

SECTION 27 05 37

FIRESTOPPING SYSTEMS FOR COMMUNICATIONS CABLING

PART 1 - GENERAL

1.1 SUMMARY

- A. This section shall govern the firestopping systems and installation as it relates to communications cabling. The intent of this section is to give the selection of an approved material and its installation by a qualified contractor.

1.2 RELATED DOCUMENTS

- A. The latest versions of the following codes, standards, and guidelines shall be followed. Bring to ITS' immediate attention where construction documents or conditions differ from requirements in codes, standards, guidelines and specifications.
- B. The following codes, as required by law:
 - 1. National Electric Code (NEC)
 - 2. National Fire Protection Association (NFPA) – NFPA 101: Life Safety Code.
- C. The following standards:
 - 1. TIA-569-B Commercial Building Standard for Telecommunications Pathways and Spaces
 - 2. ASTM E 84, "Surface Burning Characteristics of Building Materials".
 - 3. ASTM E 119, "Fire Tests of Building Construction and Materials".
 - 4. ASTM E 814, "Fire Tests of Penetration Firestop Systems".
 - 5. ANSI/UL263, "Fire Tests of Building Construction and Materials".
 - 6. ANSI/UL723, "Surface Burning Characteristics of Building Materials".
 - 7. ANSI/UL1479, "Fire Tests of Through Penetration Firestops".
 - 8. Underwriters Laboratories Inc. (UL) – Fire Resistance Directory
- D. The following guidelines:
 - 1. BICSI, Telecommunications Distribution Methods Manual (TDMM)
 - 2. BICSI, Information Transport Systems Installation Methods Manual (ITSIMM)
- E. The following specification sections:
 - 1. Division 7 – Section 07 84 13 – Penetration Firestopping
 - 2. Division 27 – Section 27 00 00 – Communications

1.3 QUALITY ASSURANCE:

- A. Provide firestopping systems that comply with the following requirements:
 - 1. Firestopping material shall be tested by a qualified testing and inspection agency. A qualified testing and inspection agency is UL, or another comparable agency performing testing (as approved by UT ITS).
 - 2. Only Firestopping products bearing the classification marking of qualified testing and inspection agency shall be used.

- B. Installation craftpersons / technicians shall be by qualified and trained. Acceptable Installer qualifications are as follows:
 - 1. FM Research approved in accordance with FM AS 4991.
 - 2. Individuals or staff who are certified, licensed, or otherwise qualified by the firestopping manufacturer as having the necessary training and experience. A minimum of 1 year experience in the installation of manufacturer's products is required.
 - 3. The Installers shall have been trained by a direct representative of the manufacturer (not distributor or agent) in the proper selection and installation procedures.

1.4 DEFINITIONS:

- A. Communications cabling – including telecommunications, audio/video, coaxial, and distributed antenna systems.
- B. Conduit sleeve – a conduit that only penetrates a single wall for the purpose of providing a pathway for communications cabling into adjacent rooms.
- C. Firestop Assembly – a manufactured product from a reputable company that is delivered to the contractor fully- or partially-assembled and when installed is rated as meeting the UL 1479 or ASTM E814 standards for fire testing and becomes part of a Firestop System for that particular type of installation.
- D. Firestop System – a product or series of products from a reputable manufacturing company that when installed properly by the contractor meets the UL 1479 or ASTM E814 standards for fire testing for that particular type of installation.
- E. Zero maintenance firestop assembly – a firestop assembly with a self-contained sealing system which shall automatically adjust to the installed cable loading and shall permit cables to be installed, removed, or retrofitted without the need to adjust, remove or reinstall firestop material.

1.5 SUBMITTALS:

- A. Refer to Section 27 00 00 Communications for shop drawing example and additional shop drawing requirements.
- B. On shop drawings and record drawings, indicate location of every communications firestopping system, as well as which UL applications test applies. (See shop drawing example in Section 27 00 00.)

PART 2 – PRODUCTS

2.1 GENERAL

- A. Communications cable tray or ladder rack shall not be continued through a fire-rated wall. Stop the tray or ladder rack, install multiple zero-maintenance firestop assemblies, and continue tray or ladder rack on the other side. Ensure grounding of the cable tray is continuous through the wall.
- B. Single Source: For all penetrations for communications openings through fire-rated walls and floors, install the same manufacturer's product for that type of penetration throughout the project.
- C. Identification

1. At all firestop locations, install a label on each side of the wall indicating the following information:
 - a) Manufacturer of Firestop
 - b) Name of product and UL System Number
 - c) Name of installing contractor and date of installation.
 - d) Rating of the wall/system.

2.2 ZERO-MAINTENANCE FIRESTOP ASSEMBLY

- A. Shall meet or exceed the ratings of the wall or floor that it penetrates.
- B. **Shall be used for communications cabling at all interior wall penetrations through a single, fire-rated wall or floor.**
- C. Shall be a listed (UL and/or FM) firestopping assembly system tested to UL 1479 or ASTM E814. The assembly shall Assembly size and quantity shall be determined as follows:
 1. For round openings, fill ratio of cabling-to-opening-size shall not exceed 40%, or as dictated by the manufacturer, whichever is more stringent.
 2. For rectangular openings, fill ratio of cabling-to-opening size shall not exceed 50%, or as dictated by the manufacturer, whichever is more stringent.
 3. Include in cabling cross-sectional area enough spare capacity to accommodate 50% growth. Upon commissioning, if adequate spare capacity is not observed, contractor shall install additional assemblies at their own cost to provide such spare capacity.
- D. Manufacturer shall be:
 1. Specified Technologies Inc., EZ Path Series 22, 33, or 44.
 2. Or approved equivalent

2.3 FIRESTOPPING FOR COMMUNICATIONS CONDUITS & OTHER APPLICATIONS

- A. Required for all fire-rated wall penetrations where a communications pathway extends beyond a single fire-rated partition.
- B. Required for all telecommunications outlets located on fire-rated walls. System shall be UL CLIV tested.
- C. Shall be a listed (UL and/or FM) firestopping assembly system tested to UL 1479 or ASTM E814.
- D. Shall meet or exceed the ratings of the wall or floor that it penetrates.
- E. Manufacturer shall be:
 1. 3M – submit appropriate system and indicate on shop drawings where being utilized.
 2. Hilti - submit appropriate system and indicate on shop drawings where being utilized.
 3. Specified Technologies Inc. - submit appropriate system and indicate on shop drawings where being utilized.

PART 3 - EXECUTION

3.1 GENERAL

- 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.
- H. Before beginning installation:
 - 1. Examine effected surfaces, as they shall be free of dirt, grease, oil, scale, laitance, rust, release agents, water repellants, and any other substances that may inhibit optimum adhesion.
 - 2. Provide masking and temporary covering to protect adjacent surfaces.
 - 3. Do not proceed until unsatisfactory conditions have been corrected.
- I. Install through-penetration firestop systems in accordance with the conditions of testing and classification as specified in the published design. Comply with manufacturer's instructions for installation of firestopping products.
- J. After installation:
 - 1. Remove equipment, materials, and debris, leaving area in undamaged, clean condition.
 - 2. Clean all surfaces adjacent to sealed openings to be free of excess firestopping materials and soiling as work progresses.
 - 3. Commissioning of Firestopping Systems for Communications Cabling is to be in conjunction with the above ceiling inspection (as outlined in Section 27 00 00). All firestop systems (including cabling through them) and identification labels shall be installed prior to the Design Engineer above-ceiling inspection.

END OF SECTION

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