



WSD-30JZ

High Performance Carbon Fiber Impregnated Adhesive

Description

Carbon fiber adhesive includes **Carbon fiber base adhesive WSD-30DJ**, **Carbon fiber leveling adhesive WSD-30ZP** and **Carbon fiber Impregnated adhesive WSD-30JZ**.

Carbon Fiber Base Adhesive WSD-30DJ:

Used for the bottom-layer application on the surface of concrete components, penetrating and reinforcing damaged concrete surfaces.

Carbon Fiber Leveling Adhesive WSD-30ZP:

Used for the bottom-layer application on the surface of concrete components, penetrating and reinforcing damaged concrete surfaces.

Carbon Fiber Impregnated Adhesive WSD-30JZ:

Used for impregnating and bonding the surface of concrete components and carbon fiber cloth, effectively adhering the carbon fiber cloth to the component surface.

Application Range

This product is a high-performance epoxy-based fiber adhesive, which can be used for concrete, steel, ceramics, stone, wood and other substrates. Penetration bonding with carbon fiber, glass fiber, basalt fiber, aramid fiber and other fibers between fabrics.

It is mainly used in the reinforcement of building structure.

**Product
Characteristic**

- ◆ **Carbon Fiber Base Adhesive WSD-30DJ:**
Low viscosity.
Good liquidity.
Strong penetration ability.
Can well infiltrate and bond the cracks and defects on the concrete surface.
- ◆ **Carbon Fiber Leveling Adhesive WSD-30ZP:**
Good thixotropic properties.
Easy to apply.
Excellent for filling small holes and chipped-out concrete, and level the surface of the concrete.
- ◆ **Carbon fiber impregnating adhesive WSD-30JZ:**
Low viscosity.
Good impregnating properties.
Can well infiltrate the carbon fiber fabrics.
Good thixotropic properties makes it easy to apply.
- ◆ **Compatibility:**
Good compatibility with carbon fibers.
- ◆ **Anticorrosion:**
Excellent durable performance, corrosion resistance.
Humidity and moisture resistance, and chemical corrosion resistance.
- ◆ **High property:**
After curing, it has good physical properties, good toughness and elastic properties.

**Product
Packaging**

The A and B components of Carbon fiber base adhesive, leveling adhesive, and impregnated adhesive are all packaged in plastic drums.

Component A: 20 kg/drum Component B: 10 kg/drum

WONSTAR Advantage

◆ **Nanomaterials**

The use of advanced nanomaterials technology to improve the overall performance of the product to ensure better thixotropy and other properties of the glue and easier combination with carbon fiber.

◆ **Modified epoxy resin**

Adopt low viscosity two-component type A modified epoxy resin, and adjust the functional group polarity to improve permeability.

◆ **The improved formula**

Use advanced formula that allows the adhesive to be cross-coupling on different substrates, increasing the bond strength by at least 18% and achieving higher durability.

◆ **Less usage amount**

No organic volatile substances, no fillers, good suitability. Compared with other products, it can save at least 15% of the usage amount.

◆ **Production equipment**

Advanced high-speed dual-planet power mixing equipment is used to mix raw materials evenly. At the same time, the use of vacuum treatment to ensure that the production process does not produce bubbles, extending the product shelf life and improving the stability of product performance.

Technical Parameters

Carbon Fiber Base Adhesive WSD-30DJ:

Appearance	Component A: Transparent viscous liquid	Operable time (min)	40
	Component B: Brown viscous liquid	Touch dry time (25°C, h)	1~2
Viscosity	≤600 MPa · s	Mixture ratio	A:B = 2:1
Tensile Strength (ASTM D638)		50 MPa	
Shear Strength (ASTM D732)		45 MPa	
Bonding strength with concrete (ASTM C882)		≥20 MPa	

Carbon Fiber Leveling Adhesive WSD-30ZP:

Appearance	Component A: Viscous paste		Operable time (min)	50
	Component B: Viscous paste		Touch dry time (25°C, h)	1~2
Steel-steel bonding strength (MPa)	Anti-shear	20	Mixture ratio	A:B=2:1
	Tensile	35	Operable temperature (°C)	5~40

Technical Parameters

Carbon fiber impregnating adhesive WSD-30JZ:

Appearance	Component A: Viscous liquid		Operable time (min)	70
	Component B: Viscous liquid		Touch dry time (25°C, h)	1~2
Mixture ratio	A:B = 2:1		Operable temperature (°C)	5~40
Consumption for 300GSM		0.6-0.9 kg/sqm	Curing time(25°C, day)	3~7
Consumption for 600GSM		1.0-1.2 kg/sqm	Ultimate elongation (%)	≥1.5
Nonvertical mobility((25°C,mm)		≥99 %	Distortion temperature	≥65 °C
Steel-steel adhesive tensile strength		≥40 MPa	Steel-steel T impact stripping length	≤20 mm

Properties Performance:

Adhesive Performance	Tensile Strength (ASTM D638)	60 MPa
	Tensile Elastic Modulus (ASTM D638)	3100 Mpa
	Elongation at Break (ASTM D638)	6 %
	Flexural Strength (ASTM D790)	240 MPa
	Compressive Strength (ASTM D695)	95 MPa
Adhesive Performance	Steel-steel tensile shear strength	≥14 MPa
	Pulling bonding strength along with concrete	≥2.5 MPa
	Steel-concrete tensile	C60 concrete damage

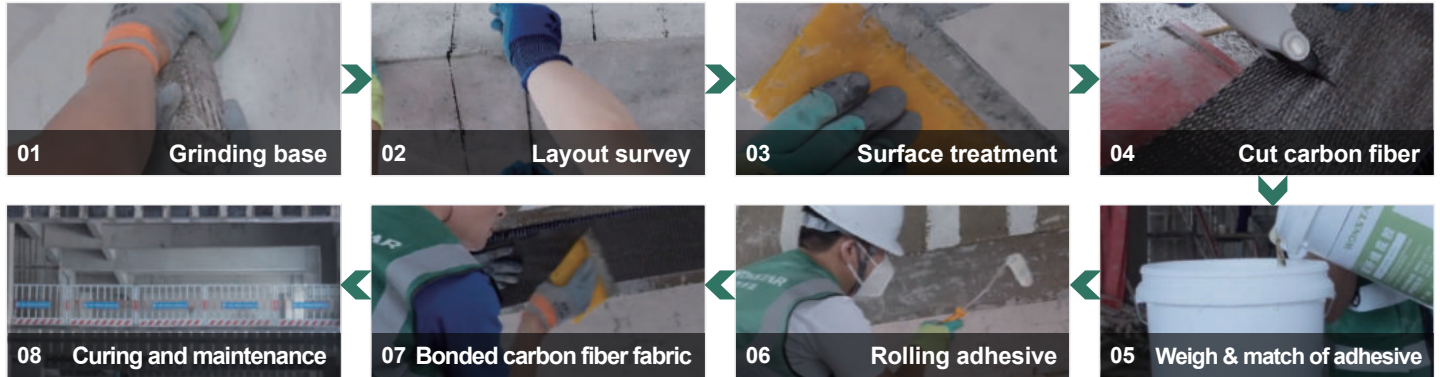
Technical Parameters

Long-term performance:

Long-term Performance	Wet and heat ageing	Compared with the short-term results at room temperature
		The decrease rate of shear strength: $\leq 12\%$
	Heat aging resistance	Compared with the short-term results at same temperature 10min
		The decrease rate of shear strength: $\leq 5\%$
	Freezing and thawing	Compared with room temperature, short-term results
		The shear strength decrease rate is not greater than 5%
	Fatigue stress	After 2×10^6 times continuous sine wave fatigue loads
		Specimen does not destroy
	Resistance to stress	Steel -steel tensile shear specimens does not destroy
		And creep deformation value is less than 0.4 mm
Resistance to corrosion medium	Resistance to salt	Compared with the control group, the strength decrease rate: $\leq 5\%$
		And shall not have cracks or comeunglued
	Alkaline medium	Compared with the control group, the strength does not decrease
		And as the concrete damage, and shall not have cracks or come unglued
	Acid medium	Concrete damage, and shall not have cracks or degumming

Construction Process

Please scan the QR code to watch the video ▶



01. GRINDING BASE

First of all, remove the paint layer of the component to be reinforced until the concrete surface is exposed and polished flat, and then polish the edges and corners of the component section into rounded corners, the beam radius should not be less than 20 mm, the column radius should not be less than 25 mm, and ensure that the surface of the component is clean and dry.

02. LAYOUT SURVEY

Mark the pasting position of the component to be reinforced according to the design drawing and the site positioning pay-off.

03. SURFACE TREATMENT

If there are defects or cracks on the surface of the component, the defects should be repaired and leveled according to the design requirements; Before bonding the carbon fiber fabric, the leveling adhesive can also be rolled on the surface of the component to increase the strength of the component.

04. CUT CARBON FIBER

Cut the carbon fiber fabric according to the requirements of the drawing. Folding is strictly prohibited. If the fiber fabric has creases, the section with creases should be cut.

05. WEIGH AND MATCH OF ADHESIVE

According to the ratio of 2 to 1 weighing and preparation of carbon fiber impregnated adhesive, the use of a blender to stir adhesive at a low speed, in order to prevent bubbles, stir along the same direction, until the adhesive color is even and has no bubbles, and then stop stirring, the amount of adhesive should not be too much, to 1kg-2kg is appropriate, with the use, as far as possible in 30 minutes used up.

06. ADHESIVE ROLLING

After the base adhesive is dry, begin to apply carbon fiber impregnating adhesive with a roller to ensure that the area to be bonded is even.

07. PASTING CARBON FIBER FABRIC

Paste the cut carbon fiber fabric to the position of layout survey, and then use the scraper to scrape the carbon fiber fabric along the direction of the carbon wire. Ensure that the carbon fabric is laid smoothly, without folds and bends, and roll the impregnated adhesive again to ensure that the liquid is fully penetrated into the carbon fiber fabric, and is dense and uniform without bubbles.

(Multi-layer paste can repeat this step, the number of layers is generally not more than 4 layers)

08. CURING AND MAINTAINING

Before curing, the carbon fiber fabric should be checked for swelling or peeling, and if so, it should be trimmed immediately. In order not to make rain and dust adhere to the carbon fiber fabric during outdoor construction, it must be covered with plastic cloth for more than 24h for maintenance.

- Average temperature below 10°C: the initial curing time is about 2 days
- Average temperature 10-20°C: the initial curing time is about 1-2 days
- The average temperature above 20°C: the initial curing time is about 1 day
- Complete curing requires a long time, generally curing more than 80% can be stressed.
- The average temperature is above 20°C: it must be cured for 7 days
- After 7 days, the pull test can be performed

Transportation and Storage

It should be stored in a dry, cool and ventilated environment, avoid rain or exposure to the sun, and do not collide with sharp objects; Carbon fiber materials must not be squeezed during transportation and storage to avoid damage to carbon fiber, and must not be directly exposed to the sun or rain.

Attention

- ◆ **One-time adhesive matching should not be too much**
The amount of one-time dispensing adhesive should not be too much, please use up within the applicable period, if it exceeds the applicable period, do not use.
- ◆ **Cautions for not using up**
If the A and B components of the adhesive are not used up, they should be covered and sealed, and should not be exposed to the air for a long time.
- ◆ **On-site construction safety precautions and accessory equipment**
Construction personnel should take all necessary safety measures (such as wearing masks, gloves, goggles, etc.), and keep fire prevention measures and the site clean.
- ◆ **Personal safety precautions**
If the adhesive is accidentally stained on the skin or cloth, it can be wiped with acetone immediately and then washed with plenty of water; If swallowed or splashed into eyes, seek immediate medical attention.

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