

PART 1 - GENERAL

1.1 REFERENCES

- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .2 Underwriter's Laboratories of Canada (ULC)
  - .1 ULC-S115-1995, Fire Tests of Fire stop Systems.

1.2 DEFINITIONS

- .1 Fire Stop Material: device intended to close off opening or penetration during fire or materials that fill openings in wall or floor assembly where penetration is by cables, cable trays, conduits, ducts and pipes and poke-through termination devices, including electrical outlet boxes along with their means of support through wall or floor openings.
  - .2 Single Component Fire Stop System: fire stop material that has Listed Systems Design and is used individually without use of high temperature insulation or other materials to create fire stop system.
  - .3 Multiple Component Fire Stop System: exact group of fire stop materials that are identified within Listed Systems Design to create on site fire stop system.
  - .4 Tightly Fitted; (ref: NBC Part 3.1.9.1.1 and 9.10.9.6.1): penetrating items that are cast in place in buildings of noncombustible construction or have "0" annular space in buildings of combustible construction.
    - .1 Words "tightly fitted" should ensure that integrity of fire separation is such that it prevents passage of smoke and hot gases to unexposed side of fire separation.
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1.3 ACTION AND  
INFORMATIONAL  
SUBMITTALS

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- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Product Data:
    - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
    - .2 Submit electronic copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 02 81 01 - Hazardous Materials.
  - .3 Shop Drawings:
    - .1 Submit shop drawings to show location, proposed material, reinforcement, anchorage, fastenings and method of installation.
    - .2 Construction details shall accurately reflect actual job conditions.
  - .4 Samples:
    - .1 Submit duplicate 300 x 300 mm samples showing actual fire stop material proposed for project.
  - .5 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.
    - .1 Test reports: in accordance with CAN-ULC-S101 for fire endurance and CAN-ULC-S102 for surface burning characteristics.
      - .1 Submit certified test reports from approved independent testing laboratories, indicating compliance of applied fire stopping with specifications for specified performance characteristics and physical properties.
    - .2 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
    - .3 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence and cleaning procedures.
    - .4 Manufacturer's Field Reports: submit to manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in PART 3 - FIELD QUALITY CONTROL.
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- .1 Packing, shipping, handling and unloading:
  - .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
  - .2 Deliver, store and handle materials in accordance with manufacturer's written instructions.

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| 1.5 DELIVERY,<br>STORAGE AND<br>HANDLING<br>(Cont'd) | .1 (Cont'd)<br>.3 Deliver materials to the site in undamaged condition and in original unopened containers, marked to indicate brand name, manufacturer, ULC markings.   |
|  | .2 Storage and Protection:<br>.1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.<br>.2 Replace defective or damaged materials with new. |
|  | .3 Waste Management and Disposal:<br>.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.                                      |

## PART 2 - PRODUCTS

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| 2.1 SUSTAINABLE<br>REQUIREMENTS | .1 Materials and products in accordance with Section 01 35 21 - LEED Requirements.   |
| 2.2 MATERIALS                   | .1 Fire stopping and smoke seal systems: in accordance with CAN-ULC-S115.<br>.1 Asbestos-free materials and systems capable of maintaining effective barrier against flame, smoke and gases in compliance with requirements of CAN-ULC-S115 and not to exceed opening sizes for which they are intended and conforming to specified special requirements described in PART 3.<br>.2 Fire stop system rating: as indicated. |
|                                 | .2 Service penetration assemblies: systems tested to CAN-ULC-S115.   |
|                                 | .3 Service penetration fire stop components: certified by test laboratory to CAN-ULC-S115.   |
|                                 | .4 Fire-resistance rating of installed fire stopping assembly in accordance with NBC.  |
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2.2 MATERIALS  
(Cont'd)

- .5 Fire stopping and smoke seals at openings intended for ease of re-entry such as cables: elastomeric seal.
- .6 Fire stopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: elastomeric seal.
- .7 Primers: to manufacturer's recommendation for specific material, substrate, and end use.
- .8 Water (if applicable): potable, clean and free from injurious amounts of deleterious substances.
- .9 Damming and backup materials, supports and anchoring devices: to manufacturer's recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.
- .10 Sealants for vertical joints: non-sagging.
- .11 All fire stopping to be from same manufacturer.
- .12 All fire stopping for all trades work to be installed by same installer.

PART 3 - EXECUTION

3.1 MANUFACTURER'S  
INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 PREPARATION

- .1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials.
    - .1 Ensure that substrates and surfaces are clean, dry and frost free.
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3.2 PREPARATION  
(Cont'd)

- .2 Prepare surfaces in contact with fire stopping materials and smoke seals to manufacturer's instructions.
- .3 Maintain insulation around pipes and ducts penetrating fire separation without interruption to vapour barrier.
- .4 Mask where necessary to avoid spillage and over coating onto adjoining surfaces; remove stains on adjacent surfaces.

3.3 INSTALLATION

- .1 Install fire stopping and smoke seal material and components in accordance with manufacturer's certified tested system listing.
- .2 Seal holes or voids made by through penetrations, poke-through termination devices, and unpenetrated openings or joints to ensure continuity and integrity of fire separation are maintained.
- .3 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.
- .4 Tool or trowel exposed surfaces to neat finish.
- .5 Remove excess compound promptly as work progresses and upon completion.

3.4 SEQUENCES OF  
OPERATION

- .1 Proceed with installation only when submittals have been reviewed by Departmental Representative.
  - .2 Install floor fire stopping before interior partition erections.
  - .3 Metal deck bonding: fire stopping to precede spray applied fireproofing to ensure required bonding.
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3.4 SEQUENCES OF  
OPERATION  
(Cont'd)

- .4 Mechanical pipe insulation: certified fire stop system component.
  - .1 Ensure pipe insulation installation precedes fire stopping.

3.5 FIELD QUALITY  
CONTROL

- .1 Inspections: notify Departmental Representative when ready for inspection and prior to concealing or enclosing fire stopping materials and service penetration assemblies.
- .2 Manufacturer's Field Services:
  - .1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports as described in PART 1 - SUBMITTALS.
  - .2 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
  - .3 Schedule site visits, to review Work, as directed in PART 1 - QUALITY ASSURANCE.

3.6 CLEANING

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.
- .3 Remove temporary dams after initial set of fire stopping and smoke seal materials.

3.7 SCHEDULE

- .1 Fire stop and smoke seal at:
  - .1 Penetrations through fire-resistance rated concrete and gypsum board partitions and walls.
  - .2 Top of fire-resistance rated gypsum board partitions.
  - .3 Intersection of fire-resistance rated concrete and gypsum board partitions.

- 3.7 SCHEDULE  
(Cont'd)
- .1 (Cont'd)
- .4 Control and sway joints in fire-resistance rated gypsum board partitions and walls.
  - .5 Penetrations through fire-resistance rated floor slabs, ceilings and roofs.
  - .6 Openings and sleeves installed for future use through fire separations.
  - .7 Around mechanical and electrical assemblies penetrating fire separations.
  - .8 Rigid ducts: greater than 129 cm<sup>2</sup>: fire stopping to consist of bead of fire stopping material between retaining angle and fire separation and between retaining angle and duct, on each side of fire separation.

- 3.8 FIRE RATING  
IDENTIFICATION
- .1 Stencil paint the fire rating of all partitions 200mm above ceiling line, both sides of partition, using 150mm high Helvetica medium capital letters. Space at 2400mm o.c. Use fire engine red gloss paint.