

Section 27 05 37
Firestopping Systems for Communications Cabling

Part 1 General

1.1 Summary

- 1.1.1 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

- 1.2.1 The latest versions of the following codes, standards, and guidelines shall be followed. Bring to CCS' immediate attention where construction documents or conditions differ from requirements in codes, standards, guidelines and specifications.

- 1.2.2 The following codes, as required by law:

1. Ontario Building Code
2. Ontario Fire Code
3. National Fire Protection Association (NFPA) – NFPA 101: Life Safety Code.

- 1.2.3 The following standards:

1. CAN/ULC-S115 Fire Tests of Fire stop Systems
2. TIA-569-C Commercial Building Standard for Telecommunications Pathways and Spaces
3. ASTM E 84, "Surface Burning Characteristics of Building Materials".
4. ASTM E 119, "Fire Tests of Building Construction and Materials".
5. ASTM E 814, "Fire Tests of Penetration Firestop Systems".
6. ANSI/UL263, "Fire Tests of Building Construction and Materials".
7. ANSI/UL723, "Surface Burning Characteristics of Building Materials".
8. ANSI/UL1479, "Fire Tests of Through Penetration Firestops".
9. Underwriters Laboratories Inc. (UL) – Fire Resistance Directory

- 1.2.4 The following guidelines:

1. BICSI, Telecommunications Distribution Methods Manual (TDMM)
2. BICSI, Information Transport Systems Installation Methods Manual (ITSIMM)

1.3 QUALITY ASSURANCE:

- 1.3.1 Products/Systems: Provide fire stopping systems that comply with the following requirements:

- .1 Fire stopping 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 fire stop system acceptable to authorities having jurisdiction.

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- .2 Fire stopping products bear the classification marking of qualified testing and inspection agency.
- 1.3.2 Installer Qualifications: Experience in performing work of this section who is qualified by the fire stopping manufacturer as having been provided the necessary training to install fire stop products in accordance with specified requirements.
- 1.4 Performance Requirements
 - 1.4.1 Fire Stop Systems shall conform to the fire (F), hose (H) and temperature (T) ratings of Codes and shall have a flame spread rating of 25 or less, National Fire Protection Association (NFPA Class "A").
 - 1.4.2 Fire Stop Systems acceptable for this project are those that have been tested to the CAN/ULC S115 Standard.
 - 1.4.3 Fire Stop Systems shall be CSA approved, non-permanent, dielectric, water resistant, non hardening, permanently pliable/re-enterable putty along with the appropriate damming or backer materials.
 - 1.4.4 Fire stopping shall maintain a minimum one hour rating, meet applicable Federal, Provincial, Local building codes and be tested by a SCC and accredited Third Party Testing Agency in accordance with the Standards.
 - 1.4.5 In locations containing high moisture, fire stopping shall be compatible with Formalin.
 - 1.4.6 Fire rated fittings allowing easy cable additions may be used. All non permanent caulking or foams shall be replaced with the removal or addition of any cabling before final acceptance by the owner.
 - 1.4.7 Fire rated pathway devices shall be the preferred product and shall be installed in all locations where frequent cable moves, add-ons and changes will occur.
 - 1.4.8 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.
 - 1.4.9 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.
 - 1.4.10 Openings for cable trays shall be sealed using re-enterable fire stopping pillows.
- 1.5 Delivery, Storage and Handling
 - 1.5.1 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.
 - 1.5.2 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.
 - 1.5.3 Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.
- 1.6 Project Conditions

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- 1.6.1 Do not install fire stopping products when ambient or substrate temperatures are outside limitations recommended by manufacturer.
 - 1.6.2 Do not install fire stopping products when substrates are wet due to rain, frost, condensation, or other causes.
 - 1.6.3 Maintain minimum temperature before, during, and for a minimum 3 days after installation of materials.
 - 1.6.4 Do not use materials that contain flammable solvents.
 - 1.6.5 Coordinate construction of openings and penetrating items to ensure that through-penetration fire stop systems are installed according to specified requirements.
 - 1.6.6 Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration fire stop systems.
 - 1.6.7 Schedule installation of fire stopping after completion of penetrating item installation but prior to covering or concealing of openings.
 - 1.6.8 Supply and install temporary fire stopping at the end of every work shift or when location of work is changing from one work area to another. This shall be done to maintain the penetration's fire rating in areas where no work is being done.
- 1.7 DEFINITIONS:
- 1.7.1 Communications cabling – including telecommunications, audio/video, coaxial, and distributed antenna systems.
 - 1.7.2 Conduit sleeve – a conduit that only penetrates a single wall for the purpose of providing a pathway for communications cabling into adjacent rooms.
 - 1.7.3 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.
 - 1.7.4 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.
 - 1.7.5 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.
- 1.8 SUBMITTALS:
- 1.8.1 On shop drawings and record drawings, indicate location of every communications firestopping system, as well as which UL applications test applies.

Part 2 Product

2.1 GENERAL

- 2.1.1 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,

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and continue tray or ladder rack on the other side. Ensure grounding of the cable tray is continuous through the wall.

2.1.2 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.

2.1.3 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.

2.1.4 Fire stop Sealants

STI SpecSeal® Brand single component latex formulations that upon cure do not re-emulsify during exposure to moisture.

Specified Product:

Specified Technologies Inc. (STI)	SpecSeal® Series SSS Sealant
Specified Technologies Inc. (STI)	SpecSeal® Series LCI Sealant

2.1.5 Fire stop Putty

STI SpecSeal® Brand intumescent, non-hardening, water resistant putties containing no solvents, inorganic fibres or silicone compounds.

Specified Product:

Specified Technologies Inc. (STI)	SpecSeal® Series SSP Putty
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2.1.6 Fire stop Pillows

STI SpecSeal® Brand re-enterable, non-curing, mineral fibre core encapsulated on six sides with intumescent coating contained in a flame retardant poly bag.

Specified Product:

Specified Technologies Inc. (STI)	SpecSeal® Series SSB Pillows
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2.1.7 Fire Rated Cable Pathways

STI EZ-PATH™ Brand device modules comprised of steel raceway with intumescent foam pads allowing 0 to 100 percent cable fill.

Specified Product:

Specified Technologies Inc. (STI)	EZ-PATH™ Fire Rated Pathway
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2.2 FIRESTOPPING FOR COMMUNICATIONS CONDUITS & OTHER APPLICATIONS

2.2.1 Required for all fire-rated wall penetrations where a communications pathway extends beyond a single fire-rated partition.

2.2.2 Required for all telecommunications outlets located on fire-rated walls. System shall be UL CLIV tested.

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- 2.2.3 Shall be a listed (UL and/or FM) firestopping assembly system tested to UL 1479 or ASTM E814.
- 2.2.4 Shall meet or exceed the ratings of the wall or floor that it penetrates.

Part 3 Execution

3.1 GENERAL

- 3.1.1 Do not install firestopping products when ambient or substrate temperatures are outside limitations recommended by manufacturer.
- 3.1.2 Do not install firestopping products when substrates are wet due to rain, frost, condensation, or other causes.
- 3.1.3 Maintain minimum temperature before, during, and for a minimum 3 days after installation of materials.
- 3.1.4 Do not use materials that contain flammable solvents.
- 3.1.5 Coordinate construction of openings and penetrating items to ensure that through penetration firestop systems are installed according to specified requirements.
- 3.1.6 Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration firestop systems.
- 3.1.7 Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.
- 3.1.8 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.
- 3.1.9 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.
- 3.1.10 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 .
- 3.1.11 All firestop systems (including cabling through them) and identification labels shall be installed prior to the Design Engineer above-ceiling inspection.

End of Section 27 05 37