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SECTION 07 9200 JOINT SEALANTS

<<<<<<< UPDATE NOTES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.
- D. Owner-provided field quality control.

1.02 RELATED REQUIREMENTS

- A. Section **01 6116 - Volatile Organic Compound (VOC) Content Restrictions**: Additional requirements for sealants and primers.
- B. Section **07 1300 - Sheet Waterproofing**: Sealing cracks and joints in waterproofing substrate surfaces using materials specified in this section.
- C. Section **07 2500 - Weather Barriers**: Sealants required in conjunction with air barriers and vapor retarders.
- D. Section **07 8400 - Firestopping**: Firestopping sealants.
- E. Section **07 9100 - Preformed Joint Seals**: Precompressed foam, gaskets, and strip seals.
- F. Section **07 9513 - Expansion Joint Cover Assemblies**: Sealants forming part of expansion joint cover assemblies.
- G. Section **08 1117 - Aluminum Terrace Doors**: Field-testing of sealed joints at perimeter of door frames.
- H. Section **08 6300 - Metal-Framed Skylights**: Structural and weatherseal sealants and accessories.
- I. Section **08 7100 - Door Hardware**: Setting exterior door thresholds in sealant.
- J. Section **08 8000 - Glazing**: Glazing sealants and accessories.
- K. Section **09 2116 - Gypsum Board Assemblies**: Sealing acoustical and sound-rated walls and ceilings.
- L. Section **09 2216 - Non-Structural Metal Framing**: Sealing between framing and adjacent construction in acoustical and sound-rated walls and ceilings.
- M. Section **09 2300 - Gypsum Plastering**: Sealing acoustical and sound-rated walls and ceilings.
- N. Section **09 2613 - Gypsum Veneer Plastering**: Sealing acoustical and sound-rated walls and ceilings.
- O. Section **09 3000 - Tiling**: Sealant between tile and plumbing fixtures and at junctions with other materials and changes in plane.
- P. Section **23 3100 - HVAC Ducts and Casings**: Duct sealants.

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 C794 - Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants; 2015a.
- C. ASTM C834 - Standard Specification for Latex Sealants; 2014.
- D. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2012.
- E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014a.

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- F. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems; 2016.
- G. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
- H. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2008 (Reapproved 2012).
- I. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2014.
- J. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2002 (Reapproved 2013).
- K. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints; 2013.
- L. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015.
- M. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition.
- N. SWRI (VAL) - SWR Institute Validated Products Directory; Current Listings at www.swrionline.org.

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.
 - 6. Substrates for which laboratory adhesion and/or compatibility testing is required.
 - 7. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
 - 8. Sample product warranty.
 - 9. Certification by manufacturer indicating that product complies with specification requirements.
 - 10. SWRI Validation: Provide currently available sealant product validations as listed by SWRI (VAL) for specified sealants.
- 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.
- E. Samples for Verification: Where custom sealant color is specified, obtain directions from **Architect** and submit at least two physical samples for verification of color of each required sealant.
- F. Sustainable Design Documentation: For sealants and primers, submit VOC content and emissions documentation as specified in Section **01 6116**.
- G. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.
- H. Installation Plan: Submit at least four weeks prior to start of installation.
- I. Preinstallation Field Adhesion Test Plan: Submit at least two weeks prior to start of installation.
- J. Field Quality Control Plan: Submit at least two weeks prior to start of installation.

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- K. Preinstallation Field Adhesion Test Reports: Submit filled out Preinstallation Field Adhesion Test Reports log within **<<10 days; or _____>>** after completion of tests; include bagged test samples and photographic records.
- L. Installation Log: Submit filled out log for each length or instance of sealant installed.
- M. Field Quality Control Log: Submit filled out log for each length or instance of sealant installed, within **<<10 days; or _____>>** after completion of inspections/tests; include bagged test samples and photographic records, if any.

1.05 QUALITY ASSURANCE

- A. Maintain **<<one copy; or _____ copies>>** of **<<each; _____; or None - N/A>>** referenced document covering installation requirements on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum **<<three; or _____>>** years **<<documented; _____; or None - N/A>>** experience.
- C. Installer Qualifications: Company specializing in performing the work of this section and with at least **<<three; or _____>>** years of **<<documented; _____; or None - N/A>>** experience **<<and approved by manufacturer; or None - N/A>>**.
- D. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.
- E. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.
 - 1. Adhesion Testing: In accordance with ASTM C794.
 - 2. Compatibility Testing: In accordance with ASTM C1087.
 - 3. Stain Testing: In accordance with ASTM C1248 **<<required only for stone substrates;; required only for masonry substrates;; _____; or None - N/A>>**.
 - 4. Allow sufficient time for testing to avoid delaying the work.
 - 5. Deliver to manufacturer sufficient samples for testing.
 - 6. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.
 - 7. Testing is not required if sealant manufacturer provides data showing previous testing, not older than 24 months, that shows satisfactory adhesion, lack of staining, and compatibility.
- F. Installation Plan: Include schedule of sealed joints, including the following.
 - 1. Joint width indicated in contract documents.
 - 2. Joint depth indicated in contract documents; to face of backing material at centerline of joint.
 - 3. Method to be used to protect adjacent surfaces from sealant droppings and smears, with acknowledgement that some surfaces cannot be cleaned to like-new condition and therefore prevention is imperative.
 - 4. Approximate date of installation, for evaluation of thermal movement influence.
 - 5. Installation Log Form: Include the following data fields, with known information filled out.
 - a. Unique identification of each length or instance of sealant installed.
 - b. Location on project.
 - c. Substrates.
 - d. Sealant used.
 - e. Stated movement capability of sealant.
 - f. Primer to be used, or indicate as "No primer" used.
 - g. Size and actual backing material used.
 - h. Date of installation.
 - i. Name of installer.
 - j. Actual joint width; provide space to indicate maximum and minimum width.
 - k. Actual joint depth to face of backing material at centerline of joint.
 - l. Air temperature.

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- G. Preinstallation Field Adhesion Test Plan: Include destructive field adhesion testing of one sample of each combination of sealant type and substrate, except interior acrylic latex sealants, and include the following for each tested sample.
1. Identification of testing agency.
 2. Name(s) of sealant manufacturers' field representatives who will be observing
 3. Preinstallation Field Adhesion Test Log Form: Include the following data fields, with known information filled out.
 - a. Substrate; if more than one type of substrate is involved in a single joint, provide two entries on form, for testing each sealant substrate side separately.
 - b. Test date.
 - c. Location on project.
 - d. Sealant used.
 - e. Stated movement capability of sealant.
 - f. Test method used.
 - g. Date of installation of field sample to be tested.
 - h. Date of test.
 - i. Copy of test method documents.
 - j. Age of sealant upon date of testing.
 - k. Test results, modeled after the sample form in the test method document.
 - l. Indicate use of photographic record of test.

----- Following is related to FIELD QUALITY CONTROL, coordinate with Owner/Architect-----

- H. **Owner** will employ an independent testing agency to perform the field quality control inspection and testing as referenced in PART 3 of this section and as follows, to prepare and submit the field quality control plan and log, and to provide recommendations of remedies in the case of failure.
1. Contractor shall cooperate with testing agency and repair failures discovered and destructive test location damage.
- I. Field Quality Control Plan:
1. Visual inspection of entire length of sealant joints.
 2. Non-destructive field adhesion testing of sealant joints, except interior acrylic latex sealants.
 - a. Test the entire length of every sealant joint.
 - b. For each different sealant and substrate combination, allow for one test every <<12 inches (305 mm); _____ inches (_____ mm)>> in the first <<10 linear feet (3 linear meters); _____ linear feet (_____ linear meters)>> of joint and one test every <<24 inches (610 mm); _____ inches (_____ mm)>> thereafter.
 - c. If any failures occur in the first <<10 linear feet (3 linear meters); _____ linear feet (_____ linear meters)>>, continue testing at <<12 inch (305 mm); _____ inch (_____ mm)>> intervals at no extra cost to **Owner**.
 3. Destructive field adhesion testing of sealant joints, except <<interior acrylic latex sealant; interior sealant joints; or _____>>.
 - a. For each different sealant and substrate combination, allow for one test every <<100 feet (30 meters); _____ feet (_____ meters)>> in the first <<1000 linear feet (305 linear meters); _____ linear feet (_____ linear meters)>>, and one test per <<1000 linear feet (305 meters); _____ linear feet (_____ linear meters)>> thereafter, or once per floor on each elevation.
 - b. If any failures occur in the first <<1000 linear feet (305 linear meters); _____ linear feet (_____ linear meters)>>, continue testing at frequency of one test per <<500 linear feet (152 linear meters); _____ linear feet (_____ linear meters)>> at no extra cost to **Owner**.
 4. Field testing agency's qualifications.
 5. Field Quality Control Log Form: Show same data fields as on Preinstallation Field Adhesion Test Log, with known information filled out and lines for multiple tests per

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sealant/substrate combinations; include visual inspection and specified field testing; allow for possibility that more tests than minimum specified may be necessary.

- J. Field Adhesion Test Procedures:
1. Allow sealants to fully cure as recommended by manufacturer before testing.
 2. Have a copy of the test method document available during tests.
 3. Take photographs or make video records of each test, with joint identification provided in the photos/videos; for example, provide small erasable whiteboard positioned next to joint.
 4. Record the type of failure that occurred, other information required by test method, and the information required on the Field Quality Control Log.
 5. When performing destructive tests, also inspect the opened joint for proper installation characteristics recommended by manufacturer, and report any deficiencies.
 6. Deliver the samples removed during destructive tests in separate sealed plastic bags, identified with project, location, test date, and test results, to **Owner**.
 7. If any combination of sealant type and substrate does not show evidence of minimum adhesion or shows cohesion failure before minimum adhesion, report results to **Architect**.
- K. Non-Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Nondestructive <<**Spot; Continuous; or _____**>> Method.
1. Record results on Field Quality Control Log.
 2. Repair failed portions of joints.
- L. Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Destructive Tail Procedure.
1. Sample: At least <<**18 inch (457 mm); _____ inch (_____ mm)**>> long.
 2. Minimum Elongation Without Adhesive Failure: Consider the tail at rest, not under any elongation stress; multiply the stated movement capability of the sealant in percent by two; then multiply <<**1 inch (25 mm); _____ inch (_____ mm)**>> by that percentage; if adhesion failure occurs before the "1 inch mark" is that distance from the substrate, the test has failed.
 3. If either adhesive or cohesive failure occurs prior to minimum elongation, take necessary measures to correct conditions and re-test; record each modification to products or installation procedures.
 4. Record results on Field Quality Control Log.
 5. Repair failed portions of joints.
- M. 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.

1.06 WARRANTY

- A. See Section **01 7800 - Closeout Submittals**, for additional warranty requirements.
- B. Correct defective work within a <<**five; or _____**>> year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
1. Adhesives Technology Corporation<<_____>> **or None - N/A**>>: www.atcepoxy.com/sle.
 2. BASF Construction Chemicals-Building Systems<<_____>> **or None - N/A**>>: www.buildingsystems.basf.com.
 3. Bostik Inc<<_____>> **or None - N/A**>>: www.bostik-us.com.
 4. Dow Corning Corporation<<_____>> **or None - N/A**>>: www.dowcorning.com/construction/sle.
 5. Fortifiber Building Systems Group<<_____>> **or None - N/A**>>: www.fortifiber.com/sle.

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6. Franklin International, Inc<<____; or None - N/A>>: www.titebond.com/sle.
 7. Hilti, Inc<<____; or None - N/A>>: www.us.hilti.com/#sle.
 8. Momentive Performance Materials, Inc (formerly GE Silicones)<<____; or None - N/A>>: www.momentive.com/sle.
 9. Pecora Corporation<<____; or None - N/A>>: www.pecora.com.
 10. The QUIKRETE Companies<<____; or None - N/A>>: www.quikrete.com.
 11. Tremco Global Sealants<<____; or None - N/A>>: www.tremcosealants.com.
 12. Sherwin-Williams Company<<____; or None - N/A>>: www.sherwin-williams.com.
 13. Sika Corporation<<____; or None - N/A>>: www.usa-sika.com.
 14. Specified Technologies Inc<<____; or None - N/A>>: www.stifirestop.com/#sle.
 15. W.R. Meadows, Inc<<____; or None - N/A>>: www.wrmeadows.com/sle.
 16. _____.
 17. Substitutions: <<See Section 49 - 49; or Not permitted>>.
- B. Self-Leveling Sealants: Pourable or self-leveling sealant that has sufficient flow to form a smooth, level surface when applied in a horizontal joint.
1. Adhesives Technology Corporation<<____; or None - N/A>>: www.atcepoxy.com/sle.
 2. BASF Construction Chemicals-Building Systems<<____; or None - N/A>>: www.buildingsystems.basf.com.
 3. Bostik Inc<<____; or None - N/A>>: www.bostik-us.com.
 4. Dayton Superior Corporation<<____; or None - N/A>>: www.daytonsuperior.com.
 5. Dow Corning Corporation<<____; or None - N/A>>: www.dowcorning.com/construction/sle.
 6. Pecora Corporation<<____; or None - N/A>>: www.pecora.com.
 7. The QUIKRETE Companies<<____; or None - N/A>>: www.quikrete.com.
 8. Tremco Global Sealants<<____; or None - N/A>>: www.tremcosealants.com.
 9. Sherwin-Williams Company<<____; or None - N/A>>: www.sherwin-williams.com.
 10. Sika Corporation<<____; or None - N/A>>: www.usa-sika.com.
 11. W.R. Meadows, Inc<<____; or None - N/A>>: www.wrmeadows.com/sle.
 12. _____.
 13. Substitutions: <<See Section 49 - 49; or Not permitted>>.

2.02 JOINT SEALANT APPLICATIONS

---- EDIT SCOPE CAREFULLY -- Exclude items not applicable, and add others ----

- A. Scope:
1. Exterior Joints: Seal open joints, whether or not the joint is indicated on the 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. Openings below ledge angles in masonry.
 - e. Other joints indicated below.
 2. Interior Joints: Do not seal interior joints unless specifically indicated 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. In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, piping, and other openings; between wall/ceiling and other construction; and other flanking sound paths.
 - 1) Exception: Such gaps and openings in <<gypsum board; plaster; and _____>> finished stud walls and suspended ceilings.
 - 2) Exception: Through-penetrations in sound-rated assemblies that are also fire-rated assemblies.
 - c. Other joints indicated below.
 3. Do not seal the following types of joints.

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- a. Intentional weepholes in masonry.
 - b. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
 - c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - d. Joints where installation of sealant is specified in another section.
 - e. Joints between suspended panel ceilings/grid and walls.
- B. <<Type _____ - ; or None - N/A>>Exterior Joints: Use non-sag <<***non-staining silicone; silyl-terminated polyether/polyurethane; polyurethane; acrylic-urethane; or _____***>> sealant, unless otherwise indicated.
1. <<Type _____ - ; or None - N/A>>Lap Joints in Sheet Metal Fabrications: Butyl rubber, non-curing.
 2. <<Type _____ - ; or None - N/A>>Lap Joints between Manufactured Metal Panels: Butyl rubber, non-curing.
 3. <<Type _____ - ; or None - N/A>>Control and Expansion Joints in Concrete Paving: Self-leveling <<***polyurethane "traffic-grade"; or _____***>> sealant.
 4. <<Type _____ - ; or None - N/A>>Wiring Slots in Concrete Paving: Self-leveling <<***epoxy; polyurea; polyurethane; or _____***>> sealant.
 5. <<Type _____ - ; or None - N/A>>Cooling Tower and Fountain Basins: Non-sag <<***polyurethane; polysulfide; or _____***>> sealant for continuous immersion.
- C. <<Type _____ - ; or None - N/A>>Interior Joints: Use non-sag <<***polyurethane; or _____***>> sealant, unless otherwise indicated.
1. <<Type _____ - ; or None - N/A>>Wall and Ceiling Joints in Non-Wet Areas: <<***Acrylic emulsion latex; or _____***>> sealant.
 2. <<Type _____ - ; or None - N/A>>Wall and Ceiling Joints in Wet Areas: Non-sag <<***polyurethane; polysulfide; or _____***>> sealant for continuous liquid immersion.
 3. <<Type _____ - ; or None - N/A>>Floor Joints in Wet Areas: <<***Self-leveling polyurethane "traffic-grade"; Non-sag polyurethane "traffic-grade"; Non-sag polyurethane "non-traffic-grade"; or _____***>> sealant suitable for continuous liquid immersion.
 4. <<Type _____ - ; or None - N/A>>Wall, Ceiling, and Floor Joints Where Tamper-Resistance is Required: Non-sag <<***tamper-resistant polyurethane; tamper-resistant silyl-terminated polyurethane; epoxy; or _____***>> sealant.
 5. <<Type _____ - ; or None - N/A>>Joints between Fixtures in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; <<***white; clear; or _____***>>.
 6. <<Type _____ - ; or None - N/A>>In Sound-Rated Assemblies: <<***Acrylic emulsion latex; or _____***>> sealant.
 7. <<Type _____ - ; or None - N/A>>Narrow Control Joints in Interior Concrete Slabs: Self-leveling <<***epoxy; polyurea; polyurethane; or _____***>> sealant.
 8. <<Type _____ - ; or None - N/A>>Other Floor Joints: <<***Self-leveling polyurethane "traffic-grade"; Non-sag polyurethane "traffic-grade"; Non-sag polyurethane "non-traffic-grade"; or _____***>> sealant.
- D. Interior Wet Areas: <<***Bathrooms; restrooms; kitchens; food service areas; food processing areas; and _____***>>; fixtures in wet areas include <<***plumbing fixtures; food service equipment; countertops; cabinets; other similar items; and _____***>>.
- E. Sound-Rated Assemblies: Walls and ceilings identified as "STC-rated", "sound-rated", or "acoustical".
- F. Areas Where Tamper-Resistance is Required: <<***As indicated on the drawings; or _____***>>.

2.03 JOINT SEALANTS - GENERAL

- A. Sealants and Primers: Provide products with levels of volatile organic compound (VOC) content as indicated in Section **01 6116**.

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- B. Sealants and Primers: Provide products having lower volatile organic compound (VOC) content than indicated in SCAQMD 1168.
- C. Colors: As indicated on the drawings.

2.04 NONSAG JOINT SEALANTS

----- Newer Silicones Better Suited For Exterior Use Than Earlier Formulations -----

- A. **<<Type _____ - ; or None - N/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: **<<Plus 100 percent, minus 50 percent; Plus and minus 50 percent; Plus and minus 35 percent; Plus and minus 25 percent; Plus and minus _____ percent; or _____>>**, minimum.
 - 2. Non-Staining To Porous Stone: Non-staining to light-colored **<<natural stone; marble; or _____>>** when tested in accordance with ASTM C1248.
 - 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
 - 4. Hardness Range: **<<15 to 35; or _____>>**, Shore A, when tested in accordance with ASTM C661.
 - 5. Color: **<<Match adjacent finished surfaces; As scheduled; As shown on drawings; or _____>>**.
 - 6. Color: To be selected by **Architect** from manufacturer's **<<standard; full; custom; or _____>>** range.
 - 7. Cure Type: **<<Single-component, neutral moisture curing; Multi-component, chemically curing; or _____>>**.
 - 8. Service Temperature Range: **<<Minus 65 to 180 degrees F (Minus 54 to 82 degrees C); _____ degrees F (_____ degrees C)>>**.
 - 9. Manufacturers:
 - a. Dow Corning Corporation**<< 756 SMS Building Sealant;; _____; or None - N/A>>**: www.dowcorning.com/construction/sle.
 - b. Dow Corning Corporation**<< 790 Silicone Building Sealant;; _____; or None - N/A>>**: www.dowcorning.com/construction/sle.
 - c. Dow Corning Corporation**<< 791 Silicone Weatherproofing Sealant;; _____; or None - N/A>>**: www.dowcorning.com/construction/sle.
 - d. Dow Corning Corporation**<< 795 Silicone Building Sealant;; _____; or None - N/A>>**: www.dowcorning.com/construction/sle.
 - e. Pecora Corporation**<< _____; or None - N/A>>**: www.pecora.com.
 - f. Sika Corporation**<< Sikasil WS-290;; _____; or None - N/A>>**: www.usa-sika.com.
 - g. Sika Corporation**<< Sikasil WS-295;; _____; or None - N/A>>**: www.usa-sika.com.
 - h. Sika Corporation**<< Sikasil 728NS;; _____; or None - N/A>>**: www.usa-sika.com.
 - i. _____.
 - j. Substitutions: **<<See Section 49 - 49; or Not permitted>>**.

----- Conventional Silicone Sealant -----

- B. **<<Type _____ - ; or None - N/A>>**Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: **<<Plus 100 percent, minus 50 percent; Plus and minus 50 percent; Plus and minus 35 percent; Plus and minus 25 percent; or Plus and minus _____ percent>>**, minimum.
 - 2. Hardness Range: **<<15 to 35; or _____>>**, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: **<<Match adjacent finished surfaces; As scheduled; As shown on drawings; or _____>>**.
 - 4. Color: To be selected by **Architect** from manufacturer's **<<standard; full; custom; or _____>>** range.

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5. Cure Type: <<**Single-component, neutral moisture curing; Multi-component, chemically curing; or _____**>>
6. Service Temperature Range: <<**Minus 65 to 180 degrees F (Minus 54 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
7. Manufacturers:
 - a. Fortifiber Building Systems Group<<**Moistop Sealant;; _____; or None - N/A**>>: www.fortifiber.com/sle.
 - b. Franklin International, Inc<<**Titebond 100% Silicone Sealant;; _____; or None - N/A**>>: www.titebond.com/sle.
 - c. Dow Corning Corporation<<**758 Silicone Weather Barrier Sealant;; _____; or None - N/A**>>: www.dowcorning.com/construction/sle.
 - d. Pecora Corporation<<**_____; or None - N/A**>>: www.pecora.com.
 - e. Sherwin-Williams Company<<**Silicone Rubber All Purpose Sealant;; _____; or None - N/A**>>: www.sherwin-williams.com.
 - f. Sika Corporation<<**Sikasil GP;; _____; or None - N/A**>>: www.usa-sika.com.
 - g. Sika Corporation<<**Sikasil WS-295;; _____; or None - N/A**>>: www.usa-sika.com.
 - h. Sika Corporation<<**Sikasil N-Plus US;; _____; or None - N/A**>>: www.usa-sika.com.
 - i. Sika Corporation<<**Sikasil 728NS;; _____; or None - N/A**>>: www.usa-sika.com.
 - j. _____.
 - k. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

----- White or Clear Mildew-Resistant -- Often Referred to as Tub & Tile or Kitchen & Bath ----

- C. <<**Type _____ - ; or None - N/A**>>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. Color: <<**White; Clear; or _____**>>.
 2. Manufacturers:
 - a. Pecora Corporation<<**_____; or None - N/A**>>: www.pecora.com.
 - b. Sika Corporation<<**Sikasil GP;; _____; or None - N/A**>>: www.usa-sika.com.
 - c. _____.
 - d. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

----- Newer "Hybrid" Sealants with Reported Longevity of Silicone but Lower Cost -----

- D. <<**Type _____ - ; or None - N/A**>>Silyl-Terminated <<**Polyether (STPE); Polyurethane (STPU); Polyether (STPE) and Polyurethane (STPU); or _____**>> 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 50 percent; Plus and minus 35 percent; Plus and minus 25 percent; Plus and minus _____ percent; or _____**>>, minimum.
 2. Hardness Range: <<**20 to 40; or _____**>>, Shore A, when tested in accordance with ASTM C661.
 3. Color: <<**Match adjacent finished surfaces; As scheduled; As shown on drawings; or _____**>>.
 4. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or _____**>> range.
 5. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
 6. Manufacturers:
 - a. Franklin International Inc<<**Titebond WeatherMaster ULTIMATE MP Sealant;; Titebond WeatherMaster Metal Roof Sealant;; Titebond WeatherMaster Sealant;; _____; or None - N/A**>>: www.titebond.com/sle.
 - b. Sherwin-Williams Company<<**Stampede 100 Low-Modulus Hybrid Urethane Sealant;; _____; or None - N/A**>>: www.sherwin-williams.com.

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- c. Sherwin-Williams Company<< **Stampede 1H Hybrid Sealant**; _____; or None - N/A>>: www.sherwin-williams.com.
- d. _____.
- e. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

----- Newer "Hybrid" Sealants with Reported Longevity of Silicone but Lower Cost -----

- E. <<**Type** _____ -; or None - N/A>> Tamper-Resistant, Silyl-Terminated <<**Polyether (STPE) and Polyurethane (STPU); Polyether (STPE); Polyurethane (STPU); or** _____>> 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 12-1/2 percent; or** _____>>, minimum
 - 2. Hardness Range: <<**25 to 30; 50 to 60; or** _____>>, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: <<**Match adjacent finished surfaces; As scheduled; As shown on drawings; or** _____>>.
 - 4. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or** _____>> range.
 - 5. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
 - 6. Manufacturers:
 - a. Pecora Corporation<< _____; or None - N/A>>: www.pecora.com.
 - b. Sika Corporation<< **SikaHyflex-150 LM**; _____; or None - N/A>>: www.usa-sika.com.
 - c. _____.
 - d. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

----- Conventional Polyurethane, Not for Continuous Immersion, Not Tamper-Resistant -----

- F. <<**Type** _____ -; or None - N/A>> Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; <<**single or multi-component; single component; multi-component; or** _____>>; not expected to withstand continuous water immersion or traffic.
- 1. Movement Capability: <<**Plus 100 percent, minus 50 percent; Plus and minus 50 percent; Plus and minus 35 percent; Plus and minus 25 percent; Plus and minus _____ percent; or** _____>>, minimum.
 - 2. Hardness Range: <<**20 to 35; or** _____>>, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: <<**Match adjacent finished surfaces; As shown on drawings; As scheduled; or** _____>>.
 - 4. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or** _____>> range.
 - 5. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
 - 6. Manufacturers:
 - a. Pecora Corporation<< _____; or None - N/A>>: www.pecora.com.
 - b. The QUIKRETE Companies<< **QUIKRETE® Polyurethane Non-Sag Sealant**; _____; or None - N/A>>: www.quikrete.com.
 - c. Sherwin-Williams Company<< **Stampede-1/-TX Polyurethane Sealant**; _____; or None - N/A>>: www.sherwin-williams.com.
 - d. Sherwin-Williams Company<< **Stampede 2NS Polyurethane Sealant**; _____; or None - N/A>>: www.sherwin-williams.com.
 - e. Sika Corporation<< **Sikaflex-1a**; _____; or None - N/A>>: www.usa-sika.com.
 - f. Sika Corporation<< **Sikaflex-15 LM**; _____; or None - N/A>>: www.usa-sika.com.
 - g. Sika Corporation<< **Sikaflex-2c NS**; _____; or None - N/A>>: www.usa-sika.com.

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h. W. R. Meadows, Inc<< **POURTHANE NS**>>; _____; or None - N/A>>:
www.wrmeadows.com/sle.

i. _____.

j. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

----- Polyurethane Suitable for Continuous Immersion in Potable Water (not chemicals) ----

G. <<**Type** _____ -; or None - N/A>>Polyurethane Sealant for Continuous Water Immersion: ASTM C920, Grade NS, Uses M and A; <<**single or multi-component; single component; multi-component; or** _____>>; explicitly approved by manufacturer for continuous water immersion; suitable for traffic exposure when recessed below traffic surface.

1. Movement Capability: <<**Plus 100 percent, minus 50 percent; Plus and minus 50 percent; Plus and minus 35 percent; Plus and minus 25 percent; Plus and minus _____ percent; or** _____>>, minimum.
2. Hardness Range: <<**20 to 35; or** _____>>, Shore A, when tested in accordance with ASTM C661.
3. Color: <<**Match adjacent finished surfaces; As scheduled; As shown on the drawings; or** _____>>.
4. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or** _____>> range.
5. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
6. Manufacturers:
 - a. Sika Corporation<< **Sikaflex-1a**>>; _____; or None - N/A>>: www.usa-sika.com.
 - b. Sika Corporation<< **Sikaflex-2c NS**>>; _____; or None - N/A>>:
www.usa-sika.com.
 - c. _____.
 - d. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

----- Nonsag Traffic-Grade Polyurethane -----

H. <<**Type** _____ -; _____ -; or None - N/A>>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; Plus and minus 12-1/2 percent; or** _____>>, minimum.
2. Hardness Range: <<**40 to 50; or** _____>>, Shore A, when tested in accordance with ASTM C661.
3. Color: <<**Match adjacent finished surfaces; As shown on drawings; As scheduled; or** _____>>.
4. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or** _____>> range.
5. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
6. Manufacturers:
 - a. _____.
 - b. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

----- Polyurethane That's Harder Than Normal, to Resist "Picking Out" -----

I. <<**Type** _____ -; _____ -; or None - N/A>>Tamper-Resistant Polyurethane Sealant: ASTM C920, Grade NS, Uses M, G, and A; single or multi-component; not expected to withstand continuous water immersion or traffic.

1. Movement Capability: <<**Plus and minus 12-1/2 percent; or** _____>>, minimum.
2. Hardness Range: <<**50 to 60; or** _____>>, Shore A, when tested in accordance with ASTM C661.

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3. Color: <<**Match adjacent finished surfaces; As shown on drawings; As scheduled; or** _____>>.
4. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or** _____>> range.
5. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
6. Manufacturers:
 - a. Pecora Corporation<<_____; **or None - N/A**>>: www.pecora.com.
 - b. _____.
 - c. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

---- Epoxy Sealant is Not as Flexible as Others, Use It Where Its Hardness is Desirable ----

- J. <<**Type** _____ - ; _____ - ; **or None - N/A**>>Epoxy Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
1. Hardness Range: <<**65 to 75; or _____**>>, Shore A, when tested in accordance with ASTM C661.
 2. Color: <<**Match adjacent finished surfaces; As shown on drawings; As scheduled; or** _____>>.
 3. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or** _____>> range.
 4. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
 5. Manufacturers:
 - a. _____.
 - b. _____.
 - c. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

---- Polysulfides Have Only Medium Movement, Used Primarily for Chemical Resistance ----

- K. <<**Type** _____ - ; **or None - N/A**>>Polysulfide Sealant: ASTM C920, Grade NS, Uses M and A; <<**single or multi-component; single component; multi-component; or _____**>>; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: <<**Plus and minus 25 percent; or _____**>>, minimum.
 2. Hardness Range: <<**20 to 35; or _____**>>, Shore A, when tested in accordance with ASTM C661.
 3. Color: <<**Match adjacent finished surfaces; As scheduled; As shown on drawings; or** _____>>.
 4. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or** _____>> range.
 5. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
 6. Manufacturers:
 - a. Pecora Corporation<<_____; **or None - N/A**>>: www.pecora.com.
 - b. W.R. Meadows, Inc<<_____; **Deck-O-Seal Gun Grade;** _____; **or None - N/A**>>: www.wrmeadows.com/sle.
 - c. _____.
 - d. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

---- Polysulfide is One of Few Suitable for Continuous Water Immersion ----

- L. <<**Type** _____ - ; **or None - N/A**>>Polysulfide Sealant for Continuous Water Immersion: Polysulfide; ASTM C920, Grade NS, Uses M and A; <<**single or multi-component; single component; multi-component; or _____**>>; explicitly approved by manufacturer for continuous water immersion; not expected to withstand traffic.
1. Movement Capability: <<**Plus and minus 25 percent; or _____**>>, minimum.
 2. Hardness Range: <<**20 to 35; or _____**>>, Shore A, when tested in accordance with ASTM C661.

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3. Color: <<**Match adjacent finished surfaces; As scheduled; As shown on drawings; or _____**>>.
4. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or _____**>> range.
5. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
6. Manufacturers:
 - a. Pecora Corporation<<**; Synthacalk GC2+;; _____; or None - N/A**>>: www.pecora.com.
 - b. W.R. Meadows, Inc<<**; Deck-O-Seal Gun Grade;; _____; or None - N/A**>>: www.wrmeadows.com/sle.
 - c. _____.
 - d. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

---- Newer "Hybrid" Sealant, Water-Based, Much Greater Movement Than Plain Latex ----

- M. <<**Type _____ - ; or None - N/A**>>Acrylic-Urethane Sealant: Water-based; ASTM C920, Grade NS, Uses M and A; single component; paintable; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: <<**Plus and minus 12-1/2 percent; Plus and minus 25 percent; Plus and minus 35 percent; or _____**>>, minimum.
 2. Hardness Range: <<**20 to 40; or _____**>>, Shore A, when tested in accordance with ASTM C661.
 3. Color: <<**White; Clear; or _____**>>.
 4. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
 5. Manufacturers:
 - a. Franklin International, Inc<<**; Titebond UA 920 Sealant;; _____; or None - N/A**>>: www.titebond.com/sle.
 - b. Sherwin-Williams Company<<**; Shermax Urethanized Elastomeric Sealant;; _____; or None - N/A**>>: www.sherwin-williams.com.
 - c. _____.
 - d. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

---- Conventional Acrylic Latex, Interior Non-Wet Areas Only, No to Low Movement ----

- N. <<**Type _____ - ; or None - N/A**>>Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
1. Color: <<**Standard colors matching finished surfaces; As shown on drawings; As scheduled; or _____**>><<**, Type OP (opaque);, Type C (clear or translucent);, _____; or None - N/A**>>.
 2. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or _____**>> range.
 3. Grade: ASTM C834; <<**Grade - Minus 18 Degrees C; Grade - 0 Degrees C; Grade - NF; or _____**>>.
 4. Manufacturers:
 - a. Franklin International, Inc<<**; Titebond GREENchoice Acoustical Smoke & Sound Sealant;; Titebond Painter's Plus Caulk;; Titebond Painter's Caulk;; _____; or None - N/A**>>: www.titebond.com/sle.
 - b. Hilti, Inc<<**; CP 506 Smoke and Acoustical Sealant;; _____; or None - N/A**>>: www.us.hilti.com/#sle.
 - c. Hilti, Inc<<**; CP 572 Smoke and Acoustical Spray Sealant;; _____; or None - N/A**>>: www.us.hilti.com/#sle.
 - d. Pecora Corporation<<**; _____; or None - N/A**>>: www.pecora.com.
 - e. Sherwin-Williams Company<<**; White Lightning 3006 Siliconized Acrylic Latex Caulk;; _____; or None - N/A**>>: www.sherwin-williams.com.

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- f. Sherwin-Williams Company<< **850A Acrylic Latex Caulk**>>; _____; or None - N/A>>: www.sherwin-williams.com.
- g. Sherwin-Williams Company<< **950A Siliconized Acrylic Latex Caulk**>>; _____; or None - N/A>>: www.sherwin-williams.com.
- h. Sherwin-Williams Company<< **Bolt Quickdry Siliconized Acrylic Latex Caulk**>>; _____; or None - N/A>>: www.sherwin-williams.com.
- i. Sherwin-Williams Company<< **Powerhouse Siliconized Acrylic Latex Sealant**>>; _____; or None - N/A>>: www.sherwin-williams.com.
- j. Specified Technologies Inc<< **Smoke N' Sound Acoustical Sealant**>>; **Smoke N' Sound Acoustical Spray**>>; _____; or None - N/A>>: www.stifirestop.com/#sle.
- k. _____.
- l. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

---- Solvent Based -- Significant VOCs ----

- O. <<**Type** _____ - ; or None - N/A>>Butyl Sealant: Solvent-based; ASTM C1311; single component, nonsag; not expected to withstand continuous water immersion or traffic.
 - 1. Hardness Range: <<**10 to 30; or** _____>>, Shore A, when tested in accordance with ASTM C661.
 - 2. Color: <<**Match adjacent finished surfaces; As scheduled; As shown on drawings; or** _____>>.
 - 3. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or** _____>> range.
 - 4. Service Temperature Range: <<**Minus 13 to 180 degrees F (Minus 25 to 82 degrees C);** _____ **degrees F (_____ degrees C)**>>.
 - 5. Manufacturers:
 - a. Sherwin-Williams Company<< **Storm Blaster All Season Sealant**>>; _____; or None - N/A>>: www.sherwin-williams.com.
 - b. _____.
 - c. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

---- The Only Available Non-Curing Type -- SOLVENT BASED ----

- P. <<**Type** _____ - ; or None - N/A>>Non-Curing Butyl Sealant: Solvent-based; ASTM C1311; single component, non-sag, non-skinning, non-hardening, non-bleeding; vapor-impermeable; intended for fully concealed applications.
 - 1. Manufacturers:
 - a. _____.
 - b. _____.
 - c. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

2.05 SELF-LEVELING SEALANTS

---- Self-Leveling Silicone Sealants -- Must Be Recessed Below Surface ----

- A. <<**Type** _____ - ; _____; or None - N/A>>Self-Leveling Silicone Sealant: ASTM C920, Grade P, Uses M and A; <<**single or multicomponent; single-component; multicomponent; or** _____>>, explicitly approved by manufacturer for traffic exposure when recessed below traffic surface; not expected to withstand continuous water immersion.
 - 1. Movement Capability: <<**Plus 100 percent, minus 50 percent; Plus and minus 50 percent; Plus and minus 35 percent; Plus and minus 25 percent; Plus and minus** _____ **percent; or** _____>>, minimum.
 - 2. Hardness Range: <<**0 to 15; or** _____>>, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: <<**Gray; _____; or Color as selected**>>.
 - 4. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or** _____>> range.
 - 5. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C);** _____ **degrees F (_____ degrees C)**>>.

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6. Manufacturers:
 - a. Sika Corporation<< **Sikasil 728RCS**>>; _____; or None - N/A>>: www.usa-sika.com.
 - b. Sika Corporation<< **Sikasil 728SL**>>; _____; or None - N/A>>: www.usa-sika.com.
 - c. _____.
 - d. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

---- Conventional Self-Leveling Polyurethane Sealant, Assumed to be Traffic-Grade ----

- B. <<**Type** _____ -; or None - N/A>>Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; <<**single or multi-component; single component; multi-component; or** _____>>; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion.
 1. Movement Capability: <<**Plus and minus 25 percent; Plus and minus** _____ **percent; or** _____>>, minimum.
 2. Hardness Range: <<**35 to 55; or** _____>>, Shore A, when tested in accordance with ASTM C661.
 3. Color: <<**Gray; _____; or Color as selected**>>.
 4. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or** _____>> range.
 5. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
 6. Manufacturers:
 - a. Pecora Corporation<< _____; or None - N/A>>: www.pecora.com.
 - b. The QUIKRETE Companies<< **QUIKRETE® Polyurethane Self-Leveling Sealant**>>; _____; or None - N/A>>: www.quikrete.com.
 - c. Sherwin-Williams Company<< **Stampede 1SL Polyurethane Sealant**>>; _____; or **None - N/A**>>: www.sherwin-williams.com.
 - d. Sherwin-Williams Company<< **Stampede 2SL Polyurethane Sealant**>>; _____; or **None - N/A**>>: www.sherwin-williams.com.
 - e. Sika Corporation<< **Sikaflex-1c SL**>>; _____; or None - N/A>>: www.usa-sika.com.
 - f. Sika Corporation<< **Sikaflex-2c SL**>>; _____; or None - N/A>>: www.usa-sika.com.
 - g. _____.
 - h. Substitutions: <<**See Section 49 - 49; or Not permitted**>>.

---- Traffic-Grade Polyurethane for Continuous Immersion ----

- C. <<**Type** _____ -; or None - N/A>>Self-Leveling Polyurethane Sealant for Continuous Water Immersion: Polyurethane; ASTM C920, Grade P, Uses M and A; <<**single or multi-component; single component; multi-component; or** _____>>; explicitly approved by manufacturer for traffic exposure and continuous water immersion.
 1. Movement Capability: <<**Plus and minus 25 percent; Plus and minus** _____ **percent; or** _____>>, minimum.
 2. Hardness Range: <<**35 to 55; or** _____>>, Shore A, when tested in accordance with ASTM C661.
 3. Color: <<**Gray; _____; or Color as selected**>>.
 4. Color: To be selected by **Architect** from manufacturer's <<**standard; full; custom; or** _____>> range.
 5. Service Temperature Range: <<**Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)**>>.
 6. Manufacturers:
 - a. Sika Corporation<< **Sikaflex-1c SL**>>; _____; or None - N/A>>: www.usa-sika.com.
 - b. Sika Corporation<< **Sikaflex-2c SL**>>; _____; or None - N/A>>: www.usa-sika.com.

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- c. W. R. MEADOWS, Inc<<: POURTHANE SL;: _____; or None - N/A>>:
www.wrmeadows.com.
- d. _____.
- e. Substitutions: <<See Section 49 - 49; or Not permitted>>.

----- Newer "Hybrid" Sealants with Reported Longevity of Silicone but Lower Cost -----

- D. <<Type _____ - ; or None - N/A>>Self-Leveling Silyl-Terminated <<Polyether/Polyurethane (STPE/STPU); Polyether (STPE); Polyurethane (STPU); or _____>> Sealant: ASTM C920, Grade P, Uses M and A; single component; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion.
- 1. Movement Capability: <<Plus and minus 35 percent; Plus and minus 25 percent; Plus and minus _____ percent; or _____>>.
 - 2. Hardness Range: <<30 to 55; or _____>>, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: <<Gray; _____; or Color as selected>>.
 - 4. Color: To be selected by Architect from manufacturer's <<standard; full; custom; or _____>> range.
 - 5. Service Temperature Range: <<Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)>>.
 - 6. Manufacturers:
 - a. Pecora Corporation<<: _____; or None - N/A>>: www.pecora.com.
 - b. _____.
 - c. Substitutions: <<See Section 49 - 49; or Not permitted>>.

---- Polysulfides Have Only Medium Movement, Used Primarily for Chemical Resistance ----

- E. <<Type _____ - ; or None - N/A>>Self-Leveling Polysulfide Sealant: ASTM C920, Grade P, Uses M and A; multicomponent; explicitly approved by manufacturer for traffic exposure and continuous water immersion.
- 1. Movement Capability: <<Plus and minus 25 percent; Plus and minus _____ percent; or _____>>.
 - 2. Hardness Range: <<30 to 55; or _____>>, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: <<Gray; _____; or Color as selected>>.
 - 4. Color: To be selected by Architect from manufacturer's <<standard; full; custom; or _____>> range.
 - 5. Service Temperature Range: <<Minus 40 to 180 degrees F (Minus 40 to 82 degrees C); _____ degrees F (_____ degrees C)>>.
 - 6. Manufacturers:
 - a. W.R. Meadows, Inc<<: Deck-O-Seal (pourable);: _____; or None - N/A>>:
www.wrmeadows.com/sle.
 - b. W.R. Meadows, Inc<<: Deck-O-Seal 125;: _____; or None - N/A>>:
www.wrmeadows.com/sle.
 - c. W.R. Meadows, Inc<<: Deck-O-Seal 150;: _____; or None - N/A>>:
www.wrmeadows.com/sel.
 - d. _____.
 - e. Substitutions: <<See Section 49 - 49; or Not permitted>>.

---- Joint Filler for Concrete Slab Saw-Cuts and Narrow Cracks ----

- F. <<Type _____ - ; or None - N/A>>Rigid Self-Leveling Polyurethane Joint Filler: Two part, low viscosity, fast setting; intended for cracks and control joints not subject to significant movement.
- 1. Hardness Range: Greater than 100, Shore A, and <<50 to 80; or _____>>, Shore D, when tested in accordance with ASTM C661.
 - 2. Manufacturers:
 - a. ARDEX Engineered Cements<<: ARDEX ARDIFIX;: _____; or None - N/A>>:
www.ardexamericas.com.

MASTER TEXT ONLY

- b. _____.
- c. Substitutions: <<See Section 49 - 49; or Not permitted>>.

---- Joint Filler for Concrete Slab Saw-Cuts and Narrow Cracks ----

- G. <<Type _____ -; _____ -; or None - N/A>>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: <<Single or multi-component; Multi-component; Single-component; or _____>>, 100 percent solids by weight.
 2. Hardness: Minimum of <<85 (Shore A) or 35 (Shore D); or _____>>, when tested in accordance with ASTM D2240 after 7 days.
 3. Color: <<Concrete gray; Match adjacent finished surfaces; As indicated on drawings; or _____>>.
 4. Color: To be selected by Architect from manufacturer's <<standard; custom; or _____>> colors.
 5. Joint Width, Minimum: <<1/8 inch (3 mm); _____ inch (_____ mm)>>.
 6. Joint Width, Maximum: <<1/4 inch (6 mm); 3/4 inch (19 mm); _____ inch (_____ mm)>>.
 7. Joint Depth: Provide product suitable for joints from <<1/8 inch (3 mm); 1/4 inch (6 mm); _____ inch (_____ mm)>> to <<2 inches (51 mm); _____ inches (_____ mm)>> in depth <<including; or excluding>> space for backer rod.
 8. Manufacturers:
 - a. Dayton Superior Corporation<< Pro-Poxy P606;; _____; or None - N/A>>: www.daytonsuperior.com.
 - b. Euclid Chemical Company<< EUCO 700;; _____; or None - N/A>>: www.euclidchemical.com/#sle.
 - c. Nox-Crete<< DynaFlex 502;; _____; or None - N/A>>: www.nox-crete.com/#sle
 - d. W.R. Meadows, Inc<< Rezi-Weld Flex;; _____; or None - N/A>>: www.wrmeadows.com/sle.
 - e. _____.
 - f. Substitutions: <<See Section 49 - 49; or Not permitted>>.

---- Joint Filler for Concrete Slab Saw-Cuts and Narrow Cracks ----

- H. <<Type _____ -; _____ -; or None - N/A>>Semi-Rigid Self-Leveling Polyurea Joint Filler: Two-component, 100 percent solids; intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.
1. Hardness: <<75; or _____>>, Shore A, minimum, when tested in accordance with ASTM D2240 after 7 days.
 2. Color: <<Concrete gray; Match adjacent finished surfaces; As indicated on drawings; or _____>>.
 3. Color: To be selected by Architect from manufacturer's <<standard; custom; or _____>> colors.
 4. Joint Width, Minimum: <<1/8 inch (3 mm); _____ inch (_____ mm)>>.
 5. Joint Width, Maximum: <<3/4 inch (19 mm); 1 inch (25 mm); _____ inch (_____ mm)>>.
 6. Joint Depth: Provide product suitable for joints from <<1/8 inch (3 mm); _____ inch (_____ mm)>> to <<1-1/2 inches (38 mm); 2 inches (51 mm); 2-1/4 inches (57 mm); _____ inches (_____ mm)>> in depth <<including; or excluding>> space for backer rod.
 7. Manufacturers:
 - a. Adhesives Technology Corporation<< Crackbond JF-311;; _____; or None - N/A>>: www.atcepoxy.com/sle.
 - b. ARDEX Engineered Cements<< ARDEX ARDISEAL RAPID PLUS;; _____; or None - N/A>>: www.ardexamericas.com.
 - c. Euclid Chemical Company<< EUCO QWIKjoint UVR;; _____; or None - N/A>>: www.euclidchemical.com/#sle.
 - d. Nox-Crete<< DynaFlex JF-85;; _____; or None - N/A>>: www.nox-crete.com
 - e. _____.

MASTER TEXT ONLY

- f. Substitutions: <<See Section 49 - 49; or Not permitted>>.

2.06 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. <<Type for Joints Not Subject to Pedestrian or Vehicular Traffic; or _____>>: ASTM C1330<< Type O - Open Cell Polyurethane; ; Type C - Closed Cell Polyethylene; ; Type B - Bi-Cellular Polyethylene; or; _____>>.
 2. Type for Joints Subject to Pedestrian or Vehicular Traffic: ASTM C1330<< Type C - Closed Cell Polyethylene; ; Type B - Bi-Cellular Polyethylene; or; _____>>.
 3. Open Cell: <<40 to 50; or _____>> percent larger in diameter than joint width.
 4. Closed Cell and Bi-Cellular: <<25 to 33; or _____>> percent larger in diameter than joint width.
 5. Manufacturers:
 - a. Nomaco, Inc<< HBR; ; HBR XL; ; SOF Rod; ; OC Foam; ; _____; or None - N/A>>: www.nomaco.com.
 - b. _____.
 - c. Substitutions: <<See Section 49 - 49; or Not permitted>>.
- 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.
- D. Preinstallation Adhesion Testing: Install a sample for each test location indicated in the test plan.
 1. Test each sample as specified in PART 1 under QUALITY ASSURANCE article.
 2. Notify **Architect** of date and time that tests will be performed, at least <<7 days; or _____>> in advance.
 3. Arrange for sealant manufacturer's technical representative to be present during tests.
 4. Record each test on Preinstallation Adhesion Test Log as indicated.
 5. If any sample fails, review products and installation procedures, consult manufacturer, or take whatever other measures are necessary to ensure adhesion; re-test in a different location; if unable to obtain satisfactory adhesion, report to **Architect**.
 6. After completion of tests, remove remaining sample material and prepare joint for new sealant installation.

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.

MASTER TEXT ONLY

- 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. Perform acoustical sealant application work in accordance with ASTM C919.
- D. 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; _____; or None - N/A >>.
- E. Measure joint dimensions and size joint backers to achieve the following << unless otherwise indicated; or None - N/A >>:
 - 1. Width/depth ratio of << 2:1; or _____ >>.
 - 2. Neck dimension no greater than << 1/3; 1/2; or _____ >> of the joint width.
 - 3. Surface bond area on each side not less than << 75; or _____ >> percent of joint width.
- F. Install bond breaker backing tape where backer rod cannot be used.
- G. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- H. 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.
- I. Nonsag Sealants: Tool surface << concave; flush; slightly recessed; or _____ >>, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
- J. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.04 FIELD QUALITY CONTROL

- A. Owner will employ an independent testing agency to perform field quality control inspection and testing as specified in PART 1 under QUALITY ASSURANCE article.
- B. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- C. Non-Destructive Adhesion Testing: If there are any failures in first << 100 linear feet (30 linear m); _____ linear feet (_____ linear m) >>, notify Architect immediately.
- D. Destructive Adhesion Testing: If there are any failures in first << 1000 linear feet (300 linear m); _____ linear feet (_____ linear m) >>, notify Architect immediately.
- E. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.
- F. Repair destructive test location damage immediately after evaluation and recording of results.

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 the low temperature in the thermal cycle. Report failures immediately and repair.

END OF SECTION