

SECTION 07 92 00

SEALANTS

PART 1 - GENERAL

1.01 SCOPE:

- A. Provide all of the labor, materials, equipment, and services required to furnish and install the sealant.
- B. The purpose of sealant in this Work is to provide a positive barrier against penetration of air and moisture at joints between items where sealant is essential to continued integrity of the barrier.

1.02 QUALITY ASSURANCE:

- A. General emissions evaluation: Building Products must meet the California Department of Public Health (CDPH) Standard Method v1.2-2017, using the applicable exposure scenario.
 - 1. Acceptable types of certifications are:
 - a. UL (Green Guard Gold) certification.
 - b. SCS (CPD) Indoor Advantage Gold certification.
 - c. CHPS ((HPPD) as a low-emitting product.
 - d. Test report showing compliance and stating exposure scenario used.
 - 2. VOC limitations for sealants: SCAQMD 1168 Rule, see Section 01 61 16.
- B. Compatibility and adhesion testing: Submit to joint sealant manufacturers samples of materials that will contact or affect joint sealants for compatibility and adhesion testing as indicated below:
 - 1. Use test methods standard with manufacturer to determine if priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
 - a. Perform tests under normal environmental conditions that will exist during actual installation.
 - 2. Submit not less than 9 pieces of each type of material, including joint substrates, shims, joint sealant backings, secondary seals, and miscellaneous materials.
 - 3. Schedule sufficient time for testing and analysis of results to prevent delay in the progress of the Work.
 - 4. Investigate materials failing compatibility or adhesion tests and obtain joint sealant manufacturer's written recommendations for corrective measures, including use of specially formulated primers.
 - 5. Testing will not be required when joint sealant manufacturer is able to submit joint preparation data required that are acceptable to Architect and are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.
- C. Product testing: Provide comprehensive test data for each type of joint sealant based on tests conducted by a qualified independent testing laboratory on current product formulations within a 24-month period preceding date of Contractor's submittal of test results to Architect.
 - 1. Test elastomeric sealants for compliance with requirements specified by reference to ASTM C920. Include test results for hardness, stain resistance, adhesion and cohesion under cyclic movement (per ASTM C719), low-temperature flexibility, modulus of elasticity at 100% strain, effects of heat aging, and effects of accelerated weathering.
- D. Engage an experienced installer who has completed joint sealant applications similar in material, design, and extent required herein. His work shall have resulted in construction with a record of

successful in-service performance and shall be able to show proof of successful similar projects completed over the past 7 years.

- E. Obtain joint sealant materials from a single manufacturer for each different product required.
- F. Building envelope sealing:
 - 1. The following areas of the building envelope shall be sealed or caulked to minimize air leakage:
 - a. Joints around fenestration and door frames.
 - b. Junctions between walls and foundations, between walls at building corners, between walls and structural floors or roofs, and between walls and roof or wall panels.
 - c. Openings at penetrations of utility services through roofs, walls and floors.
 - d. Site-built fenestration and doors.
 - e. Building assemblies used as ducts or plenums.
 - f. Joints, seams, and penetrations of vapor retarders.
 - g. All other openings in the building envelope.

1.03 SUBMITTALS:

- A. Prior to installation, submit to the Architect for review the following:
 - 1. Complete and fully descriptive manufacturer's literature for each type of sealant used naming product formulation and giving product limitations.
 - 2. Data proving the product meets or exceeds the Fed. Spec. referenced.
 - 3. Physical sample of all colors for the Architect's selection.
 - 4. Submit statements by the manufacturers and installers of their acceptance of these documents and conditions and/or any modification proposed to the use of the products. Include a statement from the manufacturer that the proposed use of the product for the conditions encountered is proper.
 - 5. Submit a guarantee warranting all defects of material and/or application for a period of five (5) years from Date of Substantial Completion. Any failure that may occur within this warranty period, due to defective application and/or materials shall, upon written notification of such failure, be repaired or replaced with proper materials and/or labor as approved by the Architect, at no additional cost to the Owner.
- B. General emissions evaluation documentation.
- C. Data sheet illustrating VOC content of adhesive products.

1.04 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver materials to site in original unopened containers or bundles with labels indicating manufacturer product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions.
- B. Store and handle materials in compliance with manufacturer's recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.05 PROJECT CONDITIONS:

- A. Do not proceed with installation of joint sealants under the following conditions.
 - 1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealant manufacturer.
 - 2. When joint substrates are wet.

3. Where joint widths are less than allowed by joint sealant manufacturer for application indicated.
4. Until contaminants capable of interfering with their adhesion are removed from joint substrates.

B. Note: Typical joint width shall be 3/8" unless otherwise advised by the joint manufacturer for the joint type involved or indicated differently on the Drawings.

1.06 INDOOR AIR QUALITY (IAQ):

- A. Coordinate with requirements above.
- B. Adhesives shall meet or be within the VOC limits of South Coast Air Quality Management District Rule No. 1168 and all sealants used as a filler shall meet or exceed Bay Area Resources Board Reg. 8, Rule 51.
- C. South Coast Rule #1168 by the South Coast Air Quality Management District.
- D. Regulation 8, Rule 51 of the Bay Area Air Resources Board (June 5, 1996) for sealants
- E. Limits on VOCs per Section 01 61 16.

1.07 WARRANTIES:

- A. All exterior assemblies shall carry a 5-year workmanship warranty from the installing contractor to accompany the manufacturer warranty provided.

PART 2 - PRODUCTS

2.01 SEALANT NO. 1 - PERIMETER OF DOOR AND WINDOW FRAMES:

- A. Product/manufacturer:
 1. Dynatrol II as manufactured by Pecora Corp.
 2. Dymeric as manufactured by Tremco.
 3. Sonloastic NP2 as manufactured by Sonneborn.
 4. An approved equal.
- B. Type: Two-part, non-sag, low-modulus polyurethane rubber sealant.
 1. FS TT-S-00227E, Class A, Type II.
 2. ASTM C-920, Type M, Grade NS, Class 25, use NT, MA, A ,G, and O.
- C. Joint Backing: Closed-cell polyethylene.
- D. Where joint depth does not permit use of joint backing, a release paper or bond breaker shall be used.
- E. On horizontal joints, surface must be cleaned and primed using primer as recommended by the sealant manufacturer.
- F. In all cases at aluminum storefront and windows, ensure and verify that specified sealant is compatible with aluminum finish.
 1. If not, notify the Architect immediately in order that a new product may be selected.
 2. Submit the aluminum storefront, curtain wall and window manufacturer's recommendation as to the type of product that should be substituted.

2.02 SEALANT NO. 2 - OPTION FOR USE WITH THE STOREFRONT SYSTEM:

- A. At the Contractor's option, silicone sealant may be used in lieu of Sealant No. 1 above. Regardless of selection of sealant type only one product shall be used throughout the installation of the storefront system.
- B. Product/manufacturer:
 - 1. 895NST as manufactured by Pecora Corp.
 - 2. Or an approved equal as manufactured by:
 - a. Tremco.
 - b. Sonneborn.
- C. Type: Medium modulus, neutral cure silicone, non-staining with dynamic movement capability of $\pm 50\%$.
 - 1. FS TT-S-00230C, Class A.
 - 2. FS TT-S-001543a.
 - 3. ASTM C-920, Class 50, Type S, Grade NS, use G, A M, O; Type I and II
 - 4. AAMA 805.2, AAMA 802.3 AND 808.3
 - 5. ASTM C-1248.
- D. Joint backing and primer: As recommended by the manufacturer for the surface application involved.

2.03 SEALANT NO. 3 - EXPANSION JOINTS AND CONTROL JOINTS:

- A. Product/manufacturer:
 - 1. DynaFlex SC as manufactured by Pecora Corp.
 - 2. Or an approved equal as manufactured by
 - a. Tremco.
 - b. Sonneborn.
 - c. An approved equal.
- B. Type: Two-part, non-sag, low-modulus polyurethane rubber sealant.
 - 1. FS TT-S-00230C Class B, Type II.
 - 2. ASTM C-920, Type S, Grade NS, Class 12.5, use NT, MA, A ,G, and O.
- C. Joint Backing: Closed-cell polyethylene.
- D. Where joint depth does not permit use of joint backing, a release paper or bond breaker shall be used.
- E. On horizontal joints, surface must be cleaned and primed using primer as recommended by the sealant manufacturer.

2.04 SEALANT NO. 4 - GENERAL PERIMETER SEALING AT TOILET FIXTURES, ACCESS DOORS, DOOR FRAMES, VANITIES, ETC. IN WET AREAS:

- A. Product/manufacturer:
 - 1. 898 Sanitary Silicone Sealant as manufactured by Pecora Corp.
 - 2. Tremsil 200 as manufactured by Tremco.
 - 3. Sonolastic Omnipus as manufactured by Sonneborn.
 - 4. An approved equal.
- B. Type: One-part, neutral-curing silicone.
 - 1. FS TT-S-001543A.

2. FS TT-S-00230C, Class A.
3. ASTM C920, Class 25.

C. Install after completion of all painting.

2.05 SEALANT NO. 5 - SETTING THRESHOLDS; FLASHING; AND GENERAL SEALING NOT OTHERWISE DELEGATED:

- A. Product/manufacturer:
1. AC-20 + Silicone as manufactured by Pecora Corp.
 2. Tremflex 834 as manufactured by Tremco.
 3. Sonolastic Sonolac as manufactured by Sonneborn.
 4. An approved equal.
- B. Type: Siliconized one-part, non-sag, acrylic latex caulk.
1. ASTM C-834.
- C. Joint Backing: Round closed-cell polyethylene.

2.06 SEALANT NO. 6 – EXTERIOR FINISH SYSTEM:

- A. Product/manufacturer:
1. 864 Low-modulus Silicone Sealant as manufactured by Pecora Corp.
 2. Spectrem 3 Silicone Sealant as manufactured by Tremco.
 3. Sonolastic Omniseal as manufactured by Sonneborn.
 4. Or as otherwise recommended by the EFIS manufacturer.
- B. Type: One-part, low-modulus, neutral-curing, high-performance silicone.
1. FS TT-S-1543A.
 2. FS TT-S-230C, Class A.
 3. CGSB-19GP-9.
 4. ASTM C-920, Class 25, type S, Grade NS, Use NT, G, A, M, O.
- C. Joint backing: Open cell polyurethane foam or closed cell polyethylene.

2.05 PRIMERS:

- A. As recommended by the sealant manufacturer for use in conjunction with the sealant for application onto the various types of materials to which the sealant applied, and complying with the requirements above. When the manufacturer's instructions make reference to use of primers and/or the construction condition requires special surface preparation, these instructions shall be complied with.

2.06 CLEANERS:

- A. Where required by manufacturer's instructions in lieu of primers, shall be of the type and kind recommended by the sealant manufacturer.

PART 3 - EXECUTION

3.01 CHOICE OF SEALANT MATERIAL:

- A. Use only that sealant material which is best suited to the installation and is so recommended by the sealant material manufacturer.

3.02 BACK-UP MATERIALS:

- A. Verify the compatibility of filler material with sealant before installation.
- B. Use filler about 1/3 to 1/2 wider than width of joint so sufficient pressure is exerted by filler to provide substantial resistance to displacement.
- C. All filler materials shall be non-oily, non-staining, back-up filler such as polyethylene foam rod, expanded polyurethane, neoprene or other filler completely compatible with the sealant material.

3.03 PREPARATION:

- A. Surface cleaning of joints: Clean out joints immediately before installing joint sealants to comply with recommendations of joint sealant manufacturer and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings, tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean concrete, masonry, unglazed surfaces of ceramic tile, similar 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. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
 - 3. Remove laitance and form release agents from concrete and masonry.
 - 4. Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile, and other non-porous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Prime joint substrates were indicated and also were recommended by joint sealant manufacturer based on preconstruction joint sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's recommendations. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.04 APPLICATION OF SEALANT:

- A. Do not caulk under weather conditions or sun conditions potentially harmful to the set and curing of the sealant material.
- B. Deliver materials to the job or place of application in original unopened containers bearing manufacturer's name and product designation.

- C. Install sealant in strict accordance with the manufacturer's recommendations, taking care to produce beads of proper width and depth, to tool as recommended by the manufacturer, and to immediately remove all surplus sealant.

3.05 SEALANT SCHEDULE:

- A. Carefully study the Drawings and furnish and install the proper sealant at each point where called for on the Drawings plus at all other points, whether specifically designated or not, where sealant is essential in maintaining the continued integrity of the intended water and air tight barrier.

- END OF SECTION -