

FCIA SPEAKS AT CSI ORLANDO

The Greater Orlando Chapter of the Construction Specifications Institute, had a program on exterior wall assemblies, Metal Composite Panel assemblies, the code requirements and standards. FCIA's Executive Director, Bill McHugh, participated remotely via PowerPoint and phone connection. Watch for more on this issue at the ICC Code Development Hearings in April.

FCIA BOARD MEETS

FCIA's Board of Directors met in Dallas to cover 2018's initiatives and actions. The complete board met with David Barbier, head of the Firestop and Fireproofing Industry segments at HILTI over breakfast as well.

Whenever near one of the FCIA Manufacturer Members, FCIA's Board takes time to visit.

FCIA MOP UPDATE

FCIA's Firestop Industry Manual of Practice Chapter on Inspection is complete and has been sent to the printer for formatting. Look for a chapter in your inbox soon.

CPVC PIPES & FIRESTOPPING

We at the FCIA Office were made aware that a Chlorinated Polyvinyl (CPVC) Pipe manufacturer has published a bulletin on products that might not be compatible with CPVC Pipe. Check it out at FCIA's Technical Resources pages. That's where the info about copper piping from the Copper Development Association is located as well. As with all products used, verify compatibility of firestop products with penetrating items and other contacted surfaces with the firestop product manufacturer.

FCIA'S ECA IS MEMPHIS BOUND

FCIA's Education and Committee Action Conference is bound for Memphis, TN this May 2-4. Don't miss this program as Bill Koffel will report on FCIA's actions at the ICC 2021 Code Development Process, new standards development issues and a very informative Members Only Session. Registration and Hotel reservations at the Peabody Hotel, a Memphis classic, is open and ready for you.

FCIA WEBINARS

Each month there is an FCIA Webinar on various topics. Invited are FCIA Member Contractors, Non-Members and many more. Building Code Officials and Fire Marshals, Specifiers and Building Owners hear from FCIA about the industry and industry related topics each month. It's a great way for FM 4991 Approved and UL/ULC Qualified Firestop Contractors to keep their Continuing Education Units up to date, for FREE. Learn more about upcoming programs at the FCIA Educational Webinar Series page.

FCIA MEMBERSHIP

Is there a Specialty Contractor company, Special Inspection agency, Distributor, Manufacturers rep or Manufacturer that you know who is not an FCIA Member but should be? Forward their contact info to Cathy Burns at FCIA at cathy@FCIA.org and she'll give them a call.

MARK YOUR CALENDARS

The Firestop Industry Conference & Trade Show will be here sooner than we think. Nov. 7-9 in Austin, TX at the Hyatt Regency Lost Pines is where you'll find us. It promises to be a great time, with great sessions. Plus, don't miss the FCIA Ray Usher Memorial Golf Tournament. It's always great fun and supports the future superstars of the Firestop & Effective Compartmentation industry.

FCIA COMMITTEES ACTIVE

FCIA's Accreditation Committee spent time working on 2018 initiatives for the FM 4991, Standard for the Approval of Firestop Contractors and the UL/ULC Qualified Firestop Contractor Programs. They continue to have conversations with both FM and UL about how the programs can be promoted more in the industry through many channels. Watch for more on this at the FCIA ECA Conference, as both FM & UL have additional personnel working on the programs. Jill Norcott joins Jeff Gould at FM, while Ruben Sandoval joins Matt Schumann at UL.

FCIA's Code Committee submitted a few proposals to the ICC Code Development Process. FCIA's Canada Committee is busy working on the proposals submitted to the National Research Council of Canada. The Technical, Education and Apprenticeship (TEA) Committee is working on revamping the FCIA Videos used for educating workers. The Committee wants the program to be more self-taught for easier use by companies to train personnel. FCIA's Marketing Committee has been planning 2018's trade show activities, while the Program Committee is working on the FCIA 2018 Conference Educational Program Content.

Wherever they are, FCIA Committees come together to build better fire- and life-safety in buildings through quality firestopping.

ICC PROMOTES CODE OFFICIALS

The International Code Council (ICC) launched a new online resource – the Value of the Code Official toolkit – that helps government officials, ICC members and others build awareness for the Code Official's significant role within their communities. This new resource also encourages students and young professionals to join the industry's pipeline of qualified professionals.

"The Value of the Code Official toolkit builds on the Code Council's innovative work through the High School Technical Training Program, the Military Families Building Safety Program and our other Safety 2.0 programs," said Code Council Board President, Jay Elbettar, P.E.

NFPA FIRE RISK REPORT & TOOL

Based on several recent fires in high-rise buildings clad with combustible wall insulation systems, global enforcement authorities are revisiting their existing building inventories to assess potential risks. There are a number of risk factors which may impact the level of risk, and the consequent priority, for inspection and/or remediation. Authorities are seeking a means to make these assessments and decisions based on the risk factors, using a risk-informed methodology. Based on the needs, a new "High-Rise Buildings with Combustible Exterior Wall Assemblies Fire Risk Tool" was developed and issued by NFPA in February 2018. Download the report at www.NFPA.org .

Firestopping is mentioned in the report, specifically penetrations, as part of compartmentation. Perimeter interior (safing slot) fire containment for passive fire-safety measures associated with the façade system is mentioned as a way to delay fire spread in the insulation and air gap between the cladding and insulation or main structure. Watch for more about this topic in future issues of Life Safety Digest.

NASFM'S NEW TOOL

The National Association of State Fire Marshals "NASFM Fire Research and Education Foundation" has developed a tool outlining the importance of multiple layers of fire-safety features in the built environment.

The research reports are listed at NASFM's Project Fail Safe section at the following website: http://www.firemarshals.org/Project-FAIL-SAFE.

The project has produced a "Risk Evaluation MATRIX" that reports on the analysis of the impact of trade-offs of passive and active building safety features.

BARRIER MANAGEMENT SYMPOSIUMS EXPANDING

The FCIA's Accreditation and Marketing Committees worked together to build the Barrier Management Symposium with UL, ASHE and The Joint Commission. The Symposiums have been well received by Healthcare Facility Engineer Members of ASHE in many areas. Over 1,000 have been educated on how to properly evaluate and maintain fire-resistance-rated and smoke-resistant assemblies in hospitals. We have more Symposiums planned with ASHE Chapters, as well as Educational Occupancies as well. Look for one to come to your area soon! Visit http://fcia.org/barriermanagementsymposium.htm for info.

DOORS & SAFETY

The Door Security & Safety Foundation of the Door and Hardware Institute (DHI) has worked hard at making swinging doors of all types – fire-rated and non-fire-rated – reliable and safe. DHI has focused their efforts on inspection of existing fire door assemblies in buildings through NFPA 80's Annual Door Inspection requirements. This heightened awareness that fire doors need to work as intended for the life-cycle of the building is something that the International Fire Code also reflects through the Chapter 7 requirements for annual inspection of all fire-resistance-rated and smoke-resistant assemblies.

The DHI's recent campaign deals with making sure that fire-doors are not obstructed, interfered with, nor modified in ways that would violate the fire-resistance-rating of the assembly. Check out their efforts in this issue and at https://www.doorsecuritysafety.org.

PERFORMANCE-BASED DESIGN FOR FIRE-RESISTANCE

The American Society of Civil Engineers (ASCE) has produced an appendix in document ASCE-7 whereby fire-resistance is purported to be handled via performance-based design. While it seems to make sense, there are issues with performance-based design for fire-resistance, rather than actual fire-testing. In fire-resistance, there are many chemistries in the product manufacture that change from time to time. Plus, fire-testing is the only real way to simulate the performance of an assemblage of products. We urge that performance-based design AND fire-resistance testing be used to design fire-safe buildings. Fire-resistance, alarms and detection, as well as sprinkler systems, are the primary protection in a building. It's important that the fire-resistance be proven with testing.

ASTM WORK ITEM FOR FIREPROOFING INSPECTION

The National Fireproofing Contractors Association Technical Standards Committee Members are working together on a new standard for fireproofing inspection. More on this as it develops.

IAS PRESIDENT TO RETIRE

Chuck Ramani, IAS Photo

The International Accreditation Services President of 45 years, Chuck Ramani, is retiring this spring. Chuck has been with IAS since its inception and has been a good friend of FCIA.

"I pay tribute to ICC Board President, Jay Elbettar, members of his board and ICC Chief Executive Officer, Dominic Sims, for their untiring support of IAS and the principles we stand for", stated Ramani. IAS has seen tremendous growth under Chuck's leadership. Raj Nathan has been named president of the International Accreditation Service (IAS), effective with Ramani's retirement on March 31, 2018. "Raj brings the utmost competence, integrity and empathy to the job that will take the corporation to new heights," according to Ramani.

We at FCIA wish the best for Chuck and his family in his new adventures.

CSC & CSI RENEW MASTERFORMAT AGREEMENT

Construction Specifications Canada (CSC), an organization committed to the improvement of construction documentation, and the Construction Specifications Institute (CSI), a national association dedicated to improving the communication of construction information, recently announced the ten-year renewal of an agreement to license and support MasterFormat® in the United States, Canada and worldwide. Firestopping continues to have its own section in MasterFormat®. FCIA's Technical Committee commented on the development of the original document, as well as some subsequent revisions.

TGP ACQUIRED BY ALLEGION

On Jan. 2, officials from Allegion Plc, a leading global security products and solutions provider, announced the company has acquired fire-rated entrance and wall system supplier Technical Glass Products through one of its subsidiaries. Current TGP President, Jeff Razwick, will continue to lead the business. TGP has been a supporter of Life Safety Digest for many years. TGP Founder, Jerry Razwick, spoke at some of the first Barrier Management Symposiums too. We wish the best for our friends at TGP and Allegion.

EMSEAL ACQUIRED BY SIKA

FCIA Member EMSEAL Joint Systems, LTD, has been purchased by SIKA. The EMSEAL management team of CEO Lester Hensley, President Dan O'Hayer and Vice President and Director of R&D, Bill Witherspoon, along with their entire respective marketing, sales, administration and manufacturing managers and staff will continue to drive EMSEAL's success under Sika's ownership.

"We have been fortunate to have had such supportive ownership over the last nine years under private equity firm Fulham & Company," comments Lester Hensley. "We are equally pleased to be joining the Sika family and feel this is absolutely the best fit for the next exciting stage in EMSEAL's global growth plan." SIKA is a specialty chemicals company known for SIKA sealant and adhesives, waterproofing, repair and other concrete related products, along with SIKA-Sarnafil Roofing.

We wish the team at EMSEAL all the best at SIKA.

CLOSE BEFORE YOU DOZE & CLOSE THE DOOR

The fire service has stated that residential fires move through homes faster than ever. Research conducted in July 2017 by UL's Firefighter Safety Research Institute (FSRI) found that during a home fire, conditions in rooms with closed doors provided a safer environment for their occupants and increased their chances of survival. The study, which was conducted during a simulated basement fire, found that during a critical ten-minute period, temperatures and concentrations of carbon monoxide and carbon dioxide reached potentially life-threatening levels in a room with an open door, while an adjacent room with a closed door successfully maintained temperatures and oxygen, carbon monoxide and carbon dioxide levels more consistent with survivable conditions.

While this movement – supported by UL Firefighter Safety Research Institute (FSRI) - is not talking about a fire door, it does build the right awareness that doors – especially fire-doors – need to close and latch to protect people in fire conditions. The fire service seems to be the group behind this. Check out their websites at https://ulfirefightersafety.org/ - https://fireservice.closeyourdoor.org/ and https://closeyourdoor.org/.

ESCAPE PLANS

There seems to be a lot of education about escape plans from the home. But, what about the places we visit daily? Restaurants? Hotels? Office, Healthcare or other Building Occupancies?

One thing that the FCIA has done at all conferences is to announce during introductory remarks where the emergency exits are located, what the alarms sound like and how to get out of the area to safety should an emergency be announced. We walk the egress area to be sure it's clear too, working with venue staff at all times. FCIA urges that wherever you are – restaurant, office, conference, hospital, etc. – that you personally look for and identify the locations for emergency exits and that meeting moderators mention this to keep you safe.

NEW TAX REFORM INCLUDES FIRE PROTECTION

The Section 179 deductions for businesses, non-residential property, raises the deduction from $500,000 to $1,000,000. The deduction can be taken in the year the expense occurs for Qualified Real Property improvements.

'Roofs, Heating, Ventilation and Alarm Systems, Fire Protection and Alarm Systems and Security Systems' are named in the Tax Reform Bill. What does that have to do with Firestopping? During the 2012 International Building Code Development Cycle the FCIA proposed successfully that Chapter 7 be named, "Fire and Smoke Protection Features". NFPA's Chapter 8 is named, "Fire Protection Features".

This should create opportunities for building owners and managers to depreciate quickly – in one year - fire protection in their buildings. Fire and Smoke Protection Features include the wall, floor, dampers, doors and firestopping.

As with all tax related items, we recommend that the building owner and manager consult with their tax advisor on the applicability of the deductions and how Firestopping and Barrier Management Services fit(s) in the picture.

FCIA INDUSTRY CALENDAR

MARCH

March 12-16
NFCA Annual Conference & CAP Training
San Diego, CA
www.nfca-online.org/events/index.asp

March 20-22
International Facility Managers Association (IFMA) Facility Fusion US
Chicago, IL
www.facilityfusion.ifma.org

March 24-28
AWCI Annual Convention & INTEX Expo
Orlando, FL
www.AWCI.org

March 25-28
ASHE Planning Design & Construction Summit and Exhibition
Nashville, TN
www.ASHE.org

APRIL

April 2-3
FCIA FM/UL Testing
Dubai, UAE
www.fcia.org/articles/events.htm

April 4-5
FM/UL Testing
Doha, Qatar
www.fcia.org/articles/events.htm

April 15-25
ICC Committee Action Hearings
Columbus, OH
www.iccsafe.org

MAY

May 1-4
FCIA Education and Committee Action Conference
Memphis, TN
fcia.org/articles/events.htm

May 9-11
DHI's conNextions 2018
Baltimore, MD
www.DHI.org

May 23-27
Construction Specifications Canada Conference
Edmonton, AB
www.CSC-DCC.ca

May 30-June 2
RAIC 2018 Festival of Architecture
St. John, New Brunswick
www.raic.org

JUNE

June 11-14
NFPA Conference & Expo
Las Vegas, NV
www.NFPA.org

June 21-23
AIA Conference on Architecture
New York, NY
www.conferenceonarchitecture.com

June 23-26
BOMA International Conference & Expo
San Antonio, TX
www.BOMA.org

July 15-18
ASHE Annual Conference and Technical Exhibition
Seattle, WA
www.ASHE.org

AUGUST

August 3-5
APPA Conference and Exhibition
Washington, D.C.
www.appa.org

SEPTEMBER

September 16-18
Canadian Healthcare Engineering Society (CHES) Annual Conference
St. John, NF
www.CHES.org

September 20-22 (tentative)
FCIA Canadian Symposium
Winnipeg, MB
www.fcia.org

OCTOBER

October 3-5
International Facility Managers Association (IFMA) World Workplace
Charlotte, NC
www.worldworkplace.ifma.org

October 3-5
CSI CONSTRUCT
Long Beach, CA
www.constructshow.com

October 21-24
ICC Annual Conference and Public Comment Hearings
Richmond, VA
www.ICCSAFE.org

NOVEMBER

November 6-10
FCIA Firestop Industry Conference & Trade Show
Austin, TX
www.fcia.org

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