

## SECTION 15050 - MECHANICAL SYSTEMS FIRE STOPPING

## PART 1 GENERAL

## 1.1 DESCRIPTION OF WORK:

- A. Extent of firestopping required by this section is indicated on the drawings and by the requirements of this section.
- B. Types of firestopping systems specified in this section include:
  - 1. Bare metal pipe
  - 2. Insulated metal pipe
  - 3. Plastic piping
  - 4. Metal conduit
  - 5. Metal duct

## 1.2 QUALITY ASSURANCE:

- A. Manufacturer's Qualifications: Firms regularly engaged in the manufacturing of firestopping systems for mechanical/electrical penetrations, whose products have been in satisfactory use for not less than 5 years, with published application data for all types of penetrations to be encountered on this job, and with local representation capable of providing training and technical assistance at the job site.
- B. Installer's Qualifications: Personnel installing firestopping systems shall have been specifically trained by the manufacturer in the application of the materials to comply with the listing of the tested assembly.
- C. Codes and Standards: Comply with the applicable codes pertaining to firestopping. Firestopping systems shall be tested and listed in accordance with the following:
  - 1. Underwriter's Laboratory:
    - a. UL 1479 test method for fire tests of through-penetration firestops.
    - b. UL Fire Resistance Directory
  - 2. American Society for Testing and Materials: ASTM E814-88 standard test method for fire tests of through-penetration firestops.

## 1.3 SUBMITTALS:

- A. Product Data: Manufacturer's specifications and technical data including the following:
  - 1. Detailed specification of construction and fabrication.
  - 2. Manufacturer's installation instructions.
- B. Shop Drawings: Indicate dimensions, description of materials and finishes, general construction, specific modifications, component connections, anchorage methods, hardware and installation procedures, plus the following specific requirements:
  - 1. Details of each proposed assembly, for all types of fire rated construction and penetrating items encountered, identifying intended products and applicable UL System Number, or UL classified devices.

2. Manufacture or manufacturer's representative shall provide qualified engineering judgments and drawings relating to non-standard applications as needed.
- C. Installer Qualifications: Submit evidence that the actual personnel installing firestopping have been properly trained by the manufacturer.
- 1.4 DELIVERY, STORAGE AND HANDLING:
- A. Packing and Shipping:
1. Deliver products in original, unopened packaging with legible manufacturer's identification.
  2. Coordinate delivery with scheduled installation date, allow minimum storage at site.
- B. Storage and Protection: Store materials in a clean, dry ventilated location. Protect from soiling, abuse, moisture and freezing when required. Follow manufacturer's instructions.
- 1.5 PROJECT CONDITIONS:
- A. Existing Conditions:
1. Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding.
  2. Proceed with installation only after penetrations of the substrate and supporting brackets have been installed.
- B. Environmental Requirements:
1. Furnish adequate ventilation if using solvent.
  2. Furnish forced air ventilation during installation if required by manufacturer.
  3. Keep flammable materials away from sparks or flame.
  4. Provide masking and drop cloths to prevent contamination of adjacent surfaces by firestopping materials.
  5. Comply with manufacturing recommendations for temperature and humidity conditions before, during and after installation of firestopping.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS:

- A. Subject to compliance with the requirements of this specification, provide products by one of the following:
1. 3M, Fire Protection Products
  2. Nelson Firestop Products
  3. TREMCO Construction Products
  4. Metalines
  5. Hilti Corporation
  6. Specified technologies, Inc. (STI)

### 2.2 GENERAL:

- A. Provide fire stop systems listed in the UL Fire Resistance Directory. Provide systems with fire resistance "F" ratings equal to the fire resistance rating of the wall or floor assembly for all

penetrations. In addition, provide systems with a "T" rating equal to the fire resistance rating of the wall or floor assembly in the following applications.

1. All floor penetrations not within the cavity of a wall.

### 2.3 ACCESSORIES:

- A. Provide forming and damming materials and sleeves as required by the firestopping system installation instructions.

## PART 3 - EXECUTION

### 3.1 GENERAL:

- A. Review all project drawings, Owner's records and existing conditions to determine location, rating, and construction of all fire resistive construction.
- B. Coordinate location of penetrations to allow for the maximum and minimum annular space around the penetrating item. Allow a minimum of 1" undisturbed building material between penetrations, or provide a firestopping system listed for multiple penetrations. Penetrating items shall be centered in hole as much as practical, unless firestopping system is listed for point contact between the wall/floor assembly and the penetrating item.
- C. Neatly form, saw cut, hole saw or core drill openings. Size openings to conform with the maximum and minimum annular space requirements of the firestopping system.

### 3.2 APPLICATION:

- A. The Contractor shall determine the most appropriate firestopping system which complies with these specifications.
- B. All insulation shall be continued through the penetration. Provide intumescent caulk or collar firestopping systems. Where the insulation thickness specified in Section 15250 exceeds the allowable insulation thickness for the firestopping system, reduce the insulation thickness 6 inches on either side of the penetration. Do not reduce insulation to less than 50 percent of the specified thickness.
- C. Provide collar type firestopping systems where shown on drawings, and for hot piping systems at penetrations where significant thermal movement can be expected, such as near expansion compensation loops or joints.
- D. Provide a firestopping system for ducts penetrating fire resistive construction without fire or fire/smoke dampers.
  1. Do not provide firestopping between fire or fire/smoke damper sleeves and the opening.
- E. Anchor wiring not within conduit on each side of a penetration to prevent it from being pulled out of the firestopping system.
- F. See Section 15120 for sleeves. The use of sleeves may affect the "T" rating of the firestopping system. Coordinate use of sleeves with firestopping.

END OF SECTION 15050