

Barrier Management Symposium

Bill McHugh, FCIA
Firestopping



MISSOURI SOCIETY FOR HEALTHCARE ENGINEERING
Member of ASHE since 1972
mosheonline.org

FCIA – Firestop Contractors International Association

- FCIA Members
 - Firestop Contractors
 - Firestop Manufacturers
 - Firestop Consultants
 - Firestop Distributors, Reps, Friends
- FREE MOP/Spec – Specifiers, AHJ's, Facilities
- FREE Life Safety Digest
- 3rd Party Contractor/Inspection Company Accreditation Programs
- Chair, ASTM Inspection Standards
- Tools for Specifiers, Facilities





The FCIA's mission is for member organizations to be recognized throughout the construction industry as preferred quality contractors of life safety firestop systems. [JOIN FCIA TODAY!](#)



Looking for a Firestop Professional? For the best [Firestop Contractors](#), [Associates](#), [Manufacturers](#), [Consultants](#), Distributors, Reps and more, [FCIA.org Member List](#) is the place for you. From Firestopping Contractors to Special Inspection Agencies, Firestop System Manufacturers to Firestop product Distributors, FCIA Members have the expertise you need. Also, check out the [FM 4991 Approved & UL Qualified/Firestop Contractors Map](#).

**FCIA Knows
Firestop Systems**
Design, Installation, Inspection,
Maintenance & Management

FCIA Barrier Management Services Member Lists

Barrier Management Services, Alphabetical Listing

Building Owners and Managers are required by the International Fire Code, NFPA 101, NFPA 1, the National Fire Code of Canada, UAE Fire and Life Safety Code, and other codes to maintain all types of fire protection in buildings. They are also required to maintain the fire-resistance rated construction and smoke resistant assemblies for the life of the building. The FCIA Barrier Management Services contractors, inspection agencies, manufacturers, distributors and software vendors provide tools for the building owner and manager to meet code requirements. Whether small or large repairs and major renovations, FCIA Barrier Services Section keeps buildings safe. [Members who offer these specialized services can register for inclusion in these lists.](#)

Member's first letter [1](#) [2](#) [3](#) [A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Z](#)

◆ Sort by Company

- [Aecon Industrial Western Inc.](#)
(Barrier Management Services)
Jeff Leddy
Member Since February 28, 2012
- [Airseal Insulation Systems](#)
(Barrier Management Services)
Abba Kloc

◆ Sort by State

- Sherwood Park (780) 416-5700
AB
- Brooklyn (718) 821-6800
NY

Contractors Offering Barrier Management Services

[By home state](#)

- [All Barrier Management Services](#)
- [Firestopping](#)
- [Fire Dampers](#)
- [Fire Doors \(Rolling and Swinging\)](#)
- [Fire-rated Glazing](#)
- [SFRM and IFRM Fireproofing](#)
- [Barrier Repairs](#)
- [Barrier Surveys](#)
- [Barrier Management Software](#)

- [Operating US-wide](#)
- [Operating in Canada](#)
- [Operating in Middle East](#)
- [Operating worldwide](#)

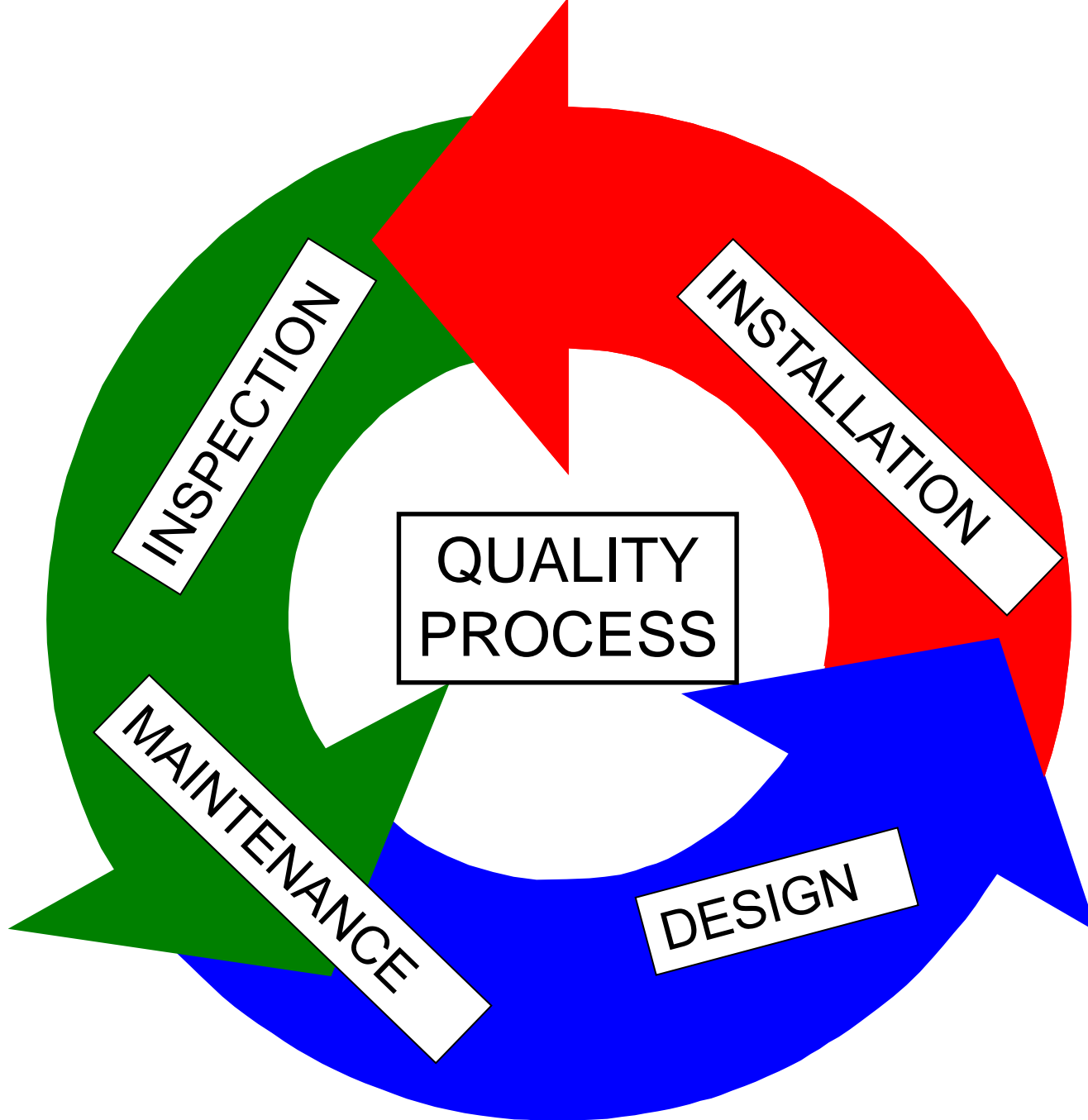
Manufacturer Members

- [Firestopping](#)
- [Fire Dampers](#)
- [Fire Doors \(Rolling and Swinging\)](#)
- [Fire-rated Glazing](#)
- [SFRM and IFRM Fireproofing](#)
- [Barrier Management Software](#)

Associate Members

- [Firestopping](#)

About Us
Contact Us
President's Message
Board / Committees
Members Only
Member Services
Member Lists
FM 4991 Approval
UL Qualification
Inspection Agencies
Barrier Management Services
Membership
Benefits
Qualification
Dues
Events



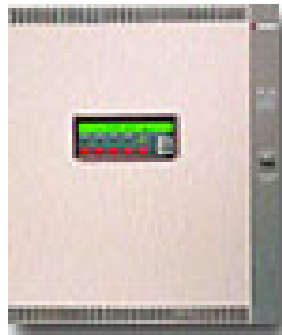
“DIIM”

- Firestopping for Safety – DIIM
 - Properly **Designed** and Specified Firestopping
FCIA’s - 07-84-00 - Specification
 - **Tested and Listed Systems** – ASTM E119/UL263;
ASTM E814, E1966 / UL1479 - UL2079, FM4990,
ULC-S-115, ASTM E2837, E2307, E3037, UL555-555S;
more...
 - Professional **Installation** – FCIA Member, Mfr.
Educated, FM 4991 Approved, UL/ULC Qualified
Contractors
 - Properly **Inspected** - ASTM E 2174 / 2393 Protocol by
IAS AC 291 Accreditation Criteria for Inspection
Agencies; Inspectors, FM, UL, IFC Firestop Exams
 - **Maintained & Managed** (Annually) - FCIA Members
– NFPA 101, NFPA 1, International Fire Code

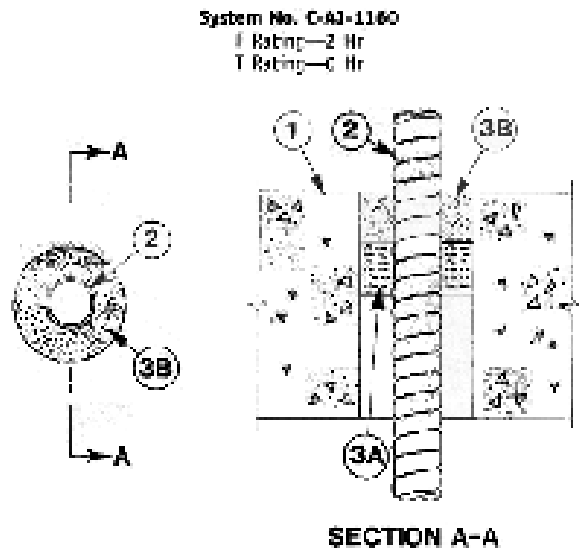
“TOTAL FIRE PROTECTION”

Fire Resistance

- Effective Compartmentation
 - Fire Barriers, Fire Walls/Floors, Smoke Barriers
 - Firestopping, Fire Dampers, Swinging and Rolling Fire Doors, Fire Rated Glazing
- Detection & Alarm Systems
- Sprinkler Suppression Systems
- Education & Egress—
 - Building Owners & Managers, Building Occupants and Firefighters – Ingress/Egress



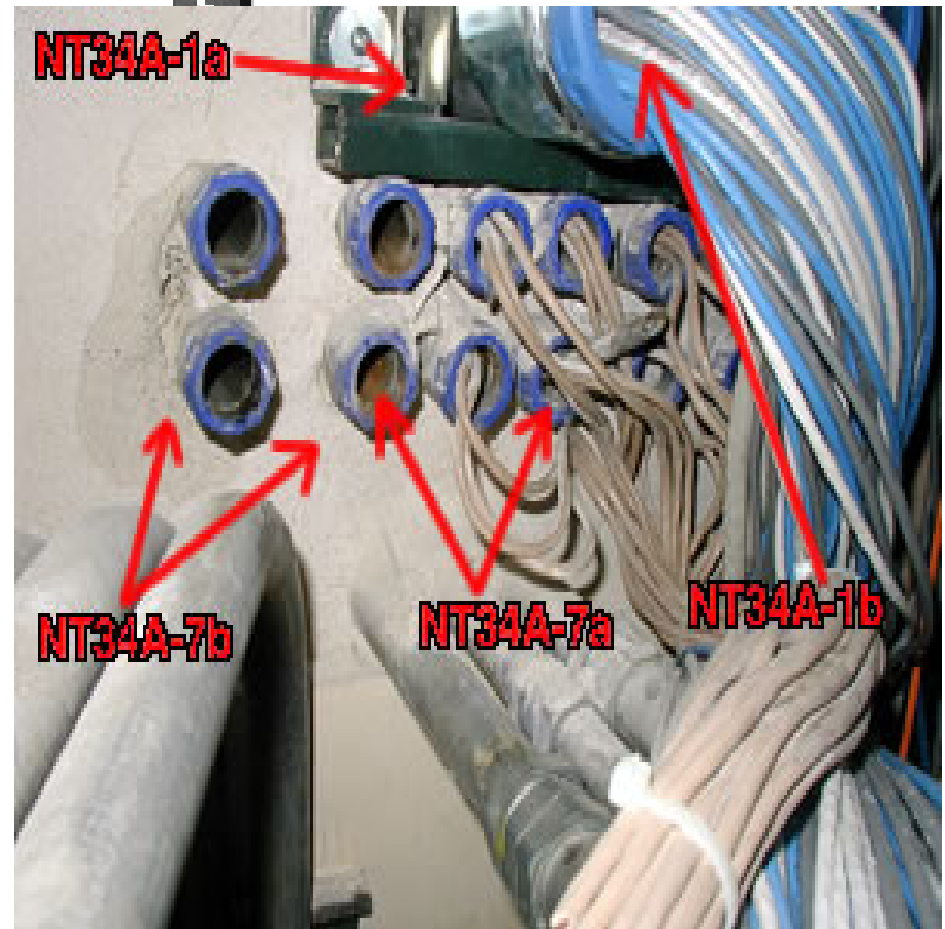
Firestopping for Continuity I – Systems



- Floor or Wall Assembly**—Min. 4-1/2 in. thick lightweight or normal weight (100 to 150 pcf) concrete. Will may also be constructed of any UL Classified Concrete Block*. Size of circular through opening in floor or wall assembly to be 1/8 in. to 1-1/2 in. larger than diam of flexible metal conduit (Item 2) installed in through opening. Max diam of opening is 6 in.
 See Concrete Block (CAC) category in the Fire Resistance Directory for names of manufacturers.
- Through Penetrating Product**—Max 4 in. diam (or smaller) pipe, or max 3/4 in. diam (or smaller) aluminum Flexible Metal Conduit. Max one flexible metal conduit to be installed near center of circular through opening in floor or wall assembly. Flexible metal conduit to be rigidly supported on both sides of floor or wall assembly.
- Packing Material**—Max 1 in. thickness of organic (plum tree silk) fiber Matul or mineral wool batt insulation. Insulation to be secured into 1 in. from top surface of floor or from both surfaces of wall.
- FILL Void or Cavity Material**—Caulk—Applied to fill the annular space around the flexible metal conduit. In floors, a min 3 in. depth of fill material to be installed flush with top surface of floor. In walls, a min 1 in. depth of fill material to be installed flush with wall surface on both sides of wall assembly.

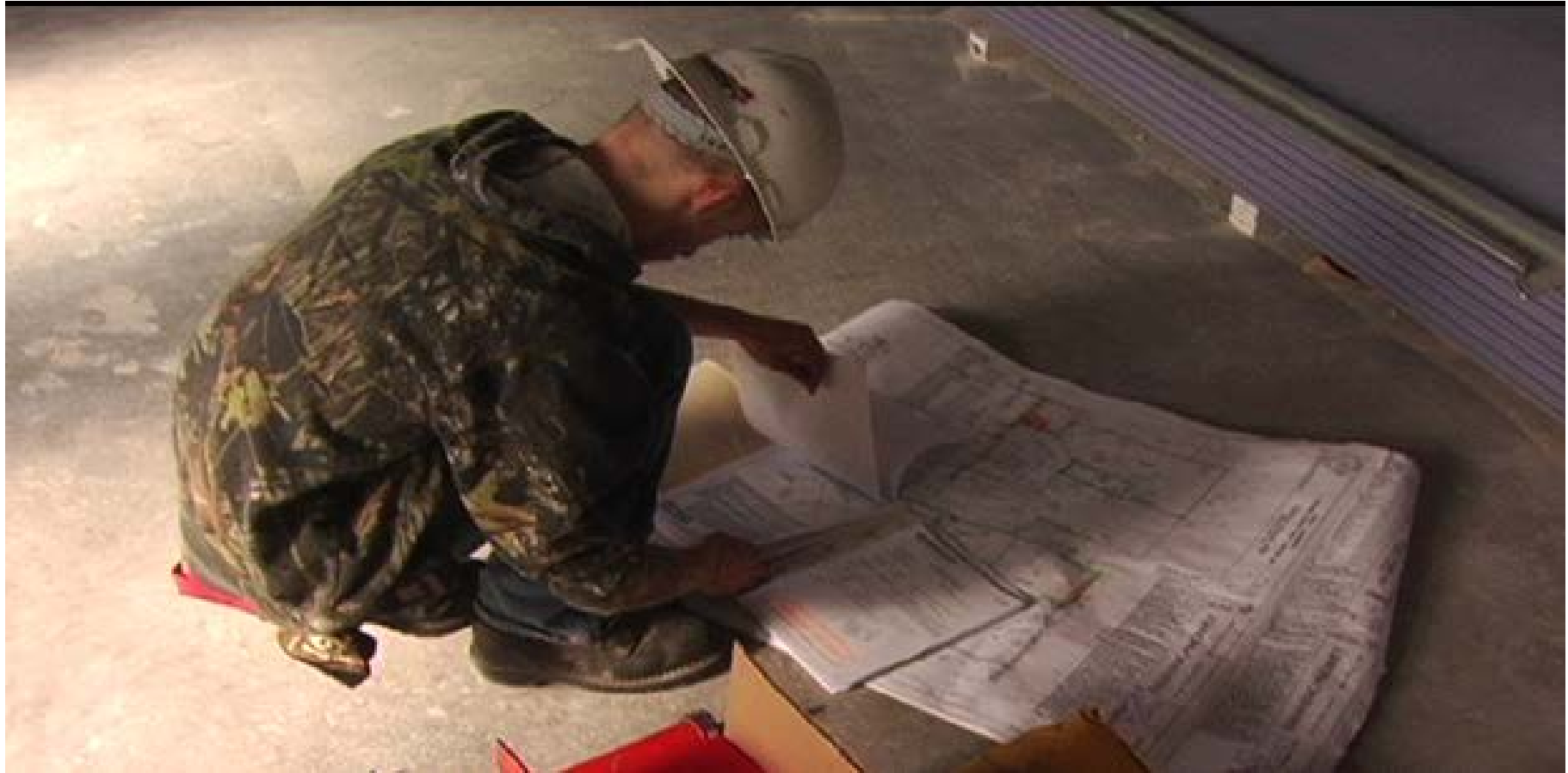
Minnesota Mining & Mfg. Co.—TF 2500B

*Bearing the UL Classified Listing Mark
 (Bearing the UL Listing Mark)



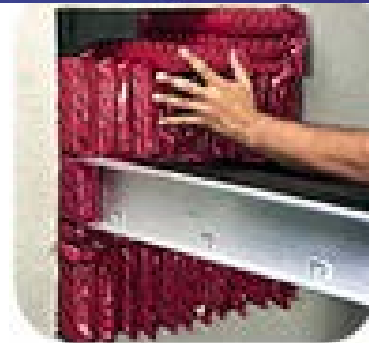
Firestopping for Continuity

I – Systems



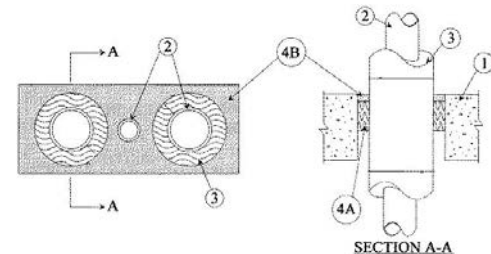
Firestop Products

- **Sealants**
 - Silicone, Latex, Intumescent
- **Wrap Strips**
 - “Thick, Thin, Wide, Less Wide”
- **Putties**
- **Pillows**
- **Composite Sheets**
- **Bricks / Plugs**
- **Pre Fabricated Kits**
- **Mortar**
- **Spray Products**



Firestopping for Continuity

- **Firestop Products Become Firestop Systems**
 - “A Specific field erected construction, consisting of an assemblage of materials to prevent the spread of fire through openings in fire rated walls and floors using **UL 1479, UL 2079, ASTM E814, ASTM E1966, ULC-S-115, ASTM E2307, ASTM E2837, E3037** as the test method...”
 - **Testing = Suitability statement for use of a firestop product in a specific system application**



Firestop Joint Systems Definition

- **UL 2079, ASTM E 1966, ULC-S-115**
 - “A joint system is a **specific construction** consisting of adjacent **wall and floor assemblies**, *and* **the materials** designed to prevent the spread of fire through a linear opening between the wall and / or floor assemblies”

Firestopping for Safety

- **Firestop Joint Systems – UL 2079**
 - Min. Positive Pressure – .01 Water, 12” below assy.
 - Movement Cycling
 - Class I – min. 500 cycles, min. 1 cycle / minute
 - Class II- min. 500 cycles, min. 10 cycles / minute
 - Class III-min 100 cycles, min. 30 cycles / minute
 - Fire Tested at Maximum Joint Width
 - No Load Bearing Characteristics, unless noted
 - Assembly, L or W Ratings

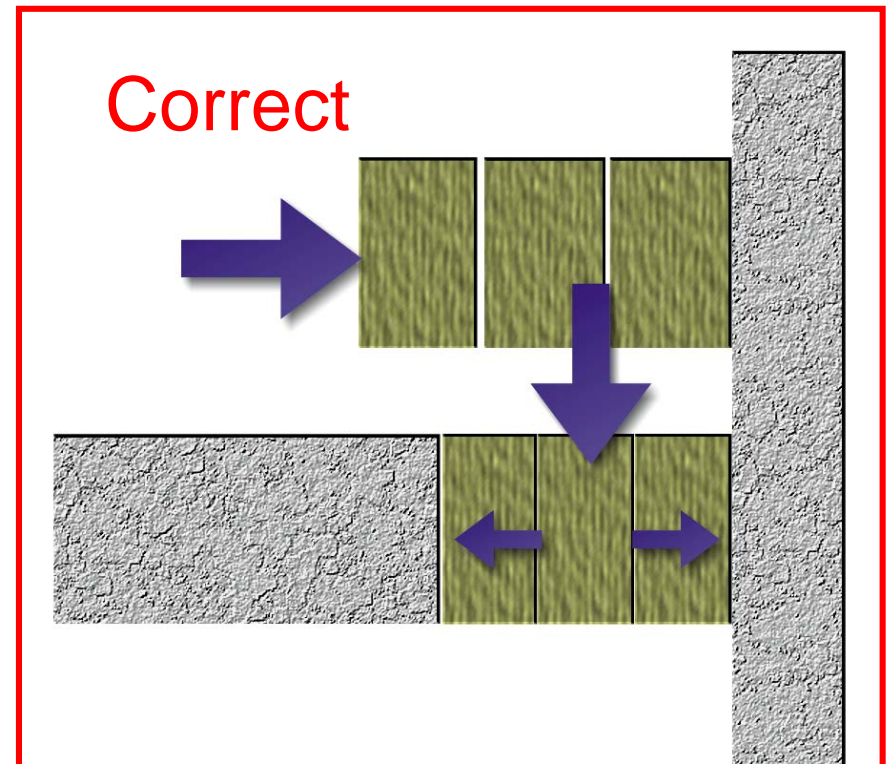
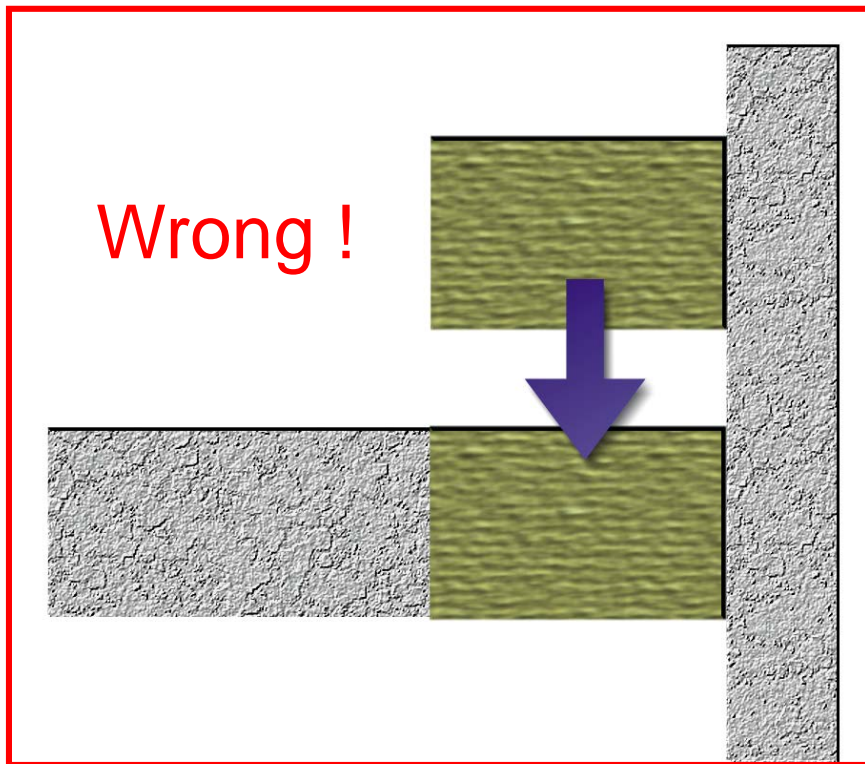
REFERENCES

- **Firestop Perimeter Containment Systems Definition – ASTM E2307**
 - “A Perimeter Fire Containment System is **a specific field erected construction** consisting of a floor with a fire resistance rating, and an exterior curtainwall with no hourly resistance rating, and the fill material installed between the floor and the curtain wall to prevent the vertical spread of **fire in a building.**”



Proper Installation of Mineral Wool

- Compressed mineral wool must be inserted perpendicular to the joint to allow for movement between the slab and wall. System describes....



NFPA 285 & ASTM E 2307?



Intertek Image



Thomas Bell-Wright International Consultants

Firestopping for Continuity

Products become Systems

- Ratings....
 - **F Rating - Flame**
 - T Rating – Temperature
 - H Rating – Hose Stream (Always)
 - **L Rating – Smoke**
 - **W Rating – Water**



Products become Systems

Hose Stream = Shock Test



Building & Fire Code Requirements

- **Smoke Barrier – Firestopping for Continuity**
 - IBC – Hourly Rated, “L” Rating
 - <5cfm/sf (IBC 2006)
 - < 50 cfm, 100sf of Wall Area (IBC 2009)
 - NFPA – ... ‘restricting the passage of smoke’ ...
Quantified “L” Rating ... not in Occupancies, yet.
 - Continuous, Barrier to Barrier, ... through concealed spaces,
 - Not always fire resistance rated.
 - **Smoke Partition**
 - IBC – Continuous barrier, not rated...’retard’.
 - NFPA – Continuous membrane that is designed to form a barrier to *limit the transfer of smoke*....

Fire/Smoke Dampers & Firestops

- Dampers are UL 555, 555S Listed *Systems*
 - Installed to manufacturer's written instructions,
 - Angles Flush
- Firestop Systems – UL 1479

Consult the Damper
Manufacturer & the
Authority Having
Jurisdiction

Firestop Solutions Photo



Engineering Judgments/EFRRA

- Variances to Systems at Site ? – Now What...
 - **First Action in Process**
 - **Find another system** – Same Manufacturer
 - **Find another system** – Different Manufacturer
 - **If no system exists in either case....**
 - **Second Action –**
 - *Engineering Judgment* – “EJ”
 - *Equivalent Fire Resistance Rated Assembly* – “EFRRA”
 - *Based on engineering, IFC Protocol*

**IFC Guidelines for Evaluating Engineering Judgment
Guidelines**

‘Construction industry professionals, building officials, fire officials, firestop contractors and other stakeholders need appropriate guidelines for evaluating and using such judgments.’

‘As such, IFC developed Recommended IFC Guidelines for Evaluating FireStop Systems in Engineering Judgments.’

Look for - “Manufacturer warrants that the EJ/EFRRRA will pass a ASTM E814/UL1479, ASTM E2307, ASTM E1966, UL2079 Fire-Test.”, or similar language.

IFC EJ Guidelines - Engineering Judgments for firestop systems should:

- 1. Not be used in lieu of tested systems when available;**
- 2. Be issued only by a firestop manufacturer's qualified technical personnel or in concert with the manufacturer by a knowledgeable registered Professional Engineer, Fire Protection Engineer, or an independent testing agency that provides listing services for firestop systems;**
- 3. Be based upon interpolation of previously tested firestop systems that are either sufficiently similar in nature or clearly bracket the conditions upon which the judgment is to be given. Additional knowledge and technical interpretations based upon accepted engineering principles, fire science and fire testing guidelines (e.g. ASTM E 2032 – Standard Guide for Extension of Data from Fire Endurance Tests, ULC Subject C263E – Criteria for Use in Extension of Data from Fire Endurance Tests, or ASTM E2750 – Standard Guide for Extensions of Data for Penetration Seals) may also be used as further support data;**

IFC EJ Guidelines

Engineering Judgments for firestop systems should:

- 4. Be based upon full knowledge of the elements of the construction to be protected, the understanding of the probable behavior of that construction and the recommended firestop system protecting it were they to be subjected to the appropriate Firestop Standard Fire Test method for the rating indicated on the Engineering Judgment;**

- 5. Be limited only to specific conditions and configurations upon which the engineering judgment was rendered and should be based upon reasonable performance expectations for the recommended firestop system under those conditions;**

- 6. Be accepted only for a single, specific job and project location and should not be transferred to any other job or project location without thorough and appropriate review of all aspects of the next job or location's circumstances.**

IFC EJ Guidelines - Basic Presentation Requirements

Proper EJ's should:

- 1. Be presented in appropriately descriptive written form with or without detail drawings where appropriate;**
- 2. Clearly indicate that the recommended firestop system is an EJ;**
- 3. Include clear directions for the installation of the recommended firestop system;**
- 4. Include dates of issue and authorization signature as well as the issuer's name, address and telephone number;**
- 5. Reference tested system(s) upon which design (EJ) is based on;**
- 6. Identify the job name, project location and firm EJ is issued to along with the non-standard conditions and rating supported by the EJ;**

IFC EJ Presentation Guidelines – What’s Seen?

- 7. Have proper justification (i.e. UL, Intertek or other independent laboratory system(s) and or opinions);**
- 8. Provide complete descriptions of critical elements for the firestop configuration. These should include, but not be limited to the following:**

a. Basic, Common

- Type(s) of assembly used or being penetrated;**
- Rating supported by the EJ.**

b. Through Penetrations

- Penetrating item(s) (type, size, etc.);**
- Annular space requirements, (minimum, maximum, actual, nominal, etc.)**
- Opening size;**
- Firestop product(s) to be used, type and amount (thickness if applicable);**
- Accessory items(s) (i.e. anchors, backing material, etc.)**

c. Joints

- Joint Width (installed width, nominal)**
- Movement Capability;**
- Movement Class (thermal wind sway, seismic);**
- Accessory item(s) (i.e. insulation type, thickness and compression, etc.)**

IFC EJ Presentation Guidelines – What’s Seen?

d•Duct Enclosure Systems – SEE www.Firestop.org

e• Firestop System – annular space dimensions, floor/wall construction, design number, components, installed thickness.

f. Perimeter Fire Barrier Systems –

- Type(s) of assembly used or being penetrated;**
- Hourly Rating required**
- Closest Listed System upon which the EJ is based**
- Joint Width**
- Static or Dynamic**
- Safing Insulation Types), thickness and compression, etc.**
- Five Basic Principles**
 - 1. Mechanical Attachment of the Spandrel Insulation**
 - 2. Protection of the Mullions**
 - 3. Compression Fitting and Orientation of the Safing Insulation**
 - 4. Installation of a Reinforcement Member(s), stiffener, at the safe-off area behind the spandrel insulation.**
 - 5. Firestop Coating, type, thickness,**

INSTALL FIRESTOP SYSTEM

Firestop Sealant, MW installation to Tested and Listed System Limits

= Firestop System



Pack

1



Apply Sealant

2



Tool/Smooth

3

Walls - BOTH SIDES

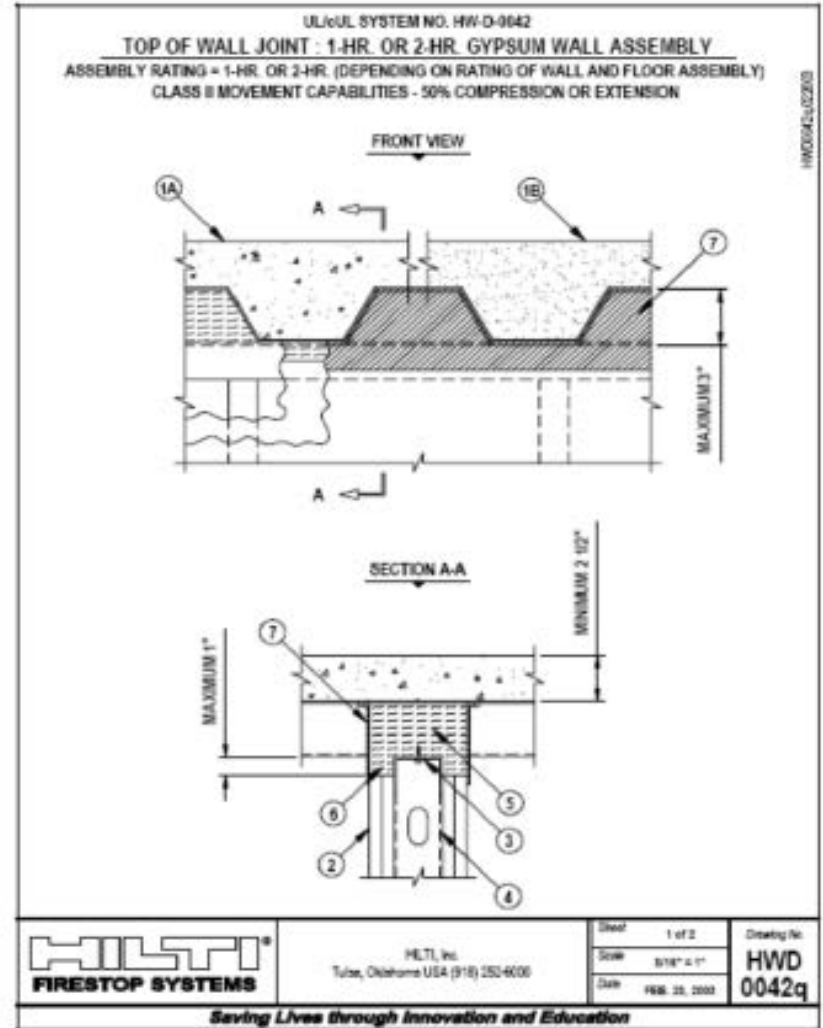


Fire Stop Technologies, Inc.



Fire Stop Technologies, Inc.

Gypsum Wall assembly running up to concrete over metal deck



Head of Wall Systems

Fireproofed I-Beam to Ceiling



Performance Firestop Photo



Firestop Solutions Photo

Results of Improperly Installed Backing/Damming/Packing



More HW-XXXX Issues



Mock Ups – A Good Idea



System Requirements

Sleeved Penetrating Items



Properly Tooled/Smoothed Firestop Sealants



Systems Vary by Penetrating Item(s), Coverings



Fire Stop Technologies Photo



STI Firestop Photos

Multiple or Single Penetrating Items?

WL-1000, 3000, 5000, 7000, 8000



Labels/Identification Systems & Inspection/Survey Speed



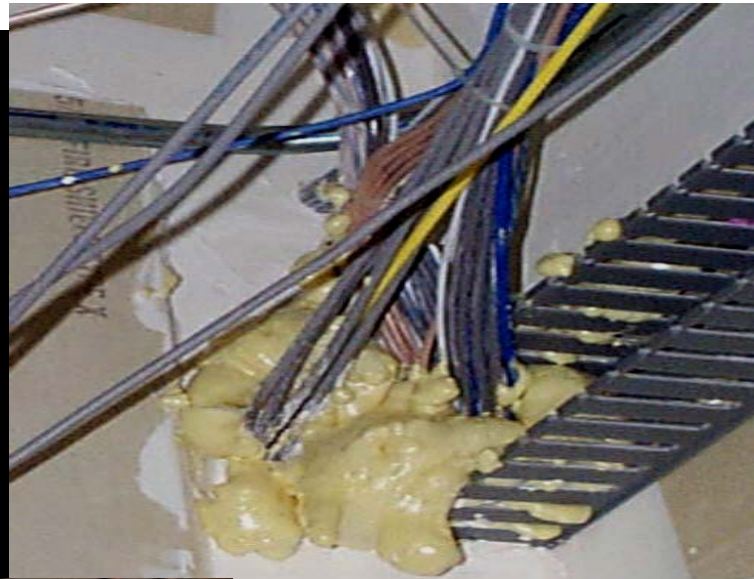
Install to Listing and Manufacturers Installation Instructions ...



Joint Compound is NOT FIRESTOP



Foam? Really?



Firestop Solutions Photos

Install to SYSTEM LISTING & Manufacturers Installation Instructions



OPL, 3M Photos

Firestop Materials, Systems & Physical Properties

- **VERIFY RESISTANCE**

- Smoke
- Germs
- Chemical Resistance – Cleaning?
- Chemical, Biological, Radiation?

- **Product Types**

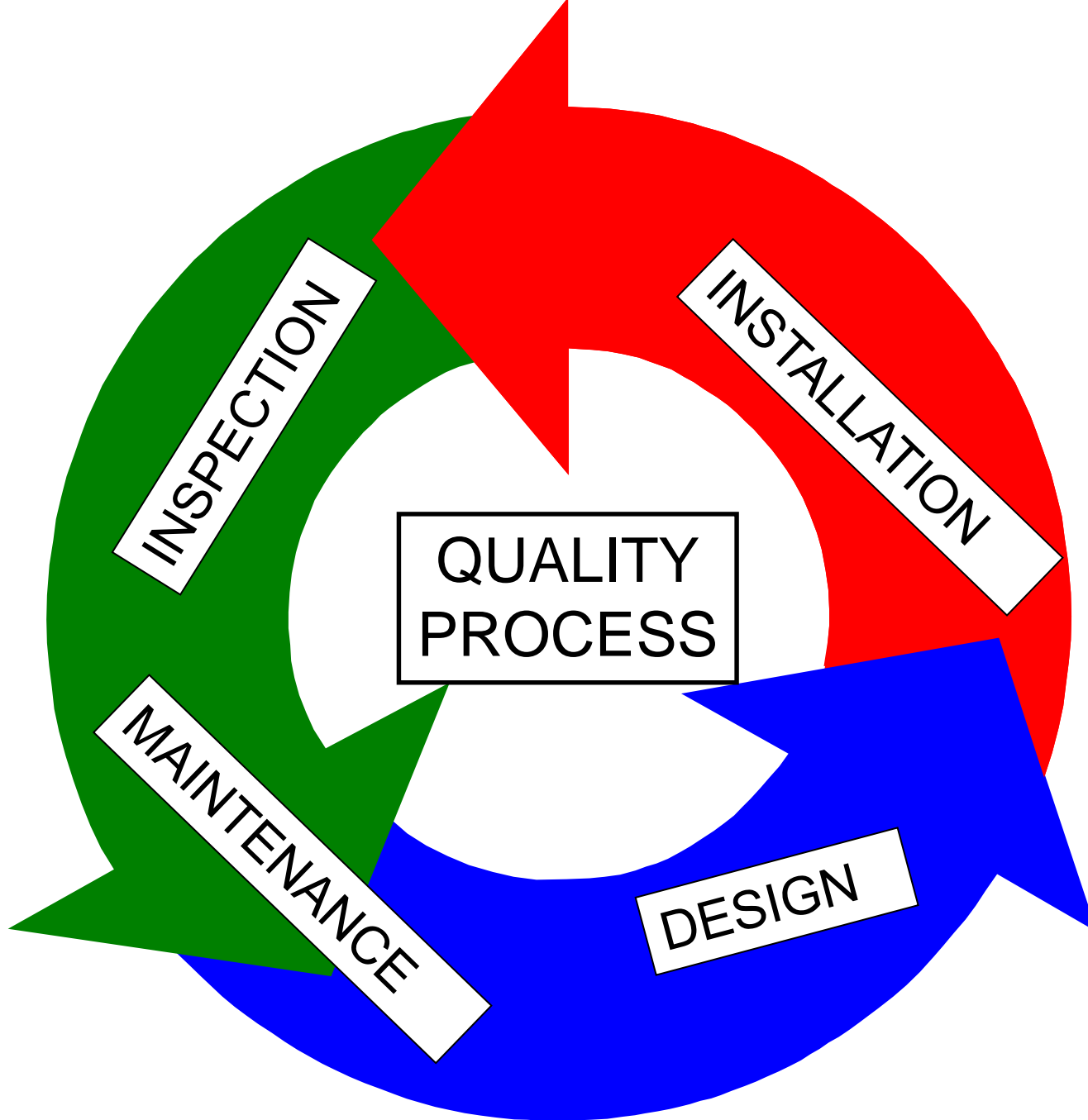
- Intumescent
- Ablative
- Endothermic
- Sealants, Boards, Blocks, Devices, Pillows, etc....

Contractors Select & Inspection Agencies Analyze SYSTEMS...

- Wall or Floor Construction Type, Rating
- Wall or Floor Thickness
- Penetrating Item, Coverings
- Size, Type, Thickness
- Annular Space Sizes
- Joint / Gap Sizes
- Backing/Packing/Forming &
- Fill Material(s)



= Resistance Rated Firestop System



Firestop Installation Methods

- **Each Trade**
 - “He/She who pokes hole, fills hole”
- **Multiple Contracts**
 - Firestop Contractors, Trades
- **Single Source Firestop Contractor**
 - *FCIA Member in Good Standing*
 - *FM 4991, UL, ULC Qualified*
 - *Manufacturer Educated*

Firestop Contractor Qualifications

1. Bought at Hardware Store, etc.

- Contractor or Individual?

2. Manufacturer Trained Individuals

- 1 hour program
- 1/2 day program
- 2 day education

3. UL/ULC Qualified, FM 4991 Approved Companies

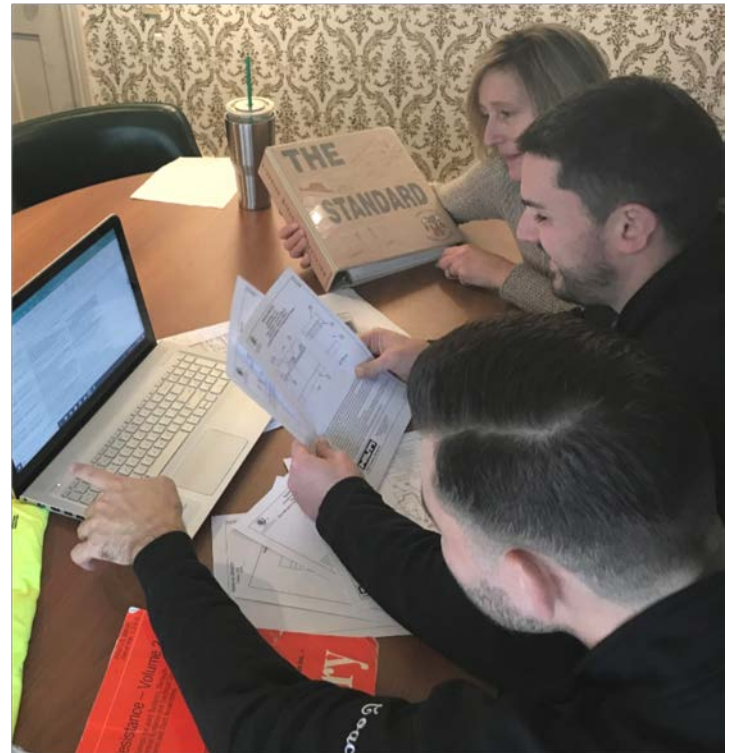
- 3rd Party Verified *Company* Management System
- *Individuals* Pass 3rd Party Exam
- *Individual* Knowledge – FCIA MOP
- All Manufacturers Products Covered
- *Company gets Approved or Qualified, not Individual*

Firestop Contractor Qualifications

FM & UL/ULC – 4 Components

1. Office Facility Procedures - Quality Management System Audit

4. Annual F&P Audit



Gleeson Powers Photo



Firestop Contractor Qualifications

FM & UL/ULC – 4 Components

2. Field – Jobsite Audit

3. Employ a person

- UL/FM Firestop Exam @ 80% or better
- DRI if employed by Approved/Qualified Firm,
 - *Designated Responsible Individual (DRI)*



Gleeson Powers Photo

FM, UL Company Audit Management System (MS)

- Employee Training & Education
- Systems Selection
- Communicate systems to Field
- Material Controls @ Site, Office
- Systems installation “protocol”
- **Labeling/Identification Systems**
- Non-Conformances
- Record keeping - Variance Procedures
- Project closeout
- Documentation



Why Firestop Contractor?

- Firestopping is a Specialty
- Looks Simple, IS Complex
- Culture of Firestop Containment Workers
- Companies, Workers
 - O-Net Classification, FCW
 - NAICS Code – Firestop Contractor
- Management System focused on Firestop
- Educated Workforce
- *How many Trades in one Worker??*

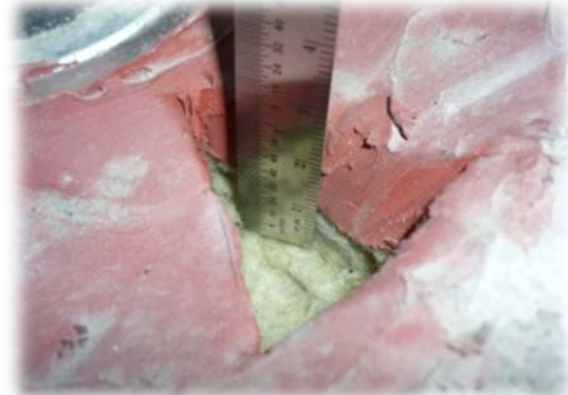
Issues in Firestopping

- Material Selection
 - Physical Properties & Firestop
- Systems Selection & Analysis
- Installation Protocol – Zero Tolerance to Systems
- Material Controls – Shelf Life, SDS
- Self Survey of Work
- Manufacturers Repair Methods
- **SYSTEMS BRAINS...**

Firestop Installation & Inspection

New Construction

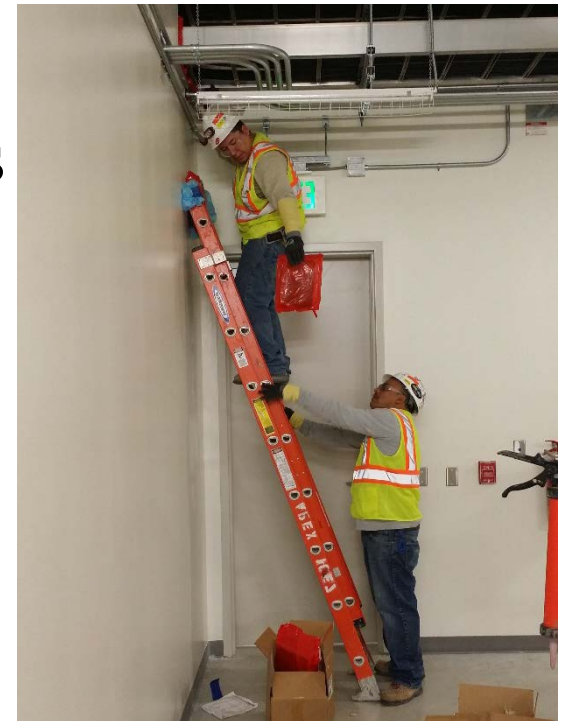
- ASTM E 2174/ ASTM E 2393 –



Quality Assurance Options

Inspection vs. Survey

- **Contractor Self Inspection**
 - Verify Management System validity
 - Not 2%, 10%
 - Required for FM & UL Contractors
- **Manufacturer Inspection**
 - Does not exist ... Survey, maybe
- **ASTM Inspection Standards**
 - 2174 Penetration Firestops
 - 2393 Joint Firestops



Apex Photo

Firestop Systems Inspection

ASTM E 2174 - ASTM E 2393

- New Construction
- “Standard Practice for On-Site Inspection of Installed Firestops – Penetrations - Joints”
 - Standard Inspection Procedure
 - Report to Authorizing Agency
 - Building Owner or Owner’s Authorized Agent
 - AHJ, if required by Code

ASTM E 2174 ASTM E 2393

Inspection in Codes

- **2012 International Building Code**
 - CH 17 – Special Inspections
 - Buildings 75' & higher above Fire Department Access
 - Occupancy Type III, IV, Chapter 16 Table 1604.5
- **NFPA 101 / 5000 - Chapter 8 – Annex**
- **NFPA 1 – Chapter 12, 'Quality Control'**

Inspection Firm & Inspector Qualifications

- ASTM E 2174 - ASTM E 2393
 - **‘Independent of, and Divested from ’**
Installing firm, Distributor, Manufacturer,
Competitor, Supplier...
 - **‘Not a Competitor** of the Installer, contractor,
manufacturer, or supplier
 - **Submit notarized statements** to above...

Inspection Agency and Individual Qualifications - IAS AC 291

- Inspector Firm shall have at least one staff..
 - PASS UL, FM or IFC Firestop Exam
 - 1 year Quality Assurance
 - Or...*
 - PASS UL/FM or IFC Firestop Exam, *and* PE, FPE, Registered Architect, or
 - PASS UL/FM or IFC Firestop Exam, *and* Education by Certified Agency

Specify IAS AC 291 @ 1.03 References, 1.06 Quality Assurance.

I – Inspection – Code Requirements

Definitions

[A] **APPROVED AGENCY**. An **established and recognized agency** regularly engaged in conducting tests or furnishing inspection services, when such agency has been *approved*. [IBC 202. Definitions]

[A] **APPROVED**. Acceptable to the *building official* or authority having jurisdiction.

[IBC 202 Definitions]

I – Inspection – Code Requirements

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. Definitions]

Inspection Process

ASTM E 2174 - ASTM E 2393

- Pre-Construction Meeting
 - Mock Ups – **Identification Systems??**
 - Destructive Testing
 - Installation Measurements
 - Discuss Inspection Method
- Meeting Required
 - During/Post Inspection Methods



Special Inspection

ASTM E 2174 - ASTM E 2393

- Inspection Documents
 - Identify System, Materials
- Identification Systems (Labels)
 - Speeds System Evaluation
 - **Maintenance Easier**



Inspection Process

ASTM E 2174 - ASTM E 2393

- Installer Firestop Contractor ...
 - Notify Inspector.
 - Inspection within 2 days
 - Inspector verifies ...
 - In accordance with Documents, Manufacturers Installation Instructions

Inspection Methods

ASTM E 2174 - ASTM E 2393

- During Construction – In Process
- Random witness, Each Floor...
 - **E2174 - 10%**, each **type** of Penetration Firestop
 - Type = By System, By Contractor
 - **E2393 - 5%** of **Total Lineal Feet** of Fire Resistance Rated Joint System, each type.
 - Type = By System, By Contractor

Adler Photo



Inspection Methods

ASTM E 2174 - ASTM E 2393

- Post Construction - Destructive Testing
 - **E2174 - Minimum 2% , no less** than 1, each type per 10,000 SF of floor area
 - **Type = By System, By Contractor**
 - **E2393 - Minimum 1 / 500 LF** of Joint Area, by type, mandatory; Exception mechanical joints
 - **Type = By System, By Contractor**



Inspection

ASTM E 2174 - ASTM E 2393

- Proper Equipment
- Measuring Tapes, NOT MICROMETERS



Inspection Methods

ASTM E 2174 - ASTM E 2393

- Both Methods...
 - If any Type does not comply
 - Repair
 - Replace
 - 1 additional inspection
 - If 10% variance per firestop type
 - Inspection stops
 - Installer inspects, repairs
 - Inspector reinspects
- Document all Deficiencies

Inspection Methods

ASTM E 2174 - ASTM E 2393

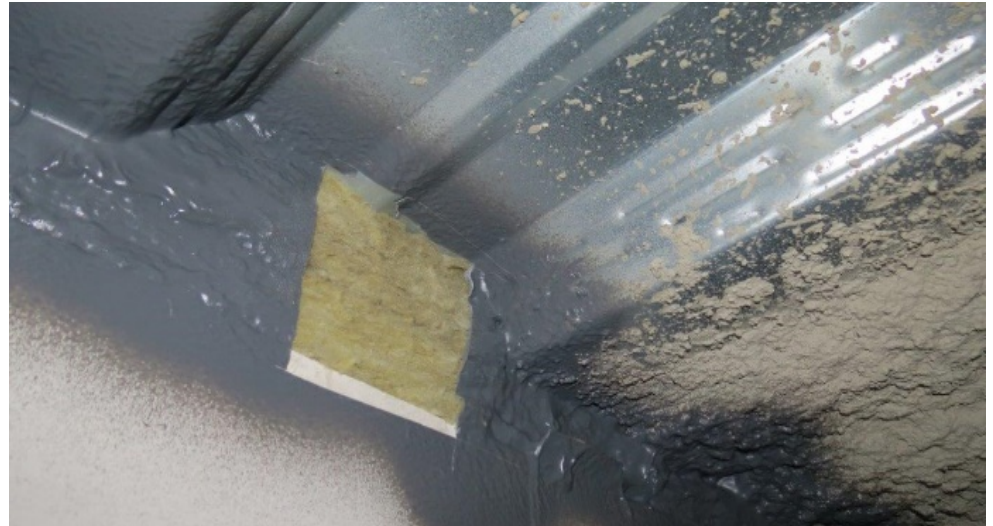
- Both Methods...
 - Inspector Shall not Supervise Workers...
 - System Selection = Supervise/Coaching
 - Installation Method Supervision
 - Inspect @ Firestop Installation Start
 - Inspect to Manufacturers Installation & Inspection and Instructions
 - Listings
- Scope....

Evaluation & Repairs

- Manufacturers Installation/Evaluation Instructions
- Acceptable Methods?
- Listings
- EJ/EFRRRA

Evaluation & Repairs

- Repairs of Existing Materials
 - Manufacturers Repair Instructions...and/or
 - Manufacturers Installation Instructions
 - Listings
 - “Patch”??
 - Adhesion
 - Movement
 - L Ratings?
 - W Ratings?



Inspection Forms Variance Notices

- One for each type of firestop
- ASTM E 2174, 2393 – Submit Forms ...
 - 1 day after Inspection to Authorizing Agency
- **Submit Variances**
 - **One Day Notice to Firestop Contractor**
 - **IBC = IMMEDIATE NOTICE**
- Numbered – Controlled
- Required – During/Post Construction Methods

Inspection Final Report

ASTM E 2174 - ASTM E 2393

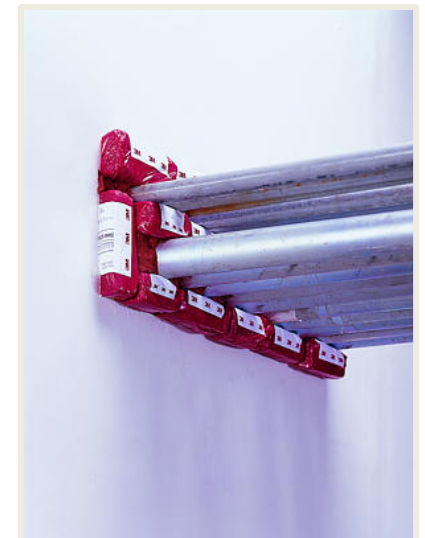
- Name, address, location –
project, installer (firestop contractor,
prime contractor), inspector, AA, AHJ
- Type and quantity of firestops inspected
- Verification method
- Percentage Deviation
- Copies of all documents sent
to Authorizing Agency

Continuity

Effective Compartmentation & Features



New UL test standards for Life Safety
Dampers will take effect in July 2002



Barrier Management Symposium

Bill McHugh, FCIA
Firestopping



MISSOURI SOCIETY FOR HEALTHCARE ENGINEERING
Member of ASHE since 1972
mosheonline.org