

**Part 1            General**

**1.1                SECTION INCLUDES**

- .1            Materials, preparation and application for caulking and sealants.

**1.2                RELATED SECTIONS**

- .1            Section 01 33 00 - Submittal Procedures
- .2            Section 01 74 19 - Construction/Demolition Waste Management And Disposal
- .3            Section 01 61 00 - Common Product Requirements

**1.3                REFERENCES**

- .1            American Society of Testing of Materials (ASTM):
  - .1            ASTM C1193-09 – Standard Guide for Use of Joint Sealants
- .2            Canadian General Standards Board (CGSB):
  - .1            CGSB 19.13-M87 – Sealing Compound, One Component, Elastomeric, Chemical Curing
- .3            Health Canada:
  - .1            Workplace Hazardous Materials Information System (WHMIS)
    - .1            Material Safety Data Sheets (MSDS).

**1.4                SUBMITTALS**

- .1            Submit in accordance with Section 01 33 00.
- .2            Submit product data and installation instructions for sealants. Submit product data for all accessory materials and components to be used to install sealants.
- .3            Submit manufacturer's color charts consisting of strips of cured sealants showing full range of colors available for each product exposed to view, for Departmental Representative's selection.
  - .1            Instructions to include installation instructions for each product used.

**1.5                DELIVERY, STORAGE, AND HANDLING**

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

**1.6                WASTE MANAGEMENT AND DISPOSAL**

- .1            Separate waste materials in accordance with Section 01 74 19.

- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, and other packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Unused sealant material must be disposed of at an official hazardous material collection.
- .5 Do not dispose of unused sealant material into sewer system, onto ground or in other location where it will pose health or environmental hazard.
- .6 Divert unused joint sealing material from landfill to official hazardous material collections site.

## **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.
- .3 Ventilate areas of work by use of portable supply and exhaust fans.

## **Part 2 Products**

### **2.1 COMPONENTS**

- .1 Sealant: one component silicone type to CGSB 19.13-M87; non-sagging; non-staining and non-bleeding; colors selected by Consultant from manufacturer's full color range; acceptable products:
  - .1 Spectrum 2 manufactured by Tremco.
  - .2 999 manufactured by Chemtron.
  - .3 Sonneborn Omni Seal manufactured by Degussa.
- .2 Joint cleaner: type recommended by sealant manufacturer to suit applicable substrate materials; free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way; formulated to promote optimum adhesion of sealants to joint substrates.
- .3 Primer: non-staining type recommended by sealant manufacturer, to suit sealing substrates.
- .4 Joint back-up:
  - .1 Of material and type that is non-staining, compatible with joint substrates, sealants, primers, and other joint fillers, and are approved for applications indicated by sealant manufacturer.
  - .2 Round closed cell foam of extruded rubber, vinyl, polyethylene, urethane or neoprene; Shore A hardness of 20; tensile strength 140 to 200 kPa; oversized 30-50%; compatible with sealant and primer; non-adhering to sealant.
- .5 Bond breaker: self-adhesive polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where three sided adhesion will result in sealant failure.
- .6 Masking tape: non-staining, non-absorbent material compatible with joint sealants and surfaces adjacent to joints.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Carefully examine surfaces, materials to receive sealants and verify they are physically capable of retaining sealant bond.
- .2 Verify that fillers and backing provided under other sections of work are properly installed.

### **3.2 PREPARATION**

- .1 Ensure that joint forming materials are compatible with sealant.
- .2 Clean and prepare joints in accordance with manufacturer's recommendations.

- .3 Prime joints when recommended by manufacturer. Mask adjoining surfaces with tape prior to priming to prevent staining.

### 3.3 INSTALLATION

- .1 Comply with joint sealant manufacturer's written installation instructions, with recommendations as specified in ASTM C1193 for use of joint sealant as applicable to materials, applications, and conditions indicated therein.
- .2 Install sealant backing to support sealant during application and a position required to produce cross sectional shapes and depths of installed sealant relative to joint widths that allow optimum sealant movement capability.
  - .1 Do not leave gaps between ends of sealant backing.
  - .2 Do not stretch, twist, puncture, or tear sealant backing.
  - .3 Remove absorbent sealant backing that has become wet before installation of sealant and replace with dry sealant backing.
- .3 Install bond breaker tape behind sealant where sealant backing is not used between sealant and backing of moving joints.
- .4 Install sealant at the same time backing is installed.
- .5 Install sealant to completely fill recesses in each joint configuration. Produce uniform, cross sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Form surface of sealant smooth, free from ridges, wrinkles, sags, air pockets, and embedded impurities.
- .6 Immediately after sealant application and before skinning or curing begins, tool sealant to form smooth, uniform bead, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joints. Comply with the following:
  - .1 Remove excess sealant from surfaces adjacent to joints.
  - .2 Use tooling agents and profiles that are approved in writing by sealant manufacturer and that do not discolor sealant or adjacent surfaces.
  - .3 Install sealant using a gun with proper sized nozzle. Use sufficient pressure to fill voids and joints solid.
- .7 Tool (form) sealant that is exposed to a concave appearance.
- .8 Install sealant in the following locations:
  - .1 Exterior:
    - .1 Head and jamb junctions between metal door frames and metal wall cladding.
    - .2 Perimeter junctions between windows and metal wall cladding, in concealed location behind window glazing caps.
    - .3 Under door thresholds.
  - .2 Interior:
    - .1 Head and jamb junctions between metal door frames and gypsum board wall cladding.

- .2 Head and jamb junctions between windows and gypsum board wall cladding.
- .3 Sill junctions between windows and wood sills.
- .4 Junctions between architectural woodwork components and walls.

### **3.4 CLEANING**

- .1 Clean adjacent surfaces immediately after application of sealant and leave work neat and clean. Remove excess sealant and droppings, using recommended cleaners as work progresses. Remove masking tape after tooling joints.

### **3.5 PROTECTION**

- .1 Protect joint sealant during and after curing period from contact with contaminating substances and from damage resulting from constructing operations or other causes so sealant is without deterioration or damage at time of Work completion.
- .2 Cut out and remove damaged or deteriorated joint sealant immediately, so that installations with repaired areas are indistinguishable from original work if, despite protection measures, damage or deterioration occurs.

**END OF SECTION**