

SECTION 270524 – COMMUNICATIONS FIRESTOPPING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. This section includes the fire stopping requirements for the Division 27 and 28 portions of the project. Should conflicts arise between this portion of the requirements and those required by the Architectural Specifications, the Contractor shall utilize the more stringent requirements. Items covered in this Section include, but are not limited to,
 - 1. Firestopping of Through Penetrations in Fire Rated Assemblies.
 - 2. Smoke Seals.
 - 3. Construction enclosing compartmentalized areas.

1.2 RELATED SECTIONS

- A. Section 270100 – Communications Common Work Results
- B. Section 270200 – Communications Demolition
- C. Section 270526 – Grounding and Bonding for Communications Systems
- D. Section 270528 – Pathways for Communications Systems
- E. Section 270544 – Sleeves and Sleeve Seals for Communications Pathways and Cabling
- F. Section 271100 – Communications Equipment Rooms Fittings
- G. Section 271313 – Communications Copper Backbone Cabling
- H. Section 271323 – Communications Optical Fiber Backbone Cabling
- I. Section 271513 – Communications Copper Horizontal Cabling
- J. Section 272100 – Data Communications System
- K. Section 273100 – Telephony System
- L. Section 274116 – Audio Visual Systems
- M. Section 275113 – Public Address Systems
- N. Section 275123 – Intercom Systems
- O. Section 275313 – Wireless GPS Clock Systems
- P. Section 280513 – Conductors and Cables for Electronic Safety and Security

- Q. Section 281300 – Access Control
- R. Section 282300 – Video Surveillance
- S. Division 1 – General Requirements
- T. Division 2 – Earthwork
- U. Division 7 – Firestopping
- V. Division 9 – Finish Painting
- W. Division 11 – Equipment
- X. Division 14 – Conveying Systems
- Y. Division 25 – Mechanical
- Z. Division 26 – Electrical

1.3 REFERENCES

- A. ASTM E 84, “Surface Burning Characteristics of Building Materials”.
- B. ASTM E 119, “Fire Tests of Building Construction and Materials”.
- C. ASTM E 814, “Fire Tests of Through Penetration Firestops”.
- D. ANSI/UL263, “Fire Tests of Building Construction and Materials”.
- E. ANSI/UL723, “Surface Burning Characteristics of Building Materials”.
- F. ANSI/UL1479, “Fire Tests of Through Penetration Firestops”.
- G. Uniform Building Code published by ICBO.
- H. Standard Building Code published by SBCCI.
- I. National Building Code published by BOCA.
- J. International Building Code published by ICC.
- K. Underwriters Laboratories Inc. (UL) – Fire Resistance Directory
- L. National Fire Protection Association (NFPA) – NFPA 101: Life Safety Code.
- M. National Fire Protection Association (NFPA) – NFPA 70: National Electrical Code.

1.4 PERFORMANCE REQUIREMENTS

- A. Fire rated pathway devices shall be the preferred product and shall be installed in all locations where frequent cable moves, adds and changes will occur.

- B. Where non- mechanical products are utilized, provide products that upon curing do no re-emulsify, dissolve, leach, breakdown or otherwise deteriorate over time from exposure to atmospheric moisture, sweating pipes, ponding water or other forms of moisture characteristic during or after construction.
- C. Where it is not practical to use a mechanical device, openings within floors and walls designed to accommodate telecommunications and data cabling shall be provided with re-enterable products that do not cure or dry.
- D. Openings for cable trays shall be sealed using re-enterable firestopping pillows.

1.5 SUBMITTALS

- A. All submittals shall conform completely with the requirements of the Contract Documents.
- B. Product Data
- C. For each type, provide manufacturer's standard catalog data for specified products demonstrating compliance with referenced standards and listing numbers of systems in which each product is to be used.
- D. Shop Drawings
 - 1. Submit schedule of opening locations and sizes, penetrating items, and required listed design numbers to seal openings to maintain fire resistance ratings. Show typical installation details including:
 - a. Minimum and maximum allowable annular spacing
 - b. Base material composition
 - c. Firestop materials selected
 - d. Applied thickness required to achieve the hourly rating
- E. Certificates
 - 1. Submit product certificates signed by firestop system manufacturer certifying material compliance with applicable code and specified performance characteristics.
- F. Installation Instructions
 - 1. Submit manufacturer's printed installation instructions.

1.6 QUALITY ASSURANCE

- A. Products/Systems: Provide firestopping systems that comply with the following requirements:
 - 1. Firestopping tests are performed by a qualified, testing and inspection agency. A qualified testing and inspection agency is UL, or another agency performing testing and follow-up inspection services for firestop system acceptable to authorities having jurisdiction.
 - 2. Firestopping products bear the classification marking of qualified testing and inspection agency.

- B. Installer Qualifications: Experience in performing work of this section who is qualified by the firestopping manufacturer as having been provided the necessary training to install firestop products in accordance with specified requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery:

- 1. Manufacturer's original, unopened, undamaged containers, identification labels intact identifying product and manufacturer, date of manufacture; lot number; shelf life, if applicable; qualified testing and inspection agency's classification marking; and mixing instruction for multicomponent products.
 - 2. Handle and store products according to manufacturer's recommendations published in technical materials. Leave products wrapped or otherwise protected and under clean and dry storage conditions until required for installation.

- B. Storage and Protection:

- 1. Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.

1.8 PROJECT CONDITIONS

- A. Do not install firestopping products when ambient or substrate temperatures are outside limitations recommended by manufacturer.
- B. Do not install firestopping products when substrates are wet due to rain, frost, condensation, or other causes.
- C. Maintain minimum temperature before, during, and for a minimum 3 days after installation of materials.
- D. Do not use materials that contain flammable solvents.
- E. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.
- F. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration firestop systems.
- G. Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.

1.9 WARRANTY

- A. Contractor shall provide written certification that all firestopping was installed in accordance with the manufacturer's written instructions for UL tested assemblies and that all firestop systems installed meet the firestopping requirements as herein specified.

1.10 COORDINATION

- A. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.
- B. Coordinate sizing of sleeves, openings, core-drilled holes or cut openings to accommodate through-penetration firestop systems.
- C. Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.

1.11 PROTECTION

- A. Where firestopping is installed at locations which shall remain exposed in the completed work, provide protection as necessary to prevent damage to adjacent surfaces and finishes, and protect as necessary against damage from other construction activities.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Single Source: Obtain firestop systems for each type of penetration and construction condition indicated only from a single manufacturer.

2.2 MATERIALS

- A. General: Use only firestopping products that have been tested for specific fire resistance rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements, and fire rating involved for each separate instance.
- B. Fire Rated Cable Pathways: Factory manufactured devices comprised of steel raceway with intumescent foam pads allowing 0 to 100 percent cable fill, the following products are acceptable:
 - 1. Specified Technologies Inc. (STI) EZ-PATH™ Fire Rated Pathway
 - 2. Hilti Speed Sleeve
 - 3. 3M Fire Barrier Pass Through Device, Square
- C. Latex Sealants: Single component latex formulations that upon cure do not re-emulsify during exposure to moisture, the following products are acceptable:
 - 1. Specified Technologies Inc. (STI) SpecSeal® Series SSS Sealant
 - 2. Hilti Elastic Firestop Sealant
 - 3. 3M Fire Barrier Silicone Sealant
- D. Firestop Putty: Intumescent, non-hardening, water resistant putties containing no solvents, inorganic fibers or silicone compounds, the following products are acceptable:
 - 1. Specified Technologies Inc. (STI) SpecSeal® Series SSP Putty

2. Hilti Firestop Putty
 3. 3M Fire Barrier Moldable Putty
- E. Firestop Pillows: Re-enterable, non-curing, mineral fiber core encapsulated with an intumescent coating contained in a flame retardant poly bag, the following products are acceptable:
1. Specified Technologies Inc. (STI) SpecSeal® Series SSB Pillows
 2. Hilti Firestop Cushions
 3. 3M Fire Barrier Pillows

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Before beginning installation, verify that substrate conditions previously installed under other sections are acceptable for installation of firestopping in accordance with manufacturer's installation instructions and technical information.
- B. Surfaces shall be free of dirt, grease, oil, scale, laitance, rust, release agents, water repellants, and any other substances that may inhibit optimum adhesion.
- C. Provide masking and temporary covering to protect adjacent surfaces.
- D. Do not proceed until unsatisfactory conditions have been corrected.
- E. Verify that environmental conditions are safe and suitable for the installation of the firestop products.

3.2 INSTALLATION

- A. General: Install through-penetration firestop systems in accordance with Performance Criteria and in accordance with the conditions of testing and classification as specified in the published design.
- B. Manufacturer's Instructions: Comply with manufacturer's instructions for installation of firestopping products.
- C. All firestopping shall be installed in accordance to the UL rated system designed for the application.
- D. Sleeves and core-drilled holes shall be sized at least 1-1/2" larger in diameter than penetrating items.
- E. Installation of firestops shall be performed by applicators/installers qualified and trained by the Manufacturer.
- F. Coordinate with plumbing, mechanical, electrical and other trades to assure that all conduits, raceways, cables, cable trays, and other equipment which penetrate fire rated construction have been permanently installed prior to installation of firestops. Schedule and sequence the work to assure that partitions and other construction which would conceal penetrations are not erected prior to the installation of firestop.

- G. Gun grade sealants and putties shall be tooled into place to insure proper adhesion to penetrations and surrounding surfaces.

3.3 FIELD QUALITY CONTROL

- A. Keep areas of work accessible until inspection by authorities having jurisdiction.
- B. Where deficiencies are found, repair firestopping products so they comply with requirements.
- C. Install work in full accordance with the rules, regulations, and safety requirements of Federal, State, County and City authorities having jurisdiction over premises. Do not construe this as relieving Contractor from compliance with any requirements of the Specifications which are in excess of Code requirements and not in conflict therewith.
- D. Correct unacceptable firestopping and provide additional inspection to verify compliance with this Specification at no additional cost.
- E. Finish surfaces of firestopping that is to remain exposed in the completed work to a uniform and level condition.

3.4 ADJUSTING AND CLEANING

- A. Remove equipment, materials, and debris, leaving area in undamaged, clean condition.
- B. Clean all surfaces adjacent to sealed openings to be free of excess firestopping materials and soiling as work progresses.

END OF SECTION 270524