SECTION 07840

FIRESTOPPING

3M™ Fire Barrier Rated Foam

FIP 1-Step

Display hidden notes to specifier. (Don't know how? [Click Here](http://www.arcat.com/sd/display_hidden_notes.shtml))

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\*\* NOTE TO SPECIFIER \*\* 3M; Firestopping Systems.  
  
This section is based on the products of 3M, which is located at:   
 3M Center Bldg. 223-2N-21.   
St. Paul, MN 55144-1000.   
 Toll Free Tel: (800)328-1687.   
Fax: (651) 737-0636.   
Email: [jemannix@mmm.com](mailto:jemannix@mmm.com)   
Web: [www.3m.com/firestop.](http://www.3m.com/firestop.)   
  
3M has been creating innovative passive fire protection systems for more than 30 years. Our complete line of fire protection products helps stop the spread of fire, smoke and toxic fumes. They are easy to install and are approved for a wide variety of firestop applications by Underwriters Laboratories, Factory Mutual and Intertek Testing Service (formerly known as Omega Point Laboratories.) .

1. GENERAL
   1. SECTION INCLUDES
      1. Firestopping systems including the following:
         1. Penetrations through fire-rated vertical and horizontal assemblies.
         2. Rated firestop foam.
   2. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03300 - Cast-In-Place Concrete.
    2. Section 04210 - Concrete Masonry Units.
    3. Section 07900 - Joint Sealers.
    4. Section 09200 - Plaster and Gypsum Board.
    5. Section 15400 - Plumbing.
    6. Section 15700 - HVAC.
    7. Section 16050 - Electrical.
    8. Section 16700 - Communications.
  1. REFERENCES
     1. 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.
        4. ANSI/UL 1709 - Rapid Rise Fire Tests of Protection Materials for Structural Steel.
     2. ASTM International (ASTM):
        1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
        2. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
        3. ASTM E 814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
     3. FM Global (FM) - FM4991 - Standard for Approval of Firestop Contractors.
     4. International Code Congress (ICC):
        1. International Building Code (IBC).
        2. International Residential Code (IRC).
     5. National Fire Protection Association (NFPA):
        1. NFPA 70 - National Electrical Code.
        2. NFPA 101 - Life Safety Code.
     6. Underwriters Laboratories (UL) - UL Building Materials Directory; Through-Penetration Firestops Systems (XHEZ), Joint Systems (XHBN), Firestop Devices (XHJI), Forming Materials (XHKU), Wall Opening Protective Materials (CLIV), and Fill, Void or Cavity Materials (XHHW).
  2. PERFORMANCE REQUIREMENTS
     1. Provide systems that are listed by at least one the following:

\*\* NOTE TO SPECIFIER \*\* Delete any of the following independent testing agencies whose listings would not be acceptable to the authorities having jurisdiction.

* + - 1. Underwriters Laboratories Inc. (UL), in "Fire Resistance Directory".
      2. Intertek Testing Service (Formerly known 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.
    1. Provide systems that utilize a foam product.
    2. Provide a rated firestop foam product that is flexible enough to allow for pipe vibration in a through penetration application.
    3. Provide a rated firestop foam product that meets the intent of the L rating classification for the movement of smoke per ANSI/UL 1479 for through penetrations and ANSI/UL 2079 for construction joints.
    4. Provide a rated firestop foam product that bears classification markings of a qualified independent testing agency.
    5. Where firestop systems not listed by any listing agency are required due to project conditions, submit a substitution proposal with evidence specified.
    6. Use only a rated firestop foam product specifically listed for use in listed systems.
    7. Provide a rated firestop foam product that is compatible with the substrates forming openings, and with the items, if any, penetrating the firestopping, under the conditions represented by this project, based on testing and field performance demonstrated by manufacturer.
    8. The rated firestop foam must meet and be acceptable for use by all building codes and NFPA codes cited in this section.
  1. SUBMITTALS
     1. Submit under provisions of Section 01300.
     2. Shop Drawings: For each firestopping system, provide the following:
        1. Listing agency's detailed drawing showing opening, penetrating item(s), and firestopping materials, identified with listing agency's name and number or designation and fire rating achieved. .
        2. For proposed systems that do not conform strictly to the listing, submit listing agency's drawing marked to show modifications and approved by firestop system manufacturer.
     3. Product Certificates: Submit certificates of conformance signed by firestop system manufacturer certifying that materials furnished comply with requirements.
     4. Product Data: Furnish 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 ASTM/UL/ANSI test standards.
        2. Storage and handling requirements and recommendations.
     5. Installation Instruction: Furnish manufacturer's installation instructions.
  2. QUALITY ASSURANCE
     1. General: All through-penetration firestop systems shall be installed with approved methods using materials that have been tested and classified to produce an approved assembly.
     2. Manufacturer Qualifications: All firestop foam products specified in this section will be supplied by a single manufacturer with a minimum of twenty five (25) years experience.
     3. Installer Qualifications: Firm must be qualified by having experience, staff, and be properly trained to install the specified products, and meets the following criteria:

\*\* NOTE TO SPECIFIER \*\* 3M recommends that only 3M Master Contractors or Certified 3M Trained Contractors be used. Delete options below that are not required.

* + - 1. Contractor is a 3M Master Contractor.
      2. Contractor is a Certified 3M Trained contractor.
      3. Contractor is acceptable to manufacturer.
      4. Contractor is acceptable to authority having jurisdiction.
      5. Contractor has completed the manufacturer's certified product installation training.
      6. Contractor must provide a list of completed projects as evidence of experience; include project name and address, owner's name and address, and architect's name and phone number.
      7. Certificate: Contractor should provide certificate of qualification.
    1. Codes: Where manufacturer's application procedures are in conflict with those of the code authority having jurisdiction, the more strict guidelines will prevail.
    2. Pre-installation Meetings: Meetings to agree on firestop requirements, conditions, manufacturer's instructions.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Deliver and store products until ready for installation in manufacturer's original unopened packaging, legibly marked with manufacturer's name and product identification, date of manufacture, lot number, shelf life, listing agency's classification marking, curing time, and mixing instructions if applicable.
     2. Store and handle in such a manner as to prevent deterioration or damage due to moisture, temperature changes, contaminants, and other causes; follow manufacturer's instructions.
     3. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.
  2. PROJECT CONDITIONS
     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 items.
     2. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install firestopping under environmental conditions outside manufacturer's absolute limits.
     3. Provide ventilation as required by firestopping manufacturer, including mechanical ventilation if required.
  3. WARRANTY
     1. At project closeout, provide to Owner or Owners Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: 3M Fire Protection Products, which is located at: 3M Center Bldg. 223-2N-21 ; St. Paul, MN 55144-1000; Toll Free Tel: 800-328-1687; Fax: 651-737-0636; Web: [www.3m.com/firestop](http://www.3m.com/firestop)
      2. Requests for substitutions will be considered in accordance with provisions of Section 01600.
      3. Single Source: To maintain control and integrity of the firestop applications a single manufacturer should be used. Specific UL or approved listing agencies systems applicable to each type of firestop condition should be supplied by one manufacturer.
   2. SCOPE/APPLICATION
      1. Provide installed firestop protects 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.
      2. Provide firestop systems listed for the specific combination of fire rated construction, type of penetrating item, annular space requirements, and fire rating, and the following criteria:
         1. F-Rating: Equal to or greater than the fire-resistance rating of the assembly in which the firestopping will be installed.
         2. L-Rating: L-rating of 1 cfm per linear foot (5.5 cu m/h/m) maximum at ambient temperatures.
         3. Wall Penetrations: Systems must be symmetrical, with the same rating from both sides of the wall.
         4. Testing: Determine ratings in accordance with ASTM E 814 or UL 1479.
   3. THROUGH PENETRATION FIRESTOP SYSTEMS
      1. 3M Fire Barrier Rated Foam, FIP 1-Step: Rated firestop foam used for commercial construction.
         1. Fire resistance: For use in 1 and 2 hour fire rated systems
         2. Paintable with primer
         3. Sag resistant
         4. No mineral wool necessary
         5. Expands up to 5 times upon dispensing
         6. Re-enterable / repairable
         7. Quick cure
2. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. Conduct tests according to manufacturer's written recommendations to verify that substrates are free of oil, grease, rolling compounds, incompatible primers, loose mill scale, dirt and other foreign substances capable of impairing bond of firestopping.
      3. Verify that items penetrating fire rated assemblies are securely attached, including sleeves, supports, hangers, and clips.
      4. Verify that openings and adjacent areas are not obstructed by construction that would interfere with installation of firestopping, including ducts, piping, equipment, and other suspended construction.
      5. Verify that environmental conditions are safe and suitable for installation of firestopping.
      6. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   2. PREPARATION
      1. Prepare substrates in accordance with manufacturer's instructions and recommendations.
      2. Install masking and temporary coverings as required to prevent contamination or defacement of adjacent surfaces due to firestopping installation.
   3. INSTALLATION
      1. Install in strict accordance with manufacturer's detailed installation instructions and procedures.
      2. Install so that openings are completely filled and material is securely adhered.
      3. Where firestopping surface will be exposed to view, finish to a smooth, uniform surface flush with adjacent surfaces.
      4. After installation is complete, remove combustible forming materials and accessories that are not part of the listed system.
      5. Repair or replace defective installations to comply with requirements.
      6. At each through penetration, attach identification labels on both sides in location where label will be visible to anyone seeking to remove penetrating items or firestopping.
      7. Clean firestop materials off surfaces adjacent to openings as work progresses, using methods and cleaning materials approved in writing by firestop system manufacturer and which will not damage the surfaces being cleaned.
      8. Notify authority having jurisdiction when firestopping installation is ready for inspection; obtain advance approval of anticipated inspection dates and phasing, if any, required to allow subsequent construction to proceed.
      9. Do not cover firestopping with other construction until approval of authority having jurisdiction has been received.

\*\* NOTE TO SPECIFIER \*\* This article is optional. Delete if not required.

* 1. FIELD QUALITY CONTROL
     1. Owner will engage an independent testing agency to inspect installed firestopping and to prepare reports indicating whether the installed work complies with the contract documents.
     2. Notify testing agency at least 7 days prior to date when firestopping installation will be ready for inspection; obtain advance approval of general schedule and phasing, if any, required to allow subsequent construction to proceed.
  2. CLEANING AND PROTECTION
     1. Remove left over material and debris from Work area. Use necessary means to protect film before, during, and after installation.
     2. Touch-up, repair or replace damaged products before Substantial Completion.
     3. Install identification Labels for Through Penetration and Construction Joint Systems: Pressure sensitive self-adhesive vinyl labels, preprinted with the following information:
        1. The words "Warning - Through Penetration Firestop System - Do not Disturb. Notify Building Management of Any Damage."
        2. Listing agency's system number or designation.
        3. System manufacturer's name, address, and phone number.
        4. Installer's name, address, and phone number.
        5. General contractor's name, address, and phone number (if applicable).
        6. Date of installation.

END OFSECTION

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