

Volume 4, No. 3

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The Magazine of Effective Compartmentation

Life Safety DIGEST

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for Building Safety**

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UL 1479**

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On the Cover:

Firestopping and effective compartmentation is an important part of the new Memorial Herman Medical Plaza, Houston, TX. Photo courtesy of Apex Firestop, LP, Houston.

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Editors' Message



FCIA's Board of Directors sets direction for supporting Fire Resistance Rated and Smoke Resistant Effective Compartmentation.

FCIA supports all aspects of fire protection in buildings to keep our families safe, to protect buildings from damage and businesses operating after an unfortunate event. Buildings can be very well-protected when there are fire- and smoke-resistance-rated walls and floors protected by features such as firestopping, rolling and swinging fire doors, fire dampers, fire-rated glazing, in addition to detection and alarm systems, sprinklers, and educated occupants.

Installation is of utmost importance in fire protection systems. Without qualified construction companies and workers who understand the critical zero-tolerance nature of Effective Compartmentation and firestopping, safety is compromised.

Without a correctly constructed fire wall, fire barrier or smoke barrier, there may be no continuity of the wall due to improper installation or unintentional or intentional damage to these important barriers. If compromised, the assemblies may not provide

the protection as intended. It would be the same as taking power from the smoke detector, or hanging something on a sprinkler head.

FCIA believes that all types of fire protection - alarms and detection, fire- and smoke-resistance-rated Effective Compartmentation and features, suppression systems and occupant education - are needed to keep our families of all ages safe, wherever they are. FCIA's code changes support this philosophy.

Read and enjoy articles about compartmentation features. Join FCIA, the association that supports effective compartmentation. Effective Compartmentation is a key component to fire and life safety.

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Effective Compartmentation for Building Safety

Effective Compartmentation contractors of all types, including specialty firestop contractors in renovations, have been working to make buildings safer through reliable Effective Compartmentation. General contractors, building owners and facility managers play a very valuable role in preventing the spread of fire in buildings through many details that may seem minute to outsiders. Dangerous fire spread is minimized by using fire-resistance and smoke-resistant Effective Compartmentation in buildings, and having it professionally installed by contractors qualified to perform this important work. Effective Compartmentation is the fire-resistance-rated wall and floor, including the supporting structure, plus all the compartmentation features that complete the assembly. These Effective Compartmentation features include firestopping, fire and smoke dampers, fire-rated glazing, fire swinging doors and hardware and fire rolling doors. Each piece has an important role to play in fire and life safety.

To start, there are several types of walls to use to build fire spread protection strategies using Effective Compartmentation. Using the 2006 International Building Code as a reference, here's what the basics are called:

- **Fire walls** - Sturdy construction, these walls are built structurally stable to allow collapse of a building on either side of the wall, yet remain standing.
- **Fire barriers** - These walls are continuous barriers, extending from a fire-resistance-rated floor to the fire-resistance-rated floor/ceiling

assembly above, and are continuous into and through concealed spaces.

- **Fire partitions** - Fire resistance-rated assemblies tested for a very short 30 minutes of protection. There are not many classified systems available in listings for one-half hour in the wall or floor assembly. The minimum found typically is one hour.

- **Smoke barriers** - Important smoke barrier walls are rated for at least one hour, and are continuously sealed to prevent the migration of smoke from one compartment to another. In firestopping, that means an "L" rated firestop system; in fire dampers, a fire - smoke damper; and in fire doors, an "S" leakage rated door with and without windows. (See Fire Door Article in this issue)

- **Smoke partitions** - These are non-resistance-rated wall assemblies that restrict the spread of smoke in buildings. Since they have no quantifiable definition, it is extremely difficult for a contractor to select the appropriate systems for these applications. "How can we pick something that's resistant without some testing to back up the claim that the products are resistant?" states Multicon's Randy Bosscawen.

Building owners have a very important role in preventing fire spread in their buildings. They are the keys to keeping the fire-resistance-rated construction continuously rated, as Effective Compartmentation.

The building owner and facility manager are important to the process of fire-resistance and smoke-resistant compartmentation

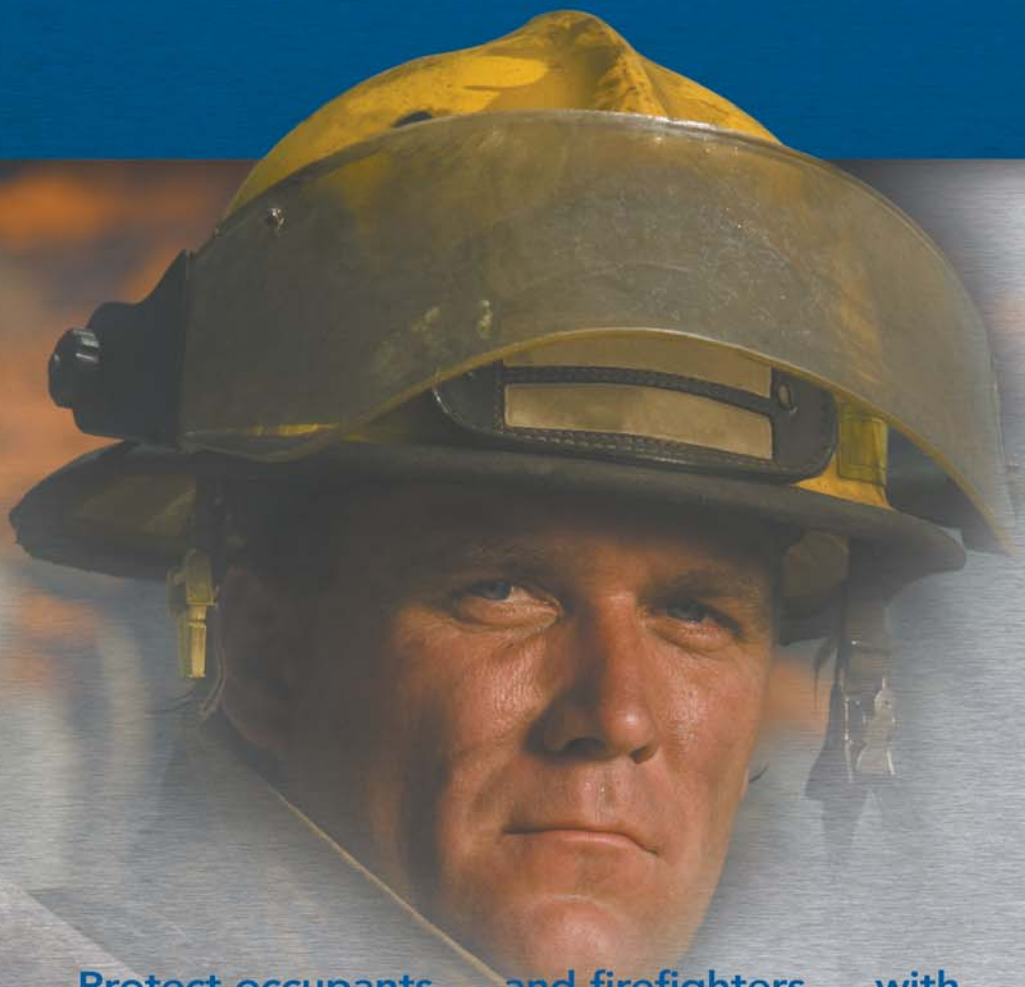
because they can control inspection and maintenance of Effective Compartmentation in many ways through several groups of people.

Building occupants let building management know if a sprinkler head or alarm station looks "odd" because they see a threat. With Effective Compartmentation (and all other fire protection features for that matter), the facility manager needs to understand what to do or who to call to keep the Fire-Resistance and Smoke-Resistant Effective Compartmentation functional. Specialty firestop contractors are geared to restore ratings in facilities throughout the facility. These contractors employ workers who are very well-trained in firestopping and Effective Compartmentation plus it's features.

Firestopping and Effective Compartmentation are very important for specialty firestop contractors, manufacturers and consultants of Effective Compartmentation features to understand - just as important as the building owner, manager or facility manager. Rapid fire spread leads to egress (exit) difficulties, life safety risk and destruction of tenant property. Since fire-resistance and smoke-resistant occupancy separations (fire barriers, smoke barriers, fire walls) are very critical to preserving tenant operations and the ability to live in a building after a fire event, it makes sense to use them widely, install them to the classified system, and maintain them professionally.

In your office, does the wall between you and whoever else is

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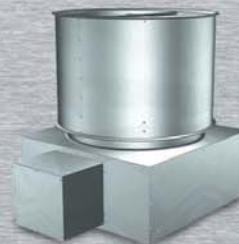
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next door extend through the drop ceiling to the floor or floor/ceiling assembly above? If not, can someone crawl from next door to your apartment, office, store and get at your secure data? Website server? Business assets? Without walls extending to the next hourly rated structural floor assembly, many risks (such as sound, fire, smoke, thieves) can spread from next door to your space. Most importantly, it is critical for building owners and facility managers to understand because it is a fire and life safety item protecting our families. The same goes for every compartmentation estimator, installer, and project manager.

How many times have we heard a fire alarm and stayed at our desk thinking, "it's not really an emergency." The National Association of State Fire Marshals' Bert Polk would ask, "Do you carry a flashlight in your pocket to find your way out in dark areas, as the lights go out first in an emergency event?" When was the last time we really spent time identifying the way out of a strange or familiar building we enter? Do we instruct our families about how to get out of buildings in emergencies, regardless of how strange we may sound at the time?

Although passive fire protection has been coined as a term for our industry, we like to refer to it as Fire-Resistance- and Smoke-Resistant-Rated Effective Compartmentation Systems. The features of effective fire-resistance-rated and smoke- (or other) resistant- compartmentation include:

- **Fire-resistance-rated floors** - Concrete, combination wood, gypsum floor ceiling assemblies systems, tested to ASTM E 119 at approved agencies such as Underwriters Laboratories.
- **Fire-resistance-rated walls** - Concrete, masonry, gypsum sys-

tems, also tested to ASTM E 119.

- **Structural fireproofing** - Spray and intumescent fireproofing materials are applied to steel and other structural elements to protect from warping or collapse in fire conditions, also tested to ASTM E 119, that support the compartments in a building.

- **Firestop systems** - Penetrations made by plumbing, mechanical, electrical and communications systems tested to ASTM E 814, UL 1479, joints made for expansion, contraction, "walltops" for floor movement tested to UL 2079, perimeter joints tested to ASTM E 2307 are all to be treated with the many products that become systems when installed properly to the classified system.

- **Fire dampers** - Fire and smoke dampers tested to UL 555, and UL 555S and installed to the manufacturers instructions, with angles, sleeves, all to be per the tested assembly.

- **Fire swinging doors and hardware** - Doors and hardware are tested as a unit with the frame, door and hardware working together to form an effective barrier.

- **Fire rolling doors** - Large openings are protected with rolling steel doors with actuators and motors engineered and tested as a fire resistance rated assembly, tested and installed to the *NFPA 105, Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives*.

- **Fire-rated glazing** - As with doors, fire-rated glazing is tested as a complete assembly to ASTM E 119, and installed per the listings.

There are many points for specialty firestop and other building contractors to remember with Effective

Fire-Resistance- and Smoke-Resistant-Rated Compartmentation and structural support systems. This includes the following things:

Design - Professional architects need to understand minimum code requirements first, then the company or community culture to protect structures and people against threats and translate that into plans and specifications for contractors. Other questions that should be answered include "Is the building located in a terrorist or high crime area where large assets need protection?"

Installation - To put Effective Compartmentation in place, proper installation is critical. That's why the Underwriters Laboratories, Omega Point, or FM Laboratory books are full of classified systems, to be selected by contractors who really understand firestop and containment systems in buildings. (See last month's articles on FM Approved & UL Qualified Firestop Contractor Programs) Many construction disciplines are embracing the quality installation processes, and educating workers for new technologies, products and processes.

Inspection - FCIA drove development and has promoted the use of ASTM E 2174 and ASTM E 2393 Inspection of Firestop Systems Standards in many areas. These inspection standards are currently required in the New York City Building Code. Qualified inspectors are important for this as well as other pieces of Effective Compartmentation. The Fire Door and Damper industry has worked at NFPA to build these elements into NFPA 80.

Maintenance - Although most firestopping materials do not require periodic maintenance, there are many trades who work in build-

ings who think they have a license to poke holes in buildings.

Reliability of all types of protection, whether it's the alarms, sprinkler, roof overhead or piping down below...and Effective Compartmentation, depends on all the points above. Proper design, installation, inspection and maintenance make the difference in all types of systems. The 2003 International Fire Code has a requirement for maintenance of all the items listed above, and it's been in force for almost five years. For 2009, a code change proposal has been added for annual inspection of all elements of fire protection in buildings. Building owners can either perform this work themselves, or look outside for specialized contractors who can provide appropriate services to keep Effective Compartmentation in working order.

Fire-Resistance-Rated Effective Compartmentation and structural elements slow the spread of fire and keep the building standing under fire attack. If only the room where the fire originated at the Chicago County Building had been fire-resistance-rated, fire may not have spread across the floor and into the stairway, killing several people trapped in upper floors of the

stairway. At the LaSalle Bank Building fire, also in Chicago, fire burned for over 5-1/2 hours before leaping to the next floor. Had fire-resistance-rated compartmentation (fire Barriers) existed on the floor of origin, the fire may have been contained to a smaller area. If the perimeter of the Windsor Tower in Spain had fire-resistance-rated perimeter fire containment systems, maybe the tower would still be functioning today. If only the First Meridien Bank in Philadelphia had properly designed, installed, inspected and maintained firestopping, maybe fire would not have spread so fast that the building became a total loss. We don't disagree that sprinklers can provide protection, but instead believe effective fire-resistance-rated compartmentation can add value when needed to protect people, property, and continuity of operations with sprinklers, detection and alarms, and occupant education.

What's the Cost?

At the building code hearings, we continually hear about the large construction costs driven by Effective Compartmentation. For Effective Compartmentation, initial cost, life cycle cost and value gained for elements installed during construction is huge. The cost of compartmentation systems is not a big mystery, but an exercise in common sense. Every building has some compartmentation, albeit possibly not resistance-rated or treated with features. Regardless, someone is installing floors, doors, walls, windows, ductwork and sealing around penetrations through the assemblies.

Here are some key facts about costs. The difference between most fire-resistance-rated and non-rated walls is really just the type of material used to build the wall, and whether or not it extends to the bottom of the floor above the space. In gypsum walls, Type X or Type C gypsum boards are used instead of standard gypsum panels. In masonry and concrete, appropriate thicknesses need to be specified to meet fire ratings, but it's not much thicker than is already installed when specified by the architect. Doors and hardware also change, and fire dampers and firestopping systems are used instead of non-rated materials and systems.

However, since there already is labor used to install the walls, doors, ductwork, seal holes, etc., everyone on the building team is already there anyway, and the cost covered. The incremental cost to move from non-resistance-rated construction to rated construction is really very, very minimal - the construction team and materials are already in place. They just have to be



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listed for use in fire situations, and installed to different protocols and specifications. Even if the various features of Effective fire-resistance- and smoke-resistant-rated Compartmentation in an existing building need extensive maintenance to fix neglect or addition of new mechanical, electrical or communications systems, bringing the systems up to par isn't over the top costwise when compared to sprinklering a building. In Chicago after the Cook County Building fire, residential high rise and historic structures were given this option under the life safety ordinance that followed. Building owners used their existing construction feature, Effective Compartmentation to protect occupants in these important buildings while building funds to install sprinklers later.

Summary...Effective Compartmentation works...

To minimize spread of fire in buildings, we encourage the concept of total fire protection. If the compartmentation components like doors, fire dampers, firestopping, and walls or floors are installed properly by qualified firestop contractors, all that's needed is commissioning to be sure it's right the first time. Then a building owner can stay on top of it to reduce life

cycle costing. Without periodic inspection and maintenance, any of the parts of total fire protection may not work as intended if called upon to protect our families by fire and smoke. FCIA also recommends that building operations personnel become educated about all parts of total fire protection and how it fits into their day-to-day job. We all don't need to be experts in each trade, but need to understand what it looks like when something has been breached. Teach building occupants, kids, families how to identify sprinkler heads, alarms and detection systems, fire doors, firestopping, fire dampers, fire-resistance-rated walls so they know what systems are part of the fire protection plans.

Most importantly, we recommend educating the building occupants about a building's fire and life safety features and the building's plan for safe egress, or defend in place should an emergency event occur. And, use FCIA members for all your firestop systems installation, inspection and Effective Compartmentation maintenance needs. 🔥

Aedan Gleeson is president of Gleeson Powers, Inc., and can be reached at aed@gpifirestop.com

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

The Value of the FCIA

The Firestop Contractors International Association (FCIA) is doing a lot to promote fire and life safety through total fire protection. As an organization, FCIA supports all aspects of fire protection in buildings to keep our families safe and businesses operating after an unfortunate event because there are fire-resistance and smoke-resistant-rated walls and floors (Effective Compartmentation) protecting the space.

The FCIA is a trade association of firestop contractor, manufacturer and associate members who believe in the total fire protection concept. FCIA and its members

are active in the code, standards and specification development process with ICC, NFPA, ASTM, UL and FM, CSI, and SCIP. FCIA's Firestop Industry Manual of Practice is recognized as a must read in the firestopping industry (available free to building owners, specifiers, architects, engineers, fire marshals and building officials via a PDF attached to an email).

FCIA's website at <http://www.fcia.org> is chock full of information about firestopping and Effective Compartmentation as a resource for the industry, not just FCIA members.

FCIA and Underwriters Laboratories (UL) co-sponsor a seminar for archi-

tects, specifiers, building owners and managers, fire marshals and building officials called the "Total Fire Protection Systems Symposium." This symposium features all types of fire protection, with representatives from each industry presenting their technologies, testing, installation processes, all in one place.

And, FCIA Life Safety Digest continues to serve fire and life safety through education about Effective Compartmentation. Contact FCIA to schedule seminars in your area, at bill@fcia.org.

Where There's Smoke



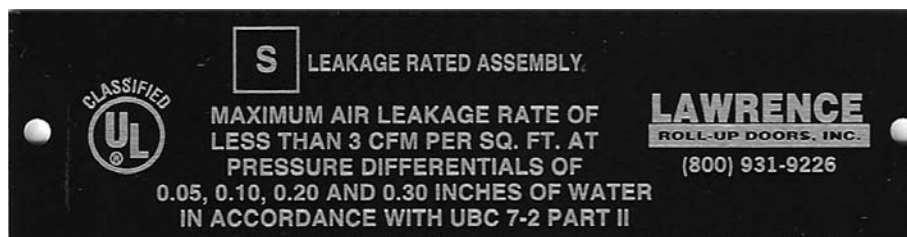
Rolling fire door being subjected to UL 1784 Air Leakage Tests

By Steve Hahn

The most common by-product of a fire is smoke. And statistics show that more fire-related deaths are actually caused by smoke than by burns. Maintaining a tenable environment - that is, an environment that is not life threatening - during evacuation or while awaiting rescue from areas of a building are primary concerns. When necessary to address those concerns, building

codes will require the use of air leakage rated door assemblies - often referred to as "smoke doors."

Air leakage rated doors are designated by an S-label. Similar to a fire door label, it is a label with an "S" that identifies the door as providing certain levels of protection from smoke by limiting the amount of air that can pass through the door assembly. The degree of protection is expressed as a function of the amount of leakage in cubic ft per



minute, per sq ft of door area, at varying pressure levels. Different areas of buildings - corridors, elevator lobbies, stairwells, etc. - have different limits for the amount of leakage allowed relative to pressure differentials common to those areas.

Many different types of doors can be S-labeled, including rolling doors. But since smoke doors must close automatically when activated by a smoke detector or alarm system, a rolling fire door - with necessary changes as required by its listing - is usually used and provided with both a fire door label and an S-label.

Like fire doors, smoke doors have their own set of standards. They are tested in accordance with UL 1784, Air Leakage Tests of Door Assemblies. These tests determine the amount of air that leaks through a door assembly attached to a sealed chamber at various pressures and temperatures. Installation and maintenance is regulated by NFPA 105, Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives.

Prior to the development of test standards (around 1990), doors were sometimes provided with perimeter "gaskets" in an effort to reduce the amount of smoke that could pass through them. This was an improvement, but their effectiveness was not really known.

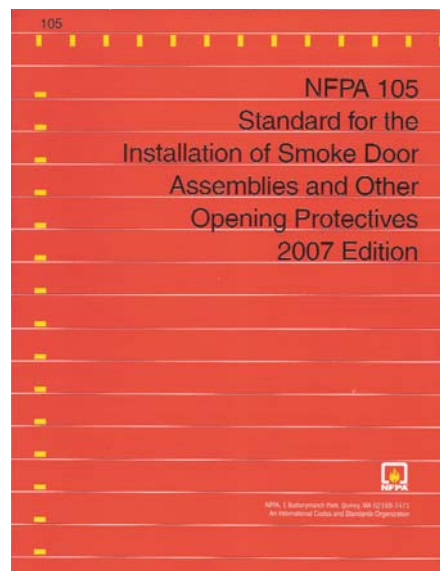
Today's S-labeled rolling fire doors go much further. A comprehensive series of tests now validates that a specific door design is capable

of complying with allowable leakage limits. An approved design may require a particular slat profile, type and size of perimeter seals, specified placement of heat-resistant caulking, and other measures that may be necessary to reduce the amount of smoke that can filter its way through and around a rolling door assembly.

Differences in door design, size of door, mounting of door, temperature, and other factors can all potentially affect leakage rates. Doors will tend to leak more through the door perimeter (around the jambs and header) than through the curtain slats. Doors also tend to have higher leakage rates when smoke is at ambient temperature ("room" temperature, approx. 75 deg. F.) than when smoke is "warm" (approx. 400 deg. F.).

Manufacturers normally use listed brush seals to fill the "gaps" between the curtain and guides, and between the curtain and header. Areas, such as the intersection of the jamb and header, may be particularly vulnerable to leakage if seals are not correctly installed. S-label doors typically also require special heat-resistant caulking between components of the door assembly and between the door assembly and the wall.

Sometimes installing or adjusting that seal on the header may be challenging. And sometimes caulking is slow and messy. But S-label doors are called on to perform in critical



life and death situations. For proper performance, all items required to be field installed are necessary - and they must be installed correctly as indicated in the listing and manufacturer's instructions. 🔥

Steve Hahn is Product Manager for Los Angeles based Lawrence Roll-Up Doors, Inc. He has been in the rolling door industry for more than 30 years, is a member of the NFPA-80 Standard for Fire Doors and Other Opening Protectives Technical Committee, and serves on three UL Standards Technical Panels. He can be reached at shahn@lawrencedoors.com

Test Standard Update: **UL 1479**



Penetrant on left is not contained within chase wall. Penetrants on right hand side are contained within a chase wall.

By Chad Stroike

UL conducted an industry review of all UL-classified through-penetration firestop designs that require chase walls in the listings. The industry review is related to the recent changes of UL 1479, Fire Tests of Through-Penetration Firestop; Section 4.1.2.1. This section now states that penetrating items shall be directly exposed to the furnace temperatures and not contained within the cavity of a wall. The date the changes became effective was Sept. 20, 2007. All manufacturers must show that their systems will work when tested with the penetrating item outside of the chase wall. This

review mainly impacts, but is not limited to, plastic (combustible) piping systems.

Background

Historically UL 1479, Fire Tests of Through-Penetration Firestops, provided for firestop systems to be tested with the penetrating item completely contained within a rated chase wall. This chase wall (as shown in Figure 1) was typically capable of limiting the effects of fire to the penetrating item. As a result, listed systems - such as nominal 4-in. plastic pipes firestopped with minimal amounts of sealant, including non-intumescent sealants - were soon hitting the market because the

pipes were protected from the extreme furnace temperatures. While the method shown in Figure 1 simulates a condition in which the wall is exposed to fire on both sides (considered more severe than would be expected in a typical fire scenario), it did not directly evaluate the consequences of fire starting within the wall or passage of fire through unprotected electrical boxes, etc.

Because of these issues and the increased risks involved with combustible-type building construction, UL's Standard Technical Panel for UL 1479 determined a change should be made to the standard. After weeks of discussion the wording was agreed upon and adopted, eliminating the

chase wall structure (Figure 2). While probably more severe than actual conditions (it ignores any protective benefit of the chase wall), it provides a conservative, easily-defined procedure. The standards change may impact F, T, and L Ratings on all systems that incorporate penetrating items with chase walls.

Effects on Manufacturers

UL has contacted each manufacturer with a list of their systems that were required to be evaluated to the new requirements of UL 1479. Manufacturers must choose which systems need to be evaluated/tested to the new standard and which systems will be removed from publication because they are not likely to pass the new requirements (Figure 2). The biggest impact we see across the industry is that many "caulk and walk" UL systems for pipe larger than 2 in. may be eliminated. Instead, firestop collars or firestop wrap strips may be required to firestop these larger diameter non-metallic pipes.

Effects on Contractors

Contractors should keep the new requirements in mind when bidding and installing firestops on future projects. UL removed all systems that don't comply with the new test requirements adopted Sept. 20, 2007. It will be up to the Authority Having Jurisdiction to decide if projects started prior to this date will be allowed to use the systems or not. Contractors should make themselves aware of the solutions available for bidding and installation purposes. 🔥

Chad Stroike is Fire Protection Engineering Manager, Chemicals Business Unit for Hilti North America. He may be reached at Chad.Stroike@hilti.com.



On Sept. 20, 2007 UL 1479 required that all penetrants be exposed to furnace conditions such as shown here

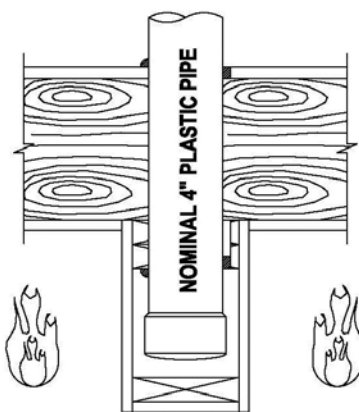


Figure 1. UL 1479 Method for testing pipes within a chase wall.

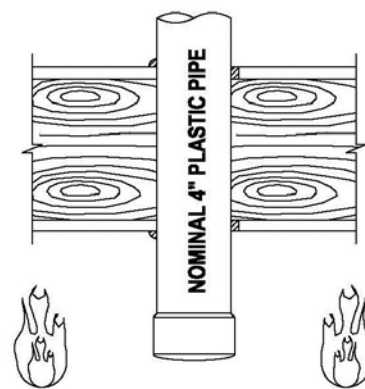


Figure 2. System not likely to pass UL 1479 Test Requirements due to pipe exposure to furnace conditions.

Code Corner

The International Code Council's Code Development Hearings took place Feb. 18 - March 1. The committees that were assembled for these hearings include:

International Existing Building Code Committee
General Committee - Height and Area topics, 'general ideas and concepts'
Means of Egress Committee - Exiting
Fire Safety Committee
Fire Code Committee, including Wildland Urban Interface Committee
Structural Committee
Mechanical Committee
Plumbing Committee; Plumbing Sewage Committee, Plumbing and Mechanical Committee

Diverse committees of 14 people from industry, building officials, and fire marshals participate in the committee hearing around 100 code change proposals per day, 200+ total for each, rendering an "approve or disapprove" to each code change proposal. It is thought that a committee endorsement is a big plus for possibility of code change to pass when it is publicly commented.

Public comments are submitted June 9 with final action hearings in Minneapolis Sept. 17-26. The final action hearings are attended by building officials, fire marshals and industry representatives, where debate is heard by all in attendance. Code change public comments voted on at the final action hearings, plus those already approved at the committee hearings and not publicly commented will become

part of the 2009 International Family of Codes.

Effective Compartmentation Public Comments by FCIA at ICC Code Hearings

Below are some public comments expected to be made, noted by the number assigned by ICC.

Design

G7 - Shop Drawings - 106.2.3 - Fire and Smoke Protection Features Shop Drawings. Shop drawings for fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions, and horizontal assemblies; rolling and swinging fire doors and hardware; fire-rated glazing; fire, smoke or fire/smoke dampers; and through or membrane penetration firestops, shall be submitted to indicate conformance with this code and the construction documents shall be approved prior to the start of systems installation.

The shop drawings FCIA is referring to are the UL or other laboratory listed systems, critical for identification of compartmentation components including firestop systems throughout the life cycle of the building. Although voted for disapproval, we heard from the committee that the words "shop drawings" should be changed. FCIA's public comment will change the language to "Fire Resistance Designs from Approved Sources," which is the language used by the building code already. The code committee members agreed stating, "documentation is needed and this proposal should be reworked through the public comment process."

Install

FS83 - 712.2.2 - This code proposal adds a requirement for firestopping to be installed by certified contractors by an approved agency. FCIA's public comment will work to address comments by the code committee regarding "approved manufacturers instructions." Although the proposal was disapproved 9-4, FCIA had excellent support on this issue from at least six others on the committee. With minor adjustments, we believe we will meet the objections, and possibly the assembly may overturn the committee and approve the code change proposal.

Inspect

G9 - 109.3.5 - Fire and Smoke-Resistance Rated Construction. Inspection of fire- and smoke-resistance-rated construction shall be in accordance with Section 109.3.5.1 through 109.3.5.4.

109.3.5.1 - Lath and gypsum board inspection. Lath and gypsum board inspections shall be made after lathing and gypsum board (interior and exterior) is in place, but before any plastering is applied or gypsum board joints and fasteners are taped and finished. Exception: Gypsum board that is not part of a fire-resistance-rated or shear assembly.

109.3.5.2 Masonry and Concrete - Masonry and concrete shall not be concealed from view until inspected and approved.

109.3.3 Fire and Smoke Resistant Penetrations. Penetration of joints and penetrations in fire-resistance-rated assemblies, smoke barriers and smoke partitions shall not be concealed from view until inspected

Industry News

and approved.

109.3.5.4 Fire and Smoke Resistant openings. Protection of openings in fire-resistance-rated assemblies, smoke barriers and smoke partitions shall not be concealed from view until inspected and approved.

G9 dealt with inspection of firestopping and compartmentation by the building official prior to concealment. Inspection helps maintain reliability of Effective Compartmentation systems. The proposed language puts the inspection by building officials of the compartmentation industry components in one place, for ease of use. Positive feedback was received that the change should correct language about smoke resistance, and that all the pieces of fire resistance need to be part of the code change, such as structural fire protection, fireproofing. The public comment will clarify the intent. Although disapproved, it had significant discussion.

G10 - 109.3.6 Fire and smoke-resistant penetrations. Protection of joints and penetrations in fire-resistance-rated assemblies, smoke barriers and smoke partitions shall not be concealed from view until inspected and approved. This change was approved as submitted, by a score of 11 for, two against in general, and in the International Existing Buildings Committee also approved as submitted.

G11 - FCIA supported the International Firestop Council code change to add ASTM E 2174 & ASTM E 2393 Standards to the building code in Chapter 109.3.6, 109.3.7. FCIA's testimony, "rarely does a contractor association request more regulation and oversight," brought positive response by the committee. With

many inexperienced individual trades installing firestopping, inspection provides fire and life safety. FCIA was involved in the development of these standards, and believes an independent, third-party inspector, hired by the owner independent of the project participants, the GC, and not related to the contractor, distributor or supplier, makes good sense.

The committee offered comments. James Colgate, NYC Executive Architect, stated that, "these are good standards, we use them," while Bob Eugene from UL stated, "these are good standards, and help reliability." Sharon Myers, a Plans Examiner at the State of Ohio Dept. of Commerce, stated "these standards had permissive language, and should go in Chapter 17." FCIA supports these standards, and will listen to comments heard in Minneapolis to build a strategy for the next code cycle.

S124 - ICC Utah Chapter Member Gilbert Gonzalez offered a code change for either inspection of firestopping to the ASTM E 2174 or ASTM E 2393 Standards, or FM - UL Qualified Firestop Contractors. This was disapproved due to 'scope', that inspection would be required for a residence with one pipe.

Maintain

F105 - The National Association of State Fire Marshals adjusted the language on this proposal at the hearings from "maintain" to "inspect" all elements of fire protection in buildings. This gives the building owner the option to either self perform or hire an Effective Compartmentation company to verify that these important safety features are actually in place.

Compartmentation

FS6 - Compartmentation Definition - COMPARTMENTATION. (IFC COMPARTMENTATION) fire, smoke, or fire-and smoke-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire, smoke, or fire and smoke or other hazards within a building and the spread of fire to or from buildings.

In FS6, FCIA attempted to add a definition for compartmentation in the IBC and IFC, in Chapter 2, section 202 definitions. Several committee members asked questions, and commented that it is a concept that needs to be defined in the code, and urged us to work with opponents to bring the appropriate language for this important code change to be accepted at final action hearings. Possible public comments include removing the "spread of fire to or from buildings," and the "other hazards" while eliminating duplicate words. Compartmentation is a concept that needs to be in the culture of the building code so it is recognized, reliable and ready when called upon to work by fire and smoke.

E119, 118, 116, 117 - These code change proposals make changes to Table 1017.1 requiring one-hour fire-resistance-rated assemblies in various occupancies. FCIA, the Fire Rated Glazing Industry, National Association of State Fire Marshals, International Association of Fire Fighters (IAFF), Los Angeles Fire Department, CA Fire Chiefs, all either wrote or testified in support of these code changes. Each of these proposals was disapproved with commentary that one-hour ratings may be overly protective.

In E117 - adding fire-resistance-rated corridors for education occupancies, FCIA presented statistics

from National Center for Education Statistics that showed:

1. There are over 126,000 schools in the USA
2. A large percentage of these schools are greater than 40 years old:
 - a. 25% built before 1950
 - b. 45% built 1950-1969
 - c. 15% built 1970-1984
 - d. 10% built after 1985

In these educational buildings, compartmentation existed first as the primary fire protection and life safety strategy, with sprinklers added later. Therefore, the safe building record in these occupancies is due to both compartmentation and sprinklers, not one or the other. This shows safe buildings are a result of sprinklers being added to already-compartmented buildings. The Fire Rated Glazing Industry's

Thom Zarembo stated that, "these buildings are full of kids...with a supervisory ratio of students to kids at one instructor to 30 students. And, it has been found that kids in emergency situations don't listen." Bob Davidson, consultant to NASFM, stated that, "in lockdown situations, these corridors are needed." IAFF's Sean Decrane stated, "how would my kids react in an emergency situation?" and Ken Krause, of the Los Angeles Fire Department, said, "this is important for safety. With sprinklers in these occupancies, there have been many trade offs" reducing the amount of fire resistance rated corridors in buildings. Public comments will have to address the reason why 1 hour rated corridors are needed in buildings.

G110 - Height and Area - At the building code hearings, there were 20

code changes to review, debate, and for the committee to make determinations. Kate Dargan, of the California State Fire Marshal and Dave Collins, of Preview Group, in representing the American Institute of Architects and the Code Technology Committee, Features Study Group continues to meet to address issues in 'Height and Area' including tying compartment sizes to fire flow in gallons per minute (GPM). Fire flow rates proposed vary from 1,000 to 2,000 GPM. It is clear that much research is needed to understand compartment size as it relates to height and area, plus fire flow of water to suppress fires.

Watch next issue of Life Safety Digest, and <http://www.iccsafe.org> for final action results important to fire and life safety compartmentation features.

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Testing & Qualification News

FCIA - UL Total Fire Protection Systems Symposium

FCIA's Bill McHugh moderated the symposium in San Jose, CA along with UL's John Taecker. With over 50 building officials, fire marshal and architect attendees, the program continues to deliver great information about all parts of fire protection including Effective Compartmentation. Speakers from the fire door industry, including Door and Hardware Institute's Bill Johnson; Door and Access Systems Manufacturers Association rep. Steve Hahn, of Lawrence Doors; fire damper industry rep. Rick Cravy, of RUSKIN; gypsum industry rep. Frank Munoz; concrete and masonry industry rep. Kurt Siggard, of Concrete Masonry Association of CA and NV; fire rated glazing industry's Ben Haigh Technical Glass Products, Inc.; National Fireproofing Contractors Association and W.R. Grace. A special thanks to UL's Betsy Titus for funding the program and John Taecker for organizing the ICC Tri Chapters for this education session. Watch <http://www.fcia.org> <<http://www.fcia.org>> for '08 and '09 FCIA UL Total Fire Protection Symposium Seminar schedules.

Compartmentation Industry at ICC Code Study Group Hearings

- There are three committees meeting at various times to discuss several building code issues. The Vertical Openings group will focus on "how big can holes in floors be" and not lose life safety and structural integrity during fire, while reviewing format, definitions and technical requirements in Chapter 7 of the International Building Code. Features Study Group will deal with the height and area issues, and

Terrorism Resistant Buildings (TRB) will aim at implementing ideas to protect people from terrorism attacks. The Code Technology Committee then reviews study group work for endorsement of the CTC at code hearings.

FCIA and the fire rated glazing industry both use Bill Koffel as our code consultant. At the last Features meeting, Koffel presented how the compartmentation concept can be used for fire and life safety. Using size of compartments and fire flow of water in gallons per minute as technical basis to justify height and area values, Koffel presented the case for Fire Resistance Rated Compartmentation to the study group.

Firestopping FM Approval - UL Qualification Taking Off

- At FCIA's Education and Committee Action Conference, 25 people took the FM or UL DRI Exams, while at Toronto, Ontario, five attendees started the road to FM Approval or UL Qualification. Currently there are about 50 FM Approved Contractors and one UL Qualified Firestop Contractor. FCIA member Gleeson-Powers, Inc., has been qualified. We understand at least 10 more are at final stages of UL Qualification from the U.S., Canada, and the Middle East with many in the cue at FM as well.

FCIA worked with MasterSpec and SpecLink to add requirements to 07 84 00 specification sections for firestop contractor qualifications. In roughly 30% of specifications, you'll find a requirement for an FM Approved or UL Qualified Contractor...plus ASTM E 2174 & ASTM E 2393 Inspection Standards. We understand from the field that enforcement is growing.

ICC Code Development Final Action Hearings

- ICC holds final action hearings in Minneapolis, MN Sept. 17-23. Public comments on code proposals will be voted on by the membership in attendance at the meetings. Watch them online, just like you are there at the hearing floor. Visit <http://www.iccsafe.org>, click on code development, and look for the webcast. FCIA and other compartmentation industry partners will comment on several items in fire safety, egress, general and fire hearings. Watch <http://www.fcia.org> for details.

Firestopping, FCIA & UL Standards Technical Panel (STP)-

UL 1479, the standard for testing firestopping, has a technical panel comprised of manufacturers, building owners, architects, building officials, fire marshals and academics. FCIA members belong to the panel, including Randy Bosscawen, Gary Hamilton, Bob Hasting, Don Murphy, Bob LeClair and others. At the January STP meeting, FCIA requested study regarding movement of penetrating items (or the wall, while the items are static), environmental exposure of firestop systems prior to testing. Additionally, an architect in Las Vegas asked that labeling of firestop systems be a requirement of UL 1479. The three study groups met at the Education and Committee Action Conference in Seattle and laid groundwork for research that will continue in spring, summer and early fall. FCIA Standards chairman, Randy Bosscawen has scheduled a meeting for July 24, in Miami. Plans are being made now, so watch <http://www.fcia.org> in mid-June for info.



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DHI Fire Door Inspection Program

- The Fire Door Assembly Inspection class (FDAIc) sessions focus on the new inspection process guidelines affected by the National Fire Protection Association's (NFPA) publication Number 80, *Standard for Fire Doors and Other Opening Protectives*, 2007 Edition. This course provides insight into the certification process for companies and individuals who want to inspect fire doors in buildings, and become educated. DHI has presented this education qualification program to building officials, fire marshals and even legislators, with great reception. DHI continues to lead the openings industry in life safety and security through inspection. Visit <http://dhi.org> for info on next classes.

NCMA Celebrates

- The National Concrete Masonry Association celebrated 90 years the week of May 20. For an association to last 90 years is a milestone. NCMA has provided educational resources for concrete block producers, architects, engineers and building officials in a big way for many years. NCMA's Dennis Graber has been a key component in the FCIA - UL Total Fire Protection Systems Symposium. Congratulations NCMA!

Fire Rated Glazing

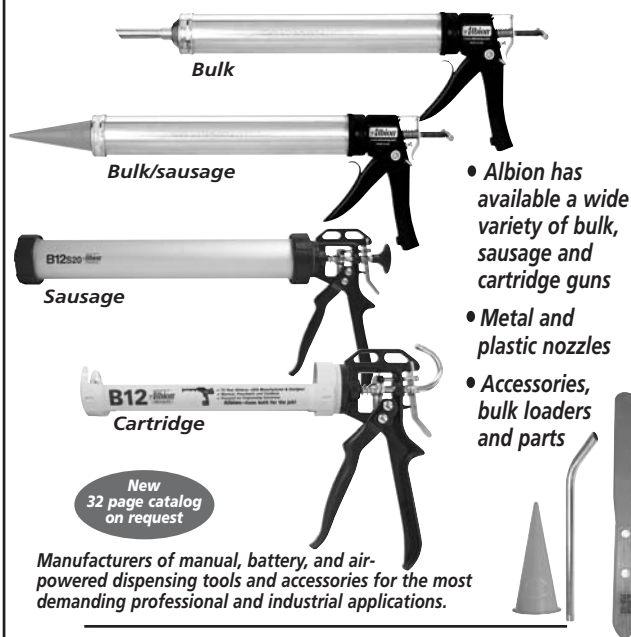
- The fire rated glazing industry continues to have discussions with building officials about the new labeling requirements for fire rated glazing. ICC's Fire Safety Committee heard several code change proposals to reverse the ICC Membership Vote of 2006-2007

cycle to label windows, all voted down by the committee. Watch for more action at the final action hearings in Minneapolis, MN. Read more about labeling in the next issue of Life Safety Digest.

Fire & Smoke Dampers

- Lots of technology gains have been made through testing in the fire damper industry. Both RUSKIN's Rick Cravy and GREENHECK's Mark Belke have educated building officials, fire marshals and architects at the Effective Compartmentation and Total Fire Protections Symposiums that firestopping may be applied around fire and smoke dampers as long as the classified UL 555 or UL 555S system allows. Contact the manufacturer for details.

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Life Safety Digest 2008 Industry Calendar

Aug. 6 to 10

National Concrete Masonry Mid-Year Meetings, Huntington Beach, CA

Sept. 17 to 23

ICC Final Action Hearings, Minneapolis

Oct. 6 to 8

Glass Build America, Las Vegas

Oct. 19 to 22

SMACNA Convention, Maui, HI

Nov. 6 to 9

FCIA Firestop Industry Conference & Trade Show, San Antonio

Nov. 8 to 15

Door and Hardware Institute Show, Boston

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The Fire Safety Construction Advisory Councils

of the midwest recently commissioned an independent and extraordinarily revealing study evaluating construction costs utilizing wood framing, light gauge steel framing and non-combustible concrete construction.

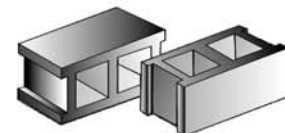
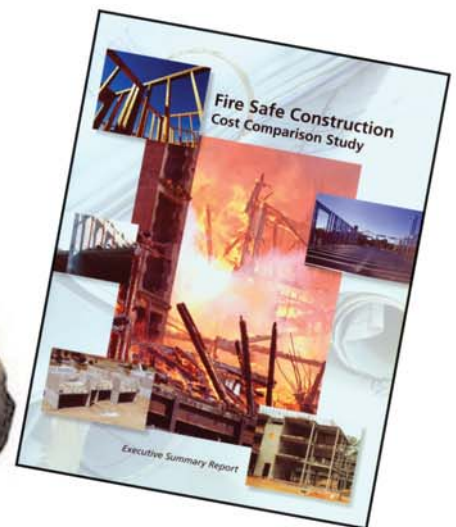
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