
1 General

1.1 REFERENCES

- .1 CGSB 51-GP-23M-[78] Thermal Insulation, Urethane, Spray in Place.
- .2 CGSB 51-GP-39M-[79] The Installation of Spray Foam-in-Situ Urethane Insulation for Residential Building Construction.

1.2 TEST REPORTS

- .1 Submit test reports, verifying qualities of insulation meet or exceed requirements of this specification, in accordance with Section 01300 – Submittals.

1.3 SAMPLES

- .1 Submit samples in accordance with Section 01300 – Submittals.

1.4 PROTECTION

- .1 Ventilate area to receive insulation by introducing fresh air and exhausting air continuously during and (24) hours after application to maintain non-toxic, unpolluted, safe working conditions.
- .2 Provide temporary enclosures to prevent spray and noxious vapours from contaminating air beyond application area.
- .3 Protect workers as recommended by insulation manufacturer.
- .4 Protect adjacent surfaces and equipment from damage by overspray, fall-out, and dusting of insulation materials.
- .5 Dispose of waste foam daily in location designated by Contract Administrator and decontaminate empty drums in accordance with foam manufacturer's instructions.

1.5 ENVIRONMENTAL REQUIREMENTS

- .1 Apply insulation only when surfaces and ambient temperatures are within manufacturer's prescribed limits.

2 Products

2.1 MATERIALS

- .1 Insulation: spray polyurethane to CGSB 51-GP-23M, Class 1
- .2 Primers: in accordance with manufacturer's recommendations for surface conditions.

3 Execution

3.1 APPLICATION

- .1 Apply insulation to clean surfaces in accordance with CGSB 51-GP-39M and manufacturer's printed instructions. Use primer where recommended by manufacturer.
- .2 Apply sprayed foam insulation in thickness as required to fill cavities.

END OF SECTION

1 General

1.1 RELATED WORK

- .1 Fire stopping and smoke seals within mechanical assemblies (i.e. inside ducts, dampers) and electrical assemblies (i.e. inside cable trays) are specified in Divisions 15 and 16 respectively.
- .2 This section and related sections requesting firestopping application must have the specified Work completed by an authorized applicator approved by the fire stopping manufacturer.

1.2 REFERENCES

- .1 CAN4-S115-M85, Standard Method of Fire Tests of Firestop Systems.
- .2 ASTM E119 (latest), Standard Test Methods for Fire Tests of Building Construction and Materials.
- .3 ASTM E814-00, Standard Test Methods for Fire Tests of Through-Penetration Fire Stops.

1.3 SUBMITTALS

- .1 Submit shop drawings and product data in accordance with Section 01300 - Submittals.
- .2 Provide detail sheets including ULC designations, and written installation instructions for each type of penetration, and each manufacturer. Approved data sheets to be kept on Site and available upon request to Contract Administrator and representatives conducting inspections.
- .3 The Firestopping Manufacturer is to submit a SIGNED letter to the Contractor certifying that all firestopping in all fire-rated partitions and floor assemblies has been installed in compliance with approved ULC design specifications for each type of penetration through fire-rated assemblies. Forward one copy to the Contract Administrator, and include one copy in each maintenance manual. **Certificate of substantial performance for the entire project will not be issued until the Contract Administrator has received the Manufacturer's letter of Certification from the Contractor indicating all fire stopping applications do comply with the tested assemblies of the Manufacturer.**

2 Products

2.1 MATERIALS

- .1 Fire stopping and smoke seal systems: in accordance with CAN4-S115.
 - .1 Asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of CAN4-S115 and not to exceed opening sizes for which they are intended.
 - .2 Firestop system rating: equal to or greater than systems through which they pass.
 - .3 Where possible, use products achieving equal "F" and "T" ratings as per ULC designations.
- .2 Service penetration assemblies: certified by ULC in accordance with CAN4-S115 and listed in ULC Guide No. 40 U19.
- .3 Service penetration firestop components: certified by ULC in accordance with CAN4-S115 and listed in ULC Guide No. 40 U19.13 and ULC Guide No. 40 U19.15 under the Label Service of ULC.
- .4 Fire-resistance rating of installed fire stopping assembly not less than the fire-resistance rating of surrounding floor and wall assembly.
- .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. Provide sample of assembly. Have manufacturer's representative approve sample prior to submitting sample to the Contract Administrator.
- .10 Sealants for vertical joints: non-sagging.

3 Execution

3.1 PREPARATION

- .1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials. Ensure that substrates and surfaces are clean, dry and frost free.
- .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.

3.2 INSTALLATION

- .1 Install fire stopping and smoke seal material and components in accordance with ULC certification and at the following locations:
 - .1 Penetrations through fire-resistance rated masonry, concrete, and gypsum board partitions and walls.
 - .2 Edge of floor slabs at curtain wall and precast concrete panels.
 - .3 Top of fire-resistance rated masonry and gypsum board partitions.
 - .4 Intersection of fire-resistance rated masonry and gypsum board partitions.
 - .5 Control and sway joints in fire-resistance rated masonry and gypsum board partitions and walls.
 - .6 Penetrations through fire-resistance rated floor slabs, ceilings and roofs.
 - .7 Openings and sleeves installed for future use through fire separations.
 - .8 Around mechanical and electrical assemblies penetrating fire separations.
 - .9 Rigid ducts: greater than 129 sq. cm. 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.
- .2 Seal holes or voids of 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 a neat finish.
- .5 Remove excess compound promptly as Work progresses and upon completion.

3.3 INSPECTION

- .1 Notify Manufacturer's representative prior to concealing or enclosing firestopping materials and service penetration assemblies. Provide manufacturer's written letter certifying firestopping application has been completed in compliance with the tested rated assembly requirements.

3.4 CLEAN UP

- .1 Remove excess materials and debris and clean adjacent surfaces immediately after application.
- .2 Remove temporary dams after initial set of fire stopping and smoke seal materials.

END OF SECTION

1 General

1.1 SUMMARY

- .1 This section specifies caulking and sealants not specified in other sections.
- .2 Refer to other sections for other caulking and sealants.

1.2 REFERENCES

- .1 CGSB 19.17-M90 One Component Acrylic Emulsion Base Sealing Compound.
- .2 CAN/CGSB-19.13-M87 Sealing Compound, One-component, Elastomeric, Chemical Curing.
- .3 CGSB 19-GP-22M-77 Sealing Compound Mildew Resistant, for Tubs and Tile.
- .4 CAN/CGSB-19.24-M80 Sealing Compound, Multi-component, Chemical Curing.

1.3 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture and water.

1.4 ENVIRONMENTAL AND SAFETY REQUIREMENTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of material safety data sheets acceptable to Labour Canada.
- .2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.
- .3 Ventilate area of Work by use of approved portable supply and exhaust fans.

1.5 WARRANTY

- .1 Product will not leak, crack, crumble, melt, shrink, run, lose adhesion or stain adjacent surface for a period of three (3) years.

2 Products

2.1 SEALANT MATERIALS

- .1 Sealants for vertical and horizontal non-traffic bearing joints and at exterior window and door frames: to CAN/CGSB-19.13-M-80.
 - .1 Acceptable materials:
 - .1 Sika, Sikaflex 1A sealant.
 - .2 Mameco 921, Vulkem 116C or 921 sealant.
 - .3 Sonneborn NP1 (one compound).
 - .4 Bostik Chem-Calk 915
- .2 Allow for colour matching to veneers and to mortar.
- .3 Sealants for vertical, non-traffic bearing joints and at masonry expansion joints: to CAN/CGSB-19.24-M80:
 - .1 Acceptable materials:
 - .1 Tremco, Dymeric sealant.
 - .2 Mameco, Vulkem 922 sealant.
 - .3 Sonneborn NP2 (two component).
 - .4 Bostik Chem-Calk 500
 - 2 Allow for colour matching to veneers and to mortar

- .4 Sealants for vertical and horizontal non-traffic bearing joints for interior use: CAN/CGSB-19.17-M90:
 - .1 Acceptable materials:
 - .1 Sonneborn Sonolac.
 - .2 Bostik Chem-Calk 600
- .5 Sealants for ceramic tile, showers, plumbing fixtures, etc. use: CAN/CGSB-19.22-M77.
 - .1 Acceptable materials:
 - .1 Tremco, Proglaze Silicone Sealant, 942-204 or 942-200.
 - .2 CGE, SCS 1702 sealant.
 - .3 Dow Corning, 8640 sealant or 786 sealant.
 - .4 Sonneborn Omniplus
- .6 Sealants for traffic bearing concrete expansion and control joints: CAN/CGSB-19.24-M80.
 - .1 Acceptable materials:
 - .1 Sonneborn SL2 with No. 733 Primer.
 - .2 Sika 2C with primer.

2.2 BACK-UP MATERIALS

- .1 Polyethylene, Urethane, Neoprene or Vinyl Foam
 - .1 Extruded closed cell foam backer rod.
 - .2 Size: oversize 30 to 50%.
- .2 Neoprene or Butyl Rubber
 - .1 Round solid rod, Shore A hardness 70.
- .3 High Density Foam
 - .1 Extruded closed cell polyvinyl chloride (PVC) or neoprene foam backer, size as recommended by manufacturer.
- .4 Bond Breaker Tape
 - .1 Polyethylene bond breaker tape which will not bond to sealant.

2.3 JOINT CLEANER

- .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.
- .2 Primer: as recommended by manufacturer.

3 Execution

3.1 PREPARATION OF JOINT SURFACES

- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.
- .2 Clean bonding joint surfaces of harmful substances, including dust, rust, oil, grease, and other matter which may impair Work.
- .3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.
- .4 Ensure joint surfaces are dry and frost free.
- .5 Prepare surfaces in accordance with manufacturer's directions.

3.2 PRIMING

- .1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

3.3 BACKUP MATERIAL

- .1 Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint filler to achieve correct joint depth and shape.

3.4 MIXING

- .1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.5 APPLICATION

- .1 Sealant.
 - .1 Apply sealant in accordance with manufacturer's instructions.
 - .2 Apply sealant in continuous beads.
 - .3 Apply sealant using gun with proper size nozzle.
 - .4 Use sufficient pressure to fill voids and joints solid.
 - .5 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
 - .6 Tool exposed surfaces to give slightly concave shape.
 - .7 Remove excess compound promptly as Work progresses and upon completion.
 - .8 Apply as indicated on drawings. Seal joints between window or door frames to adjacent building components, around the perimeter of every external opening, to control joints in masonry walls, perimeter of flooring in wet areas, plumbing fixtures (water closets, urinals, tubs, etc.) and millwork (counters, sills, cabinets, etc.).
 - .9 Apply sealant to conceal minor gaps between all finish surfaces.
- .2 Curing.
 - .1 Cure sealants in accordance with sealant manufacturer's instructions.
 - .2 Do not cover up sealants until proper curing has taken place.
- .3 Cleanup.
 - .1 Clean adjacent surfaces immediately and leave Work neat and clean.
 - .2 Remove excess and droppings, using recommended cleaners as Work progresses.
 - .3 Remove masking tape after initial set of sealant.

END OF SECTION