

**SPECIFICATION SECTION 07 84 00**  
**FIRESTOPPING & SMOKE SEALS**

**1 GENERAL**

**1.1 SECTION INCLUDES**

1.1.1 Comply with Division 1, General Requirements and Documents referred to therein.

1.1.2 It is the intent of this section of the specifications to establish a single, competent source to be responsible for providing all labour, materials, products, equipment and services, to supply and install the firestopping and smoke seal work for the entire project.

**1.1.3 SUMMARY**

- A. Provide firestop systems consisting of a material, or combination of materials installed to retain the integrity of fire-rated construction by maintaining an effective barrier against the spread of flame, smoke, and/or hot gases through penetrations, blank openings, construction joints, or at perimeter fire containment in or adjacent to fire-rated barriers in accordance with the requirements of the Building Code for this project.
  
- B. Firestop systems shall be used in locations including, but not limited to, the following:
  - 1. Penetrations through fire-resistance-rated floor and roof assemblies requiring protected openings including both empty openings and openings that contain penetrations.
  - 2. Penetrations through fire-resistance-rated wall assemblies including both empty openings and openings that contain penetrations.
  - 3. Membrane penetrations in fire-resistance-rated wall assemblies where items penetrate one side of the barrier.
  - 4. Joints in fire-resistance-rated assemblies to allow independent movement.
  - 5. Perimeter Fire Barrier System between a rated floor/roof and an exterior wall assembly.
  - 6. Joints, through penetrations and membrane penetrations in Smoke Barriers and Smoke Partitions.

**1.2 RELATED SECTIONS**

1.2.1 Related Sections to this Section include:

- 1. Division 3 - Cast-In-Place Concrete; Concrete Work
- 2. Division 4 - Unit Masonry
- 3. Division 5 - Expansion, Control, And Seismic Joints
- 4. Division 7 - Thermal And Moisture Protection
- 5. Division 8 - Glass, Glazing And Metal Curtain Wall Systems
- 6. Division 9 - Gypsum Wallboard

7. Division 15 - Mechanical
8. Division 16 - Electrical, Lighting, Power, Alarms And Communications

### **1.3 REFERENCE STANDARDS**

1.3.1 Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirement shall govern.

1. American Society for Testing and Materials (ASTM).
  - a) ASTM E 119 - Test Method for Fire Tests of Building Construction and Materials
  - b) ASTM E 136 - Test Method for Behaviour of Materials in a Vertical Tube Furnace at 750°F
  - c) ASTM E 814 - Test Method of Fire Tests of Through-Penetration Fire Stops
  - d) ASTM E 1399 Cyclic Movement and Measuring Minimum and Maximum Joint Widths
  - e) ASTM E 1966 Test Method for Resistance of Building Joint
  - f) ASTM E 2174 Standard Practice for On-Site Inspection of Installed Fire Stops
  - g) ASTM E 2393 Standard Practice for On-Site Inspection of Installed Fire Stop Joint Systems
  - h) ASTM E 2307 Standard Test Method for Determining the Fire Endurance of Perimeter Fire Barrier Systems Using the Intermediate-Scale, Multi Story Test Apparatus (ISMA)
  - i) ASTM C 920 Standard Specification for Elastomeric Joint Sealants
2. Underwriters Laboratories, Inc. (UL):
  - a) UL Qualified Firestop Contractor Program
  - b) UL 263 Fire Tests of Building Construction and Materials
  - c) UL 1479 Fire-Tests of Through-Penetration Fire Stops
  - d) UL 2079 Tests for Fire Resistance of Building Joint Systems
3. Underwriters Laboratories of Canada (ULC):
  - a) CAN/ULC-S101, Standard Methods of Fire Endurance Tests of Building Construction and Materials
  - b) CAN/ULC-S115 - Standard Method of Fire Tests of Firestop Systems

### **1.4 SYSTEM DESCRIPTION**

1.4.1 Firestopping Materials: Provide firestopping system(s) to provide and maintain a fire resistance rating, as indicated on drawings and in accordance with UL, WH, ULC, cUL or FM design details.

### **1.5 SUBMITTALS**

1.5.1 Submit Manufacturers Product Data Sheets for each type of product selected.

1.5.2 Verify that Firestop Material shall be asbestos free and complies with local regulations.

1.5.3 Submit [system design listings from a qualified testing and inspection agency] [shop drawings] that are applicable to each firestop configuration

1.5.3.1 Where there is no specific third party tested and classified Firestop System available for particular firestop configuration, the firestopping applicator shall obtain from [a professional engineer] [consultant] [the firestop manufacturer] an Engineering Judgment (EJ) or Equivalent Fire Resistance Rated Assembly (EFRRA) for submittal.

Submit applicator qualifications as noted in "Quality Assurance" article.

## **1.6 QUALITY ASSURANCE**

1.6.1 Manufacturer: Company specializing in manufacturing products of this Section with minimum three (3) years documented experience and quality management system registered in accordance with the requirements of ISO 9001:2000.

1.6.2 Applicator: Company having a minimum of three (3) years experience in the installation of materials specified herein on projects comparable to this project.

## **1.7 REGULATORY REQUIREMENTS**

1.7.1 Conform to [local Building Codes], [UL] [WH] [ULC] [cUL] [FM] listings and [ANSI/UL 1479] [ANSI/UL 2079] [ASTM E814] [CAN/ULC-S115] fire test standard to achieve the required fire protection rating.

## **1.8 ENVIRONMENTAL REQUIREMENTS**

1.8.1 Comply with manufacturer's installation recommendations for temperature, humidity, and ventilation conditions.

## **1.9 DELIVERY, STORAGE AND HANDLING**

1.9.1 Deliver materials to Site in manufacturer's sealed and labelled containers intact. Handle and store materials in accordance with manufacturer's instructions.

## **1.10 PROJECT/SITE CONDITIONS**

1.10.1 Comply with manufacturer's recommended requirements for temperature, relative humidity and substrate conditions during application and curing of materials.

## **1.11 SEQUENCING AND SCHEDULING**

1.11.1 Co-ordinate with other related Sections. Schedule work of other trades so that firestopping applications can be inspected prior to being covered by subsequent construction.

## **2 PRODUCTS**

### **2.1 ACCEPTABLE MANUFACTURERS**

2.1.1 Provide firestopping materials or devices from the following manufacturer:

A/D Fire Protection Systems Inc.

## **2.2 MATERIALS**

2.2.1 Material(s) shall be:

- A/D FIREBARRIER Acrylic Sealant
- A/D FIREBARRIER Collars
- A/D FIREBARRIER Inserts II
- A/D FIREBARRIER Intumescent Sealant
- A/D FIREBARRIER Pillows
- A/D FIREBARRIER Mineral Wool
- A/D FIREBARRIER Mortar
- A/D FIREBARRIER Putty II
- A/D FIREBARRIER Putty Pads II
- A/D FIREBARRIER Silicone or Silicone SL Sealants
- A/D FIREBARRIER Seal or Seal NS
- A/D FIREBARRIER SprayAcrylic
- A/D FIREBARRIER Wrap Strip
- A/D FIREBARRIER Collar Strip

2.2.2 Firestop system ratings: Comply with applicable Building Code requirements for locations and hourly ratings of [F] [T] or [F] [FT][FH][FTH] designations.

2.2.3 Damming and backup materials, supports and anchoring devices shall be in accordance with manufacturer's recommendations, tested firestop system/design and as acceptable to authorities having jurisdiction.

2.2.4 Primers: As required by firestopping manufacturer and compatible with selected system and contiguous materials.

2.2.5 Water: Potable.

## **3 EXECUTION**

### **3.1 EXAMINATION**

3.1.1 Examine substrates, openings, voids, adjoining construction and conditions under which the firestop is to be installed. Confirm compatibility of surfaces.

3.1.2 Verify penetrating items are securely fixed and properly located with the proper space allowance between penetrations and surfaces of openings.

### **3.2 PREPARATION**

3.2.1 Surfaces to receive firestopping shall be free of dirt, dust, grease, oil, rust, loose materials, release agents, frost, moisture or any other matter which would impair the bond of firestopping material to the substrate and penetrating item(s).

3.2.2 Prime substrates in accordance with manufacturer's written instructions.

3.2.3 Do not apply firestopping and smoke seals to surfaces previously painted or treated with sealers, curing compounds, water repellent or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required

3.2.4 Ensure that anchoring devices, back-up materials, clips, sleeves, supports and other related materials used in the actual fire tests are provided.

3.2.5 Mask where necessary to prevent firestopping materials from contacting adjoining surfaces that will remain exposed upon completion of Work. Remove tape as soon as it is possible to do so without damaging firestop material or substrate.

### **3.3 INSTALLATION**

3.3.1 Comply with [UL], [ULC], [cUL], [WH] or [FM] Listings and manufacturer's instructions for the type of material and condition of opening in each case. Consult with the manufacturer to determine proper procedure for conditions not fully covered by printed instructions. Record in writing any oral instructions received, with copy to manufacturer.

3.3.2 Remove excess firestopping material promptly as the Work progresses and upon completion.

3.3.3 Provide leak-proof dams as required to seal openings and contain firestop until cured. Install damming in accordance with test design and manufacturer's instructions.

### **3.4 FIELD QUALITY CONTROL**

3.4.1 Notify Consultant when completed installations are ready for inspection prior to concealing or enclosing an area containing firestopping materials.

3.4.2 Arrange for inspections by the Owners independent inspection and testing company appointed and paid for by Owner.

3.4.3 Following field inspections, provide all repair as required to ensure compliance with the Contract Documents.

### **3.5 CLEANING AND PROTECTION**

3.5.1 Upon completion of this work, remove all materials, equipment and debris from the site. Leave work area and adjacent surfaces in a condition acceptable to the Consultant.

**End of Section**