

## SECTION 07 92 00 - JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes joint sealants for the following applications, including those specified by reference to this Section:
  - 1. Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
  - 2. Exterior joints in horizontal traffic surfaces.
  - 3. Interior joints in vertical surfaces and horizontal nontraffic surfaces.
  - 4. Interior joints in horizontal traffic surfaces.
- B. See Division 08 Section "Glazing" for glazing sealants.

#### 1.2 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

#### 1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- C. LEED Submittals:
  - 1. Credit EQ 4.1: Manufacturers' product data for interior sealants, including printed statement of VOC content.
- D. Preconstruction field test reports.
- E. Compatibility and adhesion test reports.
- F. Product test reports.

#### 1.4 QUALITY ASSURANCE

- A. Preconstruction Compatibility and Adhesion Testing: Submit samples of materials that will contact or affect joint sealants to joint-sealant manufacturers for testing according to manufacturer's standard test method to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
- B. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates according to the method in ASTM C 1193 that is appropriate for the types of Project joints.
- C. Mockups: Build mockups incorporating sealant joints, as follows, to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution:
  - 1. Joints in mockups of assemblies specified in other Sections that are indicated to receive elastomeric joint sealants, which are specified by reference to this Section.

#### 1.5 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

#### 2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, 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. VOC Content of Interior Sealants: Provide interior sealants and sealant primers that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
  - 1. Sealants: 250 g/L.
  - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
  - 3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Colors of Exposed Joint Sealants: As selected by Owner from manufacturer's full range.

## 2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Suitability for Immersion in Liquids. Where elastomeric sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247 and qualify for the length of exposure indicated by reference to ASTM C 920 for Class 1 or 2. Liquid used for testing sealants is deionized water, unless otherwise indicated.
- D. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.
- E. Single-Component Neutral- Curing Silicone Sealant:
  - 1. Products:
    - a. Dow Corning Corporation; 791.
    - b. Dow Corning Corporation; 795.
    - c. GE Silicones; SilPruf NB SCS9000.
    - d. GE Silicones; UltraPruf II SCS2900.
    - e. Pecora Corporation; 865.
    - f. Pecora Corporation; 895.
    - g. Pecora Corporation; 898.
    - h. Or approved equal
  - 2. Type and Grade: S (single component) and NS (nonsag).
  - 3. Class: 50
  - 4. Use Related to Exposure: NT (nontraffic).
  - 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
  - 6. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C 1248.

F. Single-Component Neutral-Curing Silicone Sealant:

1. Products:
  - a. Dow Corning Corporation; 799.
  - b. GE Silicones; UltraGlaze SSG4000.
  - c. GE Silicones; UltraGlaze SSG4000AC.
  - d. Polymeric Systems Inc.; PSI-631.
  - e. Schnee-Morehead, Inc.; SM5731 Poly-Glaze Plus.
  - f. Tremco; Proglaze SG.
  - g. Tremco; Spectrem 2.
  - h. Tremco; Tremsil 600.
  - i. Or approved equal
2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: G, A, and, as applicable to joint substrates indicated, O.

G. Single-Component Mildew-Resistant Silicone Sealant:

1. Products:
  - a. Pecora Corporation; 898.
  - b. Tremco; Tremsil 600 White.
  - c. Dow Corning Corporation; 786 Mildew Resistant.
  - d. GE Silicones; Sanitary SCS1700.
  - e. Tremco; Tremsil 200 White.
  - f. Or approved equal
2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: G, A, and, as applicable to joint substrates indicated, O.

H. Multicomponent Nonsag Urethane Sealant:

1. Products:
  - a. Pecora Corporation; Dynatrol II.
  - b. Tremco; Dymeric 511.
  - c. Tremco; Vulkem 922.
  - d. Or approved equal
2. Type and Grade: M (multicomponent) and NS (nonsag).
3. Class: 50.
4. Use Related to Exposure: NT (nontraffic) and T (traffic).
5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

I. Single-Component Nonsag Urethane Sealant:

1. Products:

- a. Bostik Findley; Chem-Calk 900.
- b. Bostik Findley; Chem-Calk 915.
- c. Bostik Findley; Chem-Calk 916 Textured.
- d. Bostik Findley; Chem-Calk 2639.
- e. Pecora Corporation; Dynatrol I-XL.
- f. Polymeric Systems Inc.; Flexiprene 1000.
- g. Polymeric Systems Inc.; PSI-901.
- h. Schnee-Morehead, Inc.; Permthane SM7100.
- i. Schnee-Morehead, Inc.; Permthane SM7108.
- j. Schnee-Morehead, Inc.; Permthane SM7110.
- k. Or approved equal

2. Type and Grade: S (single component) and NS (nonsag).

3. Class: 50.

4. Use Related to Exposure: NT (nontraffic).

5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

2.4 SOLVENT-RELEASE JOINT SEALANTS

A. Acrylic-Based Solvent-Release Joint Sealant: Comply with ASTM C 1311 or FS TT-S-00230.

1. Products:

- a. Schnee-Morehead, Inc.; Acryl-R Acrylic Sealant.
- b. Tremco; Mono 555.
- c. Or approved equal

B. Butyl-Rubber-Based Solvent-Release Joint Sealant: Comply with ASTM C 1085.

1. Products:

- a. Bostik Findley; Bostik 300.
- b. Fuller, H. B. Company; SC-0296.
- c. Fuller, H. B. Company; SC-0288.
- d. Pecora Corporation; BC-158.
- e. Polymeric Systems Inc.; PSI-301.
- f. Sonneborn, Division of ChemRex Inc.; Sonneborn Multi-Purpose Sealant.
- g. Tremco; Tremco Butyl Sealant.
- h. Or approved equal

## 2.5 LATEX JOINT SEALANTS

- A. Latex Sealant: Comply with ASTM C 834, Type O P, Grade NF.
- B. Products:
  - 1. Bostik Findley; Chem-Calk 600.
  - 2. Pecora Corporation; AC-20+.
  - 3. Schnee-Morehead, Inc.; SM 8200.
  - 4. Sonneborn, Division of ChemRex Inc.; Sonolac.
  - 5. Tremco; Tremflex 834.
  - 6. or approved equal

## 2.6 ACOUSTICAL JOINT SEALANTS

- A. Acoustical Sealant for Exposed and Concealed Joints [**AS**-<#>]: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
  - 1. Products:
    - a. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant.
    - b. United States Gypsum Co.; SHEETROCK Acoustical Sealant.
    - c. Or approved equal
- B. Acoustical Sealant for Concealed Joints: Manufacturer's standard, nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic-rubber sealant recommended for sealing interior concealed joints to reduce airborne sound transmission.
  - 1. Products:
    - a. Pecora Corporation; BA-98.
    - b. Tremco; Tremco Acoustical Sealant.
    - c. Or approved equal

## 2.7 PREFORMED JOINT SEALANTS

- A. Preformed Silicone-Sealant System: Manufacturer's standard system consisting of precured low-modulus silicone extrusion, in sizes to fit joint widths indicated, combined with a neutral-curing silicone sealant for bonding extrusions to substrates.
  - 1. Products:
    - a. Dow Corning Corporation; 123 Silicone Seal.
    - b. GE Silicones; UltraSpan US1100.
    - c. Pecora Corporation; Sil-Span.
    - d. Tremco; Spectrem Ez Seal.
    - e. Or approved equal

- B. Preformed Foam Sealant: Manufacturer's standard mildew-resistant, nonmigratory, nonstaining, preformed, precompressed, open-cell foam sealant that is manufactured from high-density urethane foam impregnated with a nondrying, water-repellent agent.

1. Products:

- a. EMSEAL Joint Systems, Ltd.; Emseal 25V.
- b. illbruck Sealant Systems, Inc.; Wilseal 600.
- c. Polytite Manufacturing Corporation; Polytite B.
- d. Polytite Manufacturing Corporation; Polytite Standard.
- e. Sandell Manufacturing Co., Inc.; Polyseal.
- f. Or approved equal

## 2.8 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; 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. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) O (open-cell material) B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.
- D. 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.

## 2.9 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- 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 joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants.
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant.
    - a. 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. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
  - 2. Remove laitance and form-release agents from concrete.
    - a. 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.
- B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. 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.

### 3.2 INSTALLATION

- A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- B. Acoustical Sealant Application Standard: Comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  - 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.



- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
  - 1. Place sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses in each joint configuration.
  - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
  - 1. Remove excess sealant from surfaces adjacent to joints.
  - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  - 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
- G. Installation of Preformed Silicone-Sealant System: Comply with manufacturer's written instructions.
- H. Installation of Preformed Foam Sealants: Install each length of sealant immediately after removing protective wrapping, taking care not to pull or stretch material, producing seal continuity at ends, turns, and intersections of joints. For applications at low ambient temperatures where expansion of sealant requires acceleration to produce seal, apply heat to sealant in compliance with sealant manufacturer's written instructions.
- I. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

### 3.3 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior vertical and horizontal nontraffic construction joints in cast-in-place concrete.
  - 1. Joint Sealant: Multicomponent nonsag neutral-curing silicone sealant or multicomponent nonsag urethane sealant.
  - 2. Joint-Sealant Color: as selected from standard colors.
- B. Joint-Sealant Application: Exterior vertical control and expansion joints in unit masonry.
  - 1. Joint Sealant: Single-component neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: as selected from standard colors.

- C. Joint-Sealant Application: Exterior joints in dimension stone cladding.
  - 1. Joint Sealant: Multicomponent nonsag neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: as selected from standard colors.
- D. Joint-Sealant Application: Exterior butt joints between metal panels.
  - 1. Joint Sealant: Single-component neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: as selected from standard colors.
- E. Joint-Sealant Application: Exterior vertical joints between different materials listed above.
  - 1. Joint Sealant: Single-component neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: as selected from standard colors.
- F. Joint-Sealant Application: Exterior perimeter joints between and frames of doors, windows, and louvers.
  - 1. Joint Sealant: Single-component neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: as selected from standard colors
- G. Joint-Sealant Application: Exterior control and expansion joints in overhead surfaces.
  - 1. Joint Sealant: Single-component neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: .as selected from standard colors.
- H. Joint-Sealant Application: **<Insert other exterior joints in vertical and horizontal nontraffic surfaces.>**
  - 1. Joint Sealant: Single-component neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: .
- I. Joint-Sealant Application: Exterior control and expansion joints in horizontal traffic surfaces of brick pavers.
  - 1. Joint Sealant: Multicomponent nonsag urethane sealant.
  - 2. Joint-Sealant Color: as selected from manufacturer's standard colors.
- J. Joint-Sealant Application: Vertical control and expansion joints on exposed interior surfaces of exterior walls.
  - 1. Joint Sealant: Latex sealant.
  - 2. Joint-Sealant Color: paintable.
- K. Joint-Sealant Application: Interior perimeter joints of exterior openings.
  - 1. Joint Sealant: Latex sealant.
  - 2. Joint-Sealant Color: paintable

- L. Joint-Sealant Application: Interior ceramic tile expansion, control, contraction, and isolation joints in horizontal traffic surfaces.
  - 1. Joint Sealant: sanitary silicone sealant.
  - 2. Joint-Sealant Color: .as selected from standard colors
- M. Joint-Sealant Application: Interior joints between plumbing fixtures and adjoining walls, floors, and counters.
  - 1. Joint Sealant: Single-component mildew-resistant neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: White.
- N. Joint-Sealant Application: Vertical joints on exposed surfaces of interior unit masonry walls.
  - 1. Joint Sealant: Single-component neutral-curing silicone sealant.
  - 2. Joint-Sealant Color: .as selected from standard colors.
- O. Joint-Sealant Application: Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.
  - 1. Joint Sealant: Latex sealant.
  - 2. Joint-Sealant Color: paintable

**END OF SECTION 07 92 00**