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Hoistway Opening Protection

Life Safety Code Changes for Healthcare Facilities

Healing Architecture

Healthcare Occupancies and Firestopping

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Hoistway Opening Protection

Elevator hoistway opening protectives and enclosed elevator lobbies are designed to isolate the fire-resistance-rated elevator shaft enclosures and its doors from the remainder of the floor on which it opens.

By David Dodge

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Life Safety DIGEST

SUMMER 2017

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ON THE COVER:

McKeon Door Photo.

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EDITOR'S MESSAGE

his issue of *Life Safety Digest* is about healthcare occupancies and how fire-resistance-rated and smoke-resistant construction can help protect patients in these structures.

While most facilities have budgets for routine maintenance of sprinklers and alarms, what is the facility budget for keeping the fire-resistance and smoke-resistance barrier assemblies continuously protected? The breaches, voids, gaps and intersections can cause fire and smoke to spread, with many above drop ceilings and out of sight. They are just as much a risk as an alarm or sprinkler system that's not working.

Why manage barriers? The 2018 International Fire Code will have new requirements to keep an "Inventory" of fire-resistance-rated and smoke-resistant assemblies and the "features" of fire-resistance. The inventory of fire-resistance is needed to manage them. And, keeping an inventory, and documentation, is the key to managing these life safety barriers.

A visual observation, looking at the barrier for breaches, holes, gaps and breaks in continuity of the wall and floor, takes time, but is mandatory to manage successfully.

If you are Healthcare Facility Manager or Engineer (hopefully an ASHE Member), visit www.FCIA.org to register for the Barrier Management Symposium, July 27, 2017 in Phoenix. You will learn how to manage this important package - fire-resistance-rated barriers and smoke-resistant construction at this educational symposium. Both NPFA 101 and the International Fire Code have extensive requirements for barriers.

Then, build into the facility budget funding for the annual visual inspection needed to keep the barriers continuous and fire- and smoke-resistance intact.

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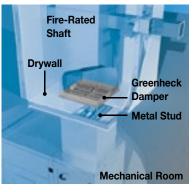
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LIFE SAFETY CODE CHANGES FOR HEALTH CARE FACILITIES

n May of 2016, the Centers for Medicare and Medicaid Services (CMS) adopted the 2012 edition of NFPA 101 -The Life Safety Code. This change went into effect on July 5, 2016, and health care facilities that receive CMS funding are now required to comply with the 2012 edition.

The previous version of NFPA 101 to be adopted by CMS was the 2000 edition. Several important changes have been made to the code since that time, including those affecting sprinklers, suites, travel distances, smoke control and many others. Awareness and understanding of these changes is important for health care facility engineers, owners and managers, as well as the architects and specifiers working on the design of these facilities, in order to ensure the life safety of patients, visitors and staff. In this article, we'll review some of the door-related changes that are now in effect.



Allegion photo.

FIRE DOOR INSPECTIONS

As those in the industry are likely aware, one of the most dramatic door-related changes from the 2000 edition of NFPA 101 is the requirement for the annual inspection of all fire door assemblies.

The 2012 edition of NFPA 101 references the 2010 edition of NFPA 80 - Standard for Fire Doors and Other Opening Protectives. This edition of the standard requires fire door

assemblies to be inspected annually, and includes a list of 11 inspection criteria. The list of criteria was expanded slightly in the 2013 edition of NFPA 80, and now includes the following items to be checked during the inspection:

- Labels are present and legible.
- No holes or breaks in the door or frame.
- Glazing and glass kit/glass beads are intact and securely fastened.
- Door, frame and hardware are in proper working order.
- No missing or broken parts.
- Door clearances are within allowable limits.
- Door closer / spring hinges are operational and door is self-closing.
- Coordinator ensures that door leaves close in proper sequence (pairs only).
- Door is self-latching in the closed position.
- Opening is not equipped with auxiliary hardware items which interfere with operation.
- No field modifications have been performed that void
- Gasketing and edge seals, where required, are present, continuous and of the proper type for a fire door.
- Signage on door covers less than 5% of door face and is not attached with mechanical fasteners.

NFPA 80 mandates that any deficiencies found during these inspections must be repaired "without delay." However, the 2012 edition of NFPA 101 also requires inspections of egress doors in certain occupancy types - Assembly, Educational, Day Care and Residential Board and Care. Many health care campuses include these occupancy types, and certain egress doors must now be inspected annually in addition to the mandated fire door inspections.

ELECTRIFIED HARDWARE

Electrified hardware is another area where several changes have occurred between the two editions. In the 2012 edition of NFPA 101, Chapter 7 includes new sections called Electrically Controlled Egress Door Assemblies and Elevator Lobby Exit Access Door Assemblies Locking.

New sections specific to health care facilities have also been added to Chapters 18 (new) and 19 (existing) which allow egress doors in certain types of health care units to be locked in the direction of egress using an application known as "controlled egress."

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Here's a basic overview of these added sections:

7.2.1.5.6 - Electrically Controlled Egress Door Assemblies:

The 2009 edition of NFPA 101 introduced a new section, Electrically Controlled Egress Door Assemblies. This section is typically applied to doors with electromagnetic locks that are released by door-mounted hardware. Operation of the door-mounted hardware must directly interrupt power to the lock and unlock the door in the direction of egress. The lock must also release upon loss of power to the door-mounted releasing hardware. The 2012 edition of NFPA 101 also requires new installations of these systems to be listed in accordance with UL 294, Standard for Access Control System Units.

7.2.1.6.3 - Elevator Lobby Exit Access Door Assemblies Locking:

This section gives facilities the option of electrically locking the door between an elevator lobby and a tenant space. During an emergency, these doors would allow building occupants to exit the elevator lobby through the tenant space, where access would be restricted under normal conditions. This application is allowed by Chapters 18 and 19 of the 2012 edition of NFPA 101.

This type of locking system must be listed in accordance with UL 294 and is only allowed by the applicable occupancy chapter if certain conditions are met. The building must be protected throughout by fire alarm and sprinkler systems as well as a smoke detection system in the elevator lobby. The door is required to be equipped with a fail-safe lockset that unlocks upon initiation of these systems (by other than manual fire alarm boxes). It must also unlock upon loss of power to the electronic locking system. Once the door is unlocked, it must remain unlocked until the fire alarm system has been manually reset. If the door remains latched after unlocking, the door must be equipped with code-compliant hardware to release the latch.

18.2.2.2.5 / 19.2.2.2.5 - Controlled Egress Locks:

First introduced in the 2009 edition of NFPA 101, controlled egress locks give health care facilities the ability to secure certain types of units within their facilities to help prevent "elopement" and abduction of highly vulnerable patients. Its use is restricted to areas where the clinical needs of patients require specialized security or protective measures, such as psychiatric units, memory care units, pediatric and maternity units and emergency departments.

Due to their design, only one controlled egress lock is permitted on each door and it is vital that staff have the ability to readily unlock those doors at all times. The building must be protected throughout by an automatic sprinkler system and the locked unit must be equipped with a smoke detection system, or a constantly-attended location within the locked space from which the doors can be remotely unlocked. In order to ensure doors will unlock in the event of a power failure or fire, fail-safe electrified locks must be installed that will also release upon activation of the smoke detection system, and by waterflow in the sprinkler system.

The adoption of the 2012 edition has also resulted in a few other notable changes, including:

Paragraph 7.2.1.5.2, which clarifies that facilities are allowed to use less-bottom-rod (LBR) fire exit hardware or other hardware that becomes inoperable when exposed to elevated temperatures during a fire. Some code officials initially questioned the use of these products, but this hardware does not impede egress as the fire pins or fusible links are only activated when temperatures in the vicinity of the door far exceed the limit of human occupancy. At this point, the door opening is no longer required to provide a viable egress path.

Paragraph 7.2.1.5.10.6 allows two releasing operations for existing hardware if the occupant load is 3 people or fewer. With the exception of residential occupancy units, most egress doors must require just one operation to release the latch(es).

Paragraphs 18.2.2.2.10.2 and 19.2.2.2.10.2 address both new and existing health care occupancies, and allow the use of horizontal-sliding doors without the breakaway feature when there is an occupant load of fewer than 10 people. If the door requires a fire-rating, it must be self-closing or automatic-closing by smoke detection, and installed in accordance with NFPA 80.

Paragraphs 18.3.6.3.12 and 19.3.6.3.12 allow protection plates of any height on corridor doors in a health care occupancy. This section of NFPA 101 does not apply to corridor doors requiring a fire-rating, only those that are not required to comply with NFPA 80 - typically patient-room doors. Paragraphs 18.3.7.6.1 and 19.3.7.6.1 also allow protection plates of any height on smoke barrier doors.

CONCLUSION

The adoption of the 2012 edition of NFPA 101 will improve the life-safety of health care facility occupants in a number of ways, most notably by requiring the annual inspection and maintenance of fire door assemblies. The increased variety of options for electrified locks will also significantly enhance the ability of hospital staff to protect their most vulnerable patients who are at a much higher risk of abduction or elopement. However, the requirements surrounding these applications are complex and NFPA 101 and NFPA 80 should be referenced thoroughly for more detailed information. As always, consult with your local Authority Having Jurisdiction (AHJ) if you need clarification or assistance.

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

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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HEALING ARCHITECTURE THE ROLE OF FIRE-RATED GLAZING ASSEMBLIES IN HEALTHCARE OCCUPANCIES

indows. Sidelites. Curtain walls. Skylights. Doors.

These assemblies all have different names, but in healthcare occupancies they all have one trait in common-the ability to improve patient well-being through the use of glass.

Glass can allow natural light to pour into healthcare centers, creating beautiful and soothing environments. It can also allow patients to see beyond the confines of their room. Studies show these design benefits improve patient outcomes, reporting that access to daylight and views can reduce the need for pain medication, accelerate patient recovery and even bolster staff performance¹.

In light of glass' role in "healing architecture," building teams employ numerous tactics to maximize its use in medical centers. Increasingly, these strategies incorporate fire-rated glazing assemblies. It is the only material able to comply with stringent fire- and lifesafety codes and to support a defend-in-place strategy during fire emergencies, without restricting daylight and visibility.

A PRESCRIPTION FOR SAFETY

Today's fire-rated glazing products used in rated assemblies are virtually clear, wireless and able to provide fire protection (defense against flames) or fireresistance (defense against flames and radiant and conductive heat transfer). These multi-tasking products make it possible to safeguard against the threat of fire without compromising patient needs. One of the primary ways they do this is through transparent building compartmentation - using fire-resistance-rated glazing assemblies - when both the frames and glazing are installed to the manufacturer's installation instructions and the listing from a fire-test laboratory directory.

Building compartmentation refers to the use of fireresistance-rated assemblies to subdivide spaces into contained areas during a fire. It is a key component of any fire- and life-safety protection plan. During a fire, these effectively isolated compartments help slow the

spread of flames, smoke and, where necessary, heat. They provide occupants with adequate time to exit the facility, and they buy time for firefighters to arrive and extinguish the fire. Assemblies are tested and listed in various directories with specific tests for smoke-, heatand fire-resistance.

In healthcare occupancies, the time afforded by compartmentation for staff to move patients or others to a safe haven behind a barrier - fire barrier or smoke barrier - is of the utmost importance.

Many patients in medical centers are incapable of self-preservation, and are unable to quickly vacate the area or premise during a fire. For example, it is generally not feasible for critically ill patients in intensive care, neonatal and recovery units to exit the facility. Instead, with the assistance of staff, patients are moved horizontally behind a barrier before being moved outside the building to safety.

Other patients are not able to recognize a fire threat. Still others rely on various life support devices that make evacuation more dangerous than keeping them in place. Thus, many hospitals train staff to remain with their patients until a fire is extinguished or are directed to relocate vertically or evacuate from the building.

Daniel J. O'Connor, chair of the National Fire Protection Association (NFPA) Technical Committee on Health Care Occupancies, explains the rationale for this defend-in-place approach in a commentary on fire-safety in healthcare occupancies: "Because some occupants are incapable of movement or slow to evacuate, a healthcare facility resembles a ship at sea: it is better to keep the fire from the patient than to remove the patient from the fire. Thus, occupants must be defended in place. As a result, healthcare facility design and operation must incorporate methods by which a fire can be detected early, then contained, and fought rapidly and successfully."

Fire-rated glazing is a particularly desirable material for this challenging task as it can sub-divide areas without creating spaces that are dark, isolated and contrary to occupant wellbeing, when constructed as an assembly and in framing installed to the listing and manufacturer's installation instructions. For architects and building professionals, this provides many benefits in healthcare design.

This article will look at three different healthcare firerated glazing installations to illustrate popular methods for using transparent building compartmentation to advance patient-centered design goals.

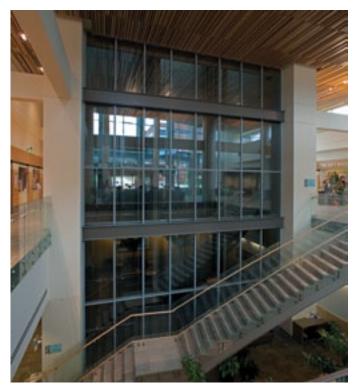
LIGHTING THE PATH TO RECOVERY

With an average of 5,650 structure fires in healthcare properties per year, per the NFPA, it is essential to equip medical centers for fires. However, while working to meet fire-and life-safety codes, many health care facility designers have also been challenged to allow for the transfer of daylight due to its ability to enhance patient outcomes and well-being. Fire-rated glass' transparent form can help building teams better maximize light penetration to meet these increasingly stringent daylighting needs. A case in point is the Dally Tower at MultiCare Good Samaritan Hospital in Puyallup, Washington, designed by Good Sam Design Collaborative, Clark/Kjos Architects and GBJ Architecture.

To ensure Dally Tower patients and visitors have access to natural daylight within the nine-story, 357,000-squarefoot facility, the building and design team implemented numerous daylighting features, including glass canopy covered entries, expansive windows and circulation hubs oriented to allow light to easily transfer between interior spaces.

One challenge with the daylighting design vision was maintaining adequate light transfer in areas required to meet fire- and life-safety codes. Such was the case with the building's central lobby elevator. A large elevator with a glass façade would help transmit light streamed from the elevator's skylight into neighboring glass-fronted patient admitting offices and waiting rooms. It would also help create an open aesthetic. However, to meet fireand life-safety codes as an area of egress, the elevator core needed to provide fire-resistance. There are many different types of fire-resistance-rated assemblies that meet life-safety code requirements, but relatively few that allow light transfer.

To meet these multiple needs, the building and design team used a fire-resistance-rated glass curtain wall assembly to skin the front side of the central lobby's elevator. It protects against radiant and conductive heat transfer—a required characteristic of glass used as a wall. This capability also allows it to exceed 25 percent of the total wall, resulting in a multi-story assembly that evokes the feel of an open, light-filled space.



A fire-resistance-rated curtain wall provides visitors with abundant access to daylight. Technical Glass Products photo

While the design team for the Dally Tower opted to use a fire-resistance-rated glass curtainwall to create a well-lit and stress-reducing interior, today's design professionals have numerous fire-resistance-rated options from which to select, including:

- door assemblies;
- transparent glass walls;
- curtainwalls;
- silicone-glazed curtainwalls; and
- glass floors.

PROMOTING COLLABORATION IN **HEALTHCARE OCCUPANCIES**

While daylight is important to occupant well-being, so too is clear communication. Patients interact with numerous healthcare personnel while receiving medical treatment. According to "Patient Safety and Quality: An Evidence-Based Handbook for Nurses," a patient may interact with up to 50 different employees during a four-day hospital stay². This leaves significant margin for error if information is not relayed accurately. As the handbook states, "When healthcare professionals are not communicating effectively, patient safety is at risk for several reasons: lack of critical information, misinterpretation of information, unclear orders over the telephone and overlooked changes in status."





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A clear communication and information system is a key way to reduce misinterpretation. Equally important is professional collaboration. Collaboration in healthcare centers has been shown to improve patient outcomes such as optimized medication dosages³ and decreased mortality rates4. It has also been shown to improve healthcare provider job satisfaction⁵. The result is an increasing importance to design healthcare centers that promote good communication and teamwork.

One way to encourage collaboration between disciplines is to provide clinical researchers and hospital staff with visual connectivity between workspaces. Firerated glazing assemblies can turn areas that would otherwise be restricted by opaque fire-rated building assembly materials into open, shared spaces that promote visibility and interaction. This was the approach GBBN Architects took during the development of the Clinical Services Pavilion at Cincinnati Children's Medical Center.

In a firm write-up about the new research-focused, outpatient center, GBBN Architects explained, "The typical laboratory floor is designed around a concept of transparency, enabling views throughout the building, as well as drawing natural light deep within the building. Design features include collaborative spaces that are selectively placed to draw researchers out of their labs."

Among the building elements that contributed to the success of the architects' vision is a light and porous central stairwell that facilitates opportunities for interaction among clinical researchers and hospital staff. Since the stairwell is designated by code to defend against the spread of flames, fire and heat for up to two hours, a fire-rated glazing assembly proved a beneficial

The design team used a slender, high-performance fire-resistance-rated glazing assembly, including the frame and fastening details to the walls, to provide the necessary transparency and satisfy building codes. GBBN Architects incorporated expansive sections of fire-rated glazing within the stairwell, extending the line of sight for occupants and connecting them to the clinic's various floors.

Today, there are many ways design teams can use fire-resistance-rated or fire-protection-rated glazing assemblies to enhance transparency and create the feeling of open, shared spaces in healthcare centers, including:

- incorporating fire-rated glass panes in central corridors and gathering areas to build fire-resistance-rated assemblies;
- using expansive fire-resistance-rated glass curtainwalls to draw the line of sight through nearby expanses of glazing;



Fire-resistance-rated glass and frames help create a light, open stairwell that encourages interaction. Joe Harrison, JH Photography Inc. photo.

- incorporating fire-protection-rated glazing in fire-rated doors to promote visibility between spaces; and
- using exterior fire-resistance-rated glazing systems on the perimeter of buildings with lot line protection requirements.

ENCOURAGING SMOOTH WAYFINDING

Another key way fire-rated glazing assemblies can advance healthcare design goals is through its ability to enhance wayfinding in critical egress areas. Hospitals and medical facilities are often large, complex buildings. Clear wayfinding is therefore paramount to the well-being of patients and staff with cognitive or visual challenges.

To enhance wayfinding, building teams can install firerated glass assemblies in stairwells, corridors and doors. Doing so can help patients and staff navigate smoothly within large healthcare complexes, ensuring they have access to signage and prominent facility landmarks in areas of egress. This was a key consideration during the development of University Hospital Seidman Cancer Center in Cleveland, Ohio.

The new Seidman Cancer Center building consolidated multiple patient care and treatment centers into a single 375,000 square-foot building. This nearly tripled the size of the existing facility. As such, it was important to foster collaboration between the different departments while keeping patient needs, such as clear wayfinding, at the forefront of interior design according to a project overview from Cannon Design. This included ensuring interior doors designated to provide fire protection by code supported wayfinding and light transfer.

To meet this need, the design team used fulllite, fire-protection-rated glass in door and transom assemblies with narrow steel profiles - installed to the fire-test laboratory listing and manufacturers installation instructions. The sleek modular system provided patients and personnel with natural daylight and visibility between spaces, and maintained visual consistency with nonrated doors. The fire-rated glazing material used in the assembly also provided critical impact safety protection. This ensures the glass will not shatter, or will shatter in a safe way, if it is impacted by fast moving people, gurneys or supply carts. Today, fire-rated glazing options are available that meet Category II of the Consumer Product Safety Commission (CPSC) Safety Standard for Architectural Glazing Materials - the highest standard of impact safety for glass.





Fire-rated glass doors support clear wayfinding in areas designed to provide fire protection by code.

Technical Glass Products photo.

CONCLUSION

Leland R. Kaiser, PH.D., once said, "The hospital is a human invention and as such can be reinvented at any time." With advanced materials like fire-rated glazing continually entering the market, it is important to evaluate how they can help design professionals reinvent approaches to designing healthcare centers that bring core safety tenants in line with patient wellbeing. "

Jeff Razwick is the president of Technical Glass Products (TGP), a supplier of fire-rated glass and framing systems, and other specialty architectural glazing. He writes frequently about the design and specification of glazing for institutional and commercial buildings, and is a past chair of the Glass Association of North America's (GANA) Fire-Rated Glazing Council (FRGC). www.fireglass.com, (800) 426-0279

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HOISTWAY OPENING PROTECTION

INTERNATIONAL BUILDING CODE (IBC) 2015 EDITION, SECTION 3006



McKeon Door photo.

n Elevator hoistway opening protectives and enclosed elevator lobbies are designed to isolate the fire-resistance-rated elevator shaft enclosures and its doors from the remainder of the floor on which it opens. The building code does not require this separation until the elevator shaft enclosure connects more than three stories (3006.2).

FIRE & LIFE SAFETY CONCERNS

Elevator shafts commonly represent a large quantity of inter-connecting vertical shafts in multi-story buildings. These shafts become conduits for fire, heat, smoke and other toxins from the fire floor(s) to additional floors. Historically, the separation of these shafts from the rest of the structure was accomplished with conventional elevator lobby construction.

Currently, a model code allows the elimination of the lobby when protection at the point of access to the elevator car is provided. Are these new provisions the best option? Is it a good idea?

CODE DISCUSSION

The 2015 edition of the IBC consolidated all of the elevator shaft separation provisions in Chapter 30 that were in Chapter 7 in all previous editions. However, the basic intent did not change and all the varied options for separation are largely constructed as a compliment of both active fire protection and passive fire-resistance and compartmentation systems. For example, Section 3006.2, Exception 2, explains that protection of the hoistway door opening is not required at the level of exit discharge when the building is equipped with an automatic sprinkler system.

- Passive systems are described in Section 3006.3, Items 1 thru 3. When the building goes into alarm, enclosures are formed either around the elevator space or at the point of access to the car in order to resist fire and/or limit smoke from spreading. Similar to fixed walls, these enclosures are considered passive because they do not go to the fire, the fire must come to them.
- The passive enclosures when tested to UL 1784, the Standard for Safety of Air Leakage Tests of Door Assemblies - simply resist fire and limit smoke from passage and mitigate its migration in the structure. Most often passive and active systems compliment each other.
- Items 1 & 2 address the use of a lobby and prescribe the rating of the wall to create the lobby. When sprinklers are a part of the design the lobby can be reduced from 1-hour fire partition walls to non-fire-resistance-rated smoke partition walls. Item 4 is illustrative of the active system pressurization.
- Along with fire- and life-safety concerns, the design professional typically considers two additional critical areas - cost and appearance. The optimum circumstance is to have a nonobtrusive ambiance at minimal cost, regardless of the diverse individuality of each building design.
- Since Chapter 30 allows options for separation at the hoistway, let's discuss the creation of a lobby versus protection at the point of access to the car within the framework of three critical considerations - fire- & life-safety, cost and finally appearance. Due to advances in technology within the opening protective industry, it may very well be possible to provide protection at the elevator that is subtle in appearance, cost effective, and most importantly that meets or exceeds basic fire-& life-safety requirements for maximum building occupant safety during a fire emergency.

ELEVATOR SEPARATION AT THE POINT OF ACCESS TO THE CAR - 3006.3, ITEM 3

This provision allows protection at the point of access to the car without creating a lobby, as long as the requirements of test standard UL 1784 are met. This language allowing the opening protective to be located at the point of access to the elevator car does not require the opening protective to be fire-rated, only resistant to the passage of smoke because the hoistway doors are fire-protection-rated.

However, hoistway doors are not resistant to the passage of smoke. Therefore, an opening protective at the point of access, working in conjunction with the fire-protection--rated hoistway door, functions as one assembly to meet both fire and smoke requirements.

WHAT ABOUT EGRESS?

(IBC) 3002.6 Prohibited doors.

Doors, other than the hoistway doors and the elevator car door, shall be prohibited at the point of access to an elevator car unless such doors are readily openable from the car side without a key, tool, special knowledge or effort.[IBC 2015 3002.6]

Vertical Rolling Barriers - Any vertical assembly placed at the point of access to an elevator car, regardless of composition of the materials, is prohibited unless it complies with Section 3002.6 as stated above (See Section 3006.4). It must be noted that motor operated assemblies with push-buttons for activation would require special knowledge.

The building occupant cannot be expected to wait until the vertical device lifts to the minimum 80-inch height before exiting. Should the battery not be charged it would require special effort to manually lift the door open and might be difficult for the disabled, handicapped, weak or small in stature building occupant. Also, to manually operate a vertical device at power failure would, at the very least, require special knowledge.

Therefore, vertical rolling barriers that do not meet all the exiting criteria located in Chapter 10, Means of Egress are not allowed as conforming exit doors in a means of egress, based on the 2015 International Building Code.

Until recent acceptance of Accessibility provisions, the elevator car was not a component of the means of egress system. Therefore, an elevator car was not considered an occupied space in the building.

This reasoning was based on the premise that when a building goes into fire alarm mode, the elevators would lock-out (not be accessible from any other floor) and immediately return to the ground floor where the door would open and remain open. This arrangement was intended to restrict building occupants from entering or leaving the elevator car until it was safely out of danger. Should the elevator malfunction and stop on an intermediate floor it would then be necessary to allow the elevator car occupant(s) to choose whether or not to exit the car. Any protection at the point of access to the elevator car at this juncture must comply with egress provisions.



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McKeon Door photo.

However, the 2015 International Building Code brings with it Accessibility provisions in Section 1009.2.1, specifically placing elevators as a component of the Exit and Exit Access portions of the Means of Egress system in buildings four stories or more in height. Therefore, any protective assembly placed at the point of access to an elevator car must conform to the requirements of a required exit assembly.

Additionally, in buildings with an occupied floor more than 120 feet (120') above the lowest level of fire department access, two fire service access elevators are required (403.6.1). In other than R-2 occupancies, buildings greater than 420 feet (420') in height shall have one additional exit stairway, or, by exception, provide occupant evacuation elevators. These elevators are for any building occupant to use during a fire to exit the structure (403.5.2).

Each of the provisions cited allow building occupants, as well as fire service personnel, to ingress into the elevator, as well as egress from the elevator. Hence, the elevator has become a viable component in the Means of Egress system in many circumstances.

WHY NOT LOBBIES?

From a cost perspective, particularly in multiple elevator car applications, it is very expensive to separate lobbies as individual openings. Overall, a full lobby created with concealed wide-span opening protectives is less expensive, does not compromise the design of the space, and perhaps most importantly, provides areas of refuge for those waiting to ingress an elevator during an emergency. When a lobby is incorporated into the design, it must have at least one complying means of egress for exiting (IBC, Section 3006.4).

PROTECTING PROPERTY AND SAVING LIVES

High-rise fires are difficult to fight and difficult to escape. An unprotected elevator shaft will act as a conduit allowing fire, smoke and toxic gasses to spread from the fire floor of origin to areas throughout the building.

Because high-rise fires are often more injurious and typically cause more damage than other structure fires, the International Builling Code has adopted increasingly rigorous requirements governing fire-resistance and fireprotection systems in high-rise buildings.

- Over the last couple of decades, new products have been developed, disasters have taken place and building codes have evolved around these fundamental principles governing the regulation and protection of the elevator shaft. It is my observation that when we examine the issue of protecting elevator openings from the threepoint perspective (aesthetics, cost, fire- and lifesafety), we discover that creating an elevator lobby enclosure is the right thing to do.
- In multiple elevator applications, certainly one opening protective at the entrance to a lobby is less expensive and less obtrusive than multiple individual car separation systems. Perhaps even more important, a conforming lobby can also be used as an area of refuge while building occupants or fire-fighting personnel safely wait for ingress and egress from elevator cars that serve in the means of egress system during a fire emergency.
- In some cases, a lobby surrounding a single elevator car may serve as an area of refuge for a building occupant when no other space is available. Fully tested and labeled opening protective assemblies manufacturers installation installed to the instructions and the listing play an important role during fire emergencies. Incorporating complying assemblies into a design without compromising aesthetics may be less costly and much easier to accomplish than we think.

David L. Dodge is Director of Business and Code Development at McKeon Door Company. David can be reached at 801-471-7210 or ddodge@mckeondoor.com.



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HEALTHCARE OCCUPANCIES AND FIRESTOPPING

ealthcare building occupancies are one of the most regulated of structures. There are stringent requirements for construction and maintenance of the structure's systems including fire-resistance.

BACKGROUND

The USA's Center for Medicare and Medicaid Services (CMS) requires that hospitals be 'deemed' to be in compliance with the NFPA 101. Until July, 2016, the applicable code for hospitals to comply with was the 2000 version of the NFPA 101. After July 5, 2016, CMS updated their policy requiring hospitals to comply with the 2012 edition of the NPFA 101, the Life Safety Code.

The Joint Commission is the largest accreditor of hospital organizations in the USA. The organization also has an international division that accredits hospitals worldwide. The Joint Commission (TJC) audits facilities to the NFPA 101-2012 version. Additionally, there are several Elements of Performance (EP's) for the structure that are reviewed. The hospital facility and procedure audits performed by TJC cover every part of the hospital operations, including the physical plant of the building.

This May, at FCIA's Education and Committee Action Conference - ECA 2017 - attendees heard from George Mills, TJC's Director of Engineering, who delivered details about the physical environment at hospitals.

TJC & BARRIER ISSUES

Each year, Mr. Mills provides a session at the American Society for Healthcare Engineering (ASHE) Annual Conference. For four years running, he pointed out that Doors and Barrier Penetrations were the top two violations, #1 and #2, found in physical plant audits.



Fire Doors are supposed to close and latch to be effective. Hold open devices are not allowed. TJC Photo



Breaches made in barriers for piping, electrical and other penetrations need protection. TJC Photo

LS.02.01.10 EP 5 & 9 - Building and fire protection features are designed and maintained to minimize the effects of fire, smoke, and heat.

- EP 5 Door issues
- **EP 9 Fire Barrier Penetrations**

BARRIER MANAGEMENT SYMPOSIUMS

Both ASHE and TJC leadership recognized the problem and decided to build education for hospital facility engineers and staff to reduce the violations. Mr. Mills then reached out to FCIA to discuss education possibilities. FCIA had already built a fire-resistance education coalition. With some modifications to make the educational content applicable to hospitals, the Barrier Management Symposium was born. TJC, ASHE, UL and FCIA partnered presenting the "Barrier Management Symposiums" over the past 4 years to about 1,000 hospital focused attendees. The results of education speak for themselves.

RESULTS

During the 2017 FCIA ECA Conference, one of Mr. Mills' key points were the results of the education efforts. He pointed out that the violations for penetrations and doors has moved down on the Top 10 List from the Top Two to #7 & 8 (Doors) and #9 & 10 (Barrier Penetrations). According to Mr. Mills, this is a direct result of the Barrier Management Symposiums.

WHAT'S IN THE BARRIER EDUCATION?

The Barrier Management Symposium Faculty covers all the Barrier Components:

Bill McHugh, FCIA, Moderator

George Mills, TJC - on Why protection is needed Bill Koffel, Koffel Associates, rep. FCIA - on Barriers Rich Walke, UL - On fire-resistance testing Jonathan Flannery, ASHE - on the importance of the

Jonathan Flannery, ASHE - on the importance of the healthcare engineer

Nestor Sanchez, USG, rep. Gypsum Industry on gypsum barriers

Marc Sorge, Greenheck, rep. Fire Damper Industry on dampers

Bill McHugh, FCIA on Firestopping

Reps. From the Door Safety and Security Foundation of the Door and Hardware Institute on fire doors Technical Glass Products reps. on fire rated glazing. George Mills, TJC & Bill McHugh, FCIA Barrier

Management Policies

The Barrier Management Symposium faculty has travelled, at their own association or company's expense, to educate about fire-resistance-rated and smoke-resistant assemblies for hospitals. The faculty's wide range of experience provides the opportunity for healthcare engineering professionals to gain knowledge, ask questions and develop their own procedures for Barrier Management.

BARRIER MANAGEMENT ONLY A HOSPITAL PROBLEM?

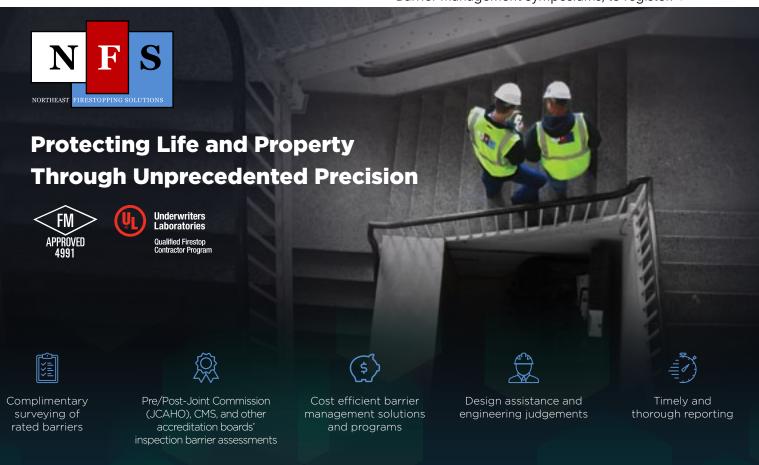
The problem with "Barriers" and breaches, holes, joints, gaps in the fire-resistance-rated or smoke-resistant assemblies is not just a hospital occupancy problem. It's in many other buildings too. That's why FCIA has also partnered with the APPA (Association of Physical Plant Administrators), to provide education for higher education facility managers. Other occupancies are to follow as well.



Bad installations are a result of installers not respecting the tested and listed systems and manufacturers' installation instructions.
This results in a life safety risk.
Pro-Firestop Photo

THANKS, FACULTY

FCIA sincerely thanks the Barrier Management Symposium Faculty for sharing their time and expertise during these important educational sessions. They have made, and will continue to make, a world of difference. Join the faculty at the next Barrier Management Symposium in Phoenix, AZ July 27. Visit www.FCIA.org, Barrier Management Symposiums, to register.



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FIRESTOPPING SPECIAL INSPECTIONS - CHECKLIST **FOR JURISDICTIONS**

here did the firestop special inspection requirement come from? At an Conference in San Antonio, TX in 2000, a conference attendee asked Mike Pfeiffer, Vice-President of Codes at the International Code Council, "Why is there no special inspection for firestopping like there is for fireproofing?" His answer? "Does your firestop industry have a standard for inspection? Have you submitted proposals to add inspection to the code? It's your code, your industry." And he was right.

FCIA then hired a consultant to write a draft of the inspection standards for submission at ASTM, FCIA's Standards Committee worked with ASTM Members, including the firestop manufacturers and consultants to manufacturers, to build what is now ASTM E 2174 and ASTM E 2393, Standards for the On-Site Inspection of Penetration (2174) and Fire-Resistant Joint Firestop Systems (2393).

ASTM E 2174 ASTM E 2393 IN SPECS & CODES

As soon as the ASTM E 2174 and ASTM E 2393 Inspection Standards were developed, FCIA worked with MasterSpec and SpecLink to add the standards to the 07-84-00 master specifications used by thousands of architectural firms worldwide.

After FCIA submitted the standards to the International Building Code (IBC) Development Process, the standards were approved and included in the 2012 International Building Code. They are still referenced in the 2015 and, soon, the 2018 versions.

The jurisdiction must adopt the 2012 or later version of the IBC in its entirety for the standards to become mandated. As long as Chapter 17, Special Inspections, is not amended out of the code upon adoption, special inspection of firestopping becomes a requirement.

FIRESTOP SPECIAL INSPECTION REQUIREMENT IN IBC

The 2015 International Building Code sections where

firestop special inspections are mandated are as follows...and form the 'Checklist' for AHJ's to use when implementing special inspections for firestopping:

1705.16 Fire-resistant penetrations and joints. In high-rise buildings or in buildings assigned to Risk Category III or IV in accordance with Section 1604.5, special inspections for through-penetrations, membrane penetration firestops, fire resistant joint systems, and perimeter fire barrier systems that are tested and listed in accordance with Sections 714.3.1.2, 714.4.1.2, 715.3 and 715.4 shall be in accordance with Section 1705.16.1 or 1705.16.2. [IBC 2015 1705.16]

The requirement is for High-Rise Buildings. High-Rise Buildings is a defined term in the IBC.

HIGH-RISE BUILDING. A building with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access. [IBC 2015 202]

The Risk Category III and IV buildings are referenced in Table 1604.5. of the IBC. Included in the categories are I-2, Hospitals, the focus of this issue of Life Safety Digest.

1705.17.1 Penetration firestops. Inspections of penetration firestop systems that are tested and listed in accordance with Sections 714.3.1.2 and 714.4.2 shall be conducted by an approved agency in accordance with ASTM E 2174. [IBC 2015 1705.17.1]

The Approved Agency is also a defined term in the IBC. It is the entity, C, Sub-S, LLC Corporation or Sole Proprietorship. Special Inspectors are also described in great length in the code. More on this later in the article.

1705.17.2 Fire-resistant joint systems. Inspection of fire-resistant joint systems that are tested and listed in accordance with Sections 715.3 and 715.4 shall be conducted by an approved agency in accordance with ASTM E 2393.

[IBC 2015 1705.17.2]

Checklist, Notes for ASTM E 2174 ASTM E 2393 **Implementation**

The IBC has specific requirements for what takes place next in Section 1703, Approvals. This and other sections become the 'Checklist' for the AHJ to use for approving Special Inspection Agencies (SIA's) and Special Inspectors (SI) employed by special inspection agencies in any discipline, including firestopping.

Below is a non-exhaustive summary of what to look for when AHJs approve the SIAs and SIs. It can also be used by building owners and managers who are hiring special inspectors as mandated by code or by the 07-84-00 Firestopping Specification.

SIAs are Approved by the AHJ

As stated in 1703.1, the SIA must submit info to the AHJ to be approved as a SIA. IAS AC 291 is an agency/company based program that AHJs can use to establish that the company has competency in the discipline inspected.

SIAs Shall be Objective, Competent, Independent

To be approved, IBC Section 1703.1 states, the agency must be "objective, competent, independent, from the contractor responsible for the work being inspected". The SIA also must have equipment and "shall employ personnel educated in conducting, supervising and evaluating tests and special inspections". The IBC does not say who should do the work, only that they be competent, have equipment to perform the inspections, independent and be objective.

FCIA NOTE to hiring agencies: Require Owner/ Owners Agent to Hire and Submit SIA's to Building **Department**

Section 1704. 2 states:

1704.2 Special inspections and tests.

Where application is made to the building official for construction as specified in Section 105, the owner or the owner's authorized agent, other than the contractor, shall employ one or more approved agencies to provide special inspections and tests during construction on the types of work specified in Section 1705 and identify the approved agencies to the building official. These special inspections and tests are in addition to the inspections by the building official that are identified in Section 110. [IBC 2015 1704.2]

Based on 1704.2, the OWNER or OWNERS AGENT needs to submit to the AHJ the proof of competence as stated above in 1704.3 and below in 1704.2.

Section 1704.2, Exception 4, contractor is permitted to employ the approved agencies where the contractor is also the owner."

This section supports FCIA's view that the building owner should not delegate hiring SIAs to those responsible for the financial success and completion schedule of the project. Economics and meeting the schedule are not always on the same page as inspection.

SIA Employed Special Inspectors Proof of Competence

Establishing the competence in question is done through experience in inspection of buildings and materials of the same type and complexity of work inspected. No "Certification" is required. Only proof of competence and experience is needed.

A hospital is a very complex building, while an office building might not be. The AHJ should have a requirement that the special inspection agency submit inspector resumes to prove this competence. And, fireproofing experience is not the same as firestopping and vice versa. Nor does firestop competence get the inspector into firestopping. (This will be the focus of another Life Safety Digest article.)

Section 1704.2.1 provides further guidance on Special Inspector Qualification. Proof of the passage below is needed before a Special Inspector should be approved by the AHJ.

1704.2.1 Special inspector qualifications. Prior to the start of the construction, the approved agencies shall provide written documentation to the building official demonstrating the competence and relevant experience or training of the special inspectors who will perform the special inspections and tests during construction. Experience or training shall be considered relevant where the documented experience or training is related in complexity to the same type of special inspection or testing activities for projects of similar complexity and material qualities. These qualifications are in addition to qualifications specified in other sections of this code.

The registered design professional in responsible charge and engineers of record involved in the design of the project are permitted to act as the approved agency and their personnel are permitted to act as special inspectors for the work designed by them, provided they qualify as special inspectors. [IBC 2015 1704.2.1]

Statement of Special Inspection

As stated in 1704.2.3, at permit application there shall be a statement of special inspections. The statement of Special Inspections is in 1704.3.1.

1704.3.1 Content of statement of special inspections.

The statement of special inspections shall identify the

- 1. The materials, systems, components and work required to have special inspections or tests by the building official or by the registered design professional responsible for each portion of the
- 2. The type and extent of each special inspection.
- **3.** The type and extent of each test.
- **4.** Additional requirements for special inspections or tests for seismic or wind resistance as specified in Sections 1705.11, 1705.12 and 1705.13.
- **5.** For each type of special inspection, identification as to whether it will be continuous special inspection, periodic special inspection or performed in accordancewiththenotationusedinthereferenced standard where the inspections are defined. [IBC 2015 1704.3.1]

Rules to Communicate to SIAs and GCs

From Section 1704.2, there are some operational instructions that speak to inspection of the construction process.

- Reasonable project site access must be given to the SIA.
- Approved agency shall submit reports to Building Official and Registered Design Professional in Responsible Charge (RDP).
- Reports shall indicate work inspected and not inspected.
- Discrepancies shall be brought to the immediate attention of the contractor for correction.
- No correction means notify Building Official and RDP.
- Final Report documenting discrepancies noted must be submitted to the Building Official.

Non-Code Mandated Considerations

As with any contracted service, there are other key issues that should be considered before hiring a special inspection agency.

- Insurance - Is there **Workers Compensation** insurance in place in case the inspectors get injured? Sole proprietors are not required to have WC Insurance in some states. How does that affect the hiring of sole proprietors? Are they covered under the building owner's policies? What about General Liability Insurance? Based on the nature of the work, they should also have Professional Liability Insurance as well.

- Association Membership Is the SIA at least a member at an association? Association membership is an investment in the industry.
- References Does the firm have references for projects inspected of similar scope?
- Accredited Company Is the company accredited by IAS or another credible third-party?
- Education & Study Have the company employee inspectors studied recognized industry documents? Attended FCIA Conferences or other Conferences? Participated in Firestop specific education?

Firestop Contractors & Effects on Value

Firestop Contractor selection by the general contractor or building owner and manager affects the cost of inspection. Most firestop special inspection is purchased based on an open ended hourly contract. When there is an inexperienced firestop contractor the likelihood of discrepancies increases, sometimes exponentially. Why?

Technically, firestopping can be installed by anyone who can buy firestop material. Hardware stores have the material. Construction industry distributors and catalog houses also stock firestop materials. Firestop materials are not limited to purchase by professionals.

But construction is not an easy discipline. That's why there are specialists: electricians, communications, low voltage alarms, plumbing, sprinkler, wallboard, masonry, concrete and other trades are all specialties. Yet, anyone can install firestopping? Does this make sense when the installation is very detailed and technical? Shouldn't there be a journeyperson Firestop-Containment Worker installing firestopping?

That's why the value - price - of a firestop systems installation varies so much at time of project proposals. Those that understand, respect and install firestopping to the listings from the UL, Intertek, FM Approvals or other directories and manufacturers installation instructions provide the true cost of application of complex and simple firestops. FCIA Member, FM 4991 Approved and UL/ULC Qualified Firestop Contractors who have also attended the FCIA Education for FM & UL/ULC Firestop Exams, manufacturer education way beyond the basic levels which 'any-one' might attend. Firestop Contractors understand this and factor the cost of the tested and listed systems limitations into proposals.

Those who think firestopping is simply installing red firestop sealant without the tested and listed systems will be 10 to 50 times cheaper than the specialist firestop contractor who follows the systems. Not 10%...10 to 50 times cheaper. That is why using a firestop specialist contactor 'seems expensive'.

But, special inspection agencies who employ special inspectors competent in firestopping will find the discrepancies with the systems that occur. When contractors who do not respect that firestopping must be installed to the tested and listed system and manufacturers installation instructions, two rude awakenings will take place. The first is that the contractor will have to re-work already installed products due to failed inspections. The second is that the building owner will exceed their inspection budget because of the increased inspections required. Remember, each time there is a discrepancy an additional inspection takes place, and the inspection agency is billing hourly.

Conclusion

Firestop Special Inspections are required where the jurisdiction has adopted the 2012 International Building Code, 2015 and soon, the 2018 versions of the code. There are code requirements that exceed what is in the ASTM E 2174 and ASTM E 2393 Special Inspection Standards, such as the 'immediate' notice to the contractor about discrepancies.

AHJs have a lot of responsibility. We have the utmost respect for what they deal with every day. They are questioned about their competency by many, but we recognize that they are some of the most diversely knowledgeable people about buildings, similar to the specifier who has to know a lot about everything.

We hope the information helps the AHJ build a checklist that helps the AHJ and others who have to hire special inspection agencies - choose them wisely.

FCIA NOTE: Request FCIA's suggested Firestop Special Inspection step by step process by email to info@FCIA.org . \ref{M}

Eric Keeton, Chair of the FCIA Standards Committee that works at ASTM on the ASTM Firestop Inspection Standards, is a FCIA Past President. He is Firestop Specialist at Dalton Protection, Inc. Fairborn,OH. Eric can be reached at EKeeton@daltonprotection. com

Tracy Smith is Vice-President of Firestop Southwest, Inc. in Phoenix, AZ. Tracy is a FCIA Past President and currently the FCIA Inspection Committee Chair. He can be reached at tracys@firestopsouthwest.com.

Bill McHugh is FCIA Executive Director and can be reached at bill@fcia.org.



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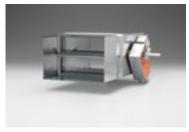
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CODES AND STANDARDS NEWS

ICC CODE CYCLE STARTS NOW

The International Code Council 2018 family of 'I-Codes', including the International Building Code, International Energy Conservation Code, International Fire Code and several others, are expected to be published this fall.

The ICC has several Code Action Committees, or 'CAC's meeting and studying code issues to prepare proposals for the 2018 I-Codes. There are CACs for

Building, Fire, Energy and several other topics that meet via teleconference and face-to-face to discuss code issues in a more informal manner than a code development hearing. After the CAC's discussions and deliberations are complete, code proposals might be submitted by the CAC to be heard at the Committee Action Hearings.

FCIA PARTICIPATING IN ICC FCAC DISCUSSIONS

FCIA's Code Consultant Bill Koffel and Executive Director Bill McHugh participate in the ICC's Fire Code Action Committee Meetings at the International Code Council during weekly teleconferences and face to face meetings. This is all in preparation for the January 8, 2018 deadline for code proposals. One area of discussion is Section 715, Joints of the International Building Code (IBC). Continued discussions take place on when vertical

openings can be allowed and how big they can be.

The deadline for the 2021 Code Development Cycle is January 8, 2018. In the meantime, FCIA's Code Committee is reviewing what it wants to submit for the new codes. As summer and fall reveal more possible proposals, watch future issues of *Life Safety Digest* for FCIA's Code Proposals.

FCIA AT NATIONAL BUILDING CODE OF CANADA

The National Building Code of Canada is reviewed and published on a 5-year development cycle. The next version of the code is to be the 2020 version of the National Building Code (NBC) and the National Fire Code (NFC) of Canada.

FCIA submitted several proposals to the NBC code development process. We understand they will be discussed by the Standing Committee on Fire Protection sometime in September.

Proposals included changing the word "Fire Stop"

to "Firestop", adding requirements for FM 4991 or ULC Qualified Firestop Contractors and adding ASTM E 2174 and ASTM E 2393 Inspection requirements to the NBC. We also submitted proposals to build language into the NFC to maintain Fire Separation continuity.

FCIA Canada Members are involved in this effort and we're thankful for their volunteer talents. Watch *Life Safety Digest* and www.FCIA.org for more info as the year progresses.

NFPA CODE DEVELOPMENT

The NFPA 5000 is a "Building Construction and Safety Code", and NFPA 101 is "the Life Safety Code". Both are published by the National Fire Protection Association (NFPA). The code is modified through public input and review / voting by committees on a 3-year development cycle. The code under development now is the 2018 NFPA 101/5000.

The final motions are heard at the Annual Meeting held in June. At this meeting, a Notice of Intent to Make a Motion (NITMAM) was submitted to reduce smoke compartments to 22,500SF from the current 40,000SF.

FCIA's Code Committee supports Bill Koffel's recommendation for FCIA to remain neutral on this NITMAM proposal. FCIA supports the position because it is already in the International Building Code (IBC), and the 200' travel distance limits the size of the smoke compartment due to design geometry.

Watch www.FCIA.org for updates on the NFPA code development process for NFPA 101/5000.



FCIA EDUCATION AND COMMITTEE ACTION CONFERENCE (ECA) A BIG SUCCESS

FCIA completed FCIA's Education & Committee Action Conference - FCIA ECA 2017 - at The Chase Park Plaza in St. Louis, MO, May 2-5. FCIA members came together for 3-1/2 days of firestop education, the FM & UL/ULC Firestop Exams, networking and more.

With over 30 attending the FCIA Education for the Firestop Exams sessions and 20 who wrote the FM or UL/ULC Firestop Exams, this group put themselves to the test while honing their knowledge to become experts in firestopping to manage operations at FM 4991 Approved, UL/ULC Qualified or IAS AC 291 Accredited Firestop Special Inspection Agencies.

FCIA's Committee Action Meetings - Accreditation, Code, Inspection/Standards, Marketing, Membership, Program, the Canada Task Group and the Technical Education & Apprenticeship Committees - were all well represented and enjoyed some dynamic and interesting conversation at committee tables.



FCIA Photo. TJC's George Mills at ECA Conference

Speakers included Karl Houser on Intertek's testina capabilities and standards. Luke Woods, UL's Primary **Development Engineer** Fire-Resistance, looked at some of the top questions from the UL Guide information. He also asked what UL should be looking at for the future that

should be reflected in UL's Test Standards UL 1479, UL 2079 to address what contractors are finding in the field.

The Joint Commission's (TJC) George Mills brought a fresh perspective to the TJC hospital facility audit process. Sound, infection control, fire-resistance and the effect of The Barrier Management Symposiums on hospital compliance were all covered. George credits the FCIA, TJC, UL and ASHE Barrier Management Symposiums (BMS) with reducing the number of violations caused by barriers - doors and penetrations.

FCIA's Contractor Only Session brought great discussion about the direction the association should take on many issues.

Melanie Bisson (ROXUL) presented to an interested group a program on the role of mineral wood in extending the fire-resistance of the horizontal (floor) assembly to the non-rated curtain wall assembly.

Corey Zussman (Pepper Construction) and Patrick



FCIA Photo

Shaw (Cushman Wakefield) pictured above looked at what property managers and general contractors typically see in the field and how the specialty firestop contractor can help. For building owners and managers to maintain the fire-resistance rated and smoke-resistant assemblies, they need a building that is code compliant from the start. The importance of education, SYSTEMS and the FCIA Member, FM 4991 Approved / UL Qualified Firestop Contractor and IAS AC 291 Accredited Firestop Inspection Agency all were brought up as possible solutions.

FCIA's ECA Conference wrapped up with Bill Koffel (Koffel Associates) presenting an executive summary on the recent code changes, with a highlight on what firestop contractors can expect to see in future code development cycles. "These changes aren't implemented tomorrow... they are implemented in 10+ years," stated Koffel.

FCIA'S NEW PROFESSIONAL LIABILITY INSURANCE PARTNERSHIP

General Liability (GL) insurance covers installations, auto and other items. GL insurance does not cover 'Design'. What is design work? Does your firm provide surveys of new or existing buildings? Does your firm select firestop systems? Does your firm inspect firestopping? All of those services might not be covered by General Liability Insurance. So, what do contractors and special inspection agencies need?

The answer: Professional Liability Insurance.

Announcing the FCIA Professional Liability Insurance Program, offered through the Norman Spencer Insurance Group. This new strategic partnership offers a new benefit

for both inspection agencies and firestop contractors – Professional Liability Insurance – to cover contractors working on new and existing buildings. It covers special inspection agencies inspecting firestopping to ASTM E 2174 and ASTM E 2393 Firestopping Inspection Standards or other inspection methods. The policies are underwritten by Lloyds of London – a first class carrier.

Learn more today . For more information visit www.FCIA.org



FCIA'S FIC 2017 LOCATION ANNOUNCED!



This November 7-10, FCIA will pack our bags and head to Palm Springs, CA and the Omni Rancho Las Palmas for the FCIA Firestop Industry Conference & Trade Show (FIC). The fourday event will feature the FM & UL/ULC Firestop Exams, the

Ray Usher Memorial Golf Outing which funds the FCIA

Scholarship Fund, engaging education sessions and networking events, as well as the FCIA Annual Dinner.

Hotel reservations are available now. Check back in the next few weeks for more information and registration info

CONSTRUCTION ECONOMY 'SAW-TOOTHING'

According to Dodge Data Analytics, the Dodge Momentum Index fell 5.1% in April to 133.8 (2000=100) from its revised March reading of 140.9.

The Momentum Index is a monthly measure of the first (or initial) report for non-residential building projects in planning, which have been shown to lead construction spending for non-residential buildings by a full year.

April's decline was due to a 12.0% drop for the institutional component of the Momentum Index, while

the commercial component rose a meager 0.1%. Since early 2016, the Momentum Index has gained substantial ground, albeit in a saw-tooth pattern, increasing by over 20% through March this year. Despite April's decline, the broad upward trend for the Momentum Index remains present, suggesting that construction activity still has further room to grow in 2017.

FCIA AT ASTM



FCIA attended the ASTM Meetings which took place in Toronto, ON in early April. Topics covered included the ASTM E 2174 / E 2393 Inspection Standards, movement of penetrating items or the assemblies and how they should be fire-tested after movement, exposure to chemicals and the need for fire -testing after exposure. The

meetings also looked at the qualifications of inspectors.

FCIA believes that the qualifications of the inspectionagency-employed inspectors on firestopping projects need to be equal to that of the contractor. We support education of inspectors, as well as utilizing the FM and UL/ULC Firestop Exams to establish competency of individual inspectors. We recognize that there are other exams and support inspection agencies that have inspectors take either the FM or UL/ULC Firestop Exam and the IFC Exam.

Why? Not only because knowledge is power, but also because being an expert in the field is critical for those who are inspecting installed firestop systems. If you don't know what you're looking at, how can you determine if it is correctly or incorrectly installed? Plus, we have heard that contractors have had to educate the inspectors about how to inspect. This is unacceptable practice.

ICC CELEBRATES "BUILDING SAFETY MONTH"

Building Safety Month (BSM), founded by the International Code Council (ICC), is celebrated by community building departments, also known as "jurisdictions", worldwide during the month of May.

Building Safety Month is a public awareness campaign to help individuals, families and businesses understand what it takes to create safe and sustainable structures.



For week one, the theme was "Mentoring the Next Generation of Building Professionals - Meeting the Need for Trained Professionals". With Baby Boomers largely retiring soon, and the population dip before the Millennials in the early 1980's, there is a significant

shortage in the next group of leaders. That's why there is a focus on Emerging Leaders at ICC.

Week two saw "Building Design Solutions All Ages", and concern for the aging population. Accessibility issues at retail, homes, healthcare facilities and many others are raised in conjunction with the



aging population. Fire and life safety is involved too.

For week three, "Manage the Damage - Preparation for Natural Disasters" included tips on how to protect you, your family and home to be protected and resilient to disasters.

Finally, during four, "Investing in Technology for Safety, Energy, & Water" addressed building code compliance for meeting the minimum standards in buildings to keep people and property protected.



That's what Building Safety week is all about: to build public interest in building safety at home, work, play, worship and healthcare in order to create a demand for safer buildings and recognition that the building code official is an important part of this equation. FCIA and Life Safety Digest salutes ICC for their leadership role in Building Safety Month.

Visit www.ICCSafe.org for more info.

FCIA AT IAS



Recently, a proposal was sent before IAS by former IFC Executive Director, Brice Miller, to remove the FM or UL Firestop Exam from the IAS AC 291 Accreditation Criteria. Miller wanted to delete the exams and instead insert the International

Firestop Council (IFC's) Exam. FCIA is against this proposal. Our position is that passing both exams gives the best value to the building owner. In lieu of requiring both, either exam would be acceptable - IFC's or either the FM or UL/ULC Firestop Exam.

FCIA IN THE MIDDLE EAST

FCIA's Symposiums in the Middle East brought FCIA Members together to discuss the best ways to keep existing buildings safe. Wherever we are in the world, existing buildings need continuous survey to assure that the fire-resistance originally installed in the building is still there and intact -ideally present to the tested and listed system requirements.

Delegate attendees learned about the complete Barrier Management System including fire-resistancerated walls, floors, fire dampers, fire doors, fire-rated glazing, and of course, firestopping - and how they might get involved in servicing fire-resistance-rated and smoke-resistant assemblies in existing buildings.

Several FCIA Members also attended the FCIA Education for the Firestop Exams and Quality Management System Manual education sessions in preparation of writing the FM or UL Firestop Exams. Both locations - Doha and Dubai - saw several companies represented by individuals writing the exam and working to establish competency. This further positions their FCIA Member Company as being an expert in the field.

This dedication to improving their knowledge and expertise proves that FCIA Members are best qualified to maintain fire-resistance and smoke-resistant assemblies.

FROM OSHA ON THE NEW SILICA RULE

The final rule on Occupational Exposure to Crystalline Silica in Construction, published on March 25, 2016, established a new Permissible Exposure Limit and contained several other ancillary provisions that apply to the construction industry. This rule was codified at 29 CFR §1926.1153 and became effective on June 23, 2016. Under the standard, all obligations were to commence on June 23, 2017 except for requirements for sample analysis in paragraph (d)(2)(v), which commence on June 23, 2018.

The construction standard for crystalline silica has several unique features warranting development of additional guidance materials. In order to provide the opportunity to conduct additional outreach to the regulated community and to provide additional time to train compliance officers, OSHA has decided to delay enforcement of this standard until September 23, 2017.

OSHA is currently developing educational materials for employers and enforcement guidance for their staff that will be made available shortly. OSHA staff will be providing these materials to employers that are subject to the requirements under § 1926.1153 and will provide guidance on what steps the employers can take to ensure that they are in compliance with the new provisions when enforcement begins on September 23, 2017. From OSHA.Gov, Crystalline Silica Standard Delay of Enforcement.

For FCIA Members, whenever employees are exposed to silica on jobsites, the procedure mentioned above needs to be followed. Work with your safety consultant to develop jobsite and company specific programs to comply with the new rules.

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=31082

AIA RELEASES 2017 EDITION OF CONTRACT DOCUMENTS

The American Institute of Architects (AIA) has announced, at AIA '17 Conference on Architecture, the release of the 2017 edition of the A201 family of contract documents. This release includes updated versions of the AIA's flagship documents, developed for the design-bid-build delivery model. Working with architects, contractors, subcontractors and owners,

the AIA Documents Committee updates this core set of documents every 10 years. This helps ensure that the AIA legal form and agreements reflect changes and trends in the industry, and that the AIA Contract Documents remain the Industry Standard. Visit www. AIAContracts.org for more info.

FCIA AT NOVA SCOTIA BUILDING OFFICIALS ASSOCIATION



This past April, FCIA Executive Director, Bill McHugh, spoke to the Nova Scotia Building Officials Association (NSBOA) at their Annual Education Meeting. The presentation covered the key qualities that a firestop contractor and special inspection agency should

possess, in addition to what to look for - the many violations - in fire separations in new construction and existing buildings.

The opportunity to present was facilitated by FCIA members in the area, Trinity Maintenance Solutions. We were honored to speak.

FCIA AT ONTARIO BUILDING OFFICIALS ASSOCIATION

FCIA members worked with FCIA Executive Director, Bill McHugh, to develop and present a 4-hour program on the 'DIIM' - Design, Installation, Inspection and Maintenance of Firestopping in Fire Separations in May.

Many thanks to FCIA Members John Sharpe, Pro-Firestop, and Jim Smiley, Sr., Dew Point Insulation, for being there and assisting with the program.

FCIA INDUSTRY CALENDAR

JUNE

June 4-7

NFPA Conference & Expo Boston, MA www.NFPA.org

June 24-27

BOMA International Conference & Expo Nashville, TN www.BOMA.org

AUGUST

August 6-9

ASHE Annual Conference and Technical Exhibition Indianapolis, IN www.ASHE.org

SEPTEMBER

September 14-15

CSI CONSTRUCT Providence, RI www.constructshow.com

September 17-19

Canadian Healthcare Engineering Society (CHES) Annual Conference Niagara Falls, ON www.CHES.org

September 20-22

FCIA Canada Symposium Toronto, ON www.fcia.org

OCTOBER

October 9-11

Oman Fire, Safety & Security Expo (OFSEC) Musca, Sultanate of Oman www.muscat-expo.com/ofsec/

October 18-20

International Facility Managers Association (IFMA) World Workplace Houston, TX www.worldworkplace.ifma.org

October 22-23

ICC Annual Conference Columbus, OH www.ICCSAFE.org

NOVEMBER

November 7-10

FCIA Firestop Industry Conference & Trade Show Palm Springs, CA www.fcia.org

November 29 - Dec. 1

CONSTRUCT Canada Toronto, Canada www.constructcanada.com



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New FyreWrap® DPS Insulation for clothes dryer vents.



Recent FEMA statistics indicate significant injuries, loss of life and property damage due to clothes dryer fires in residential buildings. At the same time, code requirements for clothes dryer ventilation ducts in multi-family residences have been difficult to achieve in real-world conditions – until now.

Half-inch, flexible, code-compliant duct wrap designed to fit tight spaces.

FyreWrap® DPS Insulation is an innovative duct wrap that provides a safe and cost-effective means to achieve a 1-hour fire resistance-rated, zero clearance enclosure for routing dryer ductwork as prescribed by the International Building and Mechanical Codes. It utilizes a lightweight, high temperature, bio-soluble fiber blanket specifically designed, UL tested and certified for this critical application. FyreWrap DPS Insulation features a ½" single layer design that is flexible and easy to cut, fabricate and wrap to fit tight spaces, providing time and cost savings on many projects.

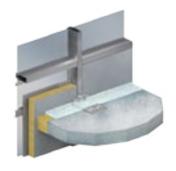
More information on FyreWrap DPS and our complete line of FyreWrap products is available at www.arccat.com and www.unifrax.com or by calling 716-768-6500.













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