Technical Data Sheet

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Silfluo SILZ-AAPSZ

Acrylic-Modified Single-Component Polysilazane Coating

Description

Silfluo SILZ-AAPSZ is a one-component, acrylic-modified polysilazane coating designed to provide hydrophobic, anti-graffiti and self-cleaning behavior together with hardness, wear resistance, weather resistance and optical transparency. The coating is intended to improve water, moisture and mildew resistance in transparent protective systems.

Applications

• Transparent protective coatings and automotive coating systems.

• Adhesives, electronic sealants, flooring and specialty textile auxiliaries.

• Hydrophobic, anti-graffiti and weather-resistant surface protection.

Applicable Substrates

Stainless steel, glass, cast iron, aluminum alloy, titanium alloy, high-temperature alloy steel, glass-ceramics, ceramics, photovoltaic glass and various fibers. Match the formulation and surface preparation to the substrate and use conditions.

Applicable Temperature

Recommended service temperature: -50 to 280°C; short-term temperature capability: 400°C. Actual resistance depends on the substrate, coating thickness and curing schedule.

Coating Performance

Test Item	Performance Indicator	Test Method
Component Type	One-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)	0.89 ± 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
Neutral Salt Spray Resistance	>2000 h	GB/T 10125-2021

Nanjing Silfluo New Material Co., Ltd.
Web: www.silfluo.com Email: inquiry@silfluo.com

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Test Item	Performance Indicator	Test Method
Water Contact Angle	110-115°	GB/T 26490-2011
Artificial Aging Resistance	30 d: no rust, powdering, cracking or discoloration	GB/T 1865-2009
Dielectric Strength (V/mm)	≥10^5	ASTM D149
Volume Resistivity (Ω·m)	≥10^{13}	GB/T 35856-2018

Construction Parameters

Item	Parameter	Item	Parameter
Coating Solids (%)	>50	Curing Temperature	Room temperature or 150°C
Theoretical Coverage (m^2/kg)	10-15	Curing Time	>24 h at room temperature; <0.5 h at 150°C
Dry Film Thickness (μm)	20-100	Working Time	3-6 h
Thinner	Esters, xylene, ethers	Max. Instantaneous Temperature	400°C
Flash Point	<22°C (solvent flash point)	Recommended Service Temperature	-50 to 280°C
Storage Temperature	5-35°C	Shelf Life	12 months

Special Notes

This is a one-component product. Use dispensed material within 6 hours and keep a single coat at or below 100 μm dry-film thickness. Clean application tools promptly during extended interruptions.

Standard Application Procedure: Surface Cleaning -> Roughening -> Cleaning and Drying -> SILZ-AAPSZ 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).
2. Cleaning: Remove residual oil and dust with a suitable cleaner or degreaser, then ensure that the substrate is dry.
3. Material Preparation: Transfer only the required amount to the spray container and keep the original container sealed.

4. Coating Application: For laboratory spraying, a 1.0 mm nozzle generally gives better appearance and uniformity. Repeated coating is not recommended unless validated.
5. Curing: At room temperature, surface-dry in approximately 30 minutes, touch-dry after more than 2 hours and fully dry after more than 24 hours. Accelerated curing: 150°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 12 months in the original, unopened and tightly sealed container under the recommended conditions.
3. Keep the one-component product tightly sealed and protect it from contamination and moisture.
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.