104 PumaPOXY MB™

100% Solids Moisture Mitigation Epoxy

PRODUCT DESCRIPTION

104 PumaPOXY MB is a MoistureBLOK system: a clear, two-component, 100% solids epoxy hybrid for on- or below-grade concrete slabs. It is specially designed for faster cure and maximum moisture vapor protection, while reducing the risk of outgassing and "fish eyes" typically associated with porous and contaminated concrete. The 104 PumaPOXY MB primer system can be used under all PumaCRETE seamless flooring materials.

104 PumaPOXY MB can be applied to concrete slabs with relative humidity as high as 99% RH and provides protection from sustained exposure to pH 14. It is engineered to reduce moisture vapor emission levels from up to 25 lbs/1,000 sq ft/24 hrs to 3 lbs/1,000 sq ft/24 hrs or less, or from 99% RH to ≤75% RH. It is an excellent and extremely effective long-term moisture blocker, with good surface contaminant resistance for both resinous and resilient flooring systems.

104 PumaPOXY MB is compliant with all state and federal VOC regulations. Its VOC content of <5 g/L allows installation in sensitive areas such as hospitals, schools, retail stores, and other occupied spaces.

FEATURES & BENEFITS

- Single-coat application
- Minimal downtime — 4-hour tack-free cure
- Built-in adhesion promoter
- Excellent inter-coat adhesion
- Low-temperature curable (45°F)
- Zero VOCs
- Green concrete primer (min. 7 days old)
- **Moisture tolerant** — reduces moisture vapor emission levels from up to 25 lbs/1,000 sq ft/24 hrs to 3 lbs or less (or 99% RH to ≤75% RH)

TYPICAL USES

- Moisture mitigation system applied under all PumaCRETE seamless flooring materials
- Concrete slabs on or below grade without a vapor barrier or retarder
- "Green concrete" slabs 7 days or older
- Industrial, commercial, institutional, and residential applications

LIMITATIONS

- Best suited for application at temperatures between 50°F and 90°F (10–32°C).
- Designed as a moisture mitigation primer system for indoor use.
- Apply only to properly prepared, sound, and stable concrete.

PHYSICAL CHARACTERISTICS

Solids (by wt.)	100%
Mix Ratio (by vol.)	2 parts Resin : 1 part Hardener
Viscosity @ 70°F	1,600 cps
Pot Life @ 70°F	15 minutes
Working Time @ 70°F	15 minutes
Cure Time, Tack-Free @ 70°F	4–5 hrs foot traffic; 12–18 hrs normal operation
Recoat Window	Maximum of 36 hours
Coverage Rate	16 mils, 100 sq ft/US gal
VOC	Nil

COVERAGE RATE PER GALLON

	Min	Max
Thickness (mils)	10	16
Coverage (sq ft/gal)	160	100

A nominal thickness of 16 mils is required for mitigating moisture vapor emissions greater than 16 lbs/1,000 sq ft/24 hrs or 92% internal RH.

COLORS & OPTIONS

Color	Clear; see "Color Guide"
Optional	120-PumaCOLOR colorants for on-site pigmenting

PACKAGING & STORAGE

Resin	5 gal & 1 gal white pails
Hardener	5 gal & 1 gal black pails
Storage	Indoors, 50°F (10°C) to 90°F (32°C)
Shelf Life	One (1) year from date of manufacture

PHYSICAL PROPERTIES

Property	Test Method	Result
Hardness (Shore D)	ASTM D-2240	70–75 D
Compressive Strength	ASTM D-695	15,000 psi
Tensile Strength	ASTM D-638	5,000 psi
Tensile Elongation	ASTM D-638	7.50%
Adhesion to Concrete	ASTM D-7234	>400 psi, substrate fails
Impact Resistance	ASTM D-2794	>160 in/lb
Water Absorption	ASTM D-570	<0.1%
Flame Spread / NFPA 101 (3 mils over cement board)	ASTM E-684	Class 1
Abrasion Resistance (CS-17 wheel, 1,000 g load, 1,000 cycles)	ASTM D-4060	30 mg loss
Coefficient of Friction (James Friction Tester)	ASTM D-2047 (ADA 0.6 min. req.)	Wet 0.7 · Dry 0.8
Perm Rating, Water Method @ 73°F / 50% RH	ASTM E-96	0.085 grains/hr/ft²/in Hg

TYPICAL SLAB TESTING PRIOR TO APPLICATION

It is recommended that the facility owner or a certified PumaCRETE applicator test slabs with unknown history for contaminants (e.g., hydrocarbons, other organic compounds, water-soluble ions, ASR, sulfurous compounds) to determine suitability for 104 PumaPOXY MB. PumaCRETE strongly recommends the anhydrous calcium chloride test per ASTM F1869-11 to determine the MVER (moisture vapor emission rate) in lbs/1,000 sq ft/24 hrs, or the in-situ test per ASTM F2170-11 to determine the internal relative humidity of slabs to be treated.

Low-permeability flooring finishes such as seamless polymer coatings require an MVER below 3 lbs/1,000 sq ft/24 hrs or 75% internal relative humidity (RH). Internal RH is the test method preferred by most floor covering and coating manufacturers. MVER fluctuates within slab areas and can vary significantly by season. **Testing must be carried out before application of 104 PumaPOXY MB to obtain the manufacturer's warranty.** Contact PumaCRETE for additional details and guidelines on pre-installation concrete testing.

EXAMINING CONCRETE SUBSTRATES

PumaCRETE recommends taking core samples of older, existing concrete slabs for analysis, especially when the building's history is unknown. Cores should be analyzed by a qualified laboratory for compounds that may cause floor failures, such as soluble salts, ASR (alkali-silica reaction), unreacted water-soluble silicates, and organic substances. Water-soluble silicates are found in some curing compounds, floor hardeners, and some manufacturers' vapor reduction products.

SURFACE PREPARATION

Concrete substrate must be clean and sound, with a properly abraded surface. Do not apply to surfaces previously treated with any kind of penetrating sealer.

Remove existing floor coverings, coatings, adhesives, curing compounds, efflorescence, dust, grease, laitance, etc. down to bare concrete by steel shot blasting, scarifying, or aggressive diamond grinding. The recommended surface profile, using ICRI baseline configurations, is **CSP 4–5**.

Once preparation is complete, vacuum the concrete surface so it is free of all dust, dirt, and debris before applying 104 PumaPOXY MB.

TECHNICAL SUPPORT

For any application questions, please call PumaCRETE technical support.

DISPOSAL

Dispose of in accordance with federal, state, and local regulations.

JOINT GUIDELINES

Static, non-moving joints, cracks, and voids

Treat with 104 PumaPOXY MB thickened with ProThickener aerosil additive. Non-moving joints and cracks can be reinforced with FibaTape™ 6" fiberglass tape. Hairline cracks may be flooded directly with 104 PumaPOXY MB during installation.

Treat wider or deeper voids and cracks after surface preparation is complete. Clean cracks with a wire brush, then vacuum. Cracks may be cut 1/8" wide × 1/8" deep with a thin, diamond-rimmed abrasive blade on an angle grinder; brush and vacuum to remove dust and debris. Spackle deep voids and cracks with 104 PumaPOXY MB thickened with Cab-O-Sil aerosil additive to a spreadable consistency, using a flat spackle knife.

Treat larger voids, spalls, and wider cracks before shot blasting or diamond grinding. Remove all debris, loose particles, dust, and contaminants, and fill the voids with a suitable moisture-tolerant repair mortar. Allow the mortar to cure sufficiently before shot blasting to CSP 4–5.

Dynamic, moving joints and cracks

Must be honored through the entire flooring system and filled with an elastomeric material suited to the general conditions, the use of the facility, and the anticipated type and amount of movement. If there is any doubt about the integrity of existing backing materials, remove, clean, and refill the joint, removing all remnants of old elastomeric material from the side walls.

Joints or cracks with dirt, residue from previous coatings, or other contaminants should be cut 1/4" wide × 1/2" deep and cleaned until free of dust and debris. Coat the side walls with 104 PumaPOXY MB where the joint sealant will bond; do not flood the joint. The elastic joint must run through the entire flooring system, including all final floor coatings or coverings. Then fit the joint with a backer rod and install a suitable elastic joint sealant.

MIXING INSTRUCTIONS

Application equipment

- PPE and clothing per SDS
- Jiffy® mixer blade (ES model)
- Clean mixing container
- Low-speed / high-torque drill
- Shed-resistant roller cover, 3/8" nap
- Application squeegee

Mix ratio: 2 parts Resin : 1 part Hardener by volume

8–14 oz of 120-PumaCOLOR colorant is recommended per gallon. When field pigmenting, mix it homogeneously into the resin before adding the hardener.

Add the hardener to the clean mixing container first, then the resin (clear or pigmented), scraping out the container. Always pour into the center. Mix thoroughly for 1–2 minutes with a spiral-style blade. Mix only as much as can be applied without exceeding the pot life.

SPECIAL NOTES

Aggressive surface preparation and concrete quality may create surface voids. 104 PumaPOXY MB may flow into them, displacing air and causing "outgassing." **If excessive voids, pinholes, or bubbles appear, STOP and contact a PumaCRETE representative.**

Sanding is not required within the recoat window. When installing epoxy or polyurethane coatings over 104 PumaPOXY MB, the recoat window is 48–72 hours. If the system will remain uncovered for an extended period, contact a PumaCRETE representative before installing subsequent floor coatings or coverings.

SAFETY (SDS)

Please see the Safety Data Sheet (SDS) for safety and precautions. Use product as directed. **Keep out of the reach of children.**

WARRANTY

Seller warrants that its goods, as described on the face hereof, are free from any defects in material or workmanship. Seller makes no other warranty, express or implied, and all implied warranties of merchantability and fitness for a particular purpose are hereby disclaimed. Seller shall not be liable for prospective profits or special, indirect, or consequential damages. Seller's sole liability and buyer's exclusive remedy for breach of any warranty is expressly limited, at seller's option, to replacement at the original F.O.B. point or refund of the purchase price. Seller shall not be responsible for any claim resulting from failure to use the product in the manner in which it was intended and in accordance with the instructions provided for its use. Any claim for breach of warranty shall be deemed waived unless buyer gives seller written notice of such claim within sixty (60) days after delivery and allows seller reasonable opportunity to investigate the claim and inspect the product.