

Part 1 General

1.1 SECTION INCLUDES

- .1 Materials and installation for asphalt for use as dampproofing.

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CSA A123.4-98, Bitumen for Use in Construction of Built-Up Roof Coverings and Dampproofing and Waterproofing Systems.
 - .2 Health Canada
 - .1 Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).

1.3 PRODUCT DATA

- .1 Submit product data in accordance with Section 01330 - Submittal Procedures.
- .2 Submit WHMIS MSDS - Material Safety Data Sheets.
- .3 Submit product data sheets for bituminous dampproofing products. Including:
 - .1 Product characteristics.
 - .2 Performance criteria.
 - .3 Application methods.
 - .4 Limitations.
- .4 Manufacturer's Instructions: Provide to indicate special handling criteria, installation sequence, and cleaning procedures.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, handle, store and protect materials in accordance with Section 01610 - Basic Product Requirements.
- .2 Provide and maintain dry, off-ground weatherproof storage.
- .3 Store materials on supports to prevent deformation.
- .4 Remove only in quantities required for same day use.
- .5 Store materials in accordance with manufacturer's written instructions.

1.5 PROJECT/SITE ENVIRONMENTAL REQUIREMENTS

- .1 Temperature, relative humidity, moisture content.
 - .1 Apply dampproofing materials only when surfaces and ambient temperatures are within manufacturers' prescribed limits.
 - .2 Do not proceed with Work when wind chill effect would tend to set bitumen before proper curing takes place.
 - .3 Maintain air temperature and substrate temperature at dampproofing installation area above 5 degrees C for 24 hours before, during and 24 hours after installation.
 - .4 Do not apply dampproofing in wet weather.
- .2 Safety: Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of asphalt, sealing compounds, primers and caulking materials.
- .3 Ventilation:
 - .1 Provide continuous ventilation during installation and curing periods for enclosed applications.

Part 2 Products

MATERIALS

- .1 Asphalt:
 - .1 Acceptable material: Gibson-Homans 6058 non-fibrated foundation coating.
 - .1 For application and curing at temperatures above 5 degrees C: to CSA A123.4.
 - .1 Package label or bill of lading for bulk hot liquid asphalt must indicate type, flash point, equiviscous temperature range and final blowing temperature.
 - .2 For application and curing at temperatures above 0 degrees C but below 5 degrees C: to CSA A123.
 - .1 Package label or bill of lading for bulk hot liquid asphalt must indicate type, flash point, equiviscous temperature range and final blowing temperature.
- .2 Sealing compound: plastic cutback asphalt cement.

- .1 Acceptable materials: Gibson-Homans 6220 Blackjacket Asphalt/Plastic Cement.
- .3 Asphalt primer:
 - .1 Acceptable materials: Gibson-Homans 6025 non-fibrated coating.

Part 3 Execution

3.1 WORKMANSHIP

- .1 Keep hot asphalt:
 - .1 Below its flash point.
 - .2 At or below its final blowing temperature.
 - .3 Within its equiviscous temperature range at place of application.

3.2 PREPARATION

- .1 Before applying dampproofing:
 - .1 Seal exterior joints between foundation walls and footings, joints between concrete floor slab and foundation and around penetrations through dampproofing with sealing compound.

3.3 APPLICATION

- .1 Do dampproofing in accordance with CGSB 37-GP-12Ma except where specified otherwise.
- .2 Do sealing work in accordance with CGSB 37-GP-11M except where specified otherwise.
- .3 Do priming of surface in accordance with CGSB 37-GP-15M except where specified otherwise.
- .4 Apply primer.

3.4 SCHEDULE

- .1 Apply continuous, uniform coating to entire exterior faces of foundation walls from 50 mm below finished grade level to and including tops of foundation wall footings.
- .2 Apply continuous, uniform coating to exterior side of foundation walls enclosing rooms below finished grade. Include exterior portion of interior walls where floors in adjacent rooms are at different elevations.

- .3 Apply two additional coats of dampproofing to vertical corners and construction joints for a minimum width of 230 mm on each side, and all around and for 230 mm along pipes passing through walls.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.34-M86, Vapour Barrier, Polyethylene Sheet, for Use in Building Construction.

1.2 SUBMITTALS

- .1 Manufacturer's Instructions: Provide to indicate special handling criteria, installation sequence, and cleaning procedures.

1.3 PRODUCT DATA

- .1 Submit product data in accordance with Section 01330 - Submittal Procedures.
- .2 Submit WHMIS MSDS - Material Safety Data Sheets.
- .3 Submit product data sheets for sheet vapour retarders. Include:
 - .1 Product characteristics.
 - .2 Performance criteria.
 - .3 Limitations.

Part 2 Products

SHEET VAPOUR BARRIER

- .1 Polyethylene film: to CAN/CGSB-51.34, 0.15 mm thick.

2.2 SHEATHING PAPER

- .1 Spun polyolefin:
 - .2 Acceptable material:
 - .1 Tyvek Stucco Wrap by Dupont Canada.
 - .2 Typar by Can-Cell.
 - .3 Roll width: standard 2743 mm.

2.3 ACCESSORIES

- .1 Joint sealing tape: air resistant pressure sensitive adhesive tape, type recommended by vapour barrier manufacturer, 63 mm wide.

Acceptable material: 3M Carpenters' Sheathing red polyethylene tape.
- .2 Sealant: non-skinning, non-drying compound.
 - .1 Acceptable material: Tremco Acoustical Sealant.
- .3 Staples and nails: galvanized steel staples minimum 12 mm long to CSA B111.
- .4 Moulded box vapour barrier: factory-moulded polyethylene box for use with recessed electric switch and outlet device boxes.

Part 3 Execution

3.1 INSTALLATION VAPOUR BARRIER

- .1 Ensure services are installed and inspected prior to installation of retarder.
- .2 Use sheets of largest practical size to minimize joints.
- .3 Install continuous vapour barrier at inside face of exterior insulated wood framed building elements unless otherwise indicated.
- .4 Installed vapour barrier to form a complete and continuous envelope, properly sealed at all joints, fastenings and penetrations, effectively resisting moisture migration.
- .5 All penetrations through vapour barrier, unless clearly detailed on drawings, must be approved by Contract Administrator.
- .6 To ensure continuity of vapour barrier at all locations, install strips of vapour barrier of sufficient width at intersecting walls, on top of walls at joists bearings and at other locations where subsequent work would prevent installation of continuous vapour barrier.
- .7 Place vapour barrier joints over solid backing, lapped one full stud or joist space and sealed with sealant between sheets. Where vapour barrier is applied to top of roof deck or floor sheathing, lap joints minimum 150 mm and seal with sealant between sheets.
- .8 At door and window openings cut `X` at , carry material onto sill, head and jamb framing members, staple in place and seal framing.

- .9 At electrical outlets and boxes located in exterior building elements, provide preformed polyethelene box. Seal vapour barrier to box and seal between electrical wires and boxes with sealant to maintain continuity of barrier.
- .10 Inspect for continuity. Repair punctures and tears with sealing tape before work is concealed.
- .11 Do not cover up any area until Contract Administrator has inspected and accepted installation of vapour barrier.

3.2 SHEATHING PAPER

- .1 Install at exterior walls and where indicated on drawings.
- .2 Installed barrier to be continuous and complete, lapped and taped at joints, to form an effective barrier against air infiltration and exfiltration.
- .3 At exterior walls, install over plywood sheathing. Staple or nail air barrier 300 mm o.c.; do not place seams at corners. Cut `X` at window at door openings and fasten material to sill, head and jambs and seal.

3.3 PERIMETER SEALS

- .1 Seal perimeter of sheet vapour barrier as follows:
 - .1 Apply continuous bead of sealant to substrate at perimeter of sheets.
 - .2 Lap sheet over sealant and press into sealant bead.
 - .3 Install staples through lapped sheets at sealant bead into wood substrate.
 - .4 Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

3.4 LAP JOINT SEALS

- .1 Seal lap joints of sheet vapour barrier as follows:
 - .1 Attach first sheet to substrate.
 - .2 Apply continuous bead of sealant over solid backing at joint.
 - .3 Lap adjoining sheet minimum 150 mm and press into sealant bead.
 - .4 Install staples through lapped sheets at sealant bead into wood substrate.
 - .5 Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

3.5 ELECTRICAL BOXES

- .1 Seal electrical switch and outlet device boxes that penetrate vapour barrier as follows:

- .1 Install moulded box vapour barrier. Wrap boxes with film sheet providing minimum 300 mm perimeter lap flange.
- .2 Apply sealant to seal edges of flange to main vapour barrier and seal wiring penetrations through box cover.

END OF SECTION

Part 1 General

1.1 REFERENCES:

- .1 Underwriters Laboratories of Canada (ULC).
 - .1 CAN/ULC-S701-01, Thermal Insulation, Polystyrene, Boards and Pipe Coverings.
- .2 Environmental Choice Program (EPC).
 - .1 CCD-016-97, Thermal Insulation.

1.2 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01330 - Submittal Procedures.
- .2 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.

Part 2 Products

INSULATION WALL

- .1 Rigid cellular polystyrene: to CAN/ULC-S701.
 - .1 Types: 2, 3, and 4, locations noted in Construction Notes.
 - .2 Thickness/RSI: as indicated.
 - .3 Edges: shiplapped.
 - .4 CFC free and HCFC free without ozone depletion potential greater than zero, EcoLogo certified.

2.2 INSULATION CONCRETE FACED

- .1 Rigid cellular polystyrene: to CAN/ULC-S701.Type: 4.
- .2 Type: 4.
- .3 Size: 610 x 1220 x thickness indicated rigid insulation panel with 10 mm thick factory applied latex -modified concrete facing.
- .4 Acceptable material: Dow Styrofoam CT.

2.3 ACCESSORIES MECHANICAL FASTENERS

- .1 Insulation clips: impale type, perforated 50 x 50 mm cold rolled galvanized/plated steel 0.8 mm thick, adhesive back, spindle of 2.5 mm diameter annealed steel,

length to suit insulation, 25 mm diameter galvanized/plated washers of self locking type.

- .2 Fasteners as applicable to situation, as detailed and as recommended by manufacturer.

Part 3 EXECUTION MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 WORKMANSHIP

- .1 Install insulation after building substrate materials are dry.
- .2 Install insulation to maintain continuity of thermal protection to building elements and spaces.
- .3 Fit insulation tight around electrical boxes, plumbing and heating pipes and ducts, around exterior doors and windows and other protrusions.
- .4 Keep insulation minimum 75 mm from heat emitting devices such as recessed light fixtures, and minimum 50 mm from sidewalls of CAN4-S604 type A chimneys and CAN/CGA-B149.1 and CAN/CGA-B149.2 type B and L vents.
- .5 Cut and trim insulation neatly to fit spaces. Butt joints tightly, offset vertical joints. Use only insulation boards free from chipped or broken edges. Use largest possible dimensions to reduce number of joints.
- .6 Offset both vertical and horizontal joints in multiple layer applications.
- .7 Do not enclose insulation until it has been inspected and approved by Contract administrator.

3.3 EXAMINATION

- .1 Examine substrates and immediately Contract administrator in writing of defects.
- .2 Prior to commencement of work ensure:
 - .1 Substrates are firm, straight, smooth, dry, free of snow, ice or frost, and clean of dust and debris.

3.4 RIGID INSULATION INSTALLATION

- .1 Install insulation boards with galvanized/plated fasteners to manufacturer's written instructions, fit boards tight.

- .2 Leave insulation board joints unbonded over line of expansion and control joints. Bond a continuous 150mm wide 0.15 mm modified bituminous membrane over expansion and control joints using compatible adhesive and primer before application of insulation.

3.5 PERIMETER FOUNDATION INSULATION

- .1 Interior/exterior application: extend boards vertically below bottom of finish floor slab as indicated, installed on inside/outside face of perimeter foundation walls as indicated.
- .2 Under slab application: extend boards in from perimeter foundation wall as indicated. Lay boards on level compacted fill.

3.6 CAVITY WALL INSTALLATION

- .1 Install polystyrene insulation boards on outer surface of inner wythe of wall cavity over impaling clips.

3.7 CLEANING

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Canadian Standards Association (CSA International).
 - .1 CSA B111-1974(R1998), Wire Nails, Spikes and Staples.
- .2 Environmental Choice Program (EPC).
 - .1 CCD-016-97, Thermal Insulation.
- .3 Underwriters Laboratories of Canada (ULC).
 - .1 CAN/ULC-S702-1997, Standard for Mineral Fibre Insulation.

1.2 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01330 - Submittal Procedures.
- .2 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.

1.3 QUALITY ASSURANCE

- .1 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

Part 2 Products

2.1 INSULATION

- .1 Batt and blanket mineral fibre: to CAN/ULC S702.
 - .1 Thickness/RSI: as indicated.
 - .2 Formalihide free.

2.2 ACCESSORIES

- .1 Nails: galvanized steel, length to suit insulation plus 25mm, to CSA B111.
- .2 Staples: 12 mm minimum leg.

- .3 Tape: as recommended by manufacturer

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 INSULATION INSTALLATION

- .1 Install insulation to maintain continuity of thermal protection to building elements and spaces.
- .2 Install insulation with factory applied vapour barrier facing warm side of building spaces [and vapour permeable membrane facing cold side. Lap ends and side flanges of membrane over framing members. Retain in position with nails, staples installed as recommended by manufacturer. Tape seal butt ends and lapped side flanges. Do not tear or cut vapour barrier.
- .3 Fit insulation closely around electrical boxes, pipes, ducts, frames and other objects in or passing through insulation.
- .4 Do not compress insulation to fit into spaces.
- .5 Keep insulation minimum 75 mm from heat emitting devices such as recessed light fixtures, and minimum 50 mm from sidewalls of CAN/ULC-S604 Type A chimneys and CAN/CGA-B149.1 and CAN/CGA-B149.2 Type B and L vents.
- .6 Do not enclose insulation until it has been inspected and approved by Contract administrator.

3.3 CLEANING

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

Part 1 General

1.1 RELATED WORK

- .1 Fire stopping and smoke seals within mechanical assemblies and electrical assemblies are specified in Division 15.

1.2 REFERENCES

- .1 Underwriter's Laboratories of Canada (ULC)
 - .1 ULC-S115-1995, Fire Tests of Firestop Systems.

1.3 SAMPLES

- .1 Submit samples.
- .2 Submit duplicate 300 x 300 mm samples showing actual firestop material proposed for project.

1.4 SHOP DRAWINGS

- .1 Submit shop drawings.
- .2 Submit shop drawings to show proposed material, reinforcement, anchorage, fastenings and method of installation. Construction details should accurately reflect actual job conditions.
- .3 Shop drawings to indicate locations where firestopping is used, required fire resistance rating, the material to be used and the tested design system (ULC or WH).

1.5 PRODUCT DATA

- .1 Submit product data.
- .2 Submit manufacturer's product data for materials and prefabricated devices, providing descriptions are sufficient for identification at job site. Include manufacturer's printed instructions for installation.

Part 2 Products

2.1 MATERIALS

- .1 Fire stopping and smoke seal systems: in accordance with ULC-S115.
 - .1 Asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of ULC-S115 and not to exceed opening sizes for which they are intended and conforming to special requirements specified in 3.5.
 - .2 Firestop system rating: as indicated.
- .2 Service penetration assemblies: certified by ULC in accordance with ULC-S115 and listed in ULC Guide No.40 U19.
- .3 Service penetration firestop components: certified by ULC in accordance with ULC-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 in accordance with NBC.
- .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.

Part 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 manufacturer's instructions.
- .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 a neat finish.
- .5 Remove excess compound promptly as work progresses and upon completion.

3.3 INSPECTION

- .1 Notify Contract administrator when ready for inspection and prior to concealing or enclosing firestopping materials and service penetration assemblies.

3.4 SCHEDULE

- .1 Firestop and smoke seal at:
 - .1 Penetrations through fire-resistance rated gypsum board partitions and walls.
 - .2 Top of fire-resistance rated gypsum board partitions.

- .3 Intersection of fire-resistance rated gypsum board partitions.
- .4 Control and sway joints in fire-resistance 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 cm²: 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.

3.5 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

Part 1 General

1.1 REFERENCES

- .1 American Society for Testing and Materials (ASTM International)
 - .1 ASTM A792/A792M-02, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- .2 Canadian Roofing Contractors Association (CRCA)
 - .1 Roofing Specifications Manual 1997.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-37.5-M89, Cutback Asphalt Plastic Cement.
 - .2 CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.
- .4 Canadian Standards Association (CSA International)
 - .1 CSA B111-1974(R1998), Wire Nails, Spikes and Staples.

1.2 SAMPLES

- .1 Submit shop drawings in accordance with Section 01330 - Submittal Procedures.
- .2 Submit duplicate 50 x 50 mm samples of each type of sheet metal material, colour and finish.

Part 2 Products

2.1 SHEET METAL MATERIALS

- .1 Aluminum-zinc alloy coated steel sheet: to ASTM A792/A792M-02 commercial quality, grade 37 with AZ180 coating, regular spangle surface, chemically treated for unpainted finish and not chemically treated for paint finish, 0.45 mm base metal thickness.

2.2 ACCESSORIES

- .1 Isolation coating: alkali resistant bituminous paint.
- .2 Plastic cement: to CAN/CGSB 37.5.
- .3 Underlay for metal flashing:
 - .1 dry sheathing to CAN/CGSB-51.32.

- .2 asphalt laminated 3.6 to 4.5 kg kraft paper.
- .3 No. 15 perforated asphalt felt to CSA A123.3.
- .4 Sealants: in accordance with Section 07900.
- .5 Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness 0.45 mm same as sheet metal being secured.
- .6 Fasteners: of same material as sheet metal, to CSA B111, ring thread flat head roofing nails of length and thickness suitable for metal flashing application.
- .7 Washers: of same material as sheet metal, 1 mm thick with rubber packings.

2.3 FABRICATION

- .1 Fabricate metal flashings and other sheet metal work in accordance with applicable CRCA 'FL' series details and as indicated.
- .2 Fabricate aluminum flashings and other sheet aluminum work in accordance with AA-Aluminum Sheet Metal Work in Building Construction.
- .3 Form pieces in 2400 mm maximum lengths. Make allowance for expansion at joints.
- .4 Hem exposed edges on underside 12 mm. Mitre and seal corners with sealant.
- .5 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- .6 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

2.4 METAL FLASHINGS

- .1 Form flashings, copings and fascias to profiles indicated of 0.45 mm thick Aluminum-zinc alloy coated steel sheet as indicated.

2.5 CAP FLASHINGS

- .1 Form for base flashings as detailed and in accordance with CRCA FL series details, FL.

2.6 EAVES TROUGHS AND DOWNPIPES

- .1 Form eaves troughs and downpipes from 0.45 mm thick Aluminum-zinc alloy coated steel sheet.
- .2 Sizes and profiles as indicated.

- .3 Provide goosenecks, outlets, strainer baskets and necessary fastenings.
- .4 Notch and form metal to building radius. All notches to be soldered. Ensure finished product forms a smooth curve, not a segmented face.

Part 3 Execution

3.1 INSTALLATION

- .1 Install sheet metal work in accordance with CRCA FL series details, and as detailed.
- .2 Use concealed fastenings except where approved before installation.
- .3 Provide underlay under sheet metal. Secure in place and lap joints 100 mm.
- .4 Counterflash bituminous flashings at intersections of roof with vertical surfaces and curbs. Flash joints using S-lock, standing seams, forming tight fit over hook strips, as detailed.
- .5 Lock end joints and caulk with sealant.
- .6 Caulk flashing at cap flashing with sealant.

3.2 DOWN PIPES

- .1 Install downpipes and secure down pipe to column with bolts at center of interior of down pipe at 600mm O.C.
- .2 Down Pipe to be 6" x 6" metal as per detail.
- .3 Galvanized finish.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Materials, preparation and application for caulking and sealants.
- .2 Text to complete other various Sections containing sealant or caulking specifications.

1.2 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-19.13-M87, Sealing Compound, One-component, Elastomeric, Chemical Curing.
 - .2 CAN/CGSB-19.17-M90, One-Component Acrylic Emulsion Base Sealing Compound.
 - .4 CAN/CGSB-19.22-M89 Mildew Resistant, Sealing Compound for Tubs and Tiles.
 - .5 CAN/CGSB-19.24-M90 Multi-component, Chemical Curing Sealing Compound.
- .2 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM C919-02, Standard Practice for Use of Sealants in Acoustical Applications.

1.3 SUBMITTALS

- .1 Submit product data in accordance with Section 01330 - Submittal Procedures.
- .2 Manufacturer's product to describe.
 - .1 Caulking compound.
 - .2 Primers.
 - .3 Sealing compound, each type, including compatibility when different sealants are in contact with each other.
- .3 Submit samples in accordance with Section 01330 - Submittal Procedures.
- .4 Submit duplicate samples of each type of material and colour.

- .5 Cured samples of exposed sealants for each color where required to match adjacent material.
- .6 Submit manufacturer's instructions in accordance with Section 01330 - Submittal Procedures.
 - .1 Instructions to include installation instructions for each product used.

1.4 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, handle, store and protect materials in accordance with Section 01610 - Basic Product Requirements.
- .2 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture, water and contact with ground or floor.

1.5 PROJECT CONDITIONS

- .1 Environmental Limitations:
 - .1 Do not proceed with installation of joint sealants under following conditions:
 - .1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 4.4 degrees C.
 - .2 When joint substrates are wet.
- .2 Joint-Width Conditions:
 - .1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
- .3 Joint-Substrate Conditions:
 - .1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.6 ENVIRONMENTAL REQUIREMENTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of Material Safety Data Sheets (MSDS) 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 as directed by Contract Administrator by use of approved portable supply and exhaust fans.

1.7 QUALITY ASSURANCE

- .1 Perform the work by experienced and skilled mechanics thoroughly trained and competent in the use of caulking and sealing equipment and the specified materials with at least five years experience.
- .2 Sealants and caulking are compatible with other materials and products with which they come in contact including but not limited to sealants provided under other Sections, insulation adhesives, bitumens, block, concrete, metals and metal finishes.

Part 2 Products

SEALANT MATERIALS

- .1 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.
- .2 When low toxicity caulks are not possible, confine usage to areas which off gas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize off gas time.
- .3 Where sealants are qualified with primers use only these primers.

2.2 SEALANT MATERIAL DESIGNATIONS

- .1 Exterior general use (non-traffic bearing): Silicone One Part. to CAN/CGSB-19.13.
 - .1 Acceptable Products:
 - .1 Dow 790/795
 - .2 GE Silpruf./silfruf LM/silpruf NB
 - .3 Sonneborne sonolastic 150/ sololastic omiseal
 - .2 Millwork to walljoints and wet areas except floors: Silicone One Part. to CAN/CGSB-19.22.
 - .1 Acceptable Products:
 - .1 Dow 786
 - .2 GE 1700
- .2 Urethanes One Part.
 - .1 Self-Leveling to CAN/CGSB-19.13, Type 1
 - .1 Acceptable Products

- .1 Sonneborne SL1
 - .2 Tremco THC 900
 - .3 PRC 6000/6006
 - .4 Vulkem 116/45
 - .5 Bostik Chem-Calk 900
- .3 Acrylic Latex One Part.
 - .1 To CAN/CGSB-19.17.
 - .2 Acceptable material:
 - .1 Sonnoborn Sonolac
 - .2 Tremco 834
 - .3 PRC 2000
 - .4 Sternson Acry Flex
 - .5 GE Acryseal
- .5 Sealants for vertical and horizontal non-traffic bearing joints to CGSB 19-GP-24.
 - .1 Type 1: high, low temperature range, wet conditions, movement range to 25%
polysulphide, non-staining, non-fading. Caulking to withstand environmental conditions of locale.
 - .2 Type 2: normal temperature range, dry conditions, movement range to 10%.
Paintable, latex base caulking, interior conditions only.
 - .3 Three part epoxidized polyurethane sealant: to meet the specified requirements of CGSB-19.24-M90.
- .4 Acoustical Sealant.
 - .1 To ASTM C919.
 - .2 Acceptable material:
 - .1 Tremco acoustic sealant
 - .2 PI 2000 bulldog
- .5 Preformed Compressible and Non-Compressible back-up materials.
 - .1 Polyethylene, Urethane, Neoprene or Vinyl Foam.
 - .1 Extruded [open] [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), extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200 kPa, extruded polyolefin foam, 32 kg/m³ density, or neoprene foam backer, size as recommended by manufacturer.
- .4 Bond Breaker Tape.
 - .1 Polyethylene bond breaker tape which will not bond to sealant.
- .5 Sealant for fireproofing: where cables, conduits, pipes and ducts pass through floors and fire-rated walls, pack space between wiring and sleeve full with penetrating foam sealing system, ULC listed meeting CAN4-S115-M85 and ASTM E814 fire barrier requirements. Co-ordinate with Section 07480.
- .6 Colours: Colours shall be selected from manufacturer's standard colour range. Colours to match material / background colour upon which they occur. Final colour selection by Contract Administrator.

2.3 SEALANT SELECTION

- .1 Perimeters of exterior openings where frames meet exterior facade of building (i.e. brick, block, precast masonry, concrete): Sealant type: CAN/CGSB-19.24.
- .2 Control and expansion joints in exterior surfaces of unit masonry walls: Sealant type: CAN/CGSB-19.24.
- .3 Joints between metal frame and cladding; CAN/CGSB-19.24.
- .4 Joints in metal cladding; CAN/CGSB-19.24.
- .5 Joints in metal flashing; CAN/CGSB-19.24.
- .6 Joints between metal frame and gypsum board: CAN/CGSB-19.13 Type MCG, Class 2-40.
- .7 Joints in gypsum board walls: CAN/CGSB-19.13 Type MCG, Class 2-40.
- .8 Joints in washrooms, janitors room etc: CAN/CGSB-19.22.
- .9 Perimeter of bath fixtures (e.g. sinks, tubs, urinals, stools, waterclosets, basins, vanities): Sealant type: CAN/CGSB-19.22
- .10 Joints in polyethylene and where acoustical sealant is specified: ASTM C919.

2.4 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.

Part 3 Execution

3.1 PROTECTION

- .1 Protect installed Work of other trades from staining or contamination.

3.2 SURFACE PREPARATION

- .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 matter 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.

3.3 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.

3.4 BACKUP MATERIAL

- .1 Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.5 MIXING

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

3.6 APPLICATION

- .1 Sealant.
 - .1 Apply sealant in accordance with manufacturer's written instructions.
 - .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
 - .3 Apply sealant in continuous beads.
 - .4 Apply sealant using gun with proper size nozzle.
 - .5 Use sufficient pressure to fill voids and joints solid.
 - .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
 - .7 Tool exposed surfaces before skinning begins to give slightly concave shape.
 - .8 Remove excess compound promptly as work progresses and upon completion.
- .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