

**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, including Section 07 52 00 - Modified Bituminous Membrane Roofing.

**1.2           RELATED SECTIONS**

- .1       Section 01 33 00 - Submittal Procedures.

**1.3           REFERENCES**

- .1       American Society for Testing and Materials International, (ASTM)
  - .1       ASTM C919-12, Standard Practice for Use of Sealants in Acoustical Applications.
- .2       Canadian General Standards Board (CGSB)
  - .1       CGSB 19-GP-5M, Sealing Compound, One Component, Acrylic Base, Solvent Curing (Issue of 1976 reaffirmed, incorporating Amendment No. 1).
  - .2       CAN/CGSB-19.13-M87, Sealing Compound, One-component, Elastomeric, Chemical Curing.
  - .3       CGSB 19-GP-14M, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing (Reaffirmation of April 1976).
  - .4       CAN/CGSB-19.17-M90, One-Component Acrylic Emulsion Base Sealing Compound.
  - .5       CAN/CGSB-19.24-M90, Multi-component, Chemical Curing Sealing Compound.
- .3       Department of Justice Canada (Jus)
  - .1       Canadian Environmental Protection Act, 1999 (CEPA).
- .4       General Services Administration (GSA) - Federal Specifications (FS)
  - .1       FS-SS-S-200-E(2)1993, Sealants, Joint, Two-Component, Jet-Blast-Resistant, Cold Applied, for Portland Cement Concrete Pavement.
- .5       Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1       Material Safety Data Sheets (MSDS).
- .6       Transport Canada (TC)
  - .1       Transportation of Dangerous Goods Act, 1992 (TDGA).

**1.4           SUBMITTALS**

- .1       Submit product data in accordance with Section 01 33 00 - Submittal Procedures.

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- .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.

#### **1.5 QUALITY ASSURANCE/MOCK-UP**

- .1 Construct mock-up to show location, size, shape and depth of joint complete with back-up material, primer, caulking and sealant.
- .2 Mock-up will be used:
  - .1 To judge workmanship, substrate preparation, operation of equipment and material application.
- .3 Locate where directed.
- .4 Allow 24 hours for inspection of mock-up by Departmental Representative before proceeding with sealant work.
- .5 When accepted, mock-up will demonstrate minimum standard of quality required for this Work. Approved mock-up may remain as part of finished Work.

#### **1.6 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver, handle, store and protect materials in accordance with manufacturer's recommendations.
- .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.

#### **1.7 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.

## **1.8 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.

## **Part 2 Products**

### **2.1 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 Where sealants are qualified with primers use only these primers.

### **2.2 SEALANT MATERIAL DESIGNATIONS**

- .1 Silicones One Part – Type 1.
  - .1 To CAN/CGSB-19.13.
- .2 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/m<sup>3</sup> 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.

**2.3 SEALANT SELECTION**

- .1 Perimeters of interior frames, as detailed and itemized: Sealant type: Type 1.

**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.

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### 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**