



Silfluo SILZ-SIPSZ

Silicone-Modified Two-Component Polysilazane

Description

Silfluo SILZ-SIPSZ is a two-component, silicone-modified polysilazane system designed to balance coating toughness, hardness, adhesion, resistance to yellowing and hydrophobic self-cleaning behavior. The cured coating is intended for clear or filled protective systems where flexibility, surface hardness and temperature resistance must be balanced through the A:B ratio.

Applications

- Hydrophobic and self-cleaning protective coatings.
- Wear-resistant, weather-resistant and heat-resistant clear or filled coatings.
- Electrical-insulation and protective coating systems requiring adjustable hardness and flexibility.

Applicable Substrates

Stainless steel, glass, cast iron, aluminum alloy, titanium alloy, high-temperature alloy steel, glass-ceramics, ceramics and photovoltaic glass. Formulation and pretreatment must be matched to the substrate and service conditions.

Applicable Temperature

Recommended service temperature: -30 to 380°C; short-term temperature capability: 430°C.

Temperature resistance depends on the A:B ratio, fillers, substrate and curing schedule.

Application-specific validation is required.

Coating Performance

Test Item	Performance Indicator	Test Method
Component Type	A/B two-component	Not specified
Color and Appearance	Pale yellow to colorless transparent liquid	GB/T 1721-1979
Solid Content (120 ± 2°C)	>50%	GB/T 1725-2007
Density (g/mL)	0.86 ± 0.02	GB/T 6750-2007
Pencil Hardness - Self-Dry	6H	GB/T 6739-2006
Pencil Hardness - Baked	>7H	GB/T 6739-2006
Adhesion	Grade 0	GB/T 9286-1998

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Test Item	Performance Indicator	Test Method
Neutral Salt Spray Resistance	>2000 h	GB/T 10125-2021
Water Contact Angle	105-110°	GB/T 26490-2011
Artificial Aging Resistance	30 d: no rust, powdering, cracking or discoloration	GB/T 1865-2009
Dielectric Strength (V/mm)	$\geq 10^5$	ASTM D149
Volume Resistivity ($\Omega \cdot m$)	$\geq 10^{13}$	GB/T 35856-2018

Construction Parameters

Item	Parameter	Item	Parameter
Coating Solids (%)	>50	Curing Temperature	Room temperature or 140°C
Theoretical Coverage (m ² /kg)	6-8	Basic Cure Time	>12 h at room temperature; <0.5 h at 140°C
Dry Film Thickness (μm)	20-150*	Working Time	1-2 h
Thinner	Butyl esters, xylene, ethers, etc.	Max. Instantaneous Temperature	430°C
Flash Point	<22°C (solvent flash point)	Recommended Service Temperature	-30 to 380°C
Storage Temperature	5-35°C	Shelf Life	6 months

Special Notes

Use the mixed coating within 2 hours. Although the construction table lists a 20-150 μm dry-film range, the application note recommends keeping a single coat at or below 100 μm. Ratio guidance: for hydrophobic self-drying use, A:B may be adjusted from 1.5:1 to 3.0:1 by mass, with 2.2:1 reported as a typical starting point. Ratio, cure and coating performance must be verified for the application.

Standard Application Procedure: Surface Cleaning -> Roughening -> Cleaning and Drying -> A/B Preparation -> SILZ-SIPSZ Application -> Curing

Application Instructions

1. Roughening: Grind or sandblast the substrate to remove rust, dust and dirt. Target Sa 2.5; minimum St 3 with no mill scale (GB/T 30790.4-2014).

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2. Cleaning: Remove residual oil and dust with a suitable cleaner or degreaser, then ensure that the substrate is dry.
3. Component Preparation: Select the A:B ratio for the required hardness and hydrophobicity, dilute the components as required, then mix thoroughly. Do not assume one universal ratio for every application.
4. Coating Application: For laboratory spraying, a 1.0 mm nozzle generally gives better appearance and uniformity. Avoid repeated wet-on-cured coating unless validated.
5. Curing: At room temperature, the coating is reported to be surface-dry in about 1 hour, touch-dry after more than 2 hours and fully dry after more than 24 hours. Accelerated curing: 140°C for 20 minutes.

Safety and Storage

1. Store in a dry, cool and well-ventilated area away from heat and ignition sources. Keep containers tightly closed and handle them carefully.
2. Maintain the storage temperature between 5°C and 35°C. Shelf life is 6 months in the original, unopened and tightly sealed container under the recommended conditions.
3. Store Components A and B in their original, tightly sealed containers and prevent cross-contamination.
4. Do not return dispensed, mixed or contaminated material to the original container. Dispose of unused material in accordance with local regulations.
5. Material beyond its shelf life may be used only after it passes an appropriate inspection.

Packaging

Available in 1 kg, 2 kg, 5 kg and 25 kg pails.

Special Note

The information above is based on currently available technical data, laboratory knowledge and practical experience. Because application conditions are outside our control, Silfluo warrants only the quality of the supplied product. Users must determine suitability through their own formulation and application tests and verify applicable local requirements. Contact Silfluo for application guidance.

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