

PART 1 - GENERAL

- 1.1 REFERENCES .1 ASTM International
- .1 ASTM C 919-Latest Edition, Standard Practice for Use of Sealants in Acoustical Applications.
 - .2 ASTM C920-Latest Edition, Standard Specification for Elastomeric Joint Sealants.
- 1.2 DEFINITIONS .1 Sealant Types: M - Multi-Component and S - Single Component.
- .2 Sealant Grades: P - Pourable or Self-Leveling used for horizontal traffic joints and NS - Non-sag or Gunnable used for vertical and non-traffic joints.
 - .3 Sealant Classes: 25,50, and 100/50 (extension/compression) representing movement capability in percent of joint width.
 - .4 Sealant Uses: T - Traffic, NT - Non-Traffic, I - Immersion, M - Mortar, G - Glass, A - Aluminum, and O - Other. Use O includes color anodized aluminum, metals other than aluminum painted surfaces, brick, stone, tile, and wood for example.
- 1.3 ACTION AND INFORMATIONAL SUBMITTALS .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for joint sealants and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Manufacturer's product to describe:
 - .1 Caulking compound.
 - .2 Primers.
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1.3 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd)

- .2 Product Data: (Cont'd)
 - .2 (Cont'd)
 - .3 Sealing compound, each type, including compatibility when different sealants are in contact with each other.
 - .3 Submit 2 copies of WHMIS and MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .3 Samples:
 - .1 Submit 2 samples of each type of material and colour.
 - .2 Cured samples of exposed sealants for each colour where required to match adjacent material.
- .4 Manufacturer's Instructions:
 - .1 Submit instructions to include installation instructions for each product used.

1.4 CLOSEOUT
SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for incorporation into manual.

1.5 DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
 - .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
 - .3 Storage and Handling Requirements:
 - .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
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1.5 DELIVERY, STORAGE AND HANDLING (Cont'd)	.3	Storage and Handling Requirements: (Cont'd) .2 Replace defective or damaged materials with new.
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<u>1.6 SITE CONDITIONS</u>	.1	Ambient Conditions: .1 Proceed with installation of joint sealants only when: .1 Ambient and substrate temperature conditions are within limits permitted by joint sealant manufacturer or are above 4.4 degrees C. .2 Joint substrates are dry. .3 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.
	.2	Joint-Width Conditions: .1 Proceed with installation of joint sealants only where joint widths are more than those allowed by joint sealant manufacturer for applications indicated.
	.3	Joint-Substrate Conditions: .1 Proceed with installation of joint sealants only after contaminants capable of interfering with adhesion are removed from joint substrates.

<u>1.7 ENVIRONMENTAL REQUIREMENTS</u>	.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 Health Canada.
	.2	Ventilate area of work as directed by Consultant by use of approved portable supply and exhaust fans.

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 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 Type 1: Multi-Component, chemically curing, polyurethane sealant, tintable. To meet specified requirements of ASTM C920, Type M, Grade NS, Class 50, uses NT, M, A, and O.
- .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/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.

- 2.3 SEALANT SELECTION .1 Exterior Joints:
- .1 Vertical joints which are bordered on one or both sides by:
 - .1 Porous building materials such as concrete, natural stone (marble, granite, limestone, etc.) or masonry or;
 - .2 Non-porous building materials such as painted metal, anodized aluminum, mill finish aluminum, PVC or porcelain tile.
 - .3 Seal with Type 1 sealant.

- 2.4 JOINT CLEANER .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant in accordance with sealant manufacturer's written recommendations.
- .2 Primer: in accordance with sealant manufacturer's written recommendations.

PART 3 - EXECUTION

- 3.1 EXAMINATION .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for joint sealants installation in accordance with manufacturer's written instructions.
- .1 Visually inspect substrate in presence of Consultant.
 - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

- 3.2 SURFACE PREPARATION .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.
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| 3.2 SURFACE PREPARATION
(Cont'd) | .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. |
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3.6 APPLICATION
(Cont'd)

- .1 Sealant: (Cont'd)
 - .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.

3.7 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Clean adjacent surfaces immediately.
 - .3 Remove excess and droppings, using recommended cleaners as work progresses.
 - .4 Remove masking tape after initial set of sealant.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.8 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by joint sealants installation.