

SECTION 07800

FIRE AND SMOKE PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and General Provisions of this Contract, Bidding Requirements, Contract Forms, and Conditions of Contract and applicable requirements of Division 1 – General Requirements, govern this section.

1.2 DESCRIPTION OF WORK

- A. Provide fire-stopping and smoke-seals as indicated on the drawings as well as the following areas, including:
 - 1. All openings in fire-rated floors and walls both empty and those accommodating penetrating items such as cables, conduits, pipes, ducts, etc.
 - 2. Curtain wall openings between exterior walls and connecting floor slabs
 - 3. Head of wall openings between walls and connecting floors or roof assemblies.
 - 4. Expansion joints in fire-rated walls and floors.
 - 5. Openings at each floor level in shafts or stairwells.

1.3 RELATED SECTIONS

- A. Coordinate work of this section with the work of the following sections to properly execute the work in order to maintain the hourly ratings of the walls and floor where fire-stopping and smoke-seals are applied.
 - 1. Concrete Work
 - 2. Masonry Work
 - 3. Joint Sealers
 - 4. Drywall
 - 5. Division 15 and 16, Sections Mechanical, Plumbing, and Electrical

1.4 QUALITY ASSURANCE

- A. Fire-stopping materials shall conform to both Flame (F) and Temperature (T) ratings as tested by nationally accepted test agencies per ASTM E-814 or UL 1479 fire tests. The F rating must be a minimum of one (1) hour, but not less than the fire resistance rating of

the assembly being penetrated. The fire test shall be conducted with a minimum positive pressure differential of 0.03 inches of water column.

- B. Fire-stopping shall be performed by a contractor trained or approved by Firestop Manufacturer. Equipment used shall be in accordance with Firestop Manufacturer's written installation instructions.

1.5 SUBMITTALS

- A. Submit Manufacturer's printed product data indicating product characteristics, performance and limiting criteria.
- B. Submit Manufacturer's installation instructions for each type of fire-stop required by the project.
- C. Prepare job mock-up of their material proposed for use in the project as directed by Architect. Approved mock-ups may be left in place as part of the finished project and will constitute the standard for remaining work.
- D. All product Material Safety Data Sheets

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver all materials in original unopened packages fully identified with Manufacturer's name, trade name and UL label.
- B. Materials shall be stored off the ground and protected from environmental conditions as required by Manufacturer.

1.7 PROJECT CONDITIONS

- A. Confirm to Manufacturer's printed instructions for installation and when applicable, curing in accordance with temperature and humidity. Conform to ventilation and safety requirements.

1.8 WARRANTY

- A. Fire-stop Contractor shall warrant that fire-stopping systems used meet fire-stopping requirements as herein specified.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Bio Fireshield, Inc

- B. Proset Code Red Firestop Device
- C. Dow Corning Corporation
- D. Hilti System, Inc.
- E. Electrical Products Div.
- F. Or approved equal as determined by the Fire Marshal

2.2 MATERIALS

- A. Materials shall be free of asbestos.
- B. Materials shall provide a Flame (F) and Temperature (T) rating. The (F) rating shall be at least one (1) hour, but not less than the fire resistance rating of assembly being penetrated, as tested per ASTM E-814.
- C. Materials shall conform to all applicable governing codes.
- D. Fire-stop Mortar: Single component Portland Cement fly ash mortar. Requires no supports or anchoring devices to pass water hose stream test. UL classified for both Flame (F) and Temperature (T) ratings. Fire-stop mortar shall restrict the transmission of temperature as well as the passage of flame, smoke, and water.
- E. Fire-stop Sealant: Single or multiple component silicone sealant. Provides a flexible, air tight, waterproof seal that bonds to most building materials. UL classified for both Flame (F) and Temperature (T) ratings. Fire-stop sealant shall restrict the transmission of temperature as well as the passage of flame, smoke and water.
- F. Fire-stop Sleeve: Prefabricated device used around plastic pipes in fire-rated floors and walls. The sleeve is made of a steel collar lined with an intumescent material. UL classified for both Flame (F) and Temperature (T)
- G. Intumescent Mastic Sealant: Single component, water-based intumescent. Classified for both Flame (F) and Temperature (T) ratings under ASTM E 814-83

2.3 ALTERNATES

- A. Must be approved in writing prior to installation by Fire Marshal/Architect/Engineer. Written approval will only be issued upon receipt and review by Fire Marshal/Architect/Engineer of documentation showing compliance with this specification in its entirety.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Contractor shall inspect and verify that the surface and condition of the substrates have no defects or errors that would interfere with the installation of the fire-stop materials.
- B. Notify Fire Marshal/Architect/Engineer in writing of any defects or errors in workmanship. Do not proceed with work until all unsatisfactory conditions have been corrected.
- C. Start of installation of fire-stopping shall constitute the Contractor's acceptance of surfaces and conditions of substrates.

3.2 PREPARATION

- A. Clean surfaces and substrates of dirt, oil, loose materials and other foreign materials which may affect the proper bond or installation of the fire-stops in strict accordance with Manufacturers written instructions.
- B. Provide primers as required which conform to Manufacturer's recommendations for various substrates and conditions.
- C. Do not apply fire-stops to surfaces previously painted or treated with a sealer, curing compound, water repellent or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required in compliance with Manufacturer's instructions.
- D. Mask where necessary to protect adjoining surfaces, remove excess material and stains or surfaces as required.

3.3 INSTALLATION

- A. Install in strict accordance the Manufacturer's printed instructions to provide a Flame rating of at least one (1) hour, but not less than the fire resistance rating of the assembly being penetrated.
- B. Ensure that anchoring devices, back-up materials, clips sleeves, supports and other materials used in the actual fire test are installed.
- C. Install fire-stops with sufficient pressure to properly fill and seal openings to ensure an effective smoke seal.
- D. Tool or trowel exposed surfaces. Remove excess fire-stop material promptly as work progresses and upon completion.

3.4 FIELD QUALITY CONTROL

- A. Fire-stop Contractor shall immediately notify the Fire Marshal/Architect/Engineer if the Fire-stopping systems herein specified cannot meet the requirements of the specification
- B. Fire-stop Contractor shall examine fire-stops to ensure proper installation and full compliance with this specification.
- C. All areas of work must be accessible until inspection by the applicable Code authorities.
- D. Correct unacceptable fire-stops and provide additional inspection to verify compliance with this specification at no additional cost.
- E. When finished work will be visible, clean adjacent surfaces in accordance with Manufacturer's printed instructions, and remove temporary dams after initial cure of fire-stops.
- F. Correct staining and discoloring on adjacent surfaces.
- G. Remove all debris and excess materials entirely from site and leave work in a neat and orderly condition.
- H. Cleaning up:
 - a. Upon completion of the work of this Section, promptly remove from the job site all debris, empty containers, and surplus material derived from this portion of the work.

END OF SECTION