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Life Safety DIGEST

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Ultimate Fire Wizard Hits UL.com

Resilient Building Design Focus of Summit

Fire Rated Door Inspections

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Multi-Family and Other Occupancies**



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On the Cover: Firestopping, Fire Doors, all contribute to safe buildings.

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Editor's Message

Multi-Family occupancies protecting people where they live, sleep, and stay put. Building occupants, owners or rental, all expect a safe building. They trust that; building code officials, fire marshals have stated code minimums for safety; designers through design communicated these code requirements through construction documents to qualified contractors who will build to that design; and knowledgeable inspection agencies to commission the building and all it's many complicated parts to the design. As you can see, this is a big cycle, and all parts must work to provide fire and life safety to buildings.

In this issue of Life Safety

Digest, articles from industry leading writers cover structural steel fireproofing, fire-resistance-rated door inspections, firestopping code violations, Barrier Management Programs, UL's FireWizard, and more.

FCIA supports fire-resistance-rated and smoke-resistant compartmentation – fire rated swinging and rolling doors, fire-rated glazing, fire dampers, fire-resistance-rated and smoke-resistant walls and floors – and works together to build and maintain safer buildings for homeowners, students, renters and others who occupy Multi-Family Buildings and expect safety.

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Why Fireproof Structural Steel?

By Phil Mancuso

Structural steel buildings are constructed worldwide to very stringent requirements that have many advantages to the building owner and manager. Structural steel, frame buildings offer benefits from lightweight construction to seismic resistance and more.

But, what about fire? Since structural steel is considered to be non-combustible and does not add fuel to a fire, then why does it need to be fireproofed?

As a vital component in the modern building design of structures such as schools, hospitals, residential, office, petrochemical and manufacturing plants, structural steel is the key element supporting the load of the structure. In the event of a fire, the steel load is compromised due to heat, and devastating failures can occur. It is important that this key element be directly protected to ensure life safety.

Critical failure of steel occurs when the steel reaches 1,000° F. At this point, unprotected steel is reduced to 60% of its original strength, and is prone to bend and deflect. This causes the structural load stability and physical characteristics of the steel to be compromised.

Passive fire protection materials are designed to safeguard the structural integrity of steel under fire conditions and maintain safe temperatures for the underlying steel for a specified period of time. Historical data provides limiting temperatures in which the fire-resistive materials protect the steel to sustain its strength and load carrying capabilities.

Structural steel is tested to ASTM E 119, UL 263 and UL 1709. The fire test furnace is constructed to represent either a large- or small-scale assembly. Gas jets are placed within the furnace to provide the necessary structural steel temperatures. These structural steel temperatures are measured with thermocouples that are strategically placed on the surface of the protected steel within a fire test furnace.

On steel decking, the unexposed limiting temperatures (surface not exposed to fire) shall not exceed an average or individual temperature of 325° F or 250° F above ambient, respectively.

The average limiting temperatures on the exposed surface (surface exposed to fire) on decking shall not exceed 1100° F. The average and individual limiting temperatures on steel beams shall not exceed 1100° F and 1300° F, respectively, and columns shall not exceed 1000° F and 1200° F, respectively. Once these limiting



Above. Dry spray SFRM applied to steel columns and bracing members. ISOLATEK photo



Above. Wet Spray SFRM applied to steel columns, beams and bracing members. ISOLATEK photo



Torres Parue Centrale, Caracas, Venezuela. ISOLATEK photo

temperatures are reached, either the average or individual temperature at any single point (whichever comes first), the fire test is complete.

Specific test methods are used to test full and small-scale fire exposure. These tests are intended to assess the thermal resistance of fire-resistive materials applied to structural steel members and the ability of these materials to withstand fire exposure.

The two common industry fire test methods have established time and temperature curves that are used to evaluate the performance of fire-resistive materials. ANSI/UL263 (ASTM E119) and ANSI/UL1709 are the test standards used to evaluate structural steel's fire resistance.

UL263 – “Fire Tests of Building Construction Materials” and ASTM E119 – “Standard Test Methods for Fire Tests of Building Construction and Materials” were developed to simulate a cellulosic fire. These are fires that occur in commercial buildings, such as office buildings, hospitals and schools or multi family structures. At five minutes, the temperature within the furnace reaches 1,000° F. The temperature gradually increases during the duration of test. At four hours, the temperature within the furnace reaches 2000° F.

UL1709 – “Rapid Rise Fire Test of Protection Materials for Structural Steel” was developed to simulate a hydrocarbon fire. UL 1709 is utilized on structures that require protection from severe fires such as petrochemical facilities and refineries, rather than those seen in commercial construction. With this critical test, at five minutes, the temperature within the furnace reaches 2000° F. This temperature is maintained for the entire duration of the fire test.

Once the fire test is complete, the data is analyzed and formulated into a report, design or system that indicates the specific requirements of the material tested to maintain the fire-resistance rating for a specified period of time.



Medium Density, wet spray SFRM applied to structural members. ISOLATEK photo



Intumescent coating being applied to large tube steel columns. ISOLATEK photo

Model building codes determine fire-resistance ratings of the structural elements for various building types, based on the building type and occupancy classifications. Fire-resistance ratings range from one to four hours. Thicknesses of the fire-resistive materials applied to the steel are dependent on the type of construction, material being used and the hourly rating required.

A recent example of a structure where passive fire protection materials played a vital role in the integrity and life safety of a building was in October 2004 at the Torres Parque Centrale in Caracas, Venezuela.

In short, this structure is a 59-story government office building. The structure was fitted with an active sprinkler system and was fireproofed with CAFCO® BLAZE-SHIELD® to maintain a two-hour fire-resistance rating. Fire spread within the unoccupied building and consumed 22 floors lasting up to 17 hours in duration. The active sprinkler system failed to operate during the fire. The passive fire protection system remained on the steel throughout the fire, protecting the building from collapse.

So why do we fireproof steel? We fireproof steel to protect the load-bearing steel elements of a structure and to maintain the model building code intentions of protecting the occupants of a building and the emergency responders, for egress of occupants, ingress of responders, all in case a fire occurs. Fire-resistive fireproofing materials are a key element in protecting and preserving life and building safety.

Phil Mancuso is Technical Services Manager at Isolatek International, a worldwide manufacturer of fire-resistive materials for fireproofing steel in buildings. He can be reached at pmancuso@isolatek.com 🔥

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Industry News

FCIA Education and Committee Action Conference Announced – Firestop Contractors, Manufacturers, Inspection Agencies won't want to miss this conference. Great education sessions and important face-to-face committee meetings make for industry advancement. FCIA's Spring Education and Committee Action Conference, at the Montleone Hotel, New Orleans...the week of JazzFest. You won't want to miss it for business or pleasure! **Visit <http://www.fcia.org> for the agenda and registration forms.**



IFC's Sean DeCrane wins ICC Fire Service Award – Sean DeCrane, IFC's Executive Director, was recognized for his efforts to increase the awareness and importance of codes to firefighter safety, and for his leadership of Vision 20/20 Strategy Five—an effort to develop a national strategic agenda for fire loss focused on firefighter involvement in code development.

DeCrane represents the International Association of Fire Fighters (IAFF) at the national level focusing on a number of code-related subjects, and has written numerous published articles and teaches classes about fire and building codes as they relate to



Sean DeCrane (center)

firefighter safety. Well done, Sean.

FCIA has been reaching out to the International Firestop Council the past 3 years conducting meetings to discuss important fire and life safety issues. "We really appreciate the efforts the manufacturers have made to work together", stated FCIA's 2011 President Bob Hasting. "We respect all the work IFC has done to educate building code officials nationwide. They've done well with great results from both Sean and the volunteer leadership."

Continued on Page 31

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ULTimate Fire Wizard Hits UL.com

Locating suitable fire-resistance designs is dramatically simplified

By Rich Walke

The ULtimate Fire Wizard, an Internet-based tool designed to allow users to quickly identify fire-resistance-rated designs that meet their project specifications has recently been launched on the UL website.

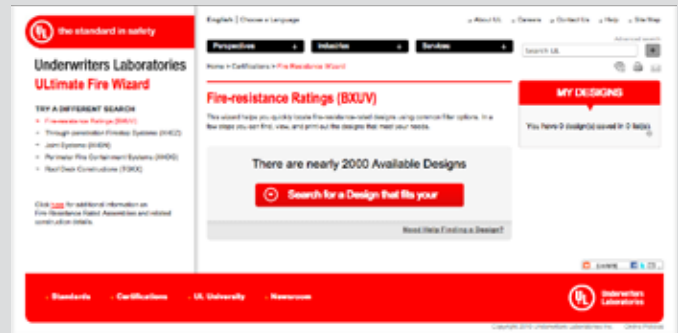
For nearly 60 years, architects, designers and code authorities have relied on UL fire-resistance-rated wall, floor-ceiling, roof-ceiling, column and beam designs for code-compliant installations. Nearly 2,000 designs are currently available through UL's Fire Resistance Directory or Online Certifications Directory.

"We recognized that the designs took a lot of time to locate and the search could become a daunting task for less experienced people just entering the profession," said Chris Hasbrook, Vice President and General Manager of UL's Building Materials & Systems Industry. "Given the value of fire-resistance-rated designs, UL developed the Wizard as a way to help architects, designers and code authorities to leverage the information commonly found in our directories and streamline the process for identifying the designs that meet project specifications."

The online Wizard incorporates an intuitive process for entering design parameters, and even allows comments to be embedded in the search summary to assist in the design and material procurement process. It uses a simple three-step process to significantly reduce the time needed to identify suitable designs. A user first enters design parameters on the Wizard's convenient pull-down menus, then views designs that meet the search parameters before selecting the designs that best meet project specifications. A search summary, identified as a design list can be viewed and printed out for future reference or as part of the construction plan package.

To access the ULtimate Fire Wizard, go to www.ul.com/firewizard.

For additional information on the ULtimate Fire Wizard contact Rich Walke at Northbrook, Ill. at Richard.N.Walke@us.ul.com or at (847) 664-3084. 🔥



Test drive the ULTimate Fire Wizard

**Follow these easy steps to
test drive the new ULtimate
Fire Wizard.**

1. Go to the Wizard home page at www.ul.com/firewizard.
2. Click on the center Search for a Design that fits your needs link. A search box will open allowing you to enter design parameters, including the assembly type, construction group, protection type, hourly rating, and even keywords for design details.
3. Click the Search button and the Wizard will load the search results for your review. You can view designs by clicking on the individual Fire-resistance Design Numbers.
4. When the individual design opens, scroll down to view the design details. If the design appears to meet your needs, you can add it to a design list of your selected designs. You can also add personalized comments on the design(s) selected, such as "This is the design used in the Main Street Mall project" or "Use for East exterior wall." Click the Save button to save the design and any comments entered.
5. When you are finished selecting the designs, click the X in the top right portion of the screen to return to the main menu.
6. From the main menu you can print or view your selected designs along with any comments entered. You may also view and print the entire design list. The selected designs or design list may be included in the plan submittal package, or other project documentation. 🔥

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THE ADVENTURES OF APEX THE FIRESTOPPER

IN THIS ISSUE, WE BEGIN WITH AN ELECTRICAL OUTLET...

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Fire Safety - The Portland Cement Association Focuses on Multi-Family Occupancies

By Steve Skalko

The most important and immediate concern to the Portland Cement Association is trends in relaxed fire protection provisions in building codes combined with the latest trends in housing our nation's elderly, disabled, and young.

Multi-Family Fire Safety Info

Provided at http://www.cement.org/codes/fire_safety.asp are links to information about key issues related to code provisions that provide adequate life safety and property protection for occupants and safety for emergency responders in multi-family construction including but not limited to apartments, condominiums, dormitories, hotels, motels, housing for the elderly, assisted living, and nursing homes.

At the site there are more detailed resources and specific amendments to modify the International Building Code (IBC) to require minimum two-hour non-combustible construction between living units in multi-family dwellings including:

Non-combustible Concrete Construction - Life Safety for Multi-Family Homes

This eight-page fire safety promotional publication addresses issues related to the balanced design for life safety and property protection in multi-family construction. Testimonials on the fire performance of multi-family construction are combined with statistics on fire deaths, injuries and property loss and the effectiveness of sprinklers and detection systems. Building officials are urged to ensure multi-family homes are constructed with all three components of balanced fire-safe design.

Fire Protection Planning Reports - A Series -

From 1975 to 1995 the Fire Safety Committee of the Concrete and Masonry Industry published a series of reports on fire safety and protection. The series addressed codes and standards and specific types of construction with an emphasis on residential construction where most fire deaths occur. While some of the information is dated, most of the information and recommendations remain appropriate today. These publications are provided in a pdf format for your

review at http://www.cement.org/codes/FPPR_seriesA.asp


Amendments: Check out this link for modifications to the IBC providing for minimum two-hour noncombustible construction for multi-family housing: <http://www.cement.org/codes/MF%20Modifications%202006%20IBC.pdf>

Modifications to tables and text in the 2006 IBC are required to achieve two-hour fire separations between guest rooms in motels/hotels, dwelling units of apartments, dormitories and units in assisted living facilities Group I-1. These changes will require minimum two-hour noncombustible construction.

While this permits concrete and masonry construction to achieve the two-hour fire rated separation, it does not prohibit the use of other materials. For example, light-gauge steel stud construction with an appropriate number of layers of proper gypsum wallboard can be specified for the two-hour non-combustible assemblies.

Modifications to the IBC are shown with deletion of existing text as strike-through and addition of new or replacement text as underlined. For jurisdictions using the 2009 IBC the following table provides a cross-reference for the appropriate sections in the 2009 edition.

2006 IBC	2009 IBC
Table 503	Table 503
508.5	509.5
704.11	705.11
706.3	707.3
708.1	708.1
708.3	709.3
708.4	709.4
711.3	712.3
717.3.2	717.3.2
717.4.2	717.4.2

Steve Skalko is Manager, Regional Code Services, for the Portland Cement Association. Steve can be reached at svskalko@cox.net. 

Fire Rated Door Inspections

By Bill Johnson

EDITORS NOTE: *Effective fire-resistance-rated compartmentation systems are a must for fire and life safety in multi-family occupancies. A door occurs in multi-family construction as often as there is a living unit in the apartment, condo, or other residence. Doors are the second largest opening after the rolling door assembly in these structures. After firestopping, they are the second largest quantity of holes in fire-resistance-rated construction. That's why NFPA 80 has very specific language about the annual inspection of fire doors. Read on for more info...*

NFPA's Fire Doors and Windows (FDW-AAA) technical committee completed its task of updating and expanding NFPA 80 in early 2006. Changes and additions have been incorporated into the 2007 edition of NFPA 80, the "Standard for Fire Rated Doors and Other Opening Protectives."

The model building codes reference NFPA 80 as the standard for the installation and maintenance of fire-rated door assemblies. Additional codes of equal importance are the ICC's International Fire Code (IFC), NFPA's Uniform Fire Code (NFPA 1) and NFPA 101, The Life Safety Code™. The code language is very specific. For example, the IFC, section 703.2 specifies that "Opening Protectives" shall be maintained in an operative condition in accordance with NFPA 80.

Why is Annual Inspection of Fire-Rated Door Assemblies Required?

NFPA 80 has required the frequent inspection of fire-rated doors, and their immediate repair, for many years. The challenge has been that it is nearly impossible to define what "frequent" means. NFPA 80 2007 has helped to define the frequency of inspections as annually – once a year.

What is Inspected on Fire-Rated Openings?

Former editions of NFPA 80 have established guidelines for the installation and maintenance of fire-rated doors. There are certain baseline elements,



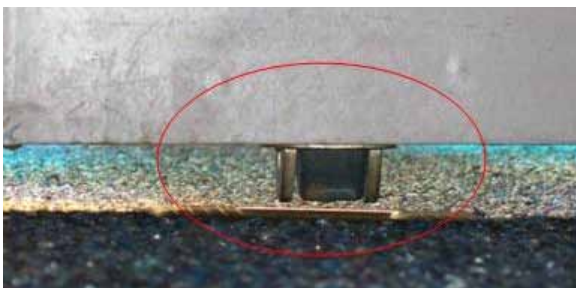
Wood stop, bottom rod removed. DHI Photo



Check glass label, frame, glazing per code requirements. DHI Photo



Parts missing, inoperable pull side. DHI photo



Door not engaged in floor strike. DHI Photo



Examine gap around frame. DHI Photo



Holes in frame, closer leaking. DHI Photo



Door not latching. DHI Photo



Fire door acting as intended. Note smoke stains from fire. DHI Photo

which are common to all swinging doors with builders hardware no matter when they were installed. The 2007 edition of NFPA 80 simply requires these baseline elements to be inspected on an annual basis (yearly).

11 Inspection Steps

Chapter 5, Section 5-2 Inspections, Paragraph 5-2.4 Swinging Doors with Builders Hardware lists the elements that are required to be inspected. It requires, “fire door assemblies to be visually inspected from both sides to assess the condition of the assembly.” Swinging doors with builders hardware will be inspected to verify the following:

- No open holes or breaks exist in surfaces of either the door or frame.
- Glazing, vision light frames, and glazing beads are intact and securely fastened in place, if so equipped.
- The door, frame, hinges, hardware and non-combustible threshold are secured, aligned, and in working order with no visible signs of damage.
- No parts are missing or broken.
- Door clearances at the door edge to the frame, on the pull side of the door, do not exceed clearances listed in 4.8.4 and 6.3.1.
- The self-closing device is operating by verifying that the active door will completely close when operated from the full open position.
- If a coordinator is installed, the inactive leaf closes before the active leaf.
- Latching hardware operates and secures the door when it is in the closed position.
- Auxiliary hardware items, which interfere or prohibit operation, are not installed on the door and frame.
- No field modifications to the door assembly have been performed that void the label.

- Gasketing and edge seals, where required, are inspected to verify their presence and integrity.

Individually, these items seem like small problems, but in the context of a fire emergency their importance becomes readily apparent. If the door assembly doesn't function as designed at the time of the fire, it simply cannot protect the occupants as intended.

In multi-family residential construction, this is important as residents are expecting the fire resistance of the door and wall to protect them in the corridors as they egress in an emergency.

Who Performs Door Inspections?

NFPA 80, Paragraph 5-2.3 Functional Testing, requires functional testing of fire-rated door and window assemblies to be performed by individuals with knowledge and understanding of the operating components of the type of door [or window] being tested.

Inspections of swinging fire-rated doors with builders hardware requires individuals who have broad product-application knowledge and understanding of fire-rated door assemblies. While NFPA 80 does not designate a specific group or groups to perform these inspections, the Door Security & Safety Foundation along with the Door and Hardware Institute provides training and certification. Authorities Having Jurisdiction (AHJs) can inspect fire doors, but may not have resources available for this task.

Inspections

NFPA 80's language in paragraph 5-2.1 requires fire door assemblies to be inspected “not less than annually, and a written record of the inspection shall be signed and kept for inspection by the AHJ.” Basically, this requirement creates an inspection system



Examine labels on door and frame. DHI Photo

similar to that for elevators, sprinkler systems and fire-alarm systems.

These inspections are performed by third-party entities, and written proof of these inspections is held by the building owner/property management for review by the AHJ. The building owner is ultimately responsible for making sure the fire-rated door assemblies are in compliance with NFPA 80.

Once the building owners are made aware that there are problem openings, they have to take action to repair or replace them.

Performance-Based Inspection Cycle for Large Buildings

The NFPA 80 committee was concerned with how large buildings, institutions and campuses would be able to inspect each fire-rated door assembly every year.

These situations are provided for in the language of paragraph 5-2.2 Performance-Based Option. Under the Performance-Based Option, a facility may have an extended inspection cycle provided it is approved by the AHJ. The full description of the Performance-Based Option is described in Annex J, NFPA 80 2007.

The foundation, partnering with members of the Door and Hardware Institute, continues to offer half-day training sessions for AHJs. These half-day sessions provide fire and building code officials with a better understanding of what to approve when they are asked to verify the inspection of a fire-rated opening.

The Door and Hardware Institute offers instructional classes with several prerequisites to educate inspectors of fire resistance rated doors and builders hardware. Visit <http://www.doorsecuritysafety.org/> and <http://www.dhi.org> for information.

Bill Johnson is the Foundation Executive Vice President of the Door and Security Foundation of the Door and Hardware Institute. Bill can be reached at bjohnson@dhi.org. 🔥

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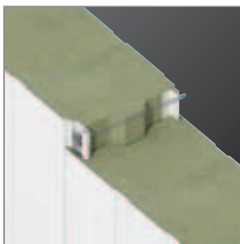


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Firestopping Special Inspections Growing

ASTM E 2174 & ASTM E 2393 Inspection Standards in 2012 I-Codes

By **Bill McHugh & Randy Bosscawen**

At FCIA's 1999 inaugural meeting, four committees were formed. Accreditation, which has produced the FM Approvals FM 4991, Standard for the approval of Firestop Contractors, Underwriters Laboratories for the UL Qualified Firestop Contractor Program. The Technical Committee wrote the FCIA Firestop Manual of Practice, while Code and Standards discussed future issues.

At a meeting later that year, the question was asked, "Why doesn't firestopping have the same inspection as fireproofing in the code?"

From that question spawned FCIA's Standards Committee. The FCIA committee worked at ASTM with manufacturers, consultants and others to develop two inspection standards for firestopping.

FCIA has been working on a strategy of DIIM, the proper Design (Systems), Installation, (FCIA Member-FM 4991 Approved and/or UL Qualified Contractors), Inspected (to ASTM E 2174 & ASTM E 2393), and Maintained and Managed (see Barrier Management Article, this issue)...ever since.

The first piece, "I" for Installation, was the FCIA Member FM 4991, Standard for the Approval of Firestop Contractors, introduced in 2000. To be ready for the program, FCIA's Technical Committee finished work on the FCIA Firestop Manual of Practice in August 2000, so people could study for the FM 4991 Firestop Exam. UL's Qualified Firestop Contractor Program arrived in 2006.

The second "I," firestopping inspection standards introduced in 2004, were ASTM E 2174, Standard Practice for the On-Site Inspection of Installed Fire Stops, and ASTM E 2393 Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers. These standards were revised in 2009 to correct language for building code requirements.

At the ICC Final Action Hearings in Dallas, May 2010, these standards became part of the 2012 International Building Code (IBC), through code proposals S127 & S128, for buildings 75 ft. and higher above lowest fire department access, and category IV and V Buildings referenced in Chapter 16 of the IBC.

Several of the pieces of DIIM are already in Specifications. This is especially true of the DII of DIIM. The International Building Code has the "D" through the word "systems" throughout Chapter 7. FCIA advocated adding the simple word, "systems" to the code.

The use of ASTM E 2174 & ASTM E 2393 in Chapter 17 of the Building Code brings the "I" Inspection to the International Building Code. To read about the "M" in DIIM, take a look at the Barrier Management Program article in this issue.

Firestopping Industry Quality Process

FCIA built the DIIM as a continuous process, for proper design, installation, inspection and maintenance and management of firestopping for reliability. When called upon by fire, firestopping provides continuity to fire-resistance-rated and smoke-resistant construction in buildings. Along with fire dampers, fire-rated glazing, rolling and swinging fire doors and hardware, firestopping is a key component in fire-resistance-rated compartmentation protection.

Firestopping and other parts of fire-resistance-rated and smoke-resistant compartmentation need to be installed as they were tested, and as listed in directories, engineering judgments, and Chapter 7 of the International Building Code (IBC).

Whether fire-resistance-rated walls and floors, or the features that protect them, they all need to be installed to the system design. A company culture of "zero tolerance" is imperative to success as a specialty firestop/containment contractor for fire and life safety protection in buildings.

Design - Tested Systems Explosion

From a small 5-in. x 7-in., 200-page book with firestop designs suitable for protecting a limited number of situations, the UL Directory has grown into an 8-in. x 11-in., three-volume phone book. Over 8,800 systems are available to firestop many building types.

These systems and engineering judgments, plus product data sheets, are the information pieces needed by Authorities Having Jurisdiction (AHJ), building owners and managers, architects and others reviewing proposals and submittal packets.

“I” for Inspection - ASTM E 2174-ASTM E 2393 Evolves

The ASTM E 2174 “Standard for On-Site Inspection of Installed Fire Stops” and the ASTM E 2393, “Standard Practice for On-Site Inspection of Fire Resistive Joint Systems and Perimeter Fire Barriers” inspection programs were founded from the “Quality Process Zero Tolerance Approach.” It’s designed to be an integral part of the protocol needed for zero tolerance firestop systems installation through proper design, installation and inspection.

Firestop manufacturers test their products, manufactured to strict tolerances, and publish systems suitable for use as firestops in the various laboratory directories. Firestop contractors select systems, then install to the detail to have the products become systems. They also perform some review of their own work to verify quality.

Independent inspection is also performed when required by specification or code. There are two inspection standards for firestopping.

ASTM E2174-04 Standard Practice for On-Site Inspection of Installed Fire Stops covers the inspection of firestopping for penetrations in fire-resistance-rated assemblies.

ASTM E2393-04, Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers is the standard for inspection of joint systems such as wall tops, wall bottoms, expansion and construction joints, plus perimeter fire protection.



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Firestop / Containment Workers and Firestopping Special Inspection Agencies understand the limitations of system designs. Premier Firestop Photo



Fire resistance rated floors with plastic drain pipes in parking garages located under multi-family unit residences are protected with wrap strips and collars or plastic pipe devices. Tabs must be folded 90 degrees to conform to the system. Premier Firestop Photo

Here are some important summary points to remember for firestopping inspection standards:

Both ASTM E 2174 and ASTM E 2329 provide that either visual observation can take place 10 percent of the time, or destructive evaluation is performed, 2 percent of the time, with no less than one of each type of firestop inspected per floor.

There is also a clause in both standards that sets qualifications for the firestop inspection agency.

First, there is a choice between jurisdictional inspectors or contract inspectors. For contract inspectors, they shall be acceptable to the AHJ and meet at least one of the following:

1. Meet the criteria in Practice E699 for agencies involved in quality assurance.
2. Have a minimum of two years experience in construction field inspections and have education, credentials, and experience acceptable to the Authorizing Agency (AA, or building owner).
3. Be a Quality Assurance Agency, accredited by the AHJ.

Second, there are conflict of interest issues for contract inspectors dealt with by the standards:

- The contract inspector shall be completely independent of, and divested from, the installer, contractor, manufacturer, or supplier of any material being inspected.
- The contract inspector shall not be a competitor of the installer, contractor, manufacturer, or supplier of any material being inspected.

The contract inspector shall submit notarized statements to the AA assuring compliance.

- The contract inspector shall provide proof of insurance required by statute, or by the AA, or by the AHJ, or by any combination of these.
- The contract inspector shall make a written submission to the AA requesting acceptance. If accepted, the AA shall present the contract inspector with written confirmation of acceptance.

Jurisdictional Inspectors: A jurisdictional inspector shall have qualifications as required by the AHJ.

Inspection Documents

There are requirements for the AA, such as building owner and manager, or owner's representative, to provide to the inspector. These documents shall be reviewed by and approved by both the AA and AHJ. Any conflicts found by the inspector must be resolved through written notification of potential conflicts prior to conducting the inspection.

The inspector must be provided the tested and listed systems as part of the inspection documents.

Scheduling the inspections is mutually agreed upon by the inspector and installer, at the start of the installation, during and shall not interfere with the installation process. The installer is under obligation to notify the inspector within one working day when any item agreed to on the schedule must be changed for whatever reason.

Inspections are well spelled out in the standards, with important tasks for both the contractor installer and the inspection agency. The standards state that the inspector shall not supervise the work, nor help in handling materials, preparation of substrates, or mixing, cutting or fastening of materials.

Inspection Method

The method of inspection and frequency depends on the scope of the project. The standards specify either the inspector be on-site during installation to randomly witness a minimum of 5 percent of the total linear feet of each type of fire-resistant joint system being installed, or shall conduct a post installation inspection sampling of joints per 500 lineal feet.

For firestopping penetrations, the inspector must either randomly witness 10 percent of the installation, with no less than one of each type per floor, or destructively tests 2 percent of the firestopping of each type, no less than one of each type per floor.

If there are non-compliances exceeding 10 percent of the inspected systems, then the inspector notifies the installer to cease work. The installer is to review his own work prior to the inspector restarting inspections. Follow-up inspections are to take place within two days of notification by the installer.

In addition to inspections, reports are to be provided to the AA and AHJ. There is a suggested report format in the Appendices of ASTM E 2174 & ASTM E 2393 for the inspection agency to use.

At a minimum, the ASTM E 2174 and ASTM E 2393 Inspection standards state that the final report shall contain project name, location, reference number, name and address of the installer company, prime contractor if different, AA, and AHJ.

The report must also have a summary with the types and quantity of firestop systems, the quantity of each system inspected, and a notarized written statement that the number complies with the requirements of the standard. The total number of deficiencies expressed as a percentage must appear on the final report. Inspection forms are submitted chronologically. Then, the information is submitted to the AA, with copies of the information submitted to the AHJ.

Who's Qualified to Inspect?

International Accreditation Services (IAS) has launched an Accreditation Criteria (AC) for firestop inspection agencies, called IAS AC 291. AC 291, which is like the FM 4991 and UL Contractor Programs, is geared instead towards companies that inspect firestop systems.



Walltop firestop systems with pipes need a system that allows pipes, and not just a joint. Premier Firestop Photo

The 2012 International Building Code will include these two ASTM E 2174 and ASTM E 2393 standards in Chapter 17, Special Inspections of the code. This means there will be more specifications calling for special inspection of firestop systems by an independent third party. For specifiers following the CSI three-part format, the specification of these standards best fits in section 3, "Field Quality Control."

There are very important characteristics to remember about the standards. Here's a few key points to remember when hiring a firestop inspection agency.

Effective quality programs have a procedure for the production process, and in firestopping it's the use of FM 4991 Approved and/or UL Qualified Firestop Contractors. Contractor sampling by their own crews to an amount that verifies the management system is working exists at contractor firms to be sure the process works. ASTM E2174 / E2393 provide the independent third party check and balance that samples the production process for firestop installation consistency, in a very specified manner.

Why Specify Both? Quality is the Whole Process

ASTM E2174 and ASTM E2393 can be used without the use of a Specialty Firestop Contractor or an FM 4991 Approved or UL Qualified Firestop Contractor on projects that use the "He or she who pokes hole, fills it" method of buying this trade.

However, the inspection may cost much more when used with the multiple trade firestop installation method, as it's difficult to manage anywhere from two to 40 subcontractor firms that touch fire-resistance-

rated compartmentation with their penetrating pipes, ducts, cables, etc.

Inspection costs rise dramatically due to multiple trades involved and submittal package variances to field applications due to a lack of knowledge. If a specialty firestop contractor is used, the cost of inspection decreases significantly because they have the culture of understanding systems selection, and the zero tolerance process needed to be successful at firestopping. A suggested specification is available on <http://www.fcia.org>.

EDITORS NOTE: *There has been much discussion in the firestopping industry about who is qualified to, and who should or should not inspect firestopping, perform building condition evaluation surveys, and other "inspection type" services: contractors, inspection agencies, manufacturers, distributors, manufacturers reps?*

In the next issue of Life Safety Digest, we'll study these topics and more. Stay tuned!

Bill McHugh is Executive Director of the Firestop Contractors International Association, and can be reached at bill@fcia.org. Randy Bosscawen, Multicon Fire Containment, is Past President, FCIA, and can be reached at rbosscawen@multicon.us. 🔥

Common Firestop Code Violations: Multi-Family and Other Occupancies

By Eirene Oliphant, MCP

When it comes to multi-family facilities, compartmentation is not only necessary for the welfare of the citizens living in these facilities, it is also required by code. So are detection, alarm and sprinkler systems. All these systems are comprised of several components that work together once installed in a building.

Detection and alarm systems, wiring, detection and alarm devices, and controls, are all designed, installed, inspected and tested to work as a system. Sprinklers employ piping, a wide variety of heads, water supply, and valves to create a system when properly designed, installed, inspected and tested for specific use in a building occupancy. Fire-resistance-rated compartmentation is formed by fire-resistance-rated walls, floors, fire-rated swinging and rolling doors and hardware, fire dampers, fire-rated glazing, and firestopping to complete the fire-resistance and smoke-resistant compartments.

Firestop systems help complete the fire resistance of the wall or floor by extending the fire rating of the assembly through the penetration. Firestopping is critical to the concept of continuity of the assembly. In addition to the International Building Code (IBC), NFPA 5000 and NFPA 101 The Life Safety Code, there are specific requirements for firestopping and maintaining continuity of the fire-resistance-rated and/or smoke-resistant assembly to form fire and smoke compartments. Unfortunately, unless the compartmentation, detection and alarm, or sprinkler provisions are installed exactly as they are designed and intended to perform, any of the systems can fail. And, firestopping is no different than the rest of these components.

So, how is this problem corrected? The first place to start is to address problems that occur in the field during construction or ongoing building management during the life cycle of the structure.

The following is a list of situations that may present themselves in the field not only to the general contractor, but also to the authority having jurisdiction (AHJ) or other special inspection agency performing inspections of firestop systems.

- No plan review or lack of information on plans
The first opportunity to address potential firestopping issues is at the plan review stage. The plans examiner can review the plans for various penetrating items and require that the plans include listing details for those penetrating items.

If this information is not provided on the plans, it is often left to the inspector to address in the field – when the work has already been completed and the system is more difficult to inspect as well as more difficult to access – and determine if the system was installed to the appropriate listing from the laboratory directory. When a specialty firestop contractor is used, a submittal with systems selected can be reviewed by the building official easily.

- Product to construction type
Combustible products, such as plastic piping, are generally not permitted in noncombustible construction. However, the IBC allows combustible products within noncombustible construction, provided it is in a concealed space. You need to consider the location of the penetration to determine whether combustible products can be used in the occupancy.
- Wall ratings (fire, temperature, air/smoke, water)
In addition to the “F” (flame occurrence) and “T” (temperature rise) ratings required by the IBC for fire-resistance-rated assemblies, smoke barriers and other smoke assemblies must restrict the movement of smoke. And the listing for the penetration to be firestopped must reflect that rating through the air leakage rating, stated as an “L Rating.” Some design professionals may also require that floors be rated for watertightness, and specify a “W Rating.” Those penetrating items and joints must be listed in the laboratory directories as proof that they were tested and possibly suitable for use in the assembly to meet the required ratings.
- Top and bottom of walls firestopped
In addition to through penetration firestop systems, both the top and bottom of the wall are firestopped. This can be achieved through the use of “head-of-wall” and “floor-to-wall” joint firestop systems.
- Firestopping and Associated Parts
Incorrect fasteners - Did you know that some firestop materials intumesce or expand when exposed to heat? Intumescent products are used most often with penetrating item products that can melt or change their shape in a fire, such as plastic pipe, ductwork, or other low melt

point penetrating items. Intumescent materials can expand up to 25 times their initial volume, filling voids made when the penetrating item melts, warps, or moves in a fire condition. If the correct fastener schedule is not followed, the intumescent material may break the fastener, and then be dislodged, allowing fire, smoke and gases to breach the barrier adding risk to building occupants and first responders.



- Orientation of packing material - The tested and listed system will state the specific type, density, and orientation of the packing material, such as mineral wool, ceramic fiber, or other packing/forming material. Mineral wool is a layered insulation type product and used frequently as a backing material to hold up or contribute to firestop systems fire rating. Simply stuffing in a wad of mineral wool or placing it in an incorrect orientation, if the system requires certain orientation, is against the “zero tolerance” systems culture of the firestopping industry.
- Materials not included in listing - The tested and listed system specifically states the manufacturer and the exact products that may be used. There is NO substitution allowed, as each component has different properties and fire performance; and these specific combinations and applications are what have passed testing. Many times a system is installed using a different manufacturer, the wrong firestop product or a different brand of insulation. For instance, combining an STI system with 3M firestop materials would not be acceptable. And, if a firestop system calls for Thermafiber Mineral Wool alone, and Roxul is installed, it would also not be acceptable.
- Not enough materials - Firestop materials can be some of the most expensive materials per ounce on the job site. The tested systems created by the manufacturers represent the minimum amount needed, and anything less may cause system failure.
- Tooling - Tooling is required as part of most systems and is necessary to create a solid bond to the substrates, and it is not just for aesthetics.

The problems listed above can lead to the following common firestop code violations which, if addressed correctly, can be prevented:

- Fire Resistance Rated Walls and Floors with Piping Penetrations
 - *Metallic and nonmetallic in same penetration – if the system does not allow them...*
Because of the difference in physical properties of metallic and nonmetallic piping, firestopping materials do not behave the same. Nonmetallic piping will melt when exposed to fire, thus requiring a firestopping material that will expand at a similar rate that the pipe is melting. Metallic piping conducts heat and needs a firestopping material that will help to dissipate the heat. There are systems in the various directories that will handle both situations. Unless you are given the system that shows conditions exactly as seen in the field, do not accept it.
 - *Insulated versus non-insulated*
Firestop systems for insulated pipes may require insulated pipes to be treated with a firestop material inside the wall cavity between the penetrant and the periphery of the opening. Be sure to check the listing because some systems allow for a zero annular space with a small bead of firestop sealant material around the penetrant, while others require an annular space, wrap strips, possibly restricting collars and, thus, more firestop material and labor to install successfully. Plus, if insulation type varies from the system shown, another firestop system must be selected.
 - *Forming/Packing Material types (glass, mineral, foam)*
There are a variety of insulation materials allowed as the packing/forming material component of the firestop system. Those materials include ceramic (alumina silica) fiber blanket or loose ceramic fiber insulation, foam backer rod, foamed silicone, glass fiber and mineral wool. Both glass fiber and mineral wool have varying density weights of the material, and the listing detail will note the weight/density needed to meet the listing (i.e., 4 pcf).
 - *Nonmetallic pipe/combustible pipe (including pex)*
As nonmetallic pipe surpasses the 2- to 3-inch mark, in general, a simple caulk system is insufficient. Check the system against the condition at the project site or on the plans. As annular space sizes change, and pipe type or size changes, the firestop system needed may also change.



- *Collar versus no collar*
Some systems require a restricting collar and wrap strip or a plastic pipe device for fire-resistance-rated wall and floor nonmetallic piping penetrations, while others do not. It is imperative when inspecting firestopping to first, "check the system," as it will specify what is needed for the firestop system. UL 1479 "Fire Tests of Through-Penetration Firestops" has a new testing requirement related to systems contained within a cavity. Check the system, because some include provisions for penetrations with a chase wall being optional.

- Fire-Resistance-Rated Walls and Floors with Electrical Penetrations

- *Outlet boxes*
Membrane penetrations are treated similarly to through penetrations. As a general rule, electrical outlets can meet firestopping requirements through the use of a putty pad and be separated by a distance of less than 24 inches, provided the outlets are not back-to-back. The size of the outlet allowed to be protected with the use of a putty pad varies depending on the material of the box (metallic or nonmetallic), the depth of the box, and the rating of the wall/ceiling assembly. Exceptions for firestopping of membrane penetrations exist for outlets that are less than 16 square inches and contribute to less than 100 square inches of openings within any 100 square feet of wall/ceiling area. Outlets on opposite sides of the wall must be separated by a horizontal distance of at least 24 inches. The annular space between the wall/ceiling membrane and the box cannot exceed 1/8 inch.

- *Conduit through head-of-wall joint*

There currently exists a very limited number of tested and listed systems that allow



penetrants to be installed through a head-of-wall joint. Watch for the use of products from different manufacturers, and systems, in these applications. The listing should show conduits passing through the head of the wall, with products from the same manufacturers installed.

- *Cables*

The tested and listed system will state the exact maximum cable fill percentage and the type of cables that can be part of the system. Systems can range from as little as one cable to 11 percent maximum cable fill up to 100 percent fill. In general, a sleeved opening at over 40 percent capacity is cause for further

examination. In addition, some systems may require "interstices" to be filled between cables, meaning bundles are to be opened and putty or sealant applied between every cable. Plus, the cable types based on function such as power, communications, must match the system selected.

- Cable Trays

Cables should be evenly distributed within the trays and treated similar to cable bundles for the fill materials. Installing a 5-inch-deep cable tray when the prescribed firestop system is designed to work with a cable depth of 3 inches is a violation of the system, and the zero tolerance culture of firestopping. This can cause the firestop system to fail. Another suitable system must be found to treat the assembly. If no system exists, then an engineering judgment may be requested from the manufacturer.



- Fire-Resistance-Rated Floors, Walls and Other Penetrating Items, Joints

- *Perimeter/slab edge joint*

These joints occur where the rated floor slab edge meets the non-rated exterior curtain wall and must be protected against the passage of fire, smoke and gases through the associated void. Because heat rises, positive pressure occurs at the ceiling line, rendering this area susceptible and providing an area for fire, smoke and gases to pass through the interior slot. Some systems also may have been tested to minimize the "leap frog" effect on the exterior of the building.

- *Product color*

Not all firestop materials used in system listings are red. Some are white, and some are green or even a light blue. Be sure to check the listing for the approved and tested material used in that specific firestop system design. Although the systems look easy, the limitations are very exact with zero tolerances allowed.

- Other Issues for Firestopping - The use of firestop products must be matched to the environment where the system will be used. It is recommended that specifiers communicate the performance requirements in addition to fire-resistance, smoke-resistant properties, so the products perform as intended. Listed below are a few of the possibilities:

- *Cast-in-place devices*

Cast-in-place devices are designed and tested

for very specific type and size of penetrants. A 3-inch PVC pipe through a 4- or 6-inch cast-in-place device is not an approved, tested and listed system.

– *Atypical environments*

In an atypical environment, i.e., one with very high moisture or where chemicals are in use, typical products generally may not work.



Have the contractor produce product data sheets, manufacturer suitability statements that their products are compatible with the environments used, and even MSDS and check for reactivity. Manufacturers know the limitations of their products. Have them state compatibility and check versus their own literature for verification. Also, the products must be able to work in the general construction environment expected during each stage of construction and in service use. Unless this is communicated through the specifications, the systems may not meet the building environment requirements.

– *Incompatible products*

Just as galvanic action occurs when copper and steel come into contact with each other, similar chemical reactions can occur between firestopping materials and the penetrating item they are intended to protect. Ensure that the physical properties of the materials are compatible with the penetrating items, fire-resistance-rated assembly, and surrounding areas, in addition to verifying that the listing for the approved and tested firestop system materials is followed. Once installed and inspected correctly, these materials become “firestop systems.”

– *Firestopping Engineering Judgments*

Engineering judgments come into play when a condition exists in the field that differs from the original design and another tested and listed system cannot be found from the approved or any other firestop product manufacturer. Because the situation in the field is not based on the identical design that was tested, the engineered judgment must be based on firestop material manufacturer’s internal test data and existing firestop systems, mixed in with the expertise of their technical personnel. Engineering judgments must be specific to a single project, and are not allowed to be transferred to any other project without a thorough review of all aspects of the new project by the firestop material manufacturer, and re-issued with new project specific documentation. Generally, engineering

judgments are issued by the manufacturer’s technical personnel familiar with the fire testing performance of the materials involved, a knowledgeable registered fire professional engineer or an independent testing agency.

Clearly, there is quite a lengthy list of items that can result in problems with the installation and inspection of firestopping materials that become systems when properly selected, installed and inspected. While this is not an all-inclusive list, any one of these items can contribute to the failure of the firestop system.

For an inspector, one of the easiest ways to avoid problems in the field is to ask the installer for the tested and listed system utilized. A destructive test can verify that the system is installed to the listed firestop system. A visual observation while the contractor is installing can also verify that products are being installed to the system.

An inspector should also be aware that the specifications for the building may call for independent inspection by a third-party inspector, similar to IBC’s Chapter 17 Special Inspections. That is because ASTM Standards E2174 & ASTM E 2393 have been in MasterSpec™ and SpecLink™ since 2004. They are also required in the 2012 version of the IBC for buildings 75 feet and higher above fire department access, and other special occupancies as defined by Table 1604.5.

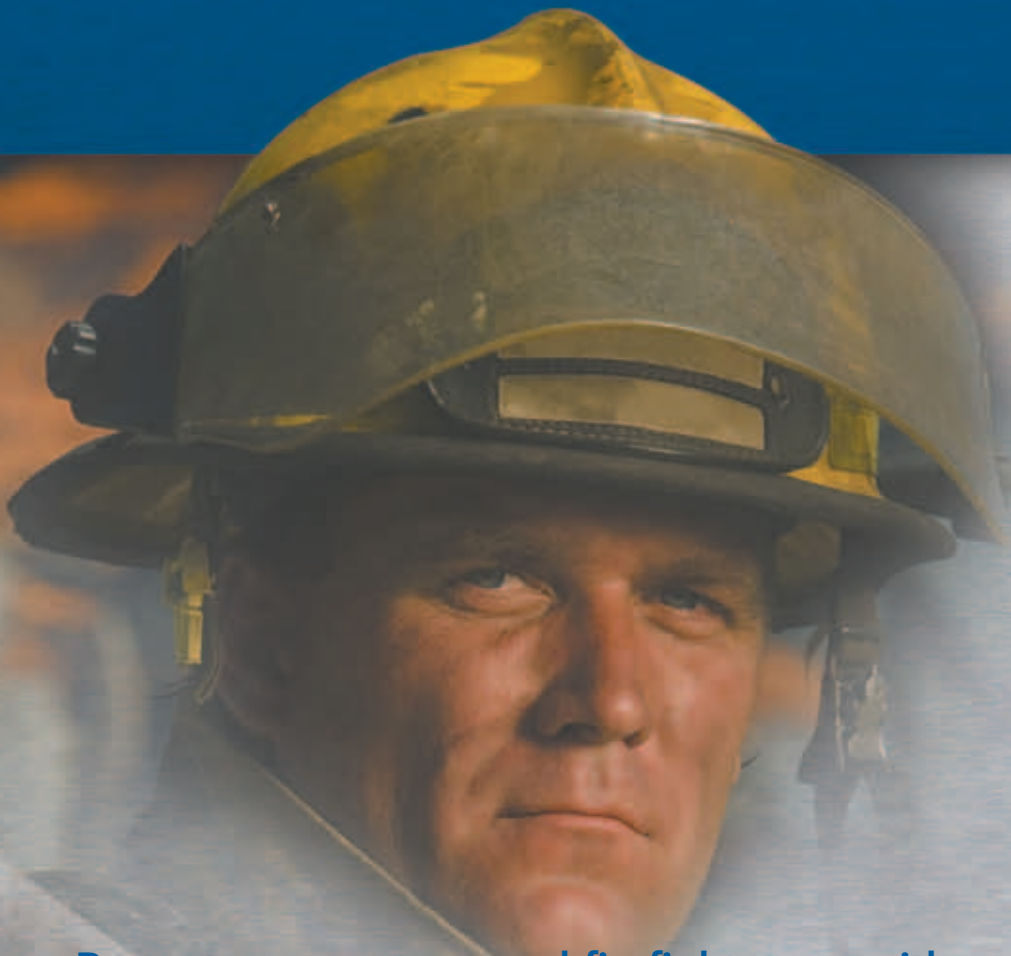
A plans examiner should ask for the jurisdiction-approved plans to include details for all the proposed systems that could be encountered on the project based on the materials being used and the fire-resistance-rated assemblies being penetrated by pipes, ducts, cables, joints, and other gaps.

As a code official, it is imperative to have a comprehensive understanding of fire-resistance-rated and smoke-resistant assemblies. The weakest link in fire and smoke barriers jeopardizes fire and life safety. Firestopping is important, as are the rest of the compartmentation disciplines that maintain the continuity of the fire-resistance rating of the assembly.

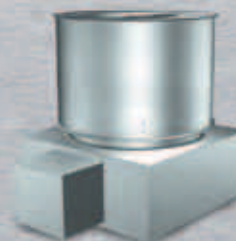
The importance of properly enforcing firestopping to ensure life safety, not only for those occupants of the building, but also for the fire service personnel who may be responding to the call, is as important as any other life safety item in the building.

Eirene Oliphant currently serves as the building official for Leawood, Kansas, and is president of E-Codes, Inc, a private company that provides consulting, third-party inspection services and educational services to the design, construction and codes communities. Oliphant presently sits on the International Code Council’s Fuel Gas/Mechanical/Plumbing/Private Sewage Interpretation Committee. Oliphant was the founding president of the Kansas City Metro Association of Permit Technicians and is past president of the Metropolitan Kansas City Chapter of the ICC. Life Safety Digest’s Bill McHugh contributed to the article. Contact him at bill@fcia.org. 🔥

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Industry News

More Industry News

Oregon Accepts Firestop/Containment Worker Four-Year Apprenticeship

FCIA Apprenticeship Chair Bob Hasting received approval for the FCIA Firestop/Containment Worker Standards this week. Oregon is the second state to adopt the standards, based on FCIA's Firestop Apprenticeship Education outline. "I have to give credit to FCIA Past Presidents who supported the initiative: Ray Usher, Bob LeClair, Don Murphy, Tom Hottenroth, Bill Hoos, and Randy Bosscawen. Without them, Co-Chair Don Donnelly, and committee members, this accomplishment wouldn't be possible.

FCIA Firestop Industry Conference & Trade Show

Interesting speakers, beautiful hotel, challenging golf course ... if you missed the **FCIA Firestop Industry Conference & Trade Show**, check out FCIA.org for presentations this week: Renee Jacobs, CHFM, Vice President, Facilities and Construction at St. Luke's, KS, spoke on "Importance of Fire Barrier Management;" Andrew Streifel, Infection Control at Univ. of Minnesota Hospitals, on "Infection Control and Firestopping" ... and more. FCIA members who did not attend will receive a conference program via mail - hope to see you at FCIA's Education and Committee Action Conference, April 26 -29.

The FCIA Ray Usher Golf Tournament to raise funds for the scholarship at the University of Maryland was loads of fun and well attended with 50+ golfers and 16 golf sponsors. Scholarship applications will be evaluated and then awarded to a deserving fire protection engineering student for the fall 2011 semester.

THANK YOU to 2010 Ray Usher Memorial Golf Sponsors!

Lunch: HILTI, Inc., **Golf Prizes:** Specified



Technologies, Inc., Thermafiber & Thermal Ceramics, **Golf Hole Sponsors:** 1 Source Firestop Inc., 3M Fire Protection Products, Falconer Engineering & Testing, Firestop Solutions, Inc.,

Multicon Fire Containment, Phoenix Insurance Group, Inc., PPMI Firestop Inc., Specified Technologies, Inc., Superl, Inc., Telgian Corp., Thermafiber, Inc., Thermal Ceramics, Thomas J. Donnelly, Inc. and Total Fire Protection, Inc.

Announcing FCIA 2011 Board

FCIA Board Elections took place at the conference.

The new board includes **Bob Hasting**, Specialty Firestop Systems — President; New Director Eric Keeton, Dalton Maintenance, inc.; New Director **Don Murphy**, PPMI Firestop, Inc.; New Director **Jodi Clem**, PREVENT — Director; **Gary Hamilton**, Hamilton Benchmark Inc. — Director; New Director **Scott Rankin**, Pyro-Stop, LLC — Director; **Ken Slama**, National Firestop Ltd.—Director; **Bill Hoos**, JHC Firestop, Inc. — Past President; **Randy Bosscawen**, Multicon Fire Containment — Past President



FCIA Abu Dhabi Educational Seminar a Big Success

FCIA's Educational Seminar in Abu Dhabi had over 85 people attending, and great education for members, building officials, airport authorities, large general contractors, the U.S. Army, and more. There were 13 FM 4991 and UL Qualified Firestop Contractor Program Firestop Exam test takers, with all participating in the FCIA Education Program prior to the exams.



THANK YOU to FCIA Abu Dhabi Educational Program SPONSORS for your support!

- Specified Technologies, Inc. & Eastern Wings Equipment, Oct. 17 Luncheon & Tabletop
- Butler (ME), 17 October Break Sponsor, Tabletop, Banner & Program Ad
- Firestop Middle East, Program Ad
- FSIME Construction, LLC, Tabletop, Banner & Program Ad
- Gleeson Powers Inc., Program Ad
- HILTI, 17 October Break Sponsor & Tabletop
- Intherpro, LLC, 17 October Break Sponsor, Banner & Program Ad
- Shoeb Fire Fighting Eqpt. and Trdg., Banner;
- Thermafiber, Inc., Program Ad
- Thermofire (Middle East) Limited, Banner& Program Ad

FCIA's program is very timely, as the new Abu Dhabi Building Code debuts in 2012. Plus, construction is booming still. Gulf News reports "over 300 projects worth \$143 billion AED are ready to be built in addition to the 1,300 underway."

FCIA Apprenticeship Committee Assembling Modules, Videos

FCIA's Apprenticeship Committee has already sent drafts of modules and the first video to the committee for review.

Photoluminescent Safety Association Elects New Officers

The Photoluminescent Safety Association has elected two new board members and new officers. The new directors are Joe Bloomfield, GlowZone Inc., returning for a second term, and Al Carlson, with Jessup Manufacturing Company, who was a founding board member. The following are the officers for the coming year; President Phil Befumo, United Mineral & Chemical Corporation; Executive Vice President Jim Armour, Balco, Inc.; Vice President Marina Batzke, American Permalight, Inc.; Secretary Joe Bloomfield, GlowZone Inc.; Treasurer Al Carlson. Jessup Manufacturing Company.

Firestopping Engineering Judgments

Firestopping Engineering Judgments – Engineering Judgments are sought only if there is no tested and listed system available for the particular situation. To help manufacturers, specialty firestop contractors, consultants and others, there is a new tool under development from UL that will help those searching for "systems." The prototype is already online, called the "Fire Resistance Wizard." Look for the introduction of this new "UL Firestop Wizard" tool in early 2011.

CONSTRUCT

CONSTRUCT2011 & the CSI Annual Convention

Join FCIA and numerous industry experts and exhibits for the 2011 Construct Show in Chicago, Sept. 14-16. Life Safety Digest is distributed at the show.

FCIA Awards Murphy, McHugh



FCIA awarded Don Murphy The Award of Excellence, "For his continued efforts to upgrade the role of the Firestopping Contractor, for his time and talents so unselfishly given as an officer, director and committee chair and member." The FCIA President's Award for "Continued efforts to upgrade

the role of the firestopping contractor, manufacturer, associate as FCIA Steering Committee Member and Executive Director" was given to Bill McHugh.

UL/FM Firestop Exam Dates Announced:

- March 29, 2011 – UL, Toronto
- April 27, 2011 - FCIA Education, FM/UL Firestop Exams at FCIA Firestop Education and Committee Action Conference
- June 2, 2011 – UL, Northbrook, IL
- July 21, 2011 UL, Melville, NY
- Nov. 9, 2011 – FCIA Education, FM/UL Firestop Exams at FCIA Firestop Industry Conference & Trade Show

FCIA Members going for FM 4991 Approval and UL Qualification

The FM 4991 and UL Qualified Contractor Programs are growing. Between the two programs, there are well over 90 contractor firms covering the



Underwriters' Laboratories of Canada
Laboratoires des Assureurs du Canada
Qualified Firestop Contractor Program



major cities in the United States, Canada, and United Arab Emirates.

New FCIA FM 4991 Approved Contractors

BAF Specialty Inc. - CA
D. W. Firestopping Inc. - LA
MASCO – Mato Inc. – CO

New UL & ULC Qualified Firestop Contractors

Hudson Bay Insulation - WA

FCIA Membership Keeps Growing

Due to the many positive programs, and the referrals from several FCIA Members in all categories, FCIA's Membership has grown to 282, with retention doing well too.

BHMA Announces New Board

The Builders Hardware Manufacturers Association (BHMA) has elected a new president and a slate of new officers for 2011. Don Baker, vice president of engineering for the Americas for Ingersoll Rand, will succeed Scott Duncan, CEO and president of DORMA Architectural Hardware, as president of the association.

The other officers that make up the new 2011 BHMA Board of Directors are: 1st Vice President Sandy Johnson, Stanley Security Solutions ; 2nd Vice President Scott James, CompX International, Inc.; 3rd Vice President Dan Picard, Sargent Manufacturing Company; and Immediate Past President – Scott Duncan, DORMA Architectural Hardware.

"The ongoing success of BHMA's industry standards and codes initiatives and each program that supports them emanate from the strategies-driven direction of the BHMA Executive Committee," said Ralph Vasami, the executive director for BHMA. "BHMA appreciates Scott Duncan's innumerable contributions while president and in the many other leadership roles he's held. Don and the entire board look forward to another challenging and productive year."

Code Corner

FCIA at ICC 2010 Charlotte Final Action Hearings

Eirene Oliphant, and ADM 12 Code Proposal, was heard at the Final Action Hearings at Charlotte, Oct. 25. ADM 12 asked for submittals for firestop systems to be approved by the building official prior to construction. The result of the systems submittal approval is that firestop systems receive attention by the building official before installation. Although great support from building officials, the National Association of Home Builders opposed the proposal, which was DISAPPROVED. Watch for FCIA's ICC 2015 Cycle Code Strategy in the next few months.

ICC's International Green Construction Code (IGCC)

The International Code Council has been working with many industry groups to assemble an overlay the IGCC 'Green Construction Code' to the International Family of Codes. There are still a year's worth of hearings and debate before the code is finished. However, it seems municipalities are jumping on the bandwagon early. Warwick, RI and Richland, WA have both adapted the draft of the IGCC in their jurisdictions.

PCA Addresses Green Construction with New Document

The Portland Cement Association has already assembled a position paper that is directed at the

IGCC and other International Codes. Check it out at <http://www.cement.org/codes/>. The document that addresses green construction is called the High Performance Building Requirements for Sustainability, and it's free. It's important that the effective compartmentation industries participate in this debate to protect fire and life safety in buildings.

NASFM's Dwayne Garriss wins ICC Board of Directors Election

ICC Immediate Past President Adolf Zubia swore in the new officers and directors of the International Code Council Board during at the 2010 ICC Annual Conference in Charlotte. Congratulations to Dwayne, CMS Administrator, State of Georgia, and an active participant at the ICC Code Development Process. His interests are in greater fire and life safety.

FCIA Consultant Bill Koffel wins ICC Affiliate Award

William E. Koffel, President of Koffel Associates, was the recipient of the International Code Council Affiliate Award, which is given in honor of John Fies, Wilbur H. Lind and Alton Riddick,



Bill Koffel (Center)

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who demonstrated unselfish service to the original model code organizations. Koffel has been active in the council's code development process and is known for his role in developing drafts of the International Building Code and International Fire Code.

"I'm truly humbled to be to be listed with the previous recipients of this award, many of which, for 30 years now, I've been watching and learning from," Koffel said. FCIA wrote a supporting letter to ICC's Awards Committee for Koffel's well deserved citation.

Clarification – In the Fall 2010 issue, Life Safety Digest reported that a public comment to code proposal FS4-09-10, had passed: *Another issue APPROVED was in FS4, where it was clarified that water*

washed glass and other fire resistance rated assemblies, must maintain the fire rating without relying on a sprinkler. The International Firestop Council submitted this proposal.

As a clarification, the final sentence in the public comment states 'However, this section shall not prohibit or limit the duties and powers of the building official allowed by Sections 104.10 and 104.11. Look for an article on the concept in future issues of Life Safety Digest. 🔥

Life Safety Digest 2010 Industry Calendar

Jan. 18 to 21

World of Concrete, Las Vegas

Jan. 31 – Feb. 4

EduCode, Las Vegas

Feb. 23-25

Life Safety Organization Meeting, Las Vegas

March 22-25

National Insulation Association Annual Convention, Tucson, AZ

March 23-25

International Facility Managers Association Facility Fusion, Boston

April 10-13

ASTM E06 Performance of Buildings Meetings, Anaheim, CA

April 26-29

FCIA Education & Committee Action Conference, New Orleans

May 12-14

AIA National Convention and Design Expo, New Orleans

May 16-22

International Green Construction Code Hearings, Dallas

May 25-29

Construction Specifications Canada, Montreal

June 1-4

International Door Association Expo, Indianapolis

June 12-15

NFPA Conference & Expo, Boston

June 12-15

ASTM E05 Fire Standards Meetings, Anaheim, CA

June 26-29

BOMA – The Every Building Show, Washington DC

Sept. 13-16

CONSTRUCT2011, CSI Annual Convention, Chicago

Oct. 26 & 27

Door & Hardware Institute 36th Annual Conference & Exposition, New York

Oct. 30-Nov.2

ASTM E06 Performance of Buildings Meetings, Tampa

Oct. 30- Nov. 3

ICC Annual Conference, Phoenix

Oct. 23-28

Society of Fire Protection Engineers Annual Meeting, Professional Development Conference, Portland, OR

Nov. 8-11

FCIA Firestop Industry Conference & Trade Show, San Diego

Dec. 4-7

ASTM E05 Fire Standards Meetings, Tampa

Resilient Building Design Focus of Summit

Professionals from the public and private sectors convened in Washington, D.C., to focus on promoting and enhancing the resilience of buildings and infrastructure. On Dec. 1, coinciding with the second day of the event, President Barack Obama proclaimed December Critical Infrastructure Protection Month, showing his commitment to delivering the necessary information, tools and resources to areas where critical infrastructure exists to maintain and enhance its security and resilience.

Sponsored by the U.S. Department of Homeland Security (DHS) Science and Technology Directorate, and organized by the National Institute of Building Sciences, *Designing for a Resilient America: A Stakeholder Summit on High Performance Resilient Buildings and Related Infrastructure*, held at the American Institute of Architects headquarters, brought federal agencies, private industry, academia, state and local officials, and professional and trade organizations together to develop recommendations for buildings and related infrastructure.

"The Department of Homeland Security has brought some of the best minds from the public and private sectors together for this Summit," said Henry L. Green, President of the National Institute of Building Sciences. "The U.S. government invests substantial funding into buildings, which can be targets of terrorist attacks and impacted by natural disasters. We at the institute are happy to assist DHS in coordinating this event to focus on how to design greater resilience into buildings and related infrastructure."

The summit supports the White House's goal of enhancing the resiliency of the nation's building stock and included Brian Kamoie, a member of the National Security Staff at the White House; Stephen E. Flynn, President of the Center for National Policy; and David Heyman, Assistant Secretary, Office of Policy at DHS.

The DHS panel included Christopher Doyle, Director, Infrastructure Protection & Disaster Management Division of the Science and Technology Directorate; Sue Armstrong, Deputy Assistant Secretary, Office of Infrastructure Protection; Rich Marshall, Director, Global Cyber Security Management, National Cyber Security Division, both of the National Protectorate and Programs Directorate; and Sandra Knight, Deputy Federal Insurance and Mitigation Administrator at the Federal Emergency Management Agency (FEMA). It was moderated David J. Kaufman, Director, Office of Policy and Program Analysis, also of FEMA.

Resiliency goes beyond the physical security of a building to address the ability of a building to continue functioning after a disaster or threatening event. When designing buildings, architects and engineers must address federal, state and local requirements in addition to the needs of their clients. To make a resilient, high-

performing building, they have to balance numerous concerns, such as safety and security with cost-effectiveness, sustainability, accessibility, functionality, productivity, historic preservation and aesthetics. The challenge, and a major purpose of the summit, is to address how to integrate resilience while satisfying the other needs of building owners.

Findings from the summit include:

There is a great need to improve the performance of the nation's built environment.

- The federal departments and agencies need to work together to effectively address an integrated approach to resiliency. The federal government should enhance its partnerships with the private sector to adopt resiliency in the design, construction and operations of buildings and related infrastructure.
- A large body of work has already been done on resiliency in both the public and private sectors. There is a need to identify this current state of the art for resiliency and leverage national organizations to help communicate this work to put it into practice.
- There are already many active committees in both the public and private sectors that are working in the area of resiliency. These committees should be used to further advance the concept of all hazards and high performance to enhance the security and resilience of buildings and related infrastructure.
- Work is underway to define and measure resiliency and high performance in buildings and related infrastructure. The federal government and private sector organizations should continue this collaboration to further develop resilience metrics and benchmarks to allow an all-hazards approach.
- Research and development plays a crucial role in developing tools and techniques for improving resiliency. Universities, national laboratories and centers of excellence should be engaged in the advancement of resiliency efforts.
- The Resilience Summit was an important step in advancing resiliency. Necessary efforts should be made to build the partnerships and activities developed during this initial gathering and similar events should occur in the future to continue the forum of discussion.

DHS and the institute will compile the proceedings of the summit into a report, which will include the results of nine working group sessions held during the event. To sign up to receive an emailed copy of the report when it becomes available, contact nibs@nibs.org with "report request" in the subject line. 🔥

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