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The Magazine of Effective Compartmentation



Life Safety DIGEST

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Insurance Industry Should Reward Proactive Building Owners and Managers

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On the Cover: Building a fire resistance rated wall and installing the firestopping, fire doors, fire dampers and fire rated glazing, all requires understanding the 'system' for building each fire and smoke protection feature for accuracy. FCIA Photo

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Editor's Message

"When the elevator door opened...she just got blasted." That was a news report description of the tragic death of Shantal McCoy, who perished in a Chicago high-rise fire in January. At *Life Safety Digest*, we mourn her loss, but also take the opportunity to underscore the importance of our work in the effective compartmentation and firestopping industries. Ms. McCoy lived in a 21-story building equipped with fire safety features similar to those found in high-rise buildings of the vintage across the country – 20-minute fire doors in a one-hour fire-resistance-rated corridor. But, as is often the case with fires, human behavior was the difference between life and death.

That factor is particularly important when considering educational occupancies. Students – and the lifestyles they maintain – can pose unique challenges for the fire safety professional. Fire alarms are extremely effective tools for alerting residents about fires, but not if the alarms sound so frequently that residents are more likely to believe that the alarm is false than real. Fire doors are effective at preventing the spread of fire, but not if they are propped open during a fire. This issue contains features that address the unique challenges faced by the firestopping and effective compartmentation industries when working in educational occupancies. Additionally it contains articles that outline some important changes in the 2012 International Building Code. It also shows how active the effective compartmentation industry is building reliability through proper Design, Installation, Inspection and Maintenance. Enjoy and let's work to keep our students safe!

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Compartmentation Saves Lives

By Aedan Gleeson

Chicago Tribune Photo

In January, the Chicago Tribune headline read, "When the elevator door opened ... she just got blasted."

The fire started in an apartment either because of a burning candle or electrical problem. The door of the apartment on fire didn't close after the tenants escaped. Why? The CBS Chicago report said "they (tenants) propped the door open with a rug so their pets – a cat or cats - could escape when they left. As a result, the fire poured into the hallway. When the elevator door opened up, she just got blasted".

Was the door to the apartment where the fire started broken? NO! The tenants "...propped the door open with a rug..."

What about the rest of the story...

What wasn't revealed in any of the newspapers, TV stations and radio was *how the rest of the occupants of that floor survived the fire.*

The building was equipped with 20-minute fire doors in a one-hour fire-resistance-rated corridor.



Residents put wet towels at the bottom of the door to slow smoke spread. The walls resisted fire from spreading from the corridor into their apartments and saved their lives.

Chicago Tribune Photo

The major damage

was limited to the apartment of fire origin and the corridor. Apartments had minor smoke damage as a result of the fire. Articles report that residents didn't wake up in some units until they heard the sirens.

We at *Life Safety Digest* were saddened by the death of Shantal McCoy. The building's designed fire protection feature, compartmentation, had been compromised by someone simply not thinking about fire spread and left a fire door open.

If only...

- There were signs on the inside of fire-rated doors stating not to leave them open and why in case of fire
- The elevators would have returned to the ground floor, preventing Ms. McCoy from using them
- The door of the burning apartment had closed automatically when the occupants left
- The alarms went off alerting residents of danger and people didn't ignore or sleep through them
- There had been a sprinkler system in the building

and that occupants knew not to cover them because they deem them ugly

• The tenants had been educated in school about what happens when fire doors are left open.



As an association, FCIA believes in total fire protection. The detection system worked, sounding an alarm for the occupants to leave on that floor. But, was the alarm system wired to alert other floors and people in the building so they knew to flee?

Fire doors protect people and property. Foundation for Life Safety and Security Photo

The egress system allowed the apartment occupants to escape safely...and the corridor was holding smoke and heat protecting apartments until the elevator opened. Once open, the heat couldn't be stopped. The fire compartmentation kept the fire in the hallway and burning apartment, reducing spread to other apartments.

It would have been great if the elevators had returned to the ground floor and stayed inoperable. We also believe that a sprinkler system to suppress the fire

would have helped slow fire spread until firefighters extinguished the blaze. And, fire compartmentation could have kept the fire in the room of origin protecting the egress path, and preventing the blaze that hit the young lady in the elevator.



Note the smoke around the door and frame interface at the top. Foundation for Life Safety and Security Photo

All of these fire protection features need to be properly designed, installed, inspected and maintained to work properly and give the greatest chance to prevent Ms. McCoy's tragic death.

What if the door had closed as the people were exiting the burning apartment? Would the flames and hot gasses have stayed in the apartment...or would just a little smoke leakage have moved through the





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Why is this article about a high rise apartment building published in an "Educational Occupancy" issue of Life Safety Digest? Because dorms are similar to apartment buildings in many ways. Plus, colleges and universities have many independently operated off campus apartment buildings housing students, just like this building. These buildings contain young people who may or may not react to an alarm because they sleep through noise. For some reason, they sleep deeper than adults.

Regardless of building fire and smoke protection features or occupancy, various resources point out that dorm residents should think and have plans for their own safety including:

- Have an escape plan, and practice it.
- Not smoke late at night or under influence of alcohol
- Take alarms seriously
- Don't delay when alarms go off, leave your stuff, go!
- Don't overload electrical outlets
- Be careful with heating elements
- Contact emergency personnel (police, fire departments) immediately
- Don't use flame candles, use the battery type
- A clean area is a safe area
- Keep clothes, linens, solvents, towels, potholders from flammables
- Have fire resistant potholders around
- Check out http://safety.rice.edu/ college%20fire%20safety.htm for a long checklist!!

The responsibility for safety is personal. It helps to know that buildings are outfitted with Total Fire Protection when needed. Checklist extracted from Rice University website referenced above.

Life Safety Digest Article Sources

Chicago Tribune, January 8, 2012. NBC Chicago News Website City of Oak Grove, MN Website, 'When College Life Means Fire Survival'; Safety Dept. Website, Rice University door without blazing the hallway and killing the young lady? What if the sprinkler system or alarm failed because it was turned off to conduct maintenance, sabatoged, water main problem?

In that case, we hope that there is effective fireand smoke- resistance-rated compartmentation in the building that will limit fire and toxic fumes from spreading and protect people in other parts of the building until firefighters arrive.

What if the compartmentation has a breach? It depends on the size of the breach and severity. Even compromised compartmentation provides some degree of protection. That's why the detection, alarm and sprinkler systems are in the building. None of these fire protection items – sprinklers, alarms, compartmentation, occupant

education and egress systems – alone are failsafe.

As shown in this event, you cannot pass a law that mandates common sense. That's why Total Fire Protection makes sense. **6**

Aedan Gleeson is President of Gleeson Powers, Inc., Franklin MA. He can be reached at aedan@gleesonpowers.com



Damage kept in the compartment of origin by fire resistance rated wall and fire door and its glazing protecting the opening from fire spread. Fire Doors that were closed, like this, worked in Chicago. Foundation for Life Safety and Security Photo



New International Building Code mandate requires marking of fire resistance rated construction. *Dalton Maintenance Photo*



Fire resistance rated walls with firestopping installed to the tested and listed firestop system protect occupants in buildings. Dalton Maintenance Photo

Firestop Special Inspections in 2012's International Building Code

During the 2009/2010 Code development cycle, the Firestop Contractors International Association (FCIA) proposed successfully that Special Inspections for Firestopping be added to Chapter 17 of the International Building Code.

Here's what the 2012 International Code Council's International Building Code (IBC) Chapter 17 states about firestop inspections:

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.

1705.16.1 Penetration firestops. Inspections of penetration firestop systems that are tested and listed in accordance with Sections 714.3.1.2 and 714.4.1.2 shall be conducted by an approved inspection agency in accordance with **ASTM E 2174**.

1705.16.2 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 inspection agency in accordance with **ASTME 2393.**

NOTE from FCIA: For clarification, "High Rise Buildings" are structures with floors greater than 75 feet above fire department access. The Category III or IV buildings in Section 1604.5 are "special occupancies." These structures are described in the IBC 2012, table 1604.5:

Category III Buildings

Buildings and other structures that represent a substantial hazard to human life in the event of failure, include but are not limited to:

- Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300.
- Buildings and other structures containing elementary school, secondary school or day care facilities with an occupant load greater than 250.
- Buildings and other structures containing adult education facilities, such as colleges and universities, with an occupant load greater than 500.
- Group I-2 occupancies with an occupant load of 50 or more resident care recipients but not having surgery or emergency treatment facilities.
- Group I-3 occupancies.
- Any other occupancy with an occupant load greater than 5,000.
- Power-generating stations, water treatment facilities for potable water, waste water treatment facilities and other public utility facilities not included in Risk Category IV.
- Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that:



Floor through penetration firestop systems are generally easy to inspect. PPMI Firestop Photo



Multiple Conduits require careful systems selection, installation and inspection to assure proper spacing between conduits, and annular space matches firestop system listing. PPMI Firestop Photo



'Fire Barrier" and other markings help keep inspectors efficient and alert building operations staff of fire rated walls to maintain. PPMI Firestop Photo



restopping is often harder to get to than inspec PPMI Firestop Photo



When firestopping is labeled, inspection is much more efficient. PPMI Firestop Photo

Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the International Fire Code; and are sufficient to pose a threat to the public if released.

Category IV Buildings

Buildings and other structures designated as essential facilities, including but not limited to:

• Group I-2 occupancies having surgery or emergency treatment facilities.

- Fire, rescue, ambulance and police stations and emergency vehicle garages.
- Designated earthquake, hurricane or other emergency shelters.
- Designated emergency preparedness, communications and operations centers and other facilities required for emergency response.
- Power-generating stations and other public utility



facilities required as emergency backup facilities for

Risk Category IV structures

Buildings and other structures containing quantities of highly toxic materials that:

- Exceed maximum allowable quantities per control area as given in Table 307.1(2) or per outdoor control area in accordance with the International Fire Code, and are sufficient to pose a threat to the public if released.
- Aviation control towers, air traffic control centers and emergency aircraft hangars.
- Buildings and other structures having critical national defense functions.
- Water storage facilities and pump structures required to maintain water pressure for fire suppression.

The codes build fire and smoke resistance on the concept of "continuity." Fire barriers are to be minimum one-hour fire-resistance-rated and continuous from fire barrier to fire barrier and from fire-resistance-rated horizontal assembly to the next horizontal assembly... and from outside wall to outside wall. That's what generates the need for all types of fire resistance features including firestopping, fire and/or smoke dampers, swinging and rolling fire doors and hardware fire rated walls and floors.

FCIA supports special inspection for these important occupancies. FCIA also believes that the maintenance of these important fire resistance rated assemblies. To learn more about the maintenance of fire-resistance-rated assemblies, see Phillip Chandler's article in this issue.



Editor Note: Building Codes

The International Code Council is one of two building code development organizations, with the National Fire Protection Association also developing building codes. The processes are different, however. NFPA uses a model where the consensus consists of industry and governmental organizations at all parts of the process. ICC uses a process where industry and government organizations participate together during initial hearings, with equal vote. Then, ICC's Final Action Hearings allow testimony from industry...but only governmental and honorary members vote.



Cleaning the area to receive the firestop products. Hamilton-Benchmark Photo



Measuring annular space size for compliance to listed system depth. *Hamilton-Benchmark Photo*



Installing mineral wool 'packing/forming' material. Hamilton-Benchmark Photo



Measuring the depth left for firestop sealant. Hamilton-Benchmark Photo



Installed firestop sealant is 'tooled or smoothed' per manufacturers published installation instructions. *Hamilton-Benchmark Photo*



Finished installation, with piping clamps. Hamilton-Benchmark Photo

Editor Note: Installation Quality and Inspection Related

Special Inspections for Firestopping Required by IBC 2012 Code, Chapter 17 are performed using ASTM E 2174 and ASTM E 2393, "Standards for the On-Site Inspection of Installed Fire-Stops."

FCIA is pleased that the "I" (Inspection) in Design, Install, Inspect and Maintain (DIIM) has been added to the code to increase reliability of installed firestopping.

FCIA believes strongly in the DIIM strategy for firestopping. To that end, FCIA proposed this passage and testified in its support. FCIA serves as chair of the ASTM task group that made changes to the standards and balloted successfully to make them suitable for code adaption.

FCIA also was the proponent to have these inspection standards added to the code. We also proposed that on the same types of buildings, that "FM 4991 Approved or UL Qualified Firestop Contractors" be part of the code as well.

FCIA believes in the concept of special inspection. We also believe that a firestop special inspection agency is not a substitute for a knowledgeable specialty firestop contractor. There is an option in the FCIA Specification that allows either an FM 4991 Approved Specialty Firestop Contractor / UL Qualified Firestop Contractor and/or ASTM E 2174 - ASTM E 2393 Inspection on projects.

Visit FCIA.org to see the FCIA Specification that includes the DIIM of firestopping.

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Insurance Industry Should Reward Proactive Building Owners and Managers

By Brad Hopkins and Tony Fontana

How can the insurance industry reward its customers for maintaining fire-resistance-rated construction in buildings?

For years, the firestopping and life safety industries have discussed the design, installation, inspection, maintenance (DIIM) and management of fire containment. However, the only thread out of place on this magic carpet ride of effective fire-resistance-rated compartmentation – in the opinion of some members of the firestopping community – is the insurance industry's role in the enforcement picture.

To understand the insurance industry's role in firestopping and life safety, you must first understand the aspects of DIIM.

Design

Professional specifiers create specifications with appropriate physical properties of products to meet building occupant needs. Manufacturers test products for suitability for use in the specific applications.

Installation

The architecture and engineering industries recognize firestopping contractor qualifications by specifying the use of listed firestop systems by qualified and/or approved companies through either the UL Qualified Firestop Contractor Program and/or FM Approvals' FM 4991 Approved Contractor Program certifications.

Inspection

Architects have been specifying firestop inspection standards from ASTM for several years. ASTM E 2174 (penetrations) and ASTM E 2393 (fire-rated expansion joints and gaps) are the standards for on site inspection of installed fire stops. The 2012 International Building Code has a requirement in Chapter 17 for mandatory special inspection of firestop systems using these standards.

Maintenance

Some third party inspectors and contractors are working, along with the manufacturers, to offer barrier maintenance programs that not only complement passive firestopping installations but also all aspects of the fire protection system. This creates intricate checks and balances to provide total fire protection for both life safety and continuity of operations including compartmentation. It is often said that it's not "if" there will be a fire, it's "when" there will be a fire. And the fire department doesn't arrive to the scene of a fire until three to five minutes after it has been reported. Smoke and fire may be developing for many minutes – even hours – before it is observed and reported. Smoke moves undeterred at around 300 feet per minute according to fire modeling tests.

With these factors in mind, the firestopping industry has long recognized that an "L" rated firestop system protects smoke barriers. It's not enough to have sprinklers to protect life and property. It's a proven fact that if toxic fumes and fire are contained at the point of origin by compartmentation keeping the egress paths clear – and the detection and alarm systems function properly – property damage and loss of life will be kept to a minimum. So the more areas that contain passive protection, even sprinklered areas, the better.

The insurance industry should consider following suit and recognize the firestopping and effective compartmentation industry's efforts. When openings and penetrations are noted in insured building walkthroughs by insurance company engineers, the building owners and managers should be rewarded for maintaining the compartmentation features such as the walls and floors, fire rated swinging and rolling doors, fire and smoke dampers, and firestopping.

Let's all get on the same page and take the glide path of "least resistance" to total fire protection for continuity of operations and zero tolerance for repairs in the buildings we use and move through daily. K

Tony Fontana is President, and Brad Hopkins, Business Development at Premier Firestopping, Saddle Brook, NJ. They can be reached through http://www.premierfirestopping.com.

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New ASTM Standard Introduced for Head-of-Wall Fire Resistance

By Bill McHugh

ASTM committees continually update standards to reflect new developments in product and building technology. ASTM's Committee E 05 on Fire Standards was formed in 1904 and has produced and maintained standards continuously ever since.

A new standard was introduced recently. The E05 Committee developed ASTM E 2837 Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies through an industry consensus process.

Countless contractors have encountered the fireresistance-rated wall meeting a non-rated metal roof or floor assembly in the field and wondered, "now what?" Continuity of the fire-resistance-rated wall is required in the International Building Code, Section 707.5, Continuity of Fire Barriers:

707.5 Continuity. Fire barriers shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above and shall be securely attached thereto. Such fire barriers shall be continuous through concealed space, such as the space above a suspended ceiling. Joints and voids at intersections shall comply with Sections 707.8 and 707.9

A fire-resistance-rated joint assembly that has been tested to ASTM E 2837 provides continuity by extending the rating of the wall to the next assembly, even if that assembly is not fire-resistance-rated.

According to ASTM's description, the test method evaluates the test specimen's ability to undergo movement without reducing its fire-resistance rating and the duration for which a test specimen will contain a fire and retain its integrity during a predetermined fire resistive test exposure.

Then, the test method also judges the ability of the test specimen to prohibit the passage of flames and hot gases, transmission of heat through the test specimen, and the ability to resist the passage of water during a hose stream test.

ASTM further states that, "This fire-test-response test method measures the performance of a unique fire resistive joint system called a continuity head-of-wall joint system." The head-of-wall joint system is designed to be used between a rated wall assembly and a nonrated horizontal assembly during a fire resistance test.

Educational Occupancies

In education occupancies fire-resistance-rated walls separate kitchens, hazardous and mechanical rooms and corridors from the educational areas. These fire-resistance-rated walls meet a non-rated roof deck now have a way to maintain "continuity" of the wall assembly to the roof using an ASTM Standard for suitability of use of the products in the situation.



System No. CJ-D-0001

ASTM E 2837 extends the rating of the wall to the unrated metal roof assembly. Specified Technologies, Inc., Image

Also, some architects design all corridor walls to be fire-resistance-rated even where no fire-resistancerating is required. This provides continuity for fire, smoke and sound when STC systems are used.

There already have been code development proposals submitted to add this standard to building codes. The International Firestop Council (Proposal FS31) and HILTI (Proposal FS32) submitted this standard for adaption by the International Building Code.

Each proposal mentions the ASTM E 2387 Standard with the fire-resistance-rated joint system extending continuity of the fire-resistance rating of the wall to the non-rated horizontal assembly above the wall.

However, the council proposal adds a clause for installation:

"715.6.1 Installation, Continuity head of wall joint systems shall be securely installed in our on the joint for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to retard the passage of fire and hot gasses."

To learn more about the upcoming International Code Council's 2015 Development Cycle, visit the Code Corner feature in this issue.

Check out the standard at http://www.ASTM.org and http://www.iccsafe.org to see all the code change proposals submitted this cycle.



System No. CJ-D-0008 Joint Rating – 1 Hour

Manufacturers have tested products for suitability of extending the fire resistance rated wall to the non-fire resistance rated roof. HILTI Image

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Manufacturers have tested products for suitability of extending the fire resistance rated wall to the non-fire resistance rated roof. HILTI Image



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Maintaining Fire Resistance New International Fire Code Requirements mean better building safety through reliable effective compartmentalization, alarms and sprinklers.

By Philip Chandler

All the chatter about vehicles accelerating on their own and then refusing their owners' attempts at reining them in unfortunately has parallels in the fire service. We now have fire engines that have minds of their own. Our modern fire apparatus only gives the illusion that they are under the control of their operators. In fact, the driver activates a micro-switch—one to go forward, one to go faster, one to engage the pump, one to increase the idle and one to discharge water. An onboard computer then has the final say over what happens.

More and more, I am witnessing instances where the computer arbitrarily overrides the operator. The engine that I ride, a half-million dollars of space-age hardware, has a new habit of inexplicably dropping down to idle when flowing water at fires.

Another local fire department reports that after connecting to the standpipe system of a high-rise building with a working fire on the third floor, the electrical



Fire resistance rated construction protects people in buildings. FCIA Photo



Fire rated systems mean the wall's joints and gaps are treated with Firestopping at the top of wall gap (red) and joints of the wallboard are taped per the tested and listed U- 400 fire rated wall system design. Joint compound and tape on wallboard is for joints that occur at studs, and not used as a firestop system. FCIA Photo

system on its brand new front-line engine mysteriously went dead, shutting down altogether. It was towed from the scene. What gives?

I have long been arguing that after the department's 1956 Mack, every piece of apparatus it havs purchased has declined in reliability. The old stuff had back-ups to the back-ups: double electrical systems, double ignition systems, double fuel supplies, you name it. And of course, there was no mistaking when it was in pump gear; it shook the ground. Yes, it often needed a strong arm and back, but there was no such thing as a gate valve deciding not to open. The old apparatus was a handful, but it yielded to its master.

Redundancy was the watchword of the fire service. The service understood that during emergency operations, all bets were off; anything could happen. Equipment might fail, humans might err, but come what may, there was a "plan B." Yet little by little, at least as far as apparatus is concerned, the service is slowly moving away from this concept.

> To a certain extent, the same can be said about the way buildings are constructed. Redundancy of life safety features has been the rule for decades. Compartmentalization, fire detection systems, and automatic suppression systems are required. Because it is understood that when it comes to a structure fire, here too all bets are off. Anything is possible, and any one or a combination of defenses may fail.

Yet even this concept has been somewhat diminished as of late. With good intentions, the industry has backed off on some of the compartmentalization requirements as an incentive for greater use of sprinkler systems in buildings.

Make no mistake, I'm not saying I disagree with sprinkler trade-offs. In fact, when push comes to shove, I am probably in agreement with this strategy; sprinklers save lives! But what I'm saying is, let's not give away the store.

There is a lot to be said for fire-rated construction that silently and, in most cases without a whole lot of complexity, contains smoke and fire to its place of origin. It is comforting to know that if the alarm fails to sound, or the sprinkler system fails to deliver water, the fire may still passively be held in check long enough for everyone to get out safely.

With the above in mind, readers may appreciate a very significant change to Chapter Seven, Fire-Resistance-Rated Construction of the 2009



Firestopping is installed at the top and bottom of walls for continuity of the fire resistance rating. FCIA $\ensuremath{\mathsf{Photo}}$



Safety is important for firestop - containment workers. FCIA Photo

International Fire Code (IFC). More specifically, I am referring to a newfound respect for this invaluable building element and a corresponding strengthening of its maintenance requirements.

While property owners have long been required to maintain *"the required fire-resistance rating of fire-resistance rated construction,"* we now have an affirmative obligation on the part of the property owner that they must not only preserve the level of protection, but also routinely inspect all such fire-rated building elements.

Consider the language in the International Fire Code, (IFC) section 703.1:

"Such elements shall be visually inspected by the owner annually and properly repaired, restored or replaced when damaged, altered, breached or penetrated. Where concealed, such elements shall not be required to be visually inspected by the owner unless the concealed space is accessible by the removal of a panel, access door, ceiling tile or similar movable entry to the space."

Wow! That means every year somebody on the school campus must haul around a ladder and pop open ceiling tiles in almost every building to make sure that every penetration through fire-rated construction has been properly fire-stopped, just for starters. I dare say this inspection process will be a full-time job, and then some.

Obviously, not every state or local jurisdiction follows the IFC. And of those that do, not every one adopts the most recent addition, or every provision of the model code. Nonetheless,

Maintenance Keeps Installed Firestop Systems Functioning

The ongoing care of any system in a building must be constant to be effective. For some features, constant means every 5 years. Others, much less.

Walls and floors are cleaned, painted and waxed at varying intervals. Carpet is replaced. Fire alarms and sprinklers are routinely tested.

After an effective compartmentation system is built and fire resistance rated walls and floors commissioned, it seems that Rodney Dangerfield's 'I get no respect' line applies. "The fire resistance rated walls and floors, they just get no respect". Why? Do people not understand what those walls do? Do people not care? Are trades not trained to 'respect' that wall before poking through it with a pipe, cable, duct, or other new service?

Maybe there are some simple solutions for the effective compartmentation to gain respect back and stop the abuse.

One way is the International Building Code 703.1 referenced in this article. Another sits in the requirement for marking fire resistance rated construction. Maybe the trades can learn to report that they blew through one of these walls, so the firestop trade can fix it. When this happens, the walls and floors get some respect.

What if the general public, including students, tradespeople, and others all who go through the education system learned in school what fire resistance does, would they respect it? A little education may 'help the fire resistance rated walls and floors get some respect'. We're not talking about how to build a clock. It's not about how to build a clock. It's not about how to design and build...but to provide knowledge to gain respect. It's about what fire resistance is for and how it just stands there to 'save their life'...as long as there' no unauthorized holes in them, the doors are working properly and latching, or for egress, not blocked

These little things taught at a young age would make a huge difference and gain some respect for fire resistance and what it can do for society.

this still represents a major upgrading of the value we attach to the importance of fireresistance-rated construction.

Further, we find in 702.1: "Where any fire-resistancerated components...do not function as intended or do not have the fire resistance required by the code under which the building was constructed,



Building a fire resistance rated wall and installing the firestopping, fire doors, fire dampers and fire rated glazing, all requires understanding the 'system' for building each fire and smoke protection feature for accuracy. FCIA Photo

remodeled or altered, such component(s) or portion thereof shall be deemed an unsafe condition." This section goes on to advise that as an "unsafe condition," compromise of fire-rated construction features, may under certain circumstances and in the opinion of the fire code official, rise to the level of *"an imminent danger to the occupants of the building,"* and as such, constitute grounds for mandatory evacuation. **Double wow!**

Look, I don't want to sound like an alarmist. After all, the 2009 IFC is just now being adapted by jurisdictions using the I-Codes. Yet the industry can nonetheless take the opportunity to reconsider just how important fire-resistance-rated construction and components, including fire doors, fire dampers, fire rated glazing and firestopping, are to the overall safety of our buildings.

Regardless of how smart and sophisticated our life safety systems and devices become, let us not forget, when all else fails, just how reliable a couple of sheets of drywall can be in the protection of lives and property.

Philip Chandler is a long time firefighter and a full-time fire marshal working extensively in the college environment from large public university centers to small private colleges. His primary responsibilities include code enforcement and education. Phil can be reached at theinspector@campusfiresafety.org.

Published with permission of the Center for Campus Fire Safety, <u>www.campusfiresafety.org</u>. Editors Note: It is not unusual for a large facility to visit with the AHJ to devise a plan that maximizes resources while maintaining safety. We understand these positive discussions take place frequently and result in plans to comply as can be expected given resources.



Industry News

FCIA at UL, ULC—FCIA visited UL Canada's Toronto Headquarters to deliver the FCIA Firestop Education Program prior to ULC administering the UL Firestop Exam with a Canada Supplement. We also visited Melville NY, to educate another 5 members for the UL Firestop Exam. Five FCIA Member Contractors have become ULC Qualified Firestop Contractors along with over 20 US based firms. Reports are that there are many more contractors preparing for this designation in addition to FM 4991.



FM Approvals, UL & Accreditation

Committee—FCIA's Accreditation Committee has held several teleconferences with FM 4991 Author Jeff Gould and Betsy Titus, Gary Knef of UL. Together, the group is working to find ways to grow the acceptance of the programs with building owners and managers, architects, specifiers and GC's.

FCIA at CSC Ottawa, Ontario, Canada Chapter-

At the Ottawa, Ontario, Construction Specifications Canada Chapter we presented on the importance of Effective Compartmentation and Firestopping to specifiers, FCIA Member Contractors and Distributors. Check out the presentation and new French FCIA 07-84-00 Specification at FCIA.org, Home Page and Specification.



New ASTM Standards for Fire Resistance— ASTM committees continually update standards to reflect new developments. In Fire Resistance, ASTM E 2837 Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies was completed in late 2011. The International Firestop Council and HILTI have submitted this standard for adaption by the International Building Code.

Visit ASTM to check out the standard. astm.org and see this issue for a more detailed description of the standard.



CONSTRUCT2012—Don't miss the

CONSTRUCT2012 Show and CSI Annual Convention in Phoenix, AZ, Sept. 11-14. There's always great education and networking with leading specifiers. FCIA has been attending since the start of the association in 1999 and has exhibited about every year since.

CSNSTRUCT

Exhibits: September 12-14, 2012 Education: September 11-14, 2012 Phoenix Convention Center | Phoenix, AZ USA

DHI Foundation—The Door and Hardware Institute's Door Security and Safety Foundation focuses on awareness, education, research and outreach for swinging doors used in buildings. Visit **doorsecuritysafety.org** to find DHI educated fire door assembly inspectors, and much more.



IAS AC 415 Fire Door Inspection—International Accreditation Services built a program for Fire Door Inspection Agencies. The Accreditation Criteria (AC), Accreditation Criteria for Agencies Performing In Field Inspection of Fire Door Assemblies (in-situ inspection), has been out for a few months. This is the first program aimed at the Special Inspection Agency in addition to the "inspector."

FCIA Firestopping Contractors—From small beginnings of only seven member companies in 1999, the association has grown to almost 300 firms. FCIA's initial Steering Committee put "International" in the name of the group to be truly worldwide. FCIA continues to grow worldwide with members from the U.S., Canada, United Arab Emirates, Qatar, Taiwan and now India. Rise and Shine Insulation's Branch brought us to India.

FCIA Membership Benefits—FCIA Members get to enjoy the presentations from the **FCIA Education & Committee Action Conference** at FCIA.org, members only area. Contact FCIA's office to get your password.



FCIA at ASTM—FCIA announced involvement in a new initiative at ASTM to create a certification for the Individual Installers and Inspectors of Firestop products last fall. The ASTM Program is all encompassing, covering penetrations, joints walltops and bottoms, plus perimeter fire containment firestop systems. This program is not a substitute for the four-year Firestop/ Containment Apprenticeship Program currently under development at FCIA.

DASMA Updates Technical Data Sheets—

Technical Data Sheets for Rolling Fire Doors and Rolling Counter Fire Doors have been updated for several constructions including the DASMA Technical Data Sheet #264, Common Jamb and Construction for Rolling Counter Fire Doors: Non-Masonry Construction – Bolted Guides. This DASMA Technical Data Sheet includes a representation of jamb construction and guide attachment details. Consult with individual manufacturers for specific guide details and their approved jamb constructions. Check out all 12 of DASMA's Rolling Steel Fire Door Data Sheets at the free download site, http://dasma.com/pubtechdata.asp (252, 253, 257, 258, 263, 264, 266, 271, 273, 275, 278).



Gypsum Association Reports Evaluation Report

Reissued—ICC Evaluation Service, LLC (ICC-ES) Evaluation Report ESR-1338, sponsored by the Gypsum Association, has been reissued by ICC-ES with an effective date of Feb. 1, 2012. The reissued report supersedes the February 2010 edition and will remain in use for one year. The report indicates compliance with the 2009 International Building Code and the 2009 International Residential Code. The report makes no technical changes to the predecessor edition. It continues to incorporate a reference to the current edition of GA-600, Fire Resistance Design Manual as an acceptable source of fire-resistance and sound-control systems. View the report at http:// www.icc-es.org/reports/pdf files/ICC-ES/ESR-1338.pdf. The Gypsum Association also reports that it published its GA-216 "APPLICATION AND FINISHING OF GYPSUM PANEL PRODUCTS" in French. Visit gypsum.org, download publications library.



Equal Through Penetration F&T Ratings—

FCIA's office has heard from members that the International Building Code requires 'F' Rating equal to 'T' Rating where penetrating items are outside of a wall cavity. There are firestop systems that meet the requirement. However, firestop contractors, building owners and managers, and general contractors need to be aware that the cost of an equal 'F' and 'T' Rating is more than without the equal ratings.



If fire starts under a floor slab, the penetrating item(s) may conduct heat quickly to the floor above. If the heat grows 325F above ambient, fire may spread without a breach of the firestop assembly. FCIA Photo



Insulation may be required above the floor to slow the transmission of heat through the penetrating item to the next floor. There are firestop systems with Equal F and T Ratings. PPMI Photo

New UL Firestop Video—UL announced the launch of a firestop installation video. This video, developed in cooperation with the International Firestop Council, describes how the proper installation of through-penetration firestop systems and joint systems can help achieve safe, code compliant installations. View the UL and FCIA videos at http://www.fcia.org,



IAS and BOABC Sign Service Recognition Agreement—The International Accreditation Service (IAS) and Building Officials Association of British Columbia (BOABC) signed a Service Recognition Agreement that outlines specific steps to introduce the IAS Building Department Accreditation (BDA) Program to building departments in the province of British Columbia. The signing took place in Richmond, British Columbia, during a week of activities that included BDA Lead Evaluator Training and the BOABC board meeting.

FCIA Partners with Center—The Center for Campus Fire Safety (CCFS) is a non-profit organization devoted to reducing the loss of life from fire at our nation's campuses. The mission of the Center for Campus Fire Safety is to serve as an advocate for the promotion of campus fire safety. FCIA is sharing information with the center about Firestopping and Effective Compartmentation. We hope that all we can give helps protect students in educational occupancy and dormitory buildings. Visit them at Campusfiresafety.org.



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Architectural Testing offers NFPA 285, ASTM

E 2307 Testing—With the addition of the ISMA (Intermediate Scale, Multistory Apparatus) chamber, Architectural Testing is proud to announce that they can now test to NFPA 285 as well as ASTM E 2307. These new offerings expand our existing, accredited fire testing services available to the building products industry. Now Architectural Testing is one of only a few testing laboratories in North America capable of performing NFPA 285 testing. Visit Archtesting.com for more info.

CSI and CSC Release MasterFormat 2012—CSI and Construction Specifications Canada (CSC) have announced the 2012 updates to *MasterFormat*®, their numbering system used to organize construction documents for commercial, industrial and institutional building projects in the United States and Canada.

"After reviewing the latest changes to *MasterFormat* proposed by its users, CSI and CSC experts made a number of updates, making it even easier to organize project manuals, or store and retrieve project information," CSI Executive Director and CEO Walter Marlowe, P.E., CSI, CAE, said.

"These changes further refine *MasterFormat*, ensuring that this standard filing system reflects the evolving needs of the industry and facilitates effective communication between project team members," CSC President Bruce J. Gillham, CTR, CCCA, said.

MasterFormat is a master list of numbers and titles classified by work results or construction practices, used to organize project manuals, detail cost information and relate drawing notations to specifications. By fostering fuller and more detailed construction specifications, *MasterFormat* is designed to reduce costly changes and delays in projects due to incomplete, misplaced, or missing information.



ICC Announces Mike Holmes Honorary Ambassador—The International Code Council Foundation will name HGTV star Mike Holmes to serve as Honorary Ambassador for this May's 2012 Building Safety Month—*An International Celebration of Safe and Sensible Structures.* Holmes is lending his voice because



of his longstanding commitment to building safety, sustainability and his successful record in raising public consciousness with his "Make it Right" message.

His involvement will allow us to make Building Safety Month an even more high profile event.

Building Safety Month—Week Three is Fire Safety—May 21-27—In 2010, more than 362,000Mi residential fires caused 2,555 deaths, more than 13,000 injuries and more than \$6.5 billion in property damage costs. The United States Fire Association (USFA) states that the top five fire-safety topics most frequently identified with home fire deaths are smoke alarms, escape plans, child fire safety, older adult fire safety (cooking and heating) and careless smoking. Even though focused on home safety, fire safety concepts work in all occupancies. Visit http://www.icc-foundation.org/ for more information.



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Life Safety Digest

2012 Industry Calendar

June 11 to 14

NFPA Conference & Expo, Las Vegas NFPA.org

June 24 to 27

ASTM E-05 Fire Standards Meetings, San Diego ASTM.org

Sept. 12 to 14

CONSTRUCT & CSI Annual Convention 2012, Phoenix csinet.org

Oct. 15 to 16

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

Dec. 2 to 5

ASTM E-05 Fire Standards Meetings, Atlanta ASTM.org

Code Corner

ICC Development Hearings - The 2015 code development process for the International Code Council (ICC)



starts soon. The ICC Code Committees heard proposals April 29-May 8 on Fire Safety, General and more, all divided by topic area.

Final Action Hearings and the ICC Expo take place at Portland, Oreg. in October. The unique part about the Final Action Hearings is

that only building officials vote on proposals. This method uses the "Committee Action Hearings" in May to gather industry input and votes through committee participation. FCIA's Bill McHugh served on the Fire Safety Committee. Look for a full report on the hearings in the summer issue of Life Safety Digest.

The ICC has a lot of information about the code development cycle at the code development section of http://www.ICC-SAFE.org. Check it out.



ICC Releases Green Code

- A new model code for constructing and remodeling buildings is expected to make buildings more efficient, reduce waste, and have SAFE & SUSTAINABLE BY THE BOOK a positive impact on health, safety 📕 🌒 🏙 🎕 📽 🕲 and community welfare. The 2012 International Green Construction Code (IgCC) will increase the energy efficiency of structures, while providing direction and oversight of green design and construction, according to the International Code Council.

The IgCC is the first model code to include sustainability measures for an entire construction project and its sitefrom design, through construction, certificate of occupancy and beyond. It establishes minimum green requirements for buildings. The IgCC offers flexibility to jurisdictions that adopt the code by establishing several levels of compliance, starting with the core provisions of the code, and then offering "jurisdictional requirement" options that can be customized to fit the needs of a local community. A jurisdiction can also require higher performance through the use of "project electives" provisions.

The code acts as an overlay to the existing set of International Codes. The IgCC provides model code language that establishes a baseline for new and existing buildings related to energy conservation, water efficiency, site impacts, building waste, material resource efficiency and other sustainability measures. The IgCC will be updated alongside the other model codes developed through the Code Council's open, transparent, and consensus-based code development process. Even if the IgCC Code is not adapted locally, watch for building owners and managers to direct architects to build to these IgCC requirements in specifications. Visit http://www.iccsafe.org for more info.







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