

SECTION 07900

JOINT SEALERS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes sealants and joint backing, precompressed foam sealers, hollow gaskets and accessories.
- B. Related Sections:
 - 1. Section 07260 - Vapor Retarders: Sealants required in conjunction therewith.
 - 2. Section 07270 - Air Barriers: Sealants required in conjunction therewith.
 - 3. Section 08800 - Glazing: Glazing sealants and accessories.
 - 4. Section 09260 - Gypsum Board Assemblies: Acoustic sealant.
 - 5. Section 09300 - Tile: Sealant used as tile grout.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM C834 - Standard Specification for Latex Sealants.
 - 2. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
 - 3. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
 - 4. ASTM C1193 - Standard Guide for Use of Joint Sealants.
 - 5. ASTM D1056 - Standard Specification for Flexible Cellular Materials- Sponge or Expanded Rubber.
 - 6. ASTM D1667 - Standard Specification for Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).
 - 7. ASTM D2628 - Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements.

1.3 SUBMITTALS

- A. General Requirements: Requirements for submittal procedures.
- B. Products Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
- C. Samples: Submit samples illustrating sealant colors for selection.
- D. Manufacturer's Installation Instructions: Submit special procedures, surface preparation, and perimeter conditions requiring special attention.
- E. Warranty: Include coverage for installed sealants and accessories failing to achieve airtight seal or watertight seal, exhibit loss of adhesion or cohesion, and sealants which do not cure.

1.4 QUALITY ASSURANCE

- A. General Joint Sealer Performance Requirements: Select materials for compatibility with joint surfaces and other indicated exposures.
 - 1. Select modulus of elasticity and hardness or grade recommended by manufacturer for each application indicated.
 - 2. Where exposed to foot traffic, select materials of sufficient strength and hardness to withstand stiletto heel traffic without damage or deterioration of sealer system.
- B. Color Selection: Provide colors indicated and if not, to match adjacent material or paint color; provide custom colors where required; colors to be selected by Engineer.
- C. Perform work in accordance with sealant manufacturers' requirements for preparation of surfaces and material installation instructions.
- D. Contractor shall require sealant manufacturer to review joint conditions and details, and shall submit to the Engineer written certification from the sealant manufacturer that joints are of the proper size and design, that the materials and backing will properly perform to provide permanent watertight, airtight or vaportight seals (as applicable), and that materials supplied meet specified performance requirements.
 - 1. Certification shall include copies of manufacturer's test regarding adhesion and staining of adjacent.
- E. Perform acoustical sealant application work in accordance with ASTM C919.
- F. Maintain one copy of each referenced document on site.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.
- B. Applicator: Company specializing in performing Work of this section with minimum five years documented experience.

1.6 MOCKUP

- A. General Requirements: Quality requirements for mockup.
- B. Construct mockup of sealant joints in conjunction with window, wall and other mockups specified in other sections.
- C. Construct mockup with specified sealant types and with other components noted.
 - 1. Determine preparation and priming requirements based on manufacturer's recommendations; take action necessary for correction of failure of sealant tests on mock-up.
 - 2. Verify sealants, primers and other components don't stain adjacent materials.
- D. Locate where directed by the Engineer.

- E. Remove mockup when directed by the Engineer.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. General Requirements: Products requirements.
- B. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

1.8 COORDINATION

- A. General Requirements: Administrative requirements for coordination and project conditions.
- B. Coordinate Work with sections referencing this section.

PART 2 PRODUCTS

2.1 JOINT SEALERS

- A. Manufacturer: Any internationally recognized manufacturer having an official technical agreement to conformity with standards for the product.
- B. General:
 - 1. Provide a complete system of cleaners, primers, fillers, tapes, backer rods and tapes and sealants in accordance with the manufacturer's requirements and the standards specified herein.
 - 2. Color of Sealants:
 - a. For Concealed Joints: Provide the manufacturer's standard color which has the best overall performance quantities for the application shown.
 - b. For Exposed Joints: Provide custom colors as selected by the Engineer from the manufacturer's standard colors or other special custom colors.
- C. 1-Part Polyurethane Sealants: Polyurethane based 1-part elastomeric sealant, in accordance and complying with Fed. Spec. TT-S-00230C, Type II Class A, with elongation and compression of not less than 25 %; ASTM C920, Type S, Class 25, Grade NS.
 - 1. Location: Interior joints subject to movement.
 - 2. Acceptable Manufacturers and Product:
 - a. Sika Chemical Corporation: Sikaflex-1a.
 - b. Sonneborn Building Products: Sonolastic NP-1.
 - c. Tremco: Dymonic.
- D. 2-Part Polyurethane Sealant: Polyurethane based 2-part elastomeric sealant in accordance and complying with Fed. Spec. TT-S-00227, Type II, Class A, with elongation and compression of not less than 25 %; ASTM C920, Type M, Class 25, Grade NS.
 - 1. Location: Exterior joints within masonry and concrete.
 - 2. Acceptable Manufacturers and Product:
 - a. Tremco: Dymeric.
 - b. Sonneborn Building Products: Sonolastic NP II.

- E. 2-Part Polyurethane Sealant for Horizontal Applications: Self leveling polyurethane based 2-part elastomeric sealant, complying with Fed. Spec. TT-S-00227E, Type I, Class A, with shore A hardness of not less than 30 and elongation and compression of not less than 25 %; ASTM C920, Type M, Class 25, Grade P.
1. Location: Joints subject to pedestrian or vehicle traffic.
 2. Acceptable Manufacturers and Product:
 - a. Tremco: THC900
 - b. Sonneborn Building Products: Sonolastic Paving Joint Sealant.
- F. Medium Modulus Silicone Rubber Sealant: Silicone rubber based 1-part neutral cure elastomeric sealant with plus 50 percent to minus 50 percent movement complying with ASTM C920 and Fed. Spec. TT-S-001543, Class A, and recommended by manufacturer for joints.
1. Location: Exterior joints subject to movement, NOT in contact with external insulation finishing system (EIFS).
 2. Acceptable Manufacturers and Product:
 - a. Dow Corning Corporation: 795 Building Sealant or DC 791.
 - b. Sonneborn, ChemRex Inc.: Sonolastic Omniseal or OmniPlus.
 - c. Tremco Construction Division: Spectrum 2.
- G. Medium Modulus Silicone Rubber Sealant to Reduce Bleeding and Mildew Growth: Silicone rubber based 1-part neutral cure elastomeric sealant with plus 50 percent to minus 50 percent movement specially designed for exterior application to reduce bleeding and mildew growth complying with ASTM C920.
1. Location: Exterior joints in metal panels and exterior ceramic tile.
 2. Acceptable Manufacturers and Product:
 - a. Dow Corning Corporation: 756 Building Sealant - HP.
- H. Ultra Low-Modulus Silicone Rubber Sealant: Silicone rubber based 1-part neutral cure elastomeric sealant with plus 100 percent to minus 50 percent movement complying with ASTM C920 and Fed. Spec. TT-S-001543, Class A.
1. Location: Joints in contact with external insulation finishing system (EIFS).
 2. Acceptable Manufacturers and Product:
 - a. Dow Corning Corporation: 790 Building Sealant, or DC 791 for nonfire rated, and FS 700 for fire rated.
- I. High Modulus Silicone Rubber Sealant: 1-part nonacid-curing silicone.
1. Location: Joints related to structural glazing.
 2. Acceptable Manufacturers and Product:
 - a. Dow Corning Corporation: Silicone 799, or DC 895.
 - b. General Electric: Ultraglaze SSG 4000.
- J. Mildew-Resistant Silicone Rubber Sealant: Silicone rubber based 1-part mildew resistance sealant with integral fungicide complying with Fed. Spec. TT-S-001543, Class A. Specifically recommended by manufacturer for interior joints in wet areas around plumbing fixtures and ceramic tile.
1. Location: Joints in ceramic tile walls and floors, around equipment, and around plumbing fixtures.
 2. Acceptable Manufacturers and Product:
 - a. General Electric: Sanitary 1700 Sealant.

- b. Dow Corning Corporation: Silicone 786 mildew resistant, or DC 798.
- K. Acrylic Sealants: General purpose, paintable acrylic-emulsion sealant with plus 7.5 percent to minus 7.5 percent movement complying with ASTM C834.
 - 1. Location: Interior joints NOT subject to movement.
 - 2. Acceptable Manufacturers and Product:
 - a. Tremco: Acrylic Latex 834.
 - b. Sonneborn Building Products: Sonolac.
 - c. Dow Corning Corporation: FS 400.
- L. 2-Part Polysulfide Sealant: Polysulfide based 2-part elastomeric sealant with plus 25 percent to minus 25 percent movement, complying with Fed. Spec. TT-S-00227, type II, class A, non-sag synthetic rubber formulated form “Thiokol LP” polymer and recommended by manufacturer for continuous submersion in chlorinated water.
 - 1. Location: Joints submerged in water.
 - 2. Acceptable Manufacturers and Product:
 - a. Pecora Corporation: Synthacalk GC-5.
 - b. Sonneborn Building Products.
- M. Foam Gasket Seal: Precompressed, impregnated open-cell foam sealant incorporating permanently elastic open cell polyurethane foam, manufacturer’s standard impregnating agent, and pressure sensitive backing.
 - 1. Acceptable Manufacturers and Product:
 - a. Emseal Corporation: Emseal Greyflex.
 - b. Illbruck Inc.: Will-Seal 150.
 - c. York Manufacturing, Inc.: York-Seal 100.
- N. Foam Gasket Seal for Submerged Application: Precompressed, impregnated opencell foam sealant incorporating permanently elastic open cell polyurethane foam, manufacturer’s impregnating agent at higher levels than standard product, and pressure sensitive backing.
 - 1. Specially designed for use in submerge application.
 - 2. Acceptable Manufacturers and Product:
 - a. Emseal Corporation: Emseal.
 - b. Illbruck Inc.: Will-Seal 200.
 - c. York Manufacturing, Inc.: York-Seal 200.
- O. Splice Adhesive for Foam Gasket Seal: 1-part urethane wet sealant as recommended by gasket seal manufacturer.

2.2 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant; ASTM D1056, sponge or expanded rubber; or ASTM D1667, closed cell PVC; oversized 30 to 50 % larger than joint width.
 - 1. Type: As recommended by manufacturer.

- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. General Requirements: Administrative requirements for coordination and project conditions.
- B. Verify substrate surfaces and joint openings are ready to receive work.
- C. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

- A. Remove loose materials and foreign matter impairing adhesion of sealant.
- B. Clean and prime joints.
- C. Perform preparation in accordance with ASTM C1193.
- D. Protect elements surrounding Work of this section from damage or disfiguration.

3.3 INSTALLATION

- A. Perform installation in accordance with ASTM C1193.
- B. Perform acoustical sealant application work in accordance with ASTM C919.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- D. Install bond breaker where joint backing is not used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tool joints as detailed.
- H. Precompressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 3 to 6 mm below adjoining surface.
- I. Compression Gaskets: Avoid joints except at ends, corners, and intersections; seal joints with adhesive; install with face 3 to 6 mm below adjoining surface.

3.4 CLEANING

- A. General Requirements: Execution requirements for final cleaning.
- B. Clean adjacent soiled surfaces.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. General Requirements: Execution requirements for protecting installed construction.
- B. Protect sealants until cured.

3.6 SCHEDULES

- A. As indicated on drawings and where directed by the Engineer.

END OF SECTION