Silfluo SILZ-PEPSZ Polyester Modified Polysilazane

Description:

SILZ-PEPSZ is a polyester-modified polysilazane resin developed to overcome the intrinsic brittleness and limited flexibility of conventional high-hardness polysilazane systems. By introducing polyester segments and hydroxyl functional groups into the polysilazane molecular backbone, the cured coating exhibits significantly enhanced flexibility, water-boiling resistance, salt spray resistance, abrasion resistance, optical transparency, and aging resistance. After curing, the coating forms covalent bonds with the substrate, resulting in excellent mechanical strength and long-term durability.

Applications

- High-voltage insulating coatings for new energy lithium batteries;
- Flexible insulating cables and enameled wire insulation systems;
- High-strength cement products, panels, pipes, and advanced construction materials;
- Thermal insulation and reflective coatings, dielectric base primers;
- Building materials, molds, ship hull protection;
- Adhesive bonding for FRP, rigid plastics, concrete, and electrical encapsulation;

Technical Data

Test Item	Specification	Test Method
Appearance & Color	Colorless Transparent liquid	Visual
Mixed Density	0.89～0.95g/cm^3	GB-T 1723-1993
Mixed Viscosity	21～26s	GB-T 9286-1998
Adhesion	Grade 0	GB-T11944-2002
Water Resistance	Boiled in water for 4 hours, no blistering, delamination, or cracking of the paint film.	GB-T 6742-2007
Bending Resistance	Bent 180 degrees, no paint peeling or cracking under a microscope.	GB-T 6739-2006
Coating Hardness	≥2H	GB-T 10125-2021
Resistance to Neutral Salt Spray	30d No blistering, no cracking, no rust spots.	GB-T 1865-2009
Resistance to Artificial Aging	30d No rust, no chalking, no cracking, slight discoloration.	GB/T 26490-2011
Water Contact Angle	＞110°	GB-T 1723-1993

Application Parameters & Curing Conditions

Item	Value	Curing Condition	Volatile

Theoretical Coverage (m^2 /kg)	10-15		
Dry Film Thickness (μm)	35-45	Medium and low temperature curing (140℃)	<0.7 h
Pot Life (h)	6	Room Temperature Cure(°C)	>24 h
Diluents	Aromatics, lipids, ethers, etc.	Recommended Service Temp (°C)	-30 to 300

Standard Application Procedure: Surface Cleaning → Roughening → Cleaning and Blowing → SILZ-PEPSZ Treatment → Curing

Instruction Manual

1. Roughening: Before coating, grind or sandblast the substrate surface to remove rust, dust, dirt, etc. Roughening significantly affects the coating effect; optimal Sa2.5, minimum St3 (no oxide scale) (GB/T 30790.4-2014), so please pay close attention.
2. Cleaning: Use a specialized cleaner or degreaser to remove residual oil, dust, etc., from the roughened surface.
3. Substrate Drying: Ensure the substrate surface is dry and clean before coating.
4. Coating Preparation: This product is a single-component product. Take an appropriate amount as needed and filter it through a 120-mesh sieve.
5. Coating Application: For best appearance and uniformity, use a 1.0-caliber spray gun in the laboratory.
6. Curing: After spraying, cure at room temperature for more than 1 hour for surface drying, more than 2 hours for touch drying, and more than 24 hours for complete drying. Alternatively, it can be cured quickly by heating (140℃ for 30 to 40 minutes).

Storage & Transportation

Store in a cool, dry, and ventilated environment away from heat and ignition sources. Storage temperature: 5–30° C. Shelf life: 6 months. Seal container tightly after use. Unused mixed material must not be reused and should be disposed of according to local regulations.

Disclaimer

The information provided herein is based on laboratory and practical experience. Application conditions are beyond our control; therefore, no warranty of performance is implied. Specifications may be modified without prior notice to comply with local regulations.

Packaging

In 1kg, 2kg, 5kg, 25kg pail.