NFCA @ PFPNet

Bill McHugh, Executive Director
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Who is NFCA?

- **FIREPROOFING Trade Association....**
- 160 - Contractors, Consultant/Inspection, Equipment, Distributor-Rep Firms
- World-Class FIREPROOFING Education –
  - SFRM & IFRM Technical Expertise
- Standards and Code Development
  - ASTM, ICC, NFPA, AISC, IAS, more....
- Peer group opportunities with top U.S. fireproofing firms
- A forum for suppliers and contractors to learn
- Accreditation Program distinguishes highly professional fireproofing contractor and inspection firms
- NFCA Fireproofing & Safety Books, under development.
- Outreach to Specifiers, Govt. Officials
- Higher standards for life safety....
NFCA Actions

• Industry Advocacy
  • NFCA @ ICC Code Development Hearings
  • NFCA @ National Building Code of Canada
  • NFCA @ ASTM Standards Development Process
  • NFCA @ American Institute of Steel Construction & American Iron and Steel Institute

• Life Safety Digest Articles
  • Thermal Barriers, Patching, Fire Resistance

• NFCA @ SFPE/ASCE Meetings

• NFCA @ IAS AC 291

• NFCA Committee ACTIONS
FCIA @ PFPNet

Bill McHugh, FCIA Executive Director
Aedan Gleeson, FCIA Past President
Ben Urcavich, FCIA President Elect
Who is FCIA?

• 360 - Firestop Contractors, Manufacturers, Consultant-Inspection Firms, Rep, Distributor Firms,

• Life Safety Digest

• FCIA Website Resources - FREE

• FCIA MOP on PDF FREE to Specifiers, Architects, Governmental Bldg./Fire Officials
  • www.FCIA.org
What does FCIA Do?

- Advocacy – Writing, Speaking, Website
  - Specifiers & Architects
  - Code Development
    - Building Code Officials
    - Fire Marshals
  - Standards Development
    - ASTM & UL
- 3rd Party Accredited Organizations,
  - Verified Knowledge & Processes
  - Companies & Individuals
What does FCIA do?

• Advocacy – Build an Industry
  • Firestop Containment Worker Education
  • Firestop Special Inspection & FM/UL Exams
  • NAICS Code for Firestopping -
  • O-Net Classification
  • ASHE/UL/TJC/FCIA Barrier Management Symposums
• Trade Shows
• Presentations
• Articles in Magazines
What does FCIA do?

• Networking
  • FCIA Conferences, Symposiums

• Education & Exposure
  • FCIA MOP, FREE Updates
  • Life Safety Digest
  • Education for FM & UL Exams, FM 4991, UL QFC & IAS AC 291
  • Management System Manual Template
  • FCIA Survey Practice
“DIIM”

• Firestopping & Fire-Resistance for Safety – DIIM
  • Properly *Designed* and Specified Firestopping
    • FCIA - 07-84-00 – Specification
    • NFCA – 07-81-00 Specification
  • Professional *Installation* – FM 4991 Approved Firestop, UL-ULC Qualified Contractors, NFCA CAP Fireproofing Contractors
  • Properly *Inspected* - ASTM E 2174 / 2393 Protocol by IAS AC 291 Accredited Inspection Agencies, Inspectors pass FM or UL Firestop Exam AND IFC Exam. *Fireproofing Inspection*
“TOTAL FIRE PROTECTION” & Fire Resistance

• Structural Fire Resistance
  • Beams, Columns, Assemblies

• 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
Fire-Resistance – Barriers, SFRM & IFRM

• Tested and Listed Assemblies
  • ASTM E119/UL 263
  • Resist Fire, Heat, Smoke/Hot Gasses
  • Structural Integrity during Fire Test
  • Hose Stream Test Survival
    • (Barriers Only)
• Fire-Resistance Systems Directories –
  • UL
  • Intertek
  • FM Approvals

*Systems/Listing Selection & Analysis...Manufacturers Instructions - Not as easy as it looks...*
Fireproofing .... Beams, Columns, Horizontal Assemblies

1. Floor Assembly — The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700, D800, or D900 Series Floor-Ceiling Design in
Firestopping for Continuity
Products become Systems

• What are Firestop *Systems*?

• ‘Field Erected Construction...Tested to...’
  • F Rating - Flame
  • T Rating – Temperature
  • H Rating – Hose (Always)
  • L Rating – Smoke
  • W Rating – Water

Graphics – 3M
Through- and Membrane-Penetration Firestop Systems
Products become Systems
Hose Stream = Shock Test
NFPA 285 & ASTM E 2307?
Installation – Who?

• Fireproofing/Firestopping wrong, missing
• New Construction Documentation?
• As Built Documentation??

*Without Qualifications*

= *fire & life safety risks*
Firestop Contractor Qualifications

• FM 4991 – Standard for the Approval of Firestop Contractors

• UL Qualified Firestop Contractors
Management System – UL, FM

• Facility Tour
• Review MS Manual
• Construction Documents Req’t’s and Review
  • Systems Selection & Analysis
• Procurement
• Storage, Handling, Preservation and Delivery
• Installation, Application and Field Quality Assurance Procedures
  • Systems Installation, Self Inspection/Survey
Management System – UL, FM

- Inspection, Testing and Calibration
  - Tape Measures, Pumps, etc.
- Control of Nonconforming Product
- Training and Qualification of Staff
  - DRI’s, Workforce
- Corrective/Preventive Action
- Quality System Monitoring and Improvement
- Documentation and Record Keeping
  - 7 years
Spec Contractor Qualifications

• UL Qualified Fireproofing Contractors
  • Education
  • Exam
  • Audits
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.
Fireproofing Contractor Qualifications
NFCA Contractor Accreditation Program

1. NFCA Education on Quality, Application
2. Employ a person
   • PASS CAP Exam @ 80% or better
   • *Designated Responsible Individual (DRI)*
     • DRI if employed by CAP Firm,
4. CEU’s – 30 over 3 years
5. Annual Renewal
6. Annual NFCA Membership
7. No Audits Required
Why Contractor Qualifications?

• Built right the first time...

• Documentation

• SYSTEMS Selection, Analysis, As-Builts
  • F, T, L, W Rated Systems
  • Tolerances - Annular Space/Aperature/Beam-Column Sizes, Angles
  • Gap Sizes - Undercuts - Framing
  • Anchors - Spacing – Hardware
  • Closers - Activation Sensors, more…
International Building Code (IBC)  
SFRM & IFRM  Special Inspection

• IBC & Legacy Codes, Specs…..30 years ++
• Requires special inspection of SFRM and IFRM applications.
• Chapter 17
S14-18 - Revise as follows:

[BF] 1705.14 Sprayed fire-resistant materials. **Special inspections** and tests of sprayed fire-resistant materials applied to floor, roof and wall assemblies and structural members shall be performed in accordance with Sections 1705.14.1 through 1705.14.6. **Special inspections** shall be based on the fire-resistance design as designated in the approved construction documents. The tests set forth in this section shall be based on samplings from specific floor, roof and wall assemblies and structural members. **Special inspections** and tests shall be performed during construction with an additional visual inspection after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspension systems for ceilings, and before concealed, where applicable. **The required sample size shall not exceed 110% of that specified by the referenced standards in Sections 1705.14.4.1 through 1704.14.4.9.**

APPROVED AS SUBMITTED [IBC 2021]

ALL OTHER TEXT IN BLACK IS 2018 IBC
Patching SFRM & IFRM

• Contact the Fireproofing Installer....
  • Original Material - Same Material from Listing & Specs
  • If not known, same Type of Material, if not known
  • Fall 2018 Issue
Firestop Installation & Inspection

I – Inspection

• **Special Inspection – 1705.1-1705.12**
  • Schedule of Special Inspections – Specifications Division 1
  • Independent 3rd Party
  • Destructive, Non Destructive, Specified Frequency
• **Firestopping – ASTM E2174, E2393**
  • Inspection Agency Accreditation – IAS AC 291
  • Instructor Competence – FM, UL Firestop Exams
• **Fireproofing – IBC Ch. 17, ASTM E605, E736, AWCI 12B**
  • Inspection Agency Accreditation – IAS AC 291
  • Instructor Competence – NFCA Exam, ICC Exam
• **Dampers – NFPA 80, at Commen’s, yr. 1, yr. 4 or 6.**
• **Doors – Annual Visual Inspection**
• **Walls?**
• **Horizontal Assemblies**
  • Steel, Concrete, Wood @ Chapter 17
Special Inspection Agency Qualifications IAS AC 291

• Special Inspection Agency Accreditation
  • Company Management System Manual
  • Audit
  • Ongoing Audits
  • Individual Competencies

• Inspection Firm shall have at least one staff.
  • PASS FM, UL Firestop Exam
  • PASS ICC Fireproofing Inspector Exam or
  • ICC Fire Inspector I
Fire Codes Require Maintenance

- NFPA 101
- NFPA 1
- International Fire Code
- Minimum Requirements Stated
- Frequency
2018 International Fire Code

• **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 *International Building Code*. [IFC 2018]
• 701.6 **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.
• 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.

[IFC 2018]
Fire-Resistance & Barrier
Management Systems Policy Topics

- **Inventory – Visual Inspection & Repairs**
  - Life Safety Drawings
  - Designs, Systems and Assemblies - **Listings**
  - **Manufacturers Installation and Maintenance Instructions**
  - Paper & Files
  - Spreadsheets
  - Software
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

- 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
  - Fireproofing
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...

Includes Fire Dampers, Fire Doors...and Continuity
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