Sili-Thane™ 803 Elastomeric Adhesive/Sealant

Product description

Sili-Thane 803 is a low odor, one-part, gun-grade, moisture-curing, polyether-based sealant. It has been specifically designed for a wide range of applications, including dynamically moving joints, bonding dissimilar materials, and sealing joints with varying coefficients of expansion. It cures to a medium-modulus rubber with extraordinary adhesion capable of accommodating joint movement of ±25% of the original joint width. In contrast to urethane sealants, Sili-Thane 803 will not foam or bubble when exposed to moist substrates or high humidity conditions during cure.

Basic uses

Use Sili-Thane 803 for interior and exterior perimeter caulking of frame openings; expansion control and isolation joints; coping and coping-to-facade joints; cornice and wash joints; poured-in-place; panels; tilt-up; underside of precast planks; top of non-loadbearing walls; steps and risers; non-structural glazing; etc. It is also suitable for manufacturing uses, such as building travel trailers, mobile homes, extruded PVC windows and doors, and many other OEM applications.

Sili-Thane 803 has been tested and found to have excellent adhesion to unprimed aluminum, acrylic-coated aluminum, brass, steel, stainless steel, tin, concrete, mortar, granite, slate, glass, ceramic tile, fiberglass, ABS, PVC, Nylon 66, polyester, lauan wood and plywood.

Sili-Thane 803 has been tested and found to have adhesive/cohesive failure-in-peel to unprimed polystyrene, polycarbonate and acrylic.

Benefits

- Superior UV resistance; does not yellow, crack, craze or chalk.
- Very low odor for interior or exterior use.
- Solvent- and isocyanate-free; low VOCs.
- Nil shrinkage.
- Minimal dirt pick-up.
- Non-gassing; will not foam or bubble.
- Non-corrosive.
- Paintable after cure.
- Exceptional adhesion to wet or dry surfaces; good underwater adhesion to non-porous surfaces.
- Gunnable at cold temperatures.
- Long life (20+ years).

Application limitations

- Should not be used for structural or butt glazing, nor in expansion joints less than 1/4” in width or depth.
- Not recommended for use in water immersion applications on porous substrates.
- Not for use on absorptive surfaces such as marble, limestone or granite without prior testing for discoloration or staining. Testing has shown that Sili-Thane 803 is less likely to cause staining than silicones or urethanes.
- Sealant must be fully cured before painting. Recommended paint is acrylic latex. Some solvent-based alkyd and acrylic paints may not adhere or cure properly. Any paint to be used should be tested on the sealant before using.
- Not for use in any application to be immersed in organic solvents.
- For applications on glass where the sealant is exposed to strong UV, a primer is required.

Colors

White, Gray, Limestone, Black. Custom colors available; minimum order quantities apply.

Packaging

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

Applicable standards

Sili-Thane 803 meets or exceeds the requirements of Federal Specification TT-S-00230C, Type II, Class A; ASTM C920, Type S, Grade NS, Class 25, Use NT, G, M, A, and O; CAN/CGSB 19.13-M87.

Installation

Joint design: The width of the joint should be a minimum of 4 times the calculated joint movement. Minimum allowable joint width or depth is 1/4". In joints up to 1/2" wide, sealant depth should be equal to the width. In joints wider than 1/2", the depth should be maintained at 1/2". Joints should not exceed 1/2" deep and 1" wide.

For butt joints, see PSI's Joint Design Chart for recommended joint designs for specific building materials. Lap shear joints should have a width of at least twice the anticipated movement.

Surface preparation:

Joints to receive sealant must be clean, sound, dry, smooth, uniform in dimensions, and free from defects, frost and all contaminants, such as waterproofing sealers, curing compounds, coatings, etc. To test adhesion, apply a bead of sealant and allow to cure thoroughly. Then pull one end of the bead to test adhesive strength. Protecting the top joint edges with masking tape will help make a nicer looking job.

Priming: Sili-Thane 803 has excellent adhesion to most common, firm, uncontaminated materials. In some applications it may be prudent to use a primer; for example, concrete that is friable, frequently wet or sandy, and some plastics. For porous surfaces, such as concrete, PSI-591 Primer is recommended. For non-porous surfaces and some plastics, PSI-690 is recommended. Because substrate composition and condition varies, any sealant/primer combination should be tested before use.

Backup material: The purpose of backup material is to regulate the joint depth; to provide a surface against which the sealant is compressed when tooled, thus promoting better adhesion to the side walls; and to provide a non-adhering back surface, precluding the possibility of a three-sided joint. Where backup material is not necessary or where a type is used that does not have release properties, a bond breaker tape should be used.

Closed-cell polyethylene foam backup material is recommended. It should not be twisted, punctured or excessively stretched during installation, nor should it be compressed more than 50% its original diameter. Open cell backer rod is compatible with all PSI sealants as long as it remains dry.

Application: For adhesive applications, apply sealant and press surfaces together firmly. For sealant applications, install backing material, apply

Performance Data*

Properties	Results	Test Method
Uncured Properties		
Skin-over time	30 minutes	ASTM C679
Cure time, 1/8" bead	<24 hours	PSI S204
Sag	<0.1 inches	ASTM C2202
VOC content	18 gms/L (0.15 lbs/gal)	
Specific gravity	1.7	
Pounds/gallon	14	
Extrusion rate @ 40 psi, 1/8" orifice	70 gm/min.	TT-S-000230C
Cured Properties - 7 days at 70°F (21°C) & 50% RH		
Hardness, Shore A	35	ASTM D412
Tensile at break	180 psi	ASTM D412
Tensile @ 100% elongation	80 psi	ASTM D412
Elongation at break	450%	ASTM D412
Service temperature	-40 to 195°F (-40 to 90°C)	
Peel to unprimed concrete, aluminum & glass	15 pli, 100% coh.	ASTM C794
Lap shear on aluminum	150 coh.	ASTM D2002
On steel	150 coh.	
Cured Construction Properties		
Durability (bond & cohesion) joint movement on glass, aluminum & concrete	±25%	ASTM C920
Sunshine weatherometer, 2000 hrs.	No appearance change	

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

sealant, and tool surface for maximum surface contact. Skin-over time is 30 minutes. Air temperature and humidity at time of application has a direct influence on work life and cure speed. Drier, colder climates require more cure time.

Cleaning: Immediately wipe away excess sealant and smears with xylene or mineral spirits. For equipment cleanup, use solvent equivalent to xylene or mineral spirits. Consult manufacturer's MSDS for safety precautions prior to using solvents.

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).

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 the 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.

Health precautions

- Product contains chemicals that are skin sensitizers and may cause eye injury. Avoid eye and skin contact. Wear skin and eye protection; contact lens wearers should practice proper precautions.
- Product forms methanol during application and cure. Methanol is flammable and a skin, eye, and respiratory irritant. Use only in well-ventilated areas.
- Keep away from heat and flame.
- If skin contact should occur, remove product from skin with dry cloth and wash skin with soap and water.
- If eye contact occurs, immediately flush eyes with water for 15 minutes; see a physician.
- If swallowed, seek immediate medical attention.
- Keep out of reach of children.

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