

## **SECTION 07-90-00 JOINT SEALANTS**

### **Part 1 – General**

1.00 Scope of Work: Contractor shall provide labor and materials required to install sealants at all specified plan locations.

1.01 Summary:

A. Extent of each type of joint sealant is indicated on Drawings and by provisions of this Section.

B. Types of sealants included:

1. Weather-proofing joint sealants.
2. Interior joint and seam sealers.
3. Sanitary joint seam sealers.
4. Fire-proofing joint sealers.

1.02 Submittals:

A. Submit product data for each product indicating compliance with requirements.

B. Submit one sample tube of each approved sealant product specified for exterior applications. The design engineer will perform adhesion testing.

C. Fire-Proofing Sealant Schedule: Submit a schedule indicating, for each application (penetrating condition or joint type), the manufacturer, product name, and UL Design number of the proposed fire-proofing sealant system to be used.

1. Submit manufacturer's data and certification as required in "Quality Assurance" Article in the Section.

1.03 Quality Assurance:

A. Fire-Proof Sealant Design and Test Criteria: Unless a specific product or system is otherwise indicated, select fire-proof sealant system recommended by the manufacturer for each specific application indicated, and to comply with requirements indicated in the "Fire-Proofing Sealant System" Article of this Section. Provide only fire-proofing systems that have been tested and listed by Underwriter's Laboratories (UL) in the application indicated.

1. Provide fire-proof sealant system with fire-ratings equal to the fire-rating assembly into which the sealant system is incorporated.
2. Coordinate fire-proof sealant selections with the construction detail and opening size of the fire-rated assembly; and the size, location, configuration, and material of the penetrating element (if any), to ensure full compliance with each detail of each UL design.
3. Where an indicated application has not been tested and listed, provide a written proposal, prepared by the manufacturer of the fire-proofing system, showing materials and methods to be used, and certifying that fire-resistance rating of the fire-proofing sealant system will not be less than that of the surrounding assembly.

## Part 2 – Products

### 2.01 Sealants, General:

- A. Compatibility: Provide joint sealer, fillers, and related materials compatible with one another and with joint substrates under conditions of service and application.
- B. Colors: Provide color of exposed joint sealers indicated or, if not indicated, as selected by SCS Construction from manufacturer's standard colors.

### 2.02 Elastomeric Joint Sealants:

- A. Elastomeric Joint Sealant Standards: Provide manufacturer's standard chemically curing elastomeric sealants that comply with ASTM C920 and other requirements indicated, including those requirements referencing ASTM C920 classification for Type, Grade, Class, and Uses.
- B. One-Part Mildew-Resistant Silicone Sealant: Subject to compliance with requirements, provide one of the following, or manufacturer's equivalent two-part sealant:

1. Dow Corning 786.
2. General Electric SCS 1702 Sanitary.
3. Pecora Corp. No. 345 White.
4. Tremco Inc. Spectrem 1.
5. Approved Equal.

C. One-part Clear Building and Glazing Sealant: Subject to compliance with requirements, provide one of the following:

1. Dow Corning Corp. 999A.
2. General Electric Co.; Construction 1201.
3. Approved Equal.

D. One-Part No Sag Urethane Sealant: Subject to compliance with requirements, provide one of the following, or manufacturer's equivalent two-part sealant:

1. Bostik Construction Products Div.; Chem-Calk 900.
2. Products Research and Chemical Corp.; Permapol RC-1.
3. Sika Corp.; Sikaflex-1a.
4. Tremco Inc.; Dymonic.
5. Approved Equal.

E. Silicone Emulsion Sealant: Provide product complying with ASTM C84 and, except for weight loss measure per ASTM C792, with ASTM C920 that accommodates joint movement of not more than 25 percent in both extension and compression for a total of 50 percent.

1. Silicone-Emulsion Sealant:
  - a. Dow Corning Corp.; Trade mate Paintable Blazing Sealant.
  - b. General Electric Co.; Silicone II XST.

#### 2.03 Latex Joint Sealants:

A. General: Provide manufacturer's standard one-part, No sag, mildew-resistant, paintable latex sealant of formulation indicated, that is recommended for exposed applications on interior and protected exterior locations and that accommodates indicated percentage change in joint width existing at time of installation without failing either adhesively or cohesively.

B. Acrylic-Emulsion Sealant: Provide product complying with ASTM C834 that accommodates joint movement of not more than 5 percent in both extensions and compression for a total of 10 percent.

C. Products: Subject to compliance with requirements, provide one of the following:

### 1. Acrylic-Emulsion Sealant:

- a. Bostik Construction Products Div.; Chem-Calk 600.
- b. Pecora Corp.; AC-20.
- c. Sonneborn Building Products Division, ChemRex Inc.; Sonolac.
- d. Tremco Inc.; Tremco Acrylic Latex 834.

### 2.04 Preformed Foam Sealants:

A. Preformed Foam Sealants: Manufacturer's standard preformed, pre-compressed, impregnated open-cell foam sealant manufactured from high-density urethane foam impregnated with a nondrying, water repellent agent; factory-produced in pre-compressed sizes and in roll or stick form to fit joint widths indicated and to develop a watertight and airtight seal when compressed to the degree specified by the manufacturer; and complying with the following requirements:

1. Properties: Permanently elastic, mildew-resistant, non-migratory, non-staining, and compatible with joint substrates and other joint sealants.
2. Impregnating Agent: Manufacturer's standard.
3. Density: Manufacturer's Standard.
4. Backing: Pressure-sensitive adhesive factory applied to one side with protective wrapping.
5. Products: Subject to compliance with requirements, provide one of the following:
  - a. Emseal Corp.; Emseal Greyflex.
  - b. Polytite Manufacturing Corp.; Polytite Standard.
  - c. Wil-Seal Construction Foams Div., Illbruck; Wil-Seal 250.

### 2.05 Joint Sealant Backing:

A. General: Provide sealant backing 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(s) based on field experience and laboratory testing.

B. Plastic Foam Joint Fillers: Preformed, compressible, resilient, nonstaining, non-waxing, non-

extruding strips of flexible plastic foam of material indicated below, of size, shape, and density to control sealant depth and otherwise contribute to producing optimum sealant performance; and are approved for application indicated by sealant manufacturer based on field experience and laboratory testing:

1. Open-cell polyurethane foam with impervious surface: ASTM C1330 Type O.

2. Closed-cell polyethylene foam: ASTM C1330 Type C.

C. Bond-Breaker Type: Polyethylene tape or other plastic tape as 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.

#### 2.06 Miscellaneous Materials:

A. Primer: Material recommended by joint sealant manufacturer where required for adhesion 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 in any way joint substrates and adjacent nonporous surfaces, and formulated to promote optimum adhesion of sealants with joint substrates.

C. Masking Tape: Non-staining, non-absorbent material compatible with joint sealants and surfaces adjacent to joints.

#### 2.07 Fire-Proof Sealant Systems:

A. Fire-Proofing Sealant System(s): Unless otherwise indicated, provide only the manufacturer's UL tested and listed sealant and accessory system(s) designed for use in each indicated application.

1. For applications subject to movement, including joints between structural elements, walls, floors, and curtain walls, and adjacent elements, provide elastomeric sealants capable of sustaining the expected range of movement without failure.

2. For application to backs of switch and outlet boxes provide Intumescent pads.

3. Approved Manufacturers: Listed manufacturers do not necessarily provide all

products required. Subject to compliance with requirements, provide applicable systems of one of the following or approved equal:

- a. Bio-Fire Shield.
- b. Dow Corning Corp.
- c. General Electric Corp.
- d. Metacaulk; Rectorseal Corp.
- e. 3M Corp.
- f. Tremco Inc.

### **Part 3 – Execution**

#### 3.01 Inspection:

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

#### 3.02 Preparation:

A. Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements.

1. Remove all foreign material from substrates which could interfere with adhesion of joint sealer.
2. Clean masonry, unglazed surfaces of ceramic tile and similar porous joint substrate surfaces. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
3. Clean metal, glass, porcelain enamel, surfaces of ceramic tile; and other nonporous surfaces by chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.

B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer

manufacturer based on prior experience. Apply primer to comply with joint sealer manufacturer's written instructions.

C. Masking Tape: use masking tape where required to prevent contact of sealant with adjoining surfaces.

### 3.03 Sealant Installation:

A. Installation: Comply with joint sealer manufacturer's written installation instruction applicable to products and applications indicated, except where more stringent requirements apply.

B. Elastomeric Sealant Installation Standard: ASTM C962.

C. Acrylic Emulsion Sealant Installation Standard: ASTM C790.

D. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:

1. Provide support of sealants during application and at position required to produce the cross-section shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.

2. Remove absorbent joint-fillers which have become wet prior to sealant application and replace with dry material.

E. Install bond breaker tape between sealants and joint-fillers, compression seals, or back of joints where adhesion of sealant surfaces at back of joint would result in sealant failure.

F. Install sealants to directly contact and fully wet joint substrates, completely fill recesses, and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

G. Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated. Remove excess sealants; do not use tooling agents which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

1. Provide concave joint configuration per Figure 6A in ASTM C962, unless otherwise indicated.

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

joints accrue.

I. Protect joint sealers during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes. Cut out and remove damage or deteriorated joint sealers immediately and reseal joints with new materials to produce repaired areas indistinguishable from original work.

### 3.04 Fire-Proofing Sealant System Installation:

A. Installation of Fire-Proofing Sealant Systems: Install sealant system, including forming, packing, and other accessory materials to fill openings in fire-rated assemblies. Comply with installation requirements of the relevant UL Design number, and in accordance with manufacturer's written instructions.

### 3.05 Joint Sealer Schedule:

A. Exterior Joints (Exposed to Weather): Install indicated sealants at each scheduled joint condition:

1. Perimeter Joints between concrete or masonry and metal frames of louvers and windows:

a. One-part no sag urethane.

2. Perimeter joints between masonry and wood door and window frames;

a. One-part no sag urethane.

3. Other joints as indicated:

a. As indicated, or if not indicated, provide no sag urethane sealant.

B. Interior Joints: (In Conditioned Spaces): Install indicated sealants at each scheduled joint condition:

1. Perimeter joints of exterior openings where shown, or if not shown, where exterior caulking is indicated:

a. One or two-part no sag urethane.

b. Acrylic emulsion sealant.

2. Perimeter joints between interior wall surfaces and frames of interior doors, and windows:

a. Acrylic emulsion sealant.

3. Perimeter joints of toilet fixtures and urinals, at pipe penetrations through ceramic tile, and similar applications:

a. One-part mildew resistant silicone sealant.

4. Other joints as indicated.

a. As indicated, or if not indicated, provide acrylic emulsion sealant.

3.06 Fire-Proofing Sealant System:

A. Provide manufacturer's UL tested and approved sealant system in each of the following applications:

1. Joints between the tops of new fire-rated walls and structural deck above.
2. Joints between fire-rated walls and floors and exterior building curtain wall.
3. Joints between fire-rated assemblies or within fire-rated assemblies as required to maintain indicated fire-rating of the assembly.
4. At the backs of switch and outlet boxes within fire-rated drywall walls.
5. Other joints as shown on the Drawings.

**-End of Section-**