

**SECTION 07 84 00
FIRESTOP SYSTEMS**

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Applications of Firestop systems include:
2. Penetrations for passage of duct, cable tray, conduit, piping, electrical busways and raceways through fire rated vertical barriers (walls and partitions), horizontal beams (floor/ceiling assemblies) and vertical service shaft walls and partitions
3. Safing gaps between edge of floor slabs and curtain walls
4. Gaps between tops of walls and ceiling or roof assemblies
5. Expansion joints in fire rated walls and floors
6. Openings and penetrations in fire rated partitions or walls containing fire doors
7. Openings around structural membranes which penetrate fire rated floors or walls

B. Related sections:

1. Concrete: Division 3 Concrete Sections
2. Masonry: Division 4 Masonry Sections
3. Insulation: Division 7 Saving Insulation and accessories
4. Gypsum Drywall: Section 09 29 00
5. Mechanical: Division 23 Mechanical Sections
6. Plumbing: Divisions 21 and 22 Fire Suppression and Plumbing sections
7. Electrical: Divisions 25, 26, and 27 Electrical Sections

1.2 REFERENCES

- A. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials
- B. ASTM E119 – Standard Test Method for Fire Tests of Building Construction and Materials
- C. ASTM E814 – Standard Test Method of Fire Tests of Through Penetration Firestop
- D. ASTM E1966 – Standard Test Methods for Fire Tests of Joints
- E. FM (Factory Mutual) - Fire Hazard Classifications
- F. UL - Fire Hazard Classifications
- G. UL 2079 – Tests for Fire Resistance of Building Joint Systems
- H. UL 1479 – Fire Tests of Through-Penetration Firestop
- I. WH (Warnock Hersey) - Certification Listings
- J. FBC - Florida Building Code

1.3 SYSTEM DESCRIPTION

- A. Provide Firestop systems manufactured and installed to maintain performance criteria stated by manufacturing without defects, damage, or failure.

1.4 SUBMITTALS

- A. Comply with pertinent provisions of Section 01300.
- B. Product Data:
 1. Materials list of items used under this Section.
 2. Provide the manufacturer's specifications and data.
 3. Shop Drawings:
 - a. Submit shop drawings showing layout, profiles, and product components.
 - b. Include Independent laboratory with system classification number on shop drawings.
 4. Provide written documentation of applicator's qualifications, including reference projects of similar scope and complexity, with current phone contacts of references for

verification.

5. Certification from sealant manufacturers that their products are suitable for the use indicated and comply with specification requirements.

1.5 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workers thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.
- B. Applicator Qualifications:
 1. Applicator shall have at least 3-years experience in installing materials of types specified and shall have successfully completed at least 3-projects of similar scope and complexity.
 2. Manufacturer approved applicator.
 3. Applicator shall designate a single individual as project supervisor who shall be on site at all times during installation.
- C. Single source responsibility for firestopping materials:
 1. Obtain Firestop materials from single manufacturer for each different product required.
 2. Manufacturer shall instruct applicator in procedures for each material.
- D. Regulatory Requirements:
 1. Firestop System installation shall meet requirements of ASTM E814 and provide a fire-rating equal to that of the construction it penetrates.
 2. Proposed Firestop materials and methods shall conform to applicable governing codes having local jurisdiction.
 3. For those Firestop applications not having an UL or third party tested system available through any manufacturer.
 - a. Prior to installation the manufacturer may submit to the authorities having jurisdiction for their consideration an engineering judgment derived from similar independently tested system of similar design.
 - b. Manufacturer's engineering judgment drawings must follow requirements set forth by the International Firestop Council.

1.6 MOCKUP

- A. Provide mockups of applied Firestop assemblies under provisions of Section 01 40 00.
- B. Apply 3 sq. ft. to a representative substrate surface.
- C. Apply Firestop material to a representative penetrated masonry, concrete, stud wall, and substrate.
- D. If accepted, mockup will demonstrate minimum standard of the Work.
- E. Mockup may remain as part of the Work.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when temperature of substrate material and ambient air is below 60°F.
- B. Maintain this minimum temperature before, during and three days after installation of materials.
- C. Provide ventilation in areas to receive solvent cured materials.

PART 2 PRODUCTS

2.1 GENERAL

- A. Product Categories
 1. SILICONE ELASTOMERIC COMPOUND
 - a. Single-component, neutral cure silicone firestopping sealant.
 - b. Silicone Elastomeric high performance sealant is capable of plus or minus 25%

- movement.
- 2. ELASTOMERIC SEALANT
 - a. Single component water-based acrylics Fire stop sealant, that allows for a plus or minus 25% movement.
- 3. INTUMESCENT SEALANTS
 - a. Single component water-based, intumescent acrylic firestop sealant that expands filling any void caused when combustible materials burn.
 - b. Sealant qualities include superb unprimed adhesion, easy gunning, and the ability to be painted once fully cured.
- 4. FIBER STUFFING
 - a. 4 lb. to 8 lb. Mineral Wool or Cerablanket Insulation
- 5. MECHANICAL DEVICE WITH FILLERS
 - a. Field fabricated or pre-fabricated collar device used to Firestop combustible pipe penetrations through walls or floors.
 - b. Pre-fabricated Cast-in-Place devices affixed to forms prior to concrete pour used to Firestop combustible or non-combustible pipe penetrations through floors.
- 6. INTUMESCENT PUTTY
 - a. A moldable intumescent putty that remains pliable allowing for easy retrofit and reduces sound transmission through assemblies.
- 7. FIRE PREVENTION PILLOW SYSTEM
 - a. Intumescent moisture resistant, dust free fiberglass bags for sealing cable tray openings.
- 8. ACCESSORIES
 - a. Use primer recommended by firestopping manufacturer for specific substrate surfaces.
 - b. Installation Accessories are clips, collars, fasteners, temporary stops/dams, and other devices required to position and retain materials in place.

PART 3 EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- A. Provide copy of manufacturer's product data including product technical bulletins, product catalog, installation instructions, and product packaging instructions.

3.2 EXAMINATION

- A. Site Verification of Conditions:
 - 1. Verify substrate conditions, previously installed under other sections, are acceptable for product installation and product packaging instructions.
 - 2. Examine areas and conditions of work area and identify conditions detrimental to proper and timely completion.

3.3 PREPARATION

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material or other matter that may affect bond of firestopping material.
- B. Verify that penetrations and joints are properly sized
- C. Remove incompatible materials that may affect bond.
- D. Do not proceed until unsatisfactory conditions have been corrected

3.4 INSTALLATION

- A. Install Firestop materials in accordance with published "Through-Penetration Firestop Systems" in UL's Fire Resistant Directory or the publication of another approved independent

laboratory

- B. Comply with manufacturer's instructions for installation of Firestop Materials
 - 1. Seal all holes or voids made by penetrations to ensure an air and water resistant seal.
 - 2. Seal all joints to ensure an air and water resistant seal, capable to withstand compression and expansion due to thermal, wind or seismic joint movement
 - 3. Consult with Mechanical Engineer, Project Manager prior to installation of Third Party Tested Firestop Systems that might hamper the performance of fire dampers as it pertains to duct work.

3.5 FIELD QUALITY CONTROL

- A. Examine Firestop areas to ensure proper installation before concealing or enclosing areas
- B. Keep areas of work accessible until inspection by applicable code authorities

3.6 IDENTIFICATION

- A. Identify Firestop systems with pressure-sensitive, self-adhesive, printed vinyl labels.
- B. Attach labels permanently to surfaces of penetrated construction on both sides of each Firestop system installation where labels will be visible to anyone seeking to remove penetrating items or Firestop systems.
 - 1. Include the following information on labels:
 - a. The words: "Warning: Through-Penetration Firestop system – Do Not Disturb"
 - b. Contractor's name, address and phone number
 - c. Designation of applicable testing and inspection agency
 - d. Date of installation
 - e. Manufacturer's name for Firestop materials

3.7 CLEANING

- A. Clean work under provisions of Section 01 77 00.
- B. Clean adjacent surfaces of firestopping materials.

3.8 PROTECTION OF FINISHED WORK

- A. Protect finished work under provisions of Section 01 50 00.
- B. Protect adjacent surfaces from damage by material installation.

END OF SECTION