

Project Name: \_\_\_\_\_  
Project Location: \_\_\_\_\_

**SECTION 07 84 13  
PENETRATION FIRESTOPPING**

**SECTION 07 84 13 – PENETRATION FIRESTOPPING**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this section, including both empty openings and openings containing penetrating items.

**1.2 SUMMARY**

- A. Provide asbestos free through-penetration firestopping including accessories for a complete system as indicated and specified.
- B. This Section includes through-penetration firestop systems for penetrations through fire-resistance-rated constructions.
- C. Related Sections include the following:
  - 1. Division 22 and 23 Sections specifying duct and pipe penetrations.
  - 2. Division 26, 27 and 28 Sections specifying cable and conduit penetrations.

**1.3 REFERENCES**

- A. Comply with current edition of referenced standards unless indicated otherwise.
- B. American National Standards Institute (ANSI):
  - 1. ANSI/UL 263 – Fire tests of Building Construction and Materials.
  - 2. ANSI/UL 723 – Surface Burning Characteristics of Building Materials.
  - 3. ANSI/UL 1479 – Standard for Fire Tests of Through Penetration Firestops.
- C. ASTM International (ASTM):
  - 1. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
  - 2. ASTM E 119 – Standard Test Method for Fire Tests of Building Construction and Materials.
  - 3. ASTM E 814 – Standard Test Method for Fire Tests of Through-Penetration Fire Stops.

**1.4 PERFORMANCE REQUIREMENTS**

- A. General: For penetrations through fire-resistance-rated construction, including both empty openings and openings containing penetrating items, provide through-penetration firestop systems that are produced and installed to resist spread of fire

Project Name: \_\_\_\_\_  
Project Location: \_\_\_\_\_

**SECTION 07 84 13  
PENETRATION FIRESTOPPING**

according to requirements indicated, resist passage of smoke and other gases and maintain original fire-resistance rating of construction penetrated.

1. Fire-resistance-rated walls including fire walls and fire barriers.
- B. Rated Systems: Provide through-penetration firestop systems with the following ratings determined per ASTM E 814 or UL 1479:
1. F-Rated Systems: Provide through-penetration firestop systems with F-ratings indicated, but not less than that equaling or exceeding fire-resistance rating of constructions penetrated.
- C. Provide systems that are listed by at least one of the following:
1. Underwriters Laboratories Inc. (UL), in "Fire Resistance Directory"
  2. Intertek Testing Services (ITS) (includes agency formerly know as Omega Point Laboratories), in "Directory of Listed Products"
  3. Any other qualified independent testing and inspection agency that conducts periodic follow-up inspections and is acceptable to Authorities Having Jurisdiction (AHJ).
- D. Provide products identical to those tested and listed for classification by UL, ITS or any other qualified independent testing agency.
- E. Provide products that bear classification marking of qualified independent testing agency.
- F. Use only products specifically listed for use in listed systems.
- G. Provide products that meet the intent of the state or local and LEED® guidelines on volatile organic compounds (VOC).
- H. Provide products with the appropriate flame spread index and smoke develop index, when tested in accordance with ASTM E-84.
- I. Firestopping materials must meet and be acceptable for use by all building codes and NFPA codes.
- J. Provide products that are compatible with each other, with the substrates forming openings and with penetrating items, if any.

1.5 SUBMITTALS

- A. Submit under provisions of the Contract and Division 01 – General Requirements.
- B. Shop Drawings: For each through-penetration firestop system, show each type of construction penetrated, relationships to adjoining construction and type of penetrating item. Include firestop design designation of qualified testing and inspecting agency that evidences compliance with requirements for each condition indicated.
1. An applicable listing agency's detailed drawing showing opening, penetrating item(s) and firestopping materials; identified by listing agency's name, number or designation and fire rating achieved.

Project Name: \_\_\_\_\_  
Project Location: \_\_\_\_\_

**SECTION 07 84 13  
PENETRATION FIRESTOPPING**

2. Where project conditions require modification to a listing, submit listing agency's drawing marked to show modifications and approved by firestop system manufacturer.
  - C. Product Certificates: Submit certificates of conformance signed by firestop system manufacturer certifying that materials furnished comply with requirements.
  - D. Product Data Sheets: Furnish firestop system manufacturer's product data sheets on each material to be used in firestop systems. Information on manufacturer's product data sheet should include:
    1. Product characteristics including compliance with appropriate ANSI/UL/ASTM testing standards.
    2. Storage and handling requirements and recommendations.
  - E. Installation Instructions: Furnish firestop system manufacturer's installation instructions.
  - F. Through-Penetration Firestop System Schedule: Indicate locations of each through penetration firestop system, along with the following information:
    1. Type of penetrating item(s).
    2. Types of constructions penetrated, including fire-resistance ratings and where applicable, thickness of construction penetrated.
    3. Through-penetration firestop systems for each location identified by listing agency's number or designation.
  - G. Qualification Data: For Installer.
  - H. Sustainable or LEED Submittals:
    1. VOC Content: For fire-resistance joint and gap systems, furnish documentation of VOC content.
- 1.6 QUALITY ASSURANCE
- A. General: All through-penetrations firestop systems shall be installed with approved methods using material that have been tested and classified to produce an approved assembly.
  - B. Installer Qualifications: A firm experienced in installing through-penetration firestop systems similar material(s), design(s) and extent to that indicated for this Project, whose work has resulted in construction with a record of successful performance.
  - C. Installation Responsibility: Assign installation of all through-penetration firestop systems in Project to a single qualified installer.
  - D. Source Limitations: Obtain through-penetration firestop systems, for each kind of penetration and conditions indicated, through one source from a single firestop system manufacturer.

Project Name: \_\_\_\_\_  
Project Location: \_\_\_\_\_

**SECTION 07 84 13  
PENETRATION FIRESTOPPING**

- E. Codes: Where a firestop systems manufacturer's application procedures are in conflict with those of the code authority having jurisdiction (AHJ), the more strict guidelines will prevail.
- F. Pre-installation Conference: Conduct conference at Project site to agree on firestop requirements, conditions, and firestop system manufacturer's instructions.
  - 1. Coordinate construction and cutting of openings so that each particular firestop system may be installed in accordance with its listing, including sizing, sleeves and penetrating item(s).
  - 2. Do not cover-up through-penetration firestop system installations that become concealed behind other construction until each installation has been examined by inspecting agency, building inspector, if required by authorities having jurisdiction.

**1.7 DELIVERY, STORAGE AND HANDLING**

- A. Deliver and store through-penetration firestop system products to Project site in original, unopened packaging with intact and legible manufacturer's labels and identifying product and manufacturer, date of manufacture, lot number, shelf life, listing agency's classification marking, curing time and mixing instruction if applicable.
- B. Store and handle materials for through-penetration firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants or other causes; follow manufacturer's instructions.
- C. Store and dispose of hazardous material, and material contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction (AHJ).

**1.8 PROJECT CONDITIONS**

- A. Environmental Limitations: Do not install through-penetration firestop systems when ambient or substrate temperatures are outside limits permitted by through-penetration firestop system manufacturer or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilation: Provide ventilation as per through-penetration firestop systems manufacturer's instructions; by natural means, or where this is inadequate, by forced-air circulation.
- C. Maintain environmental conditions (ventilation, humidity and temperature) within limits recommended by the firestop manufacturer. Do not install the firestopping when the environmental conditions recommended are not met.

Project Name: \_\_\_\_\_  
Project Location: \_\_\_\_\_

**SECTION 07 84 13  
PENETRATION FIRESTOPPING**

1.9 WARRANTY

- A. Provide a copy of the firestop manufacturer's standard limit warranty against manufacturing defects, terms, conditions and exclusion from coverage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Project include, but are not limited to the following;
1. Passive Fire Protection (PFP) Partners, Delta, BC V3M 6T8 Toll Free: 800.810.1788 email: [firestop@firestop.com](mailto:firestop@firestop.com) website: [www.firestop.com](http://www.firestop.com)
- B. Substitutions: Requests for substitutions will be considered in accordance with Section 01 60 00.
- C. Single Source: To maintain control and integrity of the firestop applications a single firestopping manufacturer should be used. Specific UL, ITS and or other approved listing agencies systems applicable to each type of firestop condition should be supplied by one firestopping manufacturer.

2.2 FIRESTOPPING GENERAL

- A. Provide penetration firestopping that is produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any.
- B. Penetrations in Fire-Resistance-Rated Walls: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01 in. of water (2.5 Pa).
1. Fire-resistance-rated walls include firewalls, fire barrier walls, smoke-barrier walls and fire partitions.
  2. F-Rating: Not less than the fire-resistance rating of constructions penetrated.
- C. Penetrations in Horizontal Assemblies: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01 in. of water (2.5 Pa).
1. Horizontal assemblies include floors, floor/ceiling assemblies and ceiling membranes of roof/ceiling assemblies.
  2. F-Rating: At least 1 hour, but not less than the fire-resistance rating of constructions penetrated.
  3. T-Rating: At least 1 hour, but not less than the fire-resistance of construction penetrated except for floor penetrations within the cavity of a wall.

Project Name: \_\_\_\_\_  
Project Location: \_\_\_\_\_

**SECTION 07 84 13  
PENETRATION FIRESTOPPING**

- D. Penetrations in Smoke Barriers: Provide penetration firestopping with ratings determined per UL 1479.
- E. Exposed Penetration Firestopping: Provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.
- F. VOC Content: Provide penetration firestopping that complies with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
  - 1. Architectural Sealants: 250 g/L.
  - 2. Sealant Primers for Nonporous Substrates: 250 g/L
  - 3. Sealant Primers for Porous Substrates: 775 g/L
- G. Accessories: Provide components for each penetration firestopping system that needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping manufacturer and approved by qualified testing and inspection agency for firestopping indicated.
  - 1. Permanent forming/damming/backing material include the following:
    - a. Slag/rock-wool or mineral wool fiber insulation
    - b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
    - c. Fire-rated form board.
    - d. Fillers for sealants
  - 2. Temporary forming materials
  - 3. Substrate primers
  - 4. Collars.
  - 5. Steel sleeves.

### 2.3 THROUGH PENETRATION FIRESTOP SYSTEMS

- A. PFP Partners 3300PS: One component moldable putty. Non-hardening intumescent putty.
- B. PFP Partners 3500SI Mastic: One component, low VOC, water-based latex, intumescent spray.
- C. PFP Partners 3600EX Sealant: One component, low VOC, intumescent, water based, acrylic latex sealant
- D. PFP Partners 4100SL Sealant: One component, low VOC, water-based latex, self-leveling for floor openings.
- E. PFP Partners 4100NS Sealant: One component, low VOC, water-based latex, non-sag sealant for floor and wall openings.
- F. PFP Partners 4800DW Sealant: One component, low VOC, water-based latex, low sag, paintable sealant.

Project Name: \_\_\_\_\_  
Project Location: \_\_\_\_\_

**SECTION 07 84 13  
PENETRATION FIRESTOPPING**

- G. PFP Partners 5100SP Mastic: One component, low VOC, water-based latex, endothermic spray.
- H. PFP Partners EBI 60 electrical box insert: One component, non-hardening compound for single and double electrical boxes.
- I. PFP Partners FCW-44 Firestop Cable Way: One piece device for firestopping blanks, cable, cable bundles and ENT through rated walls.
- J. PFP Partners MP-1 Putty Pads: One component for firestopping single electrical boxes.
- K. PFP Partners Pillows: Self contained, intumescent pillow for firestopping large openings with multiple penetrations and cable trays penetrations through walls and floors.
- L. PFP Partners PPC Collar: Intumescent device for firestopping plastic pipe penetrations through rated walls and floors:
- M. PFP Partners WS-1 Wrap Strip: Flexible, intumescent wrap strip used to firestop plastic pipe penetrations through walls and floors.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Before beginning installation, verify that substrate conditions previously installed under other sections are acceptable for installation of firestopping in accordance with manufacturer's installation instructions and technical bulletins.
  - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2 PREPARATION**

- A. Surface Cleaning: All surfaces shall be free of foreign materials (dirt, grease, oil, scale, rust, releasing agents, water repellents) and any other substances that could interfere with the adhesion of the through-penetration firestop systems.
- B. Provide masking and temporary covering to protect adjacent surfaces, when required. Remove tape as soon as possible without disturbing

**3.3 THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION**

- A. General: Install through-penetration firestop systems to comply with Part 1 "Performance Requirements" Article and with firestop system manufacturer's written installation instructions and published drawings for product and application indicated.

Project Name: \_\_\_\_\_  
Project Location: \_\_\_\_\_

**SECTION 07 84 13  
PENETRATION FIRESTOPPING**

- B. Installation Instructions: Comply with (UL), (ITS) or and or other approved listing agencies Listings and through-penetration firestop manufacturer's instructions for installation of firestopping products and the following:
1. Seal all openings or voids made by penetrations to ensure an air and water resistant seal
  2. Consult with mechanical engineer, project manager, and damper manufacturer prior to installation of through-penetration firestop systems that might hamper the performance of fire dampers as it pertains to duct work.
  3. Protect materials from damage on surfaces subjected to traffic.
  4. Fill voids and cavities formed by openings, form materials, accessories and penetrating items as required to achieve fire-resistance ratings indicated.
  5. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
  6. Clean through-penetration firestop materials surfaces.
  7. Notify AHJ when installation is ready for inspection, obtain advance approval of anticipated inspection dates and phasing, if any, required to allow subsequent construction to proceed.
  8. Do not cover installed through-penetration firestop systems with other construction until approval of AHJ has been received.

**3.4 IDENTIFICATION**

- A. Identify through-penetration firestop systems with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches of edge of the firestop systems so that labels will be visible to anyone seeking to remove penetrating items or firestop systems. Use mechanical fasteners for metal labels. For plastic labels, use self-adhering type with adhesives capable of permanently bonding labels to surfaces on which labels are placed and, in combination with label material, will result in partial destruction of label if removal is attempted. Include the following information on labels:
1. The words "Warning - Through-Penetration Firestop System - Do Not Disturb. Notify Building Management of Any Damage."
  2. Contractor's name, address, and phone number.
  3. Through-penetration firestop system designation of applicable testing and inspecting agency.
  4. Date of installation.
  5. Through-penetration firestop system manufacturer's name.
  6. Installer's name.

**3.5 REPAIRS AND MODIFICATIONS**

- A. Identify damage or re-entered seals requiring repair or modification
- B. Remove loose or damaged materials
- C. If penetrating item(s) are to be added, remove sufficient material to insert new elements. Care must be used not to cause damage to the balance of the seal.



Project Name: \_\_\_\_\_  
Project Location: \_\_\_\_\_

**SECTION 07 84 13  
PENETRATION FIRESTOPPING**

- D. Insure that surfaces to be sealed are clean and dry.
- E. Install materials in accordance with Paragraph 3.3 as required. Use only materials approved by through-penetration firestop manufacturer as suitable for repair of original seal. Never mix different manufacturer's firestopping materials.

**3.6 FIELD QUALITY CONTROL**

- A. Notify Consultant when completed installations are ready for inspection prior to concealing or enclosing an area containing firestopping materials.
- B. Arrange for inspection by the Owners independent inspection and testing company appointed and paid by Owner.
- C. Following field inspections, where deficiencies are found, all repairs or replacements as required to ensure compliance with the Contract Documents.

**3.7 CLEANING AND PROTECTION**

- A. Clean off excess material adjacent to openings as Project progresses by methods and with cleaning materials that are approved in writing by through-penetration firestop system manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure that through-penetration firestop systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated through-penetration firestop systems immediately and install new material to produce systems complying with specified requirements.

**END OF SECTION 07 84 13**

Project Name: \_\_\_\_\_  
Project Location: \_\_\_\_\_

**SECTION 07 84 43  
JOINT FIRESTOPPING**

**SECTION 07 84 43 - JOINT FIRESTOPPING**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this section.

**1.2 SUMMARY**

- A. Provide asbestos free joint firestopping including accessories for a complete system as indicated and specified.
- B. Section Includes:
1. Fire-resistive joint systems in and between fire-resistance-rated construction assemblies for the following:
    - a. Floor-to-floor joints.
    - b. Floor-to-wall joints.
    - c. Head-of-wall joints.
    - d. Wall-to-wall joints.
    - e. Other joints as indicated.
  2. Joints in smoke barriers and smoke partition systems.
  3. Perimeter fire-resistive joint systems consisting of floor-to-wall joints between perimeter edge of fire-resistance-rated floor assemblies and exterior curtain walls
- C. Related Sections include the following:
1. Division 7 Sections "Penetration Firestopping" for systems installed in openings in walls and floors with and without penetrating items.

**1.3 REFERENCES**

- A. Comply with current edition of referenced standards unless indicated otherwise.
- B. American National Standards Institute (ANSI):
1. ANSI/UL 263 – Fire tests of Building Construction and Materials.
  2. ANSI/UL 723 – Surface Burning Characteristics of Building Materials.
  3. ANSI/UL 2079 – Tests for Fire Resistance of Building Joint Systems.
- C. ASTM International (ASTM):
1. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
  2. ASTM E 119 – Standard Test Method for Fire Tests of Building Construction and Materials.
  3. ASTM E 1399 - Standard Test Method for Cyclic Movement and Measuring the Minimum and Maximum Joint Widths of Architectural Joint Systems.

**Project Name:** \_\_\_\_\_  
**Project Location:** \_\_\_\_\_

**SECTION 07 84 43  
JOINT FIRESTOPPING**

4. ASTM E 1966 - Standard Test Method for Fire Resistive Joint Systems.
  5. ASTM E 2307 - Fire Tests of Perimeter Fire Barrier Systems Using Intermediate Scale, Multi-Story Test Apparatus.
  6. ASTM E 2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers.
- D. Factory Mutual (FM) - FM4991 - Standard for Approval of Firestop Contractors.
- E. International Code Council (ICC):
1. International Building Code (IBC).
  2. International Residential Code (IRC).
- F. National Fire Protection Association (NFPA):
1. NFPA 70 - National Electrical Code.
  2. NFPA 101 - Life Safety Code.
  3. NFPA 5000 – Building Construction and Safety Code.
- G. Underwriters Laboratories (UL) - UL Building Materials Directory:
1. Joint Systems (XHBN).
  2. Forming Materials (XHKU).
  3. Fill, Void or Cavity Materials (XHHW).
- H. American Society of Sanitary Engineering (ASSE):
- I. ASSE Series 9000 – Professional Qualification Standard for Firestop Systems and Device Installers, Inspectors and Surveyors.
- J. International Association of Plumbing and Mechanical Officials (IAPMO):
1. Uniform Plumbing Code (UPC).
  2. Uniform Mechanical Code (UMC).
- K. International Standards Organization (ISO):
1. ISO 10295-2: 2009.

#### 1.4 DEFINITIONS

- A. Firestopping: The use of material or combination of materials in a fire-rated wall or floor where it has been breached, so as to restore the integrity of the fire rated assembly.
- B. System: The use of a specific firestop material or materials in conjunction with a specific wall or floor construction assembly and a specific gap condition, constitutes a system.

#### 1.5 PERFORMANCE REQUIREMENTS

- A. General: For joints in the following construction, provide firestop joint systems that are produced and installed to resist spread of fire according to requirements indicated,

**Project Name:** \_\_\_\_\_  
**Project Location:** \_\_\_\_\_

**SECTION 07 84 43  
JOINT FIRESTOPPING**

resist passage of smoke and other gases, and maintain original fire-resistance rating of assembly in which firestop joint systems are installed:

1. Fire-resistance-rated non-load-bearing walls, including partitions, with fire-protection-rated openings.
  2. Fire-resistance-rated floor assemblies.
  3. Exterior curtain-wall assemblies and fire-resistance-rated floor assemblies.
- B. Fire-Resistance Ratings of Joint Systems: Assembly ratings and movement capabilities indicated, but with assembly ratings not less than that equaling or exceeding fire-resistance rating of constructions in which joints are located, as determined by UL 2079.
- C. Provide systems that are listed by at least one of the following:
1. Underwriters Laboratories Inc. (UL), in "Fire Resistance Directory"
  2. Intertek Testing Services (ITS) (includes agency formerly know as Omega Point Laboratories), in "Directory of Listed Products"
  3. Any other qualified independent testing and inspection agency that conducts periodic follow-up inspections and is acceptable to Authorities Having Jurisdiction (AHJ).
- D. Provide products identical to those tested and listed for classification by UL, ITS or any other qualified independent testing agency.
- E. Provide fire-resistive sealants and sprays for construction joints applications that are flexible enough to satisfy the movement criteria per the test standards ASTM E 1399, ASTM E-1966 or ANSI/UL 2079.
- F. Provide products that bear classification marking of qualified independent testing agency.
- G. Use only products specifically listed for use in listed systems.
- H. Provide products that meet the intent of the state or local and LEED® guidelines on volatile organic compounds (VOC).
- I. Provide products with the appropriate flame spread index and smoke develop index, when tested in accordance with ASTM E-84.
- J. Firestopping materials must meet and be acceptable for use by all building codes and NFPA codes.
- K. Provide products that are compatible with each other, with the substrates forming openings, and with the items, if any, penetrating the fire-resistive system, under the conditions represented by this project, based on testing and field performance demonstrated by manufacturer.
- L. Ratings of Perimeter Fire-Resistive Joint Systems: As indicated, determined by NFPA 285 and UL 2079.

**Project Name:** \_\_\_\_\_  
**Project Location:** \_\_\_\_\_

**SECTION 07 84 43  
JOINT FIRESTOPPING**

1.6 SUBMITTALS

- A. Submit under provisions of the Contract and Division 01 – General Requirements.
- B. Shop Drawings: For each through-penetration firestop system, show each type of construction penetrated, relationships to adjoining construction and type of penetrating item. Include firestop design designation of qualified testing and inspecting agency that evidences compliance with requirements for each condition indicated.
  - 1. An applicable listing agency's detailed drawing showing opening, penetrating item(s) and firestopping materials; identified by listing agency's name, number or designation and fire rating achieved.
  - 2. Where project conditions require modification to a listing, submit listing agency's drawing marked to show modifications and approved by firestop system manufacturer.
- C. Product Certificates: Submit certificates of conformance signed by firestop system manufacturer certifying that materials furnished comply with requirements.
- D. Product Data Sheets: Furnish firestop system manufacturer's product data sheets on each material to be used in firestop systems. Information on manufacturer's product data sheet should include:
  - 1. Product characteristics including compliance with appropriate ANSI/UL/ASTM testing standards.
  - 2. Storage and handling requirements and recommendations.
- E. Installation Instructions: Furnish firestop system manufacturer's installation instructions.
- F. Sustainable or LEED Submittals:
  - 1. VOC Content: For fire-resistance joint and gap systems, furnish documentation of VOC content.
- G. Qualification Data: For Installer.

1.7 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: Tested by UL, ITS-WHi or other approved testing agency.
- B. General: All joint firestop systems shall be installed with approved methods using material that have been tested and classified to produce an approved assembly.
- C. Installer Qualifications: A firm experienced in installing joint firestop systems similar material(s), design(s) and extent to that indicated for this Project, whose work has resulted in construction with a record of successful performance.
- D. Installation Responsibility: Assign installation of all joint firestop systems in Project to a single qualified installer.
- E. Source Limitations: Obtain joint firestop systems, for each kind of joint and conditions indicated, through one source from a single firestop system manufacturer.

**Project Name:** \_\_\_\_\_  
**Project Location:** \_\_\_\_\_

**SECTION 07 84 43  
JOINT FIRESTOPPING**

- F. Codes: Where a firestop systems manufacturer's application procedures are in conflict with those of the code authority having jurisdiction (AHJ), the more strict guidelines will prevail.
- G. Pre-installation Conference: Conduct conference at Project site to agree on firestop requirements, conditions, and firestop system manufacturer's instructions.
  - 1. Coordinate construction so that the joint firestop system may be installed in accordance with its listing.
  - 2. Do not cover-up joint firestop system installations that become concealed behind other construction until each installation has been examined by inspecting agency, building inspector, if required by authorities having jurisdiction.

**1.8 DELIVERY, STORAGE AND HANDLING**

- A. Deliver and store joint firestop system products to Project site in original, unopened packaging with intact and legible manufacturer's labels and identifying product and manufacturer, date of manufacture, lot number, shelf life, listing agency's classification marking, curing time and mixing instruction if applicable.
- B. Store and handle materials for joint firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants or other causes; follow manufacturer's instructions.
- C. Store and dispose of hazardous material, and material contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction (AHJ).

**1.9 PROJECT CONDITIONS**

- A. Environmental Limitations: Do not install joint firestop systems when ambient or substrate temperatures are outside limits permitted by firestop system manufacturer or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilation: Provide ventilation as per firestop systems manufacturer's instructions; by natural means, or where this is inadequate, by forced-air circulation.
- C. Maintain environmental conditions (ventilation, humidity and temperature) within limits recommended by the firestop manufacturer. Do not install the firestopping when the environmental conditions recommended are not met.

**1.10 WARRANTY**

- A. Provide a copy of the firestop manufacturer's standard limit warranty against manufacturing defects, terms, conditions and exclusion from coverage.

**Project Name:** \_\_\_\_\_  
**Project Location:** \_\_\_\_\_

**SECTION 07 84 43  
JOINT FIRESTOPPING**

**PART 2 - PRODUCTS**

**2.1 MANUFACTURERS**

- A. Products: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Project include, but are not limited to the following;
  - 1. Passive Fire Protection (PFP) Partners, Delta, BC V3M 6T8 Toll Free: 800.810.1788 email: [firestop@firestop.com](mailto:firestop@firestop.com) website: [www.firestop.com](http://www.firestop.com)
- B. Substitutions: Requests for substitutions will be considered in accordance with Section 01 60 00.
- C. Single Source: To maintain control and integrity of the firestop applications a single firestopping manufacturer should be used. Specific UL, ITS and or other approved listing agencies systems applicable to each type of firestop condition should be supplied by one firestopping manufacturer.

**2.2 SCOPE/APPLICATION**

- A. Provide installed fire-resistive products that limit the spread of fire, heat, smoke, and gasses through otherwise unprotected openings in rated assemblies, including walls, partitions, floors, roof/ceilings, and similar locations, restoring the integrity of the fire-rated construction to its original fire rating.
- B. Provide fire-resistive systems listed for construction gaps per the specific combination of fire-rated construction type, configuration, gap dimensions, and fire rating, and the following criteria:
  - 1. Fire-resistance rating must be equal to or greater than that of the assembly in which it is to be installed.
  - 2. Movement capability must be appropriate to the potential movement of the gap, demonstrated by testing in accordance with ASTM E 1399 for minimum of 500 cycles at 10 cycles per minute.
  - 3. Determine ratings in accordance with UL 2079.

**2.3 THROUGH PENETRATION FIRESTOP SYSTEMS**

- A. PFP Partners 3500SI Mastic: One component, low VOC, water-based latex, intumescent spray.
- B. PFP Partners 3600EX Sealant: One component, low VOC, intumescent, water based, acrylic latex sealant
- C. PFP Partners 4100SL Sealant: One component, low VOC, water-based latex, self-leveling for floor openings.
- D. PFP Partners 4100NS Sealant: One component, low VOC, water-based latex, non-sag sealant for floor and wall openings.

**Project Name:** \_\_\_\_\_  
**Project Location:** \_\_\_\_\_

**SECTION 07 84 43  
JOINT FIRESTOPPING**

- E. PFP Partners 4800DW Sealant: One component, low VOC, water-based latex, low sag, paintable sealant.
- F. PFP Partners 5100SP Mastic: One component, low VOC, water-based latex, endothermic spray.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Before beginning installation, verify that substrate conditions previously installed under other sections are acceptable for installation of firestopping in accordance with manufacturer's installation instructions and technical bulletins.
  - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2 PREPARATION**

- A. Surface Cleaning: All surfaces shall be free of foreign materials (dirt, grease, oil, scale, rust, releasing agents, water repellents) and any other substances that could interfere with the adhesion of the joint firestop systems.
- B. Provide masking and temporary covering to protect adjacent surfaces, when required. Remove tape as soon as possible without disturbing

**3.3 JOINT FIRESTOP SYSTEM INSTALLATION**

- A. General: Install joint firestop systems to comply with Part 1 "Performance Requirements" Article and with firestop system manufacturer's written installation instructions and published drawings for product and application indicated.
- B. Installation Instructions: Comply with (UL), (ITS) or and or other approved listing agencies Listings and joint firestop manufacturer's instructions for installation of firestopping products and the following:
  - 1. Install so that all openings or voids are completely filled and material is securely adhered.
  - 2. Where joint firestop materials are exposed to view, finish to a smooth, uniform surface.
  - 3. Repair or replace defective installations in accordance with manufacturer's recommendations and listed system details to comply with requirements.
  - 4. Protect materials from damage on surfaces subjected to traffic.
  - 5. Apply materials so they contact and adhere to substrates formed by openings.
  - 6.



**Project Name:** \_\_\_\_\_  
**Project Location:** \_\_\_\_\_

**SECTION 07 84 43  
JOINT FIRESTOPPING**

**3.4 IDENTIFICATION**

- A. Identify through-penetration firestop systems with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches of edge of the firestop systems so that labels will be visible to anyone seeking to remove joint firestop systems. Use mechanical fasteners for metal labels. For plastic labels, use self-adhering type with adhesives capable of permanently bonding labels to surfaces on which labels are placed and, in combination with label material, will result in partial destruction of label if removal is attempted. Include the following information on labels:
1. The words "Warning – Construction Gap Fire Resistive System - Do Not Disturb. Notify Building Management of Any Damage."
  2. Contractor's name, address, and phone number.
  3. Joint firestop system designation of applicable testing and inspecting agency.
  4. Date of installation.
  5. Joint firestop system manufacturer's name.
  6. Installer's name.

**3.5 REPAIRS AND MODIFICATIONS**

- A. Identify damage or re-entered seals requiring repair or modification
- B. Remove loose or damaged materials
- C. If penetrating item(s) are to be added, remove sufficient material to insert new elements. Care must be used not to cause damage to the balance of the seal.
- D. Insure that surfaces to be sealed are clean and dry.
- E. Install materials in accordance with Paragraph 3.3 as required. Use only materials approved by through-penetration firestop manufacturer as suitable for repair of original seal. Never mix different manufacturer's firestopping materials.

**3.6 FIELD QUALITY CONTROL**

- A. Notify Consultant when completed installations are ready for inspection prior to concealing or enclosing an area containing firestopping materials.
- B. Arrange for inspection by the Owners independent inspection and testing company appointed and paid by Owner.
- C. Following field inspections, where deficiencies are found, all repairs or replacements as required to ensure compliance with the Contract Documents.

**3.7 CLEANING AND PROTECTION**

- A. Clean off excess material adjacent to openings as Project progresses by methods and with cleaning materials that are approved in writing by joint firestop system manufacturers and that do not damage materials in which openings occur.

**Project Name:** \_\_\_\_\_  
**Project Location:** \_\_\_\_\_

**SECTION 07 84 43  
JOINT FIRESTOPPING**

- B. Provide final protection and maintain conditions during and after installation that ensure that joint firestop systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint firestop systems immediately and install new material to produce systems complying with specified requirements.

**END OF SECTION 07 84 43**