

## PART 1 - GENERAL

1. Section Includes:
    1. Joints in or between fire-resistance-rated constructions
    2. Joints at exterior curtain-wall/floor intersections.
    3. Joints in non-rated fire separations.
    4. Sealing joints which may otherwise be noted on drawings as being firestopped.
  2. Related Work:
    1. Division 07 Section *Penetration Firestopping* for penetrations in fire-resistance-rated walls, horizontal assemblies, and smoke barriers.
  3. Types of items not described in this Section:
    1. Fire-resistive expansion joint systems.
- 1.2 ACTION SUBMITTALS
1. Product Data: For each type of product indicated.
  2. Product Schedule: For each joint fire stopping system. Include location and design designation of qualified testing agency.
    1. Where Project conditions require modification to a qualified testing agency's illustration for a particular joint fire stopping system condition, submit illustration, with modifications marked, approved by joint fire stopping system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly.
- 1.3 INFORMATIONAL SUBMITTALS
1. Qualification Data: For qualified Installer.
  2. Installer Certificates: From Installer indicating joint fire stopping systems have been installed in compliance with requirements and manufacturer's written recommendations.
  3. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for joint fire stopping systems.
- 1.4 QUALITY ASSURANCE
1. Installer Limitations: Have joint fire stopping systems installed by single installer for entire project.
  2. Source Limitations: Obtain primary joint firestopping materials from single source from single manufacturer. Provide secondary materials, including safing insulation, from source recommended by manufacturer of primary materials.
  3. Installer Qualifications: A firm experienced in installing joint fire stopping systems similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful performance. Qualifications include having the necessary experience, staff, and training to install manufacturer's products per specified requirements. Manufacturer's willingness to sell its joint fire stopping system products to Contractor or to Installer engaged by Contractor does not in itself confer qualification on buyer.
  4. Fire-Test-Response Characteristics: Joint fire stopping systems shall comply with the following requirements:

1. Joint fire stopping system tests are performed by a qualified testing agency acceptable to authorities having jurisdiction.
  2. Joint fire stopping systems are identical to those tested per testing standard referenced in *Joint Fire Stopping Systems* Article. Provide rated systems complying with the following requirements:
    1. Joint fire stopping system products bear classification marking of qualified testing agency.
  5. Preinstallation Conference: Conduct conference at Project site.
- 1.5 PROJECT CONDITIONS
1. Environmental Limitations: Do not install joint fire stopping systems when ambient or substrate temperatures are outside limits permitted by joint fire stopping system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
  2. Install and cure joint fire stopping systems per manufacturer's written instructions using natural means of ventilation or, where this is inadequate, forced-air circulation.
- 1.6 COORDINATION
1. Coordinate construction of joints to ensure that joint fire stopping systems are installed according to specified requirements.
  2. Coordinate sizing of joints to accommodate joint fire stopping systems.
  3. Notify Public Works' testing agency at least seven days in advance of joint fire stopping system installations; confirm dates and times on day preceding each series of installations.

## PART 2 - PRODUCTS

### 2.1 JOINT FIRE STOPPING SYSTEMS

1. Where required, provide joint fire stopping systems that are 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 assemblies in or between which joint fire stopping systems are installed. Joint fire stopping systems shall accommodate building movements without impairing their ability to resist the passage of fire and hot gases.
2. Joints in or between Fire-Resistance-Rated Construction: Provide joint fire stopping systems with ratings determined per ASTM E 1966 or UL 2079:
  1. Joints include those installed in or between fire-resistance-rated walls, floor or floor/ceiling assemblies, and roofs or roof/ceiling assemblies.
  2. Fire-Resistance Rating: Equal to or exceeding the fire-resistance rating of construction they will join.
3. Joints at Exterior Curtain-Wall/Floor Intersections: Provide joint fire stopping systems with rating determined by ASTM E 119 based on testing at a positive pressure differential of 0.01-inch wg 2.49 Pa or ASTM E 2307.
  1. Fire-Resistance Rating: Equal to or exceeding the fire-resistance rating of the floor assembly.
4. Joints in Non-Rated Fire Separations: Provide joint fire stopping systems with ratings determined per UL 2079.
  1. L-Rating: Not exceeding 5.0 cfm/ft 0.00775 cu. m/s x m of joint at 0.30 inch wg 74.7 Pa at both ambient and elevated temperatures.

5. Exposed Joint fire stopping systems: Provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per CAN/ULC-S102, *Test for Surface Burning Characteristics of Building Materials and Assemblies*.
6. VOC Content: Joint fire stopping system sealants shall comply 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.
7. Accessories: Provide components of joint fire stopping systems, including primers and forming materials that are needed to install fill materials and to maintain ratings required. Use only components specified by joint fire stopping system manufacturer and approved by the qualified testing agency for systems indicated.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

1. Examine substrates and conditions, with Installer present, for compliance with requirements for joint configurations, substrates, and other conditions affecting performance of the Work.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

1. Surface Cleaning: Clean joints immediately before installing joint fire stopping systems to comply with joint fire stopping system manufacturer's written instructions and the following requirements:
  1. Remove from surfaces of joint substrates foreign materials that could interfere with adhesion of fill materials.
  2. Clean joint substrates to produce clean, sound surfaces capable of developing optimum bond with fill materials. Remove loose particles remaining from cleaning operation.
  3. Remove laitance and form-release agents from concrete.
2. Priming: Prime substrates where recommended in writing by joint fire stopping system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
3. Masking Tape: Use masking tape to prevent fill materials of joint fire stopping system from contacting adjoining surfaces that will remain exposed on completion of the Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove stains. Remove tape as soon as possible without disturbing joint fire stopping system's seal with substrates.

#### 3.3 INSTALLATION

1. General: Install joint fire stopping systems to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.
2. Install forming materials and other accessories of types required to support 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 fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of joint fire stopping system.

3. Install fill materials for joint fire stopping systems by proven techniques to produce the following results:
  1. Fill voids and cavities formed by joints and forming materials as required to achieve fire-resistance ratings indicated.
  2. Apply fill materials so they contact and adhere to substrates formed by joints.
  3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

#### 3.4 IDENTIFICATION

1. Identify joint fire stopping systems with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches 150 mm of joint edge so labels will be visible to anyone seeking to remove or penetrate joint system. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed. Include the following information on labels:
  1. The words *Warning - Joint fire stopping system - Do Not Disturb. Notify Building Management of Any Damage.*
  2. Contractor's name, address, and phone number.
  3. Designation of applicable testing agency.
  4. Date of installation.
  5. Manufacturer's name.
  6. Installer's name.

#### 3.5 FIELD QUALITY CONTROL

1. Inspecting Agency: Public Works Representative may engage a qualified testing agency to perform tests and inspections.
2. Where deficiencies are found or joint fire stopping systems are damaged or removed due to testing, repair or replace joint fire stopping systems so they comply with requirements.
3. Proceed with enclosing joint fire stopping systems with other construction only after inspection reports are issued and installations comply with requirements.

#### 3.6 CLEANING AND PROTECTING

1. Clean off excess fill materials adjacent to joints as the Work progresses by methods and with cleaning materials that are approved in writing by joint fire stopping system manufacturers and that do not damage materials in which joints occur.
2. Provide final protection and maintain conditions during and after installation that ensure joint fire stopping systems are without damage or deterioration at time of Substantial Completion. If damage or deterioration occurs despite such protection, cut out and remove damaged or deteriorated joint fire stopping systems immediately and install new materials to produce joint fire stopping systems complying with specified requirements.

#### 3.7 FIRE-RESISTIVE JOINT SYSTEM SCHEDULE

1. Use firestopping materials as required to achieve the required rating for the following locations:
  1. Floors and Roofs
    1. Fire-rated floor/roof assembly with fire-rated floor/roof assembly.
    2. Fire-rated floor/roof assembly with fire-rated wall assembly.
    3. Fire-rated floor/roof assembly with an exterior wall assembly.

2. Walls
  1. Fire rated wall assembly with fire-rated wall assembly.
  2. Fire-rated wall assembly with an exterior wall assembly.
  3. Fire-rated wall assembly with the underside of a fire-rated floor/roof assembly.
  4. Fire-rated wall assembly with underside of non-rated floor/roof assembly.
3. Other joints in fire rated assemblies.

**END OF SECTION**