

SECTION 07 9200 - JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 07 6200 - Sheet Metal Flashing and Trim: Sealing of lap joints.
- B. Section 07 9100 - Preformed Joint Seals: Precompressed foam, gaskets, and strip seals.
- C. Section 08 7100 - Door Hardware: Setting exterior door thresholds in sealant.
- D. Section 08 8000 - Glazing: Glazing sealants and accessories.
- E. Section 09 2116 - Gypsum Board Assemblies: Sealing acoustical and sound-rated walls and ceilings.

1.03 REFERENCE STANDARDS

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2015.
- B. ASTM C834 - Standard Specification for Latex Sealants; 2014.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014a.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
- E. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2014.
- F. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints; 2013.
- G. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
 - 5. Substrates for which use of primer is required.
- C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years experience.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum five years experience.
- C. Field Adhesion Tests of Joints: Test for adhesion using most appropriate method in accordance with ASTM C1521, or other applicable method as recommended by manufacturer.

PART 2 PRODUCTS

2.01 JOINT SEALANT APPLICATIONS

- A. Scope:
 - 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
 - a. Wall expansion and control joints.
 - b. Joints between door, window, and other frames and adjacent construction.
 - c. Joints between different exposed materials.
 - d. Flashing lap joints and roofing termination bars.
 - e. Joints at walls and adjacent concrete slabs and sidewalks.
 - 2. Interior Joints: Seal open joints, whether or not the joint is indicated on the drawings, unless specifically indicated not to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. Joints between different finish materials
 - c. Joints between plumbing fixtures and finishes.
 - d. Joints at countertops, backsplashes and abutting wall finishes.
 - 3. Do not seal the following types of joints.
 - a. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
 - b. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - c. Joints between suspended panel ceilings/grid and walls.
- B. Exterior Joints: Use nonsag two component polyurethane sealant, unless otherwise indicated.
 - 1. Lap Joints in Sheet Metal Fabrications: Non-staining silicone sealant.
 - 2. Control and Expansion Joints in Concrete Slabs: Self-leveling polyurethane "traffic-grade" sealant.
 - 3. Interior joints at floor finishes: Nonsag "traffic grade" polyurethane.
 - 4. Roofing Termination Bars: Single component nonsag polyurethane.
- C. Interior Joints: Use nonsag acrylic latex sealant, unless otherwise indicated.
 - 1. Wall and Ceiling Joints in Non-Wet Areas: Acrylic emulsion latex sealant.
 - 2. Wall and Ceiling Joints in Wet Areas: Nonsag acrylic latex with silicone sealant, paintable.
 - 3. Floor Joints in Wet Areas: Self-leveling polyurethane "traffic-grade" sealant suitable for continuous liquid immersion.
 - 4. Joints between Fixtures in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; white.
 - 5. Joints in FRP panels: Mildew-resistant silicone sealant; clear.
 - 6. In Sound-Rated Assemblies: See Section 09 2116 Gypsum Board Assemblies for required sealant.
 - 7. Narrow Control Joints in Interior Concrete Slabs: Self-leveling epoxy sealant; Use at joints and cracks where floor will receive stained and sealed finish..
 - 8. Other Floor Joints: Nonsag polyurethane "traffic-grade" sealant.
- D. Interior Wet Areas: restrooms and food service areas; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, and cabinets.
- E. Sound-Rated Assemblies: Walls and ceilings identified as "STC-rated", "sound-rated", or "acoustical".

2.02 NONSAG JOINT SEALANTS

- A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: +/- 50%, minimum.
 - 2. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.

3. Hardness Range: 15 to 40, Shore A, when tested in accordance with ASTM C661.
 4. Color: clear.
 5. Cure Type: Single-component, neutral moisture curing.
 6. Service Temperature Range: Minus 65 to 180 degrees F.
 7. Manufacturers:
 - a. Dow Chemical Company; 790 Silicone Building Sealant: consumer.dow.com/en-us/industry/ind-building-construction.html/#sle.
 - b. Pecora Corporation; 890NST Ultra Low Modulus Architectural Silicone Sealant - Class 100: www.pecora.com.
 - c. Tremco Commercial Sealants; Spectrum 2: www.tremcosealants.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- B. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
1. Manufacturers:
 - a. Dap Products Inc.; Silicone Plus Kitchen and Bath: www.dap.com.
 - b. GE, Momentive Performance Materials, Inc.; SCS1700 Sanitary Silicone Sealant: www.siliconeforbuilding.com.
 - c. Pecora Corporation; 898NST Sanitary Silicone Sealant - Class 50: www.pecora.com.
 - d. Tremco Commercial Sealants & Waterproofing; Tremsil 200: www.tremcosealants.com.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
- C. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single component; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 25 percent, minimum.
 2. Hardness Range: 30 to 40, Shore A, when tested in accordance with ASTM C661.
 3. Color: grey.
 4. Manufacturers:
 - a. DAP Products, Inc.; Premium Polyurethane: www.dap.com.
 - b. Pecora Corporation; DynaTrol I-XL General Purpose One Part Polyurethane Sealant: www.pecora.com.
 - c. Sika Corporation; Sikaflex-1a: www.usa-sika.com/#sle.
 - d. Tremco Commercial Sealants; Vulkem 116: www.tremcosealants.com.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
- D. Polyurethane Sealant for Exterior Wall Opening Joints: ASTM C920, Grade NS, Uses M and A; multicomponent; explicitly approved by manufacturer for sealing joints between dissimilar materials.
1. Movement Capability: Plus and minus 50 percent, minimum.
 2. Hardness Range: 25 to 40, Shore A, when tested in accordance with ASTM C661.
 3. Color: Match adjacent finished surfaces.
 4. Manufacturers:
 - a. Pecora Corporation; DynaTrol II: www.pecora.com.
 - b. Sika Corporation; Sikaflex-2c NS: www.usa-sika.com/#sle.
 - c. Tremco Commercial Sealants; Dymeric 240: www.tremcosealants.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- E. Non-Sag "Traffic-Grade" Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; explicitly approved by manufacturer for continuous water immersion and traffic without the necessity to recess sealant below traffic surface.
1. Movement Capability: Plus and minus 25 percent, minimum.
 2. Hardness Range: 40 to 50, Shore A, when tested in accordance with ASTM C661.
 3. Color: Match adjacent finished surfaces.
 4. Service Temperature Range: Minus 40 to 170 degrees F.
 5. Manufacturers:
 - a. Pecora; DynaTred: www.pecora.com.

- b. Sika Corporation; Sikaflex-2c NS TG: www.usa.sika.com.
 - c. Tremco Commercial Sealants; THC-901: www.tremcosealants.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- F. General Purpose Interior Sealant: Acrylic latex with silicone; ASTM C834, Type OP, Grade NF single component, paintable.
- 1. Color: Clear or match substrate color; if painted may use white.
 - 2. Manufacturers:
 - a. Pecora Corporation; AC-20 + Silicone Acrylic Latex Caulking Compound: www.pecora.com.
 - b. Sherwin-Williams Company; 950A Siliconized Acrylic Latex Caulk: www.sherwin-williams.com.
 - c. Tremco Global Sealants; Tremflex 834 Siliconized Interior Acrylic Latex Sealant: www.tremcosealants.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- G. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
- 1. Color: white, paintable.
 - 2. Grade: ASTM C834; Grade - Minus 18 Degrees C.
 - 3. Manufacturers:
 - a. Dap; Alex Painters Acrylic Latex Caulk: www.dap.com.
 - b. White Lightning; Painter's Preferred: www.wlcaulk.com.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
- H. Butyl Sealant: Solvent-based; ASTM C1311; single component, nonsag; not expected to withstand continuous water immersion or traffic.
- 1. Hardness Range: 10 to 30, Shore A, when tested in accordance with ASTM C661.
 - 2. Color: black.
 - 3. Service Temperature Range: Minus 13 to 180 degrees F.
 - 4. Manufacturers:
 - a. Pecora Corporation; BC-158 One-Part Butyl Rubber Sealant: www.pecora.com.
 - b. Tremco Commercial Sealants & Waterproofing; Butyl Sealant: www.tremcosealants.com.

2.03 SELF-LEVELING SEALANTS

- A. Self-Leveling Polyurethane Sealant for Continuous Water Immersion: Polyurethane; ASTM C920, Grade P, Uses M and A; single component; explicitly approved by manufacturer for traffic exposure and continuous water immersion.
- 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Hardness Range: 35 to 55, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: Gray.
 - 4. Service Temperature Range: Minus 40 to 180 degrees F.
 - 5. Manufacturers:
 - a. Pecora Corporation; Urexpan NR-201: www.pecora.com.
 - b. Sika Corporation; Sikaflex-1c SL: www.usa-sika.com/#sle.
 - c. Tremco Commercial Sealants and Waterproofing; Vulkem 45SSL: www.tremcosealants.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- B. Semi-Rigid Self-Leveling Epoxy Joint Filler: Epoxy or epoxy/polyurethane copolymer; intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.
- 1. Composition: Multi-component, 100 percent solids by weight.
 - 2. Durometer Hardness: Minimum of 85 for Type A or 35 for Type D, after seven days when tested in accordance with ASTM D2240.
 - 3. Color: To be selected by Architect from manufacturer's standard colors.
 - 4. Joint Width, Minimum: 1/8 inch.

5. Joint Width, Maximum: 1/4 inch.
6. Joint Depth: Provide product suitable for joints from 1/8 inch to 2 inches in depth excluding space for backer rod.
7. Manufacturers:
 - a. Dayton Superior Corporation; Pro-Poxy P606: www.daytonsuperior.com/#sle.
 - b. Nox-Crete; DynaFlex 502: www.nox-crete.com/#sle.
 - c. W.R. Meadows, Inc; Rezi-Weld Flex: www.wrmeadows.com/#sle.
 - d. Substitutions: See Section 01 6000 - Product Requirements.

2.04 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
 1. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.
- E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- 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 backing tape where backer rod cannot be used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

- G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
- H. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.04 FIELD QUALITY CONTROL

- A. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- B. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

3.05 POST-OCCUPANCY

- A. Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width; i.e. at low temperature in thermal cycle. Report failures immediately and repair.

END OF SECTION

SECTION 07 9513 - EXPANSION JOINT COVER ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Expansion joint cover assemblies for floor, wall, ceiling, and roof surfaces.

1.02 RELATED REQUIREMENTS

- A. Section 04 2001 - Masonry Veneer: Placement of joint cover assembly frames in masonry.
- B. Section 07 9200 - Joint Sealants: Sealing expansion and control joints using gunnable and pourable sealants.
- C. Section 09 2116 - Gypsum Board Assemblies: Gypsum board control joint trim.
- D. Section 09 2116 - Gypsum Board Assemblies: Placement of expansion joint assemblies in gypsum board walls and ceilings.

1.03 REFERENCE STANDARDS

- A. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.
- B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.
- C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2013.
- D. ASTM B308/B308M - Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles; 2010.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Installation Templates: For frames and anchors to be embedded in concrete or masonry, furnish templates to relevant installers; include installation instructions and tolerances.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide joint assembly profiles, profile dimensions, anchorage devices and available colors and finish.
- C. Samples: Submit two samples 6 inch long, illustrating profile, dimension, color, and finish selected.
- D. Manufacturer's Installation Instructions: Indicate rough-in sizes and required tolerances for item placement.

PART 2 PRODUCTS

2.01 MANUFACTURERS

2.02 EXPANSION JOINT COVER ASSEMBLY APPLICATIONS

- A. Interior Wall/Ceiling Joints Subject to Thermal Movement:
 - 1. Manufacturers:
 - a. Balco; WD Snap on Series: www.balcousa.com.
 - b. Construction Specialties; ASM Series: www.c-sgroup.com.
 - c. Inpro; 804/811 Series (exposed cover plate): www.inprocorp.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- B. Exterior Wall Joints Subject to Thermal Movement:
 - 1. Manufacturers:
 - a. Balco; FCWW Series: www.balcousa.com.
 - b. Construction Specialties, Inc.; SF Series: www.c-sgroup.com.
 - c. Inpro; 620 Series: www.inprocorp.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.

2.03 EXPANSION JOINT COVER ASSEMBLIES

- A. Expansion Joint Cover Assemblies - General: Factory-fabricated and assembled; designed to completely fill joint openings, sealed to prevent passage of air, dust, water, smoke; suitable for traffic expected.
 - 1. Joint Dimensions and Configurations: As indicated on drawings.
 - 2. Joint Cover Sizes: Selected to suit joint width and configuration, based on manufacturer's published recommendations and limitations.
 - 3. Joint Movement Capability: If not indicated, provide minimum plus/minus 25 percent joint movement capability.
 - 4. Lengths: Provide covers in full lengths required; avoid splicing wherever possible.
 - 5. Anchors, Fasteners, and Fittings: Provided by cover manufacturer.
- B. Sliding Cover Plate Type Covers: Provide plate with beveled edges and neat fit that does not collect dirt.

2.04 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T5 or T6 temper.
 - 1. Exposed Finish Outdoors: Natural anodized.
 - 2. Exposed Finish at Walls and Ceilings: Natural anodized.
- B. Plate Aluminum: ASTM B209, 5052-H32.
- C. Resilient Seals:
 - 1. For Walls: Santoprene, Shore A hardness of 60 to 70 Durometer.
 - 2. Color: Gray.
- D. Moisture Barrier Bellow:
 - 1. For Walls: Polyurethane, PVC or EPDM.
 - 2. Color: Black.
- E. Anchors and Fasteners: As recommended by cover manufacturer, countersunk flush heads.
- F. Ferrous Metal Anchors: Galvanized where embedded in concrete or in contact with cementitious materials.
- G. Threaded Fasteners: Stainless steel.
- H. Backing Paint for Aluminum Components in Contact with Cementitious Materials: Asphaltic type.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joint preparation and dimensions are acceptable and in accordance with manufacturer's requirements.

3.02 INSTALLATION

- A. Install components and accessories in accordance with manufacturer's instructions.
- B. Align work plumb and level.
- C. Rigidly anchor to substrate to prevent misalignment.

END OF SECTION