

SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes:
 - 1. Joint sealants for exterior and interior joints.
 - 2. Joint Backing.
- B. Related Sections: The following Sections contain requirements that relate to this Section:

Section 07 76 00 - Flashing and Sheet Metal
Section 07 84 00 - Firestopping
Section 08 81 00 - Glazing
Section 09 21 16 - Gypsum Board Assemblies

1.03 SYSTEM PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that have been produced and installed to establish and to maintain watertight and airtight continuous seals without causing staining or deterioration of joint substrates.

1.04 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 01 Specification Sections.
- B. Product data from manufacturers for each joint sealant product required.
- C. Selection Samples: Submit three color charts illustrating available sealant colors for Architect's initial selection.
- D. Verification Samples: Submit three samples of each color sealant selected in manufacturer's standard size.
- E. Manufacturer's Installation Instructions: Indicate surface preparation, special procedures, and conditions requiring special attention.

- F. Preconstruction Test Reports: Indicate which joint sealant and primer combinations resulted in satisfactory sealant adhesion to joint substrates. Indicate whether silicone sealants stained representative substrates.
- G. Qualifications Statements: For manufacturer and applicator.
- H. Warranties: Submit samples of manufacturer's warranties and final executed documents at Project closeout.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this Section and qualified by the manufacturer.

1.06 PRECONSTRUCTION TESTING

- A. Before installing sealants, arrange for sealant manufacturer to test each combination of sealant, substrate, and joint backing for adhesion and substrate staining.
 - 1. Allow sufficient time for testing and analyzing test results without delaying the Work.
 - 2. Deliver to manufacturer recommended number and sizes of substrate samples representative of those being installed.
 - 3. Report manufacturer's recommendations for satisfactory sealant adhesion including use of primers, substrate preparation techniques, or both.
 - 4. Testing is not required if manufacturer provides data showing previous testing, not older than 24 months, that indicates satisfactory adhesion and absence of staining.
- B. Adhesion Testing: Utilize ASTM C794 (laboratory), C 1521 (field), or both to determine whether primer is required for cured sealants to achieve an optimum bond to substrates.
- C. Stain Testing: Utilize ASTM C1248 to determine the potential of staining where silicone sealants contact stone and masonry substrates.

1.07 WARRANTY

- A. General Warranty: Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Installer's Warranty: Written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period of 2 years from date of Substantial Completion.
- C. Special Manufacturer's Warranty: Written warranty, signed by elastomeric sealant manufacturer agreeing to furnish elastomeric joint sealants to repair or replace the

se that fail to achieve an airtight seal, watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Provide warranties of the following terms:

1. Silicone Sealants: 20 years; include coverage against staining porous materials.
2. Hybrid Sealants: 10 years.
3. Polyurethane Sealants: 5 years.
4. Acrylic Latex Sealants: 5 years.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers with labels indicating manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multi-component materials.
- 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.
- C. Remove products that cannot be installed within their shelf life.

1.09 PROJECT CONDITIONS

- A. Environmental Conditions: 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 or below 40° F.
 2. When joint substrates are wet.
- B. Joint Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than allowed by joint sealant manufacturer for application indicated.
- C. Joint Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with their adhesion are removed from joint substrates.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- B. Sustainable Design Requirements:
 1. VOC Content: Provide joint sealants and sealant primers that comply with SCAQMD Rule 1168.

2. VOC Emissions: For products installed within the primary air barrier, provide joint sealants that have been tested per CDPH SM v1.1 or later.

2.02 ELASTOMERIC JOINT SEALANTS

- A. **[JS-01 -]** Exterior Building Joint Sealant: Single-component, Non-sag, Nonstaining, Ultra-Low Modulus, Neutral Moisture-curing, Silicone Sealant:
 1. Compliance: ASTM C 920, Type S, Grade NS, Class 100/50, Use NT, M, G, A, O.
 2. Performance: Dynamic movement capability of plus 100 percent and minus 50 percent per ASTM C 719.
 3. Color: As selected from manufacturer's standard range.
 4. Products:
 - a. Dow Corning 790.
 - b. Momentive Performance Products: SCS2700.
 - c. Pecora Corporation 890NST, 890FTS, or both.
- B. **[JS-02 -]** Concealed Metal Lap Joint Sealant: Single-component; Non-skinning, Non-hardening Butyl Sealant:
 1. Compliance: ASTM C 920, Type S, Grade NS, Class 50, Use T, NT, M, G, A, O.
 2. Performance:
 - a. Dynamic movement capability of 10 percent in extension and compression per ASTM C 719.
 - b. Reduces airborne sound transmission through perimeter joints and openings in building construction as determined per ASTM E 90 based on installation per ASTM C 919.
 3. Color: Gray.
 4. Products:
 - a. Bostic: ChemCalk 300.
 - d. Pecora Corporation: BA-98.
- C. **[JS-03 -]** Exterior Paving Joint Sealant: Single-component, Nonsag, Moisture-curing, Traffic Grade, Silyl-terminated Polyurethane (STPU) Sealant:
 1. Compliance: ASTM C 920, Type S, Grade P, Class 25, Use T, NT, M, A, O.
 2. Performance: Dynamic movement capability of plus 25 percent or minus 25 percent per ASTM C 719.
 3. Color: As selected from manufacturer's standard range.
 4. Products:
 - a. BASF MasterSeal SL-100.
 - b. Bostic: 955-SL.
 - c. Pecora Corporation Urexpan NR-201.
- D. **[JS-04 -]** Interior Joints at Exterior Wall: Single-component, Nonsag, Moisture-curing Silyl-terminated Polyurethane (STPU) Sealant:
 1. Compliance: ASTM C 920, Type S, Grade NS, Class 50, Use T, NT, M, G, A, O.
 2. Performance: Dynamic movement capability of plus 50 percent or minus 50 percent per ASTM C 719.
 3. Color: As selected from manufacturer's standard range.
 4. Products:

- a. Bostic: Pro-MS50.
 - b. Pecora Corporation: Dynatrol I-XL HYBRID.
- E. **[JS-05 -]** Interior Building Mildew-resistant Sealant : Single-component, Nonstaining, Low Modulus, Neutral-curing, Sanitary Silicone Sealant:
 - 1. Compliance: ASTM C 920, Type S, Grade NS, Class 50, Use NT, M G, A.
 - 2. Performance: Dynamic movement capability of plus 50 percent or minus 50 percent when tested in accordance with ASTM C 719.
 - 3. Color: As selected from manufacturer's standard range.
 - 4. Products:
 - a. Bostic: Bathroom 2700.
 - b. Momentive Performance Materials: SCS1700.
 - c. Pecora Corporation: 898NST.
- F. **[JS-06 -]** Interior Building Acoustical Sealant: Single-component, Siliconized Acrylic Latex Sealant; Acoustical; Paintable:
 - 1. Compliance: ASTM C 834, Type OP, Grade NF.
 - 2. Performance:
 - a. Dynamic movement capability of 7-1/2 percent in extension and compression per ASTM C 719.
 - b. Reduces airborne sound transmission through perimeter joints and openings in building construction as determined per ASTM E 90 based on installation per ASTM C 919.
 - 3. Color: White.
 - 4. Products:
 - a. Pecora Corporation: AC-20 FTR or AIS-919.
 - b. Tremco, Inc.: Smoke & Sound.
 - c. USG Corporation: Sheetrock Acoustical Sealant
- G. **[JS-07 -]** Interior Building Sealant: Single-component, Siliconized Acrylic Latex Sealant; Acoustical; Paintable:
 - 1. Compliance: ASTM C 834, Type OP, Grade NF.
 - 2. Performance: Dynamic movement capability of 7-1/2 percent in extension and compression per ASTM C 719.
 - 3. Color: White.
 - 4. Products:
 - a. American Sealants, Inc.: ASI-174.
 - b. Bostic: ChemCalk 600.
 - c. Pecora Corporation: AC-20+ Silicone.

2.03 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.

2.04 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from pre-construction joint sealant-substrate tests and field experience.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming in any way joint substrates and adjacent nonporous surfaces.
- C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint sealant performance. Do not proceed with installation of joint sealants until unsatisfactory conditions have been corrected.

3.02 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:
 - 0. 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.
 - 1. Clean concrete, masonry, unglazed surfaces of ceramic tile, and 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.
 - 2. Remove laitance and form release agents from concrete.
 - 3. Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile, and other 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.

5. Clean Exterior Insulation and Finish Systems (EIFS) using methods recommended by EIFS manufacturer.
- B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealant manufacturer based on pre-construction joint sealant-substrate tests or field 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. Masking Tape: 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.

3.03 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint sealant manufacturer's printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:
 1. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 2. Install bond breaker tape between sealants where backer rods are not used between sealants and joint fillers or back of joints.
- D. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at the same time sealant backings are installed. Fill joints to a depth equal to 50% of joint width, but never more than 1/2" deep or less than 1/4" deep. Remainder of joint shall be filled with backer material.
 1. Tooling of Nonsag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer. Tool joints concave.

3.04 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

3.05 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so that installations with repaired areas are indistinguishable from original work.

3.06 JOINT SEALANT SCHEDULE

- A. Provide joint sealant types in joint locations as scheduled below. Where Project sealant applications are not scheduled, make request to Architect.
- B. Exterior Traffic-bearing Joints in Concrete, Brick, and Stone Paving: Type JS-03.
- C. Exterior Weather Seal Joints in Vertical and Non-traffic-bearing Horizontal Surfaces: Type JS-01.
 - 1. Control and expansion joints.
 - 2. Perimeters of doors, windows, storefronts, curtain walls, and louvers.
 - 3. Joints between metal wall panels.
 - 4. Other exterior joints exposed to view.
- D. Exterior Metal Lap Joints: Type JS-02.
 - 1. Concealed joints in metal roofing.
 - 2. Concealed joints in metal siding.
 - 3. Other concealed exterior joints indicated.
- E. Interior Joints at Exterior Wall: Type JS-04.
 - 1. Vertical and non-traffic horizontal joints at juncture exterior wall and interior construction.
 - 2. Exposed control and expansion joints on interior of exterior wall assemblies.
 - 3. Perimeters of doors, windows, storefronts, curtain walls, louvers, and pipe/duct/electrical penetrations.
 - 4. Other interior joints indicated.
- F. Interior Joints in Concrete and Masonry: Type Type JS-04
 - 1. Exposed vertical control joints in concrete masonry partitions.
 - 2. Joints between gypsum board partitions and masonry or concrete.
 - 3. Other joints in or abutting interior concrete or masonry.
- G. Interior Mildew-resistant Joints: JS-5.
 - 1. Plumbing fixture perimeters.
 - 2. Joints in countertops.

3. Control and expansion joints in tile.
 4. Floor and wall joints in wet areas.
 5. Other interior wet area joints indicated.
- H. Interior Acoustical Joints: Type JS-06 or Type JS-02 (concealed joints).
1. Perimeters of acoustically-rated partitions and ceilings.
 2. Between wall surface and acoustical ceiling L-shaped perimeter trim.
 3. Perimeters of items penetrating acoustically-rated partitions and ceilings.
 4. Other interior acoustically-rated joints indicated.
- I. Interior Joints Where Little to No Movement is Expected: Type JS-06 or Type JS-07.
1. Perimeters of fire extinguisher cabinets, toilet accessories, grilles, registers, diffusers, and other items penetrating interior partitions and ceilings.
 2. Perimeter joints of door and borrowed light frames in interior partitions.
 3. Joints between interior partitions and countertops (dry areas).
 4. Interior joints for which another type of sealant is not indicated.
- J. Fire-resistive Joint Systems: See Section 07 84 00.

END OF SECTION

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