



PSI-631

Non-corrosive Silicone Sealant

Product description

PSI-631 Non-Corrosive Silicone Sealant is a one-part, RTV, neutral cure, moisture curing sealant that is non-corrosive to all common building components. It cures to a tough, flexible rubber that has excellent primerless adhesion to glass, metals, vinyl building products, most plastics and painted surfaces. PSI-631 has little odor when curing and has excellent weatherability, durability and recovery after movement.

Basic uses

PSI-631 can be used in most construction and remedial sealant applications, including conventional glazing of glass, plastic, metal panels and silicone-insulated window units; general purpose weather sealing of most construction materials including glass, aluminum, painted metal, steel, brick, concrete, other masonry substrates and many plastics; sealing expansion and control joints in precast concrete panels and metal curtain walls; interior sealant applications where harsh odor may be objectionable such as perimeter door and window seals, vents and duct work.

Benefits

- Highly flexible over a wide temperature range.
- Excellent weatherability, durability and recovery after movement.
- Capable of compensating for joint movement of $\pm 25\%$ of the original joint width.
- Little odor when curing.

Application limitations

- Should not be used on damp, frozen or contaminated surfaces.
- Should not be used for structural or butt glazing, nor in expansion joints less than 1/4" in width or depth.
- Not recommended for sealing exterior insulation finish systems (EIFS).

- Should not be used in areas totally confined during cure as atmospheric moisture is required to trigger curing.
- Not recommended for application to materials that might bleed oils or solvents.
- Should not be used to seal natural stone, i.e., marble, light granite and limestone.
- Not for use on surfaces with reflective or special protective coatings without prior testing.
- Not recommended for horizontal joints subject to abrasion such as decks, walks, driveways, etc., unless properly recessed.
- Not for use to seal submerged and marine joints.

Color

Clear, White, Black. Custom colors available; minimum order 100 gallons.

Packaging

Available in 10.3 fl. oz. (305 ml) polyethylene cartridges, 12 cartridges per carton. Also available in 2 gallon pails, 5 gallon pails and 55 gallon drums on special order.

Applicable standards

PSI-631 meets or exceeds the requirements of Federal Specification TT-S-001543A, Class A; Federal Specification TT-S-00230C Type 2, Class A; ASTM C920-95 Type S, Grade NS, Class 25, use NT, G, A, and O; Canadian Specification CAN/CGSB 19.13-M87.

Installation

Joint design: The width of the bead should be a minimum of 4 times the calculated movement. A thin bead of silicone sealant will accommodate more movement than a thick bead. PSI-631 should be installed no thicker than 1/2" and no thinner than 1/4". Ideally, the ratio of the joint width to depth should be 2:1 with the depth never exceeding 1/2".

Closed cell polyethylene or polyurethane foam backer rod is recommended for installation into deep joints to control the depth. Bond breaker tape is recommended for joints too shallow to allow the insertion of backer rod. These materials permit the application of a thin bead while providing a non-stick surface, precluding a three-sided joint. Glazing rabbets and joints should be designed to allow the insertion and retention of these bond-breaking materials during application and curing of the sealant.

PSI-631 is capable of compensating for joint movement of $\pm 25\%$ of the original joint width. Panels and lights of less than 100 united inches should allow a minimum width of 1/4" for the sealant bead. Larger panels and lights and those made of plastic require a design width of at least 4 times the calculated movement.

Surface preparation: Clean joints and glazing areas by removing foreign matter and contaminants such as moisture, frost, dirt, dust, oil, grease, protective coatings or previously applied sealants.

Priming: PSI-631 has excellent adhesion to most surfaces. It adheres to porous materials such as concrete, and to non-porous substrates including glass and tile, ceramics; plastics, such as PVC, polycarbonate and polymethacrylates; and common metals, such as aluminum and steel. In cases where adhesion appears to be insufficient, use PSI-690 Primer for non-porous surfaces. To determine if a primer is required, apply a thin bead of sealant to the substrate, let fully cure and then pull up one end of the bead. PSI-631 will not adhere to polyethylene or polypropylene.

Method of Application: PSI-631 is applied using conventional or

air-operated guns after the joint has been properly prepared to receive the sealant. The sealant should be tooled to insure intimate contact with and subsequent wetting out of the substrate in the entire rabbet area. Sealant should be struck off at an angle in the sill area so that water will not pool. Excess sealant should be wiped from the surrounding areas while still uncured and the area wiped with a commercial solvent such as mineral spirits, xylol or isopropyl alcohol. Consult manufacturer's MSDS for safety precautions when using these flammable solvents.

Curing characteristics: PSI-631 has a work life (tooling time) of 5 to 10 minutes. Moisture content of the air during application and cure has a direct influence on its work life and cure speed. PSI-631 can be applied at outdoor temperatures of -35°F (-37°C) if surfaces are clean and frost-free. After cure it remains rubbery to -80°F (-62°C) and will retain its properties after extended exposure up to 400°F (204°C).

Shelf life: One year from date of shipment when stored in original, unopened container in a dry area at temperatures below 80°F (27°C).

Performance Data*		
Properties	Results	Test Method
Uncured Properties - 70°F (21°C) & 50% RH		
Skin-over time	10 to 20 minutes	ASTM C679
Cure time, 1/8" bead	<24 hours	PSI S202
Sag/slump	<0.01	ASTM C639
VOC content	0.4 lb/gal.	
Specific gravity	1.02	
Density	8.5 lb/gal.	
Cured Physical Properties - 7 days at 70°F (21°C) & 50% RH		
Hardness, Shore A	35	ASTM C661
Tensile strength	225 psi	ASTM D412
Ultimate elongation	325%	ASTM D412
Service temperature, cured bead	-80 to 400°F (-62 to 204°C)	PSI S406
Adhesion-in-peel, aluminum, glass & vinyl	20 to 25 lb/in.	ASTM C794
Cured Construction Properties - 7 days at 70°F (21°C) & 50% RH		
Weight loss	5% max.	ASTM C792
Cracking & chalking after heat aging	None	
Durability (bond & cohesion) movement on glass, aluminum & concrete	$\pm 25\%$	ASTM C719
Weathering and UV resistance	Excellent	ASTM C793, ASTM C794
Staining	None	ASTM C510

* Typical properties are for information only, not for purposes of specification.

Health precautions

- Application area should be well ventilated. An irritating substance is evolved during cure. If high concentrations are inhaled for long periods of time health affects cannot be ruled out.
- Uncured sealant may cause skin irritation. In case of skin contact, remove with dry cloth or paper towel and wash with soap and water.
- Uncured sealant may cause eye irritation. Contact lens wearers should take appropriate precautions. In case of eye contact, flush eyes with water and call physician.
- Keep out of reach of children.

For additional health and safety information, consult a Material Safety Data Sheet.

Maintenance

If the sealant is damaged and the bond is intact, cut out the damaged area and recaulk. No primer is required. If the bond has been affected, remove the old sealant, clean and prepare the joint in accordance with instructions under "Surface Preparation" and recaulk.

Technical services

PSI provides field service, performance data, specification assistance, and use evaluations.

Adhesion testing by PSI: This program is intended to eliminate potential field application problems by pre-testing the adhesion of PSI's construction sealants on samples of building materials submitted by the customer. The tests will aid in determining the proper surface preparation method, effective solvents for cleaning and whether priming is necessary to achieve optimum adhesion. Following this procedure will remove many of the variables that affect field success.

Test samples should be identified as to manufacturer, origin, designed use, building project, person and firm originating the request. Appropriate sketches of drawings showing the intended use can be helpful. They should be sent to the attention of PSI's Technical Director.

Jobsite testing of substrates: A field test can be performed by applying several feet of the sealant to a representative joint and letting it reach full cure. 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° angle to determine if a good bond has developed. With good adhesion, the sealant will usually tear cohesively or be difficult to remove from the surface.

Availability and cost

Polymeric Systems, Inc., is a part of Whitford Worldwide. For more information, please contact Polymeric Systems or Whitford Plastics Ltd. at:

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