

**Fire Codes &  
Fire-Separation  
Management -  
Existing  
Buildings**

**Design  
Installation  
Inspection  
Maintenance &  
Management**

FCIA Virtual 'DIIM' Symposium Canada

Bill McHugh, FCIA

Rich Walke, Consultant to FCIA

# FCIA – Firestop Contractors International Association

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- FCIA Members
  - Firestop Contractors
  - Firestop Manufacturers
  - Firestop Consultants
  - Firestop Distributors, Reps, Friends
- 3<sup>rd</sup> Party Contractor Programs – FM 4991, ULC Qualified
- 3<sup>rd</sup> Party Inspection Company Accreditation, IAS AC291; FM/UL/IFC Exams
- ASTM E2174/E2393 Inspection Standards
- FREE PDF Firestop MOP – Specifiers @ AE Firms, AHJ's
- FREE Life Safety Digest – PDF FOR ALL
- Tools for Specifiers – 07-84-00

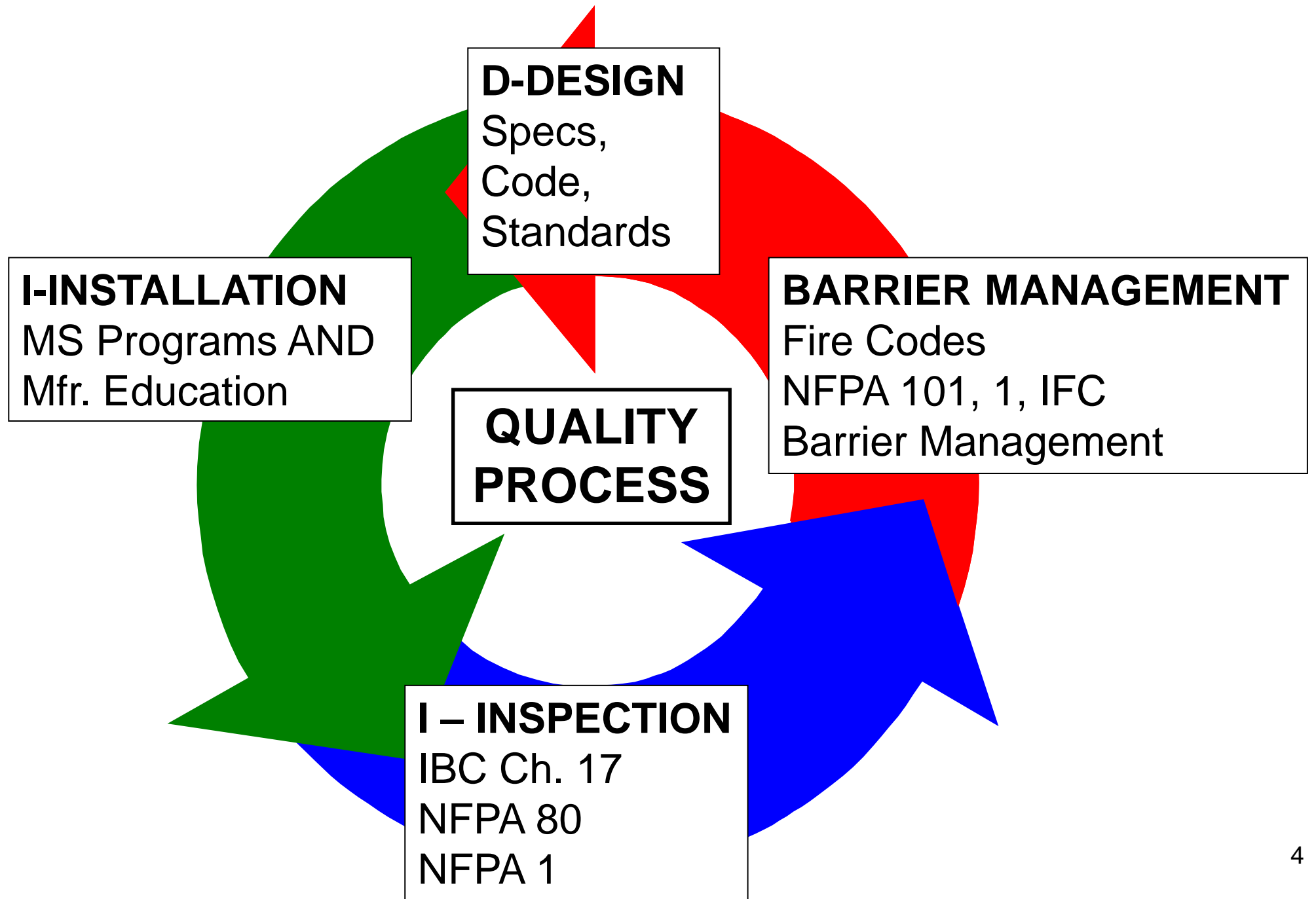


# “TOTAL FIRE PROTECTION”

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- 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





# “DIIM”

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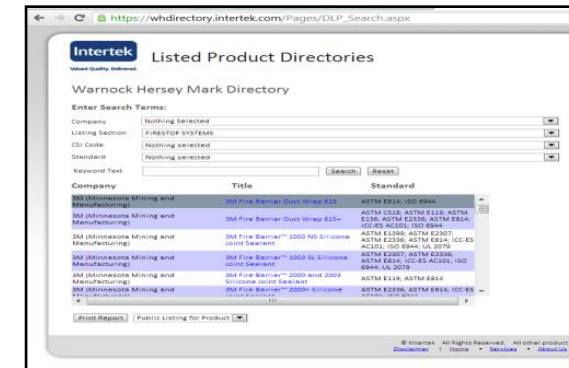
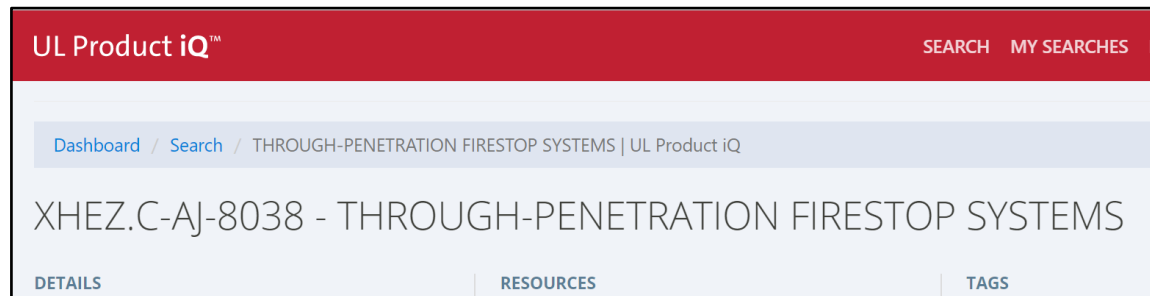
- Properly **Designed** and Specified Firestopping
  - FCIA – 07-84-00 – Specification - **RSW, CCS**
- **Tested and Listed Systems** - ULC-S101, S115, S112, S104, ASTM E2307, E2837, E3037 – Smoke (L), Water (W), Movement (M)
- Professional **Installation** – FCIA Member, ULC Qualified Contractors, FM 4991 Approved Contractors
- Properly **Inspected** – to....ASTM E2174 / E2393 Protocol by IAS AC 291 Accredited Inspection Agencies, Inspectors with ULC, IFC, FM Firestop Exam Success
- **Maintained & Managed** – Annually – by FCIA Members – **National Fire Code of Canada**  
**<http://www.constructioncanada.net/firestopping-and-effective-compartmentation/>, NFPA 1, NFPA 101, IFC**

# Firestopping for Continuity Products Become Systems

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



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



# Building & Fire Code Requirements

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- Canadian Codes –
  - New and Existing Buildings – National Building Code of Canada – Division B: Articles 3.1.7 – 3.1.10
  - **National Fire Code of Canada – Section 2.2 Fire Separations**
- International Codes –
  - New and Existing Buildings – International Building Code – Chapter 7
  - **International Fire Code – Chapter 7**



# Building & Fire Code Requirements

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- NFPA Codes
  - NFPA 5000 / 101 – Chapter 8
  - NFPA 1 Fire Code – Chapter 12
- UAE Fire and Life Safety Code – Chapter 1, Section 21
- Many other Country Codes...
- ***Minimum Requirements – Construction & Maintenance***



# Compartmentation Codes – NBC

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- Division A: Article 1.4.1.2
  - ***Fire separation*** means a construction assembly that acts as a barrier against the spread of fire. See Appendix A.
  - ***A fire separation may or may not have a fire-resistance rating.***

# Compartmentation Codes – NBC

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- Division A: Article 1.4.1.2
  - **Fire resistance rating** means the time in minutes or hours that a material or assemblies of materials will withstand the passage of flame and the transmission of heat when exposed to fire under specified conditions of test and performance criteria, or as determined by extension or interpretation of information derived therefrom as prescribed in this Code. See Appendix D.
  - **CAN/UL-S101** – *Standard Methods of Fire Endurance Tests of Building Construction Materials*

# Compartmentation Codes – NBC

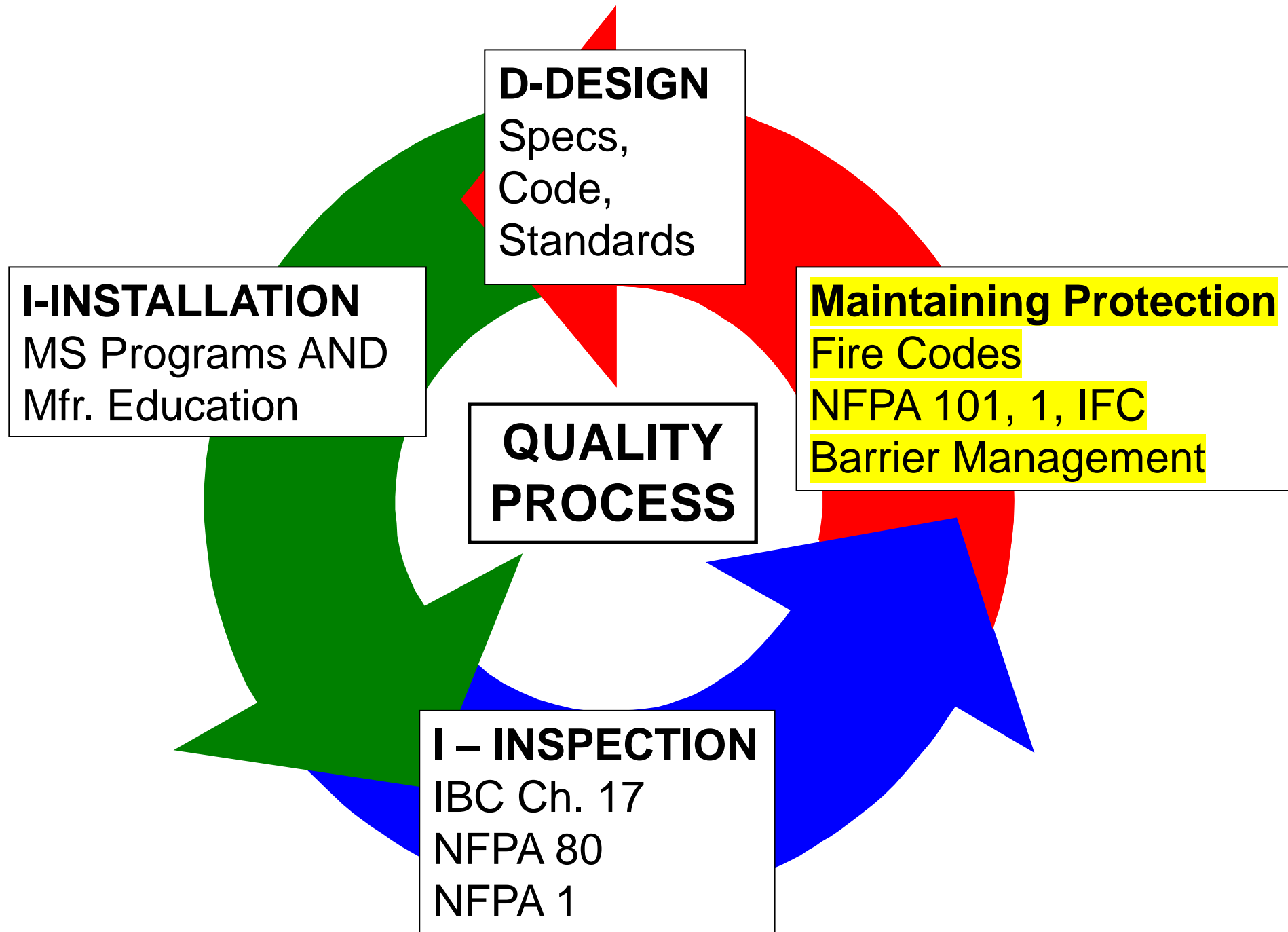
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- Division B: Article 3.1.7.1
  - **3.1.7.1. Determination of Ratings**
    - 1.Except as permitted by Sentence (2) and Articles 3.1.7.2. and 3.6.3.5., the rating of a material, assembly of materials or a structural member that is required to have a *fire-resistance rating*, shall be determined on the basis of the results of tests conducted in conformance with CAN/ULC-S101, “Fire Endurance Tests of Building Construction and Materials.”
    - 2.A material, assembly of materials or a structural member is permitted to be assigned a *fire-resistance rating* on the basis of Appendix D.

# Compartmentation Codes – NBC

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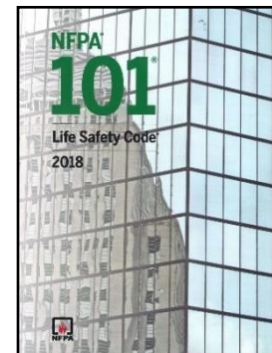
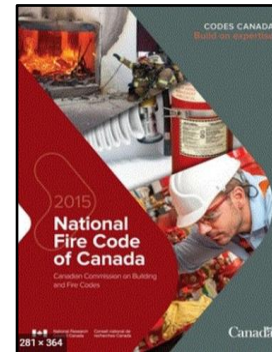
- **Products Become Systems – Test Standards**
  - **Fire & Smoke Barriers – Fire Separations**
    - **CAN/ULC-S101**, ASTM E119, UL 263
  - **Firestopping –**
    - **CAN/ULC-S115**, ASTM E814 / UL 1479, UL 2079, E1966, E2307, E2837, ...test methods...”
  - **Swinging/Rolling Fire Doors – CAN/ULC-S104, S105 Frames, S113 for 20 minute wood doors**, UL 10B/C, UL 1784....
  - **Fire Rated Glazing – CAN/ULC-S106, S101**, UL 9, ASTM E119, UL 263
  - **Fire/Smoke Dampers – CAN/ULC-S112, S112.1, S115**, UL 555, UL 555S
- **SYSTEM Testing = Suitability Statement**



# Fire Codes Require Maintenance

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- National Fire Code of Canada
  - International Fire Code
  - NFPA 101
  - NFPA 1
- 
- Minimum Requirements Stated
  - Frequency
  - **What really happens?**



# A GC that gets It!



C. Zussman - Pepper Photo



# A Few Years Later?

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K. Heckler Photo



# Existing Building – Look OK?



J. Sharp Photo

# Protected?

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D. Falconer Photo

# Really?

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J. Chiangi Photo

# The New Generation

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J. Chiangi Photo





Affinity Firestop Photo





Affinity Firestop Photo





Affinity Firestop Photo





Affinity Firestop Photo





Affinity Firestop Photo

# These Pictures are why we proposed @ NBCC.... But were DISAPPROVED. Really?

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- Fire Resistance **“Inventory” – DISAPPROVED**
- **Annual Visual Inspection .... DISAPPROVED**
  - Fire Separations
  - Firestops, Fire Doors, Fire Dampers, Firestop Systems...for building maintenance
- Existing Buildings
  - **Repair Damage** to Fire Separations – Damage?
  - **Require Documentation** of Fire Separations, etc.

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- **What NFC & Other Regulations Say about Existing Buildings...**

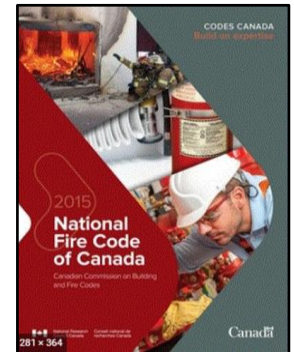
- What should Building Owners DO?
- Make Building Owners aware of a risk!
- How they/you handle is up to you...

# Compartmentation Codes – NFC

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## Division B – Part 2, Building and Occupant Fire Safety

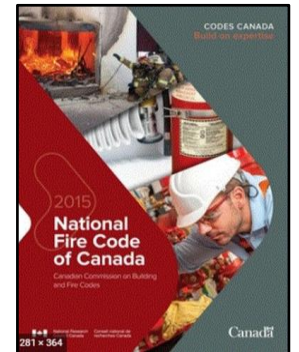
- Fire Separation & Features of Protection
- Gypsum Wallboard, Concrete Block, Concrete, Other Assemblies
- Fire Dampers
- Fire Rated Swinging & Rolling Doors
- Fire Rated Glazing
- Firestopping



# Compartmentation Codes – NFC

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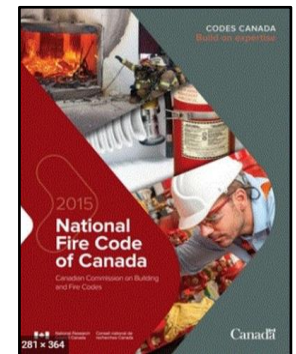
- Division A: Article 1.4.1.2
  - *Closure* means a device or assembly for closing an opening through a *fire separation* or an exterior wall, such as a door, a shutter, wired glass or glass block, and includes all components such as hardware, closing devices, frames and anchors.



# Compartmentation Codes – NFC

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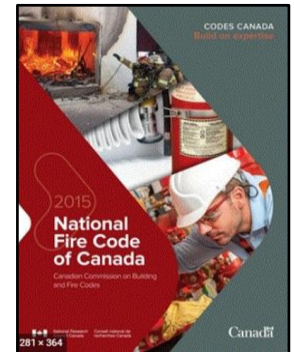
- Division B – Part 2, Building and Occupant Fire Safety
  - **2.2.1.2. – Damage to Fire Separations**
    1. Where *fire separations* are damaged so as to affect their integrity, they shall be repaired so that the integrity of the *fire separation* is maintained...



# Compartmentation Codes – NFC

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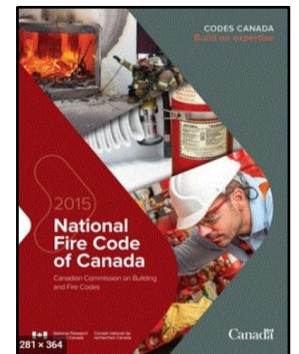
- Division B – Part 2, Building and Occupant Fire Safety
  - **2.2.2.1. – Openings in Fire Separations**
    1. Openings in *fire separations* shall be protected with *closures* in conformance with the NBC.
    2. Where *closures* in *fire separations* are replaced, the replacements shall be in conformance with the NBC.



# Compartmentation Codes – NFC

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- Division B – Part 2, Building and Occupant Fire Safety
  - **2.2.2.2. – Damage to Closures**
    1. Where *closures* are damaged so as to affect the integrity of their *fire-protection rating*, they shall be repaired so that their integrity is maintained in accordance with Article 2.2.2.1.

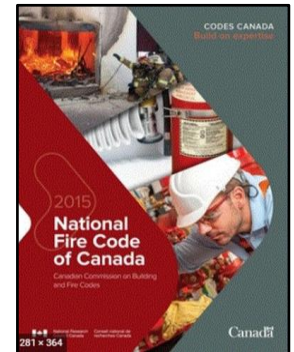




# Compartmentation Codes – NFC

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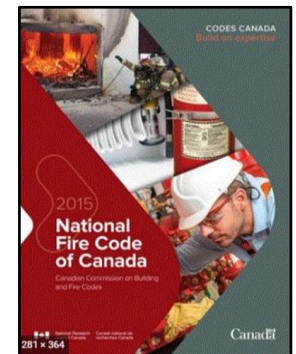
- Division B – Part 2, Building and Occupant Fire Safety
  - **2.2.2.4. – Inspection and Maintenance**
    1. Defects that interfere with the operation of *closures* in *fire separations* ... shall be corrected....
    - 2.... doors in *fire separations* ... equipped with self-closing devices shall be operated ... at intervals in greater than 24 hrs....
    3. Doors in *fire separations* shall be operated at intervals not greater than one month ....
    4. *Closures* in *fire separations* shall not be obstructed...
    5. *Fire dampers*, smoke dampers, combination smoke/*fire dampers* and *fire stop flaps* shall be a) inspected at intervals not greater than 12 months and b) be tested in accordance with NFPA 80.



# Compartmentation Codes – NFC

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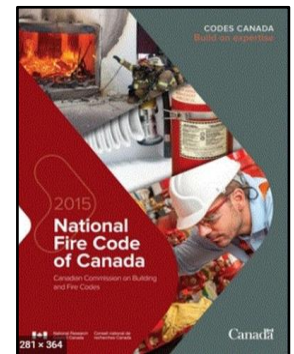
- Division B – Part 2, Building and Occupant Fire Safety
  - Unfortunately, there is nothing in the NFC directly addressing the maintenance of firestop and joint systems. However, the intent of Article 2.2.1.2 would suggest any “damage” shall be repaired. If a firestop or joint system is damaged, would it not affect the integrity of the *fire separation*? **Yes, it absolutely would!!!**
  - **2.2.1.2. – Damage to Fire Separations**
    1. Where *fire separations* are damaged so as to affect their integrity, they shall be repaired so that the integrity of the *fire separation* is maintained.
  - **FCIA Manual of Practice – Appendix, Maintenance**
    - FCIA recommends Barrier Management for Effective Compartmentation and Structural Protection



# National Fire Code of Canada

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- Division B – Part 2, Building and Occupant Fire Safety
- ***Fire Separation Integrity Maintained - How Often?***
  - Yearly?
  - Weekly?
  - Monthly?
  - ***Maintain Integrity***
  - ***Not Specific Means ALWAYS...***
- ***Fire Separation Repaired with what?***
  - Original Construction Code?
  - Current Technology?
  - ***Mud and Tape? Non Firestop Foam?***
  - ***Systems...or to as originally permitted?***

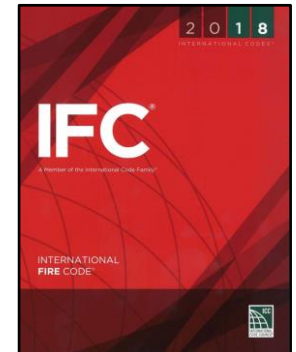


# 2018 International Fire Code Maintenance

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## 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*.



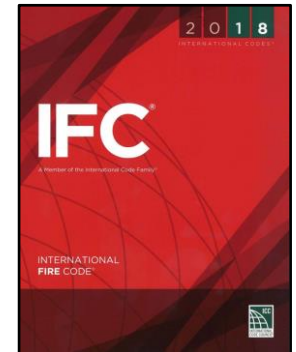
# 2018 International Fire Code Maintenance

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## 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.

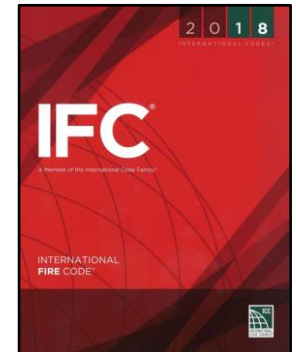


# 2018 International Fire Code Maintenance

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## 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.**

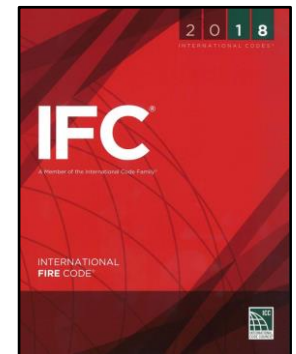


# 2018 International Fire Code Maintenance

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## 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.

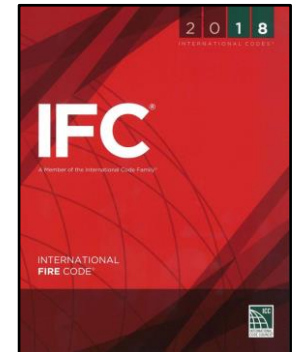


# 2018 International Fire Code Maintenance

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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.



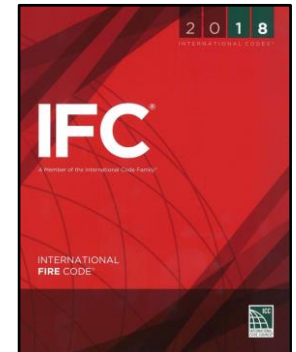


# 2018 International Fire Code Maintenance

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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" ...

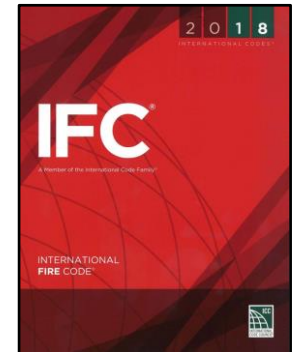


# 2018 International Fire Code Maintenance

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## 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

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## SECTION 704 JOINTS AND VOIDS

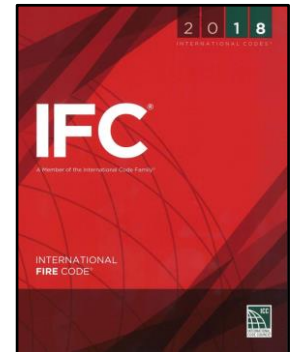
- **704.1 Maintaining protection cont.**
  - Subparagraphs 1 through 7 detail the types of joints and voids required to be maintained. This list corresponds to joints and voids which are required to be protected by the 2018 IBC.
- **Unprotected joints and voids do not need to be protected where such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



# 2018 International Fire Code Maintenance

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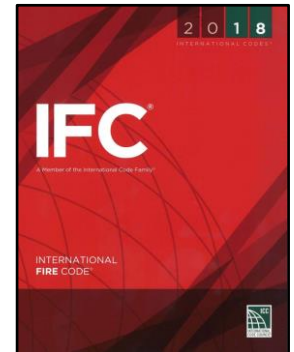
- **SECTION 705**
  - **DOOR AND WINDOW OPENINGS**
- **SECTION 706**
  - **DUCT & AIR TRANSFER OPENINGS**
- **SECTION 707**
  - **CONCEALED SPACES**
- **STRUCTURAL PROTECTION ADDED for 2021...**



# 2018 International Fire Code Fire-Resistance Inventory Explained

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

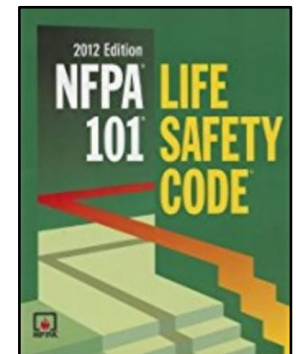


# National Fire Protection Association

## NFPA 101 – 2012

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- **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.

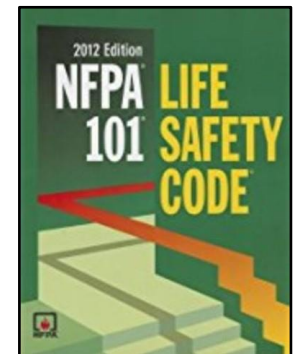


# National Fire Protection Association

## NFPA 101 – 2012

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- 4.6.12.2 **No existing life safety feature shall be removed or reduced** where such feature is a requirement for new construction. [101:4.6.12.2]
- 4.6.12.3\* **Existing life safety features **obvious to the public**, if not required by the Code, shall be either maintained or removed**. [101:4.6.12.3]

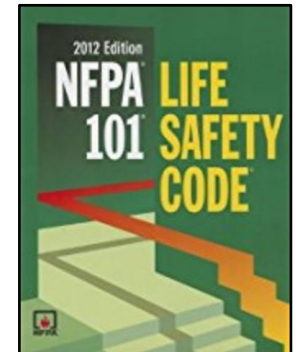


# National Fire Protection Association

## NFPA 101 – 2012

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- **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

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- **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

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- **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

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- 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.



# UAE Fire and Life Safety Code of Practice

## Maintenance & Management

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### Chapter 1, SECTION 21

#### Firestopping

- **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 the 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 Code of Canada

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## National Fire Code of Canada

- *Division B – Part 2, Building and Occupant Fire Safety*

**2.2.1.2 – Damage to Fire Separations** – Where *fire separations* are damaged so as to affect their integrity, they shall be repaired so that the integrity of the *fire separation* is maintained...



# M-Barrier Management Systems – **What should AHJ's/Building Owner look for?**

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- Visual Building Inspection = Survey
- **STARTS WITH TESTED AND LISTED SYSTEMS & MANUFACTURERS INSTALLATION INSTRUCTIONS**
- Does it look like the Tested and Listed System?
  - Annular Space
  - Penetrating Item Types, Coverings
  - # Penetrating Items, Types
  - Visible Breaches, unless listing allows
  - Joint Width
  - Penetrations in Joints & Not in System/Listing...
  - Other Breaches..
- Competent Personnel

# Building & Fire Code Requirements

## Does the Assembly Match the System?

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

# M–Barrier Management Systems

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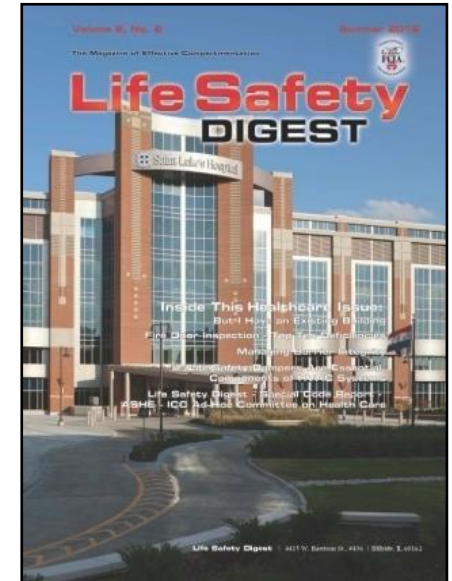
- **Barrier Management Starts at New Construction Specification...**
  - 07-84-00 – Firestopping
    - **Single Spec – Penetrations, Joints, Perimeter Fire Protection**
  - 01-78-39 – Project Record Documents





# M-Barrier Management Systems Starts @ NEW CONSTRUCTION

- NEW Buildings – 07-84-00 Specs
  - **Single Spec – Penetrations, Joints, Perimeter Fire Protection**
  - FREE @ [www.FCIA.org](http://www.FCIA.org)
- **Part I – Focus on**
  - Systems
  - Product Physical Properties
  - Manufacturers
  - “Single Manufacturer to the greatest extent possible” – EJ’s
- **Part II – Contractor & Inspection Agency Qualifications**
- **Part III – Execution; ASTM E2174 / E2393 Inspection**



# Built Right = Maintain Right

## WHEN SPECIFIED AT NEW CONSTRUCTION

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- Reference in 01-40-00 Quality Requirements
  - Special Inspections
- 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

# M–Barrier Management Systems

## Building Owner's Policy Topics

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- **Advise Clients – Create a Budget to Meet Code Requirements**
- **Inventory – What Info?**
  - Life Safety Drawings
  - Manufacturers Instructions
  - Tested and Listed Systems (Listings)
- **Manage Contractors, Workforce**
  - In House (Rules)
  - Outside Contractor (Rules)
- **Monitor Process**
- **As Built/As Maintained Documentation for Records**

# Barrier Management Policy Contents

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- ***Annual Line Item Budget***
- Rules of Engagement in Contracts
  - Internal Contracts
  - External Contracts
- Pre-Construction Meetings
- Barrier Warnings – Markings
  - Barrier/Firestop
- Violation Consequences
- Ongoing Management
- Staff – Occupant Education



# M–Barrier Management Systems

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- **Barrier Inventory** Elements & Policy...
  - Life Safety Drawings, MII, Systems
  - **Existing Conditions Documented**
  - Ongoing Survey Records
  - Deficiency Reports
  - Systems Documentation Control, Retrieval
- **ALL FIRE PROTECTION FEATURES**

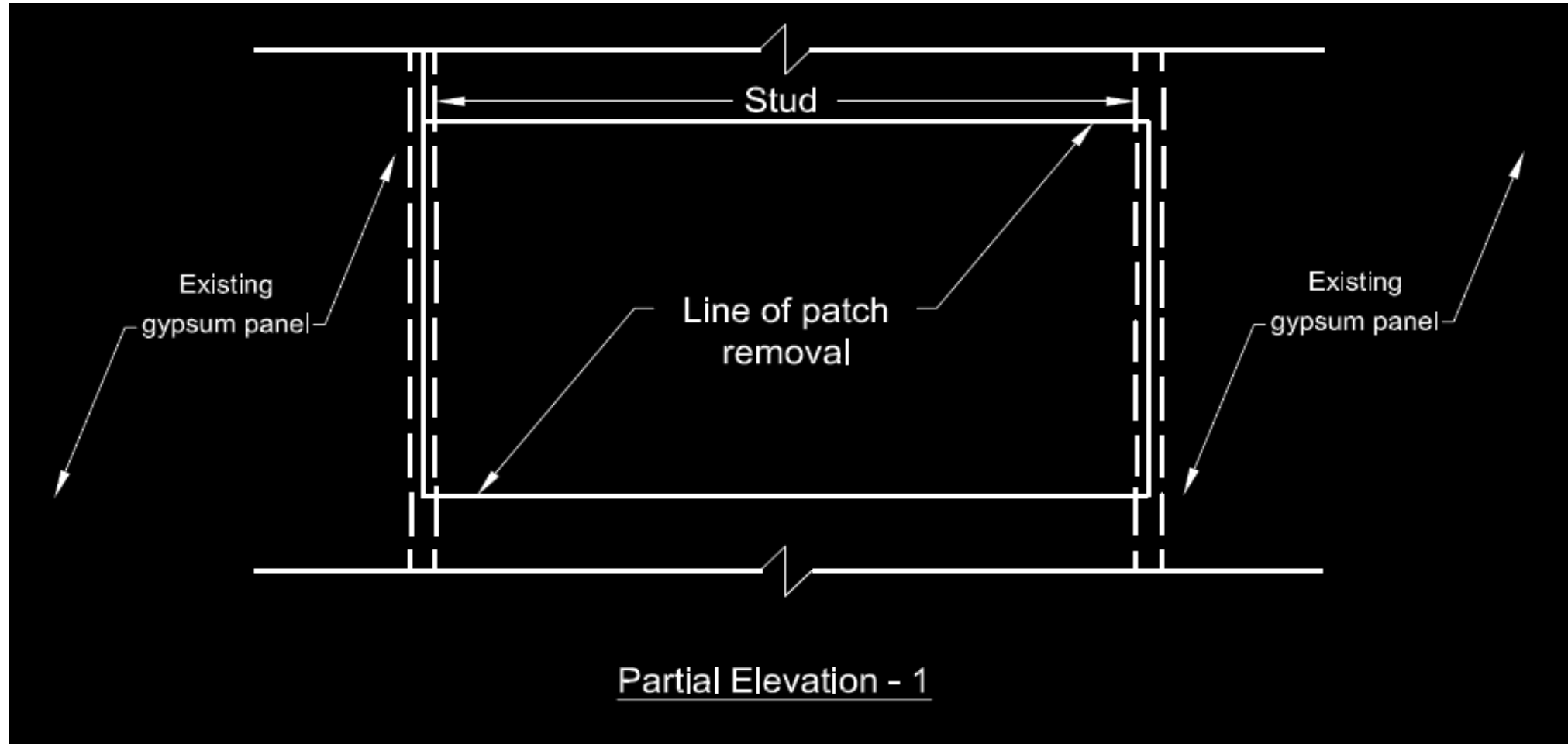


# M–Barrier Management Systems

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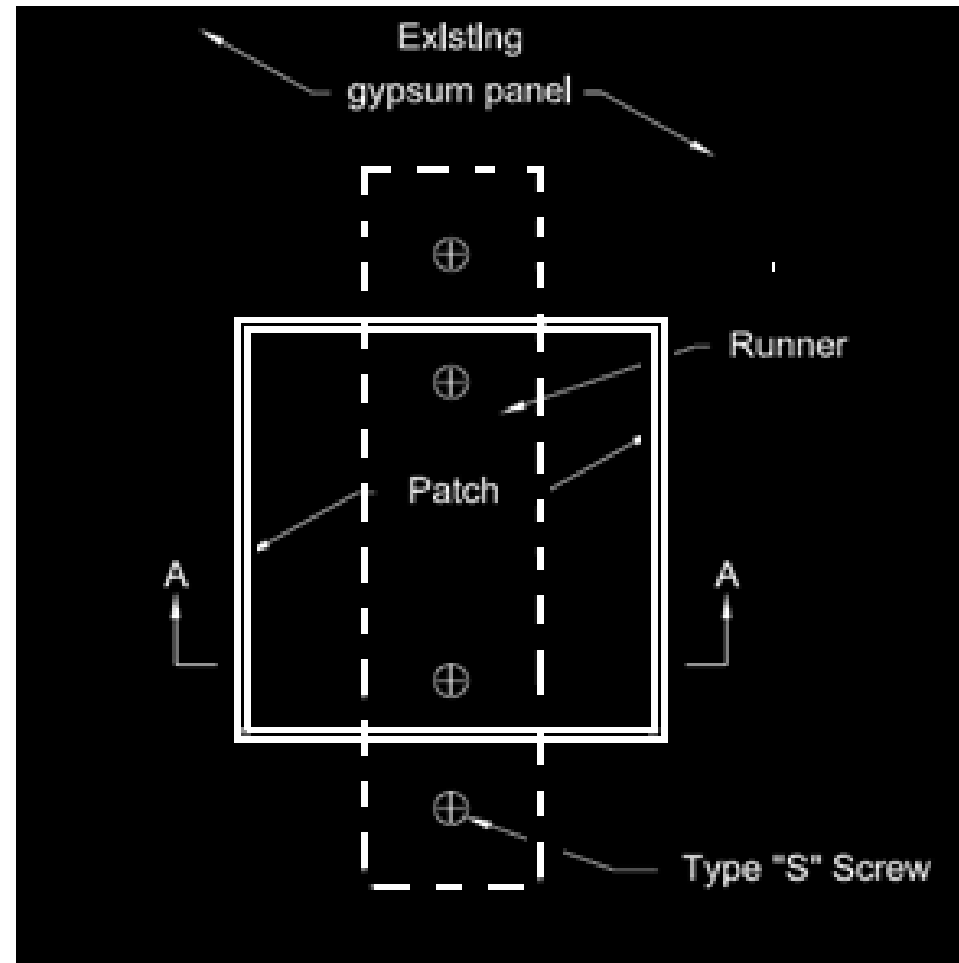
- Barrier Repair Examples

# Gypsum Board Repair Large Holes



# Gypsum Board Repairs - Small

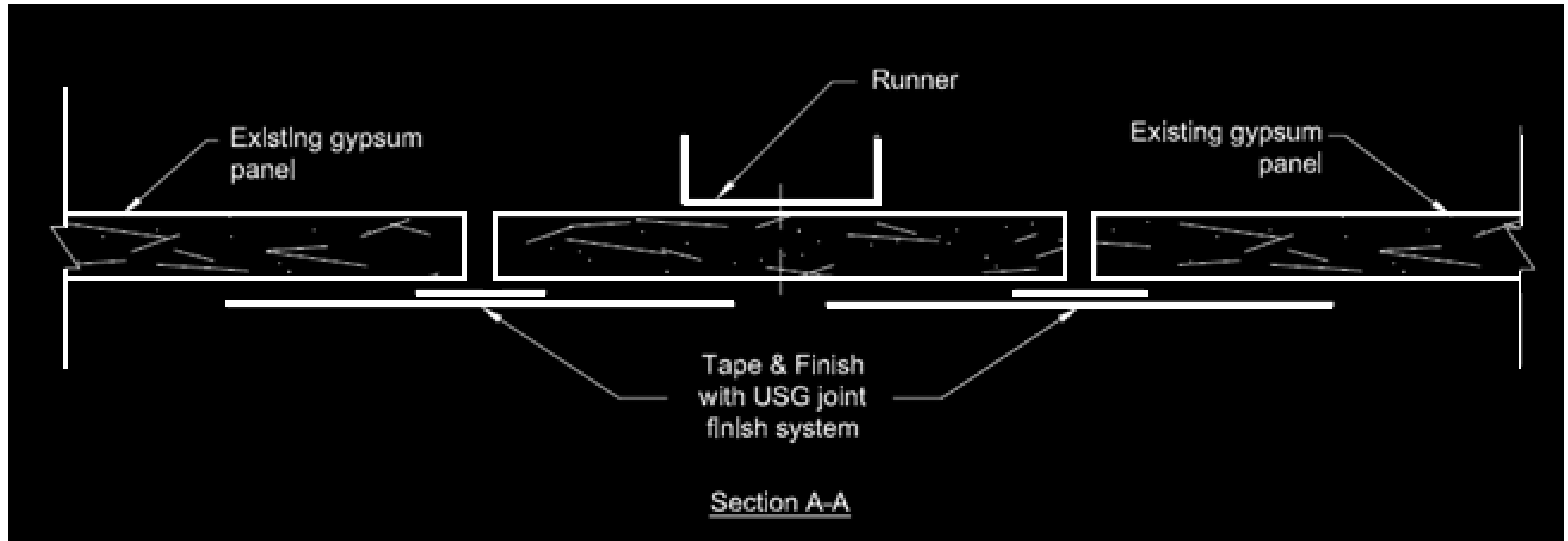
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USG Image

# Gypsum Board Repairs - Small

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USG Image

# Firestop Repairs

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- Repairs...
  - Instruction requirements by manufacturer...
  - Listed systems
  - Patching
    - Systems....
    - Adhesion
    - Movement
    - F, T,L,W Ratings
- ***....As recommended by MFR***



Affinity Firestop Photo



# M–Barrier Management Systems

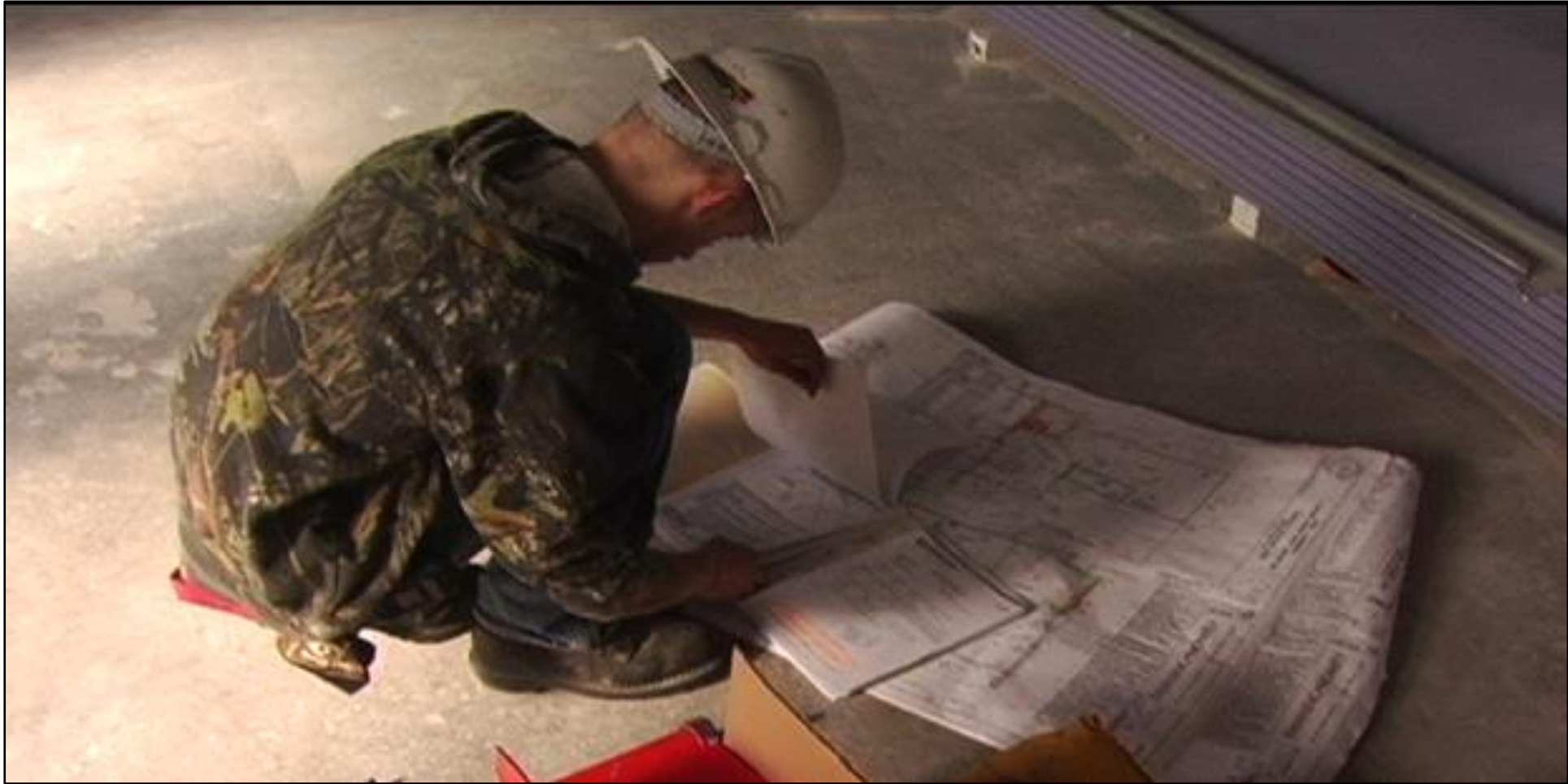
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- Visual Building Survey/Inspection....
  - Tested and Listed Systems (Listings)
  - Manufacturers installation instructions

# Firestopping for Continuity

## I – Listed Systems

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# Firestopping for Continuity 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**
- **Tapes**
- **Wraps, Duct Wraps**



STI, 3M, Rectorseal, HILTI Photos

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

**D-DESIGN**

**M-MAINTENANCE**

**QUALITY  
PROCESS**

**I-INSPECTION**

# Installation – Who?

- Firestopping wrong, missing
- Systems Documentation?
- As Built Documentation??

**Conclusion –  
Without Single Firestop Installation  
Contractor....**

**Fire & life safety risks**

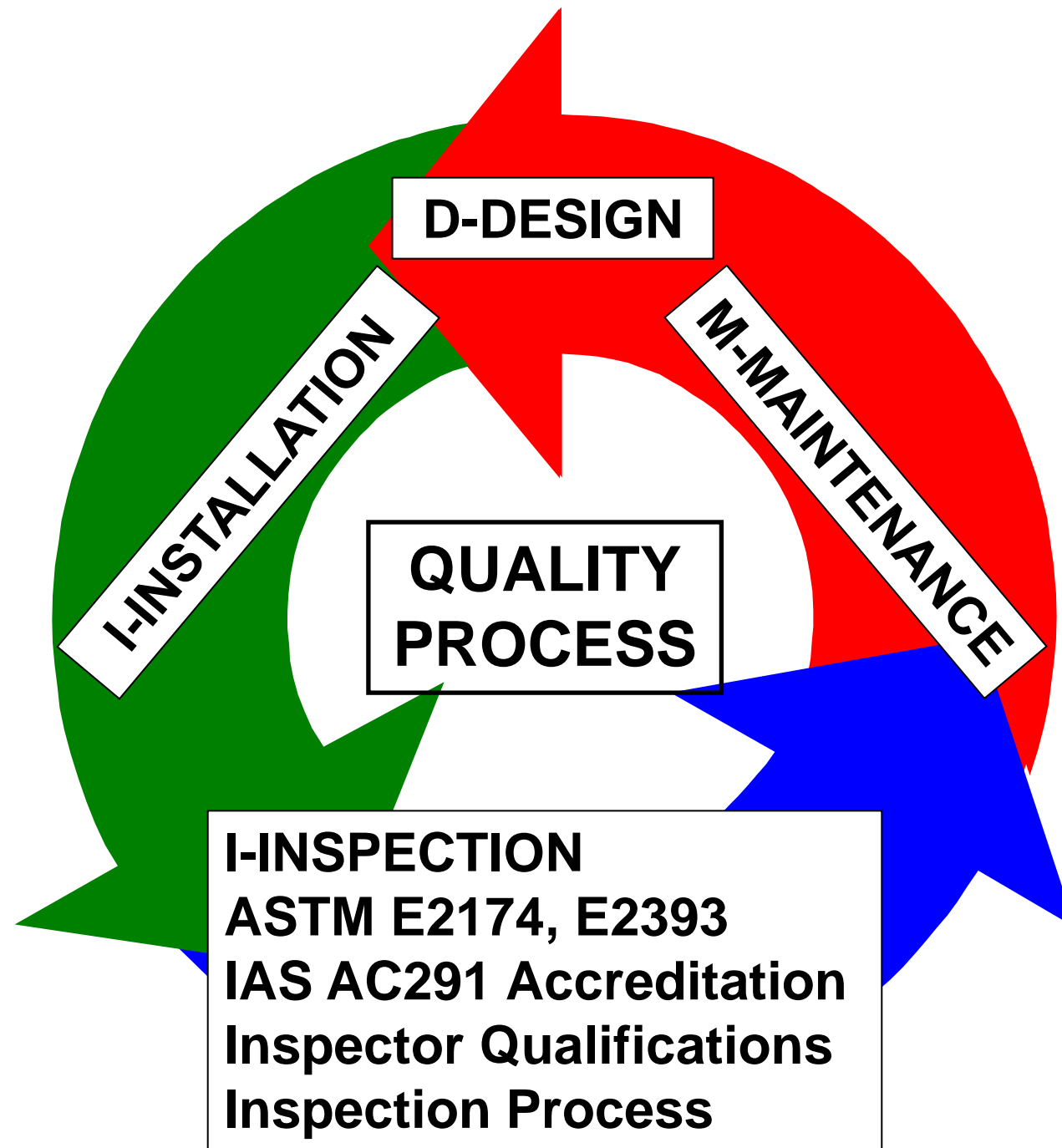


Alder Photo

# UL-ULC / FM 4991 Contractor Company Benefits

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- **Quantified Differentiation ...**
  - **Focus on the Company & Individual**
  - Investment in Company Procedures
  - Investment in People Education
  - Investment in FCIA Manual of Practice
    - Project Successful Proven Contractor
    - Education, Training, Accountability
      - = Reduced Risk – Life, Property, Business





# Why Inspection?

## Firestop Installation Methods

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- **Each Construction Discipline – MEP, etc.**
  - “He/She who pokes hole, fills hole”
- **Multiple Contracts**
  - Firestop Contractors, Trades
- **Single Source Firestop Contractor**
  - *FCIA Member in Good Standing*
  - *UL/ULC Qualified, or FM 4991*

# Firestop Inspection Standards & Professional Contractor = Success

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- ASTM E2174 / ASTM E2393 Standard Practice  
*“Inspection Process”*



Adler Photos

# Inspection in Codes

## ASTM E2174 / ASTM E2393

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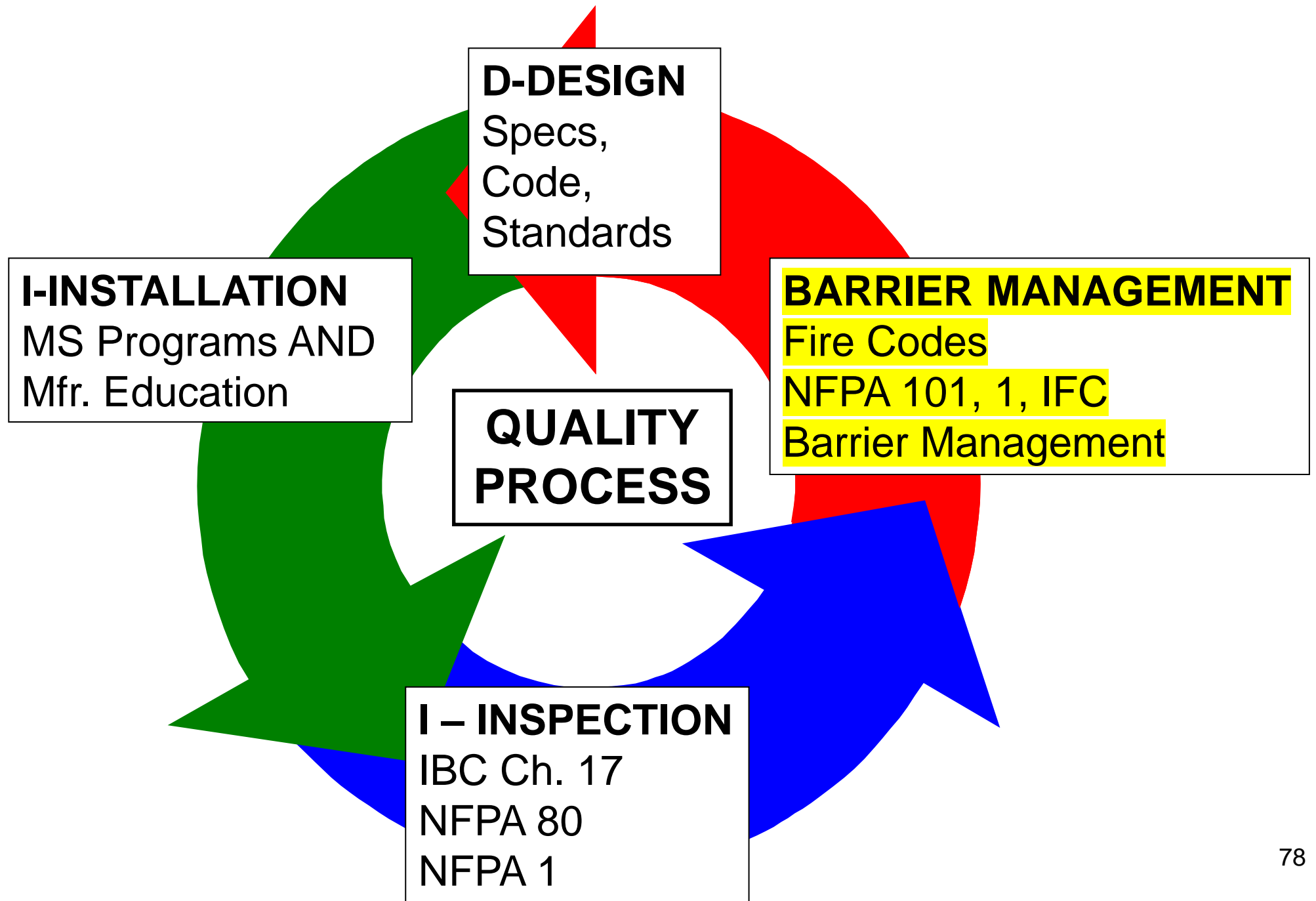
- NFPA 101 / 5000 – Chapter 8 – Annex
- 2012 International Building Code
  - CH 17 – Special Inspections (FCIA Proposals)
    - Buildings 75' & higher above Fire Department Access
    - Occupancy Type III, IV, Chapter 16 Table 1604.5
    - Residential > 250 Occupants – 2021 (FCIA Proposal)
- Abu Dhabi International Building Code
- **NOT in NBC or NFC YET**

# FCIA DIIM & Firestopping

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Proper ***DIIM*** Means Reliable Systems...

- Properly ***Designed*** – A/E – Consultant
  - Tested and Listed Systems, FCIA Member Mfr's., Compartments per IBC, NFPA Codes, SUBMITTALS....***Specified (CCS, CDT, RSW)***
- Properly ***Installed***
  - FCIA Member, FM 4991, or UL ***Qualified Contractors***
- Properly ***Inspected***
  - ASTM E2174 & ASTM E2393, by IAS ***Qualified Inspectors at IAS AC 291 Accredited Inspection Firms***
- Properly ***Maintained & Managed*** –
  - FCIA Member, FM 4991, or UL ***Qualified Contractors***



# Effective Compartmentation IS a SYSTEM

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# Questions??





# Thanks for Attending!!!

Firestop Contractors International Association  
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