SECTION 07841
THROUGH-PENETRATION FIRE STOP SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Section includes firestopping and through-penetration system materials and accessories; firestopping tops of fire rated walls; and smoke sealing at joints between floor slabs and exterior walls.

B. Firestopping of all penetrations and interruptions to fire rated assemblies, whether indicated on the Contract Drawings and/or specified herein or not, and other openings indicated.

1.02 SYSTEM DESCRIPTION

A. Firestopping Materials: ASTM E119, ASTM E814, UL 263, UL 1479 to achieve fire ratings of adjacent construction in accordance with Factory Mutual (FM), Underwriters Laboratories Inc. (UL) and Warnock Hersey (WH) Design Numbers as noted on the Contract Drawings and/or specified herein.

B. Surface Burning: ASTM E84, UL 723 with a maximum flame spread/smoke developed rating of 25/450.

C. Firestop interruptions to fire rated assemblies, materials and components.

1.03 PERFORMANCE REQUIREMENTS

A. Conform to applicable code FM, UL and WH for fire resistance ratings and surface burning characteristics.

B. Provide certificate of compliance from jurisdiction authority indicating project materials approval.

1.04 REFERENCED SECTIONS

A. Section 09260 – Gypsum Board Assemblies.
B. Section 09910 – Painting
C. Division 15 – Mechanical – Mechanical work requiring firestopping.
D. Division 16 – Electrical: Electrical work requiring firestopping.

1.05 REFERENCED STANDARDS

A. American Society for Testing and Materials (ASTM)


C. Underwriters Laboratories, Inc. (UL)
   4. UL 1479 – Fire Tests of Through-Penetration Firestops.

1.06 DEFINITIONS

A. Firestopping (Through-Penetration Protection System): A sealing or stuffing material or assembly placed in spaces between and penetrations through building materials to arrest the movement of fire, smoke, heat and hot gases through fire-rated construction.

1.07 SUBMITTALS

A. Specification Section 01330 – Submittals: Submittal procedures.

B. Product Data: Submit data on product characteristics, performance and limitation criteria.

C. Schedule: Provide a schedule of opening locations and sizes, penetrating items and the required listed design numbers to seal openings to maintain the fire resistance rating of the adjacent assembly.
D. **Manufacturer’s Installation Instructions:** Submit preparation and installation instructions.

E. **Engineering Judgements:** For conditions not covered by UL or WH listed designs, provide judgements by a licensed professional engineer suitable for presentation to the jurisdiction authority for acceptance as meeting code fire protection requirements.

1.08 **QUALITY ASSURANCE**

A. **Fire Testing:** Provide firestopping assemblies of designs which provide the specified fire ratings when tested in accordance with methods indicated.

B. **Manufacturer Qualifications:** Company specializing in manufacturing the products specified in this section with a minimum 5 years documented experience.

C. **Installer Qualifications:** Company specializing in performing the work of this section with minimum 5 years experience.

**PART 2 PRODUCTS**

2.01 **QUALIFICATIONS**

A. **Manufacturer:** Company specializing in manufacturing products specified in this section with a minimum three years documented experience.

2.02 **FIRESTOPPING ASSEMBLIES**

A. **Firestopping:** Any material meeting requirements.

1. **Fire Ratings:** Use any system listed by UL or tested in accordance with ASTM E814 that has an F Rating equal to the fire rating of penetrated assembly and minimum T Rating Equal to F Rating and that meets all other specified requirements.

B. **Acceptable Manufacturers**

1. Dow Corning Corp.
2. 3M Fire Protection Products
3. Nelson Firestop Products  
4. United States Gypsum Co. – Model Thermafiber  
5. Specified Technologies, Inc.

C. Color: As selected from manufacturer’s full range of colors.

2.03 MATERIALS

A. Elastomeric Silicone Firestopping: Single component silicone elastomeric compound and compatible silicone sealant.

1. Acceptable Manufacturers:

   b. 3M Fire Protection Products.  
   c. Specified Technologies, Inc.  
   d. Or Approved Equivalent.

B. Foam Firestopping: Single component foam compound.

1. Acceptable Manufacturers:

   a. 3M Fire Protection Products.  
   b. Specified Technologies, Inc.

C. Fibered Compound Firestopping: Formulated compound mixed with incombustible non-asbestos fibers.

1. Acceptable Manufacturers:

   b. United States Gypsum Co.

D. Intumescent Firestop Sealants and Caulks Putty: Compound which expands on exposure to surface heat gain.

1. Acceptable Manufacturers:

   b. Specified Technologies, Inc.(STI) – SpecSeal S100 and S500 Sealant.  
   c. International Protective Coatings Corp.

E. Latex Firestop Sealant:
1. Acceptable Manufacturer:

F. Silicone Firestop Sealants and Caulks:

1. Acceptable Manufacturers:
   b. 3M Fire Protection Products – Fire Barrier Silicone Sealants.
   c. Nelson CLK Firestop Sealant.

G. Firestop Putty:

1. Acceptable Manufacturers:
   b. 3M Fire Protection Products – Fire Barrier Moldable Putty.
   c. Nelson FSP Firestop Putty.

H. Firestop Collars:

1. Acceptable Manufacturers:
   b. 3M Fire Protection Products – Fire Barrier PPD’s.

I. Wrap Strips:

1. Acceptable Manufacturers:
   b. 3M Fire Protection Products – Fire Barrier FS195 Wrap Strip.

J. 2-Part Silicone Firestop Foam:

1. Acceptable Manufacturers:

K. Firestop Mortar:

1. Acceptable Manufacturers:

L. Composite Board:

1. Acceptable Manufacturers:
   a. 3M Fire Protection Products – Barrier Sheet Material.

M. Firestop Pillows:

1. Acceptable Manufacturers:

2.04 ACCESSORIES

A. Primers, Sleeves and Forms: Type recommended by firestopping manufacturer for the specific substrate surfaces and suitable for the required fire ratings and required for tested assembly design.

B. Dam Material: Permanent
   1. Mineral Fiberboard.

C. Installation Accessories: Provide clips, collars, fasteners, temporary stops or dams and other devices required to position and retain materials in place.

PART 3 EXECUTION

3.01 QUALIFICATIONS

A. Applicator: Company specializing in performing the Work of this section with minimum three years documented experience and approved by the manufacturer.

3.02 ENVIRONMENTAL REQUIREMENTS
A. Do not apply materials when temperature of substrate material and ambient air is below 60°F.

B. Comply with firestopping manufacturer’s recommendations and instructions for temperature and conditions during and after installation. Maintain minimum temperature before, during and for 3 days after installation of materials.

C. Provide ventilation in areas where solvent-cured materials are being installed.

3.03 EXAMINATION

A. Specification Section 01039 – Coordination and Meetings: Coordination and project conditions.

B. Verify openings are ready to receive the Work of this section.

3.04 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material or other matter which may affect the bonding of the firestopping material.

B. Remove incompatible materials which may affect the bond.

C. Install backing damming materials to arrest liquid material leakage.

3.05 APPLICATION

A. Install materials in the manner described in the fire test report and in accordance with the manufacturer’s instructions, completely closing openings.

B. Install material at fire rated construction perimeters and openings which contain penetrating sleeves, piping, ductwork, conduit and other items requiring firestopping.

C. Apply primer where recommended by the manufacturer for the type of firestopping material and substrate involved and as required for compliance with the required fire ratings.

D. Apply firestopping material in sufficient thickness to achieve the required fire and smoke rating to uniform density and texture.

E. Compress fibered material to a maximum 40% of its uncompressed size.
F. Place foamed material in layers to ensure homogeneous density, filling cavities and spaces. Place sealant to completely seal junctions with adjacent dissimilar materials.

G. Place intumescent coating in sufficient coats to achieve required rating.

H. Dam material to remain.

I. Do not cover installed firestopping until inspected by the A/E or Owner’s Representative.

J. Install labeling as required by the code.

3.06 CLEANING AND PROTECTION

A. Specification Section – 01770 – Contract Closeout: Final cleaning

B. Clean adjacent surfaces of firestopping materials.

3.07 PROTECTION OF INSTALLED CONSTRUCTION

A. Specification Section 01770 – Contract Closeout: Protecting installed construction.

B. Protect adjacent surfaces from damage by material installation.

END OF SECTION 07841