
Part 1 General

1.1 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM C919, Standard Practice for Use of Sealants in Acoustical Applications.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-19.13, Sealing Compound, One-component, Elastomeric, Chemical Curing.
- .3 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Protection Act (CEPA).
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .5 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act (TDGA).

1.2 SUBMITTALS

- .1 Submit product data in accordance with Section 01 33 00 - 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 01 33 00 - 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 01 33 00 - Submittal Procedures.
 - .1 Instructions to include installation instructions for each product used.

1.3 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, handle, store and protect materials in accordance with Section 01 61 00 – Common 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.

1.4 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.

1.5 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.

1.6 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 Arrange with the caulking and sealant manufacturers for a visit at the job site by one of their technical representatives before beginning the caulking and sealing installation to discuss with the Contractor and the Contract Administrator the procedures to be adopted, to analyse site conditions and inspect the surfaces and joints to be sealed, in order that type of sealant recommendations may be made for typical joint configuration.
- .3 Discuss the following items and provide a written report indicating:
 - .1 Sealants and caulking materials selected for use from those specified;
 - .2 Surface preparation requirements;
 - .3 Priming and application procedures;
 - .4 Verification that sealants and caulking are suitable for purposes intended and joint design;
 - .5 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.
 - .6 Verification that sealant and caulking are suitable for temperature and humidity conditions at time of application and will not stain adjacent surfaces;
 - .7 Recommended sealant for each type of joint configuration;

- .8 Joint design;
- .9 Anticipated frequency and extent of joint movement.
- .10 Number of beads to be used in the sealing operation;
- .11 Suitability of durometer hardness and other properties of material to be used.
- .12 Weather conditions under which work will be done.

1.7 SEALANT MATERIALS

- .1 Sealants and Caulking compounds must:
 - .1 Meet or exceed all applicable governmental and industrial safety and performance standards; and
 - .2 Be manufactured and transported in such a manner that all steps to the process, including the disposal of waste products arising therefrom, will meet the requirements of all applicable governmental acts, by laws and regulations including, for facilities located in Canada, the Fisheries Act and the Canadian Environmental Protection Act (CEPA).
- .2 Sealant and caulking compounds must not be formulated or manufactured with: aromatic solvents, fibrous talc or asbestos, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium, barium or their compounds, except barium sulphate.
- .3 Sealant and caulking compounds must not contain a total of volatile organic compound (VOC's) in excess of 5% by weight as calculated from records of the amounts of constituents used to make the product.
- .4 Sealant and caulking compounds must be accompanied by detailed instructions for proper application so as to minimize health concerns and maximize performance, and information describing proper disposal methods.
- .5 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.
- .6 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.
- .7 Where sealants are qualified with primers use only these primers.
- .8 Sealants acceptable for use on this project must be listed on CGSB Qualified Products List issued by CGSB Qualification Board for Joint Sealants. Where sealants are qualified with primers use only these primers.

1.8 SEALANT MATERIAL DESIGNATIONS

- .1 Urethanes One Part.
 - .1 Non-Sag to CAN/CGSB-19.13, Type 2.
- .2 Silicones One Part.
 - .1 To CAN/CGSB-19.13, mildew resistant.

- .3 Acoustical Sealant.
 - .1 To ASTM C919.
- .4 Preformed Compressible and Non-Compressible 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), 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.

1.9 SEALANT SELECTION

- .1 Perimeters of exterior openings where frames meet exterior facade of building, Sealant type CAN/CGSB- 19.13.
- .2 Expansion and control joints in exterior surfaces of poured-in-place concrete walls: Sealant type CAN/CGSB – 19.13.
- .3 Control and expansion joints in exterior surfaces of unit masonry walls: Sealant type: CAN/CGSB – 19.13.
- .4 Seal interior perimeters of exterior openings as detailed on drawings: Sealant type: CAN/CGSB – 19.13.
- .5 Control and expansion joints on the interior of exterior surfaces of unit masonry walls. Sealant Type CAN/CGSB -19.13.
- .6 Interior control and expansion joints in floor surfaces: Sealant type CAN/CGSB -19.13.
- .7 Perimeters of interior frames, as detailed and itemized: Sealant type CAN/CGSB -19.13.
- .8 Interior masonry vertical control joints (block-to-block, block-to-concrete, and intersecting masonry walls): Sealant type CAN/CGSB -19.13.
- .9 Perimeter of bath fixtures (e.g. sinks, tubs, urinals, stools, waterclosets, basins, vanities, counters, plastic laminate and adjacent wall finish, etc.): Sealant type CAN/CGSB – 19.13, mildew resistant.
- .10 Exposed interior control joints in drywall: Sealant type: CAN/CGSB -19.13.
- .11 Acoustical Sealant ASTM C919.

1.10 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 2 Execution

2.1 PROTECTION

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

2.2 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.

2.3 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.

2.4 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.

2.5 MIXING

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

2.6 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.
 - .4 Remove masking tape after initial set of sealant.

END OF SECTION