

SECTION 07900

JOINT SEALERS

PART GENERAL

SECTION INCLUDES

- Sealing of exterior joints.
- Sealing of interior joints.
- Sealing of floor joints.
- Sealing of pavement joints.
- Sealing of joints immersed in water.
- Sealing of glazing joints.

RELATED SECTIONS

- Section 02760 - Paving Specialties.
- Section 03300 - Cast-In-Place Concrete.
- Section 04300 - Brick Masonry Units.
- Section 04300 - Concrete Masonry Units.
- Section 05810 - Expansion Joint Assemblies.
- Section 06100 - Rough Carpentry.
- Section 06400 - Architectural Woodwork.
- Section 07620 - Sheet Metal Flashing and Trim.
- Section 07840 - Firestopping.
- Section 08500 - Windows.
- Section 08800 - Glazing.
- Section 08900 - Glazed Curtain Wall.
- Section 09260 - Gypsum Board Systems.

Section 09300 - Tile.

REFERENCES

ASTM C 1193 - Standard Guide for Use of Joint Sealants.

ASTM C 1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.

ASTM D 1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.

SUBMITTALS

Submit under provisions of Section 01300.

Product Data: Provide manufacturer's standard details and installation instructions.

Samples: Submit samples of cured sealant where required to match the Architect's sample.

Test Reports:

Submit results of manufacturer's preconstruction testing.

Submit report of field substrate adhesion tests.

Submit installer's preconstruction inspection report.

Identify any substrates requiring primers, type of primer recommended by manufacturer, and surface preparation required.

Installer Qualifications: Submit name, address, telephone, date company founded.

QUALITY ASSURANCE

Installer Qualifications:

Firm regularly engaged in installation of sealers of the type specified for not less than 5 years.

Preconstruction Testing:

Transmit samples of actual project materials to joint sealer manufacturer for adhesion testing, attention: Technical Director.

Identify samples by material manufacturer, origin,

designed use, project, Contractor's name, and joint sealer to be applied. Include drawings or sketches showing intended use, where applicable.

Sealer manufacturer shall perform adhesion testing to determine proper surface preparation, effective cleaning solvents, and whether priming is necessary to achieve optimum adhesion.

Sealer manufacturer shall test porous substrates submitted to determine potential for staining.

DELIVERY, STORAGE, AND HANDLING

Deliver materials in manufacturer's original, unopened containers.

Store between 40 and 90 degrees F (4-32 degrees C).

PROJECT CONDITIONS

Do not apply clear water repellent sealers, waterproofing compounds, or other architectural coatings to surfaces to which sealers will be applied without first verifying compatibility.

Install sealers when air and substrate temperatures are over 40 degrees F (4 degrees C) and rising, but less than 100 degrees F (37 degrees C), unless specific installation instructions are obtained from manufacturer.

WARRANTY

The Contractor and the installer shall jointly and severally warrant joint sealers against failure in material and workmanship for a period of 5 years from the date of Substantial Completion.

PART PRODUCTS

MANUFACTURER

Provide joint sealers manufactured by Polymeric Systems, Inc.; 723 Wheatland Street, Phoenixville PA 19460-3394; ASD. Tel: outside PA (800) CAULK-IT, Tel: inside PA (610) 935-1170; Fax: (610) 935-7123.

Substitutions: Not permitted.

JOINT SEALERS

One-Part Polysulfide: PSI-7000 Sealant Polysulfide Rubber Caulk.

Two-Part Polysulfide: PSI-350 Polysulfide Sealant.

Acetoxy Silicone:

PSI-601 Acetoxy Silicone Sealant.

Food contact: PSI-601-FG Food Grade Acetoxy Silicone Sealant.

Neutral Cure Silicone: PSI-631 Non-Corrosive Silicone Sealant.

Low Modulus Silicone Sealant: PSI-641 Low Modulus Silicone Sealant.

High-Temperature Silicone: PSI-613 Hi-Temperature Silicone Adhesive/Sealant.

One-Part Urethane:

Gun-grade, oxygen-cured: PSI-901 One-Part Urethane Sealant.

Gun-grade, moisture-cured: Flexiprene 1000 One-Part Urethane Sealant.

Self-leveling: Flexiprene PSI-952 One-Part Self-Leveling Urethane Sealant.

Two-Part Urethane:

Gun-grade: PSI-270 Two-Part Urethane Sealant.

Self-leveling: PSI-270SL Self-Leveling Two-Part Urethane Sealant.

Immersion-Type Polyurethane: National Sanitary Foundation (NSF) certified, and as follows:

Gun-grade: PSI-270 Urethane Sealant (Gun-Grade).

Self-leveling: PSI-270SL Urethane Sealant (Self-Leveling).

Hot-pour paving sealants are specified in Section 02760.

Fire-resistant sealants in through-penetration firestop assemblies are specified in Section 07840.

ACCESSORY MATERIALS

Primers: Provide primers where required by the schedule

at the end of this Section, and also where preconstruction tests indicate the need for primers to obtain optimum adhesion.

Joint Backing: Provide joint backing to control depth of sealant and to prevent 3-sided bond.

Backer rod: Closed cell polyethylene foam, complying with ASTM C 1330; diameter approximately 1-1/3 times joint width to provide support during sealer application and tooling.

Bond-breaker tape: Polyethylene tape; width equal to joint opening. Provide where back-up material is not necessary for depth control or where a type is used that does not have release properties.

Concrete expansion joint filler: Pre-formed, nonextruding, cellular neoprene sponge rubber expansion joint filler: ASTM D 1752, Type 1.

COLORS

Provide manufacturer's standard colors as selected by the Architect.

PSI-270 Two-Part Urethane Sealant (Gun-Grade).

White, off-white, limestone, gray, bronze, pine, black.

PSI-270SL Two-Part Urethane Sealant (Self-Leveling).

White, off-white, limestone, gray, bronze, pine, black.

PSI-350 Two-Part Polysulfide.

White, black, gray.

PSI-601 Acetoxy Silicone Sealant.

Clear, white, bronze, black, aluminum.

PSI-601-FG Food Grade Acetoxy Silicone Sealant.

PSI-631 Non-Corrosive Silicone Sealant.

Clear, white, black.

PSI-641 Low Modulus Silicone Sealant.

Clear, white, limestone, bronze, gray.

PSI-613 Hi-Temperature Silicone Adhesive/Sealant.

Red.

PSI-901 One-Part Urethane Sealant.

White, limestone, gray, bronze, tan, black.

PSI-7000 Sealant Polysulfide Rubber Caulk.

Off-white, limestone, gray, bronze.

Flexiprene PSI-952 One-Part Self-Leveling Urethane Sealant.

Gray, limestone.

Flexiprene 1000 One-Part Urethane Sealant.

White, gray, limestone, bronze, black, tan.

Provide custom colors to match the Architect's samples.
PSI-270 Two-Part Urethane Sealant (Gun-Grade).
PSI-270SL Two-Part Urethane Sealant (Self-Leveling).
PSI-350 Two-Part Polysulfide Sealant.
PSI-601 Acetoxy Silicone Sealant.
PSI-7000 Sealant Polysulfide Rubber Caulk.
Flexiprene 1000 One-Part Urethane Sealant.

Provide the following colors:
Sealant joints in masonry: Match mortar color.
Joints in precast concrete: Match color of precast matrix.
Joints around doors, windows, and other openings: Match color of adjacent wall material.
Joints in paving: Manufacturer's standard gray.
Joints in interior floors: Custom color to match the Architect's sample.

MIXING

Mix multi-part sealers in accordance with manufacturer's instructions, using only whole units. Do not mix partial units.

PART EXECUTION

EXAMINATION

Verify that dimensions are correct and substrate is in proper condition for installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

Substrates shall be clean, dry, and free of loose aggregate, laitance, paint, corrosion, oil, grease, tar, asphalt, mastic compounds, wax, waterproofing agents, release agents, and other deleterious substances.

PREPARATION

Remove foreign substances from substrate. Clean substrate in accordance with manufacturer's instructions.

Do not damage adjacent finishes; mask adjacent finished surfaces and adjacent porous surfaces that would be

damaged by primer, sealant, or cleaning agents.

Prime surfaces to receive sealant in accordance with manufacturer's instructions, and allow to dry before installing sealant. Do not apply primer to surfaces outside of the joint. Prime surfaces prior to installing backer rod or bond-breaker tape.

Install joint backing. Do not puncture, twist, compress more than 50 percent, or stretch backer during installation.

Install joint backing to control joint depth as indicated and to prevent 3-sided bond.

Install to control depth at midpoint of sealant as follows, unless otherwise indicated in the drawings or the manufacturer's instructions:

Joints 1/4-inch (6 mm) to 1/2-inch (12 mm) wide:
Depth equal to width.

Joints over 1/2-inch (12 mm) wide: 1/2-inch (12 mm) depth.

INSTALLATION

General: Install sealants in accordance with manufacturer's printed instructions and the requirements of ASTM C 1193.

Gun-Grade Sealers: Extrude sealer to completely fill joint. Tool to compress sealer against sides of joint and to eliminate air bubbles. Leave a neat, slightly recessed concave surface, unless otherwise indicated.

Self-Leveling Sealers: Pour sealer flush with adjacent surfaces.

Self-Leveling Sealers: Pour sealer to fill joint, slightly recessed below adjacent surfaces.

CLEANING

Clean primer and sealant from adjacent surfaces. Wipe fresh sealant immediately from adjacent surfaces. Cleaning agents used to remove sealant from equipment, tools, and impervious substrates may damage architectural finishes. Do not use agents harmful to finishes.

Remove masking tape from completed joints.

FIELD QUALITY CONTROL

Make a cut in the cured sealant across the joint the entire depth of the sealant. Make two vertical cuts several inches long, paralleling the sides of the joint as closely as possible and extending down from the cross cut. Grasp the free length of sealant and pull at a 90 degree angle, tearing sealant from joint for several inches.

Sealant tears cohesively: Pass.

Sealant fails in adhesion at joint face: Fail.

Remove, prepare anew, and reinstall failed sealants.

SCHEDULE OF JOINT SEALERS

General-Purpose Interior and Exterior Applications:

Sealer:

One-part, gun-grade polyurethane.

Two-part urethane.

One-part polysulfide.

Two-part polysulfide.

Neutral-cure silicone.

Low modulus silicone.

Applications:

Joints and recesses between adjacent constructions and frames, sills, and subsills of windows, doors, curtainwall, storefront, louvers, etc.

Coping joints and wash joints in precast concrete, cast stone, or natural stone.

Masonry joints beneath shelf angles.

Around penetrations in exterior walls.

Under door thresholds, and at bottom of door frames.

Wherever necessary to prevent infiltration of water or air into or through exterior building envelope.

Other Exterior Applications:

Sealer:

Neutral cure silicone.

Low modulus silicone.

Applications:

Between adjacent construction and gravel stops, copings, fascias, and miscellaneous flashings.

Metal flashing inserted into reglet.

Top edge of surface mounted counterflashing.

Expansion and control joints in masonry where

expansion joint covers are not indicated.
Joints between new and existing exterior
construction.

Interior Wetted Areas:

Sealer: Silicone.

Applications: Between adjacent construction and
vanities, shower stalls, bathtub and shower
enclosures, sinks, counter tops, plumbing cut-outs,
plumbing fixtures, etc.

Food Contact Surfaces:

Primer: None.

Glass (non-coated).

Ceramic tile, quarry tile.

Primer: PSI-690 Primer.

Aluminum (anodized and mill finish).

Iron and steel (carbon, stainless, galvanized).

Plastic (ABS, PVDF, polyurethane, PVC).

Wood.

Marble, slate.

Primer: PSI-691 Primer.

Concrete.

Sealer: Food contact acetoxysilicone.

Applications:

Between adjacent construction and sinks, counter
tops, equipment, plumbing cut-outs, plumbing
fixtures, etc.

Interior High-Movement Joints:

Sealer:

One-part, gun-grade polyurethane.

Two-part urethane.

One-part polysulfide.

Two-part polysulfide.

Neutral cure silicone.

Low modulus silicone.

Applications:

At resilient joint between interior partitions
and floor framing above.

Other Interior Applications:

Sealer:

Applications:

Between adjacent construction and equipment,
shelving, casework, furniture, etc.

Perimeters of door and window frames, access
panels, etc.

Between interior partitions and adjoining concrete or steel columns, walls, or other construction.

Other exposed locations within partitions to seal against passage of air.

Other interior joints of small dimension which require painting.

Gypsum board partitions:

Between gypsum panels and metal track at floors and dissimilar walls; install sealant just prior to installation of gypsum panel.

Between adjacent face layers of abutting intersection gypsum board partitions; install sealant before taping and finishing joint.

Between gypsum panels and penetrations: Seal around openings of ducts, pipes, etc. Seal sides and backs of electrical boxes.

Seal control joints prior to installing control joint trim.

Other concealed locations within partitions to completely seal against passage of air.

Allow sealant to cure before painting over joint.

Exterior Traffic Surfaces:

Sealer:

Self-leveling two-part urethane.

One-part urethane, self-leveling.

Applications:

Control and expansion joints in sidewalks and pavements.

Interior Traffic Surfaces:

Sealer:

Self-leveling two-part urethane.

One-part self-leveling urethane.

Applications:

Control and expansion joints in floors.

Interior Heavy Traffic Surfaces:

Surface preparation: Freshly saw-cut or blast-clean joints; blow with oil-free compressed air.

Sealer: Epoxy.

Pour flush with adjacent surface in 2 pours in accordance with manufacturer's instructions.

Applications: Control joints in floors subject to vehicular traffic.

Joints Subject to Water Immersion:

Primer: Primer 67.

Sealer:

Immersion-type gun-grade polyurethane.

Immersion-type self-leveling polyurethane.

Applications:

Joints subject to water immersion.

Joints in water tanks.

Joints in fountains and pools.

Allow to cure at least 5 days before immersing in water.

High-Temperature Surfaces:

Metal primer: PSI-690.

Sealer: High-temperature silicone.

Applications:

Between adjacent construction and engine exhaust pipes, hot water or steam pipes, etc.

Glazing:

Primer: None.

Glass (non-coated).

Ceramic tile, quarry tile.

Primer: PSI-690 Primer.

Aluminum (anodized and mill finish).

Iron and steel (carbon, stainless, galvanized).

Plastic (ABS, PVDF, polyurethane, PVC).

Wood.

Marble, slate.

Primer: PSI-691 Primer.

Concrete.

Sealer:

Acetoxy silicone.

Neutral cure silicone.

Low modulus silicone.

Applications:

Glazing, including butt and lap sheer joints, stopless glazing, and cap, head and toe bead in conventional glazing.

Curtain wall.

Storefront.

Glass partitions.

Glass blocks.

Solar panels.

Skylights.

END OF SECTION