Shieldanchor EP500

High-performance, Two-component Injectable Epoxy Anchor Adhesive

MICSHIELD®

TECHNICAL DATA SHEET

Description

Shieldanchor EP500 is a high-strength, multi-purpose, fast-curing, two-component, styrene-free epoxy resin anchoring adhesive supplied in a pre-packed cartridge system. **Shieldanchor EP500** designed to anchor threaded rods and reinforcing bars in both cracked and uncracked concrete, providing excellent load capacity and long-term performance.

Uses

- Anchoring steel bars and bolts in concrete structures.
- Curtain walls and mechanical stone fixing using dry-hanging brackets.
- Reinforcing and anchoring structural frameworks in buildings.
- Fixing structural steel elements to concrete or masonry.
- Base fixation for various equipment.
- For infrastructure projects, bridges, highways, and water-conservancy structures.
- Installing signage, noise barriers, barricades, or heavy fixtures on concrete or masonry surfaces.

Characteristics / Advantages

- Fast curing.
- Styrene free.
- Moisture-tolerant and stable in humid environments.
- High strength and modulus with good toughness.
- Resistant to aging and high temperatures.
- Resistant to acids and alkalis
- Excellent thixotropy, ideal for side and overhead anchoring.

Shelf Life and Storage

Shieldanchor EP500 has a shelf life of 12 months when stored in its original unopened packaging in cool (10 – 25 °C) and dry conditions, protected from direct sunlight, heat, and moisture. Shelf life may be reduced if the recommended storage conditions are not followed.

Packaging

Shieldanchor EP500 is supplied in 390 ml cartridges.

Typical Properties

Color / Appearance (Part A) Color / Appearance (Part B)	White Paste Red/ Black Paste
Solid content	99%
Viscosity of mixture	18 – 22 $kg \cdot m^{-1} \cdot s^{-1}$
Density after curing	1.5 ± 0.1 g/cm^3
Mixture Ratio (By weight)	3:1
Thixotropy index	≥ 4.0
Splitting Tensile Strength	≥ 9.0MPa
Bending Strength	60 MPa
Compressive strength	≥90 MPa
Steel-steel Tensile Shear Strength	≥16 MPa
Tensile Strength of ribbed steel bars and concrete C30, Ø25, L=150 mm	≥ 20 MPa
Bonding Strength of ribbed steel bars and concrete C60, Ø25, L=125 mm	≥ 25 MPa
Steel-steel T impact Stripping Length	≤ 25mm
Sagging mobility (25°C)	≤ 2.0 mm
Heat Distortion temperature	≥ 65 °C

Working & Curing Times

Temperature (°C)	-5	0	10	20	≥30
Working time (minutes)	60	45	30	15	20
Curing time (hours)	72	48	24	12	6

MANASEER GROUP

Estimating

The required quantity of **Shieldanchor EP500** depends on the hole diameter and depth. Typically, filling approximately two-thirds of the hole is sufficient. The estimated volume of **Shieldanchor EP500** can be calculated using the following formula:
Volume (ml) = (π / 6000) × Øh² × d

Steel bar diameter (Ø) (mm)	Hole diameter (Øh) (mm)	Hole depth (d) (mm)	**Shieldanchor EP500** Volume (ml (2/3v))
8	12	80	6.03
8	12	120	9.04
8	12	160	12.06
10	14	100	10.26
10	14	150	15.08
10	14	200	20.52
12	16	120	16.09
12	16	180	24.12
12	16	240	32.18
14	18	140	23.73
14	18	210	35.61
14	18	280	47.46
16	22	160	40.52
16	22	240	60.79
16	22	320	81.04
18	25	180	58.87
18	25	270	88.31
18	25	360	117.74
20	28	200	82.06
20	28	300	123.09
20	28	400	164.12
25	32	250	133.97
25	32	375	200.96
25	32	500	267.95

TECHNICAL DATA SHEET

Steel bar diameter (Ø) (mm)	Hole diameter (Øh) (mm)	Embedded Length (mm)	Maximum Pull Out Force (KN)
10	13	80	26.1
10	13	110	26.3
12	16	90	36.2
12	16	120	37.9
14	18	100	45.2
14	18	110	49.8
14	18	150	51.6
16	20	120	60.3
16	20	180	67.4
18	22	135	74.6
18	22	150	82.9
18	22	200	85.2
20	25	150	94.2
20	25	160	100.5
20	25	220	105.2
25	32	180	144.8
25	32	200	160.8
25	32	270	164.4
32	40	240	241.3
32	40	250	251.3
32	40	350	269.4

TECHNICAL DATA SHEET

1. Surface Preparation

Drill holes at the designed positions, ensuring that the depth and diameter meet the specified requirements to provide sufficient bonding area and achieve the required pull-out strength.

Then clean the holes by brushing and blowing at least three times to remove all dust and debris before injecting the adhesive.

2. Application

Remove the protective cap from the cartridge, cut the foil seal, and attach the static mixing nozzle. Insert **Shieldanchor EP500** cartridge into the special static mixer and dispenser, then squeeze out a small amount of it until a uniform color is achieved to ensure proper mixing. Inject **Shieldanchor EP500** adhesive from the bottom of the hole, filling approximately two-thirds of the hole. Clean and polish the steel bar or anchor bolt before insertion. Insert the bar or bolt in a single, steady motion until it reaches the bottom of the hole. Allow the assembly to remain undisturbed for the recommended curing time to achieve full strength.

3. Cleaning

Clean the tools and any uncured material immediately before reaching the setting time using a suitable solvent. Hardened material should be removed mechanically.

Safety Instructions

The application should be done in a well-ventilated area with adequate air circulation, away from any heat source, and ensure having gloves, eye protection, masks, and protective clothing.

Avoid contact with the eyes and skin. In case of direct contact with the skin, wash the affected area immediately with water for several minutes. If it comes into contact with the eyes, rinse immediately with lukewarm water for at least 15 minutes and get medical advice or treatment if any emergency warning signs appear. Dispose of any leftover epoxy and waste materials according to local regulations. For further information, refer to the Material Safety Data Sheet.

Technical Support

Refer to technical information, method statement, or contract technical support team for any inquiry.

Address: Manaseer Group, 8th Circle, King Abdullah II St. 302
P.O. Box 925988 Amman, 11110, Jordan
Phone +962 6 5800600
Fax. +962 6 5833890
Email: info.shield@manaseer-ic.com
Website: www.manaseergroup.com