

Planibond Hi-Mod MV

High-Modulus, Medium-Viscosity, Epoxy Bonding Agent



DESCRIPTION

Planibond® Hi-Mod MV is a two-component, multipurpose, high-modulus, medium-viscosity, epoxy bonding agent. *Planibond Hi-Mod MV* is nonshrink, 100%-solids and moisture-tolerant. It is used primarily as a bonding agent for screeds and repair mortars.

FEATURES AND BENEFITS

- Easy-to-use, two-component formula with a 2-to-1 ratio in volume of Part A and Part B
- Medium-viscosity for easy placement by brush or roller
- Gray in color when mixed

INDUSTRY STANDARDS AND APPROVALS

- ASTM C881 / AASHTO M235 Grade 2; Class C; Type I, II, IV, V

WHERE TO USE

- For bonding fresh concrete and screed mortars to cured concrete and epoxy-primed steel
- As a grout for installing anchors, bolts, dowels, rods, steel bars and faceplates (1/4" or 6 mm in maximum thickness)
- As an epoxy repair mortar with the addition of select aggregates
- As a crack filler in gravity-feed applications
- As a structural adhesive for properly prepared concrete

SUITABLE SUBSTRATES

- Concrete substrates must be at least 28 days old.
- Do not apply *Planibond Hi-Mod MV* over nondimensionally stable materials.

Consult MAPEI's Technical Services Department for installation recommendations regarding substrates and conditions not listed.

SURFACE PREPARATION

- Mechanically clean and prepare concrete substrate by shotblasting, sandblasting, scarifying or other engineer-approved methods as to achieve a profile of CSP #2 to #4 per ICRI Guideline 310.2R.
- Before application, thoroughly clean the surface of any substance that could interfere with the bond of the epoxy adhesive, 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*.
- Concrete substrate and ambient room temperatures must be between 59°F and 95°F (15°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* and finished material.
- Substrates must be dry or damp. Do not apply *Planibond Hi-Mod MV* over standing water.

MIXING

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

1. Store *Planibond Hi-Mod MV* components at room temperature before mixing.
2. Using a Jiffy mixing paddle, mix *Planibond Hi-Mod MV*'s individual components separately before combining them.
3. Using a low-speed mixer (at about 300 to 550 rpm) and a Jiffy mixing paddle, combine 2 parts by volume of Part A with 1 part by volume of Part B, and mix 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.
4. 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.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

Application as a bonding agent

1. 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 the concrete, screed mortar or repair mortar.
2. 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.

3. Apply *Planibond Hi-Mod MV* at a thickness of 15 to 20 mils.
4. Concrete, screed mortars and repair mortars must be placed onto *Planibond Hi-Mod MV* while it is tacky.

Consult MAPEI's Technical Services Department to know which screed mortar and/or repair mortar will work in wet-on-wet mode.

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

1. Prime the area to be repaired with neat-mixed *Planibond Hi-Mod MV*.
2. 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).

1. For ease of application, apply the bonding agent on a substrate with a CSP of #3 or greater.
2. 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 sand-broadcast applications only.
3. Immediately after application of *Planibond Hi-Mod MV*, broadcast clean and dry *Mapesand Coarse* or #16 mesh sand.
4. 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.

Application as a crack filler

1. Apply the bonding agent "neat" for applications up to 1/4" (6 mm) in thickness.
2. For applications of 1/4" to 1/2" (6 to 12 mm), add a selected dry aggregate: 1.5 to 4 parts by volume of aggregate (70% to 80% silica retained on sieves #30 to #50). Use only sorted, oven-dried aggregate.

CLEANING

- Clean tools and protective gear with mineral spirits. Cured material can only be mechanically removed.

LIMITATIONS

- For use as a bonding agent for a slab topping, note that the measured moisture vapor transmission cannot exceed 5 lbs. per 1,000 sq. ft. (2.27 kg per 92.9 m²) per 24 hours using a calcium chloride test, per ASTM F1869.
- *Planibond Hi-Mod MV* can only be used between the temperatures of 59°F and 95°F (15°C and 35°C). For temperatures above 85°F (29°C), take appropriate precautions to keep the material cool and away from direct sunlight and significant air movement. Higher temperatures will decrease the setting time; cooler temperatures will increase the setting time.
- *Planibond Hi-Mod MV* is a two-component product, with no additional ingredients required. Do not add water or thin the material with solvents.

- Always apply fresh concrete, repair mortars and screed mortars to *Planibond Hi-Mod MV* while it is tacky. Once *Planibond Hi-Mod MV* has been applied to the substrate, it will need some time to become sufficiently tacky; time will vary based on such factors as ambient air temperature and substrate temperature. Do not allow the material to become tack-free or harden before application, or *Planibond Hi-Mod MV* will act as a bond-breaker and prevent adhesion to the substrate.

Product Performance Properties

at 50% relative humidity (RH)

Laboratory Tests	Results
Compressive strength – ASTM D695	
7 days at 59°F (15°C)	11,000 psi (75.9 MPa)
Modulus of elasticity – ASTM D695	
7 days at 59°F (15°C)	280,000 psi (1 931 MPa)
Linear coefficient of shrinkage on cure at 73°F (23°C) – D2566	
48 hours at 73°F (23°C)	0.000%
Bond strength – ASTM C882	
2 days at 59°F (15°C) (moist-cured), hardened concrete to hardened concrete	> 2,500 psi (17.2 MPa)
14 days at 73°F (23°C) (moist-cured), freshly mixed concrete to hardened concrete	> 2,500 psi (17.2 MPa)
14 days at 59°F (15°C) (moist-cured), hardened concrete to hardened concrete	> 3,750 psi (25.9 MPa)
Tensile strength – ASTM D638	
7 days at 59°F (15°C)	> 7,000 psi (48.3 MPa)
Tensile elongation at break – ASTM D638	
7 days at 59°F (15°C)	2.9%
Water absorption – ASTM D570	
14 days at 73°F (23°C)	0.2%
Flexural resistance heat deflection temperature, with fiber stress loading at 261 psi (1.8 MPa) – ASTM D648	
7 days	141°F (60°C)
Gel time, 60 g at 73°F (23°C) – ASTM C881	60 minutes
Viscosity at 73°F (23°C) – ASTM D2556	3,020 cps
VOC content (SCAQMD Rule 1168)	< 250 g per L
Typical VOC content per SCAQMD Rule 1168 testing methods	3 g per L

Shelf Life and Product Characteristics

before mixing

Shelf life	2 years when stored in original, unopened packaging at 73°F (23°C)
Storage	Store in dry place at 50°F to 95°F (10°C to 35°C).

Protect containers from freezing in transit and storage. Provide for heated storage on site and deliver all materials at least 24 hours before work begins.

Application Properties

at 50% RH

Application temperature range – ASTM C881	> 59°F (15°C)
Drying time, 20 mils at 73°F (23°C) – ASTM D5895	
Set-to-touch	About 3 hours
Tack-free time	About 5 hours, 30 minutes

CSI Classification

Maintenance of Concrete	03 01 00
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Packaging

Size
Part A, Pail: 1.34 U.S. gals. (5.07 L)
Part B, Pail: 0.66 U.S. gal. (2.50 L)
Part A, Pail: 5 U.S. gals. (18.9 L)
Part B, Pail: 2.5 U.S. gals. (9.46 L)

Approximate Coverage*
as a bonding agent

Substrate	Coverage
Smooth surface	100 sq. ft. per U.S. gal. (2.45 m ² per L)
Rough surface	60 sq. ft. per U.S. gal. (1.47 m ² per L)

** Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions and setting practices.*

ADDITIONAL INFORMATION

Refer to the Safety Data Sheet (SDS) for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

WARNING

The test results shown in the TECHNICAL DATA table were obtained in compliance with test methods and curing cycles, if applicable, defined in the industry standards referenced on the Technical Data Sheet. Please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement nor replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at www.mapei.com. **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

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For the most current product data and BEST-BACKEDSM warranty information,
visit www.mapei.com.
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