

# WEIDU WD-986

High Ultimate Tensile Strength Structural Glazing Sealant

## TECHNICAL DATASHEET



### **PRODUCT DESCRIPTION**

**WEIDU™ WD-986 Structural Glazing Sealant** is a neutral curing one-component Silicone sealant with high modulus and high mechanical properties designed for site or factory glazing and curtain-wall production. It has a high speed curing time in contact with atmospheric humidity. It requires contact with air as it reacts with atmospheric moisture to cure to a tough but flexible silicone rubber. Its unique properties give it an extraordinary adhesion power, extremely high mechanical strength, being stable to aging and with a high resistance to UV radiation and the atmospheric agents

### **AREAS OF APPLICATION**

WEIDU™ WD-986 is ideal for structural glazing and other bonding applications where high mechanical strength with silicone is required.

### **FEATURES & BENEFITS**

**High ultimate tensile strength sealant ideally suited for structural bonding and protective glazing applications**

- ☑ Resistant to vibration
- ☑ Extremely high mechanical strength
- ☑ Odorless and Non-corrosive cure byproduct
- ☑ High ultimate tensile strength will increase safety factors in SSG designs
- ☑ Designed to allow sufficient time for placement and tooling before skinning.
- ☑ Faster early hour cure properties to facilitate handling of assembled units.
- ☑ Neutral cure – suitable for use on coated glass, galvanized steel, masonry and other porous and non-porous substrates.
- ☑ Extraordinary adhesion power to glass, aluminium and steel
- ☑ Primer less adhesion, Bonds to most conventional substrates and finishes including: glass, glass coatings, ceramic frits, fluoropolymer and powder coated paints, conversion-coated and anodized aluminum.
- ☑ Excellent long-term resistance to natural weathering including: sunlight, rain, snow, ultraviolet radiation, heat and humidity, ozone and temperature extremes.
- ☑ Resistant to UV Degradation, Yellowing and Weathering
- ☑ Cures to form an extremely tough elastomeric rubber ensuring a durable, flexible, watertight bond

### **CONFORMS, MEETS & EXCEEDS**

WEIDU™ WD-986 Structural Glazing Sealant has been internally tested and is designed to meet or exceed the test requirements of: GB 16776-1MG-25HM

## **TYPICAL PROPERTIES – UNCURED**

Information on this data sheet can change without notice and it is therefore not recommended that these figures be used in spec writing. If you have any questions contact manufacturer's sales and technical service department.

| <b>Properties</b>     | <b>Value</b>                 | <b>Test Method</b> |
|-----------------------|------------------------------|--------------------|
| Appearance            | No Grain & No Agglomerations | ISO 11600          |
| Color                 | Black                        |                    |
| Consistency           | Paste                        |                    |
| Chemical base         | One-component silicone       |                    |
| Basis                 | 100% Silicone                |                    |
| Cure Type             | Neutral                      |                    |
| Conforms to           | GB 16776-1MG-25HM            |                    |
| Density at 25°C       | g/cm <sup>3</sup> 1.38       | ISO 1183           |
| Work Life (Snap time) | 15-20 minutes                |                    |
| Tack Free Time        | 60 minutes                   | ASTM C679          |
| Sag/Slump             | 0, Non sag                   | ISO 7390           |

## **TYPICAL PROPERTIES – CURED**

| <b>Properties</b>                      | <b>Value</b>    | <b>Test Method</b> |
|--|-----------------|--------------------|
| Hardness, Shore A                      | 50              | ASTM D-2240-97     |
| Ultimate Tensile Strength              | 1.32 , MPa      | ISO 8339           |
| Ultimate Elongation, %                 | 464             | ISO 8339           |
| Heat weight loss, %                    | 3.5             | ISO 10563          |
| Joint Movement Capability              | ±35%            | ASTM C719          |
| Extrudability, g/min                   | 260             |                    |
| Service Temperature Range (after cure) | -40°C to +150°C |                    |
| Application temperature (ambient )     | +5°C to +50°C   |                    |
| Cure Rate / Day (deep section)         | 2 mm            |                    |
| Full Cure (most common bead sizes)     | 5-10 days       |                    |

## **POTENTIAL APPLICATIONS**

WEIDU™ WD-986 Structural Glazing Sealant is developed specifically for structural bonding applications of glass and metal in factory or field situations. The particular mechanical properties of WEIDU™ WD-986 are suitable for responding to the technical and safety requests imposed in the architecture and engineering of facades for bonding glass and metal structures.

WEIDU™ WD-986 Structural Glazing Sealant can also be used to adhere stiffening elements to

building panels and for other high demanding industrial adhesive applications.

## **METHOD OF APPLICATION**

### **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. Surfaces must be clean, dry and free from grease, oil and dust. Surface treatment depends on the specific nature of the substrates and is crucial for a long lasting bond.

Isopropyl Alcohol (IPA) is commonly used and has proven useful for most substrates. Xylene and Toluene have also been found useful on many substrates.

### **CLEANING PROCEDURES**

- Use clean, white cloths free of lint or other lint-free wiping materials.
- Do not use detergent to clean the substrate as residue may be left on the 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.

**Note:** When using any solvent, always provide adequate ventilation. Avoid heat, sparks and open flames. Use solvent resistant gloves. Observe and follow all precautions listed on solvent container label.

### **MASKING**

Areas adjacent to the joints should be masked with tape to prevent contamination of the substrates and to ensure a neat sealant line. Remove masking immediately after application of silicone or as soon as possible.

### **PRIMING**

WEIDU™ WD-986 Structural Glazing Sealant adheres to most common construction materials without primer. However, a preliminary adhesion test is recommended on every surface. Sometimes, it may be necessary to treat the joint surfaces with a primer to obtain better adhesion performances.

### **INSERTING BACKING MATERIAL**

Use the closed cell polyethylene backer foam as a back-up material to limit the sealant joint depth and avoid the sealant to adhere to the joint base. Choose the right backing strip diameter (at least 25% wider than the joint width)

### **SILICONE SEALANT APPLICATION & TOOLING AND FINISHING**

After substrate preparation, apply the sealant with a professional caulking gun, evenly and without bubbles. Observe the eventually used primer's open time before filling the joint. The joint should be tooled and smoothed before skin formation. Press the sealant and smooth it ensuring good contact with the surfaces to seal. Use neutral soapy water as a tooling agent. Remove masking tape. Uncured product may be easily removed with solvents such as isopropyl alcohol or "white spirit". Cured sealant must be removed mechanically.

## **CAUTION/SAFETY**

Please refer to the SDS for the corresponding product for information regarding safety and handling. Before handling, read product and safety data sheets and container labels for safe use, physical and health hazard information. The Material Safety Data Sheet is available upon request.

## **CURE TIME**

The rate of surface cure and cure-in-depth of most one-part silicone sealants is affected by the temperature, degree of confinement and cross-sectional thickness of the sealant and humidity of the environment. However, an environment of high temperatures in combination with high humidity may slow the surface cure rate of WEIDU™ WD-986. Normal cure time of WEIDU™ WD-986 Structural Glazing Sealant is 2mm per day.

## **COVERAGE**

300ml cartridge will give approximately 15 lineal meters of a 5mm bead.

## **COLORS**

WEIDU™ WD-986 Structural Glazing Sealant is available in black color. Other colors under request.

## **PACKAGING INFORMATION**

WEIDU™ WD-986 Structural Glazing Sealant is supplied in 590ml sausages packed in boxes of 20.

## **STORAGE & SHELF LIFE**

WEIDU™ WD-986 Structural Glazing Sealant should be stored in cool and dry conditions, not over 25°C away from direct sun light and source of heat. WEIDU™ WD-986 Structural Glazing Sealant has a shelf life of 12 months from the date of manufacturing if stored in original unopened container. In countries where high heat and humidity are a factor, special precautions must be taken to store the product in a covered, well-ventilated warehouse and avoid excessive heat conditions. Storage in high heat, high humidity condition may reduce shelf life by around 30%.

## **LIMITATIONS**

WEIDU™ WD-986 Structural Glazing Sealant should not be used, applied or is not recommended:

- For structural adhesion on bare metals or surfaces subject to corrosion (i.e., mill aluminum, bare steel, etc.)

- In designs where the silicone is encapsulated and without access to atmospheric moisture (this material requires atmospheric moisture to cure from paste to rubber).

- In exceedingly large structural cavities (see Sealant Application section for additional information). Under exceedingly hot or cold conditions (see Sealant Application section for additional information). Underwater or in applications where the product will be in continuous contact with water.

- For contact with strong acids or bases. In food contact applications.

## **WARRANTY INFORMATION**

WEIDU™ warrants that its product complies, within its shelf life, to its specification.

If any responsibility were to be considered ours, this would be only for any damages and for the value of the merchandise supplied by us and used by the customer. It is over understood that we warrant the irreproachable quality of our products in accordance with our General Conditions of Sales and Supply.

## **LIABILITY**

The information in this document, in particular recommendations regarding the application and final use of our products, are given in good faith based on our knowledge and is the result of tests and experience and are intended as guidelines. It is the responsibility of the user to determine whether the product is suitable for the application. Due to the great variety of materials and conditions, which are beyond our knowledge and control, we recommend carrying out sufficient previous trials.

The property rights of third parties must be respected.

This TDS replaces and supersedes all previous data sheets on the same product.

**Hunan Weidu Energy Saving Material Co., Ltd**