

SS922 SUPER PERFORMANCE SILICONE STRUCTURAL SEALANT

DESCRIPTION

SS922 Super Performance Silicone Structural Sealant is a two-component, high strength, neutral curing silicone sealant designed and tested for structurally glazed curtain wall applications, especially for structural glazing in high-rise curtain wall, big-size glass curtain wall, complex construction curtain wall and situations with high-security requirement. Uncured, both the A and B components are thixotropic pastes and, when mixed, cure quickly to an extremely tough elastomeric silicone rubber and sealant at room temperature with primerless adhesion to many substrates ensuring a durable, flexible, watertight bond.

CHARACTERISTICS

- High strength, more suitable for structural glazing in high-rise curtain wall, big-size glass curtain wall, complex construction curtain wall and situations with high-security requirement than common silicone structural glazing sealants
- Improves safety in SSG designs
- Odorless, non-corrosive cure system
- Excellent weatherability and high resistance to ultraviolet radiation, heat and humidity, ozone and temperature extremes
- Remains flexible over a temperature range of -58° F(-50° C) to 302° F (150° C)
- Successfully tested for use in protective glazing applications
- Excellent unprimed adhesion to wide range of substrates including coated, enameled and reflective glasses, anodized and polyester coated or painted aluminum profiles
- Good compatibility with other neutral silicone sealants
- Meets global standards for structural glazing (American, China, Europe)
- Lot matching of base and curing agent not necessary

APPLICATIONS

- Silicone structural glazing in high-rise curtain wall;
- Silicone structural glazing in big-size glass curtain wall;
- Silicone structural glazing in complex construction curtain wall;
- Silicone structural glazing in situations with high-security requirement;
- Other silicone structural glazing and protective glazing applications.

TYPICAL PROPERTIES

Property	Result	Test method
Bases: as supplied		
Color	White	
Specific Gravity	1.38	

Curing agent: as supplied		
Color	Black	
Specific Gravity	1.01	
As mixed		
Color	Black	
Specific Gravity	1.34	
Tooling Time(23 °C/73 °F, 50% RH)	10-15minutes	
Tack free time(23 °C/73 °F, 50% RH)	50-90 minutes	ASTM C679
Flow, Sag or Slump	0.1 inches max	ASTM D2202
As cured - after 7 days at 23 °C (73 °F) and 50% RH		
Durometer Hardness, Shore A	48	ASTM D2240
Ultimate Tensile Strength	1.38MPa	ISO 8339
Specifications: Typical property data values should not be used as specifications. Assistance with specifications are available by contacting Guangzhou Baiyun Chemical Industry CO., LTD.		

APPLICABLE STANDARDS

SS922 Super Performance Silicone Structural Sealant meets or exceeds the requirements of the following specifications for two-part sealants.

ASTM Specifications:

- C1184, Type M, Use G and O

European Standard:

- ETAG 002

China Standard:

- GB 16776

COLORS

SS922 Super Performance Silicone Structural Sealant is available in black.

PACKAGING

SS922 Super Performance Silicone Structural Sealant is available as a “kit” consisting of a 47.6 US gallon drum of Base and a 5 US gallon pail of curing agent (catalyst). Both the drum and the pail are straightsided for use in commercially available pumping equipment.

Base: BAIYUN SS922 Base is available in 52 US gallon drum (containing ~47.6 US gallons (180 L)) with a polyethylene bag liner.

Catalyst: BAIYUN SS922 Curing Agent is available in a 5.3 US gallon pail (containing ~5.0 US gallons (19 L)).

LIMITATIONS

SS922 Super Performance Silicone Structural Sealant should not be used, applied or is not recommended:

- In structural glazing applications unless Guangzhou Baiyun Chemical Industry CO., LTD. has reviewed shop drawings for applicability and has performed

adhesion and compatibility tests on project substrates, spacer materials and all accompanying accessories. Review and testing is done on a project-by-project basis. No blanket approval is given by Guangzhou Baiyun Chemical Industry CO., LTD. for structural glazing applications. Structural glazing industry guidelines (ASTM C1401) suggest that drawings and details are to be reviewed by all parties involved in the manufacture of an SSG system and for each building project.

- To building materials that bleed oils, plasticizers or solvents – materials such as impregnated wood, oil-based caulks, green or partially vulcanized rubber gaskets or tapes
- When surface temperatures below 10 °C (50 °F) or exceed 40 °C (104 °F)
- Where painting of the sealant is required, as the paint film may crack and peel
- In below-grade applications
- For use as an interior penetration fire stop sealing system
- In horizontal floor joints where abrasion and physical abuse are likely to be encountered
- To frost-laden or damp surfaces
- For structural adhesion on bare metals or surfaces subject to corrosion (i.e., mill aluminum, bare steel, etc.)
- For contact with strong acids or bases
- To surfaces in contact with food
- For continuous immersion in water
- For water immersion applications.

Do not apply acid-curing (Acetoxy) silicone sealants to this product as this may cause loss of adhesion of SS922 Super Performance Silicone Structural Sealant to glass, and/or other substrates used in the system.

TECHNICAL SERVICES

Complete technical information and literature are available from Guangzhou Baiyun Chemical Industry CO., LTD.

The following materials are required to be submitted to Guangzhou Baiyun Chemical Industry CO., LTD. to receive suggestions for the use of SS922 Super Performance Silicone Structural Sealant.

- Architectural and shop drawings for review and comment.
- Design wind load requirement(s) for project.
- Glass or panel sizes.
- Production samples of metal, glass, gaskets, spacers and setting blocks with type and manufacturer identified.
- Specification and/or identification of paint or finish to which SS922 Super Performance Silicone Structural Sealant is intended to adhere (i.e., 215-R1 anodized or if paint; manufacturer, finish system and ID#).

Guangzhou Baiyun Chemical Industry CO., LTD. will provide the following, after reviewing the materials above:

- Determination as to whether the submitted joint dimensions meet the minimum

design criteria necessary for the use of SS922 Super Performance Silicone Structural Sealant.

- Short-term adhesion data using (typically) the ASTM C794 and/or ASTM C1135 test method. Other test methods may be employed.
- Short-term compatibility test results on gaskets, spacers and setting blocks and other accessories per ASTM C1087 or Guangzhou Baiyun Chemical Industry CO., LTD. test method for compatibility.
- Information regarding suggested primers, when required.

Guangzhou Baiyun Chemical Industry CO., LTD. will not:

- Design sealant joints.
- Provide comments on the structural integrity of overall framing system(s).
- Provide long-term performance data.

The design professional has final responsibility for the determination of structural sealant joint dimensions based on project conditions, design wind load(s), glass or panel sizes, anticipated thermal, seismic or other movement of the system.

The ASTM C1401 Standard Guide for Structural Sealant Glazing provides a thorough overview of design topics and information for use in SSG systems.

INSTALLATION

Surface Preparation

Sealants may not adhere or maintain long-term adhesion to substrates if the surface is not prepared and cleaned properly before sealant application. Using proper materials and following prescribed surface preparation and cleaning procedures is vital for sealant adhesion. Guangzhou Baiyun Chemical Industry CO., LTD. can provide quality control information and suggestions to user upon request.

Materials

- Use clean, fresh solvent as recommended by the sealant manufacturer's test report. When handling solvents, refer to manufacturer's MSDS for information on handling, safety and personal protective equipment. Isopropyl Alcohol (IPA) is commonly used and has proven useful for most substrates encountered in SSG systems. Xylene and Toluene have also been found useful on many substrates.
- Use clean, white cloths free of lint or other lint-free wiping materials.
- Use a clean, narrow-blade putty knife when tooling structural silicone into the cavity.
- Use primer when required.

Cleaning Procedures

- Remove all loose material (such as dirt and dust), plus any oil, frost or other contaminants from the substrates to which the structural silicone will be adhered.
- Do not use detergent to clean the substrate as residue may be left on the surface.
- Clean the substrates receiving the sealant as follows: Using a two-rag wipe technique. Wet one rag with solvent and wipe the surface with it, then use the

second rag to wipe the wet solvent from the surface BEFORE it evaporates. Allowing solvent to dry on the surface without wiping with a second cloth can negate the entire cleaning procedure because the contaminants may be re-deposited as the solvent dries.

- Change the cleaning rags frequently, as they become soiled. It is easier to see the soiling if white rags are used. Do not dip used wipe cloths into solvent as this can contaminate the solvent. Cleaning with contaminated solvent can result in sealant adhesion issues. Always use clean containers for solvent use and for solvent storage.
- When cleaning deep, narrow joints, wrap the cleaning cloth around a clean, narrow-blade putty knife. This permits force to be applied to the cleaned surface.
- Clean only as much area as can be sealed in one hour. If cleaned areas are again exposed to rain or contaminants, the surface must be cleaned again.

Primers

SS922 Super Performance Silicone Structural Sealant will bond to many clean surfaces without the aid of a primer. For difficult-to-bond substrates, the use of a primer or special surface preparation should be evaluated. An evaluation should be made for each specific application/substrate to determine quality of bond. When properly used, primers help assure strong and consistent sealant adhesion to surfaces that may be difficult to bond. Most primers are a blend of organic and inorganic chemicals, resins and solvents. Obtaining the proper materials, as well as following the prescribed procedures, is vital to ensure the successful use of primers. PRIMER APPLICATION IS NOT A SUBSTITUTE FOR SURFACE PREPARATION. Consult Guangzhou Baiyun Chemical Industry CO., LTD. primer datasheet(s) for specifics and recommendations for use.

CAUTION

Primers may contain solvents. When handling solvents, refer to manufacturer's MSDS for information on handling, safety and personal protective equipment.

Masking

- To simplify clean up of excess sealant, use easy to release, pressure sensitive tape to mask adjacent surfaces before applying the structural silicone sealant.
- Start from the top down and overlap the runs. Tool in direction of over-lap so that masking is not disturbed during tooling.
- Remove masking immediately after application of silicone or as soon as possible or practical.
- Drop cloths can be used to cover any surfaces likely to collect excess sealant removed during tooling operations.

STRUCTURAL GLAZING

Sealant Application

- Apply the sealant by pushing the bead ahead of the nozzle and making sure that

the entire cavity is filled. Tooling should be done neatly, forcing the sealant into contact with the sides of the joint, thus helping to eliminate any internal voids and assuring good substrate contact. AIR POCKETS OR VOIDS WITHIN THE STRUCTURAL CAVITY ARE NOT ACCEPTABLE.

- Due to the smooth consistency of SS922 Super Performance Silicone Structural Sealant, tooling agents such as water, soap or detergent solutions are not necessary or recommended. Dry tooling is recommended.
- Sealant application is not recommended when the temperature is below 50° F (10° C) or if frost or moisture is present on the surfaces to be sealed.
- SS922 Super Performance Silicone Structural Sealant works best when applied to surfaces below 104° F (40° C).

Mixing, Pumping and Dispensing

- SS922 Super Performance Silicone Structural Sealant should be mixed and dispensed using two-component mixing equipment, which is available from several equipment manufacturers. These mixing / pumping systems are specifically designed to meter precise proportions of A base and B catalyst, in an air-free environment, and mix and dispense material at proper pressures and volumes to insure thoroughly mixed air-free material.
- Consult equipment manufacturer or system handbook for startup and shutdown procedures that cover proper operating pressures, mixing devices, and purging requirements.
- Hand mixing of A base + B catalyst is not recommended.
- Kit matching of the A and B components of SS922 Super Performance Silicone Structural Sealant is not required.
- SS922 Super Performance Silicone Structural Sealant has been used successfully in both “In-line” mixing systems and on “purgeless” after-the-gun mixing equipment. Consult equipment manufacturer and/or BAIYUN for information on mixing device options.
- When properly mixed, the material should be solid, homogeneous black. If incomplete mixing is noticed, cease use of the material until equipment has been adjusted and confirmed that complete mixing is being attained.

Curing

- When mixing A base + B catalyst at approximately a 13:1 ratio by weight, the material will become tack-free at about 1 hours under ambient conditions of 73° F (23° C), 50% R.H. Under these conditions approximately 80% of strength should develop within 24 hours. Development of maximum properties requires full evaporation of cure by-products and will normally be achieved within 7 days.
- Work life and cure rate may be adjusted by changing the A base to B catalyst ratio. Ratio must be within recommended range to achieve desired cured material property profile.
- Work life and cure rate can be affected by temperature and humidity levels. Mild heat (i.e., around 104° F/40° C) will shorten the work life of the material, but will not significantly reduce the time required for complete cure. Cooler

temperatures and lower humidity (i.e., <40° F/4° C and <30% R.H.) tend to slow the cure and adhesion process.

- The B catalysts are sensitive to prolonged exposure to atmospheric moisture and the storage containers should be kept tightly closed whenever possible to maximize useful life.
- The catalyst may require mixing before placing container in pumping equipment if settling of components has occurred. Contact BAIYUN technical services for additional information.

Adhesion

Development of maximum bond strength will depend on substrate finish, joint configuration, primer use, adhesive thickness, substrate preparation and ambient conditions at location of use. Minimum stress should be applied to the adhesive bond for 24 hours. The adhesive strength of the bond should eventually exceed the cohesive strength of the silicone rubber adhesive. Maximum bond strength will typically be reached within 7 days.

HANDLING AND SAFETY

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE FROM BAIYUN SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING BAIYUN CUSTOMER SERVICE.

USABLE LIFE AND STORAGE

When stored at or below 27 °C (80 °F) in the original unopened containers, SS922 Super Performance Silicone Structural Sealant Curing Agent and Base has a usable life of 9 months from the date of manufacture.

PRODUCT SAFETY

Customers considering the use of any of Guangzhou Baiyun Chemical Industry CO., LTD. products should consult the latest Material Safety Data Sheets and labels for product safety information. Customers must evaluate Guangzhou Baiyun Chemical Industry CO., LTD. products and make their own determination as to fitness of use in their particular applications. For Material Safety Data Sheets contact the Guangzhou Baiyun Chemical Industry CO., LTD. sales office nearest you. Customers must ensure that all applicable federal, state, and local requirements have been met before handling any of the products mentioned in the text.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and 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 Guangzhou Baiyun Chemical Industry CO., LTD.'s products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Guangzhou Baiyun Chemical Industry CO., LTD.'s sole warranty is that the product will meet the Guangzhou Baiyun Chemical Industry CO., LTD. sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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