



Sili-Thane[®] 812 HS High-Strength Elastomeric Adhesive/Sealant

Product description

Sili-Thane 812 HS High-Strength is a one-part, polyether-based adhesive/sealant. Boasting a 15-minute skin-over time, this fast-curing, high-strength product provides excellent adhesion to both porous and non-porous substrates. It is easy to apply, yet exhibits durability in a myriad of situations and temperature ranges. In contrast to urethane sealants, Sili-Thane 812 HS does not foam or bubble when exposed to high humidity or moist substrates during cure. It does not crack, craze, yellow, or chalk on long-term exposure to UV light. It is also virtually odorless with low-VOC content, no solvents and no isocyanates. Once cured, Sili-Thane 812 HS is paintable with most paints.

Basic uses

Sili-Thane 812 HS is ideal for OEM manufacturing use in building mobile homes and travel trailers, extruded PVC windows and doors, and similar OEM applications. Use Sili-Thane 812 HS for bonding dissimilar materials; 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; steps and risers; top of non-loadbearing walls; non-structural glazing; etc.

Sili-Thane 812 HS 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, polyester, Nylon 66, lauan wood and plywood.

Sili-Thane 812 HS has been tested and found to have moderate adhesion 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.
- Exceptional adhesion to wet or dry surfaces; good underwater adhesion to non-porous surfaces.

- Nil shrinkage.
- Minimal dirt pick-up.
- Non-gassing; will not foam or bubble.
- Non-corrosive.
- Paintable after cure.
- 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" (6 mm) 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 812 HS 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-US-gallon (7.6-liter) pails, 5-US-gallon (18.9-liter) pails and 55-US-gallon (208-liter) drums on special order.

Applicable standards

Sili-Thane 812 HS 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" (6 mm). In joints up to 1/2" (12 mm) wide, sealant depth should be equal to the width. In joints wider than 1/2" (12 mm), the depth should be maintained at 1/2" (12 mm). Joints should not exceed 1/2" (12 mm) deep and 1" (25 mm) 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 and surfaces to receive sealant must be clean, sound, smooth, dry, 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 812 HS has excellent adhesion to most firm, common, uncontaminated materials. In some applications it may be prudent

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 ingested, seek immediate medical attention.
- KEEP OUT OF REACH OF CHILDREN.

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

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

Performance Data*

Properties	Results	Test Methods
Uncured Properties		
Skin-over time	15 minutes	ASTM C679
Cure time, 1/8" bead	<24 hours	PSI S204
Sag	<0.1 in (<3 mm)	ASTM C2202
VOC content	0.15 lb/gal (18 g/L)	
Specific gravity	1.5	
Density	12.5 lb/gal (1.5 g/cm ³)	
Extrusion rate @ 40 psi, 1/8" orifice	80 gm/min.	TT-S-000230C
<i>Cured properties below at 7 days, 70°F (21°C) and 50% RH</i>		
Cured Properties		
Hardness, Shore A	42	ASTM C661
Tensile at break	375 psi (2.6 MPa)	ASTM D412
Tensile @ 100% elongation	200 psi (1.4 MPa)	ASTM D412
Elongation at break	350%	ASTM D412
Service temperature	-40 to 195°F (-40 to 90°C)	
Peel to unprimed concrete, aluminum and glass	30 pli (52.5 N/cm), 100% coh.	ASTM C794
Lap shear on aluminum	300 coh.	ASTM D2002
On steel	300 coh.	
Cured Construction Properties		
Durability (bond & cohesion)		
joint movement on glass, aluminum and concrete	±25%	ASTM C920
Sunshine weatherometer, 2000 hrs.	No appearance change	
* Typical properties are for information only, not for purposes of specification. The data above represents product performance in ideal laboratory conditions. Individual users' experience may vary depending on application conditions.		

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 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 SDS 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 instruc-

tions under "Surface Preparation" and recaulk.

Technical services

PSI provides 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.

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