

SECTION 07 92 00
JOINT SEALANTS

PART 1 - GENERAL

1.1 DESCRIPTION:

- A. The Work in this Section covers all sealant and caulking materials and their application, wherever required for complete installation of building materials or systems.

1.2 RELATED WORK:

- A. Columbaria Caps: SECTION 03 48 24, PRE-CAST CONCRETE COLUMBARIUM UNITS.
- B. Stone Veneer: SECTION 04 43 00, NATURAL STONE VENEER

1.3 QUALITY CONTROL:

- A. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Product Testing: Obtain test results from a qualified testing agency based on testing current sealant formulations within a 12-month period.
 - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C1021.
 - 2. Test elastomeric joint sealants for compliance with requirements specified by reference to ASTM C920, and where applicable, to other standard test methods.
 - 3. Test other joint sealants for compliance with requirements indicated by referencing standard specifications and test methods.
- D. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to joint substrates in accordance with sealant manufacturer's recommendations:
 - 1. Locate test joints where indicated or, if not indicated, as directed by the Contracting Officer's Representative's.

2. Conduct field tests for each application indicated below:
 - a. Each type of elastomeric sealant and joint substrate indicated.
 - b. Each type of non-elastomeric sealant and joint substrate indicated.
3. Notify the COR seven days in advance of dates and times when test joints will be erected. //

E. VOC: Acrylic latex and Silicon sealants shall have less than 50g/l VOC content.

1.4 SUBMITTALS:

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's installation instructions for each product used.
- C. Cured samples of exposed sealants for each color where required to match adjacent material.
- D. Manufacturer's Literature and Data:
 1. Caulking compound
 2. Primers
 3. Sealing compound, each type, including compatibility when different sealants are in contact with each other.

1.5 PROJECT CONDITIONS:

- A. Environmental Limitations:
 1. Do not proceed with installation of joint sealants under following conditions:
 - a. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 °F.
 - b. When joint substrates are wet.
- B. 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.

C. Joint-Substrate Conditions:

1. Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.6 DELIVERY, HANDLING, AND STORAGE:

- A. Deliver materials in manufacturers' original unopened containers, with brand names, date of manufacture, shelf life, and material designation clearly marked thereon.
- B. Carefully handle and store to prevent inclusion of foreign materials.
- C. Do not subject to sustained temperatures less than 5° C (40° F) or exceeding 32° C (90° F).

1.7 DEFINITIONS:

- A. Definitions of terms in accordance with ASTM C717 and as specified.
- B. Back-up Rod: A type of sealant backing.
- C. Bond Breakers: A type of sealant backing.
- D. Filler: A sealant backing used behind a back-up rod.

1.8 WARRANTY:

- A. Warranty exterior sealing against leaks, adhesion, and cohesive failure, and subject to terms of "Warranty of Construction", FAR clause 52.246-21, except that warranty period shall be extended to two years.

- B. General Warranty: Special warranty specified in this Article shall not deprive Government of other rights Government may have under other provisions of Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of Contract Documents.

1.9 APPLICABLE PUBLICATIONS:

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
- C509-06.....Elastomeric Cellular Preformed Gasket and Sealing Material.
 - C612-04.....Mineral Fiber Block and Board Thermal Insulation.
 - C717-09.....Standard Terminology of Building Seals and Sealants.
 - C834-05.....Latex Sealants.
 - C919-08.....Use of Sealants in Acoustical Applications.
 - C920-08.....Elastomeric Joint Sealants.
 - C1021-08.....Laboratories Engaged in Testing of Building Sealants.
 - C1193-09.....Standard Guide for Use of Joint Sealants.
 - C1330-02 (R2007).....Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.
 - D1056-07.....Specification for Flexible Cellular Materials—Sponge or Expanded Rubber.
 - E84-09.....Surface Burning Characteristics of Building Materials.
- C. Sealant, Waterproofing and Restoration Institute (SWRI).
The Professionals' Guide

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Provide color of exposed joint sealants as selected. Custom colors will be used to provide blending of finish colors.
- B. Provide joint sealers, joint fillers and other materials that are compatible with one another and with joint substrates, as demonstrated by testing and field experience.

2.2 ELASTOMERIC JOINT SEALANTS

- A. Exterior Building Sealant: One-part silicone complying with ASTM C920, Type S, Grade NS, Class 25, Use NT, M, G, A, and O. Dow Corning Corp. "790", Tremco "Spectrem 1" or approved equal. Sealant shall resist ultra-violet, heat, ozone and moisture exposure and shall withstand substrate surface temperatures as high as 250-deg. F.
- B. Horizontal Joint Sealant: Two-part pourable urethane; ASTM C920, Type M; Grade P; Class 25; Uses T, M, A and O; Pecora Corp. "NR-200 Urexpan", Sonneborn "Sonolastic Paving Joint Sealant", Tremco, Inc. "THC-900/901" or approved equal. Horizontal joint sealant shall have a minimum Shore A hardness of 30.

2.3 CAULKING COMPOUND

- A. C-1: ASTM C834, acrylic latex.
- B. C-2: One component acoustical caulking, non-drying, non-hardening, synthetic rubber.

2.4 JOINT SEALANT BACKING

- A. General: Provide sealant backings of material and type that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Plastic Foam Joint-Fillers: Preformed, compressible, resilient, non-waxing, non-extruding strips of plastic foam, of size, shape and density to control sealant depth.

- C. Cylindrical Sealant Backings: ASTM C1330, of type indicated below and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
1. Type 9: Closed-cell material with a surface skin.
- D. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM 01056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 20° F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and otherwise contribute to optimum sealant performance.
- E. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

- A. Filler: Mineral fiber board: ASTM C612 Class 1. Thickness same as joint width. Depth to fill void completely behind back-up rod.
- B. Primer: As recommended by joint sealant manufacturer for adhesion of sealant to joint substrates. Stain free type.
- C. Cleaners for nonporous Surfaces: non-staining, chemical cleaner of type acceptable to manufacturer of sealant and sealant backing materials which are not harmful to substrates and adjacent nonporous materials and formulated to promote adhesion of sealant and substrates.
- D. Masking Tape: Non-staining, non-absorbent type compatible with joint sealants and to surfaces adjacent to joints.

2.6 COLOR

- A. Sealants used with exposed masonry shall match color of mortar joints.
- B. Sealants used with unpainted concrete shall match color of adjacent concrete.

C. Color of sealants for other locations shall be light gray or aluminum, unless specified otherwise.

D. Caulking shall be light gray or white, unless specified otherwise.

PART 3 - EXECUTION

3.1 INSPECTION:

A. Inspect substrate surface for bond breaker contamination and unsound materials at adherent faces of sealant.

B. Coordinate for repair and resolution of unsound substrate materials.

C. Inspect for uniform joint widths and that dimensions are within tolerance established by sealant manufacturer.

3.2 PREPARATIONS:

A. Prepare joints in accordance with manufacturer's instructions and SWRI.

B. Clean surfaces of joint to receive caulking or sealants leaving joint dry to the touch, free from frost, moisture, grease, oil, wax, lacquer paint, or other foreign matter that would tend to destroy or impair adhesion.

1. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants.

2. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air. Porous joint surfaces include the following:

- a. Concrete.

- b. Masonry.

3. Remove laitance and form-release agents from concrete.

4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

- a. Metal.

C. Do not cut or damage joint edges.

- D. Apply masking tape to face of surfaces adjacent to joints before applying primers, caulking, or sealing compounds.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- E. Apply primer to sides of joints wherever required by compound manufacturer's printed instructions.
 - 1. Apply primer prior to installation of back-up rod or bond breaker tape.
 - 2. Use brush or other approved means that will reach all parts of joints.
- F. Take all necessary steps to prevent three sided adhesion of sealants.

3.3 BACKING INSTALLATION:

- A. Install back-up material, to form joints enclosed on three sides as required for specified depth of sealant.
- B. Where deep joints occur, install filler to fill space behind the back-up rod and position the rod at proper depth.
- C. Cut fillers installed by others to proper depth for installation of back-up rod and sealants.
- D. Install back-up rod, without puncturing the material, to a uniform depth, within plus or minus 1/8 inch for sealant depths specified.
- E. Where space for back-up rod does not exist, install bond breaker tape strip at bottom (or back) of joint so sealant bonds only to two opposing surfaces.
- F. Take all necessary steps to prevent three sided adhesion of sealants.

3.4 SEALANT DEPTHS AND GEOMETRY:

- A. At widths up to 1/4 inch, sealant depth equal to width.

- B. At widths over 1/4 inch, sealant depth 1/2 of width up to 1/2-inch maximum depth at center of joint with sealant thickness at center of joint approximately 1/2 of depth at adhesion surface.

3.5 INSTALLATION:

- A. General:
 - 1. Comply with manufacturer's written installation instructions for products and applications indicated.
- B. For application of sealants, follow requirements of ASTM C1193 unless specified otherwise.

3.6 PROTECTION AND CLEANING

- A. Protect joint sealants during and after curing period from contact with contaminating substances or from damage.
- B. Cut out and remove damaged or deteriorated joint sealers and reseal joints with matching new materials.
- C. Clean fresh compound accidentally smeared on adjoining surfaces: Scrape off immediately and rub clean with a solvent as recommended by the caulking or sealant manufacturer.
- D. After filling and finishing joints, remove masking tape.
- E. Leave adjacent surfaces in a clean and unstained condition.

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REPAIR COLUMBARIA FAÇADE

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