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Maintenance of
Concrete

MasterEmaco[®] ADH 501

Low viscosity, high modulus epoxy resin for crack injection and horizontal void filling

PACKAGING

6.1 fl. oz / 180 ml Cartridge
(12 per Case)

COLOR

Part A (Resin): Clear,
Part B (Hardener): Amber

Ratio: 2:1 by volume, Mixed
Color – Amber

STORAGE

Store and transport in unopened
containers in a cool, clean, dry area.
Keep from freezing.

SHELF LIFE

2 years when properly stored

VOC CONTENT

0 g/L less water and exempt solvents

DESCRIPTION

MasterEmaco ADH 501 is a two-component, low viscosity, high modulus epoxy resin formulation designed for high performance structural crack repair applications (ASTM C881). The application temperature range is 50 – 100 °F (10 – 38 °C).

PRODUCT HIGHLIGHTS

- Pressure injection or gravity feed
- Low odor
- Structural repair of concrete cracks (less than ¼")
- Extended Gel/Cure Time
- Moisture insensitive
- Acceptable for use in USDA inspected facilities

SUBSTRATES

- Concrete
- Masonry

APPLICATIONS

- Crack injection
- Epoxy resin binder for mortar repair, patching and overlay of interior surfaces including aggregate
- Sealer for interior slabs and exterior above-ground slabs, decks, patios, driveways, parking garages and other structures
- Void filling for grouting application

TECHNICAL DATA

Working Time

22 minutes @ 100 °F (38 °C)

30 minutes @ 75 °F (24 °C)

45 minutes @ 50 °F (10 °C)

Temperature range

50 – 100 °F (10 – 38 °C)

Test Data

PROPERTY	RESULTS	TEST METHOD
Gel Time – 60 gram mass, min 60 °F (16 °C)	27	ASTM C 881
Viscosity	500, cP	
Pot Life, min	19	
Compressive Yield Strength, MPa (psi) 7 days @ 60 °F (16 °C)	(10,150) (70.0)	ASTM D 695
Compressive Modulus, MPa (psi) 7 days @ 60 °F (16 °C)	(2,068) (300,000)	ASTM D 695
Tensile Strength 7 days @ 60 °F (16 °C)	7,230 (49.8)	ASTM D 638
Tensile Elongation 7 days @ 60 °F (16 °C)	% 4.4	ASTM D 638
Hardened Concrete Bond Strength to Hardened Concrete, MPa (psi) 2 days @ 60 °F (16 °C) 14 days @ 60 °F (16 °C)	1,580 (10.9) 2,950 (20.3)	ASTM C 882
Hardened Concrete Bond Strength Fresh to Hardened Concrete, MPa (psi) 14 days @ 60 °F (16 °C)	1,720 (11.9)	
Water Absorption % 14 Day	0.3	ASTM D 570
Linear Shrinkage, % 2 Days	0.0003	ASTM D 2566
Heat Deflection Temperature, °F (°C) 7 Days	120 (49)	ASTM D 648

Test results are averages obtained under laboratory conditions 60 °F (16 °C). Expect reasonable variations.

CARTRIDGE PREPARATION

- CAUTION:** Check the expiration date on the cartridge to ensure it is not expired. **Do not use expired product!** Insert cartridge into the dispenser. Make sure it is properly positioned with the shoulder of the cartridge flush with the front top bracket of the dispenser. Point upward at about a 45° angle. Remove the plastic cap and plug from the top of the cartridge.
- Continue to point upward, away from yourself and others while slowly applying pressure to dispenser moving any bubbles and product up through the cartridge until both products flow out evenly. The cartridge is now purged or balanced and ready for the flow controller installation.
- Use a flow controller located inside the threaded end of the mixing nozzle and secured

by a plastic cap. Insert the flow controller to the top of the threaded end of the cartridge where product will dispense and ensure it is securely seated. Install the mixing nozzle onto cartridge. Holding the dispenser straight up, slowly apply pressure to the dispenser moving any bubbles and product up through the nozzle until product reaches the tip. Tilting only slightly, dispense this first full stroke of material into a disposable container. The cartridge is now ready for use.

- CAUTION:** When changing cartridges, never re use nozzles. A new nozzle should be used with each new cartridge and steps 1-3 should be repeated accordingly.
- NOTE:** Schedule dispensing to consume an entire cartridge at one time with no interruption of flow to prevent material from hardening in mixing nozzle. Replace the nozzle if problems occur while dispensing product as the product

may have begun to cure in the nozzle which will affect the mix ratio. Never transfer a used nozzle to a new cartridge. Repeat the cartridge balancing steps after replacing the nozzle.

APPLICATION

Application temperature range is 50 to 100 °F (10 to 38 °C). Precondition all components to 70 °F (21 °C) for 24 hours before using.

GRAVITY FEED CRACK REPAIR FOR HORIZONTAL APPLICATIONS

For best results, cut a groove to open up the crack using an abrasive or diamond blade (crack chaser) to a width of 1/8 in (3.2 mm) and minimum depth of 3/8 in (9.5 mm). Use a wire brush to abrade and then blow out the crack with compressed air to remove all dust, dirt, grease, wax, oil or any other

contaminants. Pour MasterEmaco ADH 501 into the crack and its self leveling ability will fill the entire crack area. Repeat application if necessary to completely fill the crack

LOW PRESSURE CRACK INJECTION FOR VERTICAL, HORIZONTAL AND OVERHEAD STRUCTURAL REPAIR

Use MasterEmaco ADH 502 to seal crack surface and to adhere injection ports at desire spacing.

Use a plastic tube to connect the static mixer on the MasterEmaco ADH 501 cartridge to the first injection port.

NOTE: when injecting on vertical or inclined surfaces, the lowest injection should begin at the lowest port.

The resin should be injected using low pressure until resin is observed at the next port. The tube should be removed from the injection port and moved to the next port, taking care to seal the first port.

Repeat this process until the crack has been completely injected. Once the resin has cured, the ports can be removed by mechanical means.

BONDING AGENT APPLICATION

Bonding fresh concrete to hardened concrete or when used as a bonding agent for repairing concrete spalls: Using a brush or roller apply an even coat of the bulk mixed MasterEmaco ADH 501 to the clean and mechanically prepared concrete surface. While the epoxy is still tacky, place fresh concrete over the mixed epoxy.

Spall Repair Applications

To avoid a feathered edge, cut around the spall into sound concrete with a grinder or circular saw using a diamond or concrete abrasive blade. The edge cut should be equal to the maximum depth of the spall or to at least, a minimum depth of ¾ in (19 mm).

Chip out all loose concrete within the entire spall to a minimum depth of ¾ in (19 mm). Follow surface preparation instructions above to clean the spall. Estimate the amount of bulk product needed and mix Part A and Part B, 2 to 1 by volume. Mix Part A and B thoroughly. Slowly add 3-4 parts by volume of kiln dried sand or aggregate of choice and mix well, pour and trowel until smooth/level.

Note: The low viscosity of MasterEmaco ADH 501 will aid in wetting out aggregate to create a repair mortar. Maximum mortar thickness is 1.5 in (38 mm) per lift.

CLEAN UP

Clean uncured mixed material with xylene or mineral spirits. Cured material must be removed mechanically

FOR BEST PERFORMANCE

- Do not mend dynamic or moving cracks
- Use entire contents of cartridge. Do not attempt to reuse unused portions.
- UV may discolor cured material
- For professional use only: not for sale to or use by the general public.
- Contact your local representative for a pre job conference to plan the installation.
- Make certain the most current versions of product data sheet and SDS are being used; visit www.master-builders-solutions.com/en-us to verify the most current versions.
- Proper application is the responsibility of the user. Field visits by Master Builder Solutions personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

HEALTH, SAFETY AND ENVIRONMENTAL

Read, understand and follow all Safety Data Sheets and product label information for this product prior to use. The SDS can be obtained by visiting www.master-builders-solutions.com/en-us, e-mailing your request to mbsbcst@mbcc-group.com or calling +1 (800) 433-9517. Use only as directed.

IN CASE OF EMERGENCY: Call CHEMTEL +1 (800) 255-3924 or if outside the US or Canada, +1 (813) 248-0585.

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