

SECTION 07 84 43 - JOINT FIRESTOPPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Intumescent gypsum wall framing gaskets.
2. Perimeter fire-barrier system.
3. Joints in or between fire-resistance-rated construction.
4. Joints at exterior curtain-wall/floor intersections.
5. Joints in smoke barriers.

B. Related Requirements:

1. Section 07 84 13 "Penetration Firestopping" for penetrations in fire-resistance-rated walls, horizontal assemblies, and smoke barriers [**and for wall identification**].
2. Section 07 95 13.13 "Interior Expansion Joint Cover Assemblies" for fire-resistive manufactured expansion-joint cover assemblies for interior floors, walls, and ceilings.
3. Section 07 95 13.16 "Exterior Expansion Joint Cover Assemblies" for fire-resistive manufactured expansion-joint cover assemblies for exterior building walls, soffits, and parapets.
4. Section 07 95 13.19 "Parking Deck Expansion Joint Cover Assemblies" for fire-resistive manufactured expansion-joint cover assemblies subject to vehicular traffic.
5. Section 09 22 16 "Non-Structural Metal Framing" for firestop tracks for metal-framed partition heads.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site and virtual.

1.3 ACTION SUBMITTALS

A. Product Data:

1. For each type of product.

- B. Unlisted Firestopping Systems: Obtain an Engineering Judgment (EJ) from firestop manufacturer where no UL, FM Approvals, or other listed assembly is available for particular firestop configuration. Follow International Firestop Council (IFC) recommended guidelines for evaluating firestop systems in EJs.

- C. Product Schedule: For each joint firestopping system. Include location, illustration of

firestopping system, and design designation of qualified testing agency.

1. Engineering Judgments: Where Project conditions require modification to a qualified testing agency's illustration for a particular joint firestopping system condition, submit illustration, with modifications marked, approved by joint firestopping system manufacturer's fire-protection engineer as an EJ or equivalent fire-resistance-rated assembly developed in accordance with current IFC guidelines.

D. Sustainable Design Submittals:

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Listed System Designs: For each joint firestopping system, for tests performed by a qualified testing agency.

1.5 CLOSEOUT SUBMITTALS

- A. Installer Certificates: From Installer indicating that joint firestopping systems have been installed in compliance with requirements and manufacturer's written installation instructions.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A firm that has been approved by FM Approvals in accordance with FM Approvals 4991 or been evaluated by UL and found to comply with UL's "UL Solutions Qualified Firestop Contractor Program."

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Do not install joint firestopping systems when ambient or substrate temperatures are outside limits permitted by joint firestopping system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Install and cure joint firestopping systems in accordance with manufacturer's written installation instructions using natural means of ventilation or, where this is inadequate, forced-air circulation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics:

1. A qualified testing agency, acceptable to authorities having jurisdiction, will perform joint firestopping system tests.
2. Test in accordance with testing standards referenced in "Joint Firestopping Systems" Article. Provide rated systems complying with the following requirements:
 - a. Joint firestop systems installed with products bearing the classification marking of a qualified product certification agency in accordance with listed system designs published by a qualified testing agency.
 - 1) UL in its online directory "Product iQ."
 - 2) Intertek Group in its "Directory of Building Products."
- B. Rain/Water Resistance: For perimeter fire-barrier system applications, where inclement weather or greater-than-transient water exposure is expected, use products that dry rapidly and cure in the presence of atmospheric moisture sufficient to pass ASTM D6904 early rain-resistance test (24-hour exposure).

2.2 JOINT FIRESTOPPING SYSTEM TYPES

- A. General: Systems that resist spread of fire, passage of smoke and other gases, and maintain original fire-resistance rating of assemblies in or between which joint firestopping systems are installed. Joint firestopping systems must accommodate building movements without impairing their ability to resist the passage of fire and hot gases.
 1. Joint firestopping systems that are compatible with one another, with the substrates forming openings, and with penetrating items, if any.
 2. Provide products that, upon curing, do not re-emulsify, dissolve, leach, break down, or otherwise deteriorate over time from exposure to atmospheric moisture, sweating pipes, ponding water or other forms of moisture.
 3. Provide firestop products that do not contain ethylene glycol.
- B. Joints in or between Fire-Resistance-Rated Construction: Provide joint firestopping systems with ratings determined in accordance with ASTM E1966 or UL 2079, with published L-Ratings for ambient and elevated temperatures as evidence of the ability of the fire-resistive joint system to restrict the movement of smoke.
 1. Fire-Resistance Rating: Equal to or exceeding the fire-resistance rating of the wall, floor, or roof in or between which it is installed.
- C. Joints at Exterior Curtain-Wall/Floor Intersections: Provide joint firestopping systems with rating determined in accordance with ASTM E2307.
 1. F-Rating: Equal to or exceeding the fire-resistance rating of the floor assembly.
- D. Joints in Smoke Barriers: Provide joint firestopping systems with ratings determined in accordance with UL 2079 based on testing at a positive pressure differential of **0.30 inch wg**.

1. L-Rating: Not exceeding **5.0 cfm/ft.** of joint at both ambient and elevated temperatures.

2.3 ACCESSORIES

- A. Provide components of joint firestopping systems, including primers and forming materials, that are needed to install elastomeric fill materials and to maintain ratings required. Use only components specified by joint firestopping system manufacturer and approved by the qualified testing agency for conditions indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install joint firestopping systems in accordance with manufacturer's written installation instructions and published drawings for products and applications indicated.
- B. Install forming materials and other accessories of types required to support elastomeric fill materials during their application and in position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
 1. After installing elastomeric fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of fire-resistive joint system.
- C. Install elastomeric fill materials for joint firestopping systems by proven techniques to produce the following results:
 1. Apply elastomeric fill in voids and cavities formed by joints and forming materials as required to achieve fire-resistance ratings indicated.
 2. Apply elastomeric fill materials so they contact and adhere to substrates formed by joints.
 3. For elastomeric fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.2 FIELD QUALITY CONTROL

- A. Owner will engage a qualified testing agency to perform tests and inspections in accordance with ASTM E2393.
- B. Where deficiencies are found or joint firestopping systems are damaged or removed due to testing, repair or replace joint firestopping systems so they comply with requirements.
- C. Proceed with enclosing joint firestopping systems with other construction only after inspection reports are issued and installations comply with requirements.

3.3 JOINT FIRESTOPPING SYSTEM SCHEDULE

- A. Where UL-classified systems are indicated, they refer to system numbers in UL's online directory "Product iQ" under product [**Category XHBN**][or][**Category XHDG**].
- B. Where Intertek Group-listed systems are indicated, they refer to design numbers in Intertek Group's "Directory of Building Products" under product category [**Expansion/Seismic Joints**][or][**Firestop Systems**].
- C. Floor-to-Floor, Joint Firestopping Systems: .
1. UL-Classified Systems: FF- [D][S] - <Insert four-digit number>[0000-0999][1000-1999][2000-2999][3000-3999][4000-4999].
 2. Assembly Rating: [One hour][Two hours]<Insert number of hours>.
 3. Nominal Joint Width: [As indicated]<Insert dimension>.
 4. Movement Capabilities: [Class I][Class II][Class III] - <Insert number> percent [compression or extension][compression, extension, or horizontal shear].
 5. L-Rating at Ambient: Less than <Insert cfm/ft.>.
 6. L-Rating at 400 Deg F (204 Deg C): Less than <Insert cfm/ft.>.
 7. W-Rating: No leakage of water at completion of water-leakage testing.
- D. Head-of-Wall, Fire-Resistive Joint Firestopping Systems: .
1. UL-Classified Systems: HW- [D][S] - <Insert four-digit number>[0000-0999][1000-1999][2000-2999][3000-3999][4000-4999].
 2. Intertek Group-Listed Systems: <Insert design number>.
 3. Assembly Rating: [One hour][Two hours]<Insert number of hours>.
 4. Nominal Joint Width: [As indicated]<Insert dimension>.
 5. Movement Capabilities: [Class I][Class II][Class III] - <Insert number> percent [compression or extension].
 6. L-Rating at Ambient: Less than <Insert cfm/ft.>.
 7. L-Rating at 400 Deg F (204 Deg C): Less than <Insert cfm/ft.>.
- E. Perimeter Joint Firestopping Systems: .
1. UL-Classified Perimeter Fire-Containment Systems: CW- [D][S] - <Insert four-digit number>[0000-0999][1000-1999][2000-2999].
 2. Intertek Group-Listed, Perimeter Fire-Barrier Systems: <Insert design number>.
 3. Integrity Rating: [One hour][Two hours]<Insert number of hours>.
 4. Insulation Rating: [Zero hour][1/4 hour][3/4 hour][1 hour]<Insert number of hours>.
 5. Linear Opening Width: [2-1/2 inches][8 inches][As indicated]<Insert dimension>, maximum.
 6. Movement Capabilities: [Class I][Class II][Class III] - <Insert number> percent [compression or extension].
 7. F-Rating: [One hour][Two hours]<Insert number of hours>.

END OF SECTION 07 84 43

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