



Silfluo SILZ-FSLPSZ

High/Low-Temperature Heavy-Duty Anticorrosion Fluorinated Olefin-Silicon Coating

Description

Silfluo SILZ-FSLPSZ is a one-component, high-/low-temperature, heavy-duty anticorrosion coating based on a graphene-containing fluorinated olefin-silicon polymer. Selected chain ends are blocked with isocyanate (NCO) groups and protected reactive functionalities. Upon exposure to air, these functionalities are reported to deblock, promoting chemical bonding to polar substrates, chain extension and crosslinking into an interpenetrating polymer network (IPN). Its relatively low initial viscosity supports wetting and penetration into surface irregularities; after curing, the coating forms a dense barrier that limits oxygen and moisture ingress.

Applications

- Heavy-duty anticorrosion protection for metallic and mineral substrates.
- Protective systems requiring wear resistance, impact resistance and electrical insulation.
- Acid-, alkali-, salt- and solvent-exposure environments, subject to application-specific validation.

Applicable Substrates

Carbon steel, stainless steel, cast iron, aluminum alloy, titanium alloy, high-temperature alloy steel, glass-ceramics, ceramics, cement and leather. Substrate-specific pretreatment and formulation adjustments may be required for different service conditions.

Applicable Temperature

Recommended service temperature in the construction data is -50 to 280°C. The source narrative reports long-term operation up to 300°C and specially treated variants above 400°C, while the construction table lists an instantaneous maximum of 350°C. These upper-limit statements are formulation-, substrate- and cure-dependent and must be validated for the intended service.

Basic Product Data

Item	Typical Value	Test Method
Coating Appearance	Transparent	Visual
Component Type	One-component	Not specified
Density (g/cm ³)	1.02-1.13	Measured

Coating Performance

Test Item	Performance Indicator	Test Method
Condition in Container	Uniform; no lumps or sediment	Visual

Nanjing Silfluo New Material Co., Ltd.

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The offered information of this docs is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are fully satisfactory for end use. Suggestions of use shall not be taken as inducements to infringe any patent. Please confirm with us prior to any problems.

Technical Data Sheet



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Test Item	Performance Indicator	Test Method
Viscosity at 25°C	50-70 s, Ford Cup No. 4	GB/T 1723-1993
Adhesion - Cross Cut	Grade 0	GB/T 9286-1998
Neutral Salt Spray Resistance	3000 h: no blistering, cracking or rust spots	GB/T 10125-2021
Chemical Reagent Resistance	50% H ₂ SO ₄ / 50% NaOH / 5% NaCl: 180 h each; no blistering, peeling or rust	GB/T 9274-1998
Accelerated Alkali / Salt Resistance	20% NaOH / 5% NaCl: 180 h each; no blistering, peeling or rust	Not specified
Abrasion Loss	22 mg (1000 g / 1000 cycles); 0.019 g (CS10 wheel)	Not specified
Hydrofluoric Acid Resistance	300 h: no blistering, peeling or rust	Not specified
Acid Resistance - 25% H ₂ SO ₄	720 h: no blistering, peeling or rust	GB/T 9274-1988

Construction Parameters

Item	Parameter	Item	Parameter
Coating Solids (%)	≥45	Volatility	Low volatility
Theoretical Coverage (m ² /kg)	10-15	Heat Cure	120-140°C, <2 h
Dry Film Thickness (μm)	30-200	Self-Curing Time	1 h surface-dry; about 8 h full-dry
Working Time	6 h*	Max. Instantaneous Temperature	350°C
Thinner	Alkanes, esters, ethers	Recommended Service Temperature	-50 to 280°C
Flash Point	<22°C (solvent flash point)	Storage Temperature	5-35°C
Shelf Life	12 months	Component Type	One-component

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Special Notes

The source provides both a preferred one-pass application and a 2-3 coat construction sequence. Select the coat schedule through application trials. For multiple coats, target approximately 40 µm per pass and 100-200 µm total dry-film thickness, allow at least 30 minutes between coats, and recoat before full cure. Do not exceed 200 µm total dry-film thickness without validation. The construction table lists a 6-hour working time, whereas the narrative recommends use within 3 hours; use 3 hours as the conservative working limit.

Standard Application Procedure: Surface Cleaning -> Roughening -> Cleaning and Drying -> SILZ-FSLPSZ Application -> Curing

Application Instructions

1. Surface Preparation: Dry damp substrates and remove oil, loose corrosion and raised defects. Repair concrete voids with a compatible resin filler and allow the repair to dry before coating.
2. Metal Preparation: St 2 or Sa 2 may be acceptable for general work. For higher performance, use Sa 2.5; the detailed procedure sets St 3 without mill scale as the minimum (GB/T 30790.4-2014).
3. Product Preparation: This is a one-component coating. Stir thoroughly until uniform and, where filtration is required, pass the material through a 300-mesh screen before spraying.
4. Coating Application: A 1.0 mm spray nozzle is reported to provide good appearance and uniformity in laboratory spraying. Apply one pass or 2-3 coats according to the validated coat schedule, without missed areas or sagging.
5. Curing: At approximately $20 \pm 15^{\circ}\text{C}$ and $65 \pm 20\%$ RH without added curing agent, surface drying may require about 6 hours; reported approximate values are 5 hours at 30°C , 4 hours at 40°C and 3 hours at 50°C . Avoid an abrupt temperature ramp.
6. Inspection: Check that the film is continuous and uniform with no missed areas. A dull surface may indicate excessive ambient humidity. Verify project requirements using suitable instruments.

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 when not in use.
4. Do not return dispensed 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.

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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.