

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 01 74 19 – Waste management and disposal.
- .2 Section 09 21 99 – Partitions for minor works.
- .3 Section 09 65 19 – Resilient tile flooring.
- .4 Section 09 91 99 – Painting for minor works.

1.2 REFERENCE STANDARDS

- .1 ASTM International
 - .1 ASTM C 919-08, Standard Practice for Use of Sealants in Acoustical Applications.
- .2 Canadian General Standards Board (CGSB)
 - .1 CGSB 19-GP-5M-1984, 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-1984, 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 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.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .5 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

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.
 - .3 Sealing compound, each type, including compatibility when different sealants are in contact with each other.
 - .3 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.

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- .3 Samples:
 - .1 Submit 2 samples of each type of material and colour.
 - .2 for harmonization with adjacent materials, submit cured samples of exposed sealants for each color where required to match adjacent material which must be left visible, for each color proposed.
- .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 off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect joint sealants from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Waste Management and Disposal:
 - .1 Waste Management and Disposal
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.
 - .2 Packaging Waste Management: remove for reuse of pallets, crates, padding, and packaging materials in accordance with Section 01 74 19 - Waste Management and Disposal.

1.6 SITE CONDITIONS

- .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.

1.7 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 Health Canada.

1.8 WARRANTY

- .1 Provide a written warranty, issued in the name of the owner, certifying that the work specified in this section will be free from any defect in materials and workmanship, in particular against loss of waterproofing, cracking, spalling, loss of consistency, contraction, sagging, loss of adhesion and tarnishing of adjacent surfaces, for a period of thirty-six (36) months from the date of final acceptance.
- .2 The warranty must cover the cost of any expense generated in repairing the aforementioned defects and any other damage to the building resulting from defects in the work of this section.
- .3 The guarantee formulation must be approved by the Departmental Representative.

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 Primers: the type recommended by the sealant manufacturer.
 - .2 Non-corrosive and non-greasy cleaning agents compatible with sealant and sealant materials and recommended by sealants manufacturer.
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.3 Sealants:

- .1 Sealants, except those described in CAN / CGSB-19.1 and CAN / CGSB-19.18, must be on the list of approved products, published by the Product Certification Commission. of the ONGC (CGSB). In the case of sealants that have been approved with a primer, only this primer should be used with the sealant. All products must be low VOC (LEED).
- .1 Product n° 1 :
- .1 Multicomponent polyurethane sealant, colors to be chosen by the Departmental Representative and in accordance with CAN / CGSB-19.24-M90 Class B, Type II.
- .1 Tensile Strength % Elongation (ASTM 800-900% D 412)
- .2 Hardness Properties ASTM C 661 40 ± 5
- .3 Movement Capability +50% / -50%
- .2 Applications :
- .1 Expansion or control joints in interior and exterior masonry.
- .2 Joints between exterior door frames and access hatches, windows, curtain walls and shutters or other and exterior masonry walls.
- .3 Seams to support angles of masonry or exterior panels.
- .4 All miscellaneous joints required by plans but not covered by other sections.
- .5 Acoustic sealant for exposed structures.
- .6 Joints between masonry elements
- .2 Produit n° 2 :
- .1 Multi-component, polyurethane joint sealant, self leveling, colors to be chosen by the Departmental Representative and in accordance with the U.S. Federal Specification TT-S-00227E, ASTM C920, type M, Grade P, Class 25
- .1 Hardness, durometer scale « A » (ASTM C 30 - 35 661)
- .2 Concrete peel strength (ASTM C 794) 18 – 22 pli
- .3 Mouvement capacity (ASTM C 719) ±25 %
- .4 Tensile strenght (ASTM D 719) 190-230 psi
- .2 Applications :
- .1 Contraction or control joints in ceramic, granite, concrete floors.
- .2 Expansion joints in terrace floors.
- .3 Horizontal joints subject to traffic, such as door sills, sidewalks, ramps, etc.
- .3 Produit n° 3 :
- .1 Single component, acetoxysilicone sealant, cellant de silicone acétoxy, colors to be chosen by the Departmental Representative, with fungicide for sanitary installations, in accordance with CAN/ONGC-19.13-M87.
- .2 Applications :
- .1 Sealing of openings of plumbing pipes in gypsum structures, under pipe flange.
- .4 Product n° 4 :
- .1 Single-component, moisture-cure, acetoxysilicone sealant, colors to be chosen by the Departmental Representative and in accordance with CAN/ONGC-19.13-M87.
- .1 Hardness (Shore A) (ASTM C 661) 26 à 30
- .2 Peel Strength Aluminum and Glass (ASTM C 794) 2,28 – 2,63 kN/m
- .3 Dynamic Movement (ASTM C 719) ±25%

- .4 Tensile Strength at 100% Max Elongation 0,345-0,552 MPa (ASTM C 1184)
- .2 Applications :
 - .1 Caulking of metal flashings (roofing).
 - .2 Sealing of plumbing pipe penetrations in gypsum structures, under the fitting collars.
 - .3 Joint between interior door frame, glazed partition or other and materials other than gypsum.
 - .4 Sealing joints between gypsum and window elements and curtain walls.
 - .5 Sealing between gypsum and metallic structures.
- .5 Product n° 5 :
 - .1 High-performance, fast-curing, single-component, lowmodulus, hybrid sealant, colors to be chosen by the Departmental Representative and in accordance with.
 - .1 Hardness Properties (ASTM C 661) 25
 - .2 Adhesion to Aluminum (ASTM C 794) 20 – 25 pli
 - .3 Movement Capability (ASTM C 719) ±35%
 - .2 Applications :
 - .1 Joint between interior door frame, glazed partition or other and materials other than gypsum.
 - .2 Sealing joints between gypsum and window elements and curtain walls.
 - .3 Sealing between gypsum and metal structures.
- .6 Product n° 6 :
 - .1 Flame retardant sealant: refer to section 07 81 00 – Applied fireproofing
- .4 Sealing and caulking products shall not contain or be made from the following components: aromatic solvents, talc or asbestos fibers, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium, barium and derivatives, with the exception of barium sulphate.
- .5 In order to minimize health risks and maximize product performance, it is important that these be accompanied by detailed instructions regarding the method of application and necessary information regarding waste disposal methods.
- .6 Caulking products that emit strong odors, contain toxic chemicals or are not certified to be of a mold resistant type should not be used in air handling units.
- .7 If you can not help but use toxic products, restrict use to areas where fumes can be exhausted outdoors or where they will be confined behind air barrier barriers. or apply them several months before the place is occupied so as to allow evacuation of the fumes over the longest possible period

2.3 BACKING MATERIAL

- .1 Preformed, compressible and non-compressible
 - .1 Elements made of polyethylene foam, urethane, neoprene or vinyl.
 - .1 Extruded cellular foam filling rods.
 - .2 Oversized elements from 30 to 50%.
 - .2 Neoprene or rubber-butyl parts.
 - .1 Round and solid rods with a Shore A hardness of 70.

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- .3 High density foam elements.
 - .1 Extruded cellular PVC foam extruded cellular polyethylene foam with Shore A hardness of 20 and tensile strength of 140 to 200 kPa, extruded polyolefin foam, density of 32 kg / m³, or neoprene, recommended by the manufacturer.
- .4 Anti-seizing tape.
 - .1 Polyethylene tape that does not adhere to the sealant.

2.4 COLOR OF SEALANTS AND MASTICS

- .1 In general, the color of each sealant and mastics, at the discretion of the Departmental Representative, will match that of adjacent surfaces (submit color chart)

2.5 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 Departmental Representative.
 - .2 Inform Departmental Representative 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 Departmental Representative.

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.
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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.
 - .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 00 - 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 00 - 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.

END OF SECTION
