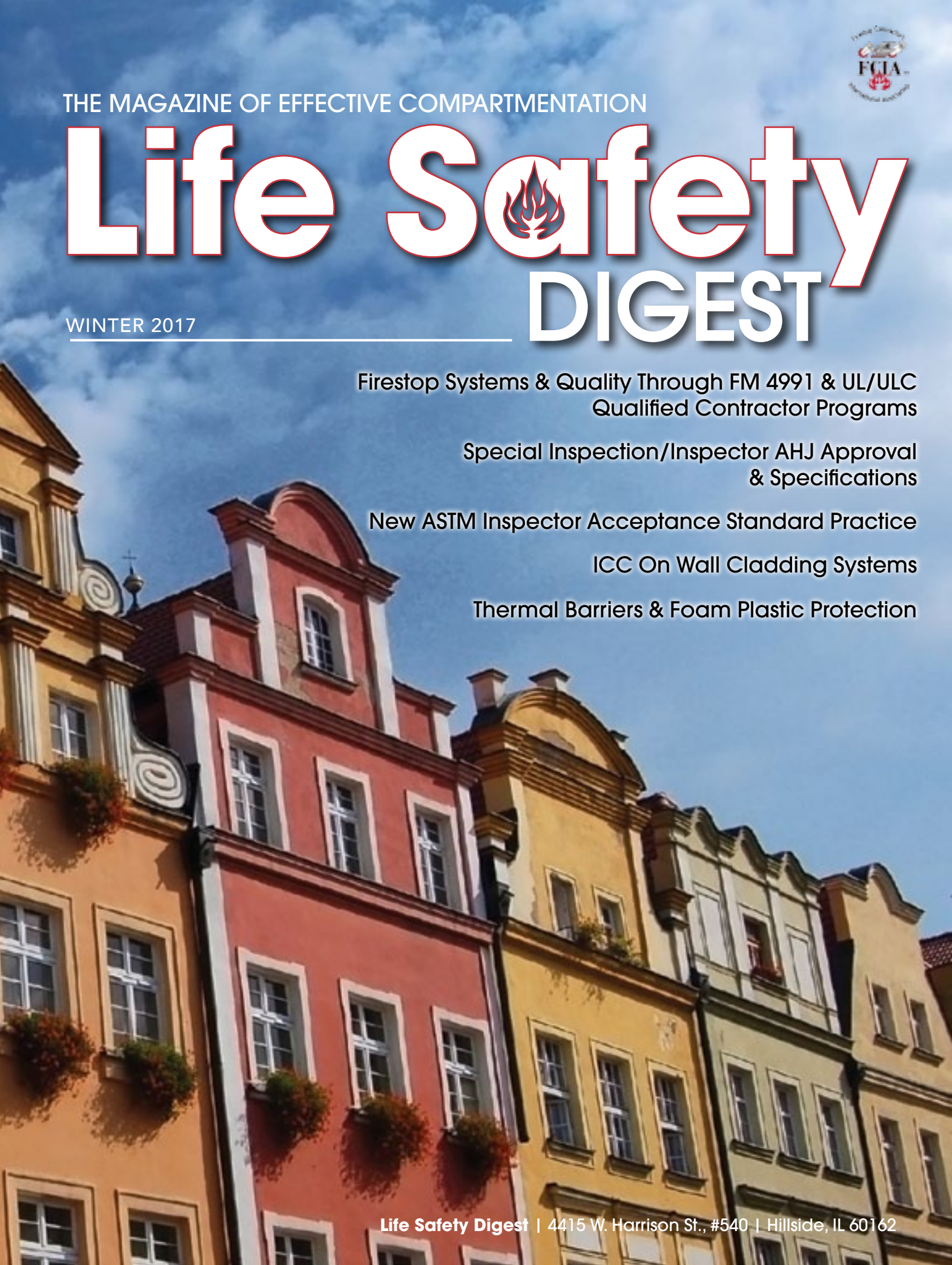

THE MAGAZINE OF EFFECTIVE COMPARTMENTATION

Life Safety DIGEST

WINTER 2017

Firestop Systems & Quality Through FM 4991 & UL/ULC Qualified Contractor Programs

Special Inspection/Inspector AHJ Approval & Specifications

New ASTM Inspector Acceptance Standard Practice

ICC On Wall Cladding Systems

Thermal Barriers & Foam Plastic Protection

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LIFE SAFETY DIGEST

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EDITOR'S MESSAGE

Check out this issue of *Life Safety Digest*.

Many publications offer all kinds of information about products and testing for use in construction, but how many offer analysis on how the installation and inspection qualifications and processes work? In this issue of FCIA's *Life Safety Digest*, FCIA Accreditation Chair, Aedan Gleeson and Ben Urcavich, Accreditation Committee Member look at what a Firestop Contractor Quality Management System is and how it works to provide life-safety firestop systems to the UL, Intertek, FM Approvals or other laboratory listing and Manufacturers' installation instructions. Another article by FCIA Inspection Chair, Tracy Smith, analyzes Firestopping Special Inspection according to the International Building Code, while Eric Keeton, FCIA Standards Chair, provides insight into a new standard practice, ASTM E 3038, *Standard Practice for Assessing and Qualifying Candidates as Inspectors of Firestop Systems and Fire-Resistive Joint Systems*.

Then, don't miss the Industry News and Industry Calendar. There's a lot going on in the fire-resistance industry as we all participate in the ASTM and UL Standards Development Processes, National Building Code of Canada, International Code Council and NFPA Code Development Processes and much more.

While products are important, the installation and inspection processes are equally important to be sure that life-safety firestop systems work when called upon by fire and smoke.

UNLIMITED?

Not when it comes to fire rated glass

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

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

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

Ceramics (Fire Protective)

Filmed or Laminated Ceramic in a 60 minute temperature rise door limited to 100 square inches

SuperLite II-XL (Fire Resistive)

SuperLite II-XL 60 in a 60 minute temperature door over 100 square inches. The sidelites and transoms also use SuperLite II-XL 60 in GPX Architectural Series Framing

For more information on USA-made, code-compliant fire rated glass and framing products, visit **www.safti.com** or call **888.653.3333**.

WRITTEN BY **AEDAN GLEESON & BEN URCAVICH**

FIRESTOP SYSTEMS & QUALITY THROUGH FM 4991 & UL/ULC QUALIFIED CONTRACTOR PROGRAMS

MULTI-FAMILY TO INDUSTRIAL, INSTITUTIONAL AND HIGH-RISE CONSTRUCTION & MAINTENANCE

In advertising, there have been many claims about how easy it is to install, inspect and maintain all types of construction products. We at FCIA have an opinion about this. Nothing in construction is "easy". It takes skill and understanding to install any construction product properly. Think of your last DIY job at home. How many trips to the hardware store did it take until it was completed? How many "do overs" to get it right? Bottom line…. nothing is as easy as it looks.

In the manufacturing sector of the construction industry, companies have embraced the quality concept through having their manufacturing processes reviewed and confirmed by third-party, independent ISO 9000 Auditing Processes. While the quality of products might have improved from the quality movement and ISO 9000 Audited Processes, what about the installation and inspection of installed products? Has it kept pace? In one trade, yes. Firestopping.

FCIA'S 'DIIM'

The professional firestopping industry has focused quality through the 'DIIM' of Firestopping process – the proper D-Design, I-Installation, I-Inspection and M-Maintenance/Management of firestopping for fire- and life-safety. The FCIA's focus on this has been through the quality management system process of the 'IIM'.

The Firestop Contractors International Association (FCIA) has developed a complete package for the 'IIM' by working with the Contractor members, Manufacturers and Consultants to build meaningful standards, approvals and qualifications. The idea is that these 'IIM' programs result in installations that match the tested and listed design listings and Manufacturers' installation instructions for the building's complete life-cycle.

The **D-Design**, is the Manufacturer's investment in testing at the leading laboratories like UL, FM Approvals, Intertek and others.

The **I-Installation** part of firestopping's 'IIM' focuses on the firestop contractor company and the process, or management system, it uses to get firestopping installed to the tested and listed firestop system and Manufacturers' installation instructions.

The second **I-Inspection,** covers the inspection by the contractor of their own work and the Specialty Inspection Agency third-party independent inspection. Specialty Inspection Agencies can also participate in programs for quality, such as the International Accreditation Service's IAS AC 291 program.

Firestop products become systems when installed to the listing and manufacturers installation instructions. Performance Firestop Photo.

Finally, the **M-Maintenance and Management** of Firestopping and fire-resistance-rated and smoke-resistant construction is an ongoing issue that needs attention by Building Owners and Managers. Some hire this work out to professional firestop contractors who perform Barrier Management Services, while other Building Owners perform the annual survey required by the International Fire Code on their own.

MANAGING THE I-INSTALLATION

There are several parts of the management system program that are needed to make the "I-Installation" work according to the FM 4991, *Standard for the Approval of Firestop Contractors*, or the UL/ULC Qualified Firestop Contractor Program requirements.

DESIGNATED RESPONSIBLE INDIVIDUAL

Both the FM 4991 Approved Contractor and UL/ULC Qualified Firestop Contractor Programs require that a key individual at a company take and pass at an 80% score, an examination based on the FCIA Firestop Manual of Practice, Systems Selection and Analysis and

the FM and UL/ULC Programs. Once the person passes the exam and the company becomes a FM 4991 Approved or UL/ULC Qualified Firestop Company, the firm appoints the person as the Designated Responsible Individual, or DRI. DRI's manage the operations of the audited company management system.

MANAGEMENT SYSTEM

The manufacturing industry is no stranger to the management system concept. The construction subcontracting industry had not embraced this concept until FCIA started its talks with FM and UL almost 20 years ago. Both programs - the FM 4991 Firestop Contractor Approval and UL's Qualified Firestop Contractor Program - require a management system, the first step towards either company-based credential.

In a management system, the firestop contractor company must demonstrate that they have procedures for firestopping to happen correctly. The management system is a custom, company-specific set of processes and procedures for quality assurance, systems selection/analysis, communication of the tested and listed systems and Manufacturers' installation instructions to workers on project sites and measures for ensuring proper installation and inspection of their own work. Also included is a functioning material control and handling system and appropriate measures for inspecting the contractor company's own completed firestop assemblies after they've been installed.

The procedures are all documented in a Quality Management System Manual that is unique to each contractor company. It is unique because not every company operates the same. It is the company's competitive advantage.

There are some requirements that must be met by companies who are FM 4991 Approved or UL/ULC Qualified. The company must keep records of installations for at least 7 years. In addition to a management system, the firestop company employs a person who has passed an exam, referenced above. The FM Firestop Exam will have questions based on the FM 4991 Approval Standard while the UL/ULC Firestop Exam will have questions on the UL/ULC Program Requirements. Both have many questions on systems selection and analysis.

WHAT'S A MANAGEMENT SYSTEM MANUAL

A management system is a program that is developed and implemented by a company in respect to quality. There are several topics that need to be addressed by the company with procedures – in other words, a management system. The focus is the company. The credential – FM 4991 Approved Firestop Contractor or UL/ULC Qualified Firestop Contractor – are about the company AND the individual. It's not a personal certification program, it's much more.

There are several key points that must have documented processes that are audited for verification by FM or UL/ULC. Read on below several items found in management systems manuals.

Estimates, Proposals, Decisions, Job Start – As with any project, the firestop contractor needs procedures for how a project is started. It all starts with the plans and specs, firestop systems and manufacturers installation instructions and safety data sheets

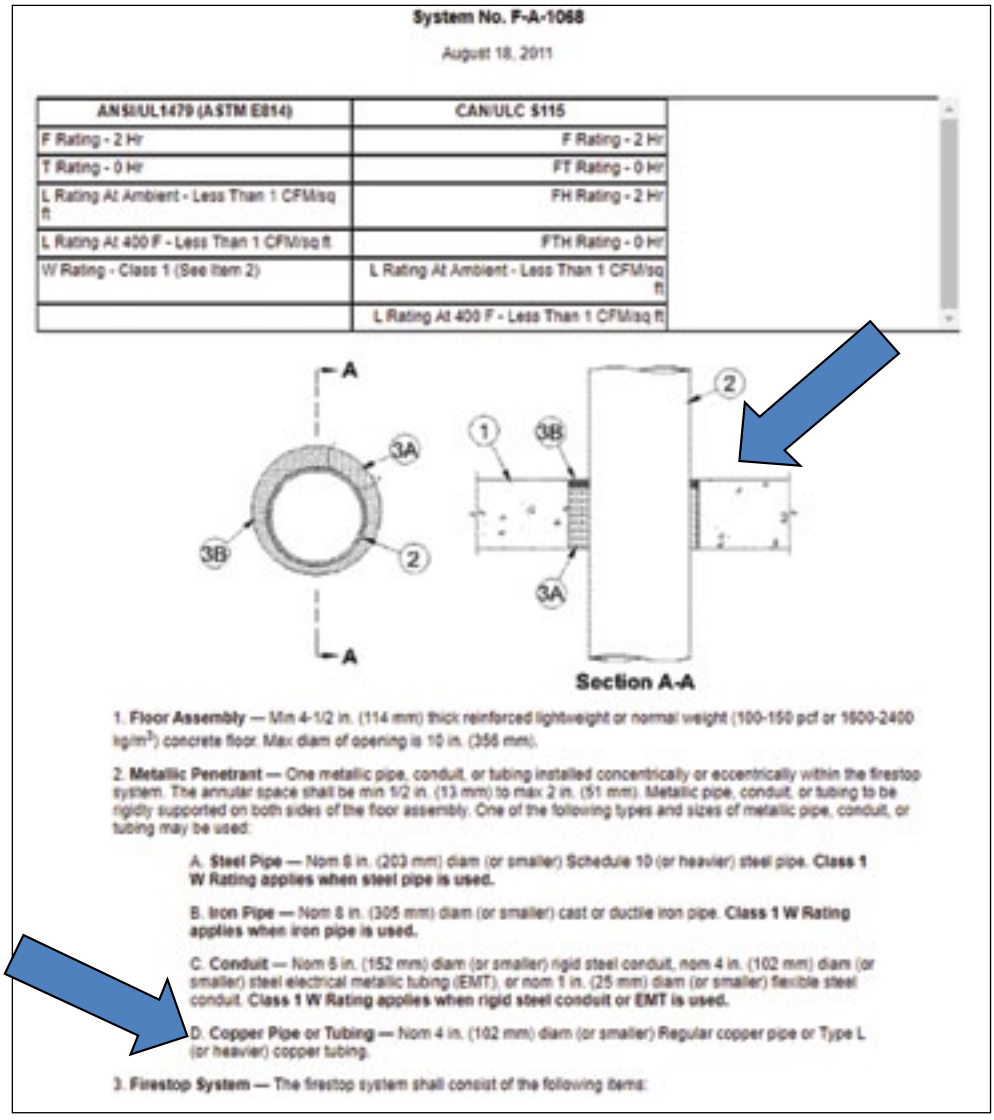
Employee Training & Education - The company is only as good as its personnel. Companies invest in their personnel through training and education. To meet this requirement, the company needs to show proof of education through proof that a person passed the FM or UL/ULC Firestop Exam. Continuing education needs to be documented. Various personnel need to be trained. Verification is through receipts at conferences, sign-in sheets and more. For the workforce, the FCIA Firestop Containment Worker Education Program and specific Manufacturer education sessions can be used as a training tool for the company's employees.

For instance, employees need to know the difference between systems. From pictures, UL System C-AJ-1501 (http://productspec.ul.com/document.php?id=XHEZ.C-AJ-1501), and system F-A-1068 (http://productspec.ul.com/document.php?id=XHEZ.F-A-1068) look the same. When analyzing the system, the C-AJ-1501 is eliminated since the penetrating item is limited to Aluminum Piping. F-A-1068 allows copper penetrating items. In the picture below, it appears there is no sleeve in the assembly. However, if there was, that would disqualify System F-A-1068 and we'd have to look for another system. Both F-A-1068 and C-AJ-1501 have been tested for smoke by existence of an "L" Rating. The "L" Rating helps the firestop contractor comply with the IBC Code requirement for <5cfm/sf opening area and <100cfm/10'x10' air leakage in the smoke barrier.

Firestopping looks easy. Annular space sizes, backing/damming depth, firestop sealant application under pipe supports, correct firestop sealant thickness, and then, documentation of the UL System, (F-A-1068) is key to success. Gleeson Powers Photo

Systems Selection & Analysis – Firestop Contractors need to select and install firestop systems. Selection takes place during the estimate time, prior to providing proposals. The systems selected become the tool used to submit for approval from General Contractors, Building Owners and Managers, Fire Marshals/ Inspectors and Building Code Officials. After installation, the systems selected are reviewed by the Contractor personnel for quality control. The same systems are also used by 3rd-party Specialty Inspection Agencies during their inspections.

Communicate Systems to Field – After systems are selected, those systems that are likely to be installed on the jobsite need to be communicated through work orders. Should conditions come up in the field where the systems were not communicated, the company needs to have processes in place to handle these situations. Do the field workers then review a directory, whether online or in print, to select new systems for the DRI to review and approve? Does the field crew look through their catalog of systems to find the right system, then install without approval? What kind of training do the workers undergo to qualify them to handle this important task? Each company will have a unique way to handle systems selection based on their company philosophy. Common among all firestop contractors is that before requesting an Engineering Judgment or EJ, they should look for another system from all Manufacturers to see if there is a tested and listed system available. More on EJ's in another Life Safety Digest article.



System No. F-A-1088

August 18, 2011

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating - 2 Hr	F Rating - 2 Hr
T Rating - 0 Hr	FT Rating - 0 Hr
L Rating At Ambient - Less Than 1 CFM/sq ft	FH Rating - 2 Hr
L Rating At 400 F - Less Than 1 CFM/sq ft	FTH Rating - 0 Hr
W Rating - Class 1 (See Item 2)	L Rating At Ambient - Less Than 1 CFM/sq ft
	L Rating At 400 F - Less Than 1 CFM/sq ft

Section A-A

1. **Floor Assembly** — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m^3) concrete floor. Max diam of opening is 10 in. (356 mm).

2. **Metallic Penetrant** — One metallic pipe, conduit, or tubing installed concentrically or eccentrically within the firestop system. The annular space shall be min 1/2 in. (13 mm) to max 2 in. (51 mm). Metallic pipe, conduit, or tubing to be rigidly supported on both sides of the floor assembly. One of the following types and sizes of metallic pipe, conduit, or tubing may be used:

A. **Steel Pipe** — Nom 8 in. (203 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe. **Class 1 W Rating applies when steel pipe is used.**

B. **Iron Pipe** — Nom 8 in. (305 mm) diam (or smaller) cast or ductile iron pipe. **Class 1 W Rating applies when iron pipe is used.**

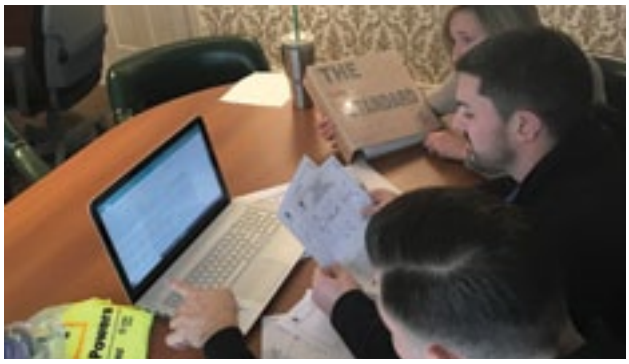
C. **Conduit** — Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit, nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT), or nom 1 in. (25 mm) diam (or smaller) flexible steel conduit. **Class 1 W Rating applies when rigid steel conduit or EMT is used.**

D. **Copper Pipe or Tubing** — Nom 4 in. (102 mm) diam (or smaller) Regular copper pipe or Type L (or heavier) copper tubing.

3. **Firestop System** — The firestop system shall consist of the following items:

Material Controls - The contractor company needs to be sure the right materials are used in the tested and listed systems. They also need to use materials that are still useable. Shelf-life needs to be checked to be sure the material has not yet expired. Installation temperature limitations from product data sheets, installation instructions and Safety Data Sheets need to be understood by the firestop containment worker crews. Material receipt inspection and rejection procedures need to be in place.

Systems installation "protocol" – Once the material has been checked out, installation to the tested and listed system design parameters and the Manufacturers' installation instructions must be followed. FCIA's 2015 code proposal for the 2018 IBC now means that the Firestop Contractor must have both the listings and Manufacturers installation instructions at the jobsite to verify that the products are installed as required. For instance, if the annular space maximum is 2", then an annular space greater than 2" is unacceptable for that system.



Systems selected are critical to successful installation. Systems from the UL Directory, FM Approval Guide, Intertek Directory are analyzed for appropriateness before being communicated to the field. Gleeson Powers Photo.

Labeling – In the FM 4991 Standard, there is a requirement that if there is FM Approvals Labelling required by the specification, that labels follow an FM Design, numbered and with specific information. That requires a procedure. If no FM Labels are required, the contractor can supply labels to its own procedures. Check FCIA's Identification Systems Chapter in the FCIA Firestop Manual of Practice for details.

When an FM Label is specified, the special label above is used. When generic labels are specified, the label might include contractor company name and contact info, system number, date installed, etc. FM Approvals Image.

Variance Procedures – Wherever there is a variance or non-conformance of some kind or a variance to a tested and listed firestop system, the Non-Conformance(s) needs to be recorded and corrective actions documented. This is present in both the FM 4991 and UL/ULC Qualified Firestop Contractor Programs. In simple terms, mistakes need to be identified and fixed. All corrective action that has been done needs to be documented.

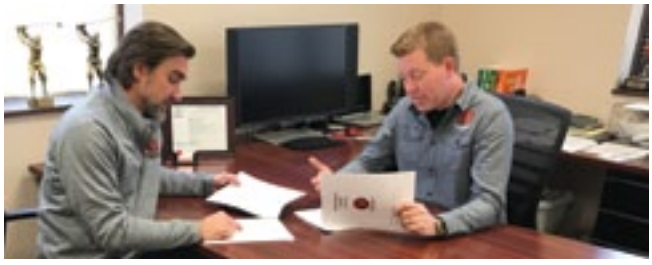
Documentation – The FM 4991 Approved or UL/ULC Qualified Firestop Contractor Program require that the firestop contractor maintain records for seven (7) years.

Recordkeeping – In both the FM and UL/ULC Firestop Contractor Programs, the FM 4991 Approved or UL/ULC Qualified Firestop Contractor Company is required to keep records for seven (7) years. Included in the records are the life safety drawings, specification, tested and listed systems designs and engineering judgements, materials used and other key items that might be audited by FM or UL/ULC Personnel during an annual audit.

Project closeout - This is a critical part of any project. This is where documentation is passed from the installer Contractor company through proper channels to the Building Owner and Manager. Documentation of firestop systems – and all fire-resistance-rated construction elements – is needed to maintain the fire-resistance and smoke-resistant assemblies for the building life-cycle. Procedures are needed to document this important process in the company's Quality Management System Manual.

Purchasing – The purchasing process for firestopping in management system based programs requires a purchase order system. The purchasing of firestop system component products must state that they conform to the system requirements. Plus, an annual review of the suppliers is also mandated.

Management System Review – At least annually, those responsible for the management system need to perform a self-audit and review of the program to be sure it's working properly. This is usually prior to the audit by FM Approvals or UL personnel.



Management System reviews are required annually. Performance Firestop Photo.

AUDIT PROCESS

Third-party Contractor company quality management system audits are about 1 to 1-1/2 days long. They are provided by nationally recognized testing laboratories like FM Approvals and UL/ULC. The auditor arrives at the Firestop Contractor Office and the audit process is discussed. The auditor then reviews project files and files related to the topics above, asking the contractor to prove that they meet all requirements of the FM 4991 or UL/ULC Qualified Firestop Contractor Program.

After an audit takes place in the office, the FM or UL/ULC Auditor then visits a project site with the Contractor to be sure they 'do as they say they do'.

FCIA collaborated with both FM Approvals to build the FM 4991, Standard for the Approval of Firestop Contractors and UL to build the UL/ULC Qualified Firestop Contractor Programs for the I-Installation piece of the 'DIIM'. We believed that this will make the Firestop Contractors better companies in the long run by focusing on the complete firestop operation.

These third-party schemes are meant to provide a benchmark level of quality to the General Contractors, Building Owners and Managers, Fire Marshals and Building Code Officials who design and approve the systems used in structures. These FM 4991 and UL/

ULC Qualified Firestop Contractor Programs are a way to quantifiably qualify Contractor companies setting a benchmark level of quality for their installations.

In addition to initial audits, there are also annual audits performed by FM Approvals or UL/ULC. The annual audit verifies that the Firestop Contractor's processes are still working as they did at the time of the initial audit.

FM 4991 OR UL QFC AUDIT PRICES

FM Approvals and UL/ULC charge for their time and reviews for the contractor to become approved. Cost of the initial audit ranges from $6,500 to $12,000, depending on the time and travel it takes to complete the initial audit. In both cases, the FM 4991 or UL/ULC QFC annual audit costs $3,500 USD.

ARE MANUFACTURER PROGRAMS EQUAL TO FM 4991 OR UL QFC?

There are many firestop Manufacturers that offer programs to meet the needs of specifications that state the Manufacturer must approve the Contractors. Some have stated that the Manufacture programs are equal to the FM 4991 or UL/ULC Qualified Firestop Contractor Programs. FCIA has great respect for the Manufacturers of firestopping. They have invested heavily in manufacturing, marketing, testing, innovations and personnel. However, the Manufacturer programs are not equal to the FM 4991 or UL/ULC Qualified Firestop Contractor Programs.

First, the Manufacturer programs are not third-party operated. The Manufacturer has a vested interest in the sale of their products.

Second, Manufacturer programs vary a lot. Some require a visit to the Manufacturer's facility where 1-2 days of education is provided. Most Contractors send estimators and project management personnel for these trips. An exam might be given by the Manufacturer. For the workers, short, 30-minute to 1-hour education programs focus on giving cards to the workers in the field. For these programs, an exam might or might not be required. The critical thing is that these programs are for individual workers and not the company that is directing them. And, the worker programs are usually free. The Manufacturer's facility education programs might have a fee that is sometimes waived.

CONCLUSION

Specifiers consider that Manufacturers programs are not equal to the FM 4991 and UL/ULC Qualified Firestop Contractor Programs. Specify FCIA Member, FM 4991 Approved, UL/ULC QFC Firestop Contractors AND Manufacturer education programs. A specification that says, 'either FM 4991, UL/ULC QFC Firestop Contractors OR Manufacturer accredited' is a specification that will not draw a consistent level of quality assurance from the prospective installation companies.

General Contractors, Building Owners and Managers, check out the value that comes from FCIA Member, FM 4991 Approved Firestop or UL/ULC Qualified Firestop Contractors. There's a reason there are differences between the companies that just 'fire caulk' everything and those who understand what the technical aspects of firestopping are.

There are some that think firestopping is simply 'sealing pipes' with whatever they think is "Fire Caulk" and that miraculously, it will extend the fire-resistance of the wall where the breach was made for piping to pass through. How can that be after as many years as the manufacturers and contractors, distributors and reps have been teaching about firestop systems?

Fire Caulk, Wallboard Compound or Firestop System? With the cost of labor at about 80% of the application, the choice is clear. Why use any company other than a firestop contractor that gets the installation protocol to the tested and listed system and manufacturers installation instructions – an FCIA Member, FM 4991 Approved or UL Qualified Contractor? This industry is about fire and life safety.

To correct this, the firestop contractor removes the wallboard compound and incorrectly installed firestop sealant, then selects a system. Separating the Optical Fiber Raceway plastic piping into separate holes from the metal penetrating item might be an option using system W-L-2190. an option using system W-L-2190 http://productspec.ul.com/document.php?id=XHEZ.W-L-2190 and system W-L-1120 http://productspec.ul.com/document.php?id=XHEZ.W-L-1120. Pro Firestop Photo

FCIA Member, FM 4991 Approved Firestop or UL/ULC Firestop Contractors, thank you for being members and going the extra mile. Interested in finding or becoming an FCIA Member, FM 4991 Approved or UL/ULC Qualified Firestop Contractor? Visit www.FCIA.org and you'll find all you need.

Aedan Gleeson, President, Gleeson Powers, Inc., (aedan@gleesonpowers.com) is Chair of the FCIA Accreditation Committee. Ben Urcavich, President, Performance Firestop, (Ben@performance-firestop.com) is an incoming FCIA Board Member and a member of FCIA's Accreditation Committee.

Construction Specialties®

FIRE BARRIER

Pass inspection the first time

CS understands how critical it is for you to meet your project requirements, which is why we've created resources to help you along the way. With videos detailing how to properly install a fire barrier, concerns about passing inspection can be minimized. Before your next installation, watch our video on the RFX fire barrier floor to wall transition to see the process step-by-step. To view the video, visit **csinc.bz/rfx-installation.**

SPECIAL INSPECTION/INSPECTOR AHJ APPROVAL & SPECIFICATIONS

There are several items that are required to have Special Inspection according the International Building Code (IBC), Chapter 17, Special Inspections. Firestopping has had a requirement for Special Inspection since the FCIA proposed successfully to add it to the 2012 version of the IBC.

For firestopping, the IBC requires Special Inspection for buildings with occupied floors 75' and higher above lowest fire department access, as well as Risk Category III and IV Buildings from Table 1604.5 in the IBC. For the description of buildings in the Table 1604.5, see the Chart below.

TABLE 1604.5
RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES

RISK CATEGORY	NATURE OF OCCUPANCY
I	Buildings and other structures that represent a low hazard to human life in the event of failure, including but not limited to: • Agricultural facilities. • Certain temporary facilities. • Minor storage facilities.
II	Buildings and other structures except those listed in Risk Categories I, III and IV.
III	Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but 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 Group E occupancies with an occupant load greater than 250. • Buildings and other structures containing educational occupancies for students above the 12th grade 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.[a] • Power-generating stations, water treatment facilities for potable water, wastewater 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: 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.[b]
IV	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.[b] • 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.

a. For purposes of occupant load calculation, occupancies required by Table 1004.1.2 to use gross floor area calculations shall be permitted to use net floor areas to determine the total occupant load.

b. Where approved by the building official, the classification of buildings and other structures as Risk Category III or IV based on their quantities of toxic, highly toxic or explosive materials is permitted to be reduced to Risk Category II, provided it can be demonstrated by a hazard assessment in accordance with Section 1.5.3 of ASCE 7 that a release of the toxic, highly toxic or explosive materials is not sufficient to pose a threat to the public.

The IBC requires that *standards* ASTM E 2174, *Standard for the On-Site Inspection of Penetration Firestops* and ASTM E 2393, *Standards for the On-Site Inspection Fire-Resistive Joint Assemblies*, are used to inspect firestopping. Fireproofing is more prescriptive and listed in the IBC, and is currently without an ASTM Inspection Standard.

SPECIAL INSPECTION DEFINITION

Special Inspection is a defined term in the International Building Code, (IBC). The following is the definition for Special Inspection from Chapter 2 of the IBC:

> **[BS] SPECIAL INSPECTION.** Inspection of construction requiring the expertise of an *approved special inspector* in order to ensure compliance with this code and the *approved construction documents*. **[IBC 202]**

Note that the Special Inspector must be *approved*. The word *approved* is also a defined term that means acceptable to the Building Official.

There are two types of Special Inspection defined in Chapter 2 of the IBC.

> **Continuous special inspection.** Special inspection by the *special inspector* who is present when and where the work to be inspected is being performed. [IBC 202]
>
> **Periodic special inspection.** Special inspection by the *special inspector* who is intermittently present where the work to be inspected has been or is being performed. **[IBC 202]**

The IBC states which type of inspection takes place in each discipline that requires Special Inspection. Refer to Chapter 17 of the code for more details. Firestopping is generally a periodic type of inspection, when referred to by the IBC.

SPECIAL INSPECTOR REQUIREMENTS

The IBC has specific language that gives requirements and for those Inspectors performing Special Inspection to the IBC's requirements. The Special Inspector is also a defined term.

> **[BS] SPECIAL INSPECTOR.** A qualified person employed or retained by an *approved* agency and *approved by the building official* as having the competence necessary to inspect a particular type of construction requiring *special inspection*. **[IBC 202]**

Note that the IBC states that the person who is the Special Inspector is approved by the Building Official. The person is also employed by an Agency that must also be approved by the AHJ to become an 'Approved Agency'. Therefore, there are two approvals to be done by the Building Official: an Agency, which becomes approved, and then also the Special Inspector. This is critical for the building department during implementation of their policy for Special Inspection in firestopping and other disciplines.

Firestop Inspection is many times above ceilings. Firestop Southwest Photo

SPECIAL INSPECTOR ACCEPTABILITY

The IBC states that the Special Inspector must be approved by the Building Official. Approval takes many forms. Competence and relevant experience is what is required by the code.

It seems there are many ways to approve Special Inspectors based on the definition of the Special Inspector in Chapter 2 and language in Chapter 17 of IBC.

There are organizations that provide certification for approved agency Special Inspector personnel. While there are several "Certifications" offered by many organizations, a certification is not required to be approved by the AHJ to be a Special Inspector. While certification can be one path to compliance with the code, it is certainly not the only path. Here's why: in the charging language of the IBC's Chapter 17, Special Inspections, the code states what is required for the AHJ to approve the Special Inspection Agency and Special Inspector. And, it does not require certification to be approved by the AHJ as a Special Inspector. What's required is competence in the discipline where Special Inspection is mandated. See below for the specific language:

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

The registered design professional in responsible charge and engineers of record involved in the design of the project are permitted to act as the *approved agency* and their personnel are permitted to act as special inspectors for the work designed by them, provided they qualify as special inspectors.
[IBC 1702.1]

As shown in 1704.2.1, demonstration of competence can take place many ways. Passing an industry exam pertinent to the inspection, in addition to relevant experience OR training, is a way for the Building Official to approve the Special Inspector.

Experience or training is considered relevant when it is similar in complexity and materials. Therefore, a welding inspector would not inspect fireproofing or firestopping unless they have relevant training and education in that discipline. The option for the Registered Design Professional in Responsible Charge also requires that the RDPRC be equally competent as a Special Inspector.

Competence is shown through passing an industry exam. For Firestopping, there are exams that prove both competence and relevant experience. The FM and UL/ULC Firestop Exams are third-party exams managed by credible organizations, FM Approvals or Underwriters Laboratories. The exams are based on the tested and listed systems designs and the FCIA Firestop Manual of Practice. (www.FCIA.org). The International Firestop Council also has a firestop exam. (www.Firestop.org)

Finally, also in Chapter 17 of the IBC, the Special Inspection Agency needs to also be approved by the AHJ.

SECTION 1703

APPROVALS

1703.1 Approved agency. An approved agency shall provide all information as necessary for the *building official* to determine that the agency meets the applicable requirements specified in Sections 1703.1.1 through 1703.1.3.

1703.1.1 Independence. An *approved agency* shall be objective, competent and independent from the contractor responsible for the work being inspected. The agency shall also disclose to the *building official* and the *registered design professional in responsible charge* possible conflicts of interest so that objectivity can be confirmed.

1703.1.2 Equipment. An *approved agency* shall have adequate equipment to perform required tests. The equipment shall be periodically calibrated.

1703.1.3 Personnel. An *approved agency* shall employ experienced personnel educated in conducting, supervising and evaluating tests and *special inspections*.
[IBC 1703.1, 1703.1.1-1703.1.3]

In this section, it is clear that the AHJ must approve the agency (company) that provides Special Inspections. The company needs to be "objective, competent and independent" from the company installing firestopping. The *approved agency* also needs to have the equipment to perform the inspection by inspector who are "experienced personnel in conducting, supervising and evaluating tests and special inspections". This, along with the Inspector requirements in the IBC, needs to be reflected in the Building Official organization procedures for approving agencies. It also needs to be in the 07-84-00 specification. Check out FCIA's 07-84-00 Firestopping Specification to see how it might be handled.

So, what are the requirements for a company to be considered a Special Inspection Agency (SIA)? Simply stated, the SIA needs to meet the requirements of the AHJ. Each jurisdiction might have its own requirements for Special Inspection Agencies. Some jurisdictions might want a business license, proof of experience inspecting the building elements under consideration, minimum insurance for workers compensation, general liability insurance and more. Other AHJ's might want International Accreditation Service (IAS) Accreditation to Accreditation Criteria IAS AC 291 or another equivalent program. The accreditation for the Special Inspection Agency provides proof of company competence in firestopping for the Building Official. It becomes the basis for approving an "approved Agency".

BACK TO THE INSPECTORS

What about the Special Inspectors? Each jurisdiction has the right to set their own requirements for approving Special Inspectors employed by approved Agencies. Some possible criteria used by Building Officials to evaluate and Specifiers to communicate through construction documents to the Special Inspector might be:

Relevant Training & Education – FCIA's Firestop Manual of Practice is an industry recognized document that has a benchmark level of education relevant to firestopping. FCIA Conferences, Education prior to the FM and UL/ULC Firestop Exams and FCIA Webinars offer education about firestopping. The International Firestop Council also offers education and training.

Exams related to the inspection performed – FCIA works with FM Approvals and UL, as mentioned above. FM and UL offer firestop industry exams which are focused on systems selection and analysis, in addition to general firestop industry information such as materials, engineering judgments and much more. The International Firestop Council has an exam as well. The International Code Council has many exams for Special Inspection, however there is currently no exam for firestopping, though there is an exam for fireproofing.

Experience – The inspector must have experience inspecting similar types of buildings and materials, as well as tested and listed systems. For this, a listing of projects that the Special Inspector has performed inspections of is in order. For AHJ's, consider verifying through contacts to the references.

Equipment – What equipment does an Inspection Agency need? For firestopping, getting to the work where the inspection takes place can be challenging. Firestopping is located at horizontal floor assemblies and walls. In walls, the firestopping can be at the bottom or top of the wall assembly. Therefore, ladders or lifts with proper safety equipment are needed to perform the inspection. If the firestop contractor(s) will not allow the Inspection Agency Inspector to use the equipment, the Agency will need to provide the equipment.

Firestop Inspection Agencies need to supply inspectors with ladders. Firestop Southwest Photo.

Firestop inspection equipment is not complex. Measuring tapes are used to determine thickness acceptability after calculating or sealant shrinkage. Firestop Southwest Photo.

Cuts in the profile of firestop spray products reveals assembly thickness. Firestop Southwest Photo.

Years' experience – This can work as a requirement, provided the jurisdiction has no issues with such recommendation. Specifications can certainly call for experience.

Other Requirements – Special Inspection Agencies need to have proper insurance as required by the Building Owner and Manager. There are likely requirements for workers compensation, general liability and professional liability insurance. Also, the Building Owner might have privacy and/or confidentiality requirements for those working in their buildings.

ASTM PRACTICE

The ASTM E 2174 and ASTM E 2393 both have minimum requirements for the Inspector and Inspection Agency mixed in the standard's Section 6. First, there is a definition for the Inspector in Section 3.2.7 of both ASTM E 2174 and ASTM E 2393.

> 3.2.7 *inspector*—an individual meeting the qualifications set forth in this document and who performs the inspection. **[ASTM E 2174 & 2393, 2014]**

Then, in ASTM E 2174 and ASTM E 2393, 6.1, qualifications in ASTM E 2174 states that the Inspector shall be acceptable to the AHJ AND meet one of the following:

> -Meet criteria contained in ASTM E 699. *This Standard Practice for Evaluation of Agencies Involved in Testing, Quality Assurance and Evaluating of Building Components* is a company based standard focused on the complete agency.
>
> -Have a minimum of 2-years of experience in construction field inspections and have education, credentials and experience acceptable to the Authorizing Agency. The Authorizing Agency is the organization that hires the Special Inspection Agency.
>
> -Be a Quality Assurance Agency accredited by the AHJ – International Accreditation Services and other organizations accredit agencies and do not have exams for individuals. The AHJ accepts, but does not accredit, these organizations.

Other than the 2-years of experience, the other two requirements are speaking to the Agency and not the individual Inspector.

There are requirements for the Inspector in the standard. It states clearly in the conflicts of interest section 6.2, that the "inspector shall be completely independent of and divested from the installer, contractor, manufacturer, or supplier of the material inspected", nor be a competitor. This is to provide independence from schedule and finances and to eliminate hurt feelings about losing work to a competitor. Proof of insurance is also required, but only

in ASTM E 2393. Both standards ask for an acceptance communication from the hiring authority.

The Standards both ask for notarized statements that the Inspector complies with the criteria above.

SUMMARY

Special Inspection is in the building code for a reason. The ICC's voting membership approved the FCIA Proposals to insert ASTM E 2174 and ASTM E 2393 into the International Building Code's Chapter 17, Special Inspections.

Even though contractor companies are not usually looking for more inspection, the leaders at FCIA believed that good, thorough inspection performed by proven capable Agencies (IAS AC 291 Accredited) and on-site inspection provided by Inspectors with competence in the same construction, type and materials (FM or UL/ULC Firestop Exams AND IFC Exam) is critical to success.

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ICC SPECIAL INSPECTOR EXAMS CHANGING

Spray Fire-Resistive Materials and Intumescent Fire-Resistive Materials have had requirements for Special Inspection in the code for decades. One of the exams offered by the ICC is the Spray Applied Fireproofing Exam.

Starting December 1, 2017, a majority of ICC's two-part Special Inspector exams will be split into three separate exam modules: general requirements, codes and plan reading. As an exception, the spray-applied fireproofing Special Inspector exam will have a slightly different breakdown then the other exams and will be split into two exam modules - General Requirements and Codes & Plan Reading. In the Spray-Applied Fireproofing Exam there are 25 questions for the General Requirements (1-hour exam allowed) and 30 questions on Codes and Plans (1.5-hours allowed).

For more info, visit www.ICCSafe.org and www.NFCA-Online.org

NEW ASTM INSPECTOR ACCEPTANCE STANDARD PRACTICE

ASTM has issued ASTM E 3038, *Standard Practice for Assessing and Qualifying Candidates as Inspectors of Firestop Systems and Fire-Resistive Joint Systems*. The practice, published in late 2016, states that it determines the technical proficiency of a candidate based on a minimum amount of education, experience and knowledge possessed, which is needed to ensure competence to conduct inspections in compliance with practices ASTM E 2174, *Standard Practice for the On-Site Inspection of Installed Penetration Firestops* and ASTM E 2393, *Standard Practice for the On-Site Inspection of Fire-Resistive Joints*.

The following is a summary of the ASTM E 3038 Standard Practice and some thoughts on Special Inspection Agency and Special Inspector competencies.

Section 2.1 of ASTM E 3038 covers the referenced ASTM fire test and extension of data standards, plus ASTM E 2174 and ASTM E 2393. Other standards and documents included as references include: several ISO Standards; UL 1479, *Standard for Fire Tests of Penetration Firestops*; UL 2079, *Standard for Tests for Fire-Resistance of Building, Joint Systems*; the FCIA Firestop Manual of Practice; the FM 4991 *Standard for the Approval of Firestop Contractors Class Number 4991*; the IAS AC 291 Accreditation Criteria for Special Inspection Agencies; the IFC Firestop Inspection Manual; the IFC Guidelines for Engineering Judgments; and the International Building Code.

Section 3 of the new ASTM Standard covers Terminology. Definitions specific to the Standard include several words and phrases.

First, 3.2.1 defines the 'Candidate'. The 'Candidate' is that entity seeking designation. It defines it as either an individual or a company.

> 3.2.1 *candidate,* n—the individual or company seeking the designation and recognition as a firestop industry inspector. [ASTM E 3038]

Throughout the document, whether the Company or the individual Inspector, the document refers to the 'Candidate'. The definition in 3.2.2 sets up the industry specific to firestopping.

> 3.2.2 *firestop industry,* n—the field of work related to firestop systems and fire-resistive joint systems. [ASTM E 3038]

In 3.2.3, there is a definition for the Firestop Industry Inspector.

> 3.2.3 *firestop industry inspector*, n—the individual or company possessing the credentials set forth in this Practice, and who is authorized by the AHJ or AA, or both, to conduct an inspection under Practices E2174 and E2393, or both. [ASTM E 3038]

In both cases, the ASTM E 3038 defines the firestop industry Inspector/Candidate as the individual or the Company.

A key point to remember is that the result of these definitions should be that the Authority Having Jurisdiction (AHJ) approve and or the Authorizing Agency (AA) hire a reputable, qualified company that hires competent people to perform inspections. To hire a Special Inspection Agency, a contract will be issued by the AA to the successful Special Inspection Agency company. The Special Inspection Agency, like the firestop contractor, is hired via a contract.

As shown in the Special Inspection article in this issue of *Life Safety Digest*, the International Building Code's Chapter 17, Special Inspections requires two separate approvals when it comes to special inspection – the Special Inspector and the Special Inspection Agency.

First, there is an approval for the "Approved Agency". The approved agency criteria for acceptance is that the Special Inspection Agency has equipment, company experience and other key items that the AHJ can verify and approve. It is important to have this level of approval as the company is the entity that takes the business risk, the operational risk and is the entity that buys the insurance. The individual is employed by that company entity.

Regardless of the company form – C-Corporation, Subchapter S-Corporation, Limited Liability Company or even Sole Proprietorship – these forms of businesses are a company that employs the Inspector. It is the company that keeps records, purchases the insurance, etc. As to a sole proprietorship, the US Internal Revenue Service defines the Sole Proprietorship as "A sole proprietor is someone who owns an unincorporated business by himself or herself." Clearly, this is a company entity.

The Special Inspection Agency hires the Special Inspectors, regardless of how many are employed. It is key that those individuals be capable, knowledgeable people who understand that they are to inspect to the tested and listed systems' and manufacturers' installation instructions, and then are required to report deviations where applicable.

There is another acceptance required in the IBC for the individual, the person performing the inspection, in addition to the Special Inspection Agency approval. In the IBC, it states in Chapter 17 that the individual Special Inspector needs to be competent in the same type and complexity of materials and construction inspected, in addition to not having conflicts of interest.

Section 6 covers the procedure that ASTM E 3038 uses to provide the Authority Having Jurisdiction (AHJ) or Authorizing Agency (hiring entity) the information to evaluate the acceptability of the firestop industry Inspector.

In Section 6.2, Prerequisites of ASTM E 3038, there is only one prerequisite required, with four choices given. The Standard Practice lets the AHJ choose between these four items. These are all related to the individual Inspector, and not the company.

Two of the prerequisite items are two-years of experience as a firestop industry Inspector. The two-years only count if the person had been an Inspector working for a Special Inspection Agency or involved in quality control. If a firestop-containment worker were to become a firestop industry Inspector, there is a four-year experience requirement.

There is also an option for a minimum of four-years of systems selection and installation experience. The final prerequisite option available within the ASTM E 3038 Standard is a license as a registered design professional, with an unspecified number of years of experience.

> 6.2.3 Have a minimum four years of full-time (or at least 6160 h) experience in the selection or installation, or both, firestop systems or fire-resistive joint systems, or both; or… [ASTM E 3038]

The next note then explains what full-time might look like and the acceptance criteria for a statement of full-time. In Section 6.2.4, a registered design professional is then stated as acceptable, with experience:

> 6.2.4 Hold license as a registered design professional with experience in the firestop industry. [ASTM E 3038]

The International Building Code also provides for the Registered Design Professional in Responsible Charge performing special inspections. However, in the IBC, Chapter 17 requires that the individual prove competence in the same time and complexity of materials and construction inspected.

In 6.3, Firestop Industry Inspector Qualifications are defined.

> 6.3.1 *Firestop Industry Examination*—Score a minimum of 80 % on an examination, which is acceptable to the AHJ or AA, or both, and contains subject matter directly related to the firestop industry and to inspections conducted under the scopes of Practices E 2174 and E 2393. [ASTM E 3038]

Then, there is specific training required as well:

> 6.3.2 *Training*—Perform one of two options.
>
> 6.3.2.1 *Option 1*—Attend at least two hours of educational training seminars directly related to firestop systems or fire-resistive joint systems, or both, conducted by at least four different organizations; either (a) manufacturers of firestop industry products or (b) firestop industry trade associations, or a combination of both (a) and (b).
>
> 6.3.2.2 *Option 2*—Attend a 6-h educational program that is acceptable to the AHJ or AA, or both, and planned with the explicit purpose of educating parties specifically interested in the firestop industry. [ASTM E 3038]

In both 6.3.2.1, Option 1 and 2, the education is required to be a specific length, while the IBC only requires that competence be proven.

In 6.3.1, note 9, there are programs mentioned that have examinations. The International Accreditation Service's IAS Accreditation Criteria AC 291 is a company-management-system-based accreditation program. It has an exam as a requirement for Special Inspectors working for the IAS AC 291 Accredited Special Inspection Agency. It also requires a company management system audit by IAS. Costs for the audit by IAS are about $2,000 USD, with an annual fee of about $1,500 USD.

The next program is the International Firestop Council's (IFC) Recommended Training and Education for Third-Party Firestop Inspectors program. This program is an education and exam for individual inspectors offered by the Council. The training fees run $499 USD, while the exam fees run $500 USD, according to the IFC website.

Then, both FM 4991, Standard for the Approval of Firestop Contractors and UL/ULC's Qualified Contractor Program are mentioned. Both programs have exams required for the Designated Responsible Individual (DRI) to prove knowledge of the listings, as well as the FCIA Firestop Manual of Practice and Systems Selection / Analysis. The fees for these exams are $745 USD for the FM Approvals Firestop Exam and $570 USD for the UL/ULC Firestop Exam. The FM 4991 Approved or UL/ULC Qualified Firestop Contractor Program audit costs are typically between $6,000-12,000 USD. This includes

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a Management System Manual audit and jobsite audits to assure that the management system is implemented effectively at the company.

The IAS AC 291, FM 4991 Approved and the UL/ULC QFCP Programs are company based audit proven competence programs that have at least one person who has demonstrated knowledge. The IAS, FM and UL Programs require the company to have a Quality Management System implemented at the company – both policies and procedures – that assure that firestopping is installed or inspected to the tested and listed system and the manufacturers' installation instructions. The management system is then audited by the accrediting body – FM, UL or IAS - to verify that the company does as it says it does.

Section 7 covers conflicts of interest. Similarly, there are also conflicts of interest sections in ASTM E 2174 and ASTM E 2393. In Section 7, Note 11, of ASTM E 3038, the Standard Practice goes to great length to describe a sample non-conflict letter. Below is an excerpt from the Standard Practice non-conflict letter:

> "I am not engaged in the manufacture, supply, installation, purchase, ownership, use, or maintenance of materials and systems used in firestop systems or fire-resistive joint systems, or both." **[Excerpt, ASTM E 3038, 7.14, Note 11]**

The Note 11 also states:

> "For a period of at least 2 years, I have not been involved in, or been employed by, a company involved in the production, supply, installation, or maintenance of any material used for firestop systems or fire-resistive joint systems, or both." **[Excerpt, ASTM E 3038, 7.14, Note 11]**

Does this mean that a building owner's employee who inspected firestopping to maintain the building now must wait two-years to inspect firestopping? Under ASTM E 3038 it does. This is in a note and notes can be considered non-mandatory; however, there ARE jurisdictions that make the notes mandatory.

Section 8 requires that the candidate submit to the AHJ or AA documentation that contains,

> 8.2.1 Evidence of compliance with 6.2, Prerequisites,
> 8.2.2 Evidence of compliance with 6.3, Inspector Qualifications, and
> 8.2.3 Evidence of compliance with Section 7, Conflicts of Interest. [ASTM E 3038]

Then, in section 9, there is a requirement for evidence of compliance to be provided to the firestop industry Inspector from the AHJ or AA stating the Inspector complied for this project.

Further in 9.2 there are statements that the AHJ, AA or both provide requirements to the firestop industry Inspector about continuing education.

FCIA's Standards Committee applauds the attempt to provide acceptance criteria for inspection to ASTM E 2174 and ASTM E 2393 Firestop Inspection Standards.

However, we are concerned that this document approves an individual with the appearance that the company has met the requirements. The approvals required by the International Building Code are separate. This ASTM E 3038 blurs the requirements because it states that the Firestop Industry Inspector is the Special Inspection Agency company AND the individual firestop industry Inspector.

FCIA's position is that the Special Inspection Agency company that takes the business and technical risks, is the entity that holds the contract for inspection with the AA and employs the firestop industry Inspector(s). It is the Special Inspection Agency company that provides the General and Professional Liability Insurance, Workers' Compensation Insurance, equipment, ladders, gauges, communications equipment and more that is needed by the AA for employees to work on jobsites. It is the Special Inspection Agency company that keeps records, while individuals may move from one Inspection Agency to another. It is the Special Inspection Agency company that will be sued should issues arise on firestop projects, while the individual Inspector will hold little to no responsibility.

Therefore, FCIA recommends that Special Inspection Agency companies be reviewed for approval very carefully. The Special Inspection Agency is a critical part of the firestop installation process. The Firestop Contractor and Special Inspection Agency both need to be well-versed in the procedures required to get firestopping installed to the tested and listed system and manufacturers' installation instructions.

Specifiers and AHJ's should consider not using this document as a requirement or reference in specifications and adoptions of the IBC because the Standard is stated to be for both the Special Inspector and the Special Inspection Agency together. However, the requirements only cover the Special Inspector and not the Special Inspection Agency.

While there are sections of the document that might provide the AHJ and AA value, the appearance that an AA is buying a company evaluation when all it is receiving is the individual's competence.

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ICC ON WALL CLADDING SYSTEMS

COMBUSTIBLE EXTERIOR WALL "CLADDING" SYSTEMS: AN ICC PERSPECTIVE

The tragic Grenfell Tower fire in London brought extensive public focus on combustible exterior wall systems, often called "cladding," prompting many questions as to how these types of fires can occur and what the risks are of such a fire in the future. The focus of this short article is to briefly discuss the 2018 International Building Code® (IBC®) requirements in terms of fire safety and what to look for in plan review and inspections when cladding is used on a noncombustible wall. This document relates only to those buildings and jurisdictions that use the IBC, and as such do not pertain to the Grenfell Tower or other buildings which have not been constructed in strict compliance with the IBC. The International Code Council (ICC) cannot make comparisons between the design and construction of the Grenfell Tower or other non-IBC buildings relative to the provisions of the IBC as these buildings have not been built to our code provisions. This article is not intended to be a detailed list of all applicable code requirements – be sure to consult the IBC.

The current provisions for Metal Composite Materials (MCMs) in the 2018 IBC were updated in the 2012 IBC and remain virtually unchanged. The update process followed the rigors of ICC's Code Development Process, which includes the submittal of code change proposals, committee review and ultimate approval by the ICC Governmental Member Voting Representatives. The committee was comprised of a body of technical experts including fire protection engineers, members from the fire service, code consultants, architects, building officials, material industry representatives and testing laboratories. The committee unanimously approved the updated provisions in the 2012 IBC.

KEY ITEMS FOR PLAN REVIEW

1. What type of exterior wall covering, or cladding, has been specified?
   In the past, the exterior wall finishes on high-rise buildings were not a significant challenge from a fire safety perspective. Most exterior walls were masonry, concrete or glass. In the last 20-30 years, energy conservation and product innovation considerations have resulted in an increase in combustible materials being used as a cladding material.

2. Is the exterior wall cladding combustible or noncombustible?
   A material is noncombustible if it meets the criteria for noncombustibility based on the standard ASTM E136, "Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C." *Otherwise, it is considered a combustible material relative to code compliance.*

3. What is combustible cladding?
   Combustible cladding is a siding, panel or application that is composed all or in part of combustible materials used on the exterior side for aesthetics and to resist rain, sleet, snow and wind loads.

Two typical exterior wall claddings are (IBC definitions are noted):

- ***Exterior Insulation and Finish Systems (EIFS).*** *EIFS are nonstructural, nonload-bearing, exterior wall cladding systems that consist of an insulation board attached either adhesively or mechanically, or both, to the substrate; an integrally reinforced base coat and a textured protective finish coat.*
- ***Metal Composite Material (MCM).*** *A factory-manufactured panel consisting of metal skins bonded to both faces of a solid plastic core.*
- ***Metal Composite Material (MCM) System.*** *An exterior wall covering fabricated using MCM in a specific assembly including joints, seams, attachments, substrate, framing and other details as appropriate to a particular design.*

4. **Does the exterior wall system include foam plastic insulation? Are other materials/components included in the wall system such as combustible water resistive barriers?**
   Foam plastic insulation can drastically change the

fire performance of an exterior wall system. When foam plastic insulation is added to a wall system, compliance with IBC Chapter 26 entitled "Plastic" is necessary. Chapter 26 requires compliance with National Fire Protection Association standard 285 (NFPA 285, see page 4) for buildings of Types I – IV construction in excess of one story. Where the insulation is covered on each face by masonry or concrete, compliance with NFPA 285 is not required.

Other materials such as combustible water resistive barriers add an additional combustible component that may alter the fire performance of an otherwise code complying product. A water-resistive barrier is defined as follows:

> ***Water-Resistive Barrier.*** *A material behind an exterior wall covering that is intended to resist liquid water that has penetrated behind the exterior covering from further intruding into the exterior wall assembly.*

5. **What factors limit the use of combustible materials on walls?**

The IBC limits combustible materials on exterior walls based upon the following factors:

- *Type of exterior wall cladding.*
- *Type of construction of the building. Buildings of Types I – IV construction are required to have noncombustible exterior walls. However, these walls can have combustible exterior cladding, such as MCMs.*
- *Height of the cladding above grade. The installation height of combustible cladding on the exterior can have a considerable impact on firefighting operations.*
- *The presence of an automatic sprinkler system throughout the building. The IBC requires all new high-rise buildings (buildings with occupied floors greater than 75 feet above the lowest level of fire department vehicle access) to be protected throughout with an automatic sprinkler system.*
- *Percentage of the exterior wall covered with the combustible cladding.*
- *The required fire-resistance rating of the exterior wall.*
- *Fire separation distance of the exterior wall from adjacent buildings and lot lines.*
- *Fire testing for the specific type of exterior wall cladding.*

METAL COMPOSITE MATERIALS (MCMS)

Here is a brief look at one type of cladding, Metal Composite Materials (MCMs) (see Section 1406 of the IBC), since they have been at the center of the discussion following the Grenfell Tower fire. The table below provides a snapshot as to what is permitted for MCM installations in Types I, II, III and IV construction. These requirements do not address the addition of foam plastic insulation in conjunction with the MCM system or within the MCM itself. Foam plastic would require testing to NFPA 285 as noted previously and compliance with IBC Chapter 26 for foam plastics.

Snapshot of MCM requirements for Type I, II, III and IV construction

Base requirements (Section 1406.10)	Alternative 1 (Section 1406.11.1)	Alternative 2 (Section 1406.11.2)	Alternative 3 (Section 1406.11.3)	Alternative 4 (Section 1406.11.4)
Unlimited height · *Flame spread index ≤ 25[a]* · *Smoke developed index ≤ 450[a]* · *Approved thermal barrier ½ inch (12.7 mm) gypsum or material meeting fire test NFPA 275[a,b]* · *Compliance with fire test NFPA 285[a]*	**Up to 40 feet above grade** · *Flame spread index ≤ 75[a]* · *Smoke developed index ≤ 450[a]* · *For fire separation distances 5 feet or less, MCM panel coverage limited to ≤ 10% of exterior wall* · *For fire separation distances greater than 5 feet unlimited MCM coverage is permitted*	**Up to 50 feet above grade** · *Flame spread index ≤ 75[a]* · *Smoke developed index ≤ 450[a]* · *Self ignition temperature≥ 650 oF[a]* · *MCM panels limited to ≤ 300 sq feet in size* · *Minimum 4 feet vertical separation required*	**Up to 75 feet above grade[c]** · *Flame spread index ≤ 75[a]* · *Smoke developed index ≤ 450[a]* · *Prohibited on buildings of Group A-1, A-2, H, I-2 and I-3* · *Prohibited on buildings with a required exterior wall fire resistance rating* · *Self ignition temperature ≥ 650 oF[a]* · *Combustibility rating CC1 or CC2[a]* · *Area limitations based upon combustibility rating[d]*	**Up to 75 feet above grade[c]** · *Flame spread index ≤ 75[a]* · *Smoke developed index ≤ 450[a]* · *Minimum fire separation of 30 feet required (20 feet for sprinklered buildings)* · *Self ignition temperature ≥ 650 oF[a]* · *Combustibility rating CC1 or CC2[a]* · *Flame barriers between each story are required or a vertical separation of MCM panels ≥ 4 feet must be provided[e]* · *Area limitations based upon combustibility rating[f]*

Footnotes:

a. A fire test is required. See table on page 25 for a description of fire tests.
b. Thermal barriers are not required if the MCM passes specific test criteria (NFPA 286) that shows the panel will not contribute to fire growth.
c. Height of installation is unlimited where an automatic sprinkler system is installed throughout the building.
d. See Sections 1406.11.3.4 and 1406.11.3.5 of the IBC.
e. Where flame barriers are used, they must extend a minimum 30 inches beyond the exterior wall. Where an automatic sprinkler system is installed throughout the building, flame barriers and vertical separations are not required.
f. See Section 1406.11.4.3 of the IBC.

FIRE TESTS

The following table identifies the required fire tests for which MCMs must be tested as noted on page 24. These tests will apply depending upon which alternative noted on page 24 is used for the MCM installation.

Applicable Fire Test Standards for MCMs			
Test standard	**Type of Test**	**Title**	**Summary**
ASTM D635	Combustibility test	Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position	A fire test that measures the rate of combustion/burning of plastic, measured as either Class CC1 or CC2.
ASTM D1929	Self ignition test	Standard Test Method for Determining Ignition Temperature of Plastics	A fire test that measures self igniting temperatures of plastic.
ASTM E 84/ UL 723	Flame spread and smoke developed indicies	Standard Test Methods for Surface Burning Characteristics of Building Materials (ASTM E84) Test for Surface Burning Characteristics of Building Materials (UL 723)	A fire test that provides a comparative ranking of flame spread and smoke generation of a material.
NFPA 275	Thermal barrier performance	Standard Method of Fire Tests for the Evaluation of Thermal Barriers	A fire test that provides a quantitative method of identifying acceptable thermal barriers.
NFPA 285	Flame propagation test	Standard Fire Test Method for the Evaluation of Fire Propagation Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components	A fire test that measures flame and fire propagation both horizontally and vertically of a test specimen that replicates end use installation.
NFPA 286	Interior finish test	Standard Methods of Fire Test for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth	A fire test that measures the fuel contribution of interior finishes to a fire.

CONFORMITY ASSESSMENT

Prior to exterior wall finish and finish systems being approved for installation, there is a conformity assessment these products and systems must first undergo. The manufacturing and labeling process is critical to demonstrate compliance with the applicable fire tests and code requirements. This is typically done through an approved agency. An approved agency is defined as follows:

Approved Agency. *An established and recognized agency that is regularly engaged in conducting tests, furnishing inspection services or furnishing product certification where such agency has been approved by the building official.*

A key component of this process is the requirement for proper labeling which includes: testing; inspection and identification; label information; and method of labeling.

INSPECTION PROCESS

Once the conformity assessment and approval process is complete, the exterior wall system is ready for installation. It is imperative that the inspector monitor the installation process. Some questions that need to be answered include:

1. *Is the system (and all of its component parts) labeled in order to ensure that the system has been evaluated through the conformity assessment process?* Key to this assessment process is the demonstration of compliance with the required fire tests.

   The purpose of the process is to make sure that the product specified is what has been shipped to the jobsite. The performance of cladding materials in a fire can vary significantly, but in appearance the products and systems can seem very similar. Without proper documentation through proper labeling, the only way to determine fire performance is to conduct tests on the product.

2. *Are the materials and systems being installed as specified and labeled?*

   Even minor changes to the tested wall system can change the performance of the system in a fire. If the approved construction documents specify an MCM system and foam plastic insulation is subsequently installed, then the exterior wall system needs further review, testing, labeling and approval.

3. *Is the exterior wall system being inspected during installation?*

   Once the exterior wall system is installed, it is difficult to identify the specific construction materials and installation details within the system. The timing of the inspection is very important as inspectors need to see what is installed in order to confirm that the installation complies with the approved installation instructions.

COMPLIANCE RESOURCES

Exterior wall systems have become more complex. Navigating through the exterior wall system testing requirements and limitations, verifying that testing was completed, and determining how products should be used can be onerous. ICC has two subsidiaries that can help with the approvals process: ICC Evaluation Service (ICC-ES) and the International Accreditation Service (IAS).

ICC-ES has developed acceptance criteria for products such as MCMs and EIFS that clearly outline what requirements the materials and systems must meet in order to comply with the IBC. The manufacturers work with ICC-ES to produce documentation to show that their products meet relevant code provisions and ICC-ES acceptance criteria in order for the evaluation report to be issued for their specific products, materials and systems. These reports also address the limitations of their use and confirm that proper testing of the system has occurred. Reports for exterior wall systems can be accessed on the ICC-ES website.

IAS provides accreditation services related to a variety of topics including public safety and sustainability. One of their key services is laboratory accreditation. Through IAS, jurisdictions can determine which laboratories are accredited for performing the necessary tests and provide the necessary confidence that the laboratories meet quality standards.

MOVING FORWARD

Exterior wall systems or "cladding" have become increasingly more complex with innovative construction techniques and the desire for energy efficient buildings. Balancing the objectives of weather protection, energy savings, structural requirements and fire safety is a challenge in the development of new products and exterior wall systems with combustible materials. The approvals process from initial design through final inspection is critical to ensure compliance with complex code requirements.

FCIA SIDEBAR

There have been articles about Metal Composite Material (MCM) wall cladding and the wall assemblies in many industry magazines as well as the Wall Street Journal (WSJ) recently.

https://www.wsj.com/articles/built-to-burn-thousands-of-buildings-world-wide-are-wrapped-in-combustible-panels-1508858048?mg=prod/accounts-wsj

Getty Image

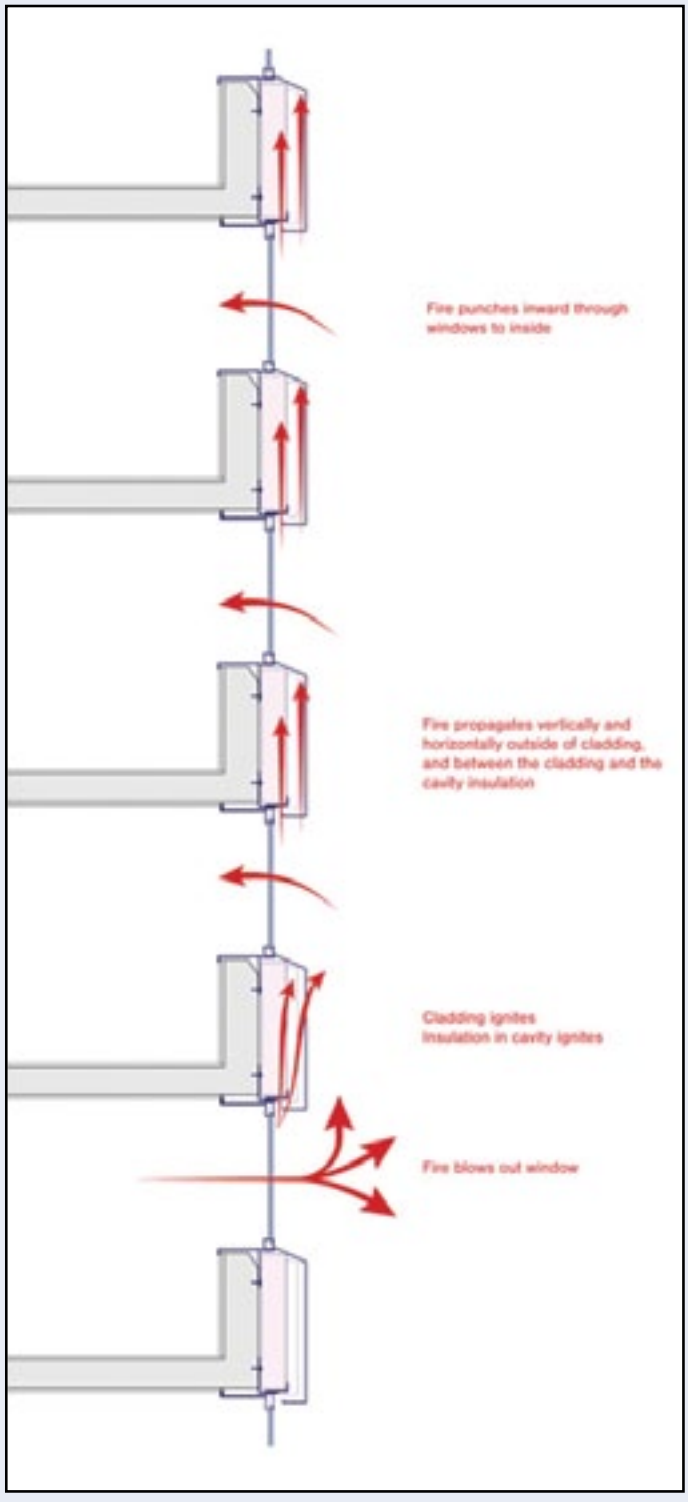
The Wall Street Journal article discussed a 2009 International Building Code proposal that passed at the Fire Safety Committee Hearings, as well as the Final Action Hearings. The change proposed that there should not be a building height limit for the use of Metal Composite Materials. The reasoning was that the code allowed plastic windows, so why not plastic panels?

There were several contributing factors that caused the large loss of life in the Grenfell Tower. Various experts have cited those contributing factors as: a single egress stairwell; non-latching doors to the stairwells; instructions to defend in place; a 2" airspace behind the MCM panels and combustible insulation; firestopping that was not installed where it should have been, without a way to block fire from getting into the wall cavity; and more, to name a few.

Check out the Grenfell Tower article by Joseph Lstiburek at www.BuildingScience.com

Watch for more as the UK investigates and issues final reports on the tragedy. We expect that there will be several code development proposals submitted to the International Code Council (ICC) for it's 2021 Code Development Process.

FCIA Staff



Building Science Image

Thermal Barriers & Foam Plastic Protection

Over the past several years, there has been great discussion and debate about thermal barriers that are applied over foam insulation to protect the interior of a building where the foam has been applied. Foam insulation is applied in many applications in walls, crawl spaces and attics to provide continuous insulation and maximum R-Values per inch of insulation. Foam insulation is a viable product for many uses and has an excellent insulation performance history.

TEST STANDARDS

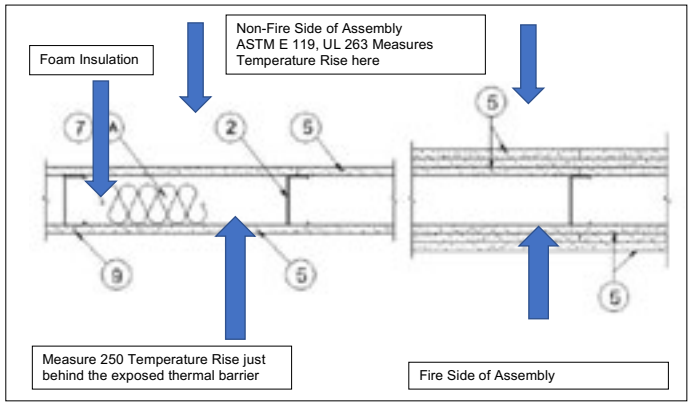
It seems in research recently that there is confusion about how to protect foam insulation. Several standards get referenced, including NFPA 286, CAN4/ULC S-124 *Standard Method of Test for the Evaluation of Protective Coverings for Foamed Plastics*, CAN/ULC S-101 *Standard Methods of Fire Endurance Tests of Building Construction and Materials, UL 263 Standard for Fire Tests of Building and Construction Materials* and ASTM E 119 *Standard Test Methods for Fire Tests of Building Construction and Materials and* UL 1715, *Fire Test of Interior Finish Material* in product literature. These standards have been mentioned as test standards that can be used for acceptance of the thermal barrier and code compliance. But, are they correct?

THERMAL BARRIER OBJECTIVE & KEY ISSUES

The objective of protecting foamed plastics with a thermal barrier is to prevent the foam insulation from catching fire inside the wall, attic or crawl space. Foam insulation can catch fire without flame touching it due to heat transfer into the foam. That's why buyers of this type of insulation need to insist that there be reports of the temperature at the interface of the foam and thermal barrier during fire testing.

What's the big deal? If a supplier states that the products lasted 15 minutes (code compliant) in a UL 263 or ASTM E 119, CAN/ULC S-101 fire test, that's great; however, all three of these fire tests measure temperature rise on the non-fire side, not inside the wall directly, but at the complete other side of the assembly. Based on that, the foam inside the wall can catch fire and burn while the exterior of the wall assembly stays below the required temperature rise of 250°F.

See the illustration in next column:



ANSI/UL 263 Design No. U423 Image, © 2017 UL LLC

In the Canadian and US markets, many products—typically fibre-based or cementitious spray fire-resistive materials and some intumescent fire-resistive materials—can meet the fire-test requirements to prevent foam plastics from catching fire due to heat transfer from the interior of the building through the thermal barrier and into the foam.

Unfortunately, there has been a growing trend amongst some product suppliers of 'paintable' ignition barriers claiming that products meet the performance of a thermal barrier that protects the foam from igniting.

CONCLUSION

For Thermal Barriers, there will be claims made with test reports stating code compliance. Specifiers and purchasers should ask the one question that will protect people in buildings. What's the temperature rise of the thermal barrier material at the underside of the thermal barrier at the *foam insulation interface*? That's not the temperature on the non-fire side of the *assembly*.

Foam plastics are amazing insulating materials. They can be managed properly to be safely used in buildings. Just ask the right questions.

John A. Dalton is technical service manager for GCP Applied Technologies fire protection products division. He is the task group chair of the ASTM E06.21 committee on serviceability and a principal member of the U.S. National Fire Protection Association (NFPA) 502, Standard for Road Tunnels, Bridges, and Other Limited Access Highways. Dalton has degrees in mathematics and industrial chemistry.
He can be reached at john.a.dalton@gcpat.com

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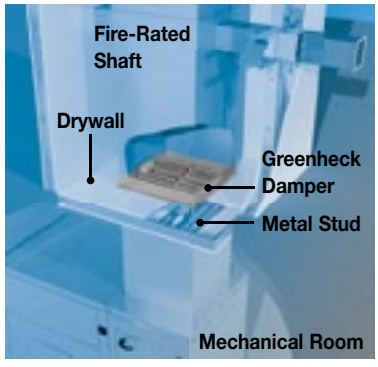

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CODES AND STANDARDS NEWS

NEW I-CODES

The 2018 versions of the ICC Family of Codes launched September 2017. Check them out for free using the viewer at https://codes.iccsafe.org/public/. Better yet, buy them and get the full benefits of the documents on your laptop, phone, etc. at www.ICCSafe.org.

ICC CODE DEVELOPMENT PROCESS

The International Code Council has been conducting Code Action Committee meetings for the past 2 years. The Building Code Action Committee, Fire Code Action Committee, Sustainability, Energy and High-Performance Building Code Action Committees all have sub-groups that meet frequently via teleconference. They also meet face-to-face.

The idea for the Code Action Committees is to give participants the chance to discuss issues in more depth than a 2-minute or 1-minute for/against, rebuttal/re-rebuttal format. The committees are appointed by ICC's Board of Directors and are assigned an ICC Staff person to work with them. Just because a proposal is not from the Code Action Committee does not mean it is not a good proposal. Many will submit proposals individually. Watch for more as the cycle kicks off for Group A Codes January 8, 2018.

During 'Group A', the following International Codes are debated for the 2021 version of the Codes:

International Building Code – Fire Safety
International Building Code – General
International Fire Code
International Fuel Gas Code
International Mechanical Code
International Plumbing Code
International Property Management Code
International Private Sewage Disposal Code
International Residential-Mechanical Code
International Residential Plumbing Code
International Swimming Pool and Spa Code
International Wildland Urban Interface Code
International Zoning Code

ICC ON COMBUSTIBLE WALL "CLADDING" SYSTEMS

The Grenfell Tower in London brought extensive public focus on combustible exterior wall systems, prompting many questions about why these fires occur and what the risks are in the future. There has been a lot written on this subject, with investigations still ongoing. Check out ICC's summary Chart from the 2018 International Building Code in this issue of *Life Safety Digest*. Also, it is likely that there will be code proposals submitted in January and heard at ICC's Committee Action Hearings this coming April 15-25, 2018.

NFPA FIRE PROTECTION FEATURES COMMITTEE

As the ICC Code Development Process gears up, NFPA is also promoting their upcoming 2021 NFPA 101 and 5000 Development Process. Their cycle likely kicks off late spring in June 2018.

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INDUSTRY NEWS

IAS AND THE FIRESTOP EXAMS

During the International Accreditation Services (IAS) March Accreditation Committee 2017 Meeting, Brice Miller, consultant, proposed to remove the FM and UL/ULC Firestop Exams from the Accreditation Criteria for Special Inspection Agencies, IAS AC 291, and replace it with the IFC Firestop Special Inspector Exam.

FCIA strongly disagreed with Mr. Miller, and the IAS Accreditation Committee agreed with FCIA. FCIA believes that the FM or UL/ULC Firestop Exam AND the IFC Firestop Exam are great ways to show Inspection Agency employee Inspector competence in Firestopping. The IAS Accreditation Committee allows, and FCIA supported, either the FM/UL/ULC Firestop Exam OR the IFC Firestop Exam.

IAS Image

NEW IAS PRESIDENT

New IAS President – The International Code Council and International Accreditation Service Boards announced that Raj Nathan will be IAS President when Chuck Ramani retires after a 44-year career with ICC in March 2018. Raj has been a good friend to the Firestopping industry over the past 10 years, and we look forward to working with him and the team at IAS.

ICC 2017 AWARDS

At the International Code Council Annual Business Meeting and Expo, honors were bestowed on some people FCIA has worked with over the years: Dave Collins, AIA and Gary Lewis. Dave, of the Preview Group, is AIA's Code Consultant. Dave is the winner of the Bobby J. Fowler Award for Leadership, Integrity and Professionalism. Gary Lewis, the 2017 ICC Fire Service Award recipient, is President of the New Jersey Fire Prevention and Protection Association and has served on numerous ICC Committees. Gary was Chair of the ICC Ad-hoc Committee on Terrorism Resistant Buildings and has had a big impact on the International Fire Code.

ICC Image

CODE DEVELOPMENT STARTS AGAIN

Now that the ICC has published the 2018 versions of the I-Codes and NFPA the 2018 NFPA 101, The Life Safety Code and NFPA 5000, Building Construction and Safety Code, the development of both codes starts over again for the 2021 version of the codes. The ICC's Code Change Proposals are due January 8, 2018. NFPA's Proposals will be due sometime in June 2018.

JUST ASK ASHE

The American Society for Healthcare Engineering (ASHE) has a very good program that is used by ASHE Member Healthcare Facility Engineering Personnel to get answers on a host of things, including Building Codes and Standards, Accreditation and Facility Compliance. At the other end of the phone sometimes is Bill Koffel or his colleagues at Koffel Associates.

Visit **www.ASHE.org** and click on "Just Ask ASHE".

FIRES AT BUILDINGS UNDER CONSTRUCTION

According to the NFPA 241 Bulletin, there have been several large-scale fires at construction sites in 2017, causing multi-millions of dollars of damage, as well as potential personal injury and loss beyond the structure of origin. Much, if not all, of these losses could have been eliminated with the proper safeguards.

NFPA® 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations, provides measures for preventing or minimizing fire damage to structures during construction, alteration or demolition. Complying with NFPA 241 also helps management and mitigation of risks that can lead to catastrophic and costly events at construction sites. From a carelessly disposed cigarette to failure to properly store or dispose of combustible materials, these fires often result from a lack of awareness and understanding of fire risks and consequences, and they are almost always preventable. Visit www.NFPA.org to get the full bulletin and a research report on "Fires in Structures Under Construction, Undergoing Major Renovation, or Being Demolished".

DHI'S DOOR SECURITY & SAFETY FOUNDATION (DSSF)

The DSSF has been working hard on protecting people in buildings through its campaign to safely secure doors in schools with code compliant methods. According to DHI, a classroom door can be locked from the inside with a key, card or fob, without opening the door, yet still allow egress from the inside without having to unlock the door. The door must be able to be unlocked from the outside as well. These are common door lock functions that are tested and certified, and consistently meet fire and building codes in schools, providing protection against active shooters. Many FCIA Members inspect fire doors as part of their service offerings. While the building code does not require fire doors for classroom to corridors, some designers build the corridor wall assemblies as if they were fire-resistance-rated – extending to the next horizontal floor or roof assembly above.

OWENS CORNING ACQUIRES PAROC

FCIA Member Owens Corning announced that they have signed an agreement with CVC Capital Partners to acquire Paroc Group ("Paroc"). Paroc is a leading European manufacturer of high-performance mineral wool building insulation for thermal, fire and acoustic applications in residential and commercial construction.

The acquisition of Paroc expands Owens Corning's mineral wool technology, grows their presence in the European insulation market, and provides access to a variety of new end-use markets. Owens Corning's acquisition of Thermafiber, Inc in 2013 coupled with the investment in a new state-of-the-art manufacturing facility in Joplin, MO strengthens their portfolio of mineral wool product solutions and their commitment to the industry. The transaction is anticipated to close in early 2018.

NIBS PLANNING BUILDING INNOVATION 2018

The National Institute of Building Sciences is having its 6th Annual Conference and Expo with fifty-five expert speakers and 35 presentations in 20 different sessions over three days. NIBS' Annual Conference will explore solutions to *Sustain, Strengthen, Secure*. During the four-day event, Jan. 8-11, 2018, Science meets Design. A big part of the conference is a discussion on "Building Resilience". How that is defined depends on who is speaking.

NATIONAL HEALTHCARE ENGINEERING WEEK

In mid-October, both the American Society for Healthcare Engineering (ASHE) and The Canadian Healthcare Engineering Society (CHES) celebrated National Healthcare Engineering Week. This gave Healthcare Facility Personnel the opportunity to bring attention to the public – and upper management at Healthcare Facilities – about the importance of the built-environment to patient care. The hidden features in buildings do not get the respect they deserve. From emergency power generators to smoke barriers and structural fire-resistance, each of these items contribute to a safe patient environment. Check out **www.ASHE.org** and **www.CHES.org** to see displays made by staff, tours conducted, a song written and performed by ASHE's Tim Adams, and much more.

FCIA MOURNS LOSS OF A GOOD FRIEND

FCIA participation in many of the conventions, CONSTRUCT, ICC, ASHE and others, had FCIA Marketing Chair, Don Murphy, at the FCIA booth with FCIA Executive Director, Bill McHugh. The pair could be found making friends for FCIA wherever the booth could be found. On Sept. 11, Don passed away at his office in Indianapolis, IN. It was a fitting tribute to Don that many FCIA friends came to his wake and funeral and tribute at FCIA's Firestop Industry Conference & Trade Show. Don did a lot to support FCIA and Fire-Resistance industry – from FCIA's inception in 1998 to now. Rest in peace, dear friend.

FCIA'S FALL WAS EVERYWHERE

FCIA's Marketing, Canada Committees and Executive Director Bill McHugh spent time at the CONSTRUCT/CSI Annual Convention, ICC's Annual Business Meeting and Expo, Canadian Healthcare Engineering Society, ASTM/ICC Education Program in Dubai, FCIA DIIM Symposium in Toronto and much more.

FCIA's message that FCIA Member, FM 4991 Approved or UL/ULC Qualified Firestop Contractors and IAS AC 291 Accredited Special Inspection Agencies are best qualified to provide services to turn firestop materials into firestop systems using tested and listed assemblies and manufacturers' installation instructions. They specialize in maintaining the fire-resistance of assemblies where breaches are made for joints or penetrating items in new and existing buildings.

FCIA FIRESTOP INDUSTRY CONFERENCE (FIC) & TRADE SHOW

FCIA's big event of the year had over 180 total participants at the Conference, taking in engaging sessions from a variety of dynamic speakers. We had a great Ray Usher Memorial Golf Tournament in Palm Springs, CA, with many taking the FM & UL/ULC Firestop Exams. The trade show had 16 tables.

During the ***"Crash of the Fire and Energy Codes - High-Rise Facade Fires Worldwide",*** Joe Lstiburek, PhD, PE, Building Science, Inc., gave insights about how high-rise exterior cladding assemblies and insulation can work on the exterior skin of a building and still be safe.

The panel, ***"Top Questions from the Help Desk"***, with Technical Representatives from FCIA Manufacturer Members participating on a Technical Panel, looked at the top issues in the Firestop industry, as viewed from the Manufacturer's Technical Staff point of view. The interaction between the audience and manufacturer technical personnel brought open discussion on key issues.

Then, with the programs presented on ***"What Keeps Property Managers & General Contractors Awake at Night"*** with Patrick Shaw (Cushman Wakefield) and Corey Zussman (Pepper Construction), Kevin Daugherty on ***"How to Find, Train, Motivate and Retain Employees"***, Jill Norcott from FM Approvals providing technical content on ***Maximum Foreseeable Loss Walls (MFL)***, FCIA's Code Consultant Bill Koffel and Andre LaRoche from the National Research Council of Canada on the ***Code Development Process*** in the USA and Canada and Jonathan Flannery on ***Time Management,*** FCIA Members had a ton of new info to take home.

Jill Norcott, FM Approvals. FCIA Photo

FCIA Members, presentations from the conference are in the Members Only Section of www.FCIA.org. Not a FCIA member? Join FCIA to take advantage of this and many other benefits.

NFCA SYMPOSIUM

The National Fireproofing Contractors Association held its Annual Symposium in Chicago with a tour of Underwriters Laboratories. NFCA's Symposium speakers included Fred Hervey and Matt Schumann from UL, several NFCA Member Fireproofing Manufacturers and others. Topics included Building and Fire Codes, UL Test Standards and more. Many specifiers and governmental official AHJ's from Chicago and the Suburbs attended and heard more about the importance of fire-resistance in buildings.

Fred Hervey, UL - NFCA Photo

FCIA INDUSTRY CALENDAR

JANUARY

January 8-11
Building Innovation Conference & Expo
Washington, DC
www.NIBS.org

January 21-23
Intersec
Dubai, UAE
www.intersecexpo.com

FEBRUARY

February 22-26
World of Concrete
Las Vegas, NV
www.worldofconcrete.com

February 26-28
Association of General Contractors
New Orleans, LA
www.AGC.org

MARCH

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

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

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

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

March 26-28 (tentative)
FCIA FSB Firestop & Effective Compartmentation 'DIIM' Symposium and FM/UL Testing
Doha, Qatar
www.fcia.org/articles/events.htm

APRIL

April 1-3 (tentative)
FCIA IBC Firestop & Effective Compartmentation 'DIIM' Symposium and FM/UL Testing
Dubai, UAE
www.fcia.org/articles/events.htm

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

MAY

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

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

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

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

JUNE

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

June 19-20
International Facility Managers Association (IFMA) Facility Fusion Canada
Quebec City, Quebec, Canada
www.facilityfusion.ifma.org

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

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

JULY

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

AUGUST

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

SEPTEMBER

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

September 20-22 (tentative)
FCIA Canadian Symposium
TBD location
www.fcia.org

OCTOBER

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

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

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

NOVEMBER

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

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