What The Structural Fireproofing Discipline Needs to Know about Firestopping Penetrations and Joints

National Fireproofing Contractors Association

Bill McHugh, NFCA Technical Director
Rich Walke, CTI, Consultant to NFCA
Carl Fernald, PCI

NFCA FREE
Webinar Series

Learn –
Network Grow

Info@NFCA-Online.org

December 16, 2025

Thanks Members…

- NFCA Contractors
- NFCA Associates
- NFCA Manufacturers

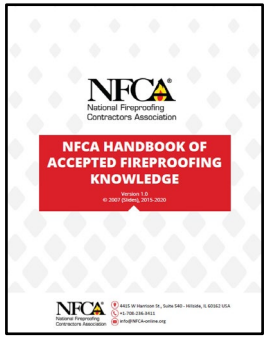
Thanks 2025/2026 NFCA Board of Directors

President	Steve Winston, American Coatings Corp., Ashland, VA
1st V. P.	Nikita Gordon, Gunnlaugson Spray-On (2010) Ltd., Winnipeg, MB
2nd V. P.	Adam Carter, Superior Industrial Insulation Company, Cleveland, OH
Treasurer	Neal Rivers, Easley and Rivers, Pittsburgh, PA
Secretary	Bob Pool, Alfred Miller Contracting, Lake Charles, LA
Past President	Carl Fernald, Performance Contracting Inc., Tampa, FL
Director	Don Armand, Donalco, Edmonton, AB
Director	Joe Colavita, Martin Bros.
Director	John Dalton, Monokote-Saint-Gobain
Director	George Fine, True Fireproofing, Tulsa, OK
Director	Daniella Lopez, Nevell Group, Inc., Concord, CA
Director	Bob Pool, Alfred Miller Contracting, Lake Charles, LA
Director	Paul Steele, The Raymond Group, Orange, CA
Director	Matthew Strieter, Southern Insulation Inc., Hyattsville, MD

What Does NFCA Provide?

National Fireproofing Contractors Association

- **Fireproofing Education & Exams**
  - World-Class SFRM & IFRM Fireproofing Instruction
- **NFCA Contractor Accreditation Program for IFRM & SFRM**
  - Educated fireproofing Companies – UL QFCP
- **Week of Learning - Educational Conference (PFPCon)**
  - Network with top Fireproofing Contractors, Manufacturers, Associates
  - A forum for suppliers and contractors to learn from one another
- **NFCA 100-400 Standards** for quality and life safety
- **NFCA Handbook of Fireproofing Knowledge**
- **NFCA Website** to find Fireproofing Leaders – www.NFCA-online.org
- **Technical expertise, Standards and Code development….**



What Does NFCA Do?

- NFCA @ ASTM Task Groups - Fireproofing
- NFCA @ NFPA Fire Protection Features
- NFCA @ AISC, AISI, CSI/CSC
- NFCA @ National Codes, Canada – NBCC, NFCC
- NFCA @ American Institute of Steel Construction (AISC)
- Industry Articles
- NFCA @ SFPE/ASCE Meetings
- NFCA Committee ACTIONS
- NFCA International Efforts
  - Middle East
  - Mexico
  - India
  - More…

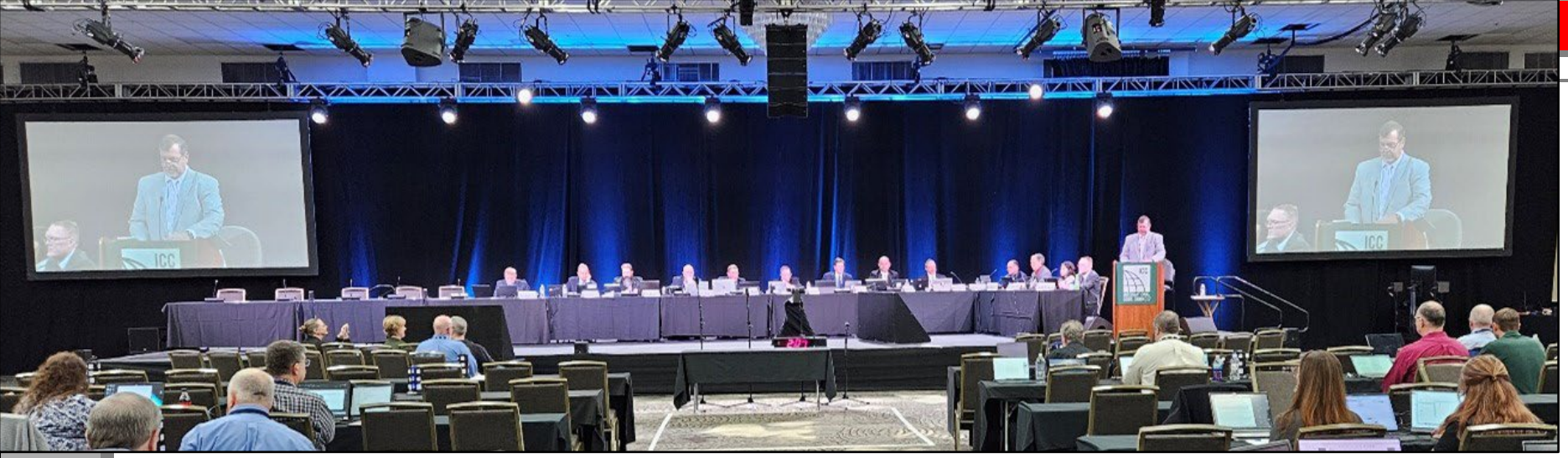
CSI NATIONAL CONFERENCE 2024

2024 INTERNATIONAL CODE COUNCIL CONFERENCE EXPO+HEARINGS

ASTM INTERNATIONAL

AISC AMERICAN INSTITUTE OF STEEL CONSTRUCTION FOUNDED 1921

NFPA



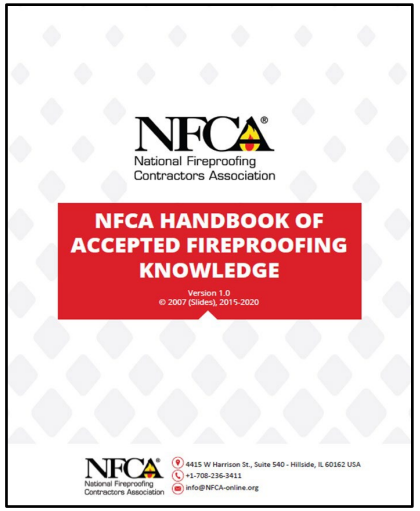
National Fireproofing Contractors Association

2027 Code Development Process (CDP) – IBC, NFPA
2025/2030 CDP – NBCC, NFCC

Bill McHugh, Technical Director, NFCA
Rich Walke, Consultant to the NFCA

Contractor Qualifications – NFCA Contractor Accreditation Program (CAP)

- Contractor DRI's
- Inspection Agency Personnel
- Commitment to Fireproofing Installation
- NFCA Accreditation Seal - Registered mark



SFRM Accredited Contractor
NFCA®
National Fireproofing Contractors Association

IFRM Accredited Contractor
NFCA®
National Fireproofing Contractors Association

IFRM and SFRM Accredited Contractor
NFCA®
National Fireproofing Contractors Association

Contractor Qualifications – UL QFCP

- UL Qualified SFRM Fireproofing Contractors
  - NFCA Education
    - NFCA HAFK, DRI
    - UL Program Guide, Product iQ
  - NFCA SFRM Fireproofing Exam
  - Management System
  - UL Audits –
    - Office
    - Field

CERTIFIED
MANAGEMENT SYSTEM
QUALIFIED FIRESTOP CONTRACTOR

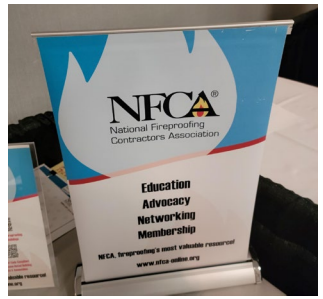
NFCA Educational Events

National Fireproofing Contractors Association

- NFCA/FCIA PasFiPro Canada Symposium
  - Members, Code Officials
- NFCA/FCIA PasFiPro Dubai, Doha
- NFCA @ Mexico LATAM/PCI
- NFCA's PFPCON '26

NFCA – "Associate – Advocate"
Fire & Life Safety

- Webinars, FSBI - Fire Safe Build India
- CSI – Construction Specifications Institute
- CSC – Construction Specifications Canada
- NFPA Expo & Committees
- ICC Expo & Hearings
- Dubai, UAE & Doha, Qatar
  & Riyadh, Saudi Arabia,
  Australia, New Zealand…
- ***Accreditation, Education, More***….



What The Structural Fireproofing Discipline Needs to Know about Firestopping Penetrations and Joints

National Fireproofing Contractors Association

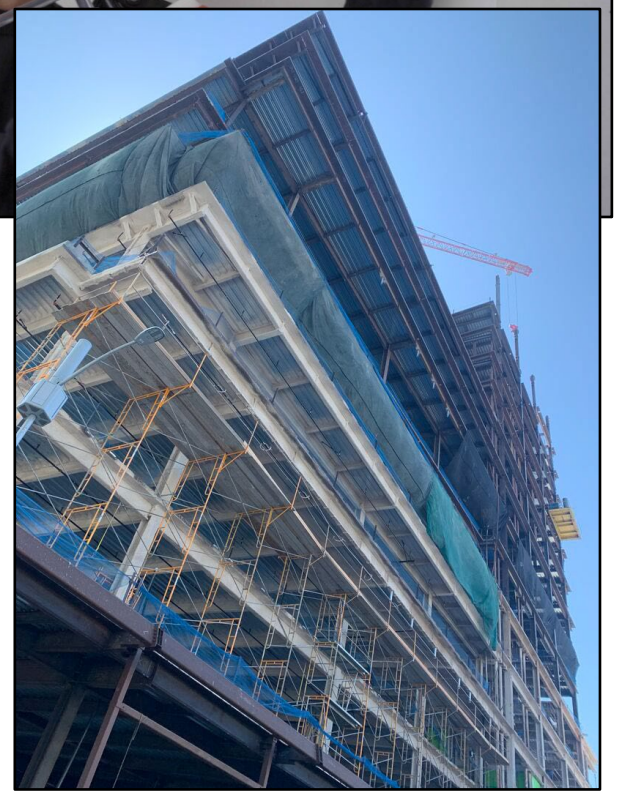
Bill McHugh, NFCA Technical Director
Rich Walke, CTI, Consultant to NFCA
Carl Fernald, PCI

NFCA FREE
Webinar Series

Learn –
Network Grow

Info@NFCA-Online.org

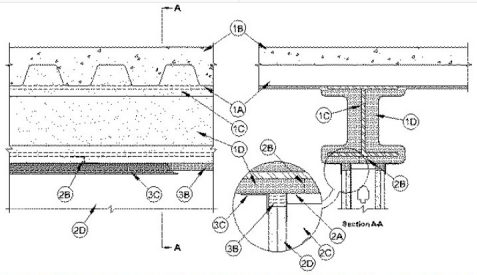
Systems & Materials …
Structural & Effective Compartmentation



UL Product iQ®

SEARCH MY SEARCHES MY TAGS BILL

Class II Movement Capabilities — 50% or 100 % Compression or Extension (See Item 3)	FH Ratings— 1 and 2 Hr (See Item 1)
L Rating At Ambient — Less Than 1 CFM/sq ft	FTH Ratings — 1 and 2 Hr (See Item 1)
L Rating At 400 F — Less Than 1 CFM/sq ft	Nominal Joint Width - 19 or 38 mm (See Item 3)
	Class II Movement Capabilities — 50% or 100 % Compression or Extension (See Item 3)
	L Rating At Ambient — Less Than 1.55 L/s/m
	L Rating At 204 C — Less Than 1.55 L/s/m



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 the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor And Floor Units* —** Max 3 in. (76 mm) deep galv steel fluted floor units.

B. **Concrete —** Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.

C. **Structural Steel Support —** Steel beam, as specified in the individual D700, D800, or D900 Series Floor-Ceiling Design, used to support steel floor units. Steel beam centered over and parallel with wall assembly.

D. **Spray-Applied Fire Resistive Material* —** After installation of the steel attachment clips (Item 2B), steel floor units and structural steel support to be sprayed with the min thickness of material specified in the individual D700, D800, or D900 Series Design. The flutes of the steel floor units are to be filled with material across the entire top flange of the steel beam. **Additional material shall be applied to the web of the steel beam on each side of the wall. For a 1 hr Assembly Rating, the thickness of material applied to each side of the steel beam web shall be 13/16 in. (21 mm). For a 2 hr Assembly Rating, the thickness of material applied to each side of the steel beam web shall be 1-3/8 in. (35 mm).**

Fire-Resistance Structural / Compartmentation

- Fireproofing Fire Test Standards – Structural and Compartmentation
  - ASTM E119 - UL 263 - ULC-S101
  - ISO Standards
    - Acceptance Criteria
    - Standard Time Temperature Curves, Worldwide
    - Loading – Fully? Partial? When and Where?
    - Restrained/Unrestrained
- Firestopping Fire Test Standards – Compartmentation
  - ASTM E814 – UL 1479
  - ASTM E1966 – UL 2079
  - ASTM E2307
  - ASTM E2837
    - F, T, L, W and M Ratings, Assembly Rating
- Fireproofing/Firestopping MEET!

Conditions of Acceptance – Columns

- **1000ºF (537ºC) Ave**
- **1200ºF (648ºC) Ind Point**

OR

Support load if tested load bearing

UL Image

UL Image: Raymond Image

UL Image

Conditions of Acceptance Floor/Ceilings or Roof/Ceilings

- Flame passage
- 250ºF / 325ºF
- Temperatures of supporting construction – Relates to Unrestrained Rating
- Support load – Relates to Restrained Rating

Fire-Resistance Testing – ASTM E119 / UL 263

- Columns
- Beams
- Floor/Ceilings or Roof/Ceilings
- Walls

Each Have Different Acceptance Criteria!!

Walls – U, V and W Series UL Designs

- **Tested in accordance with …'**
  - Standards – ASTM E119, UL 263, ULC-S101
    - Flame Passage
    - Heat Transmission
    - **Hose Stream Test**
  - BS 476, EN 1363, IS 3809
    - Insulation
    - Integrity

  No Hose Stream Test

- Special Inspection??
- No Contractor Qualifications

What is a Firestop System?

- Firestop Sealant?
- Firestop Products??
- Fire-Resistance-Rated Floors, Walls?
- Manufacturer’s Product Data Sheets?
- Manufacturers Sell Sheets?
- Safety Data Sheets?
- UL Listings?

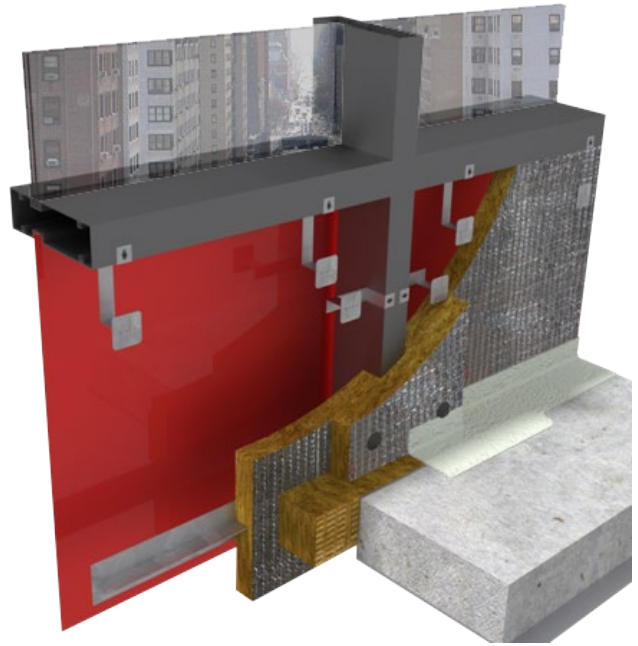
Firestopping for Continuity
Products become SYSTEMS Based on Testing

- **'Field Erected Construction…Tested to…'**
  - Standards – UL 1479, ASTM E814, FM 4990, ULC-S115, UL 2079, ASTM E1966, ASTM E2307, ASTM E2837
    - F Rating – Flame/Hose Stream
    - T Rating – Flame/Temp/Hose Stream
    - Assembly Rating – Flame/Temp/Hose Stream
    - L Rating – Smoke (Optional UL 1479 / 2079 only)
    - W Rating – Water (Optional UL 1479 / 2079 only)
    - M Rating – Movement
  - ISO 10295-1 – Integrity & Insulation Ratings
  - EN 1366-3 – Integrity & Insulation Ratings

3M Image

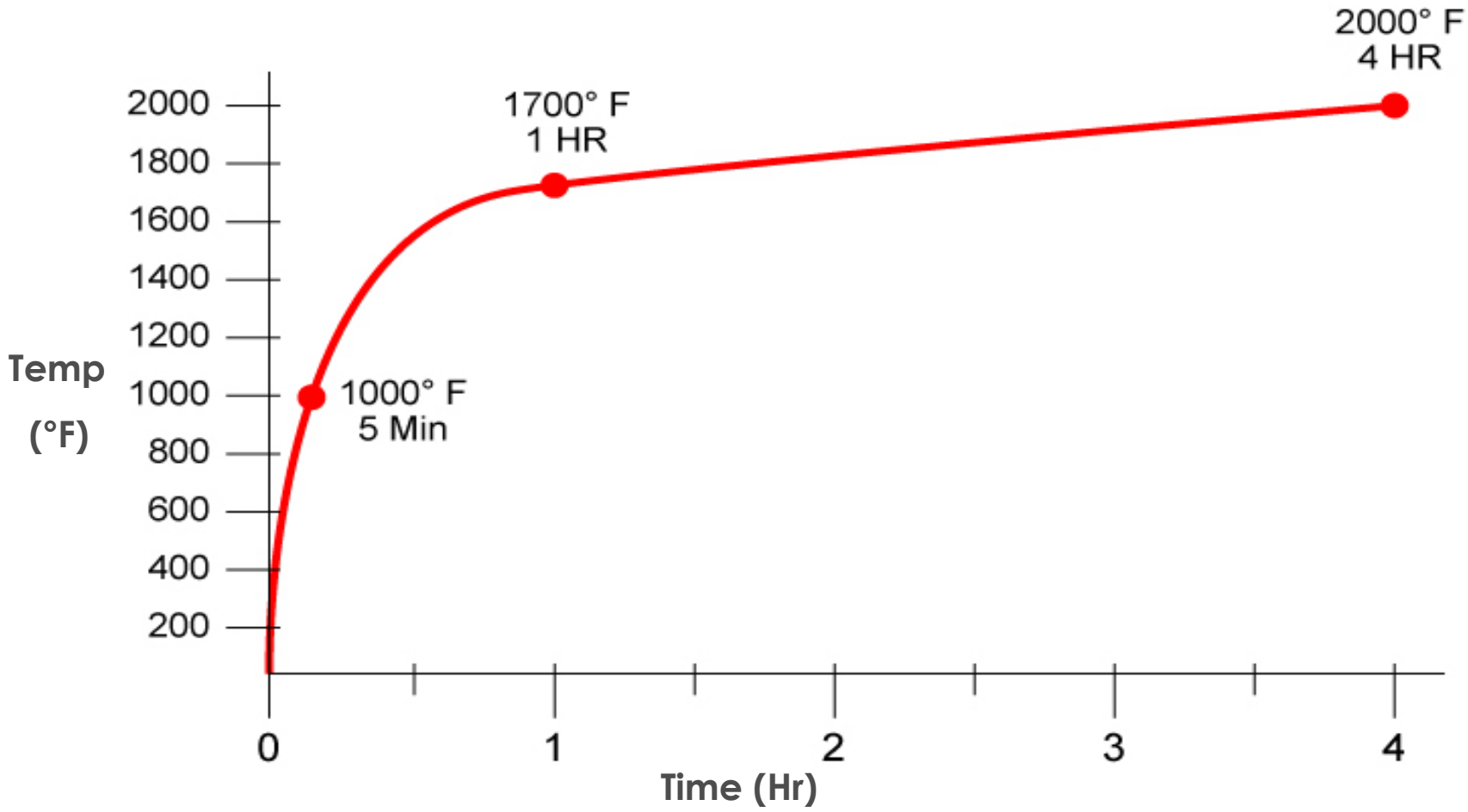
IBC & Curtain Walls – ASTM E2307

- Prevent Fire Spread – @ Interior Safing Slot
  - Interior Flame
  - Exterior Flame Plume from Window
  - Time & Temperature
  - Tested Systems….
- EN 13501-2



OCF/Thermafiber Graphics

Time Temperature Curve – Firestopping – Look familiar?




FCIA


FCI

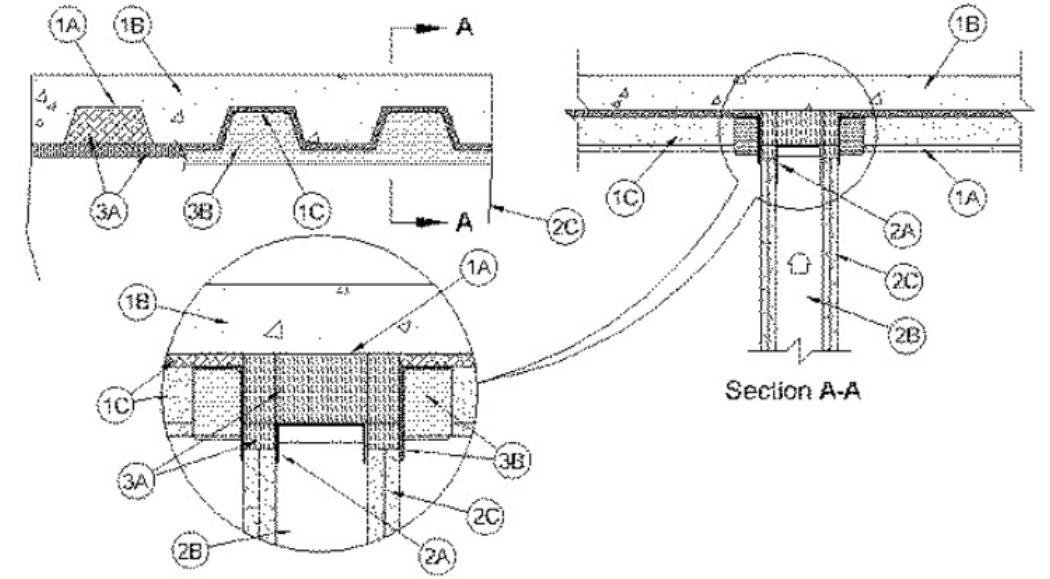

FCIA
FCIA
FCIA
Firestop Contractors International Association

Joints and Voids – HW-D-0255 – Gypsum Wall ⊥ Protected Deck – Mineral Wool and Spray

System No. HW-D-0255

July 22, 2005

Assembly Rating — 1 and 2 Hr (See Item 2)
Nominal Joint Width — 1 in.
Class I and II Movement Capabilities — 25% Compression and Extension



UL Solutions Image / Text HW-D-0255

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 Series Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor And Form Units* —** Max 3 in. deep galv steel fluted units.

B. **Concrete —** Min 2-1/2 in. thick reinforced concrete, as measured from the top plane of the floor units.

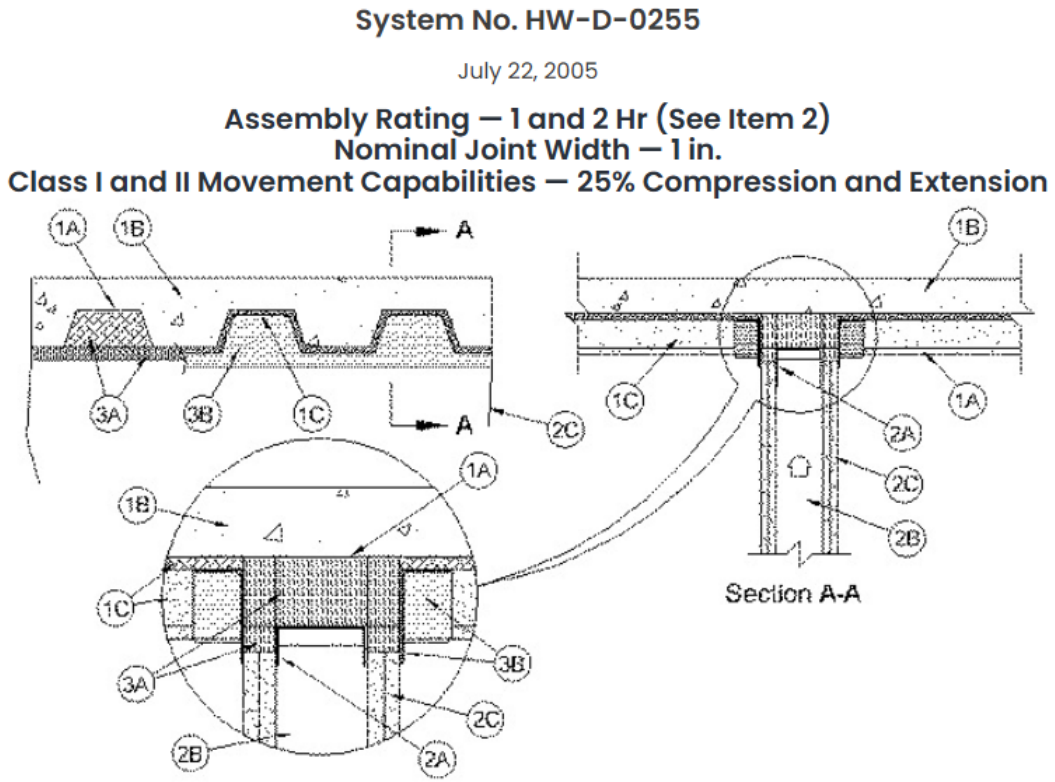
C. **Spray-Applied Fire Resistive Material* —** After installation of the ceiling runner (Item 2A) steel floor units to be sprayed with a min 5/16 in. to max 11/16 in. thickness of material in accordance with the specifications in the individual D700 Series Design. The spray-applied fire resistive material shall be excluded from the steel deck in the area immediately above the wall as well as from the flanges of the ceiling runner

GCP APPLIED TECHNOLOGIES INC — Type MK-6/HY

2. **Wall Assembly —** The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor and Ceiling Runners —** Floor and ceiling runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs . Ceiling runner to be provided with min 3 in. flanges. Ceiling runner is secured to steel floor or roof deck with steel fasteners or welds spaced max 24 in. OC.

Joints and Voids – HW-D-0255 – Gypsum Wall ⊥ Protected Deck – Mineral Wool and Spray



UL Solutions Image / Text HW-D-0255

3. **Joint System — Max separation between bottom of floor and top of wall is 1 in. The joint system is designed to accommodate a max 25 percent compression or extension from its installed width.** The joint system consists of a forming material and a fill material, as follows:

A. **Forming Material* —** Min 4 in. thickness of 4 pcf mineral wool batt insulation cut to fit the shape of the fluted deck and installed into the flutes of the steel floor units between the top of the ceiling runner and the steel deck. The mineral wool is to be compressed 33 percent in height and tightly packed such that it is flush with the flanges of the ceiling runner. Additional sections of mineral wool are cut to a thickness of 5/8 or 1-1/4 in. for 1 or 2 hr rated walls, resp and compressed 50 percent in height to completely fill the gap above the top of the gypsum board and the bottom of the steel deck. The additional sections of forming material are tightly packed and flush with both surfaces of the wall.

ROCK WOOL MANUFACTURING CO — Delta Board

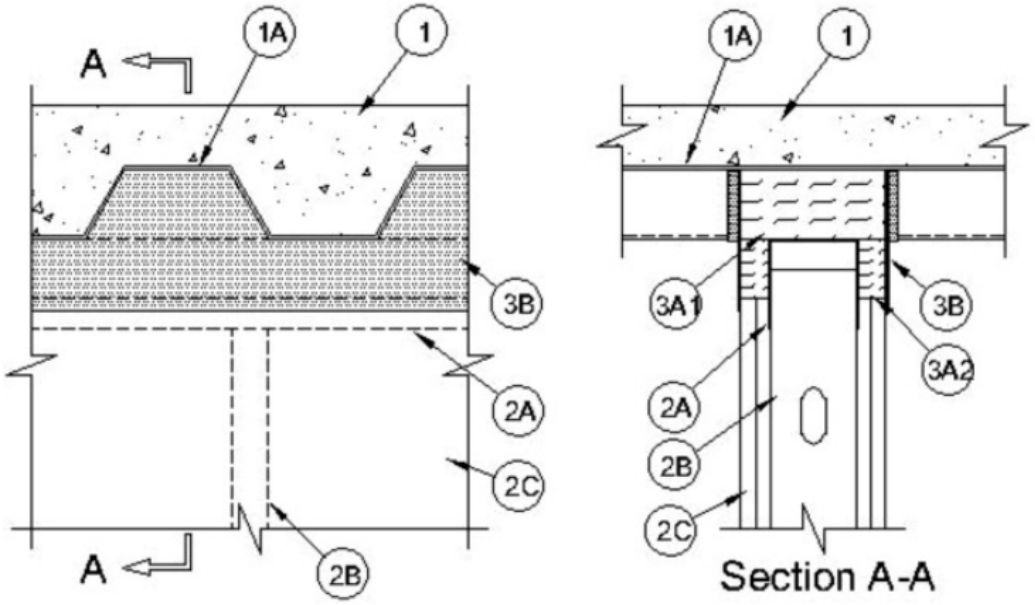
B. **Fill, Void or Cavity Material* —** Min 1/8 in. wet thickness of fill material applied on each side of the wall to completely cover mineral wool and overlap a min of 1/2 in. onto concrete wall and 2 in. onto the sprayed applied material (Item 1C).

TREMCO INC — TREMstop Acrylic SP

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Joints and Voids – HW-D-0538 – Gypsum Wall ⊥ Protected Deck – Mineral Wool and Spray

ANSI/UL2079
Assembly Ratings — 1 And 2 Hr (See Item 2)
Nominal Joint Width - 1-1/2 In.
Class II or III Movement Capabilities — 50% Compression or Extension
L Rating At Ambient — Less Than 1 CFM/Lin Ft
L Rating At 400 F — Less Than 1 CFM/Lin Ft



UL Solutions Image / Text HW-D-0538

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 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor and Form Units* —** Max 3 in. (76 mm) deep galv steel fluted floor units.

B. **Concrete —** Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.

C. **Steel Attachment Clips —** (Optional. Not Shown) - Used to secure ceiling runner when spray-applied fire resistive material (Item 1D) is applied to floor units prior to installation of ceiling runner of wall. Z-shaped clips formed from 1 in. (25 mm) wide strips of min 20 ga galv steel. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material on the steel floor unit with 1-1/2 in. (38 mm) long upper and lower legs. Legs of clips fastened to bottom of floor units (prior to application of spray-applied fire-resistive materials) with steel fasteners or welds. Clips spaced max 16 in. (406 mm) OC and extend to within 1/4 to 3/4 in. (6 to 19 mm) from the surface of the wall.

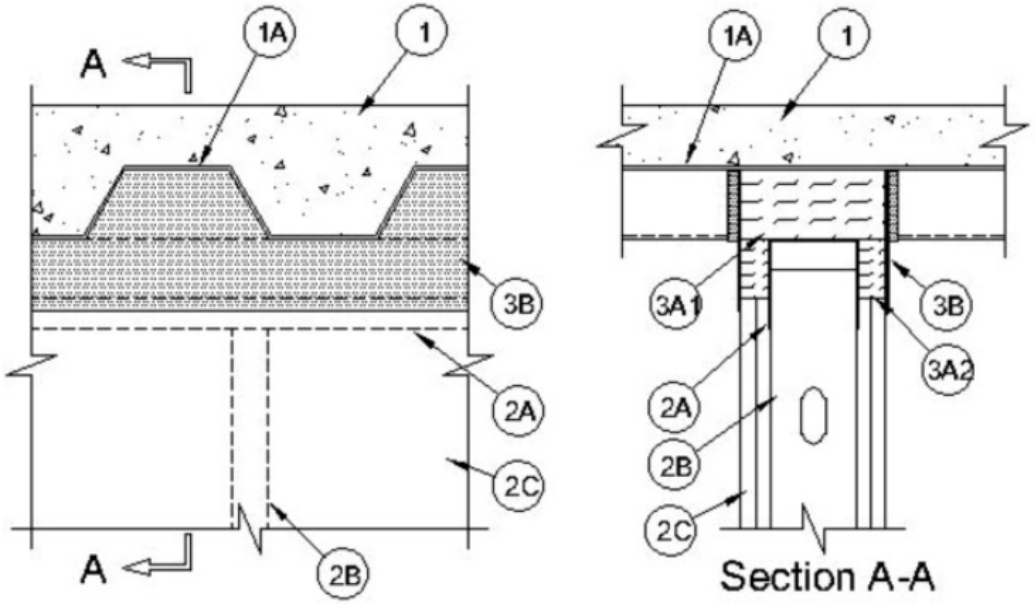
D. **Spray-Applied Fire Resistive Material* —** (Optional. Not Shown) - After installation of the ceiling runner, or prior to installation of the ceiling runner and after installation of the steel attachment clips (Item 1C), the steel floor units may be sprayed with the min thickness of material specified in the individual D700 Series Design.

ISOLATEK INTERNATIONAL — Type 300

GCP APPLIED TECHNOLOGIES INC — Type MK-6/HY

Joints and Voids – HW-D-0538 – Gypsum Wall ⊥ Protected Deck – Mineral Wool and Spray

ANSI/UL2079
Assembly Ratings — 1 And 2 Hr (See Item 2)
Nominal Joint Width - 1-1/2 In.
Class II or III Movement Capabilities — 50% Compression or Extension
L Rating At Ambient — Less Than 1 CFM/Lin Ft
L Rating At 400 F — Less Than 1 CFM/Lin Ft



UL Solutions Image / Text HW-D-0538

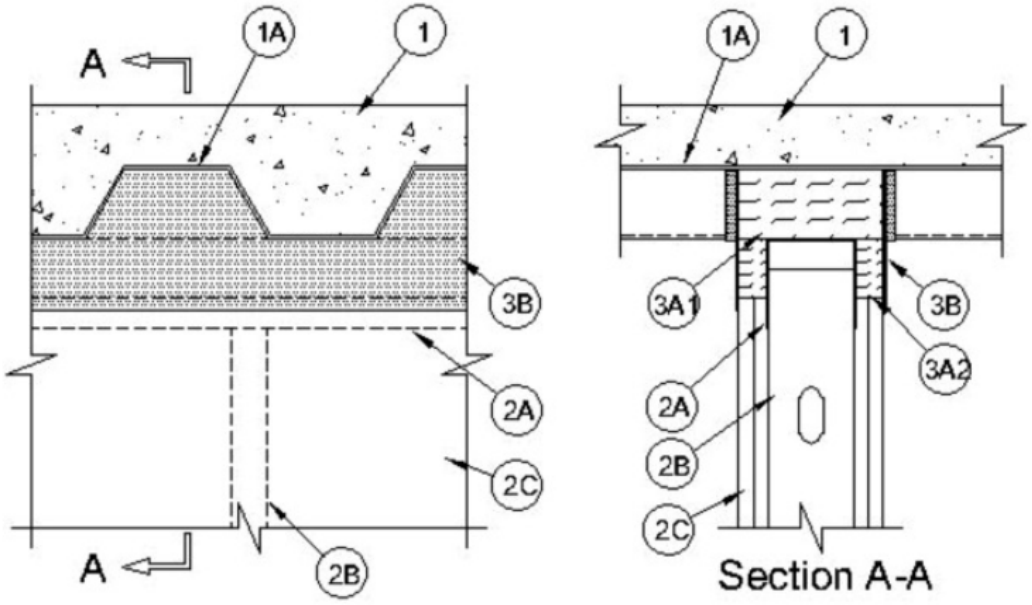
2. **Wall Assembly —** The 1 hr or 2 hr fire rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner described in the individual U400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor and Ceiling Runners —** Floor and ceiling runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs (Item 2B). Flange height of ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Ceiling runner installed perpendicular to the deck direction and secured to valleys of deck with masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC. For floor or roof decks with spray-applied fire resistive material, ceiling runner attached to steel attachment clips (Item 1C) with masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC.

3. **Joint System —** Max separation between bottom plane of floor or roof and top of gypsum board at time of installation of joint system is 1-1/2 in. (38 mm). The joint system is designed to accommodate a max 50 compression or extension from its installed width. The joint system consists of forming material and a fill material as follows:

Joints and Voids – HW-D-0538 – Gypsum Wall ⊥ Protected Deck – Mineral Wool and Spray

ANSI/UL2079
Assembly Ratings — 1 And 2 Hr (See Item 2)
Nominal Joint Width - 1-1/2 In.
Class II or III Movement Capabilities — 50% Compression or Extension
L Rating At Ambient — Less Than 1 CFM/Lin Ft
L Rating At 400 F — Less Than 1 CFM/Lin Ft



UL Solutions Image / Text HW-D-0538

A. **Forming Material* —** Min 4 pcf (64 kg/m^3) forming material sized to attain a min compression rate of 25 percent in the thickness direction and firmly packed to completely fill the flutes. Alternately, nom 4 pcf (64 kg/m^3) forming material cut to shape of flute and nom 1 in. (25 mm) longer than thickness of wall; mineral wool compressed from ends and firmly packed into each flute to attain a min compression rate of 14.3 percent in the length (wall thickness) direction to be flush with both wall surfaces. Additional pieces of batt insulation, 5/8 or 1-1/4 in. (16 or 32 mm) wide, shall be compressed 50 percent in thickness and installed cut edge first into gap between bottom of fluted floor or roof units and forming material within flutes, and top of gypsum board.
Johns Manville Corporation — MinWool-1200 Safing
B. **Fill, Void or Cavity Material* —** Min 1/16 in. (1.6 mm) dry thickness (min 1/8 in. or 3.2 mm wet thickness) of fill material sprayed on each side of the wall to completely cover mineral wool forming material and to overlap a min of 1/2 in. (13 mm) onto gypsum board and min of 1/2 in. (13 mm) onto the steel deck or 2 in. (51 mm) onto the spray-applied fire resistive material on steel deck, on both sides of wall.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-SP WB Firestop Joint Spray

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Joints and Voids – HW-D-0300 – Concrete Wall ⊥ Protected Deck – Mineral Wool and Spray

System No. HW-D-0300

October 16, 2015

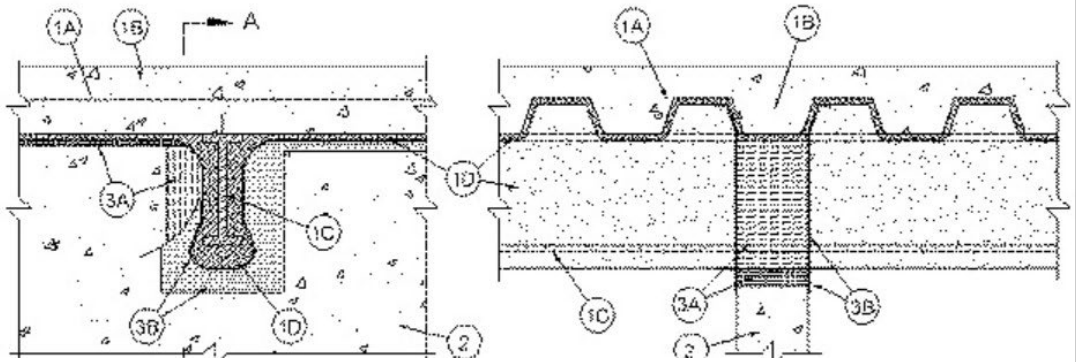
Assembly Ratings — 2 and 3 Hr (See Item 3A)

Nominal Joint Width — 1 and 2 In. (See Item 3)

Class II Movement Capabilities — 25% Compression or Extension

L Rating At Ambient - Less Than 1 CFM/Lin Ft

L Rating At 400 F - Less Than 1 CFM/Lin Ft



UL Solutions Image / Text HW-D0300

1A. **Roof Assembly (Not Shown) —** As an alternate to the floor assembly, a fire-rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P700 and P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly.

The roof assembly shall include the following construction details:

A.Steel Roof Deck — Max 2 in. (51 mm) deep galv steel fluted roof deck.

B.Roof Insulation — For P900 Series Designs, min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the roof deck. For P700 Series Designs, as specified in the individual P700 Series Design.

C. Spray-Applied Fire Resistive Materials* — Prior to the installation of the Forming Material and Fill, Void or Cavity Material (Items 3A and 3B, respectively), the steel roof deck shall be sprayed with the thickness of material specified in the individual P700 Series Design. For P900 Series Designs, structural steel supports only to be sprayed in accordance with the specifications in the individual P900 Series Design.

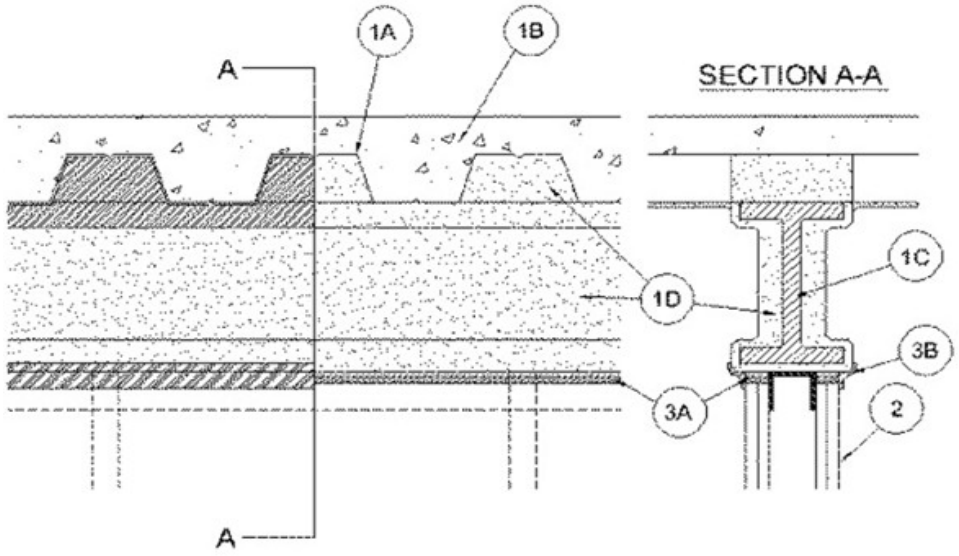
ISOLATEK INTERNATIONAL — Type 300

GCP APPLIED TECHNOLOGIES INC — Type MK-6/HY, MK-6/HY ES, MK-6S and RG

The hourly fire rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly.

Joints and Voids – HW-D-0259 – Gypsum Wall II & Beneath Protected Beam – Mineral Wool and Spray

ANSI/UL2079
Assembly Ratings — 1 and 2 Hr (See Items 1 and 2)
Nominal Joint Width - 1-1/2 In.
Class II Movement Capabilities — 50% Compression or Extension
L Rating At Ambient — Less Than 1 CFM/lin ft
L Rating At 400 F — Less Than 1 CFM/lin ft



UL Solutions Image / Text HW-D0259

1. **Floor Assembly —** The fire-rated fluted steel floor unit/concrete floor assembly shall be constructed of the materials and in the manner described in the individual Floor-Ceiling Design in the Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor and Form Units* —** Max 3 in. (76 mm) deep galv steel fluted floor units.

B. **Concrete —** Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.

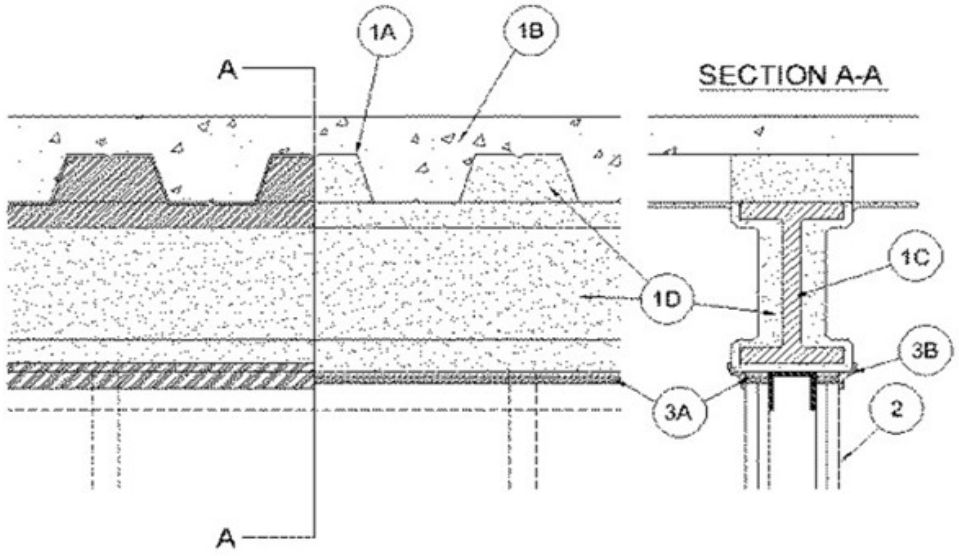
C. **Structural Steel Support —** Steel beam, as specified in the individual D700 or D900 Series Floor-Ceiling Design, used to support steel floor units. Structural steel support centered over and parallel with wall assembly.

D. **Spray-Applied Fire Resistive Material* —** Steel floor units and structural steel beam to be sprayed with the thickness of material specified in the individual D700 Series Design or the structural steel supports to be sprayed in accordance with the specifications in the individual D900 Series Design. The flutes of the steel floor units are to be filled with material across the entire top flange of the steel beam. Additional material shall be applied to the web of the steel beam on each side of the wall. **For a 1 hr Assembly Rating, the total thickness of material applied to each side of the steel beam web shall be min 13/16 in. (21 mm). For a 2 hr Assembly Rating, the total thickness of material applied to each side of the steel beam web shall be min 1-3/8 in. (35 mm).**

GCP APPLIED TECHNOLOGIES INC — Types MK-6-HY or MK-10HB

Joints and Voids – HW-D-0259 – Gypsum Wall ll & Beneath Protected Beam – Mineral Wool and Spray

ANSI/UL2079
Assembly Ratings — 1 and 2 Hr (See Items 1 and 2)
Nominal Joint Width - 1-1/2 In.
Class II Movement Capabilities — 50% Compression or Extension
L Rating At Ambient — Less Than 1 CFM/lin ft
L Rating At 400 F — Less Than 1 CFM/lin ft



UL Solutions Image / Text HW-D0259

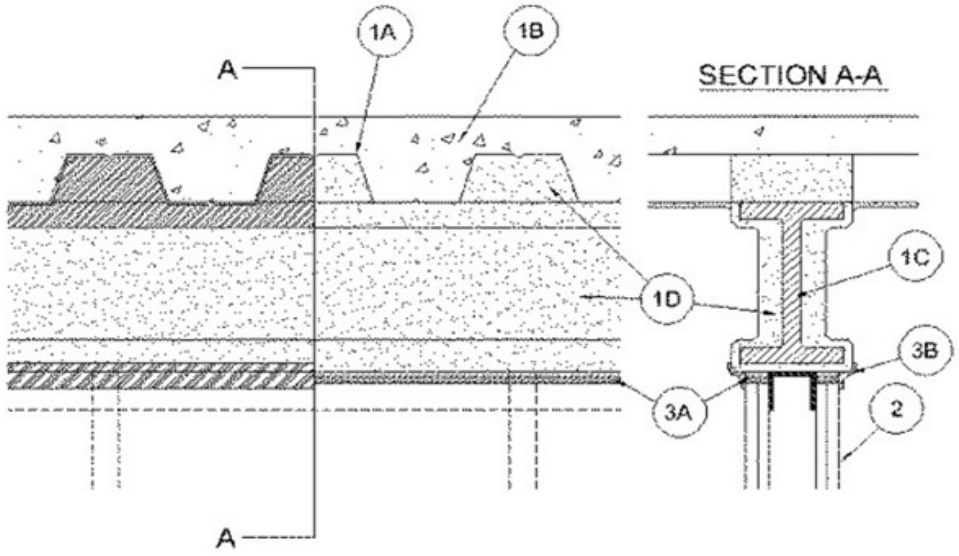
2. **Wall Assembly* —** The 1 or 2 h fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor and Ceiling Runners —** Floor and ceiling runners of wall assembly shall consist of min No. 25 gauge galv steel channels sized to accommodate steel studs (Item 2B). Flange height of ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Ceiling runner centered beneath and parallel with steel beam (Item 1C). Ceiling runner secured to steel beam through spray-applied fire resistive material with steel fasteners spaced max 24 in. (610 mm) OC.

3. **Joint System — Max separation between bottom of spray-applied fire resistive material on beam and top of gypsum board at time of installation is 1-1/2 in. (38 mm). The joint system is designed to accommodate a max 50 percent compression or extension from its installed width.** The joint system consists of a forming material and a fill material between the top of the gypsum board and the bottom of the spray-applied fire resistive material on the beam, as follows:

Joints and Voids – HW-D-0259 – Gypsum Wall II & Beneath Protected Beam – Mineral Wool and Spray

ANSI/UL2079
Assembly Ratings — 1 and 2 Hr (See Items 1 and 2)
Nominal Joint Width - 1-1/2 In.
Class II Movement Capabilities — 50% Compression or Extension
L Rating At Ambient — Less Than 1 CFM/lin ft
L Rating At 400 F — Less Than 1 CFM/lin ft



UL Solutions Image / Text HW-D0259

A. **Forming Material* —** Nominal 4 pcf (64 kg/m^3) mineral wool forming material cut into strips to fill the gap between top of the gypsum board and bottom of beam. Width of the strips shall be equal to the total thickness of the gypsum board. The strips of mineral wool shall be compressed 50 percent in thickness and firmly packed into the gap between the top of gypsum board and bottom of beam.

ROCK WOOL MANUFACTURING CO — Delta Board

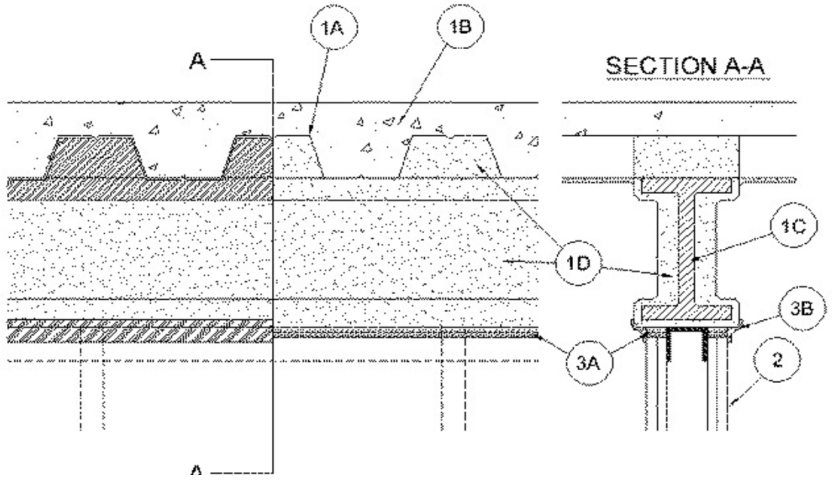
B. **Fill, Void or Cavity Material* —** Min 1/16 in. (1.6 mm) dry thickness (min 1/8 in. or 3.2 mm wet thickness) of fill material sprayed or troweled on each side of wall to completely cover mineral wool forming material and to overlap 1/2 in. (13 mm) onto gypsum board and 2 in. (51 mm) onto spray-applied fire resistive material on the structural steel support.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP672 Firestop Spray or CFS-SP WB Firestop Joint Spray

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Joints and Voids – HW-D-0259 – Gypsum Wall ll & Beneath Protected Beam – Mineral Wool and Spray

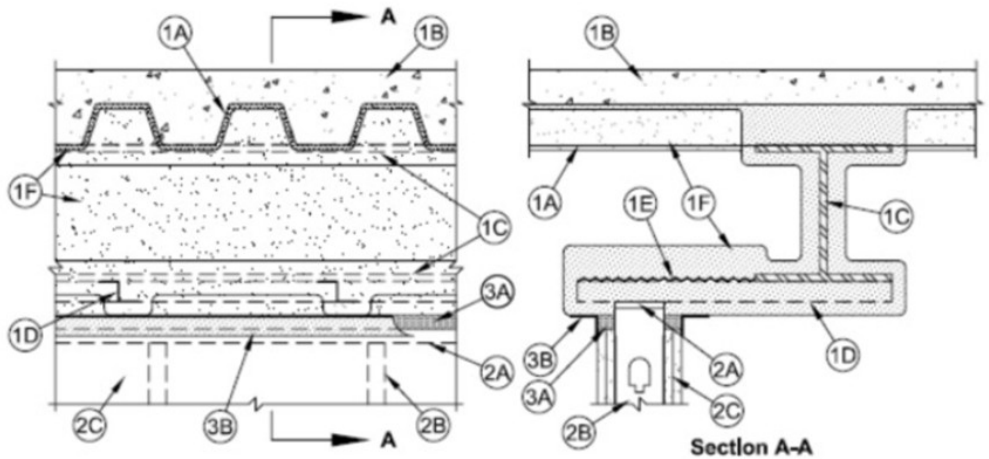
- INCREASED Fireproofing Thickness – WEB OF BEAM
  - **Acceptance Criteria** – 250°F (F139°C) Ave Rise / 325°F (181°C) Individual Point Rise on non-fire side
- Rest of beam protected based on beam design
- Continuous FP @ Bottom
- Clips? Top Track Attachment?
- Sequencing??



UL Solutions Image

Joints and Voids – HW-D-0617 – Gypsum Wall Offset from Protected Beam – Mineral Wool and Spray

ANSI/UL2079
Assembly Ratings — 1 and 2 Hr (See Items 1 and 2)
Maximum Joint Width - 3/4 or 1-1/2 In. (See Item 3)
Class II or III Movement Capabilities - 25%, 50% or 100%Compression or Extension (See Item 3)
L Rating At Ambient — Less Than 1 CFM/sq ft
L Rating At 400 F — Less Than 1 CFM/sq ft



UL Solutions Image / Text HW-D617

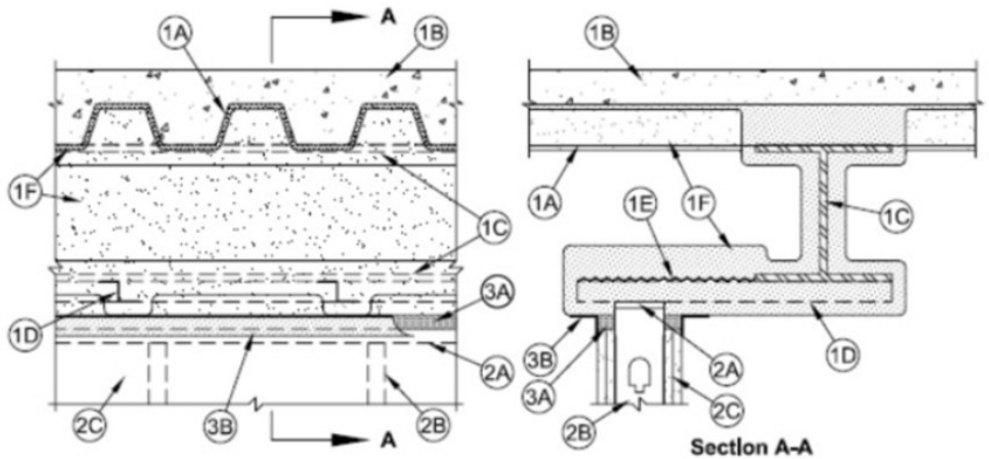
1. **Floor Assembly —** The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:

D. **Steel Attachment Clips —** Z-shaped bars or channels, located to span from steel beam to min 1 in. (25 mm) beyond face of wall and spaced max 24 in. (610 mm) on center. Z-shaped bars are nom 1-1/2 to 2 in. (38 to 51 mm) deep and formed from min 16 gauge painted or galvanized steel. Channels are nom 1-1/2 in. (38 mm) or 2 in. (51 mm) deep and formed from min 16 gauge painted or galvanized steel. Each bar or channel welded to steel beam and welded, bolted or screwed to ceiling runner of wall. Each bar or channel shall be fully covered with spray applied fire resistive material (Item 1F) to the minimum thickness of material required on the flanges of the steel beam.

E. **Steel Lath —** Nom 3/8 in. (10 mm) diamond mesh expanded steel rib lath having a nom weight of 3.4 lb/yd^2 (1.8 kg/m^2) shall be installed over and attached to the steel attachment clip bars or channels (Item 1D) to completely cover the exposed area from the flange tip of the steel beam to the end of the bar/channel framing extending beyond the wall surface. The lath shall be secured with steel fasteners or tie wire and shall be fully covered with spray applied fire resistive material (Item 1F).

Joints and Voids – HW-D-0617 – Gypsum Wall Offset from Protected Beam – Mineral Wool and Spray

ANSI/UL2079
Assembly Ratings — 1 and 2 Hr (See Items 1 and 2)
Maximum Joint Width - 3/4 or 1-1/2 In. (See Item 3)
Class II or III Movement Capabilities - 25%, 50% or 100%Compression or Extension (See Item 3)
L Rating At Ambient — Less Than 1 CFM/sq ft
L Rating At 400 F — Less Than 1 CFM/sq ft



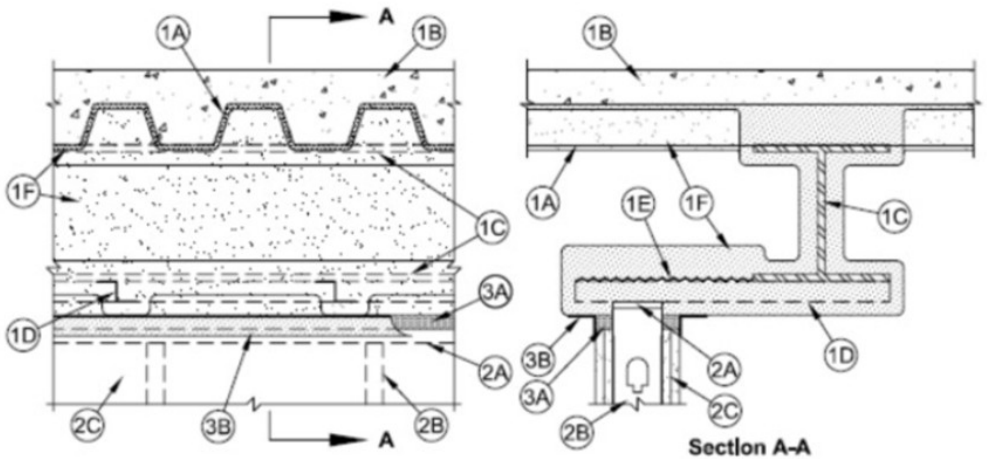
UL Solutions Image / Text HW-D617

F. **Spray-Applied Fire Resistive Material* —** After installation of steel attachment clip and steel lath (Items 1D and 1E), steel floor units and structural steel support to be sprayed with the min thickness of material specified in the individual D700 or D900 Series Design. The flutes of the steel floor units are to be filled with material across the entire top flange of the steel beam. Each bar or channel attachment clip member (Item 1D) shall be fully covered with spray applied fire resistive material to the minimum thickness of material required on the flanges of the steel beam. The thickness of material applied to the expanded steel lath shall be sufficient to completely fill the spaces between the bar/channel attachment clip above the wall. Additional material shall be applied to the web of the steel beam on each side of the wall. The min total thickness of material applied to each side of the steel beam web shall be 13/16 in. (21 mm) for 1 hr fire rated assemblies and 1 3/8 in. (35 mm) for 2 hr fire rated assemblies. For D700 Series Designs, all surfaces of the steel floor units to be sprayed with the thickness of material specified in the individual D700 Series Design. For D900 Series Designs structural steel supports, steel attachment clip and steel lath only to be sprayed in accordance with the specifications in the individual D900 Series Design.

GCP APPLIED TECHNOLOGIES INC — Type MK-6/HY, MK-6/HYES, MK-65 and RG

Joints and Voids – HW-D-0617 – Gypsum Wall Offset from Protected Beam – Mineral Wool and Spray

ANSI/UL2079
Assembly Ratings — 1 and 2 Hr (See Items 1 and 2)
Maximum Joint Width - 3/4 or 1-1/2 In. (See Item 3)
Class II or III Movement Capabilities - 25%, 50% or 100%Compression or Extension (See Item 3)
L Rating At Ambient — Less Than 1 CFM/sq ft
L Rating At 400 F — Less Than 1 CFM/sq ft



UL Solutions Image / Text HW-D617

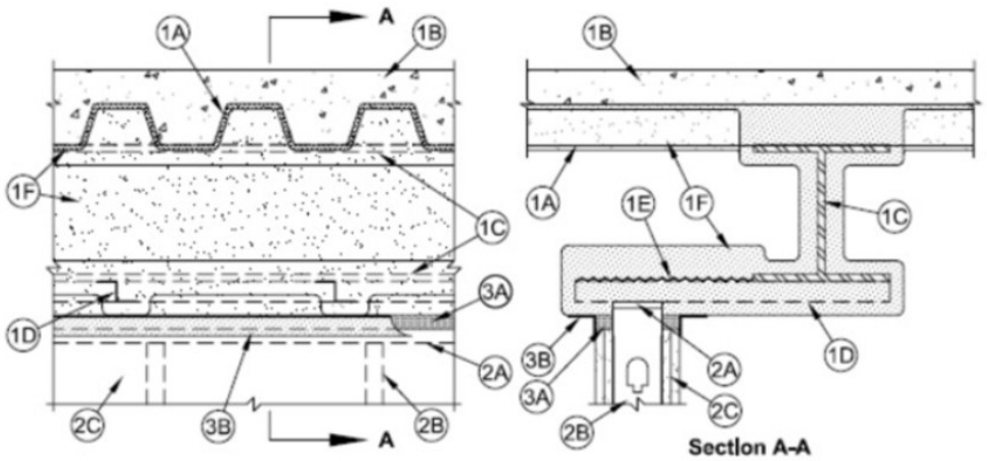
2. **Wall Assembly —** The 1 or 2 hr fire rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor and Ceiling Runners —** Floor and ceiling runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs (Item 2B). Ceiling runner to be provided with min 1-1/4 in. (32 mm) to max 3 in. (76 mm) flanges. Flange height of ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Ceiling runner is secured to steel attachment clip (Item 1D) with steel fasteners or welds spaced max 24 in. (610 mm) OC. Ceiling runner to be installed parallel with structural steel support and located such that a max clearance of 8 in. (203 mm) is present between the finished wall and the flange of the steel beam (Item 1C).

3. Joint System — Max separation between bottom plane of spray-applied fire resistive material on the steel attachment clip (Item 1D) and the top of the gypsum board is 3/4 or 1-1/2 in. (19 or 38 mm). When Item 3A1 is used in lieu of the mineral wool strips described in Item 3A, the maximum joint width is 3/4 in. (19 mm) and the movement capability of the joint system is 100 percent compression or extension. Otherwise, the movement capability of the joint system is 50 percent compression or extension when spray sealant (Item 3B) is used or 25 percent compression only when sealant (Item 3C) is used. The joint system shall consist of forming and fill materials, as follows:

Joints and Voids – HW-D-0617 – Gypsum Wall Offset from Protected Beam – Mineral Wool and Spray

ANSI/UL2079
Assembly Ratings — 1 and 2 Hr (See Items 1 and 2)
Maximum Joint Width - 3/4 or 1-1/2 In. (See Item 3)
Class II or III Movement Capabilities - 25%, 50% or 100%Compression or Extension (See Item 3)
L Rating At Ambient — Less Than 1 CFM/sq ft
L Rating At 400 F — Less Than 1 CFM/sq ft



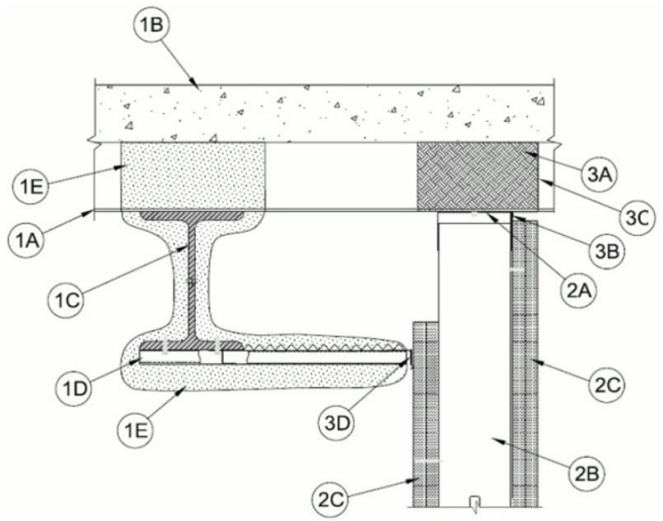
UL Solutions Image / Text HW-D617

A. **Forming Material* —** Nom 4 pcf (64 kg/m^3) density mineral wool batt insulation. Sections of mineral wool batt cut to a thickness equal to the overall thickness of gypsum board and compressed a min of 50 percent into the gap between the top of the gypsum board and the bottom plane of the spray applied fire resistive material on the steel attachment clip (Item 1D) on both sides of the wall assembly.
Johns Manville Corporation — MinWool-1200 Safing
B. **Fill, Void or Cavity Material* — Sealant —** A min 1/8 in. (3 mm) wet thickness (min 1/16 in. or 1.6 mm dry thickness) of fill material applied on each side of wall to completely cover forming material and to overlap min 1/2 in. (13 mm) onto wall and min 2 in. (51 mm) onto spray-applied fire resistive material.
SPECIFIED TECHNOLOGIES INC — SpecSeal AS200 Elastomeric Spray

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Joints and Voids – HW-D-0718 – Gypsum Wall Offset from Protected Beam – Mineral Wool and Spray

ANSI/UL2079
Assembly Rating — 1 and 2 Hr (See Item 2)
Nominal Joint Width - 1/2 in. and 1 in.
Class II or III Movement Capabilities — 100% Compression or Extension for 1/2 in. Joint; 100% Compression or 0% Extension for 1 in. Joint
L Rating at Ambient — Less than 1 CFM/Lin Ft
L Rating at 400°F — Less than 1 CFM/Lin Ft



UL Solutions Image / Text HW-D718

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 Series Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:

C. **Structural Steel Support —** Steel beam, as specified in the individual D700 Series Floor-Ceiling Design, used to support steel floor units. Structural steel support oriented parallel to and 1 to 7 in. (25 to 178 mm) from wall assembly.

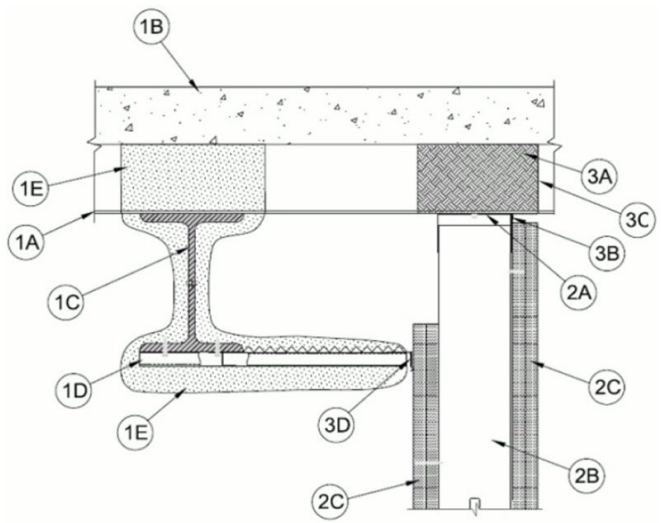
D. **Steel Attachment Clips —** Z-shaped clips formed from 1 in. (25 mm) wide strips of min 20 ga galv steel. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material on the bottom flange of the steel beam with 1-1/2 in. (38 mm) long upper and lower legs. Legs of clips fastened to bottom of beam (prior to application of spray-applied fire-resistive materials) with steel fasteners or welds. Clips spaced max 16 in. (406 mm) OC and extend to within 1/4 to 3/4 in. (6 to 19 mm) from the surface of the wall.

E. **Spray-Applied Fire Resistive Material* —** After installation of the steel attachment clips, structural steel support to be sprayed with the min thickness of material specified in the individual D700 Series Design. The flutes of the steel floor units are to be filled with material across the entire top flange of the steel beam. In addition, the flutes of the steel floor units immediately above the wall may be filled with material to the full thickness of the wall as an alternate to Items 3A and 3C.

ISOLATEK INTERNATIONAL — Type 300

Joints and Voids – HW-D-0718 – Gypsum Wall Offset from Protected Beam – Mineral Wool and Spray

ANSI/UL2079
Assembly Rating — 1 and 2 Hr (See Item 2)
Nominal Joint Width - 1/2 in. and 1 in.
Class II or III Movement Capabilities — 100% Compression or Extension for 1/2 in. Joint; 100% Compression or 0% Extension for 1 in. Joint
L Rating at Ambient — Less than 1 CFM/Lin Ft
L Rating at 400°F — Less than 1 CFM/Lin Ft



UL Solutions Image / Text HW-D718

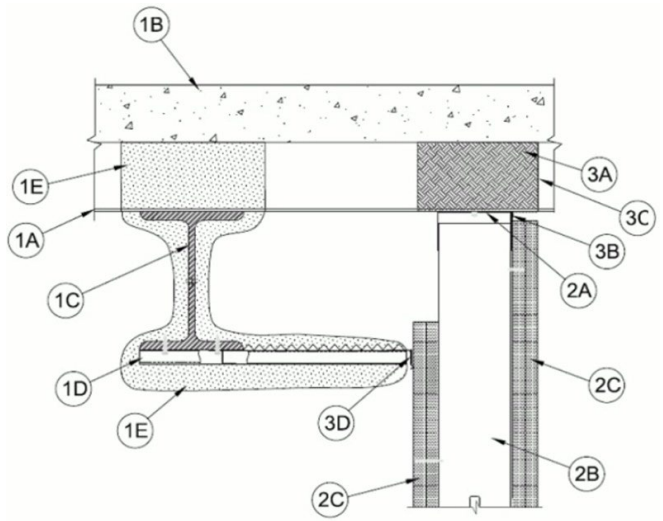
2. **Wall Assembly —** The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor and Ceiling Runners —** Channel shaped ceiling runner with width to accommodate studs, legs of min 2 in. (51 mm), and fabricated from min 24 MSG galv steel. Ceiling runner installed perpendicular to steel deck direction. Floor runners of wall assembly shall consist of min No. 25 ga galv steel channels sized to accommodate the steel studs. Floor runner to be provided with min 1-1/4 in. (32mm) flanges. Ceiling runner to be attached to steel deck with steel fasteners spaced a max of 24 in. (610 mm) O.C.

C. **Gypsum Board* —** Gypsum board sheets installed to a min total 5/8 in. (16 mm) or 1-1/4 in. (32 mm) thickness on each side of wall for 1 and 2 hr fire rated assemblies, respectively. Gypsum board to extend min 3 in. (76 mm) above the bottom of Z clips on side of wall adjacent to beam. Wall to be constructed as specified in the individual Design in the UL Fire Resistance Directory except that a max 1 in. (25 mm) gap shall be maintained between the top of the gypsum board and the bottom of the steel floor or roof assembly on the full height wall side. The screws attaching the gypsum board to the studs along the top of the wall shall be located 3 to 3-1/2 in. (76 to 89 mm) below the bottom of the steel deck at time of installation. No gypsum board attachment screws shall be driven into the ceiling runner. The screws attaching the gypsum board to the studs at the beam side of the wall shall be located max 2 in. (51 mm) below the bottom of the Z clips.

Joints and Voids – HW-D-0718 – Gypsum Wall Offset from Protected Beam – Mineral Wool and Spray

ANSI/UL2079
Assembly Rating — 1 and 2 Hr (See Item 2)
Nominal Joint Width - 1/2 in. and 1 in.
Class II or III Movement Capabilities — 100% Compression or Extension for 1/2 in. Joint; 100% Compression or 0% Extension for 1 in. Joint
L Rating at Ambient — Less than 1 CFM/Lin Ft
L Rating at 400°F — Less than 1 CFM/Lin Ft



UL Solutions Image / Text HW-D718

3. **Joint System — Max separation between bottom of steel floor or roof unit and top of wall (at time of installation of joint system) is 1 in. (25 mm). The joint system is designed to accommodate a max 100 percent compression or extension from its installed width when joint width is nom 1/2 in. The joint system is designed to accommodate a max 100 percent compression or 0% extension from its installed width when joint width is nom 1 in.** The joint system shall consist of the following:

A. **Forming Material* —** Min 4 pcf (64 kg/m^3) mineral wool insulation cut to the shape of the fluted steel floor units, approx 33% larger than the area of the flutes. Pieces compressed and inserted into the flutes above the top ceiling runner flush with gypsum board on both sides of wall. As an option, the spray-applied fire resistive material described in Item 1 can be used in place of the packing material.

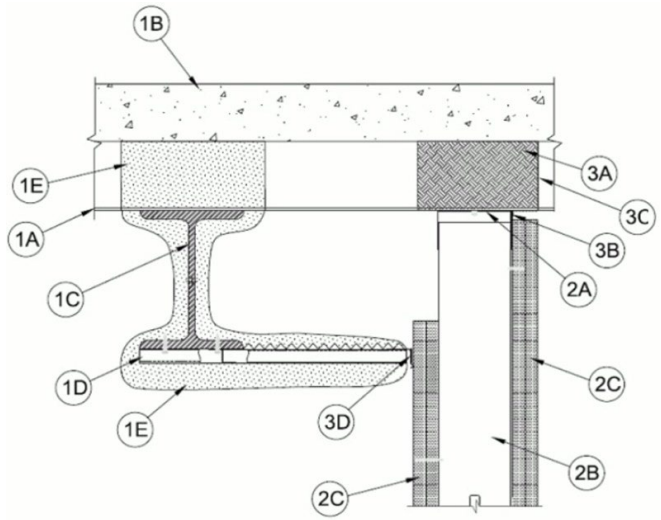
See **Forming Material** (XHKU) category in the Fire Resistance Directory for names of manufacturers.

D. **Fill, Void or Cavity Material* —** A nom 20 gauge steel angle provided with a nom 1 in. (25 mm) wide intumescent strip on one leg. Angle to be secured to the steel attachment clips (Item 1D) with min No. 8 steel sheet metal screws such that the intumescent strip is flat against the outer surface of the wall.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Firestik FS1

Joints and Voids – HW-D-0718 – Gypsum Wall Offset from Protected Beam – Mineral Wool and Spray

ANSI/UL2079
Assembly Rating — 1 and 2 Hr (See Item 2)
Nominal Joint Width - 1/2 in. and 1 in.
Class II or III Movement Capabilities — 100% Compression or Extension for 1/2 in. Joint; 100% Compression or 0% Extension for 1 in. Joint
L Rating at Ambient — Less than 1 CFM/Lin Ft
L Rating at 400°F — Less than 1 CFM/Lin Ft



UL Solutions Image / Text HW-D718

E. **Spray-Applied Fire Resistive Material* —** Nom 3/8 in. (10 mm) diamond mesh expanded steel rib lath having a nom weight of 3.4 lb/yd^2 (1.8 kg/m^2) shall be installed over and attached to the steel attachment clip bars or channels (Item 1D) to completely cover the exposed area from the flange tip of the steel beam to the end of the bar/channel framing extending beyond the wall surface, to the minimum thickness of material required on the flanges of the steel beam. The lath shall be secured with steel fasteners or tie wire, and the attachment clips, lath and space between clips shall be fully covered with spray applied fire resistive material (Item 1E).

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

National Fireproofing Contractors Association

Thanks for Attending!!!

National Fireproofing Contractors Association

National Fireproofing Contractors Association
800 Roosevelt Road – Building C, Suite 312
Glen Ellyn, IL 60137 USA
*1-**708-236-3411 – Info@NFCA-online.org**
www.NFCA-online.org

How do Contractors Select/Analyze Systems & Inspection Agencies Analyze?

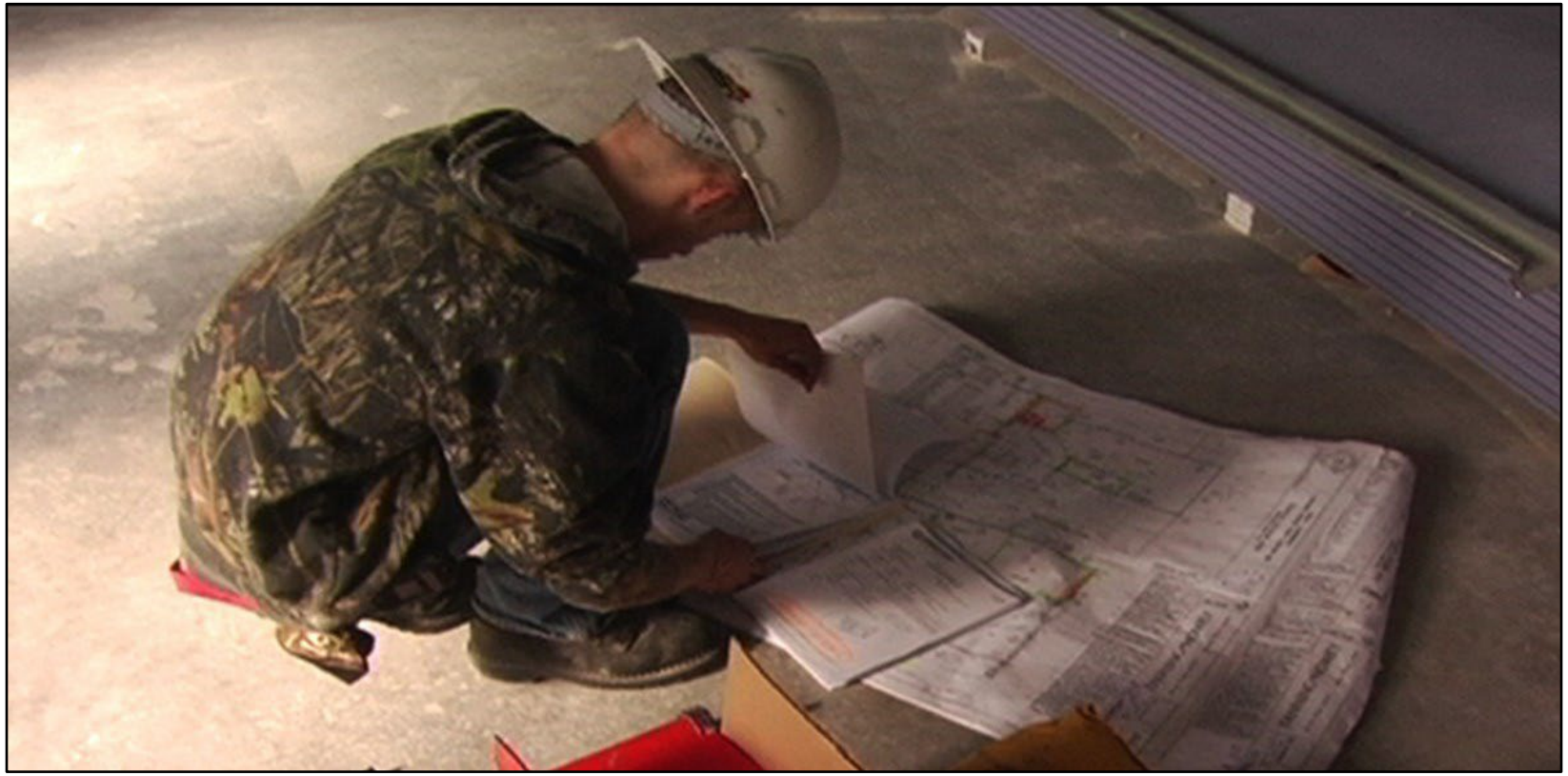
- Wall or Floor Construction Type, Rating
- Wall or Floor Thickness
- Penetrating Item, Coverings
- Size, Type, Thickness
- Annular Space, Joint, Breach Sizes
- Packing/Damming/Backing Materials
- Fill Material(s)

STI Graphic

= Rated Firestop System Installed Based on Manufacturers Instructions, & Tested & Listed Systems

I – Installation – Listed Systems – ALL FIRESTOPPING

- New 2027 DRAFT Code Requirement
  - *LISTINGS Mandatory on Jobsite!!*



Firestopping for Continuity – Firestop Products

- Sealants
  - Silicone, Acrylic/Latex, Intumescent
- Wrap Strips & Collars
  - “Thick, Thin, Wide, Less Wide”
- Putties
- Pre Fabricated MCT Devices
- Fire Pillows
- Mortar
- Composite Sheets
- Bricks / Plugs
- Spray Products
- Tapes
- Cavity Barriers, Strips

AstroFlame, Fischer, Promat, STI, 3M, AD, HILTI, Nelson Photos

Who Installs Firestopping?

- **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 Firestop Contractors***

FM 4991 & UL/ULC QFC Requirements

- **FM, UL/ULC Firestop Exam @ 80% min.**
- **Management System (MS) Written**
- **MS Procedures implemented**
- **MS Audit @.....**
  - **Contractor Office** – Records & Documents
  - **Jobsite** – Observation, possible destructive

FM 4991 & UL/ULC QFC

- UL QUALIFIED or FM 4991 APPROVED
- DRI – Appointed by Contractor, CEU's
- Listed @
  - FCIA.org
  - ApprovalGuide.com
  - UL.com/PiQ

www.UL.com/PiQ

www.ApprovalGuide.com

Fireproofing Contractor Qualifications – NFCA Contractor Accreditation Program

1. NFCA Education - Quality, Application
2. Employ a DRI….
   - ***Designated Responsible Individual (DRI)***
   - PASS SFRM, IFRM Fireproofing Exam @ 80% or better
   - DRI employed by CAP Firm
3. CEU's – 30 over 3 years or RE-EXAM
4. Annual Renewal
5. No Audits Require

SFRM Accredited Contractor
NFCA®
National Fireproofing Contractors Association

IFRM Accredited Contractor
NFCA®
National Fireproofing Contractors Association

Contractor Qualifications – UL QFCP

- UL Qualified SFRM Fireproofing Contractors
  - NFCA Education
    - NFCA HAFK, DRI
    - UL Program Guide, Product iQ
  - NFCA SFRM Fireproofing Exam
  - Management System
  - UL Audits –
    - Office
    - Field

CERTIFIED
MANAGEMENT SYSTEM
QUALIFIED FIRESTOP CONTRACTOR

Firestopping Safety – FOLLOW SPECIFIC COMPANY REQUIREMENTS

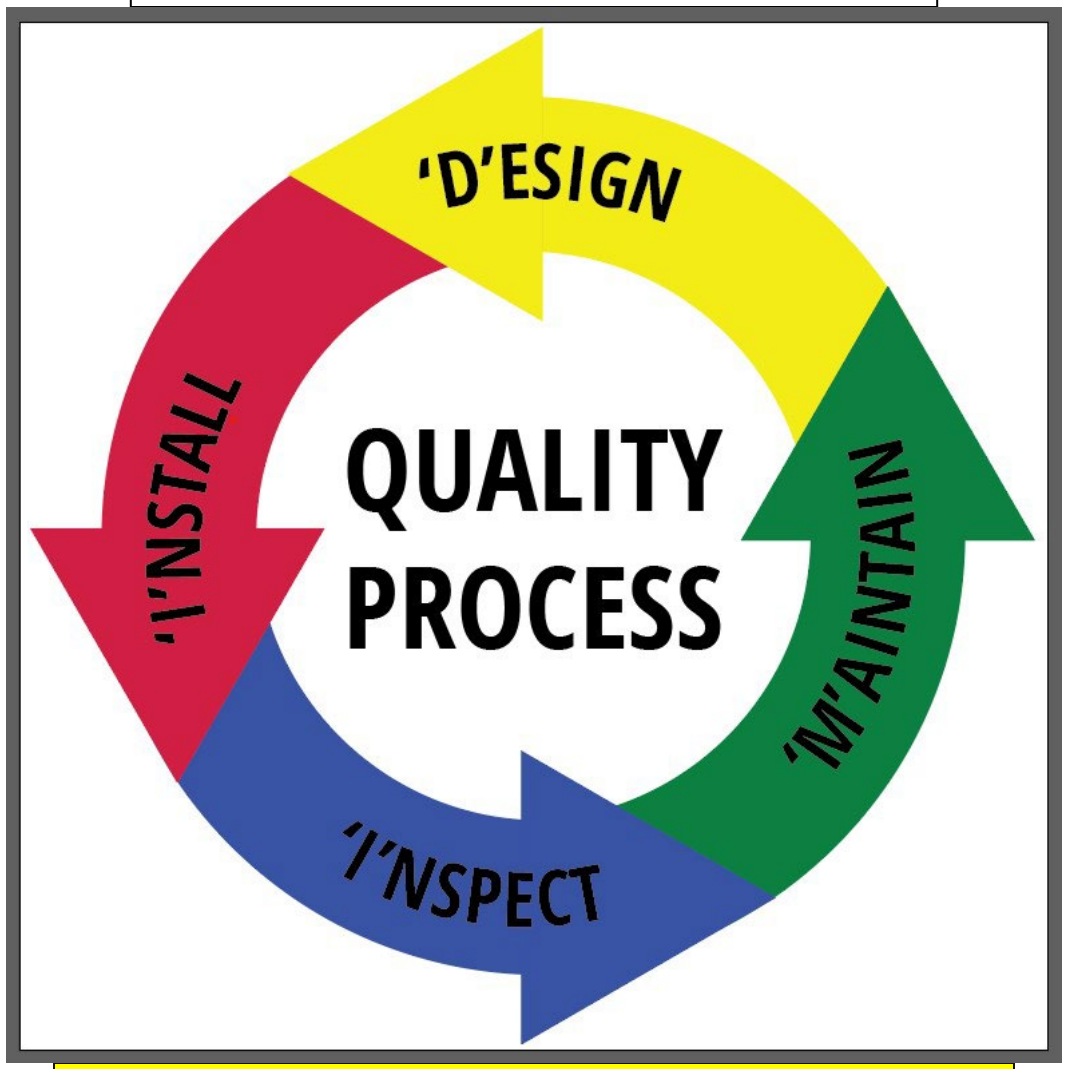
- Tool Safety Caution Points
  - Caulking Guns and Bulk Loaders
  - Tooling Spatulas
  - Spray Equipment –
    - Hoses – Frequent Inspections
    - Spray Tip Clogging = Exploding hose
    - Fuel indoors + Ignition Source = FIRE
  - Power Tools – Saws, Drivers, Caulk Guns
  - Eye Protection, Gloves, Respiration Equipment
  - Silicone Foam Pumps
  - Knives

Safety

- **Personal Protective Equipment**
  - Pre 1995 – Toluene, MEK
  - Cleaning Materials – Toluene, etc.
  - Silicone Products
  - Latex Products
- **AS REQUIRED BY MANUFACTURER….**
  - Respirators
  - Eye Protection
  - Specific Glove Types
  - Long Sleeves
  - Don’t Eat
- **SDS Sheets**
- **Manufacturers Instructions**
- **Product Data Sheets**

FCIA's DIIM™

D-DESIGN - Specs, Code



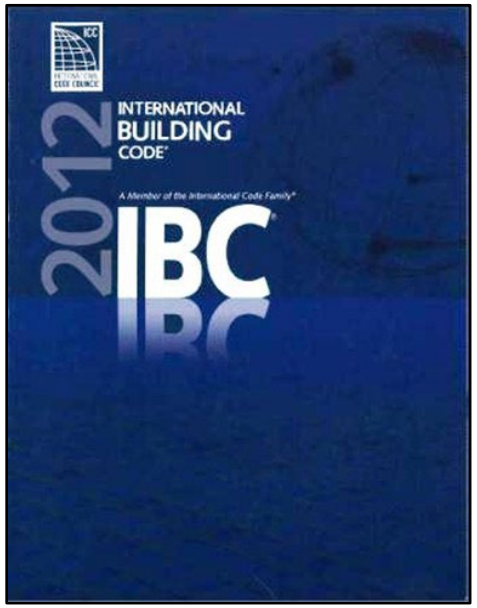
I-INSTALL
FM 4991/UL QFCP
Programs AND
Mfr. Education

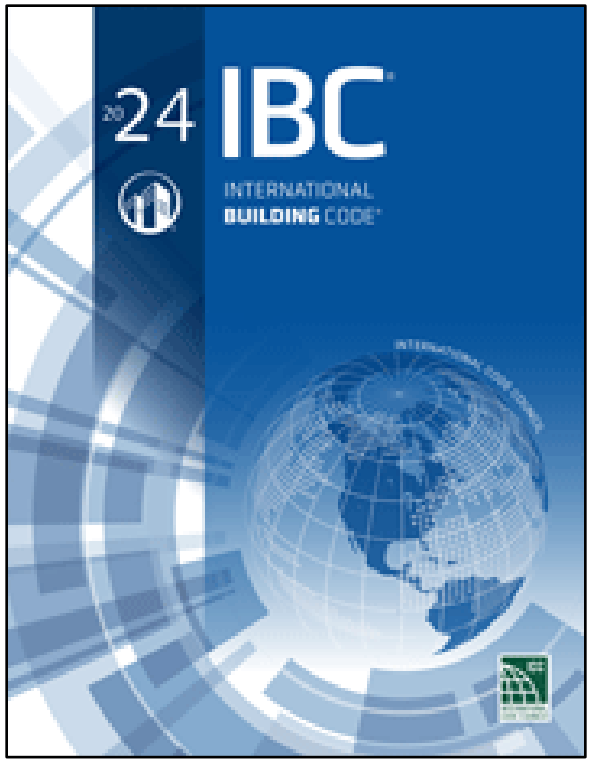
M-Maintain
PFP/BARRIER
MANAGEMENT
Fire Codes

I-INSPECT
IBC Ch. 17 – NFPA 80 – NFPA 1

Firestop Special Inspection
IBC Ch. 17 – 2012 Onwards….

National Fireproofing Contractors Association





Firestop Inspection

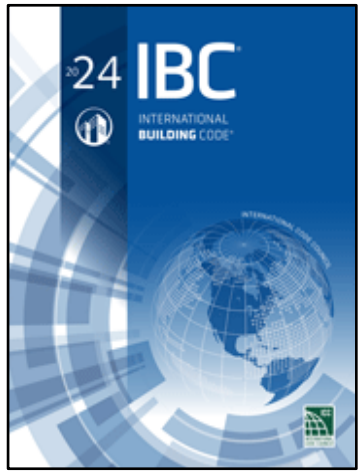
- ASTM E2174 / ASTM E2393 – *“Inspection Process”*

Firestop Inspection in Codes
ASTM E2174 / ASTM E2393

National Fireproofing Contractors Association

- NFPA 1 – Ch. 12
- NFPA 101 / 5000 – Chapter 8 –Annex
- 2012 – 2024 International Building Code
- IBC Ch. 17 – Special Inspections – Firestop
  - **Buildings 75’ & higher above Fire Department Access**
  - **Risk Category Types III, IV, Chapter 16, Table 1604.5**
  - **IBC 2021 Residential Occupancy ≥ 250 Occupants**
- Abu Dhabi International Building Code

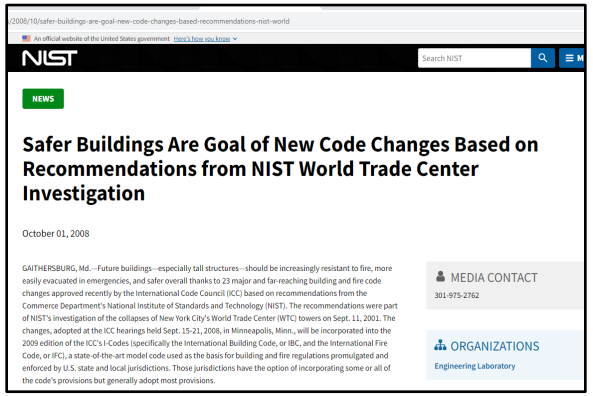
FCIA & KOFFEL
2002-2023



Ch. 17 Special Inspection

1705.14.1 Physical and visual tests. The *special inspections* and tests shall include the following to demonstrate compliance with the listing and the *fire-resistance rating*:

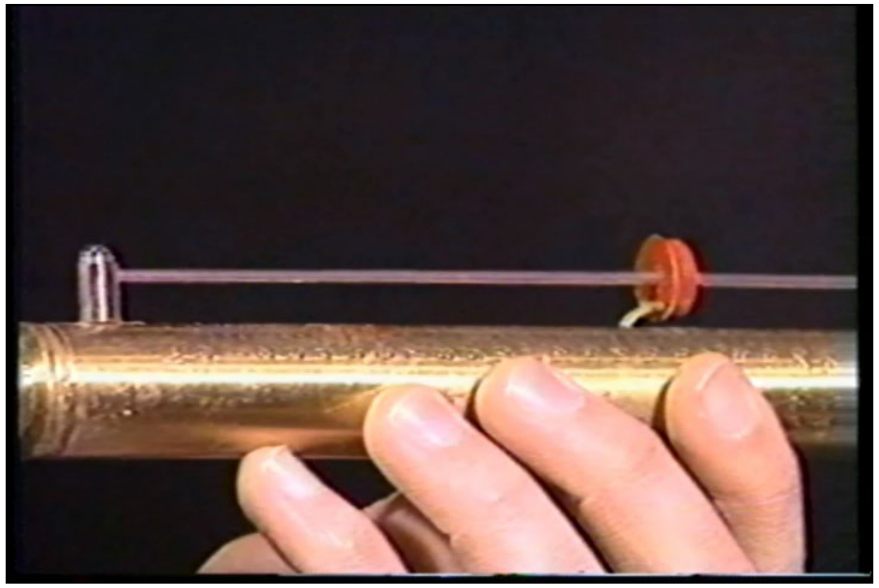
1. Condition of substrates.
2. Thickness of application.
3. Density in pounds per cubic foot (kg/m3).
4. Bond strength adhesion/cohesion.
5. Condition of finished application.



[IBC 2018, 2021, 2024 1705.15.1]

Measuring Thickness

Continue to Apply Tension Force until Failure Occurs or Scale Capacity is Reached



Ch. 17 Special Inspection – SFRM Prescriptive International Building Code -

1705.15 Sprayed fire-resistive 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 inspection after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspension systems for ceilings, where applicable.

[IBC 2024, 1705.15] – AWCI 12-A NOT in IBC…

Intumescent Fire-Resistive Materials (IFRM) Special Inspection

1705.16 Intumescent Fire-Resistive Materials ~~Mastic and intumescent fire-resistant coatings.~~

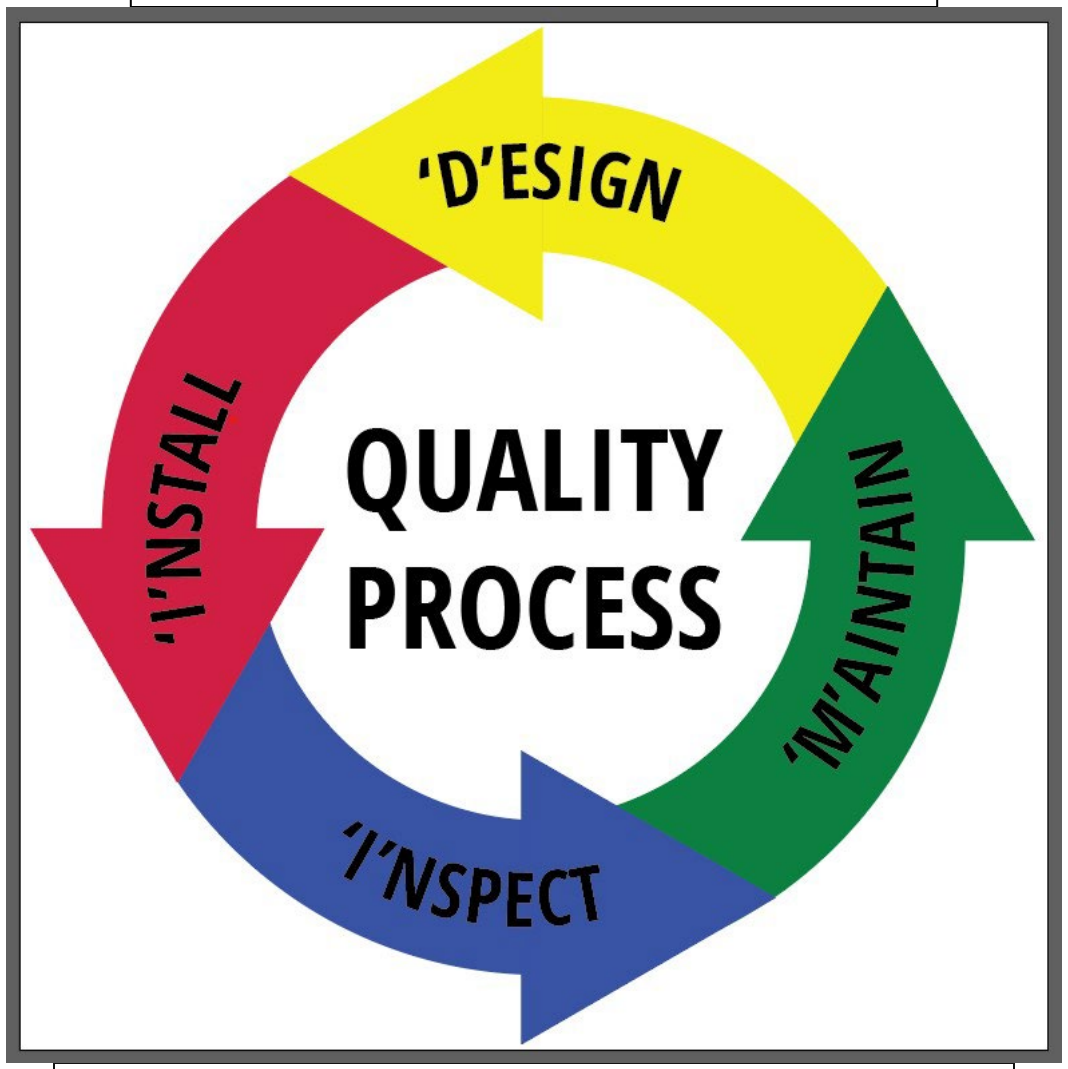
Special inspections and tests for ~~mastic and~~ *intumescent fire-resistive materials* applied to structural elements and decks shall be performed in accordance with **AWCI 12-B.**

Special inspections and tests shall be based on the fire-resistance design as designated in the *approved construction documents*. *Special inspections* and tests shall be performed during construction. Additional visual inspection shall be performed after the rough installation and, where applicable, prior to the concealment of electrical, automatic sprinkler, mechanical and plumbing systems.

[IBC 2018, 2021, 2024 1705.16]

FCIA's DIIM™

D-DESIGN - Specs, Code



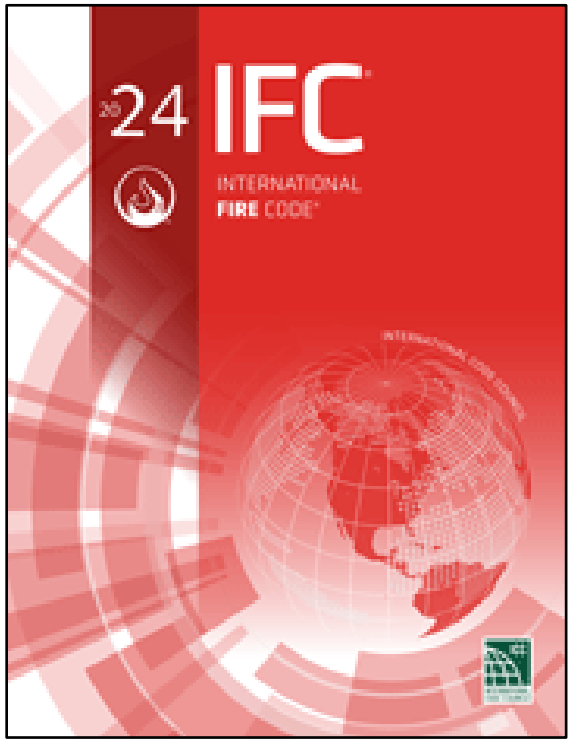
I-INSTALL
FM 4991/UL QFCP
Programs AND
Mfr. Education

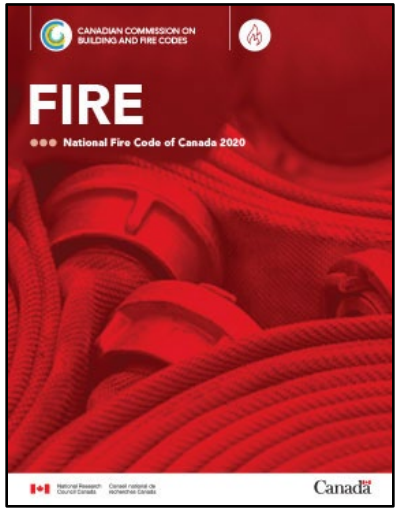
M-Maintain
PFP/BARRIER
MANAGEMENT
Fire Codes

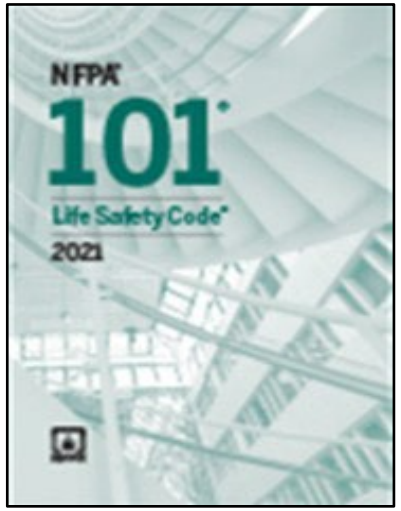
I-INSPECT
IBC Ch. 17 – NFPA 80 – NFPA 1

Fire Code – Maintain Protection

Covers BOTH Structural Fire-Protection and fire-resistance-rated Effective Compartmentation



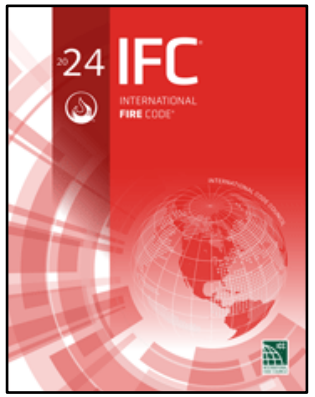




2024 International Fire Code – Maintenance

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*.



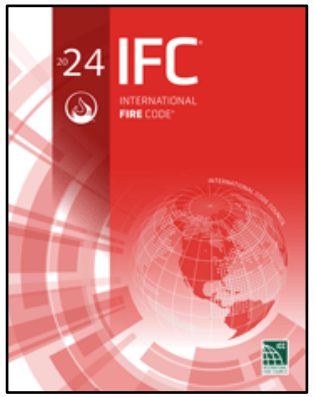
FCIA Added Emphasis

2024 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.**

  Records of inspections and repairs shall be maintained.



FCIA Added Emphasis

F90-24 – 2027 IBC PROPOSAL… PATCHING – FOLLOW LISTING

Kevin Scott, KH Scott Assoc. Comment to be heard @ October Hearings - Fire Marshal ‘Field’ Perspective

- **708.2 Repair of sprayed ~~fire-resistant~~ fire-resistive materials and intumescent ~~fire-resistant~~ fire-resistive materials.** ~~Where damaged, materials~~Materials used to protect columns, beams and horizontal assemblies shall be securely bonded to the substrate without evidence of deterioration or damage, or delamination, cracks or voids through which the substrate is exposed. Where the original material and listing is known or can be identified, such damage shall be repaired, replaced or restored ~~in accordance with~~ to the requirements of the listing in accordance with the manufacturer's repair instructions. ~~and with the same materials and thicknesses used in the listing provided the original material is known or can be identified.~~ Where the ~~listing~~ original material or listing is not known or is no longer available, repairs shall be made with the same material type and thickness ~~that exists~~ as originally used.

F91-24 – 2027 IBC PROPOSAL…
Annual Visual Inspection

Approved as Submitted

- **708.1 Maintaining protection.** Where required when the building was originally permitted and constructed, spray fire-resistant materials, and intumescent fire-resistant materials and other materials used to provide fire-resistance protection, shall be visually inspected to verify that the materials do not exhibit exposure to the substrate.

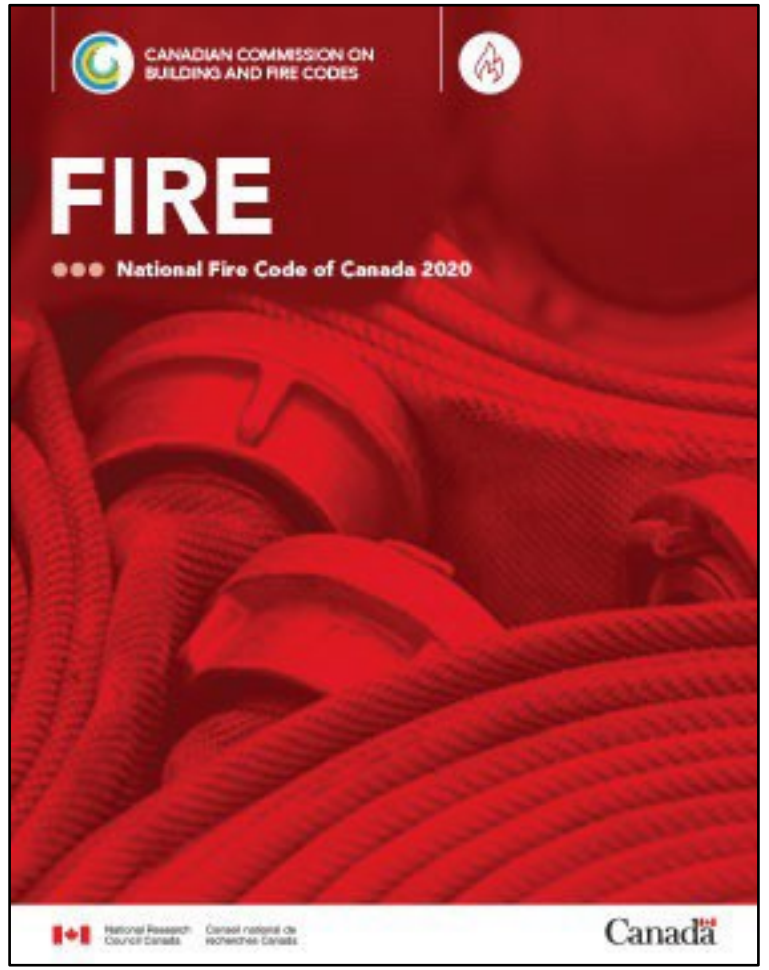
National Fire Code of Canada

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…

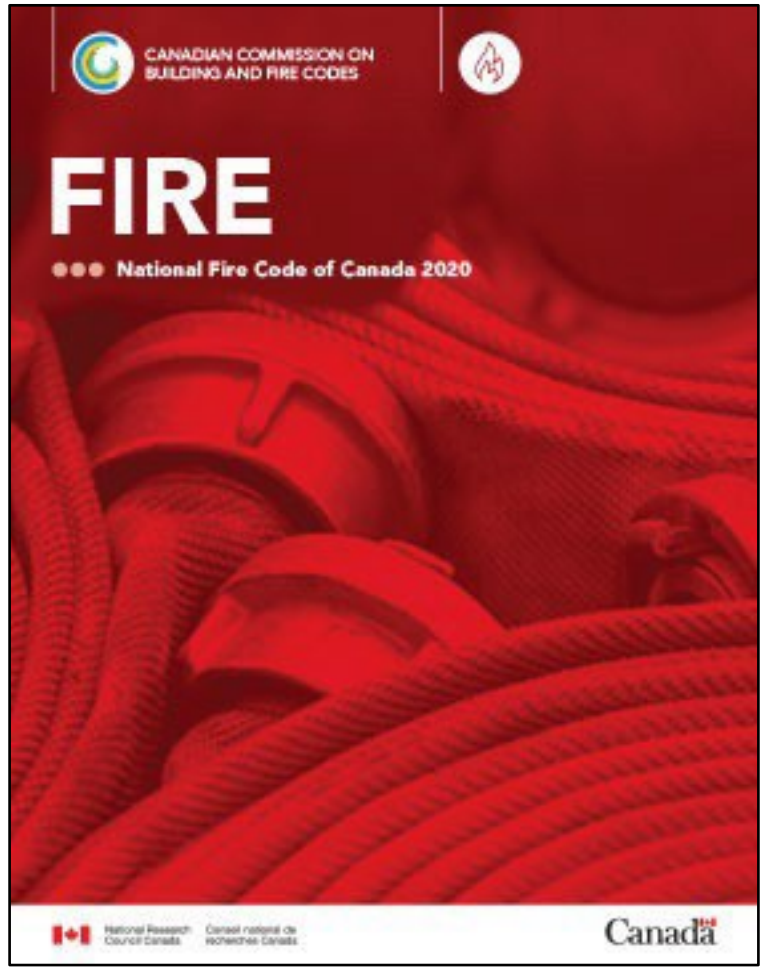


National Fire Code of Canada - Fireproofing

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

  2.2.1.2 (2) – Damage to Fire Separations & Fire Protection Materials

Where **materials used to provide fire protection** are damaged or removed, they shall be repaired or replaced so that the integrity of the fire protection is maintained.



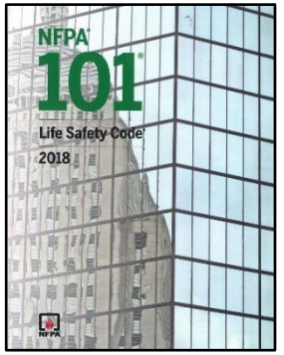
National Fire Protection Association – NFPA 1 – 2018 - 2024

- 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.*

FCIA Added Emphasis

National Fire Protection Association – NFPA 101 – 2018 – 2024 – ALL Fire Resistance

- **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.



ALL PFP Specifications Send to 01 78 39

- **Section 01 78 39 – Project Record Documents**
  = INVENTORY Requirements (SYSTEMS)
  - Life Safety & Structural FP Drawings
  - Manufacturers Installation Instructions
  - Product Data Sheets
  - Safety Data Sheets
  - Tested and Listed Systems
- Who conducts inspections & maintenance?
  - In-House Staff?
  - PFP/Barrier Contractor?

SUMMARY – Fireproofing

- Reduces Loss of Life – Safe Areas
- Contains Fires (and Smoke) to Room of Origin
- Provides Protection from Structural Collapse
- Reduces Property Loss
  - Non-Mechanical / Electrical Systems
  - Smoke Protection Systems
  - ?Occupancy / Building Use Change?

SUMMARY – Firestopping

- Reduces Loss of Life – Safe Areas
- Contains Fires (and Smoke) to Room of Origin
- ?Provides Protection from Structural Collapse?
- Protects from Water Damage
- Reduces Property Loss
  - Non-Mechanical / Electrical Systems
  - Smoke Protection Systems
  - ?Occupancy / Building Use Change?

National Fireproofing Contractors Association

Thanks for Attending!!!

National Fireproofing Contractors Association

National Fireproofing Contractors Association
800 Roosevelt Road – Building C, Suite 312
Glen Ellyn, IL 60137 USA
*1-**708-236-3411 – Info@NFCA-online.org**
www.NFCA-online.org