

SPECIFICATIONS - DETAILED PROVISIONS
Section 07920 - Sealants and Caulking

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SECTION 07920
SEALANTS AND CAULKING

PART 1 - GENERAL

1.01 DESCRIPTION

Requirements specified in Conditions of the Contract and Division 1 form a part of this Section. Provide all sealant and caulking work, complete as indicated, specified and required.

- A. Work Included in This Section. Principal items are:
1. This Specification is intended to be general in scope as to locations of caulking and sealants. Contractor shall examine all Drawings and Details thoroughly and familiarize himself with the extent of the caulking and sealing involved. Only a complete and absolutely watertight and weathertight job will be accepted.
 2. Additional information pertaining to sealing and/or caulking will be found in the various specific trade sections and shall be coordinated with the work of this Section.
- B. Related Work Not in This Section. Concrete Work, Masonry Work, Doors and Frames, Painting, Gypsum Drywall, Weatherstripping and Sound Sealing integral to manufactured items, and caulking required for piping, conduit or other mechanical or electrical work.

1.02 SUBMITTALS

Prior to purchase or delivery of materials, submit the following, and obtain District acceptance.

- A. Samples and Technical Data
1. Submit technical data by all manufacturers of proposed materials.
 2. Submit material manufacturers' printed preparation and application instructions to District and furnish copies to all trades concerned.
- B. Shop Drawings and Mock-Ups. When requested, submit the following in accordance with these specifications:
1. Full-size details indicating all the necessary components for each type of joint to be sealed.

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2. Observed field conditions and measurements. Mock-up units or test sections shall be also scheduled after receiving written approval of shop drawings by the District.

1.03 WARRANTY

Contractor shall fully guarantee all materials and workmanship under this Section for a period of three (3) years from the date of final acceptance of the structure against all defects in both workmanship and materials and he shall promptly correct and/or replace such faulty work if so notified, at no additional cost to the District.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Delivery. Deliver sealant and caulking compounds in unopened factory labeled containers; labels bearing statement of conformance to standards specified for each material; and bearing manufacturer's name and product designation.
- B. Colors. As selected to match adjoining surfaces. Special colors may be required.
- C. Sealant Compounds. Materials shall conform to Fed. Spec. TT-S-00227E(3) for multi-component sealant, or to Fed. Spec. TT-S-00230C(2) for single component sealant. Properties and adhesion of 1-part sealants shall be equal to 2-part materials. Sealants shall be Type I or Type II, as applicable. Sealants shall be limited to acceptable compounds compositions which are polysulfide, polyurethane, and silicone. For metal buildings, use Class "A" sealants, and for other locations, use Class "B" sealants each conforming with above referenced Federal Specifications or with ASTM C-920 like characteristics. Above grade sealants shall be resistant to ultra violet deteriorations.
 1. For joints in water-bearing surfaces, use only polyurethane sealants certified and approved by manufacturer for continuous or intermittent submergence in water or sewage.
 2. Silicone type sealant shall be used only on above grade joints which are not subject to vehicular or pedestrian traffic.
 3. Acoustical Sealant. Where designated or required at interior and acoustic partitions, use: "Acoustical Sealant" produced by USG, Tremco, or equal products.
 4. For Traffic (Vehicular or Pedestrian) Horizontal Sealant Joints. Sealant shall be MAMECO International's No. 45, or equal. Provide with Shore "A" Hardness Range of 25-35.

- D. Primer, where required, shall be used as recommended in writing by the sealant manufacturer. Primer shall have been tested for non-staining characteristics and durability on samples of actual surfaces to be sealed.
- E. Back-up Materials and Preformed Joint Fillers. Use non-staining material, compatible with sealant and primer, and of a resilient nature, such as closed cell polyethylene rod, or elastomeric tubing or rod (neoprene, butyl, or EDPM). Materials impregnated with oil, bitumen, or similar shall not be used. Size and shape shall be as indicated by joint details in Drawings and shall be as recommended by sealant manufacturer in writing. Sealant shall not adhere to back-up material.
- F. Bond Breakers, where required, shall be polyethylene tape, aluminum foil or other material as recommended by sealant manufacturer in writing.

PART 3 - EXECUTION

3.01 GENERAL

- A. Perform work of this Section by material manufacturer's approved applicator in strict conformance with manufacturer's printed instructions, or perform such operations under direct supervision of qualified representative of material manufacturer.
- B. Applicator shall examine all surfaces and report to the General Contractor all conditions not acceptable.

3.02 PREPARATION

- A. Thoroughly clean all joints, removing all foreign matter such as dust, oil, grease, water, surface dirt, frost and old caulking materials. Sealant must be applied to the base surface. Previously applied paint or primer must be entirely removed.
- B. Porous materials such as concrete masonry or stone should be cleaned where necessary by grinding, blast-cleaning, mechanical abrading, acid washing or combination of these methods to provide a clean, sound base surface for sealant adhesion.
 - 1. Laitance shall be removed by acid washing, grinding, or mechanical abrading.
 - 2. Form oils shall be removed by blast-cleaning.

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3. Loose particles present or resulting from grinding, abrading or blast-cleaning shall be removed by blowing out joints with oil-free compressed air (or vacuuming) prior to application of primer or sealant.
- C. Non-porous surfaces, such as metal and glass, shall be cleaned either mechanically or chemically. Protective coatings such as methacrylate lacquer on metallic surfaces shall be removed by a solvent that leaves no residue. Solvent shall be used with clean cloths or lintless paper towels. Do not allow solvent to air dry without wiping. Wipe dry with clean, dry cloth, or lintless paper towels.
 - D. Joint areas to be protected with masking tape or strippable films shall be cleaned before application of tape or film.
 - E. All joints to receive sealant shall be as indicated on shop or Project Drawings. Do not seal joints until they are in compliance with drawings or are acceptable to the Engineer.
 1. Joints to receive sealant shall be a minimum of 1/4 inch wide by 1/4 inch deep, unless otherwise approved.
 2. For joints in concrete, masonry, or stone: depth of the sealant may be equal to the width of joints up to 1/2 inch wide. For joints 1/2 inch to 1 inch wide: depth shall be 1/2 inch. For expansion and other joints, 1 to 2 inches wide: depth shall be no greater than 1/2 the applied sealant width. For joints exceeding 2 inches (5 cm) in width: depth shall be as directed by sealant manufacturer.
 3. For joints in metal, glass, and other non-porous surfaces: sealant depth shall be a minimum of 1/2 the applied sealant width, and shall in no case exceed the applied sealant width.
 - F. Joints to receive sealant, back-up material or pre-formed joint filler shall be cleaned out, raked to full width and depth as required by Applicator.
 - G. Joints shall be of sufficient width and depth to accommodate specified back-up material or pre-formed joint filler and sealant.

3.03 APPLICATION

- A. Install back-up material or joint filler, of type and size specified, at proper depth to provide sealant dimensions as detailed. Back-up material shall be of suitable size and shape; and compressed 25-50 percent to fit joints as required. Sealant shall not be applied without back-up material and/or bond breaker strip. When using back-up tubes avoid lengthwise stretching. Tube or rod shall not be twisted or braided.
- B. Apply masking tape, where required, in continuous strips in alignment with joint edge.

- C. Prime surfaces, where required, with primer as recommended by sealant manufacturer.
- D. Follow sealant manufacturer's instruction regarding mixing (if required), surface preparation, priming, and application procedure.
- E. Apply sealant under pressure with hand or power actuated gun or other appropriate means. Gun shall have nozzle of proper size and provide sufficient pressure to completely fill joints as designed. All joint surfaces shall be tooled to provide the contour as indicated on Drawings. When tooling joints, use tooling solution recommended by manufacturer. Remove masking tape immediately after joints have been tooled.
 - 1. For sealant application when air temperature is below forty degrees (40°) Fahrenheit (four degrees (4°) Centigrade), consult sealant manufacturer for recommendations.

3.04 CLEAN-UP AND PROTECTION

Clean adjacent surfaces of sealant as work progresses. Use solvent or cleaning agent as recommended by sealant manufacturer. All finished work shall be left in a neat, clean condition.

3.05 QUALITY CONTROL

The sealant joints shall be uniformly smooth, free of wrinkles, flush with adjacent surfaces and absolutely watertight. Adjacent surfaces which have been soiled by the application of the sealing compound shall be wiped clean and be left neat. The work will be judged defective due to the sealant's hardening, cracking, crumbling, melting, shrinking, leaking, or running.

END OF SECTION 07920

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