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- 1.1 Section Includes .1 Materials, preparation and application for caulking and sealants.
- 1.3 References .1 American Society for Testing and Materials International, (ASTM)
.1 ASTM C 919, Standard Practice for Use of Sealants in Acoustical Applications.
.2 Canadian General Standards Board (CGSB)
.1 CAN/CGSB-19.17, One-Component Acrylic Emulsion Base Sealing Compound.
.2 CAN/CGSB-19.24, 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).
.6 Underwriters' Laboratories of Canada (ULC):
.1 CAN/ULC-S102-03, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
- 1.4 Submittals .1 Submit product data in accordance with Section 01 33 00 "Shop Drawings and Other 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.
.3 Submit samples in accordance with Section 01 33 00 "Shop Drawings and Other Submittal Procedures"
.4 Submit duplicate samples of each type of material and colour.
.5 Cured samples of exposed sealants for each colour where required to match adjacent material.
.6 Submit manufacturer's instructions in accordance with Section 01 33 00 "Shop Drawings and Other Submittal Procedures". Instructions to include installation instructions for each product used.

1.5 Quality Assurance/ Mock-Up

- .1 Construct mock-up in accordance with Section 01 45 00 "Testing and Quality Control".
- .2 Construct mock-up to show location, size, shape and depth of joints complete with back-up material, primer, caulking and sealant.
- .3 Mock-up will be used to judge workmanship, substrate preparation, operation of equipment and material application.
- .4 Locate where directed.
- .5 Allow 3 business days for inspection of mock-up by the Departmental Representative before proceeding with sealant work.
- .6 When accepted, mock-up will demonstrate minimum standard of quality required for this Work. The accepted mock-up may remain as part of the finished Work.

1.6 Delivery, Storage, and Handling

- .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.

1.7 Waste Management and Disposal

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 35 43 "Environmental Procedures".
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with the 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 an official hazardous material collections site approved by the 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.

1.8 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°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.

1.9 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 Submit ventilation plan using portable supply and exhaust fans to Departmental Representative for review and approval.

PART 1 - 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 Sealant: Silicone, low modulus, high performance, one part, neutral curing, non-staining, construction grade, to CAN/CGSB-19.13. Colour to match adjacent finishes to the approval of the Departmental Representative. Acceptable material: #790 – Silicone Building Sealant by Dow Corning, SikaSil-C990 by Sika Canada Inc., or approved equal.

2.2 Sealant

Material Designations (continued)

- .4 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.

2.4 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 2 - 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 Sealants:
- .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 Upon completion of the work of this Section remove from the premises all surplus material, dirt and debris caused by the work of this Section and leave the installation clean.
- .2 Cleanup.
- .1 Clean adjacent surfaces immediately and leave Work neat and clean. Use cleaning method recommended by manufacturer.
 - .2 Remove excess and droppings, using recommended cleaners as work progresses.
 - .3 Remove masking tape after initial set of sealant.

END OF SECTION