

International Fire Code – NFPA 1 – NFPA 101 – and Maintaining Protection

**FCIA – ASTM Virtual Fire-Resistance-Rated & Smoke-
Resistant Assemblies & Existing Buildings
Middle East Webinar Series**

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Rich Walke, Consultant to the FCIA

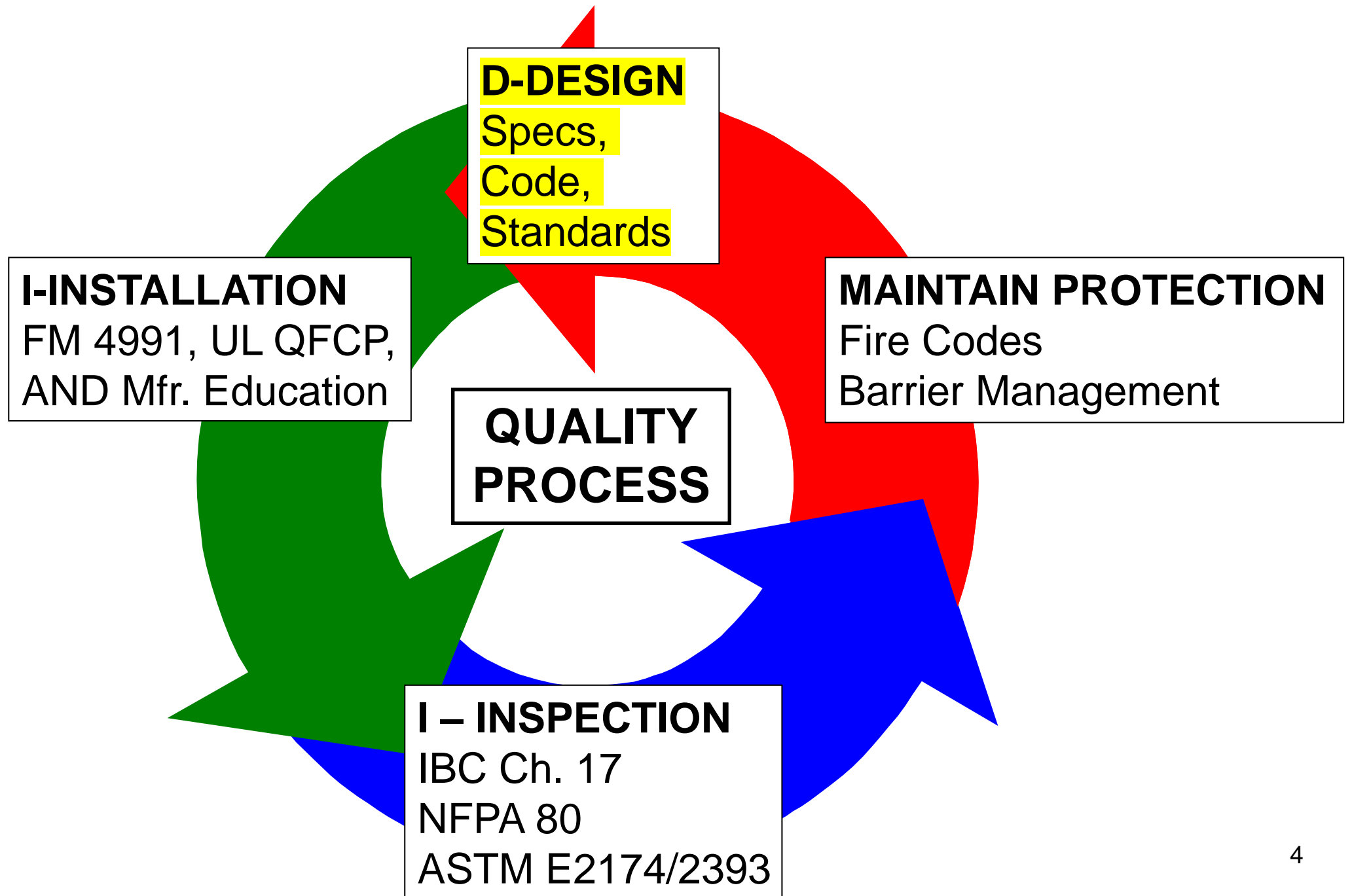


Outline – DII-M

- FCIA – DIIM – Firestopping
 - Why Existing Buildings?
 - Who, What, When, Where, Why?
 - Design – Specs, Codes, Testing, Products
 - Installation –
 - FM 4991, UL/ULC Qualified Firestop Contractor Programs
 - Inspection –
 - ASTM E2174 / E2393 Inspection Standards
 - IAS AC 291, Inspector Qualifications
 - Maintain Protection – Fire Codes; Barrier Management
 - Firestopping for Safety –
 - Repairs??

“TOTAL FIRE PROTECTION”

- 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



Building & Fire Code Requirements

- Fire-Resistance Rated Barriers – Defined Terms
 - ***Exterior Walls***
 - ***Fire Walls***
 - ***Fire Barriers***
 - ***Fire Partitions (Not NFPA)***
 - ***Smoke Barriers***
 - ***Smoke Partitions***
 - ***Archaic Assemblies***

Existing Buildings

- **Archaic Assemblies**
 - Clay Tile Block
 - Gypsum Block
 - Plaster
 - Clay Tile/Concrete
 - Unidentified Assemblies
- **Tested ... Calculated ... Prescriptive**
- **EJ/EFRRRA's**

M–Barrier Management Systems Starts @ NEW CONSTRUCTION

- **NEW Buildings – 07-84-00 Spec - [www. FCIA .org](http://www.FCIA.org)**
- **Part I – Focus on Systems**
- **Part II– Contractor/Installer Qualifications**
 - **FM 4991 Approved, **OR** UL Qualified**
 - ****AND** Manufacturer Accredited, Approved, Trained**
 - **Special Inspection Agency – IAS AC 291 Accredited**
 - **Special Inspector Qualifications – FM, UL AND IFC Exam**
- **Part III – Execution - Special Inspection**
 - **ASTM E2174 - Penetrations**
 - **ASTM E2393 - Joints**

Built Right = Maintain Protection Right WHEN SPECIFIED

- **Reference 01-78-00 Closeout Submittals**
 - **01 78 29 Final Site Survey**
 - **01 78 33 Bonds**
 - **01 78 36 Warranties**
 - **01 78 39 Project Record Documents**
 - **01 78 43 Spare Parts**
 - **01 78 46 Extra Stock Materials**
 - **01 78 53 Sustainable Design Closeout Documentation**

NOW WHAT??

Existing Buildings

- *Culture of Building Owner*
 - Sprinklers
 - Detection & Alarms
 - **Fire-Resistance-Rated & Smoke Resistant Assemblies ???**
- *Maintain Protection...*
- **FCIA / ASHE / TJC / UL Barrier Management Symposium – www.FCIA.org**

What Buildings Need Protection Maintained?

- Hospitals, nursing homes
- Apartments, Condos
- Universities
- Warehousing
- Manufacturing – Paper, others
- More

Who & What Title, Where??

- Director, Manager, VP....
- Building Engineering
- Property Manager
- Facility Manager
- Corporate Real Estate
- Facility Director
- Asset Manager
- Chief Engineer
- Building Engineer
- Maintenance
- Facility Maintenance
- Security & Risk Management

Ask, 'Do you have'....

- **Fire-resistance-rated or smoke resistant walls or floors?**
- **Documented fire-resistance inventories?**
- **Assemblies that “Maintain Protection with Annual Visual Inspection”**
- **Line item budget for maintaining protection?**
 - Sprinkler and alarm, fire extinguishers?
 - Fire-resistance and smoke resistant assemblies?
- ***Part of a comprehensive Life Safety Evaluation***

Existing Buildings? Did you know...

- **Fire, existing building codes have existed for decades**
- **Fire Codes mandate maintaining protection**
 - Structural fire-protection
 - Fire-resistance-rated compartmentation

Existing Buildings?

- **NFPA 1, NFPA 101, IFC – *Rich will Cover....***
- **New IFC “maintaining protection” requirements**
 - Inventory of fire-resistance-rated assemblies?
- **What’s IFC’s reference to ‘Inventory’?**
 - Life Safety Drawings with Fire-Resistance Ratings
 - Tested and Listed Systems Designs
 - Manufacturers Instructions/Product Data Sheets
- **What’s risk –**
 - ***Fire and Smoke Spread = life, property, continuity of operations losses***

I-INSTALLATION
Systems Selection
Systems Analysis
Self Inspection
FCIA, FM & UL
MACC

D-DESIGN

M-MAINTENANCE

**QUALITY
PROCESS**

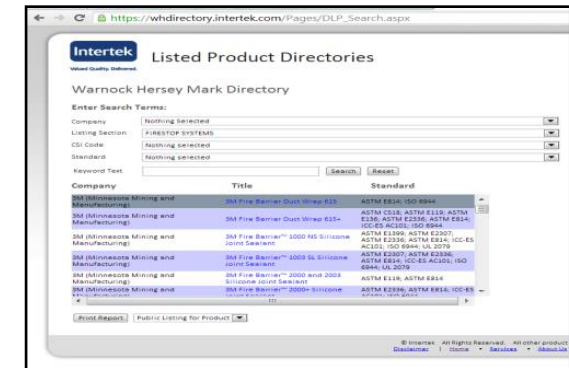
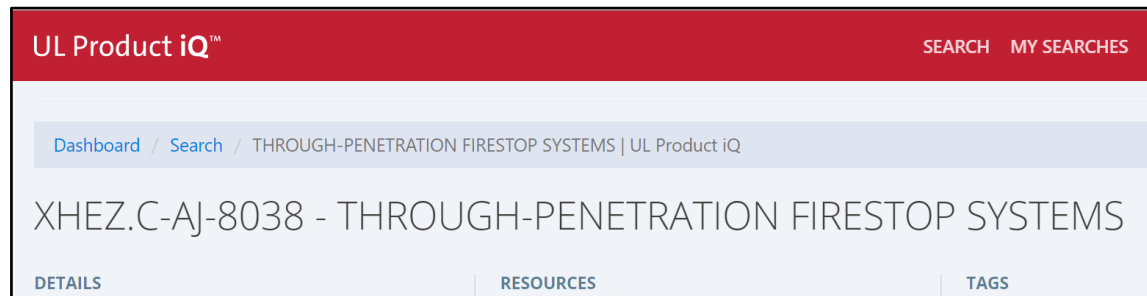
I-INSPECTION
ASTM E2174
ASTM E2393

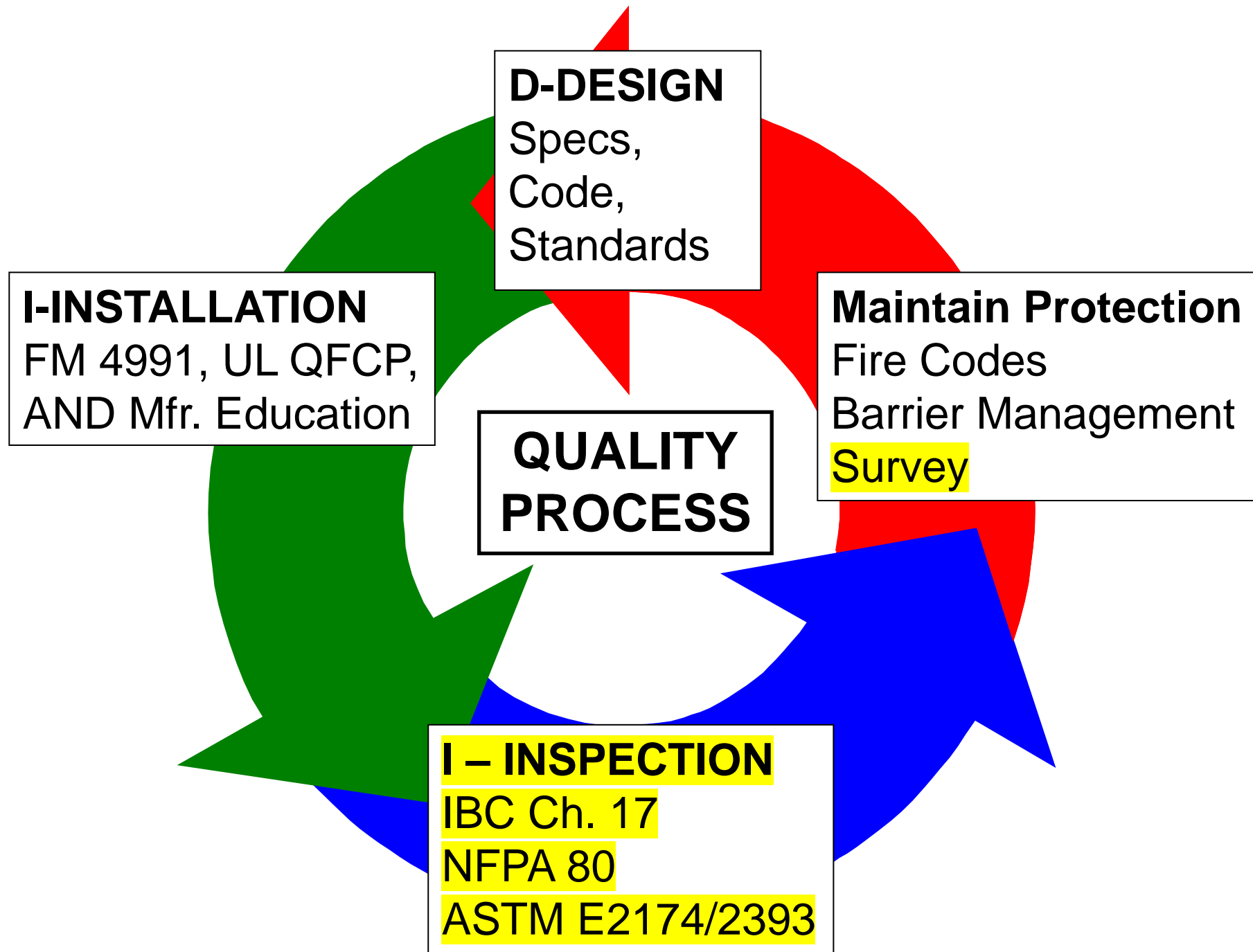
Firestopping for Continuity Products Become Systems

- Firestop Systems Directories –
 - UL
 - Intertek
 - FM Approvals
 - Others



Systems Selection & Analysis...Not as easy as it looks...





M–Barrier Management Systems

- **Visual Building Survey/Inspection....**
 - **Does it look like the SYSTEM Assembly?**
 - Listing/Manufacturers Instructions
 - Annular Space
 - Visible Breaches, unless listing allows
 - Joint Width
 - Penetrating Item Types, Coverings
 - # Penetrating Items, Types
 - Penetrations in Joints & Not in System/Listing...
 - Much more...
 - **Competent Personnel, SYSTEMS**

How to Select/Analyze Systems

WE NEED THE LISTING!!

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

= Rated Firestop System



STI Graphic

M–Barrier Management Systems

Building Owner's Policy Topics

- ***Fire Code Creates SAFETY***
- **Create a Budget to Meet Code Requirements**
- **Inventory – What Info?**
 - Life Safety Drawings
 - Manufacturers Instructions
 - Tested and Listed Systems (Listings)
- **Implement Fire Resistance Management**
 - In House Policy
 - Outside Contractor Policy
- **Monitor Process**
- **Annual Visual Inspection & Keep Records**
- **Show Fire Marshal....Insurance Company**

M–Barrier Management Systems

- **Electronic Best Practice Elements**
 - **Action Oriented**
 - Projects - Specifications
 - Ongoing Surveys – FCIA RPPS 2010-1
 - **Action Reminders**
 - **In Process Status**
 - **Record Retrieval**

Master Audit Certificate of Compliance Program

A **Jobsite Specific Management System Audit** – Our audit provides verified processes were followed to properly installed firestop systems.

A **Renewable Jobsite Specific Certificate** – After completion of a successful audit, we issue a jobsite specific certificate that is renewable for the building owner.

Improved Firestop Systems Documentation – The MACC certificate in conjunction with the firestop systems documentation, **builds the fire-resistance inventory required by the 2018 International Fire Code** for fire and smoke protection features.

UL Slide



UL Certificate Number: 1000-0001
Qualified Firestop Contractor Program
Master Audit
Audit Date: 08/03/2018
Expiration Date: 12/31/2019
Certificate of Compliance


This certificate reports the findings of an audit by UL to the management system requirements of the Qualified Firestop Contractor Program. The audit was conducted to the requirements specified in the Qualified Firestop Contractor Program requirements. The UL qualified contractor was found to be in compliance with the requirements at the time of the site audit.

Structure Name: Underwriters Laboratories
Job Number: 0001
Address: 333 Pfingsten Rd.
Northbrook, IL 60062

Qualified Contractor: PCIA
Address: 4415 W. Harrison Street, Suite 540
Hillside, IL 60162

Qualified Contractor Scope of Work:
For Project # 0001 Firestopping Head and Bottom of Interior Fire Walls and all Trade Penetrations / Except Cable Tray

UL LLC makes no representations or warranties, expressed or implied, that the installed firestop system will prevent any loss or damage in the event of a fire or similar event, or that the system will in all cases provide the protection for which it is installed or intended. The certificate is evidence that the installing contractor's management system was in compliance with the applicable requirements of the Qualified Firestop Contractor Program.
UL LLC is not an insurer and does not assume any obligation or undertake to discharge any liability of the Qualified building Contractor, or any other party for any loss, which may result in failure, incorrect installation, non-compliance with requirements, cancellation of this certificate, or withdrawal by the Qualified building Contractor from the Qualified Firestop Contractor Program.
Any modification to any firestop system of the structure will affect the complete firestop system and may render protection afforded by the system ineffective. Any changes will invalidate this certificate unless the organization does, in the building owner's responsibility for an annual visual inspection of the inventory of



UL Certificate Number: 1000
QUALIFIED FIRESTOP CONTRACTOR CERTIFICATE

Company Name: Underwriters Laboratories Inc. File number: R12345 Issued: January 31, 2018
Address: 333 Pfingsten Rd. Expires: December 31, 2019
Telephone: 480.290.6987 Email Address: Ruben.SandovalJr@UL.com

This company has demonstrated that it complies with UL's Qualified Firestop Contractor Program Requirements. This certificate is not transferable and expires on December 31st of the following Year. This certificate may be displayed, copied and shared with others but must be used in its entirety.

Only those companies listed in UL's online Directory for the Qualified Firestop Contractor Program at www.ul.com/contractor are considered eligible for this program and to use this Certificate and the UL Qualified Firestop Contractor Program Marking (shown here) in its advertising and promotional material in accordance with marking guidelines provided at www.ul.com/contractor.

UL Underwriters Laboratories
Qualified Firestop Contractor Program

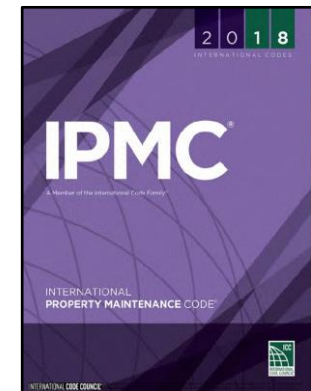
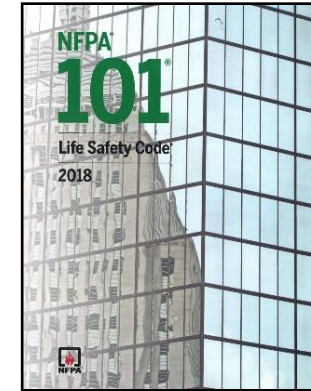
Underwriters Laboratories reserves the right to void this certificate at any point. This certificate does not indicate compliance with any UL product certification program.

For additional information regarding the Qualified Firestop Contractor Program, please visit www.ul.com/contractor

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Fire Codes Require Maintenance

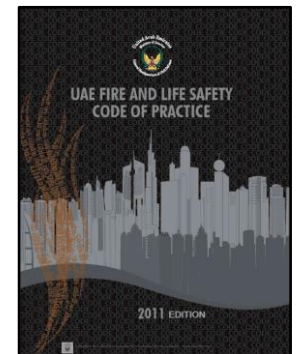
- UAE Fire & Life Safety Code
 - NFPA 101
 - NFPA 1
 - International Fire Code
 - International Property Maintenance Code
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- Minimum Requirements stated
 - Frequency stated
 - **What really happens?**



UAE Fire & Life Safety Code 2011

- **SECTION 21.15 Maintenance & Management**

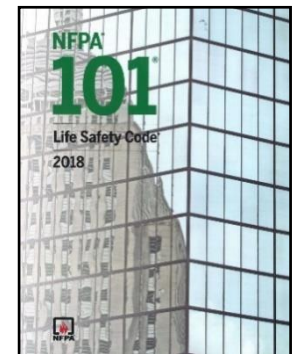
- **21.15.1** Provide final protection and **maintain conditions during and after installation** that ensure firestop systems are **without damage or deterioration at time of Substantial Completion**. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated firestop systems immediately and install new materials to produce firestop systems complying with specified requirements.
- **21.15.2** The required fire-resistance rating of installed firestop systems **shall be visually inspected by the owner or owner's inspection agency annually**. **Damaged, altered or breached firestop systems shall be properly repaired, restored or replaced** to comply with applicable codes as per the guidelines of Civil Defense.
- **21.15.3** **Any new openings** made therein for passage of through penetrants **shall be protected with approved firestop system** to comply with applicable codes as per the guidelines of Civil Defense.



National Fire Protection Association

NFPA 101 – 2018

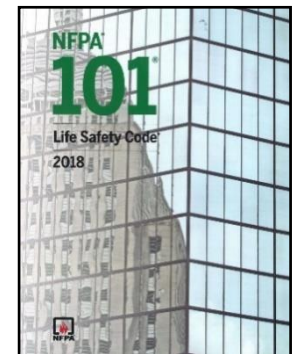
- **SECTION 4.6.12 Maintenance, Inspection, and Testing.**
 - **4.6.12.1** **Whenever or wherever any device**, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature **is required for compliance** with the provisions of this Code, **such device**, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or other feature **shall thereafter be continuously maintained** ... in accordance with applicable NFPA requirements or requirements developed as part of a performance-based design, or as directed by the AHJ.



National Fire Protection Association

NFPA 101 – 2018

- 4.6.12.2 **No existing life safety feature shall be removed or reduced** where such feature is a requirement for new construction.
- 4.6.12.3* **Existing life safety features **obvious to the public**, if not required by the Code, shall be either maintained or removed.**
- 4.6.12.4 **Any device**, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature **requiring periodic testing, inspection, or operation** to ensure its maintenance shall be tested, inspected, or operated as specified elsewhere in this Code or as directed by the AHJ.
- 4.6.12.5 **Maintenance, inspection, and testing shall be performed under the supervision of a responsible person who shall ensure** that testing, inspection, and maintenance are made at specified intervals in accordance with applicable NFPA standards or as directed by the AHJ.



National Fire Protection Association

NFPA 1 – 2018

- **12.3.3* Maintenance of Fire-Resistive Construction, Draft-Stop Partitions, and Roof Coverings.**
 - **12.3.3.1** Required fire-resistive construction, including fire barriers, fire walls, exterior walls due to location on property, fire-resistive requirements based on type of construction, draftstop partitions, and roof coverings, shall be maintained and shall be properly repaired, restored, or replaced where damaged, altered, breached, penetrated, removed, or improperly installed.



National Fire Protection Association

NFPA 1 – 2018

- **12.3.3.2** Where required, **fire-rated gypsum wallboard** walls or ceilings that are damaged to the extent that through openings exist, the damaged gypsum wallboard **shall be replaced or returned to the required level of fire-resistance using a listed repair system or using materials and methods equivalent to the original construction.**
- **12.3.3.3** Where readily accessible, required fire-resistance-rated assemblies in high-rise buildings shall be visually inspected for integrity at least once every 3 years.



National Fire Protection Association

NFPA 1 – 2018

- 12.3.3.3.1** The **person responsible** for conducting the visual inspection shall demonstrate appropriate **technical knowledge and experience in fire-resistance-rated design and construction** acceptable to the AHJ.
- 12.3.3.3.2** A written report prepared by the person responsible for conducting the visual inspection shall be submitted to the AHJ documenting the results of the visual inspection.

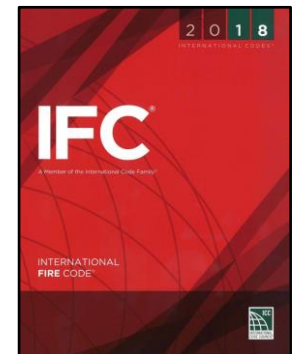


2018 International Fire Code Maintenance

SECTION 701

GENERAL

- **701.1 Scope.** The provisions of this chapter shall govern the **inspection and maintenance of the materials, systems and assemblies used for structural fire-resistance, fire-resistance-rated construction separation of adjacent spaces and construction** installed to resist the passage of smoke to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings. New buildings shall comply with the *IBC*.

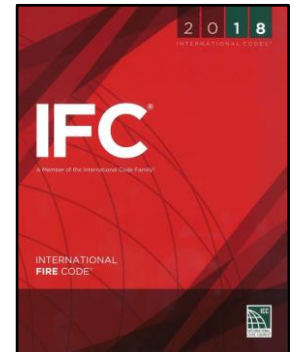


2018 International Fire Code Maintenance

SECTION 701

GENERAL

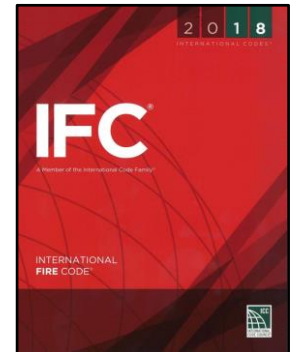
- **701.2 Fire-resistance-rated construction.** The *fire-resistance rating* of the following *fire-resistance-rated* construction shall be maintained:
 1. Structural members
 2. *Exterior walls*
 3. *Fire walls, fire barriers, fire partitions*
 4. *Horizontal assemblies*
 5. Shaft enclosures



2018 International Fire Code Maintenance

SECTION 701 GENERAL

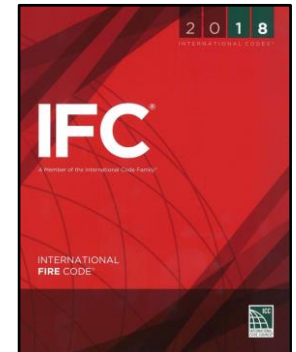
- **701.3 Smoke barriers.** The *fire-resistance rating* and smoke-resistant characteristics of smoke barriers shall be maintained.
- **701.4 Smoke partitions.** The smoke-resistant characteristics of smoke partitions shall be maintained.



2018 International Fire Code Maintenance

SECTION 701 GENERAL

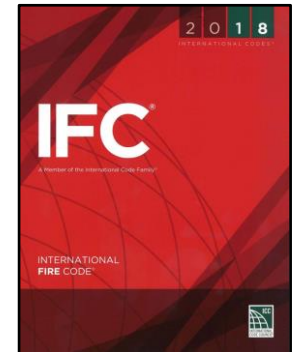
- **701.5 Maintaining protection.** Materials, systems and devices used to repair or protect breaches and openings in fire-resistance-rated construction and construction installed to resist the passage of smoke shall be maintained in accordance with Sections 703 through 707.



2018 International Fire Code Maintenance

SECTION 701 GENERAL

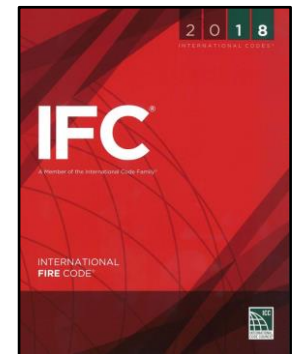
- **701.6 Owner's responsibility.** The owner shall maintain an inventory of all required **fire-resistance-rated construction**, construction installed to resist the passage of smoke and the construction included in Sections 703 through 707. **Such construction shall be visually inspected by the owner annually and properly repaired, restored or replaced where damaged, altered, breached or penetrated.**
- **FCIA Initiative with Koffel Assoc. – 'Inventory'...**



2018 International Fire Code Maintenance

SECTION 701 GENERAL

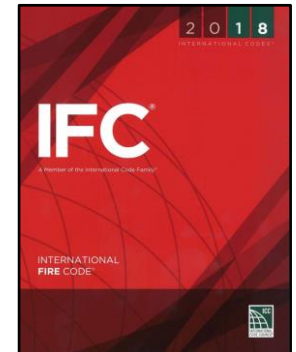
- **701.6 Owner's responsibility Cont. Records of inspections and repairs shall be maintained.** Where concealed, such elements shall not be required to be visually inspected by the *owner* unless the concealed space is accessible by the removal or movement of a panel, access door, ceiling tile or similar movable entry to the space.



2018 International Fire Code Maintenance

SECTION 701 GENERAL

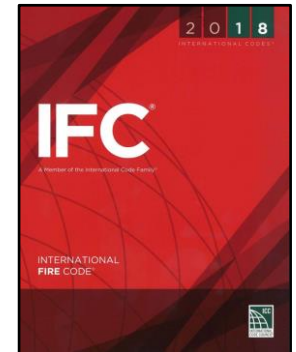
- **701.7 Unsafe Conditions.** Where any components in this chapter are not maintained and do not function as intended or do not have the *fire-resistance* or the resistance to the passage of smoke required by the code under which building was constructed, remodeled or altered, such component(s) or portions thereof shall be deemed an unsafe condition in accordance with Section 111.1.1.



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SECTION 701 GENERAL

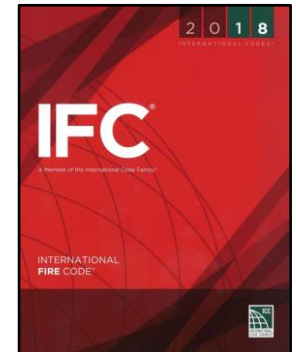
- **701.7 Unsafe Conditions Cont.** Components or portions thereof determined to be unsafe shall be repaired or replaced to conform to the code under which building was constructed, remodeled or altered, as deemed appropriate by the *fire code official*. Where the condition of components is such that any building, structure or portion thereof presents an imminent danger to the occupants of the building, structure or portion thereof, the *fire code official* shall act in accordance with Section 111.2.



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SECTION 703 PENETRATIONS

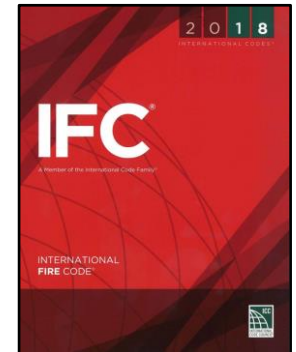
- **703.1 Maintaining protection.** Materials and firestop systems used to protect membrane and through penetrations in *fire-resistance-rated* construction and construction installed to resist the passage of smoke shall be maintained.



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SECTION 703 PENETRATIONS

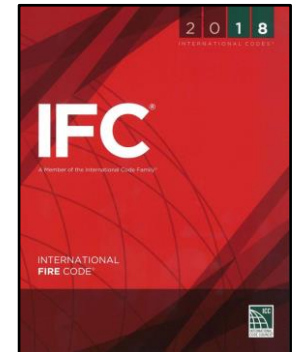
- **703.1 Maintaining protection cont.** The materials and firestop systems shall be **securely attached** to or bonded to the construction being penetrated **with no openings visible** through or into the cavity of the construction. Where the system design number is known, the system shall be inspected to the listing criteria and manufacturer's installation instructions.
- **FCIA Initiative...**"Where the system design number is known"...



2018 International Fire Code Maintenance

SECTION 704 JOINTS AND VOIDS

- **704.1 Maintaining protection.** Where required when the building was originally constructed, materials and systems used to protect joints and voids in the following locations shall be maintained. The materials and systems shall be securely attached to or bonded to the adjacent construction, without openings visible through the construction.



2018 International Fire Code Maintenance

SECTION 704 JOINTS AND VOIDS

- **704.1 Maintaining protection cont.**
 - Subparagraphs 1 through 7 detail the types of joints and voids required to be maintained. This list corresponds to joints and voids which are required to be protected by the 2018 IBC.
- **Unprotected joints and voids do not need to be protected where such joints and voids were not required to be protected when the building was originally constructed.**

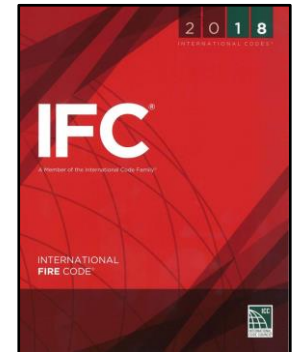


2018 International Fire Code Maintenance

SECTION 705

DOOR AND WINDOW OPENINGS

- **705.1 Maintaining protection.** Where required when the building was originally constructed, opening protectives installed in *fire-resistance-rated* assemblies, *smoke barriers* and *smoke partitions* shall be inspected and maintained in accordance with this section.

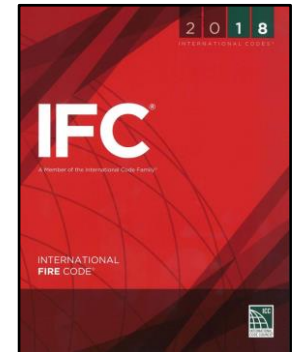


2018 International Fire Code Maintenance

SECTION 705

DOOR AND WINDOW OPENINGS

- **705.2 Inspection and maintenance.** *Opening protectives* in *fire-resistance-rated* assemblies shall be inspected and maintained in accordance with NFPA 80. *Opening protectives* in *smoke barriers* shall be inspected and maintained in accordance with NFPA 80 and NFPA 105. *Openings* in *smoke partitions* shall be inspected and maintained in accordance with NFPA 105.

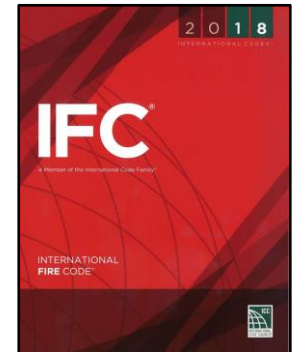


2018 International Fire Code Maintenance

SECTION 705

DOOR AND WINDOW OPENINGS

- **705.2 Inspection and maintenance cont.** Fire doors and smoke and draft control doors shall not be blocked, obstructed, or otherwise made inoperable. Fusible links shall be replaced promptly whenever fused or damaged. *Opening protectives and smoke and draft control doors shall not be modified.*

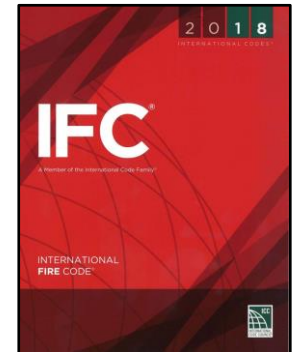


2018 International Fire Code Maintenance

SECTION 705

DOOR AND WINDOW OPENINGS

- **705.2.1 Labeling requirements.** Where approved by the *fire code official*, the application of field-applied labels associated with the maintenance of *opening protectives* shall follow the requirements of the *approved* third-party certification organization accredited for *listing* the opening protective.



2018 International Fire Code Maintenance

SECTION 705

DOOR AND WINDOW OPENINGS

- **705.2.2 Signs.** Where required by the *fire code official*, a sign shall be permanently displayed on or near each *fire door* in letters not less than 1 inch (25 mm) high to read as follows:
 1. For doors designed to be kept normally open: FIRE DOOR—DO NOT BLOCK.
 2. For doors designed to be kept normally closed: FIRE DOOR—KEEP CLOSED.



2018 International Fire Code Maintenance

SECTION 705

DOOR AND WINDOW OPENINGS

- **705.2.3 Hold-open devices and closers.** Hold-open devices and automatic door closers, where provided, shall be maintained. During the period that such device is out of service for repairs, the door it operates shall remain in the closed position.

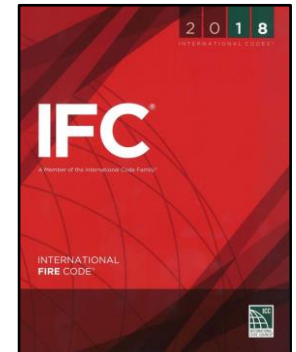


2018 International Fire Code Maintenance

SECTION 705

DOOR AND WINDOW OPENINGS

- **705.2.4 Door operation.** *Swinging fire doors shall close from the full-open position and latch automatically.*
- **705.2.5 Smoke- and heat-activated doors.** *Smoke-activated doors shall be maintained to self-close or automatically close upon detection of smoke.* Existing fusible-link type automatic door-closing devices are permitted if the fusible link rating does not exceed 135°F (57°C).



2018 International Fire Code Maintenance

SECTION 705

DOOR AND WINDOW OPENINGS

- **705.2.6 Testing.** Horizontal and vertical sliding and rolling *fire doors* shall be inspected and tested annually to confirm proper operation and full closure. Records of inspections and testing shall be maintained.

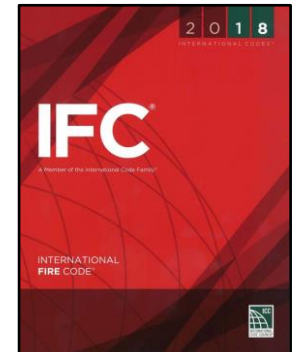


2018 International Fire Code Maintenance

SECTION 706

DUCT AND AIR TRANSFER OPENINGS

- **706.1 Maintaining protection.** **Dampers** protecting ducts and air transfer openings **shall be inspected and maintained in accordance with NFPA 80 and NFPA 105.** Other products or materials used to protect the openings for ducts and air transfer openings shall be securely attached to or bonded to the construction containing the duct or air transfer opening, without visible openings through or into the cavity of the construction.
Any damaged products or materials protecting duct and air transfer openings shall be repaired, restored or replaced.

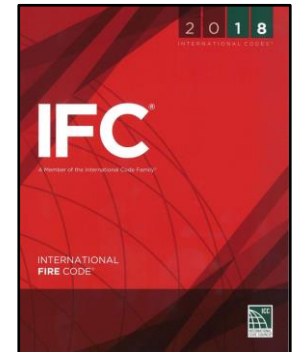


2018 International Fire Code Maintenance

SECTION 706

DUCT AND AIR TRANSFER OPENINGS

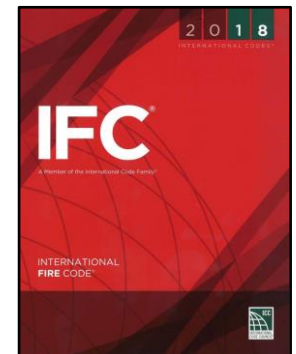
- **706.2 Unprotected openings.** Unprotected duct and air transfer openings in *fire-resistance-rated* construction and construction installed to resist the passage of smoke shall be protected so as to comply with requirements that were in effect when the building was constructed.



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SECTION 707 CONCEALED SPACES

- **707.1 Fireblocking and draftstopping.** Required *fireblocking* and *draftstopping* in combustible concealed spaces shall be maintained to provide continuity and integrity of the construction.

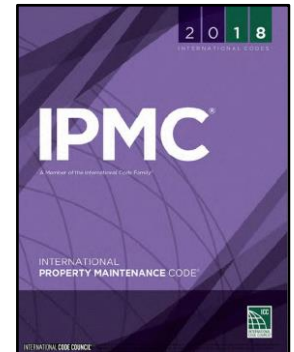


2018 International Property Maintenance Code

SECTION 703

FIRE-RESISTANCE RATINGS

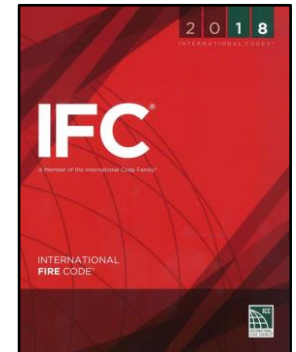
703.3 Maintenance. The required fire-resistance rating of fire-resistance-rated construction, including walls, firestops, shaft enclosures, partitions, smoke barriers, floors, fire-resistive coatings and sprayed fire-resistant materials applied to structural members and joint systems, shall be maintained. Such elements shall be visually inspected annually by the owner and repaired, restored or replace where damaged, altered, breached or penetrated. **Records of inspections and repairs shall be maintained. ...**



2018 International Fire Code

Owner's Responsibility

- **701.6 Owner's responsibility.** The **owner shall maintain an inventory of all required** *fire-resistance-rated and smoke resistant* construction, and the construction included in Sections 703 through 707 and such construction shall be visually inspected by the *owner annually and properly repaired, restored or replaced where damaged, altered, breached or penetrated.*
- **FCIA Initiative with Koffel Associates**



2018 International Fire Code

Fire-Resistance Inventory Explained

- **Life Safety Drawings**
- Designs, Systems and Assemblies – **Listings**
- **Manufacturers Installation and Maintenance Instructions**
- How?
 - Paper & Files
 - Spreadsheets
 - Software

C-AJ-8XXX???

See Tag/Label
Identification
System

CAUTION! FIRESTOP SYSTEM

Affinity Firestop Photo

C-AJ-8XXX???

See Tag/Label
Identification
System

CAUTION! FIRESTOP SYSTEM

Affinity Firestop Photo

C-AJ-8XXX???

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AFFINITY FIRESTOP SYSTEM
2.5 GPM MIN. FLOW RATE @ 150 PSI
100% PASS - UL-2089 - Firestop Systems Inc.

CAUTION! FIRESTOP SYSTEM

Affinity Firestop Photo

C-AJ-5209??



Affinity Firestop Photo

C-AJ-8XXX??



Affinity Firestop Photo

W-L-2XXX???

NOPE!!



Affinity Firestop Photo

W-L-2XXX???

NOPE!!



Affinity Firestop Photo

W-L-2XXX???

NOPE!!



Affinity Firestop Photo

W-L-2XXX??

Wallboard

Patch??

NO!!



Affinity Firestop Photo

Good Luck!



Affinity Firestop Photo

Questions??



Thanks for Attending!!!

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