



PLANIBOND HI-MOD MV
High-Modulus, Medium-Viscosity, Epoxy Bonding Agent

SECTION 03 01 00
Maintenance of Cast-In-Place Concrete

Part 1 GENERAL

1.1 SECTION INCLUDES

- A. Surface preparation and field application for a high-strength, two-part, nonsag, 100%-solids, solvent-free epoxy anchoring gel designed for a wide variety of bonding and repair applications.

1.2 RELATED SECTIONS

- A. Section 03 01 40 – Maintenance of Precast Concrete

1.3 REFERENCES

- A. ASTM International:
 - 1. ASTM C881, Types I, II, IV and V – Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color and patterns.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum of 5 years' experience in manufacturing similar products.
- B. Installer Qualifications: Minimum of 2 years' experience in installing similar products.
- C. Source Limitations: For repair products, obtain each color, grade, finish, type and variety of product from single source and from single manufacturer with resources to provide products of consistent quality in appearance and physical properties.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship is approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.



1.6 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handling: Handle materials to avoid damage.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

Part 2 PRODUCTS

2.1 MANUFACTURERS

- A. Product Performance:

Viscosity – ASTM D2556 At 73°F (23°C)	3,020 cps
Gel time, 60-gram sample – ASTM C881	60 minutes
Compressive strength – ASTM D695 At 7 days at 59°F (15°C)	11,000 psi
Bond strength – ASTM C882 2 days at 59°F (15°C) (moist cure), hardened concrete to hardened concrete	2,500 psi (17.2 MPa)
14 days at 73°F (23°C) (moist cure), freshly mixed concrete to hardener concrete	2,500 psi (17.2 MPa)
14 days at 59°F (15°C) (moist cure), hardened concrete to hardened concrete	3,750 psi (25.9 MPa)

Acceptable Manufacturer:

MAPEI North America
1144 E. Newport Center Dr.; Deerfield Beach, FL 33442
Toll-Free for CRS Technical Services: Tel. 888-365-0614
Email: CRS@mapei.com
Web: www.mapei.com



- B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
- C. Substitutions: Not permitted.

2.2 EPOXY CRACK-INJECTION MATERIALS

- A. Epoxy Bonding Agent: ASTM C881, bonding system.
 - 1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Planibond Hi-Mod MV
 - 2. Type I, Type II: Non-load-bearing applications.
 - 3. Type IV: Load-bearing applications.
 - 4. Bond Strength: Not less than 3,750 psi (25.9 MPa) within 14 days when tested according to ASTM C882.

2.3 MISCELLANEOUS MATERIALS

- A. Portland Cement: ASTM C 150/C 150M, Type I, II or III unless otherwise indicated.
- B. Water: Potable.

2.4 MIXES

- A. General: Mix products, in clean containers, according to manufacturer's written instructions.
 - 1. Do not add water, thinners or additives unless recommended by manufacturer.
 - 2. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovels or trowels as units of measure.
 - 3. Do not mix more materials than can be used within time limits recommended by manufacturer. Discard materials that have begun to set.

Part 3 EXECUTION

3.1 EXAMINATION

- A. Properly prepared concrete at least 28 days old, stable, sound and dry, as well as masonry and wood.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

Ensure that all appropriate tools and safety equipment are used. Refer to Technical Data Sheets (TDSs) for surface preparation.

- A. Mechanically clean and prepare concrete substrate by shotblasting, sandblasting, scarifying or other engineer-approved methods to achieve a profile of CSP #2 to #4 per ICRI Guideline 310.2R.
- B. Before application, thoroughly clean the surface of any substance that could interfere with the bond of the installation material, including dirt, paint, tar, asphalt, wax, oil, grease, latex compounds, sealers, curing compounds, form-release agents, laitance, loose toppings, foreign substances and adhesive residue. Clean steel mechanically to remove any corrosion



or coating (to a near white metal finish) before application of Planibond Hi-Mod MV.

- C. Concrete substrate and ambient room temperatures must be between 50°F and 95°F (10°C and 35°C) before application. Temperatures must be maintained within this range for at least 72 hours after the installation of Planibond Hi-Mod MV.
- D. Substrates must be dry or damp. Do not apply Planibond Hi-Mod MV over standing water.

3.3 MIXING

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details.

- A. Store Planibond Hi-Mod MV components at room temperature before mixing.
- B. Using a Jiffy mixing paddle, mix Planibond Hi-Mod MV's individual components separately before combining them.
- C. Using a low-speed mixer (at about 300 to 550 rpm) and a Jiffy mixing paddle, mix all of Part A with all of Part B together thoroughly for 3 minutes until achieving a uniformly mixed material. Stop after about 1 minute to scrape excess material from the sides of the mixing container. Mix to a smooth, homogenous consistency. Do not mix at high speeds, which can trap air within the mixed material. Always ensure that well-mixed equal amounts of Part A are combined with the same as Part B.
- D. Only mix as much material as can be applied within the pot life. Warm temperatures and/or mixing a large volume of material at a time can greatly reduce the pot life of epoxy.

3.4 INSTALLATION

Read all installation instructions thoroughly before installation.

Application as a bonding agent

- A. Apply the bonding agent onto the substrate with a brush, roller, broom or trowel, working material into the profiled substrate. Completely cover all areas of substrate that will receive concrete, screed mortar or repair.
- B. Alternatively, perform a sand broadcast to complete rejection if concrete or toppings cannot be installed before curing. Use MAPEI's Mapesand Coarse or sand of #16 mesh in size.
- C. Apply Planibond Hi-Mod MV at a thickness of 15 to 20 mils.
- D. Concrete, screed mortars and repair mortars must be placed onto Planibond Hi-Mod MV while it is tacky.

Application as an epoxy repair mortar for concrete substrates (interior use only)

- A. Prime the area to be repaired with neat-mixed Planibond Hi-Mod MV.
- B. Add up to 4 parts by volume of trowel-grade aggregate to 1 part of neat-mixed Planibond Hi-Mod MV. While the primer coat is still tacky, apply the epoxy repair mortar up to 2" (5 cm) thick per lift. Allow the material to harden between lifts, being sure to apply the next lift (primer and mortar) within 24 hours.

Application as a bonding agent/primer with or without sand broadcast (when the material being bonded will be the final wear surface)

- A. For ease of application, apply the bonding agent on a substrate with a CSP of #3 or greater.
- B. Apply the bonding agent with a brush, roller, broom, squeegee or trowel, working material into



the profiled substrate and back-rolling where applicable to achieve a uniform thickness. Completely cover all areas of substrate that will receive the sand broadcast, topping or repair material. Follow Steps 3 to 4 below for sandbroadcast applications only.

- C. Immediately after application of Planibond Hi-Mod MV, broadcast clean and dry Mapesand Coarse or #16 mesh sand.
- D. Once Planibond Hi-Mod MV has cured (for 16 to 24 hours at 75°F or 24°C), the excess sand can be removed by sweeping, air blowing or vacuum. Once the surface has been swept clean of all unbonded sand, use an industrial vacuum equipped with a brush over the surface to remove any debris or remaining unbonded sand.

END OF SECTION