

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 45 00 - Quality Control.
- .3 Section 01 61 00 - Common Product Requirements.
- .4 Section 01 74 19 - Waste Management and Disposal.
- .5 Section 03 10 00 - Concrete Forming and Accessories.
- .6 Section 03 30 00 - Cast-in-Place Concrete.

1.3 REFERENCES

- .1 Canadian General Standards Board (CGSB)
- .2 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 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .5 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.
  - .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.
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1.4 SUBMITTALS  
(Cont'd)

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- .3 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 DELIVERY,  
STORAGE, AND  
HANDLING

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- .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.

1.6 WASTE  
MANAGEMENT AND  
DISPOSAL

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- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.  
.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.  
.3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, packaging material, in appropriate on-site bins, for recycling in accordance with Waste Management Plan.  
.4 Place materials defined as hazardous or toxic in designated containers.  
.5 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.  
.6 Unused sealant material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.  
.7 Divert unused joint sealing material from landfill to official hazardous material collections site approved by Departmental Representative.  
.8 Empty plastic joint sealer containers are not recyclable. Do not dispose of empty containers with plastic materials destined for recycling.  
.9 Fold up metal banding, flatten, and place in designated area for recycling.
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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.

1.9 MEASUREMENT FOR  
PAYMENT

- .1 No measurement for payment to be made under this section. Include costs in unit prices for items in which joint sealing is required.

PART 2 - PRODUCTS

2.1 SEALANT  
MATERIALS

- .1 Where sealants are qualified with primers use only these primers.

2.2 SEALANT  
MATERIAL  
DESIGNATIONS

- .1 Polyurethane Sealant:
  - .1 Self-Leveling one part polyurethane sealant to CAN/CGSB-19.13 M87, Classification C-1-25-B-N, Premium Grade, colour to match concrete.
  - .2 Non-Sag to CAN/CGSB-19.24, colour to match concrete.
  - .3 Meets ASTM C920, types, Grade P, Class 25.
  - .4 Federal specifications TT-S-00230C, Type 1, Class A.
  - .5 Service temperature range of -44 to 77°C.
- .2 Preformed Compressible and Non-Compressible back-up materials.
  - .1 Polyethylene or Neoprene 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 Expansion and control joints in exterior surfaces of poured-in-place concrete: Sealant type: self-leveling, premium-grade polyurethane sealant.

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.

3.6 APPLICATION  
(Cont'd)

- .1 (Cont'd)
  - .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.