

SECTION 07900

JOINT SEALERS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.02 SUMMARY

- A. Extent of each form and type of joint sealer is indicated on drawings and as herein noted.
- B. This section includes joint sealers for the following locations:
 - 1. Exterior joints in vertical surfaces and nontraffic horizontal surfaces as indicated below:
 - a. Control and expansion joints in cast-in-place concrete
 - b. Control and expansion joints in unit masonry and cement plaster
 - c. Joints between materials listed above.
 - d. Perimeter joints between materials listed above and frames of doors and windows
 - e. Control and expansion joints in ceiling and overhead surfaces
 - f. Other joints as indicated, and needed
 - 2. Interior joints in vertical surfaces and horizontal non-traffic surfaces as listed below:
 - a. Control and expansion joints on exposed interior surfaces of exterior walls
 - b. Perimeter joints of exterior openings where indicated
 - c. Vertical control joints on exposed surfaces of interior units masonry and concrete walls and partitions
 - d. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances
 - e. Perimeter joints of toilet fixtures
 - f. Other joints as indicated, and needed
 - 3. Sealing joints related to flashing and sheet metal for roofing is specified in Division 7 Section "Flashing and Sheet Metal".
- C. Sealants for glazing purposes are specified in Division 8 Section "Glass and Glazing".
- D. Sealing compound perimeter joints of gypsum drywall partitions to reduce sound transmission characteristics is specified in Division 9 Section "Gypsum Drywall".
- E. Sealing tile joints is specified in Division 9 Section "Tile".

1.03 SYSTEM PERFORMANCES

- A. Provide joint sealers that have been produced and installed to establish and maintain watertight and airtight continuous seals.

1.04 SUBMITTALS

- A. Product Data from manufacturers for each joint sealer product required, including instructions for joint preparation and joint sealer application.
- B. Samples for Initial Selection Purposes: Manufacturer's standard bead samples consisting of strips of actual products showing full range of colors available, for each product exposed to view.
- C. Certificates from manufacturers of joint sealers attesting that their products comply with specification requirements and are suitable for the use indicated.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an Installer who has successfully completed within the last three years at least three joint sealer applications similar in type and size to that of this Project.
- B. Single Source Responsibility for Joint Sealer Materials: Obtain joint sealer materials from a single manufacturer for each different product required.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multicomponent 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.

1.07 PROJECT CONDITIONS

- A. Environmental Conditions: Do not proceed with installation of joint sealers under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturers.
 - 2. When joint substrates are wet due to rain, frost, condensation, or other causes.
- B. Joint Width Conditions: Do not proceed with installation of joint sealers where joint widths are less than allowed by joint sealer manufacturer for application indicated.
- C. Joint Substrate Conditions: Do not proceed with installation of joint sealers until contaminants capable of interfering with their adhesion are removed from joint substrates.

1.08 SEQUENCING AND SCHEDULING

- A. Sequence installation of joint sealers to occur not less than 21 nor more than 30 days after completion of waterproofing, unless otherwise indicated.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealers, 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. Colors: Provide color of exposed joint sealers indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors.

2.02 ELASTOMERIC JOINT SEALERS

- A. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealant of base polymer indicated which complies with ASTM C 920 requirements, including those referenced for Type, Grade, Class, and Uses.
- B. One-Part Polysulfide Sealant: Type S, Grade NS, Class 12-½; Uses NT, M, G, A, and, as applicable to joint substrates indicated, O.
- C. One-Part Mildew-Resistant Silicone Sealant: Type S, Grade NS, Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide; intended for

sealing interior joints with nonporous substrates and subject to in-service exposure to conditions of high humidity and temperature extremes.

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

1. One-Part Polysulfide Sealant:

"Chem-Calk 100", Bostik Construction Products Div.
"GC-9 Synthacalk", Pecora Corporation
"PRC Rubber Calk 7000", Product Research and Chemical Corp.

2. One-Part Mildew Resistant Silicone Sealant:

"Dow Corning 786", Dow Corning Co.
"SCS 1702 Sanitary", General Electric Co.
"863 #345 White", Pecora Corp.
"Rhodorsil 6B White" Rhone-Poulenc, Inc.
"Proglaze White", Tremco Corp.
"OmniPlus" Sonneborn Building Products Div., Rexnord Chemical Products, Inc.

2.03 MISCELLANEOUS JOINT SEALANTS:

A. Acoustical Sealant for Concealed Joints: Manufacturer's standard, nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic rubber sealant recommended for sealing interior concealed joints to reduce transmission of airborne sound.

B. Butyl-Polyisobutylene Sealant: Manufacturer's standard, solvent-release-curing, butyl polyisobutylene sealant complying with AAMA 809.2, recommended for concealed joints.

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

1. Acoustical Sealants for Concealed Joints:

"BA-98", Pecora Corporation
"Tremco Acoustical Sealant", Tremco, Inc.

2. Butyl-Polyisobutylene Sealant:

"PTI 404", Protective Treatments, Inc.

2.04 COMPRESSION SEALS

A. Preformed Foam Sealant: Manufacturer's standard preformed, precompressed, 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 manufacturer; and complying with the following requirements:

1. Properties: Permanently elastic, mildew-resistant, nonmigratory, nonstaining, compatible with joint substrates and other joint sealers.

2. Impregnating Agent: Manufacturer's standard.

3. Density: Manufacturer's standard.

4. Backing: Coated in one face with release agent serving as bond breaker for primary joint sealant.

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

"Emseal", Emseal Corporation
"Emseal Greyflex", Emseal Corporation

"Polytite R", Sandell Manufacturing Co., Inc.
"Polytite Standard", Sandell Manufacturing Co., Inc.
"Will-Seal 150", Wil-Seal Construction Foams Div., Illbruck
"Will-Seal 250", Wil-Seal Construction Foams Div., Illbruck
"York-Seal 100", York Manufacturing, Inc.
"York Seal 200", York Manufacturing, Inc.

2.05 FIRE-RESISTANT JOINT SEALERS:

- A. General: Provide manufacturer's standard fire-stopping sealant, with accessory materials, having fire-resistance ratings indicated as established by testing identical assemblies per ASTM E 814 by Underwriters Laboratory, Inc., or other testing and inspecting agency acceptable to authorities having jurisdiction.
- B. One-Part Fire-Stopping Sealant: One part elastomeric sealant formulated for use in a through-penetration fire-stop system for sealing openings around cables, conduit, pipes and similar penetrations through walls and floors.
- C. Products: Subject to compliance with requirements, provide one of the following:
 - 1. One-Part Fire-Stopping Sealant:
 - "Dow Corning Fire Stop Sealant", Dow Corning Corporation
 - "3M Fire Barrier Caulk CP-25", Electrical Products Division, 3M
 - "RTV 7403", General Electric Co.
 - "Fyre Putty", Standard Oil Engineered Materials Co.

2.06 JOINT SEALANT BACKING

- A. General: Provide sealant backings of material and type which are nonstaining, are compatible with joint substrates, sealants, primers and other joint fillers, and are approved for applications indicated by sealant manufacturer based in field experience and laboratory testing.
- B. Plastic Foam Joint Fillers: Preformed, compressible, resilient, nonwaxing, nonextruding strips of flexible, nongassing plastic foam of material indicated below; nonabsorbent to water and gas; and of size, shape and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
 - 1. Closed-cell polyethylene foam
- C. Bond Breaker Taps: 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.

2.07 MISCELLANEOUS MATERIALS:

- A. Primer: Provide type of recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealer-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Provide nonstaining, chemical cleaners of type which are acceptable to manufacturers of sealants and sealant backing materials, which are not harmful to substrates and adjacent nonporous materials, and which do not leave oily residues or otherwise have a detrimental effect on sealant adhesion or in-service performance.
- C. Masking Tape: Provide nonstaining, nonabsorbent type compatible with joint sealants and to surfaces adjacent to joints.
- D. Accessory Materials for Fire-Stopping Sealants: Provide forming, joint fillers, packing and other accessory materials required for installation of fire-stopping sealants as applicable to installation conditions indicated.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine joints indicated to receive joint sealers, 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 sealers until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Surface Cleaning of Joints: 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 joint substrates which could interfere with adhesion of joint sealer, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealers, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. 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 sealers. 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.
 - 4. Clean metal, glass, porcelain enamel, glazed surfaces or 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 in preconstruction joint sealer-substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer 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 which 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 SEALERS

- A. General: Comply with joint sealer manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
- B. Elastomeric Sealant Installation Standard: Comply with recommendations of ASTM C 962 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 applications and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.
 - a. Do not leave gaps between ends of joint fillers.
 - b. Do not stretch, twist, puncture, or tear joint fillers.
 - c. Remove joint fillers which have become wet prior to sealant application and replace with dry material.

- D. Install bond breaker tape between sealants and joint fillers, compression seals, or back of joints where adhesion of sealant to surfaces at back of joints would result in sealant failure.
 - 1. Install compressible seals serving as sealant backings to comply with requirements indicated above for joint fillers.
 - a. 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 which allow optimum sealant movement capability.
- E. 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 which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.
 - a. Provide concave joint configuration per Figure 6A in ASTM C 962, unless otherwise indicated.
- F. Installation of Fire-Stopping Sealant: Install sealant, including forming, packing, and other accessory materials to fill openings around mechanical and electrical services penetrating floors and walls to provide fire-stops with fire resistance ratings indicated for floor or wall assembly in which penetration occurs. Comply with installation requirements established by testing and inspecting agency.

3.04 CLEANING:

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

3.05 PROTECTION

- A. Protect joint sealers 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 or deteriorated joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.

END OF SECTION