



WSD-390ZJ

High Performance Anchoring Epoxy Resin Adhesive

Description

Anchoring epoxy resin adhesive, also known as **chemical anchoring adhesive**, is a mixture of a variety of chemical components, with excellent adhesion and shear strength. The main function is to strengthen the connection between concrete and steel bars, bolts, anchors and other mechanical parts, so that the two can jointly bear a variety of loads.

Application Range

- ◆ Planting of steel bars and bolts in concrete members
- ◆ Curtain wall installation, stone dry-hanging skeleton fixation
- ◆ Increasing the cross section, building structure reinforcement, and planting steel bar framework
- ◆ Fixing the foundation of large equipment and various equipment
- ◆ Anchoring connection between steel structure and concrete structure
- ◆ Railway, highway, bridge, water conservancy and other engineering reinforcement
- ◆ Billboard, tunnel pipeline, road sound insulation board and barrier fixed
- ◆ The new beam plate column
- ◆ Heavy object hanging
- ◆ Climbing steel ring installation
- ◆ Wood structure repair
- ◆ Rack installation of stereoscopic warehouse

Product Characteristic

- ◆ High strength, strong adhesion, good durability, similar to inserted.
 - ◆ No need to match adhesive, simple and fast construction.
 - ◆ No expansion stress, will not damage the substrate, and repair effect.
 - ◆ Good heat resistance, no creep at room temperature, can be welded at high temperature.
 - ◆ Acid, alkali and salt resistance, anti-aging, excellent seismic performance.
 - ◆ Curing time is fast, can save the construction period.
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Product Packaging

Two-component plastic cartridge packaging, 390 ml / tube.

Appearance

Component A: White paste Component B: Grey paste
After mixing: Grey paste (Colors can be customized, such as red)

Storage and transportation

Should be stored in a cool dry ventilated warehouse, storage period of 24 months; This product is safe and non-toxic, non-dangerous goods, which can be transported according to general chemical building materials.

Appearance

Mix ratio: A:B=3:1
Density after curing: $1.5 \pm 0.1 \text{ g/cm}^3$
Usage: $\pi \cdot 1/2 d^2 \cdot h \cdot 2/3$
d: hole diameter h: hole depth

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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.
- ◆ **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.
- ◆ **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.
- ◆ **Test report**
The product has authoritative and comprehensive inspection reports to meet all types of engineering needs.

Technical Parameters

		Testing Items	Testing Conditions		Qualification Criteria (GB50728-2011) Class I
Colloidal Performance	Splitting Tensile Strength (MPa)	Under conditions of (23±2)°C and (50±5)% relative humidity, the test is conducted at a loading rate of 2mm/min.	(23±2)°C、(50±5)%RH		≥8.5
	Bending Strength (MPa)				≥50, and should not present fragmented damage
	Compressive Strength (MPa)				≥8.5
Adhesion Performance	Steel-steel (steel sleeve) tensile anti-shear strength (MPa)	(23±2)°C、(50±5)%RH		≥10	
	Concrete bond strength with ribbed steel bars under restrained tensile conditions (MPa)	(23±2)°C、(50±5)%RH	C30,φ25, l=150	≥11	
			C60,φ25, l=125	≥17	
Steel-steel T impact stripping length (mm)	(23±2)°C、(50±5) %RH		≤25		
Thermal deformation temperature (°C)	≥40	B method using a bending stress of 0.45 MPa		≥65	
Non-volatile Content (%)	≥20	(105±2)°C、(180±5) min		≥99	
Passing the test for resistance to damp heat aging		Passing the test for long-term stress resistance ability		Service life of 50 years	

Bonding Force Renference Sheet

The reference table of WSD-390ZJ injection-type anchor adhesive planting and anchoring binding force

* The anchoring adhesion when planting steel bars

The steel bar diameter (mm)	The diameter of drilled hole D (mm)	The yield Characteristic Value of Steel bars (kN)	The anchoring adhesion (characteristic value) R _k (kN)																The steel bar yield planting depth lb (mm)		
			26.1	26.3	26.3	26.3															
10	13	26.3	26.1	26.3	26.3	26.3														105	
12	16	37.9		36.2	37.9	37.9	37.9														125
14	18	51.6			45.2	49.8	51.6	51.6	51.6												150
16	20	67.4					60.3	67.4	67.4	67.4	67.4										175
18	22	85.2						74.6	82.9	85.2	85.2	85.2									200
20	25	105.2							94.2	100.5	105.2	105.2	105.2								220
22	28	127.3								112.5	126.6	127.3	127.3	127.3							240
25	32	164.4									144.8	160.8	164.4	164.4	164.4	164.4					270
28	35	206.3										175.9	193.4	206.3	206.3	206.3	206.3				305
32	40	269.4												241.3	251.3	269.4	269.4	269.4	269.4		350
40	50	421.0														339.3	339.3	421.0	421.0	421.0	440
The steel bar buried depth (mm)			80	90	100	110	120	135	150	160	180	200	220	240	250	270	305	350	400	440	

- Notes:
1. Concrete strength is **C30**, II grade steel yield strength is 335 N/mm².
 2. The diameter of drilling holes in the table is the best recommended value, the nearest bit can be selected according to the actual situation.
 3. The yield buried depth value of the steel bars should consider safety factors, and select the design values.

Bonding Force Renference Sheet

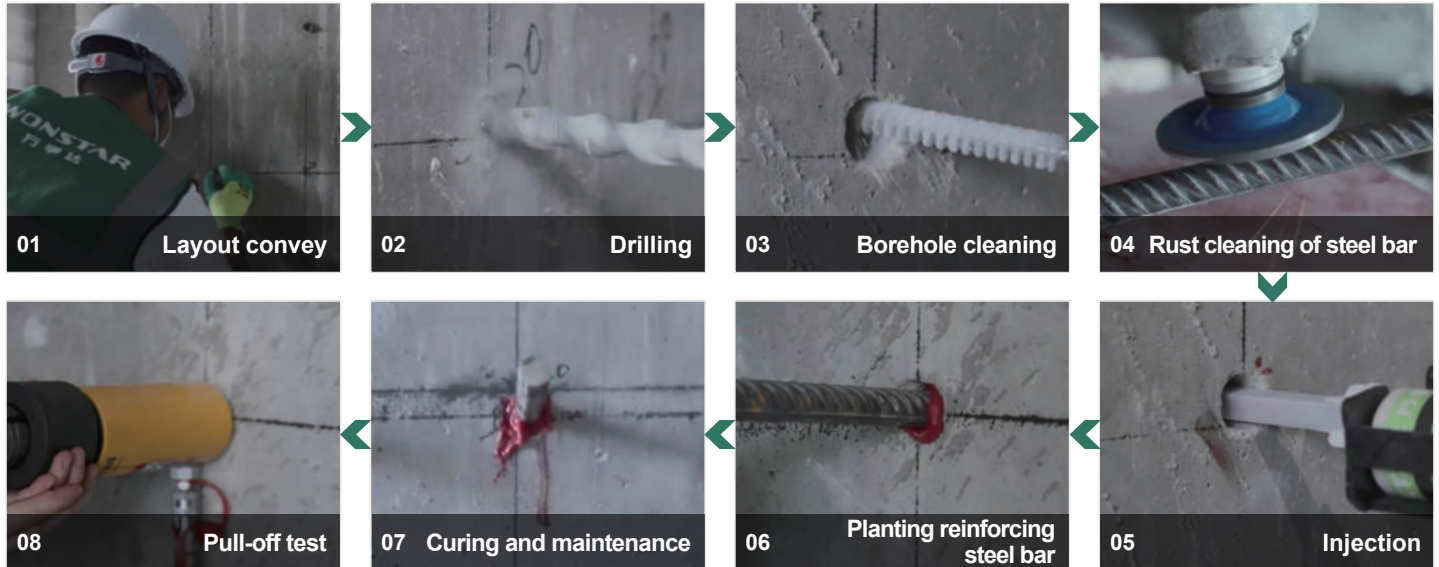
* The anchoring adhesion when planting steel bars

The steel bar diameter (mm)	The diameter of drilled hole D (mm)	The yield Characteristic Value of Steel bars (kN)	The anchoring adhesion (design value) R_d (kN)																	The steel bar yield planting depth l_b (mm)		
			17.4	19.6	21.8	22.9																
10	13	22.9	17.4	19.6	21.8	22.9															105	
12	16	33.0		24.1	26.8	29.5	33.0															125
14	18	44.8			33.2	49.8	36.2	40.7	44.8													150
16	20	58.5					40.2	45.1	50.1	53.5	58.5											175
18	22	74.1						49.7	55.3	59.0	66.4	74.1										200
20	25	91.5							62.8	67.0	75.3	83.7	91.5									220
22	28	110.7								75.0	84.4	93.8	103.2	110.7								240
25	32	143.0									96.5	107.2	118.0	128.7	134.0	143.0						270
28	35	179.3											117.2	128.9	140.6	146.5	158.3	179.3				305
32	40	234.2												160.8	167.3	181.0	204.4	234.2				350
40	50	365.9														226.2	255.5	293.1	334.9	365.9		440
The steel bar buried depth (mm)			80	90	100	110	120	135	150	160	180	200	220	240	250	270	305	350	400	440		

Notes:
 1. Concrete strength is C30, the designed strength of grade II steel bar is 335 N/mm². The designed safety coefficient of steel bar $\gamma_s=1.15$. The designed safety coefficient concrete $\gamma_c=1.5$.

Construction Process

Please scan the QR code to watch the video ▶



01. LAYOUT CONVEY

Positioning according to the design drawings; using the steel detector to avoid the existing steel on the substrate.

02. DRILLING

The depth and diameter of the hole should meet the requirements of the national standard; the hole should be adjusted to avoid the existing steel bar; the actual drilling depth can refer to the 15d benchmark, according to the actual required anchorage force size, and consider the length of the substrate (If the base material is thin, the depth should be reduced), make comprehensive calculation.

03. BOREHOLE CLEANING

After drilling, check whether the hole depth and aperture are qualified, brush the hole wall with a brush after confirming that it is correct, and then blow out the dust in the hole with compressed air. It is recommended to brush three times and blow three times until there is no dust debris in the hole.

04. RUST CLEANING OF STEEL BAR

Rust, oil on the steel bar should be removed, and polished metal luster, the use of Angle grinder and steel wheel can speed up the process.

05. INJECTION

Install the anchoring epoxy resin adhesive on the groove of the dispenser, install the mixing tip (static mixers for laminar flows) at the front end, adjust the adhesive injection speed, drain a little of the incomplete colloid before injection, and start from the bottom of the hole to discharge the air, about two-thirds of the hole depth.

06. PLANTING REINFORCING STEEL BAR

When the steel bar is inserted, it is necessary to turn and insert in a single direction to prevent mixing bubbles and reach the specified depth.

07. CURING AND MAINTENANCE

Planting steel bar has a curing process, before the complete curing shall not disturb the steel bar, if there is a large disturbance should be replanted.

08. PULL-OFF TEST

After solidification and maintenance of the steel bar can be random sampling, most test with pull out test apparatus.

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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