



Life Safety DIGEST

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But I Have an Existing Building
Fire Door Inspection - Top Ten Deficiencies

Managing Barrier Integrity

Life Safety Dampers Are Essential
Components of HVAC Systems

Life Safety Digest - Special Code Report -
ASHE - ICC Ad-Hoc Committee on Health Care

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On the Cover:
Special thanks to Renee Jacobs, Vice President Facilities & Construction at St. Luke's Health System and Specified Technologies for the cover. Photo by Michael Spillers. Firestopping was installed and barriers managed under Renee's leadership. FCIA Member MTS Contracting, Inc. installed the firestop system and firestopping building-wide.

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Life Safety DIGEST

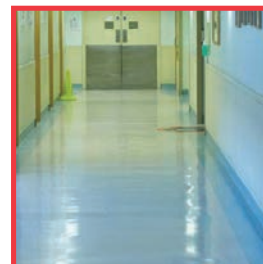
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Editor's Message

Healthcare Occupancy Issue

The American Society of Healthcare Engineers (ASHE) just finished its Annual Conference where much education and a large exhibition took place. According to ASHE, attendance set records this year.

We at FCIA participated as an association in both the ASHE Annual Convention and the ASHE Professional Design and Construction Show this year. We are continually impressed by the professionalism of the ASHE membership and staff.

This year, there was a strong focus on providing economic value to the patient...the ultimate end user of healthcare facilities. We heard about code development, risk assessments and contingency plans. We also heard from the Joint Commission that maintenance of fire and smoke barriers was at the top of the most frequent violation list again this year. What caused the violations? 'Doors with Builders Hardware and Penetrations'. There was a strong suggestion during a Plenary Session for ASHE Members to manage the people who climb above ceilings and poke holes in barriers.

To "barrier maintenance," the last two Joint Commission's *EC News* issues had articles on how facilities can deal with doors and firestopping in rated barriers. (Check out article in this issue). Management of people and process seemed to be at the crux of the matter. Developing a program for "above ceiling permits" and incentivizing staff to enforce discovered lack of "above ceiling permits" was a solution offered by the Joint Commission.

On codes, ASHE director of codes and standards Chad Beebe during his Code and Standards Update and Plenary Session spoke about changes proposed in the International Code Council's (ICC) International Building Code so it is consistent with NFPA 101 requirements for healthcare occupancies. The result of the efforts would be the elimination of time spent by ASHE Members, staff and regulators resolving conflicts. Check out the ICC-ASHE Special Report, in this issue.

The large ASHE audience listened intently as Chad reported on ASHE's partnership with the ICC. Through working with the ICC/ASHE Ad Hoc Committee on Healthcare, the group's success rate was about 65% on the 2012 ICC Code Development Proposals. In the code world, that's huge.

This participation by ASHE at ICC's Code Development Process resolving conflicts between the NFPA 101 and ICC International Building Codes will result in less time and resources spent on these consistency issues.

Reducing conflict resolution hopefully frees up funding to focus on key items that increase the building's ability to serve and protect the patient. Regardless of the Public Comment and ICC Final Action Hearing outcomes, we applaud ASHE and ICC for the very open process developed and used to discuss the conflicts between codes. We have confidence that the ASHE healthcare engineer will continue to work to maximize value and patient safety. 🔥

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Fire Door Inspection - Top Ten Deficiencies

By Lori Greene, AHC/CDC, CCPR

As more jurisdictions adopt the 2009 International Fire Code, the 2009 edition of NFPA 101 - The Life Safety Code, or other codes that reference the 2007 or 2010 edition of NFPA 80 - Standard for Fire Doors and Other Opening Protective, more attention is being focused on fire doors and egress doors. Fire door assemblies and certain egress doors must be inspected annually per these publications, and any deficiencies found must be corrected without delay.

The Door Security and Safety Foundation is an organization that exists to promote secure and safe openings that enhance life safety through education and partnerships with like-minded organizations. The Foundation's research has identified the top ten deficiencies on swinging doors with builders hardware:

1. Painted or missing fire door labels

The label found on the edge or top of a fire door and in the rabbet of a fire-rated frame may be made of metal, paper, or plastic, or may be stamped or diecast into the door or frame. Labels must be visible and legible. Some embossed labels can still be read if they are painted, but if a painted label is illegible, the paint must be removed. If labels are missing or can't be made legible, the Authority Having Jurisdiction (AHJ) may require the doors or frames to be re-labeled by a listing agency.

2. Poor clearance dimensions around the perimeter of the door in the closed position

The maximum clearance allowed by NFPA 80 between a fire door and the frame at the head, jambs, and meeting stiles of pairs is 1/8 inch for wood doors, and 3/16 inch for hollow metal doors. The maximum clearance at the bottom of the door is 3/4 inch between the bottom of the door and the top of the flooring or threshold. Prior to the 2007 edition, NFPA 80 included a variable requirement for the undercut, depending on the type of flooring.

For clearances larger than allowed by NFPA 80, there are gasketing products in development that

may be allowed by the listing agencies as an alternative to replacing the door. Shimming the hinges with metal shims may help to correct the problem, and there are metal edges available that are listed for use when a door needs to be increased in width to reduce the clearance.

3. Kick-down door holders

A kick-down door holder is a simple mechanical device that is mounted on the bottom corner of the door and flips down to hold the door open. Because fire doors must be self-closing or automatic-closing (there are a few exceptions), a kick-down holder is not an acceptable way of holding open a fire door. A mechanical hold-open feature in a door closer and other types of hold-opens such as wedges, hooks, and overhead holders are not allowed for fire doors either.

An automatic-closing fire door is held open electronically, and closes upon fire alarm. This may be accomplished with a wall- or floor-mounted magnetic holder, a closer-holder unit that receives a signal from the fire alarm system or incorporates its own smoke detector, or a separate hold-open unit that is paired with a standard door closer. There is also a battery-operated hold-open available, which can be used in some retrofit applications.

Existing fire doors may be equipped with fusible link closer arms, which incorporate a fusible link that is intended to melt during a fire and release the hold-open. Current building and life safety codes do not allow fusible link arms on doors in a means of egress, because they do not allow the doors to control the spread of smoke. Automatic-closing doors must be initiated by the fire alarm system or smoke detection.

4. Auxiliary hardware items that interfere with the intended function of the door

These auxiliary items may include creative ways of holding open the door or providing additional security. In many cases the auxiliary items create an egress problem, for example, additional locks or surface bolts (most egress doors must unlatch with one operation),



Hinge with Wrong and Missing Fasteners.
Ingersoll-Rand Photo.



Missing Hinge Reinforcement.
Ingersoll-Rand Photo.



Stairwell Door Propped Open.
Ingersoll-Rand Photo.



Replacement Strikes.
Ingersoll-Rand Photo.

chains or creative devices used with panic hardware, or electronic access control products that have not been installed with the required release devices for code compliance. Hardware used on fire doors must be listed for that use, and items not listed for use on a fire door must be removed. Holes left by the removal of auxiliary items must be filled in accordance with NFPA 80, typically either with steel fasteners, or with the same material as the door or frame.

Field preparation for these auxiliary items may also create a problem on fire doors. NFPA 80 limits job site preparation of fire doors to holes for surface-applied hardware, function holes for mortise locks, and holes for labeled viewers. The maximum hole diameter is 1 inch, except holes for cylinders which may be any diameter. Protection plates may be field-installed, and wood and composite doors may be undercut in the field a maximum of 3/4 inch (check with the door manufacturer first). Field modifications beyond what is allowed by NFPA 80 may void the label and require re-labeling of the assembly.

5. Fire doors blocked to stay in the open position

If a fire door is not able to close, it can't compartmentalize the building and prevent the spread of fire and smoke. Fire doors are typically blocked open for the convenience of the building's occupants. Many people don't understand the function of fire doors, and may compromise life safety without realizing the results of their actions. Educating facilities staff and the building's occupants on fire door requirements can help to avoid a problem, and/or a fine from the local fire marshal.

6. Area surrounding the fire door assembly blocked by furniture, equipment and/or boxes

In addition to the annual inspection of fire doors, recent editions of NFPA 101 – The Life Safety Code require certain egress doors to be inspected annually as well. The area leading to fire and egress doors must be kept clear for egress purposes, and to provide the required maneuvering clearance for accessible openings.

If a fire door is no longer used as a door, building occupants will sometimes place furniture or stack stored items against the door. NFPA 80 requires fire doors that are no longer in use to be removed and replaced with wall construction matching the adjacent wall. A fire door typically carries a lower hourly rating

than the wall, because the fuel load against an operable door is much less than a wall with furniture and other materials against it. If a 20-minute door in a one-hour wall has an increased fuel load because it is no longer operable, it will not be able to withstand fire for the required amount of time. Check required egress routes before removing any door.

7. Broken, defective or missing hardware items (latch bolts and/or strike plates, closer arms, cover plates, etc)

Hardware may not perform as designed and tested if it is missing parts or if the hardware has become damaged. Bent closer arms may not close the door properly. Missing cover plates may create a passage for smoke, and a missing strike or latchbolt could mean that the door does not stay positively latched when exposed to the pressures of a fire. When defective hardware is noted, it must be repaired or replaced immediately.

8. Fire exit hardware installed on doors that are not labeled for use with fire exit hardware

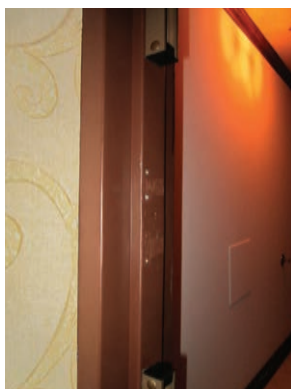
Fire exit hardware is essentially panic hardware that is listed for use on a fire-rated door. It is not equipped with mechanical dogging (the ability to hold back the latch) since fire doors need to positively latch, although electric dogging may be used as long as the latch projects upon fire alarm.

Fire exit hardware is not required for every fire door. Its use is determined by the occupancy type and the occupant load. The IBC requires panic hardware / fire exit hardware for Assembly and Educational occupancies with an occupant load of more than 50 people (2006 edition and later), or more than 100 people (2000 and 2003 editions). NFPA 101 requires panic hardware / fire exit hardware for Assembly, Educational, and Day Care occupancies with an occupant load of more than 100 people.

When fire exit hardware is used, NFPA 80 requires the door to have a label stating, "Fire door to be equipped with fire exit hardware." This ensures that the door is properly reinforced for the fire exit hardware. An existing door that is prepped for a lockset would not typically be reinforced for fire exit hardware or carry the proper label, so fire exit hardware should not be retrofitted to an existing door that was not originally prepped for it.



Missing Latch.
Ingersoll-Rand Photo.

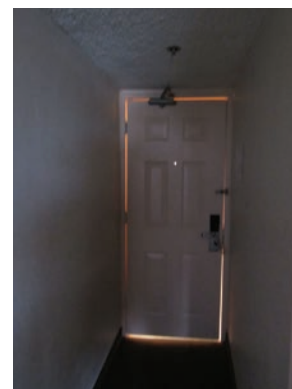


Missing Strikes.
Ingersoll-Rand Photo.



Kick Down Stop.
Ingersoll-Rand Photo.

9.



Hotel Door Clearances.
Ingersoll-Rand Photo.

Missing or incorrect fasteners

In most cases, hardware must be installed with the fasteners provided by the manufacturer. Installers sometimes use other fasteners for faster installation or because the original fasteners have been lost. There must be no missing fasteners on hardware installed on fire doors, and some products may require through-bolts if the door does not have adequate blocking or reinforcing.

10. Bottom flush bolts that do not project ½ inch into the strike

Flush bolts are used on the inactive leaf of pairs of doors when the active leaf has a lockset. There are three types - manual, automatic, and constant-latching. They typically project into the frame head and into the floor, although there are some automatic and constant-latching bolts that have a top bolt only, and incorporate an auxiliary fire pin that projects when a certain temperature is reached and engages into the edge of the other door.

Manual flush bolts are projected and retracted manually, and are only allowed by NFPA 80 on fire doors “where acceptable to the AHJ, provided they do not pose a hazard to safety to life.” Annex A – Explanatory Material states, “This provision limits their use to rooms not normally occupied by humans (e.g., transformer vaults and storage rooms).” The use of manual flush bolts is also limited to certain applications by the egress code requirements, because it requires two motions to unlatch the door when manual flush bolts are installed, and they are not within the allowable reach range for accessibility.

Automatic flush bolts project automatically when the active leaf is closed, via a small trigger on each bolt. When the active leaf is opened, the bolts retract automatically, making them acceptable for use on most egress doors that don’t require panic hardware as long as the inactive leaf is not equipped with “dummy” hardware (lever or bar) which suggests that the inactive leaf can be operated independently. Automatic flush bolts are considered positive-latching and can be used on fire doors. A coordinator is also required to ensure that the inactive leaf closes before the active leaf.



Holes Left in Door and Missing Fasteners.
Ingersoll-Rand Photo.



Label for Fire Exit Hardware.
Ingersoll-Rand Photo.



Missing Top Channel. *Ingersoll-Rand Photo.*

Constant latching flush bolts have an automatic flush bolt on the bottom, and the top is a spring-loaded bolt that is retracted manually to open the door. These bolts provide a higher degree of security than the other two because the inactive leaf is more likely to be closed and latched properly. They can be an egress issue for some doors because the top bolt has to be retracted manually, and it is not within the accessible reach range. A coordinator is also required for this application.

When the bottom bolt doesn’t engage properly, there is no assurance that the fire door will perform as it was designed and tested during a fire. The undercut of the door must be carefully coordinated to ensure the proper engagement of the bottom bolt. Another issue with flush bolts on fire doors is that the coordinator/auto flush bolt combination can be difficult to keep functional in a high-use opening. If the latches don’t retract properly or if the inactive leaf is pulled or pushed without opening the active leaf first, the corners of the door can be susceptible to damage because of the volume of material removed to prepare the door for the flush bolt. This is a particular problem on wood doors.

The new requirements for the annual inspection of fire and egress doors have drawn attention to the condition of existing doors, and the potential failure of these doors to perform in a fire or emergency. If the inspection requirements are not being enforced in your area, fire and egress doors are still required to be properly maintained, so now is the time to make a plan for inspecting the doors in your facility and repairing or replacing deficient components. Written documentation of fire door inspections must be kept for review by the AHJ. Inspections may be conducted by an individual who is knowledgeable about the type of doors being inspected, and there are several fire door inspection training programs available. 🔥

Lori Greene, a hardware consultant with Ingersoll Rand Security Technologies, is based in Needham Heights, MA. She writes extensively maintaining a blog at 'idighardware.com.' Lori can be reached at lori_greene@irco.com. If located outside of New England and have a specific question, she requests contacting the local [Ingersoll Rand Security Technologies](http://www.ingersollrand.com) office.

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What Facilities Managers Need to Know About Fire and Smoke Damper Inspections in Healthcare Facilities

By Alexandra Witkowski

Although fire and smoke dampers are hidden from view, where required, they are integral fire and life safety components in facilities. Facilities managers are in charge of a multitude of building features. One is making sure fire and smoke dampers are tested at the right intervals, meet the code requirements, and have the records to prove it. Knowing the purpose of these components - testing intervals, code requirements, how they are tested, and the best way to record testing results - ensures that future testing is completed in less time and that the facility remains safe between testing periods.

Function

The purpose of smoke dampers is to restrict the flow of smoke in air ducts in the event of a fire. Fire dampers are required anywhere there is a penetration in a firewall or barrier. In many instances, combination fire and smoke dampers are installed in these areas, and together, they retard fire and smoke from traveling through a facility's ductwork. Fire dampers operate when a bi-metallic link heats up to the point of separation, releasing a gravity drop or spring-loaded damper blades. Smoke dampers are motorized and are usually triggered by a fire alarm or detector.

Keeping a Facility Code Compliant

The Joint Commission reviews the maintenance procedures among many other items for healthcare facilities and it is imperative to stay in compliance. For fire and smoke dampers, the Joint Commission relies on NFPA standards for the requirements. NFPA 80 the Standard for Fire Doors and Other Opening Protectives identifies the testing requirements for Fire Dampers and NFPA 105 the Standard for Smoke Door Assemblies and Other Opening Protectives covers smoke dampers. Both standards require dampers to be tested one year after install, every four years thereafter, and every six years for healthcare occupancies. To remain consistent with NFPA, the Joint Commission revised EC.5.40 EP 14 in July 2007 to include the six-year testing period for healthcare facilities.

Proper Damper Testing and Recording Tips

As a facilities manager for a healthcare facility, it is very important to keep careful track of any HVAC, mechanical, wall, or partition changes in your facility. Although this may seem like a simple problem to solve, it can be very challenging to keep up with the inevitable changes that occur between the six-year testing periods. The best advice is to ask the damper



testing firm or inspector to mark the locations of the dampers they find on the building's architectural and mechanical plans. The damper's locations should be permanently labeled and numbered so the corresponding number is indicated on the plans. Keeping a detailed map of the damper's locations should result in shorter testing time in the future. Additionally, it will also help to identify any changes that may occur between testing cycles.

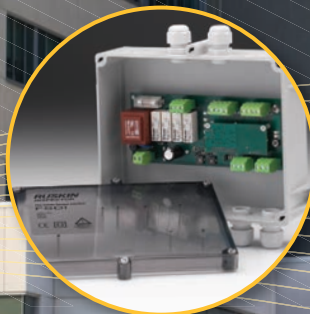
When changes occur in a facility, it makes it difficult to know the exact location of all the dampers. In these cases, a survey must be completed at any site that should have a damper in the field. If there is no access panel, a small hole can be made and a mini camera can verify if there is a damper in the area. Once a damper has been found, an access panel must be installed to test the component. Dampers must be tested under the conditions appropriate for their static or dynamic rating. The testing firm will confirm the track area is free from dirt and debris so the damper is not impeded during operations. Additionally, tests should include before and after pictures that show the dampers opened and closed to demonstrate the test was performed.

Finally, the reports should include a detailed map of the component's locations, individual reports for each damper, the pictures of each damper tested, and a list of deficiencies. It is also a good idea to have all the information available electronically so that it is easy to reference in six years. Do this and your Joint Commission inspection will be a breeze. 🔥

Alexandra Witkowski is the Communications Manager for Kinetix Fire & Life Safety Experts. For more information visit www.kinetixfire.com or e-mail questions to info@kinetixfire.com.

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FCIA Educates FM Approvals' Firestop Contractor Auditors

By Aedan Gleeson & Don Murphy

This *Life Safety Digest* issue is the annual healthcare issue. Healthcare occupancies are one of the most highly regulated occupancies. The Joint Commission, Center for Medicare and Medicaid Services, departments of public health, fire marshals, building officials, insurance agencies all may have jurisdiction over healthcare structures.

Healthcare organizations are accredited by several organizations depending on where they are located. In the US and other international locations, the Joint Commission International (JCI) accredits healthcare organizations. In Canada, "Accreditation Canada" (the *Canadian Council on Health Services*) provides accreditation services. In the UK, 'QHA Trent Accreditation', and in the Far East the JCI and former Trent Accreditation Scheme is used. The Australian Council for Healthcare Standards International and Accreditation France are also accrediting organizations. In The Middle East, the Joint Commission and Accreditation Canada have several healthcare organizations under their umbrella.

To become accredited, healthcare organizations must produce management system-based documents from which audits are performed by surveyors from the accrediting organization. The survey or audit process is an ongoing effort because healthcare occupancies undergo constant change with respect to both the physical plants and healthcare delivery services.

As a reward, accredited organizations receive reimbursement from Medicare and Medicaid for services rendered to patients in the US. Similar government reimbursement is tied to accreditation in other countries as well. Loss of accreditation can mean loss of reimbursement for services already delivered.

FCIA's Steering Committee looked at several accreditation models for Specialty Firestop Contractors to help quantitatively qualify themselves to perform this important firestop installation work in all occupancies and especially healthcare. The FCIA Accreditation Committee worked for a year with FM Approvals in 1999 to build what we now know is FM 4991, Standard for the Approval of Firestop Contractors. In an effort to continually improve the program, the FCIA Accreditation Committee offered, and FM Approvals accepted, a "Firestop Contractor Auditor Lesson in Firestopping."

On July 10, there were 30+ FM auditors listening intently to FM's Jeff Gould, FCIA Accreditation Committee members Don Murphy and chair Aedan Gleeson, plus FM 4991 DRI Gus Mancini about how to tell good from bad firestopping. It seemed the perfect storm in the sense that FM Approvals was building a new office building in its Norwood, MA complex at the

time and the group was able to do real "show and tell."

All of the FM 4991 auditors had an opportunity to visit the site and observe the installation of firestopping real time, by real firestop/containment workers. At the project site, one auditor asked that a destructive test of an installed firestop system take place as the rest of the FM 4991 auditors looked on. Through this demonstration, they learned how to evaluate if the curtainwall firestop system was installed properly or not....to the UL Listed Firestop System design provided by the installing contractor.

FM auditors and FCIA's Accreditation Committee representatives also had the opportunity to visit "The Wall." FM has a fire-rated wall in its fire protection display area with a large number of listed FM-approved firestop systems tested to FM 4990 - Standard for Testing Firestop Materials. "The Wall" firestopping was installed by an FM 4991 approved firestop contractor as was the FM facility's firestopping. FM 4991 contractors provided a perfect combination of quality materials and accurate installation for fire and life safety.

The rest of the morning was spent in the FM Approvals conference – classroom. The auditors were a very attentive audience, with plenty of good questions and examples of audits recently done. Even a few upper FM management representatives joined the session for periods of time.

The general consensus was that everyone learned a lot and has a better understanding of firestop systems as a very important part of property protection and life safety. Thanks to FCIA member involvement and instruction, the auditors gave the education program a 10 out of 10. For FCIA, it meant building on the proper Design, Installation Inspection and Maintenance of Firestopping for better auditors checking firestop contractors' management system processes. The end result we are looking for is better in place reliability of installed firestop products that become systems when installed properly. 🔥

Aedan Gleeson, FCIA accreditation chair and 1st FCIA president, of Gleeson Powers, Inc., is an FM 4991 Approved Firestop Contractor. Gleeson Powers installed the firestopping at the project and built "The Wall" at FM's fire protection display area.

Don Murphy, FCIA past president and current FCIA treasurer, worked with the Accreditation Committee travelling to Boston during initial discussions with FM in 1999, and again in July for this education session.

Thanks, FCIA leaders, for volunteering to help build reliability of installed firestopping through education of auditors, contractors, and others. Aedan can be reached at aedan@gleesonpowers.com and Don, don@ppmifirestop.com.



Product News

New Canada Fyre Wrap - FyreWrap Elite 1.5 Duct Insulation complies with NFPA 96 and the National Building Code of Canada. The two-layer Elite 1.5 system meets CAN/ULC-S144, a new Canadian test standard for fire-rated kitchen exhaust grease duct systems and the existing ULC Grease Duct Fire Test protocol. Elite 1.5 is also listed for fire protection of metallic HVAC ducts.

The FyreWrap Elite 1.5 Duct Insulation is a nominal 1-1/2-inch, 6pcf product, yielding a thinner, lighter duct wrap product. These features offer contractors easy installation and an effective solution for job site conditions with limited space. www.unifrax.com

Roxul Expands - Rockwool® International announced plans to expand its North American operations and build its first US-based manufacturing facility. The new plant will be constructed in Marshall County, Mississippi.

This location will help Roxul maintain its strong growth in key insulation markets such as residential, commercial building, flat roof and industrial applications. Current Roxul factories located in Milton, Ontario and Grand Forks, British Columbia will remain fully operational. Construction of the 600,000-square-foot facility is expected to begin later this year with production to begin in 2014. The facility will employ approximately 150 people.

Fire Door Fire Caulk - Fire Door Solutions introduces two new products, Fire Door Caulk and Fire Door Thru-Bolt. The Fire Door Caulk was tested for wooden solid core 90-minute fire-rated doors to the following criteria, NFPA 252, UL 10C, UL 10B and CAN/ULC S104.

The **Fire Door Thru-Bolt** is used for holes up to 1/2 inch in steel hollow fire rated doors. The Fire Door Thru-Bolt is available in 1/4 inch and 1/2 inch widths for both 1-3/4 inch and 2-inch fire-rated doors. The Fire Door Thru-Bolt meets the NFPA 80 5.2.15.4 requirements to protect the facility's UL Label. www.firedoorsolutions.com.

Barrier Management Program - The eBMP™ System is the only fully automated electronic barrier management program designed to ensure fire barrier compliance and control costs. The web-based system utilizes a bar coding navigation system to manage the process of documenting the locations of all fire barrier penetrations, firestops, fire doors, dampers, and

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NEW Firestop Block - When it comes to firestopping through penetrations in large openings, the new Hilti Firestop Block CFS-BL is the pre-formed solution. The innovative CFS-BL "Grid-Tech" component allows for larger openings, greater annular space and improved performance under fire conditions.

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Specified Technologies Photo.

But I Have an Existing Building

By William E. Koffel, P.E., FSFPE

It is well known that the *Life Safety Code*®, NFPA 101®, has separate chapters for new and existing buildings for most occupancies. As such, some users of the *Code* refer to the appropriate chapter for existing buildings to determine if an existing level of protection may be decreased. When this is done, one is likely to reach an incorrect conclusion as to what is required by the *Code*. Let's look at three different scenarios.

An existing hospital has a floor on which there are no patient sleeping rooms. The floor has an occupant load in excess of 50 people and is currently subdivided into smoke compartments not exceeding 22,500 square feet. Must the smoke barrier be maintained?

In most instances, it must be maintained. Yes, the requirement for smoke barriers in existing buildings only applies to floors with sleeping rooms for more than 30 patients (19.3.7.1)¹. However, smoke barriers are required in new hospitals on any floor where patients sleep or receive treatment and on any floor with an occupant load of 50 or more. As such, unless the floor is separated from the health care occupancy and does not require a smoke barrier as indicated in Paragraph 18.3.7.2, the smoke barrier must be maintained to provide the same level of protection as provided by the original construction. In other words, if the smoke barrier has a one-hour fire-resistance rating, even the fire-resistance rating must be maintained even though smoke barriers in existing buildings need only have a ½-hour fire-resistance rating.

An existing hospital has a fully-ducted HVAC system and the duct penetrations of the smoke barriers are protected with smoke dampers. Since the original construction, automatic sprinkler protection has been provided throughout the building using fast response sprinklers wherever appropriate. May the smoke dampers be removed?



Smoke barriers protect patients from fire and resist smoke. FCIA Photo.

This scenario is slightly more challenging. If the *Life Safety Code* is applicable, the smoke dampers are not required (18.3.7.3). However, if the building was also required to be constructed to comply with the *International Building Code*, 2012 Edition, the smoke dampers are required by the IBC. As such, even though the smoke dampers are not required for new hospitals per the *Life Safety Code*, the level of protection provided during construction to meet the IBC must be maintained (IBC 3404.1).

I have an area that is currently protected as a hazardous area as required by Chapter 19. The use of the space is such that it is no longer a hazardous area. Do I need to maintain the existing level of protection?

Assuming that the use of the space is not a hazardous area as defined in Chapter 18 of *NFPA 101*, the protection need not be retained. However, it must be recognized that if a subsequent change is made in the use of the space such that it would be considered a hazardous area per Chapter 18, the protection of the space would now need

to meet the Chapter 18 requirements. However, if the space had continued to be identified as an area protected as a hazardous area, a subsequent change to use the space in a manner that again requires protection as a hazardous area might not require additional protection, since it was already identified and protected as a hazardous area. Therefore, the protection as a hazardous area need not be maintained, but failure to do so could result in more restrictive requirements in the future if the use of the space changes again.



Fire Barrier under construction. FCIA Photo.

Unfortunately, many times the *Code* is not applied as indicated in the above three scenarios and existing levels of protection are reduced to that which is required for existing buildings. In the second scenario, one of several references within the I-code family of codes was provided

which clearly states that existing levels of protection must be maintained to the extent required by the IBC. *NFPA 101* has similar language which reads as follows:

4.6.7.4* Existing life safety features that exceed the requirements for new buildings shall be permitted to be decreased to those required for new buildings.

4.6.7.5* Existing life safety features that do not meet the requirements for new buildings, but that exceed the requirements for existing buildings, shall not be further diminished.

In other words, the requirements for existing conditions apply to that which exists at the effective date of the adopted code and should not be used as a basis to reduce existing levels of fire protection or life safety in a building. The level of protection provided in the building as it was constructed shall be maintained, unless it exceeds that which is required for new.

(Endnotes)

- 1 The references provided in the article are from the 2012 Edition of *NFPA 101*®, unless otherwise noted. However, similar requirements can be found in the 2000 Edition as well, unless otherwise noted.

Bill Koffel is President of Koffel Associates, a fire protection and life safety engineering design and consulting firm, recognized as an expert in the fire protection and life safety aspects of codes and standards. The firm provides consulting; engineering design & construction administration; codes & standards development; seminar development & training; product testing & evaluation / representation; and litigation support to public and private clients worldwide. Bill remains active in the development process of the industry's governing codes, standards and design guidelines including International Code Council (ICC), NFPA, Society of Fire Protection Engineers (SFPE) and Underwriters Laboratory (UL). As former code official with the Maryland State Fire Marshal's Office, he was conducted licensure, certification, and accreditation surveys of various health care facilities. Bill serves on numerous NFPA Technical Committees including the Life Safety Technical Committee on Health Care Occupancies and serving as the Chair of the Life Safety Technical Correlating Committee. Additional information can be found at www.koffel.com.

THE ADVENTURES OF DR. LUMINOUS

IN THIS ISSUE, WHAT STARTS OUT AS A TYPICAL WORK DAY QUICKLY BECOMES TERRIFYING WHEN AN EARTHQUAKE STRIKES SUDDENLY!

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I CAN'T SEE ANYTHING! HELP!

AHHHHH!

HEY! THAT'S MY FOOT!

WHAT'S HAPPENING!?

HEY! WATCH OUT!

CALL SOMEONE!

I CAN'T FIND MY PHONE!

GET ME OUTTA HERE!!

WHERE IS THE STAIRWELL?



WHEN SUDDENLY, FROM OUT OF NOWHERE, COMES A SIGN OF HOPE! & JUST ON THE OTHER SIDE OF THAT SIGN WE FIND...

DR. LUMINOUS!



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12-06378

Life Safety Digest - Special Code Report - ASHE - ICC Ad Hoc Committee on Health Care

At the Code Hearings in Dallas, The International Code Council (ICC) considered several code changes proposed by the ICC Ad Hoc Committee on Health Care. ASHE and the ICC members joined together “in an effort to reduce complexity and duplication and improve safety” in 2011 to create the Ad Hoc Committee. In 2011 and early 2012, the committee met to review current codes that affect health care facilities and collaborate on code change proposals.

At the ASHE Annual Conference in San Antonio, TX in mid-July, ASHE’s director of codes and standards Chad Beebe presented results of the efforts of the Ad Hoc Committee’s code proposals. “The ICC Ad Hoc Committee on Health Care’s success rate was about 65%...but we should have gotten 100%,” stated Mr. Beebe. In code development, that 65% success rate is amazing. It’s a big compliment to both ASHE and ICC members who worked together to research and develop code proposals to present to the committees to get that kind of “batting average.”

Mr. Beebe also presented the scenario that the ASHE member must go through when constructing a new health care facility:

1. Build the structure to requirements in NFPA 101-2000 to comply with the Center for Medicaid and Medicare Services (CMS).
2. Open the building, then rebuild to the ICC Building and Fire Codes.

According to ASHE, this results in resources spent to resolve conflicts between codes. It was clear that ASHE members wanted to reallocate the financial and management resources to patient care.

Mr. Beebe mentioned that ASHE members should reach out to local building officials in their communities who participate in the code development process. Their objective should be to educate them about how health care works, how professional and regulated the health care facility manager’s processes are and the safe environment that these buildings provide so they can make an educated decision when voting on code proposals.

In 1945 the Hill Burton Act created CMS. CMS reimburses USA health care organizations who meet accreditation requirements set forth in CMS requirements. The Joint Commission audits the health care organizations’ processes that produce a safe environment of care for all.

At the time CMS was formed, there was no national code. The US had three codes in existence

at the time. The Building Officials and Code Administrators International’s BOCA National Building Code, International Conference of Building Official’s Uniform Building Code and the Southern Building Code Congress International’s Standard Building Code covered parts of the US, but not all. NFPA 101 was the only code that covered the complete country. Therefore, CMS adopted use of this NFPA 101 document for a safe environment of care nationally.

Fast forward to 2000 and the three legacy codes are no longer. They merged into one organization, the International Code Council, and one family of documents, the International Building Code and other codes.

With this initiative at ICC, ASHE is trying to bring the code requirements closer together eliminating the need to resolve code variations. It also seems ASHE is requesting that maybe CMS look at the ICC Codes for health care occupancies and or update to a newer version of NFPA 101. It has been stated that the savings across the universe of hospital facilities that currently must comply with both NFPA 101 Life Safety Code and International Fire/International Building Code requirements would exceed \$6 billion. This is a huge money-saving opportunity for the health care industry, for patients, hospitals and for the federal government (CMS), which pays for many services at these hospitals.

Mr. Beebe reported that ASHE is likely to submit to ICC public comments on major issues attempting to overturn the committee decisions made in May at ICC. These issues include, but are not limited to, FS 42, FS 65, and FS 114.

FS 42 – Drop Ceilings as a substitute for Smoke Partitions - This proposal would have allowed “lay in ceilings,” if designed to limit smoke, to eliminate smoke partitions extended above drop ceilings. ASHE is having some fire modeling data produced to illustrate the point. The committee disapproved the proposal.

FS 65 – Eliminate elevator lobbies - The ASHE/ICC Ad Hoc Committee proposed to eliminate elevator lobbies in I-2 Occupancies, which was disapproved. Substantiation by ASHE/ICC AdHoc Committee on Healthcare included sprinkler performance in buildings. Comments included that elevator lobbies limit patient movement on gurneys, affects patient evacuation and that the smoke compartments affect staff operations. Opponents pointed to the reliance on sprinkler performance for justification being unreasonable.

FS 114 – Eliminate Smoke Dampers in Smoke Barriers - I-1 Occupancies – The purpose of this proposal was to bring the NFPA 101 and ICC Code

Requirements together for these assemblies. It seems that the NFPA Code does not require smoke dampers in I-1 occupancies. There was equal support from both sides on this issue. This was disapproved by the committee.

ASHE was not successful with increasing the size of the smoke compartment from 26,000 square feet to 40,000 square feet. Mr. Beebe also reported at ASHE's Annual Conference that they are working with the Building Hardware Manufacturers Association on a proposal to simplify access control.

Other proposals that passed include splitting occupancy group I-2 into Condition 1 (Hospitals) and Condition 2 (Nursing Homes and Foster Care). These occupancies have differing need, which should be addressed separately. ASHE also added the term "Defend In Place" to the code "laying groundwork for more code proposals," according to ASHE's Beebe.

According to Mr. Beebe, conflicts between codes tax health care facilities' human and financial resources. As with resolution of any construction and maintenance issue construction professionals involved in the process have differing perspectives. Change is occurring and things are getting done. Further resolution to either change or remain the same means perspective adjustments from all involved in the process.

Mr. Beebe stated that benefits of this ASHE ICC effort include safe facilities; broad adoption of codes; and clarification for facilities and owners, managers, and design professionals through clear, viable code language.

It is a tribute to both ASHE and ICC's memberships that a very professional discussion is taking place over a period of time. ICC's Final Action Code Development Hearings take place in Portland, Ore., from Oct. 24-28.

ASHE members can get involved in the ICC process. Involvement from ASHE members is critical to the adoption of scientifically based codes, which can save the health care industry—and your health care facility—a tremendous amount of money while providing appropriate levels of safety.

ASHE members, to get involved in the process or learn more about it, contact Chad Beebe at cbeebe.aha@gmail.com. 🔥

Sources:

ASHE Annual Conference 2012, July 2012.

ASHE Newsletter, July 2012

ICCSAFE.org

ICC Newsletters



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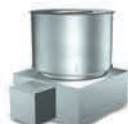
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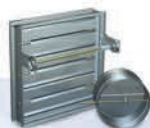
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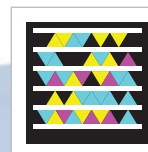
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Clarifications and Expectations Managing Barrier Integrity

With The Joint Commission's Director of Engineering, George Mills

The Joint Commission has identified the need to increase the field's awareness of the Life Safety Code® (LSC). To address this need, Environment of Care® News publishes the column **Clarifications and Expectations**, authored by George Mills, MBA, FASHE, CEM, CHFM, CHSP, director, Department of Engineering, The Joint Commission. This column clarifies standards expectations and provides strategies for challenging compliance issues, primarily in life safety and the environment of care. You may wish to share the ideas and strategies in this column with your organization's leadership.*

Fortunately for the health care field, The Joint Commission's Statement of Conditions™ (SOC) has provided a process since 1995 for organizations to manage significant building repair issues that require capital dollars. Although Joint Commission surveyors have found fewer major building issues over the past several years, they have discovered more issues related to the ongoing maintenance of buildings. Last month's column (see the June 2012 EC News, pages 6-7 and 11) offered a methodology to inspect and maintain doors in order to ensure that they properly close and latch. This month's column focuses on the role of fire and smoke barriers and suggests a method for managing access points.

"Defend in place" and compartmentalization

Health care fire response plans generally incorporate a "defend in place" strategy to ensure that patients who are incapable of self-preservation can depend on the building—and the staff—to protect them until their safety is assured. The defend-in-place strategy requires compartmentalization; that is, while one compartment contains the fire, the other compartments provide a safe refuge for all individuals to remain safely in place. Containing the fire until either an approved sprinkler system or responders can quench it allows time for occupants to move or be moved to safety into laterally adjacent compartments.

Smoke barriers or fire-rated walls form each compartment. Smoke barriers restrict the movement of smoke while subdividing the building; fire barriers protect the occupants from products of combustion for a predetermined amount of time. For example, a two-hour fire-rated assembly is designed to contain fire to the site of origin for up to two hours. A smoke or fire barrier serves as a membrane that stretches from one outside wall to the other outside wall and from the floor to the underside of the floor above or the roof above, with all openings properly sealed.

Now that we've defined smoke and fire barriers, let's focus on how to ensure the integrity of the barrier system to either restrict smoke movement or to limit the spread of fire.

Openings in barriers

Openings in barriers must be protected. Smoke-barrier doors are required to have self-closures or automatic-closing devices but are not required to latch. A fire-barrier door is a rated assembly, has self-closures or automatic-closing devices, and is required to latch (per the "Life Safety" [LS] chapter of the *Comprehensive Accreditation Manuals* as well as the LSC). Both door types should have gaps less than or equal to 1/8 inch at meeting edges and less than or equal to 3/4 inch at undercuts (with some exceptions). (We provided suggestions for managing the scheduled maintenance of these doors in last month's *EC News*.)



Because fire compartments protect patients, they must be kept intact.

Each organization also must protect openings in barriers other than doors. The LSC has specific requirements for pass-through windows in a fire-rated barrier, including fire shutters; alternatively, shutters in pass-through windows in smoke barriers must interface with the smoke detection system.

The real culprit undermining the integrity of barriers often involves activity above the lay-in ceiling assembly. These locations "above the ceiling" contain miles of cables, pipes, conduits, and other materials. Contractors who encounter a barrier while running cables must *penetrate* the barrier, thereby breaching its integrity. If the hole created to accommodate the cables (or any other penetrating material) is not properly repaired with appropriate material, the breach in the barrier will allow smoke and products of combustion to invade the adjacent compartment. This results in diminished patient safety and compromises the defend-in-place process.

Creating penetrations in a barrier to accommodate building services is allowed as long as the organization

* Life Safety Code® is a registered trademark of the National Fire Protection Association, Quincy, MA.

repairs the barrier to restore its integrity. That said, Joint Commission surveyors found unsealed penetrations in fire barriers in about half of the surveys conducted in 2011 scored at Standard LS.02.01.10 (52%) and in smoke barriers at Standard LS.02.01.30 (45%). As it's not always clear who made a hole in a barrier, the best suggestion for managing barriers may be to limit access to these barriers.

Limiting access to barriers

Effective management of barriers may begin with limiting access to them. One way to do this would

be to put a "bounty" on those who are not authorized to have access to the barriers. How might this work? First, the Facilities Department would create a "barrier access program" that grants access privileges and a work permit to those who need to work above the ceilings and potentially create penetrations in fire and smoke barriers. Facilities Department staff would grant these workers access privileges and work permits only after training them on the barrier-repair process (referred to as "fire-stop" and "smoke-stop" repairs) or through an agreement that identifies who will repair the opening. The dated work permit would state that the person working above the ceiling has been authorized by the Facilities Department, and it would be affixed to the ladder (which is how the bounty would come into play). The barrier access program would specify the duration of the permit; for example, if permits were limited in duration to one day, Facilities Department staff could ensure that barrier repairs were reviewed once completed. Then, if any staff member saw and reported someone above the ceiling without a permit, a bounty would be paid out.

A sample scenario

Let's examine a sample scenario of how a barrier access program and the bounty concept would work. In this scenario, the Facilities Department has developed a barrier access program, and everyone in the organization has been instructed that any person on a ladder working above the ceiling must have a barrier access permit affixed to the ladder. They have

also been trained to report unauthorized workers to Security.

A nurse walking to the nurse's station notices a person on a ladder working above the ceiling without a barrier access permit. As instructed, the nurse says nothing and continues on his way. When the nurse reaches the nurse's station, he calls Security. About 15 minutes later, Security arrives on the unit, ostensibly performing daily rounds but actually responding to the nurse's information. Security approaches the person on the unauthorized ladder and asks him to climb

Related Requirements

Standard LS.02.01.10

Building and fire protection features are designed and maintained to minimize the effects of fire, smoke, and heat.

Rationale for LS.02.01.10

A building should be designed, constructed, and maintained in order to minimize danger from the effects of fire, including smoke, heat, and toxic gases. The structural characteristics of the building, as well as its age, determine the types of fire protection features that are needed. The features covered in this standard include the structure, automatic sprinkler systems, building separations, and doors.

Note: When remodeling or designing a new building, the hospital should also satisfy any requirements of other codes and standards (local, state, or federal) that may be more stringent than the Life Safety Code. Also, the Life Safety Code contains special considerations for minor and major renovations.

Related Element of Performance for LS.02.01.10

9. The space around pipes, conduits, bus ducts, cables, wires, air ducts, or pneumatic tubes that penetrate fire-rated walls and floors is protected with an approved fire-rated material.

Note: Polyurethane expanding foam is not an accepted fire-rated material for this purpose. (For full text and any exceptions, refer to NFPA 101-2000, 8.2.3.2.4.2)

Standard LS.02.01.30

The hospital provides and maintains building features to protect individuals from the hazards of fire and smoke.

Rationale for LS.02.01.30

Fire and smoke are special concerns in health care organizations because of the inability of some patients to evacuate without assistance from staff. If not properly protected, the building can put patients at risk because smoke and fire can travel through openings in a building. To facilitate safe evacuation, the effects of fire and smoke can be contained when sections of a building are separated into multiple compartments. In addition, interior finishes need to be controlled to minimize smoke and toxic gases. Openings are necessary and include such features as heating, ventilating, and air conditioning (HVAC) systems, elevator shafts, and trash and laundry chutes. Hospitals should design and maintain these openings to contain fire to a compartment or floor.

Related Element of Performance for LS.02.01.30

18. Smoke barriers extend from the floor slab to the floor or roof slab above, through any concealed spaces (such as those above suspended ceilings and interstitial spaces), and extend continuously from exterior wall to exterior wall. All penetrations are properly sealed. (For full text and any exceptions, refer to NFPA 101-2000, 18/19.3.7.3)

down. Security finds out that the person is a contractor running computer cables and asks him if he is aware of the barrier access program. The contractor responds that he has not heard of the program, so Security tells him he must leave the premises for the day, informing him that each morning, from 7:00 A.M. to 8:00 A.M., the Facilities Department issues barrier access permits to authorized contractors.

The outcomes for the players in this scenario?

- *The nurse:* As a bounty for reporting the unauthorized ladder, he receives a gift card to the cafeteria.
- *The contractor:* The next day he is in the Facilities Department office, learning about the barrier access program and negotiating with Facilities Department staff to have the penetrations properly repaired by trained Facilities Department staff.
- *The Facilities Department:* With the barrier access program in place, the department is effectively managing access to the barriers.

Implementation

An organization planning a barrier access program might consider implementing the following ideas:

- Reconciling life safety drawings with actual barriers
- Requiring a label or stamp that identifies the type of barrier to be placed at access points
- Requiring digital pictures of the correctly repaired opening if the contractor is going to make repairs
- Conducting random barrier inspections to ensure that they are being maintained
- Requiring that a percentage of repairs be field tested to ensure that they meet the design standards for the repair of an opening
- Creating charts that identify proper fire- or smoke-stop techniques associated with the openings
- Using one manufacturer of fire-stop products (to ensure consistent application)

What about existing penetrations? It is up to the organization to assess the condition of the barriers and create a management plan to identify unsealed penetrations and repair barriers. Organizations should make it a habit to annually ask, “Are the spaces around pipes, conduits, bus ducts, cables, wires, air ducts, or

pneumatic tubes that penetrate fire-rated walls and floors protected with an approved fire-rated material?” (See Standards LS.02.01.10, EP 9, and LS.02.01.30, EP 18, in the box on page 20.)

The organization’s annual assessment of existing penetrations and its ongoing management of present barrier penetrations should include scrutinizing for the use of improper products to fill penetrations—for example, polyurethane expanding foam. This product is often used as insulation and to fill cavities between a window and the wall framing it. The material has a UL label that attests to its insulating properties. As it expands, the foam hardens into a beige material. When used as designed—only for insulation—it is encapsulated behind the drywall. However, some organizations have used this expanding foam to fill penetrations. But because it burns rapidly and emits toxic smoke, it is never appropriate for either smoke- or fire-barrier repairs.

Unsealed penetrations can be placed on the SOC as a Plan for Improvement (PFI) item. The Joint Commission allows the organization to group penetrations as a single PFI, provided that the grouping is associated with a specific list or drawing that identifies specific numbers and locations. For example, a PFI could make this statement: “37 penetrations on 3West as identified on Life Safety Drawing 3W dated April 19, 2012.” Remember, the PFI cannot be closed until all 37 penetrations are corrected. Also, once a PFI is created, there must be an assessment of which interim life safety measures (ILSM) should be initiated, as defined in the organization’s ILSM policy. 🔥

Maintaining Fire and Smoke Barriers is important for fire and life safety in all occupancies, not just healthcare. Life Safety Digest thanks the Joint Commission for allowing us to share this important educational article.

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Industry News

NASFM Announces New Crowd Manager Training - Fatal disasters such as the Indiana State Fair 2011 stage collapse and the 2003 The Station nightclub fire clearly illustrate the need for “trained crowd managers” to prevent repeat catastrophes. A new training program endorsed by and available through the International Code Council at www.iccsafe.org/crowdmanager and the National Association of State Fire Marshals (NASFM) at www.firemarshals.org is aimed at making public gatherings safer by teaching event staff how to be better crowd managers.

Building and fire officials have the responsibility to require trained crowd managers in compliance with the *International Fire Code*, *NFPA-101 the Life Safety Code*, the *NFPA-1 Fire Code* and many local ordinances that address safety in public assembly occupancies, but have few choices about what training should be provided. These codes require trained crowd managers in public assemblies such as theaters, ballrooms, clubs and stadiums. The threshold for the requirement varies from 250 to 1,000 occupants. Events at healthcare facilities may easily reach 250. The program was unveiled in July at the NASFM annual conference.

New Gypsum Manual - The 20th edition of the Gypsum Association’s flagship publication depicts over 600 systems that may be used for fire-rated walls and partitions, floor/ceiling systems, roof/ceiling systems, and to protect columns, beams, and girders. There’s a free download available at <http://www.gypsum.org/>.

FCIA at UL’s Annual Meeting – Many industries attended Underwriters Laboratories’ Annual Meeting in Wheeling, IL. This meeting is a gathering of high-level UL and industry leaders for a three-day program. FCIA’s Bill McHugh attended the business meetings and UL’s Fire Council Meetings. Leaders from fire protection industries attended two days of sessions on new and existing technology improvements. We met some old friends and made new relationships along the way with contacts in the US, Canada, India, Europe and China.

ASTM Meetings – FCIA’s standards chair Eric Keeton and vice chair Tracy Smith, plus manufacturers, consultants and others joined to review proposals to change ASTM E 2174 and ASTM E 2393 reflecting better performance of FM 4991 Approved and/or UL Qualified specialty firestop contractors. The task group also conducted a webinar July 19. As a result, a ballot is being

prepared that provides an incentive for building owners and managers to specify and use FM 4991 Approved and/or UL Qualified Firestop Contractors. Watch www.FCIA.org for more info as it develops.



Intertek & DHI’s Fire Door Inspector Certification - Becoming a Certified Fire & Egress Door Inspector is based on successfully completing The Door and Hardware Institute’s (DHI) Fire and Egress Door Assembly Inspection class and the pre-requisite classes. After the completion of these requirements, DHI will notify Intertek and the individual will be eligible to register and become an Intertek Certified Fire & Egress Door Inspector. <http://www.intertek.com/building/door-inspector-program/>

CCHRB Education Session – Chicago’s Council on High Rise Buildings (CCHRB) is known worldwide for its research and best practices in high-rise construction. The CCHRB held a session on the stack effect in high-rise buildings in June. During the session, the word “compartmentation” came up several times as a way to control air movement in buildings mitigating the stack effect that occurs in these occupancies. FCIA was mentioned from the introductory remarks of Kim Clawson, chair of the meeting. “FCIA’s executive director told me that the 2005 CCHRB Seminar (with Guylene Proulx and Dick Bukowski speaking) provided motivation for the association’s programs moving forward.”

Other key points included the relationship between pressures and the need for building features such as compartmentation, to control stack effect, the need for revolving doors in high-rise occupancies, and how air movement affects buildings to control stack effect. Nate Wittasek mentioned, “should we rely on one system for safety in buildings? if an 80-story building, and the sprinkler doesn’t work, what happens?” We appreciate high level groups being proactive such as CCHRB. www.cchrb.com

IAS Board Member Honored - Majed Dabdoub was recently recognized for eight years of outstanding service on the International Accreditation Service (IAS) Board of Directors. During his service, IAS developed a number of new accreditation programs and saw consistent growth

in customers, even during the economic downturn. Today, IAS accredits clients in over 30 countries around the world. ICC and IAS membership and clients are extremely grateful for the leadership and hard work of Majed while serving on the IAS Board of Directors. Majed was honored before his local chapter, the Southwestern Ohio Building Officials Association and his state chapter, the Ohio Building Officials Association at a special joint meeting in Cincinnati, Ohio. He is the sr. plans examiner for the City of Cincinnati, Ohio. Check IAS out at www.iasonline.org.

UL FSA Newsletter - UL publishes the Fire & Security Authority (FSA) newsletter quarterly. To sign up, visit UL's website at www.ul.com. It's FREE!

UL Firestop Exams – FCIA spends time at UL's various locations delivering the FCIA Education Session to those seeking to pass the UL Firestop Exam and become UL Qualified Firestop Contractors. We've flown to Toronto, Ontario, Canada; Melville, New York; and Northbrook, Illinois. The next UL Firestop Exam takes place in November at FCIA's Firestop Industry Conference & Trade Show. FCIA will offer a "FCIA Management System Education" Webinar in Late August in addition to the FCIA Firestop Education Session before the UL Firestop Exam at November's Conference. Free to FCIA Members, of course. Watch www.fcia.org for more info.

NIBS Annual Report - The 2011 *National Institute of Building Sciences Annual Report to the President of the United States* is now available online. The report, which goes to the US President, Congress and the institute membership worldwide, highlights the institute's activities for the year. The 2011 edition, one of the largest to date, covers 35 different programs and projects. It exemplifies the enormous number of projects that the institute is involved in annually. In 2011, the institute addressed hazard mitigation, (Building Resilience) building performance and information technology related issues. Steve Skalko, of the Portland Cement Association, presented a great program on "Building Resilience" at FCIA's Education and Committee Action Meetings in Las Vegas. Check it out at <http://www.nibs.org/client/assets/files/nibs/2011AnnualReport.pdf>

FCIA Firestop Industry Conference & Trade Show – Wow, what a FCIA Education and Committee Action Conference we had in April! It's hard to believe it, but November will come very quickly. Save the date for the 2012 FCIA Firestop Industry Conference & Trade Show in Orlando

Nov. 6-9. FCIA's Program Committee, chaired by Scott Rankin promises great speakers from several leading entities. Watch your inbox for updates on speakers from the Joint Commission and more. The FCIA Ray Usher Golf Tourney that benefits the Bob LeClair Scholarship is always great fun. Education, relationships, fun, networking...are all part of the FCIA experience. The place, Disney's Grand Floridian Resort, is a great place to celebrate for just \$189/night. This is a great rate for a great property. Don't miss it. <http://www.fcia.org>.

New DHI CE600 2012: Fire and Egress Door Assembly Inspections Course for Continuing Education - This new Door and Hardware Institute online course is designed to keep inspectors of swinging fire and egress door assemblies abreast of changes in the codes and standards that affect the annual inspection of these types of door assemblies. If you are enrolled in the Continuing Education Program you can earn 50 technical points upon completion of this course. **Special introductory pricing in effect! Visit dhi.org for more info.** 🔥

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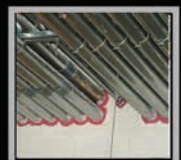
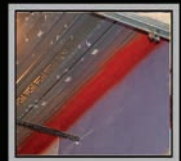
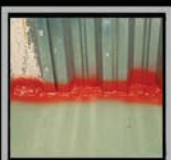
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(Before)



(After)



Code Corner

The International Code Council (ICC) Code Development process for the 2015 International Building Code is well underway. ICC held its Committee Action Hearings in Dallas in early May. The formal schedule is that Code Development proposals submitted in January, 2012 were heard in May with results published in June. Public Comments were due Aug. 3, with another code development monograph due out in September for the late October ICC Final Action Hearings.

The Committee Action Hearing sessions included hearings about the International Building, Energy and other codes. Committees of about 15 people heard over 2,000 pages of code proposals over the eight-day period.

FCIA at ICC Hearings - FCIA had the honor of being appointed by the ICC and Board of Directors to participate as a member of the International Building Code Fire Safety Committee. It was a lot of work but well worth the time to "give back" and volunteer at this important code development process.

FCIA was interested in several proposals that were submitted from many directions during this code cycle in from the Fire Safety (FS) and General (G) Committees. Below are highlights for the

effective compartmentation industries, fire and life safety in buildings:

Proposal **FS 25**, proposed by the International Firestop Council, provided new language for a new ASTM Leapfrog Standard. It was disapproved because the standard was not yet ready, it had an incorrect reference section and it is not required for sprinklered buildings.

FS 72 & FS 78 was a proposal by a healthcare facility engineer to require FM 4991 Approved or UL Qualified Firestop Contractors for work in I-2 healthcare facilities except for where work was of a minor nature. The proposal was withdrawn by the proponent.

The **FS 73** FCIA's proposal dealt with codifying firestopping Engineering Judgments and was disapproved by the committee as well.

There were several proposals that dealt with the definition of a joint. **FS 31** (International Firestop Council) and **FS 32** (Hilti) would have added a new ASTM E2837 - 11 - Standard Test Method for Determining the Fire Resistance of Continuity Head of Wall Joint Systems Installed between Rated Wall Assemblies and Nonrated Horizontal Assemblies. The new walltop joint standard proposals were both defeated 11-0. The ASTM Standard E 2837 provides an extension of a fire-rated wall to a non-rated roof deck.

Code Proposal **G14** a group included in International Firestop Council had a section 202 Definition for a Joint. This proposal stated; *Joint: The junction where adjacent assemblies intersect without applying a static load from one element to another, with or without physical contact between the assemblies, which is created due to building tolerances, or is designed to allow independent movement of the building in any plane caused by thermal, seismic, wind or any other loading.* The proposal was disapproved 11-0.

FCIA's Proposal **G15** stated the definition: **JOINT.** *The opening in or between adjacent assemblies that interrupts the continuity of a fire-rated or smoke-rated assembly and either involves the intersection of dissimilar materials or assemblies, is created due to building tolerances, or is designed to allow independent movement of the building in any plane caused by thermal, seismic, wind or any other loading.* The proposal was defeated 9-2. However, building officials from the 'hearing floor' did not voice as many concerns with the proposal as industry professionals did.

In **FS 77**, the International Firestop Council was successful with a very important proposal to provide a rated firestop system at the exterior curtainwall/vertical fire barrier intersection. This provides important continuity for fire barriers from



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“outside wall to outside wall”.

In **FS 82**, the International Firestop Council proposed that in **715.7 Dissimilar materials**. Joints installed in or between fire-resistance-rated walls or horizontal assemblies consisting of two or more assemblies of dissimilar materials shall be protected by an approved fire-resistant joint system complying with Section 715.3. This proposal was also disapproved.

In **FS 83**, the International Code Council's Code Technology Committee proposed a change to the fire-rated glazing section, which was approved. **716.2 Fire-resistance-rated glazing.** Fire-resistance-rated glazing tested as part of a fire-resistance-rated wall or floor/ceiling assembly in accordance with ASTM E 119 or UL 263 and labeled in accordance with Section 703.6 shall be permitted in fire doors and fire window assemblies where tested and installed in accordance with their listings and shall not otherwise be required to comply with this section when used as part of a wall or floor/ceiling assembly. Fire-resistance-rated glazing shall be permitted in fire door and fire window assemblies where tested and installed in accordance with their listings and when in compliance with the requirements of this section.

Another proposal on fire-rated glazing glazing, **FS 91** proposed by the Glazing Industry Code Council & Primary Fire Rated Glazing Manufacturers was approved as modified. **716.5.5.1 Glazing in doors.** Fire-protection-rated glazing in excess

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of 100 square inches (0.065 m²) is not permitted. Fire-resistance-rated glazing in excess of 100 square inches (0.065 m²) shall be permitted in fire doors, assemblies when tested as components of the doors, assemblies, and not as glass lights, and shall have a maximum transmitted temperature rise of 450° F (250° C) in accordance with Section 716.5.5. Fire doors using listed fire-resistance-rated glazing shall have a maximum transmitted temperature rise in accordance with Section 716.5.5 when tested in accordance NFPA 252, UL 10B or UL 10C.

ICC's Code Technology Committee also proposed in **FS 95** that 716.5.8.4 Fire Protection Safety glazing. Fire-protection-rated glazing installed in fire doors assemblies in areas subject to human impact in hazardous locations shall also comply with the safety glazing requirements of Chapter 24 where applicable. This brings safety and fire protection together in codes.

There were several proposals heard and disapproved by the committee from Unifrax and the International Firestop Council that attempted to add a provision that would have allowed using listed fire wrap insulations as a substitute for fire dampers, electrical circuit protection and substitute for shafts used around refuse, recycle, and laundry chutes using materials that are rated to ASTM E 2816-1, the Standard Test Methods for Fire Resistive Metallic HVAC Duct Systems.

Here's one example from **FS 102: 717.1.2 (IMC 607.1.2) Ducts that penetrate fire-resistance-rated assemblies. Ducts tested and listed in accordance with ASTM E2816 having a fire-resistance rating equal to the construction being penetrated that protect horizontal ducts penetrating fire-resistance-rated vertical assemblies or that protect vertical ducts or both are not required to have fire dampers. Add new standard to Chapter 35 as follows: ASTM E2816 Standard Test Methods for Fire Resistive Metallic HVAC Duct Systems**

In **FS 180**, Bill Koffel, of Koffel Associates, a proposal was approved by the committee. The proposal attempts to bring continuity to the thermal barrier on the exterior skin of the building. 2603.4 thermal barrier. Except as provided for in Sections 2603.4.1 and 2603.10, foam plastic shall be separated from the interior of a building by an approved thermal barrier of 1/2-inch (12.7 mm) gypsum wallboard or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275. Penetrations of the thermal barrier shall be protected to maintain the integrity of the thermal barrier. Combustible concealed spaces shall comply with Section 718.

Another proposal dealt with thermal barriers at the building perimeter and was approved as modified. In **FS 175, 1409.10.2 Thermal barriers. HPL shall be separated from the interior of a building by**

an approved thermal barrier consisting of 1/2-inch (12.7 mm) gypsum wallboard or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275. If the integrity fire test is conducted in accordance with NFPA 286, the acceptance criteria shall be as indicated in section 803.1.2 of this code. equivalent thermal barrier material that will limit the average temperature rise of the unexposed surface to not more than 250°F (121°C) after 15 minutes of fire exposure in accordance with the standard time-temperature curve of ASTM E 119 or UL 263. The thermal barrier shall be installed in such a manner that it will remain in place for not less than 15 minutes based on a test conducted in accordance with UL 1715.

In **FS 187**, a proposal to eliminate restrictions on foam plastics used at the building's exterior walls was disapproved.

ICC's Final Action Hearings take place the week of October 22-27. Watch www.ICCSAFE.org for info.

NFPA's Fire Protection Features Committee met at Indianapolis in late May. FCIA's Code Committee submitted several proposals to NFPA's Fire Protection Features Committee for consideration. The International Firestop Council did as well.

The NFPA committees are operating under a new code development process aimed at simplifying the process. The new procedures, rules, committee balance were all reviewed for the committee by Kristin Bigda, NFPA staff liaison for NFPA's Fire Protection Features Committee.

During meetings, a motion to make a change is now called "create a first revision," or "Resolve Public Input," or third, "Create a committee input."

For the Fire Protection Features Committee, it was stated that the committee was in balance. The committee consists of the following mix (27 total members):

Enforcers, 22% (only two in the room)	
Insurance 7%	Installer/Maintainer, 4%
Users, 19%	Special Experts, 22%
Labor, 0%	Research and Testing, 4%
Manufacturers, 22%	



A big success at NFPA's Fire Protection Features Committee meeting was the "Committee Input" initiated by FCIA to provide a new Annex Note referencing FM 4991 and UL Qualified Firestop Contractor Program in area right before "inspection." This reinforces the FCIA's call for better reliability of installed firestopping through qualified contractors, accredited inspection agencies and maintained by building owners and managers or their subcontractors to keep the compartmentation working as it was designed.

FCIA also added language reducing the height and size of convenience openings for stairs in buildings. It seems that last code development cycle the size and height of openings for escalators was extended to stairs as well increasing the "convenience" openings. The proposal limited the height of the convenience openings to four stories. We also added an annex note explaining what Engineering Judgments are and how they should work.

A proposal to eliminate Water Wetted glass for fire ratings passed as a first revision to the code. This was proposed by the International Firestop Council (IFC) and presented, supported by FCIA. Another proposal by IFC that FCIA presented and supported was the exceptions from T ratings for penetrations contained in the cavity of a wall or not in direct contact with combustible material.

We also had a few proposals that were not successful. FCIA had submitted a new definition for Joints to the code that was disapproved. FCIA presented and supported the IFC proposal to add quantified L-Ratings to the code that exists currently in the International Building Code, which was not approved as well.

Even with initial successes, NFPA's process is far from over. There are still letter ballots and a final hearing to go...and more work to do. Check out how and get involved at www.nfpa.org

ICC Studies New Voting for Code Development Hearings – The "Remote Participation Project Steering Committee" has been meeting to study remote participation and voting for future hearings. The goal of the group is to "increase member and stakeholder participation (remote participation) consistent with ICC's Mission. The work plan will provide for the implementation of new processes by the start of the Code Development Cycle that will lead to publication of the 2018 International Codes." Visit www.iccsafe.org for more info.



The National Fire Protection Association (NFPA) and the International Code Council (ICC) announced the formation of the Coalition for Current Safety Codes (CCSC). The coalition will advance public safety in the

built environment by advocating states and municipal jurisdictions adopt current building, fire prevention, sustainable, electrical and life safety codes. ICC and NFPA will seek broad participation in the coalition from other SDOs, the construction and insurance industries, government and the private sector to raise awareness about the importance of and steps needed to provide up-to-date buildings where people live, work, play and go to school. The two associations are coming together to co-chair the coalition because of a mutual commitment to public safety and in an effort to create even broader support for the adoption of modern codes and standards.

Codes and standards are updated on regular cycles to benefit from new science, lessons learned from disasters, and new technologies and products. Both associations are among a number of SDOs that provide support to government by engaging in public/private sector collaboration to develop codes that support health, safety and the environment. As a result, government does not take on the high cost of developing its own codes and benefits from code uniformity that enables safe and affordable construction growth. <http://www.nfpa.org/newsReleaseDetails.asp?categoryId=488&itemId=57256>



Canada Codes – The Canadian Commission on Building and Fire Codes has several committees that manage the Canadian National Building and Fire Codes. There is a "Standing Committee on Fire Protection" that meets from time to time. The next meeting is in Quebec City, Quebec, Canada Nov. 21-22. The public is welcome but there are rules to follow to attend. Attendance info is located at http://www.nationalcodes.nrc.gc.ca/eng/visitor_policy.shtml.

Abu Dhabi National Building Code – Abu Dhabi, UAE has been fast tracking the adaption of the Abu Dhabi National Building Code. The code is based on the 2009 version of the International Building Code. We understand that the Abu Dhabi Department of Municipal Affairs (DMA) may be requiring special inspections of firestopping as an amendment to the code. We sent the 2012 International Building Code language for special inspections of firestopping for DMA to use as a reference. This would be good for building reliability of installed firestopping in buildings. We met the DMA at the FCIA Educational Seminar in the UAE last year. Check out the winter edition *Life Safety Digest* for more info. 🔥

Life Safety Digest

2012 Industry Calendar

Sept. 12 to 14

CONSTRUCT & CSI Annual Convention 2012, Phoenix
csinet.org

Sept. 23 to 25

Canadian Healthcare Engineering Society
Montreal, Quebec, CAN
ches.org

Oct. 15 to 16

Society of Fire Protection Engineers Annual Meeting, Professional Development Conference, Savannah, GA
sfpe.org

Oct. 17 to 18

DHI's CoNEXTions Industry Convention
Las Vegas, NV
Dhiconextions.org

Oct. 21 to Oct. 28

ICC Annual Conference & International Code Council Group A Final Action Hearings
Portland, OR
iccsafe.org

Nov. 6 to 9

FCIA Firestop Industry Conference & Trade Show
FCIA.org

Nov. 30 to Dec. 2

Construct Canada, Toronto, Ontario, Canada
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Dec. 2 to 5

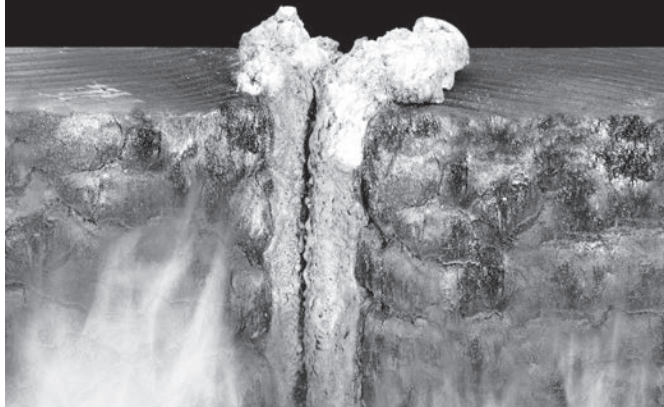
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