

320

E-BOND 320 MOISTURE REDUCTION BARRIER EPOXY

FORMULATED AND LABELED FOR PROFESSIONAL USE ONLY
NOT FOR SALE TO OR USE BY THE GENERAL PUBLIC

320 MRB EPOXY

PRODUCT DATA

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E-Bond 320 MRB is a one-coat 100% solids, surface penetrating, film-forming epoxy coating for remediating the moisture vapor transmission related to green and damp concrete surfaces. This proprietary formula has been specifically designed to cure and adhere to concrete under extreme conditions of constant moisture transmission, high pH and high relative humidity. When installed at the required application thickness, E-Bond 320 MRB, once cured, reduces the levels of water vapor transmission below the recommended moisture vapor transmission for most adhesives, coatings and floor coverings.

WHERE TO USE

- Properly prepared new (at least 7 days old) or existing concrete substrates
- Properly prepared and fully cured lightweight concrete

FEATURES AND BENEFITS

- Can be applied onto above, at and below-grade concrete substrates
- Apply to concrete with a relative humidity (RH) up to and including 100%
- Reduces 25lbs of Moisture Vapor Transmission to less than 3 lbs
- Up to 97% Reduction in Moisture Vapor Transmission
- Alkali Resistant to a pH14
- Low VOC
- Low viscosity mix ensures maximum penetration of the concrete substrate to fill in pores and voids
- One Coat application
- Easy mix formula (2 parts A to 1 part B by volume)
- Non-flammable

PHYSICAL PROPERTIES

Color (Mixed)	Translucent Green
Mix Ratio (by volume)	2 A : 1 B
Pot Life:	~15 minutes (Empty container immediately after mixing)
Viscosity, mixed (RV2-30)	~700 cps
Solid Content	100%
Flash Point	> 200°F
Clean Up	Xylene or MEK immediately after use
Water Vapor Transmission per Water Method ¹	
Avg. Measured Permeance	≤ 0.1 grains / h ⁻¹ ft ⁻² in Hg ⁻¹
¹ ASTM E 96/E 96M -05 Test Methods for Water Vapor Transmission of Materials	
High pH Resistance ¹	
Spot Test, Covered (14d)	No effect
Spot Test, Open (14d)	No effect
Immersion (14d)	No effect
¹ ASTM D 1308 - 10% & 30% Sodium Hydroxide alkali solution (pH14)	

Preparation

All materials should be stored at 40°F (4°C) to 80°F (27°C) 24 hours prior to installation.

The substrate must be POROUS to achieve full penetration of the E-Bond 320 MRB. Roughen the surface of all smooth formed concrete surfaces such as hard troweled surfaces and precast panels to an opened coarse texture to increase the penetration of Moisture Guard Max.

Remove deteriorated concrete, laitance, asphalt, dirt, grease, paint, curing or sealing compounds, and any other contaminants that will inhibit the bond or deter the proper penetration of the E-Bond 320 MRB into the substrate. The prepared substrate must be structurally sound, completely clean with an open coarse texture with an ICRI CSP 3 profile. Vacuum shot blasting is recommended. Use a walk behind magnetic sweeper to remove any remaining shot. (Note: Surface preparation by acid etching is not permitted.)

The substrate must be free from liquid or standing water to ensure full penetration of the E-Bond 320 MRB. The surface temperature must be a minimum of 5°F above the dew point temperature and not have hydrostatic pressure at the time of application.

Test the surface for direct tensile bond strength per ASTM C 1583 prior to installation. The pull-out value must be greater than or equal to 175 psi (1.2 MPa) with the failure at a depth of greater than or equal to 1/4" (6 mm) into the base with greater than or equal to 50% failure of the substrate.

Remove all loose material by vacuuming to result in a dust-free surface before application of Moisture Guard Max.

Brooms shall not be used.

Determine the coverage rate by first testing the substrate moisture vapor content using test method ASTM F2170 RH probes or the surface moisture vapor transmission per ASTM F1869 Moisture Vapor Transmission (Calcium Chloride) procedure.

Application of E-Bond 320 MRB to a small test area is required to ensure desired performance. Determine adhesion properties of E-Bond 320 MRB to the substrate and the moisture vapor transmission.

E-Bond 320 MRB cannot accommodate substrate movement. Repair all cracks prior to installation following adhesive manufacturer or floor covering manufacturer recommendations. Honor all expansion and control joints.

Note: It is the responsibility of the installer/applicator to ensure the suitability of the product for its intended use.

Expansion Joints and Cracks

Honor all expansion and control joints. Remove all loose material from the joint. Coat the inside of the joint with E-

Bond 320 MRB to the desired application thickness. Allow the E-Bond 320 MRB to cure a minimum of 12 hours prior to the installation of backer rod and sealant.

Non-moving cracks and voids must be completely cleaned and repaired prior to installation of E-Bond 320 MRB.

For openings < 1/8" width E-Bond 320 MRB can be used neat and for larger openings use E-Bond 320 MRB mixed with the appropriate epoxy thickening agent.

Trial Application

E-Bond Epoxies, Inc. requires that when its products are used in any application or as part of any system that includes other manufacturers' products, the contractor and/or design professional shall test all the system components collectively for compatibility, performance and long-term intended use in accordance with pertinent and accepted industry standards prior to any construction. Written documentation of the tests performed shall be satisfactory to the design professional and contractor. Test results must include the means and methods of application, products used, project-specific conditions being addressed, and standardized tests performed for each proposed system or variation.

Mixing

1. Do not mix more material than can be applied in 15-20 minutes. (Note: High temperatures will reduce the working time.)
2. For easier mixing and application, before using, allow E-Bond 320 MRB to acclimate to room temperature of 65°F - 75°F (18°C - 24°C) for a minimum of 24 hours.
3. The mixing ratio is 2 part A to 1 part B by volume.
4. Remove Part A and Part B containers from the outer mixing pail. Add Part B (Yellow) to the mixing pail, scraping the sides to remove all material.
5. Pour Part A (Blue) into Part B (Yellow) (2:1) making sure all of the Part A is transferred into the Part B.
6. Mix for 2 minutes with a jiffy (paint) style mixing paddle and high-speed drill at low speed (<400 rpm).
7. Scrape the sides and corners of the mixing pail to incorporate any unmixed material. Continue mixing until a smooth, homogeneous, translucent green consistency is achieved, typically 1 minute.
8. Avoid over-mixing as this will incorporate air into the mixture.
9. Immediately pour the mixed material onto the substrate.

Application

E-Bond 320 MRB must be applied when the ambient air and surface temperatures are between 50°F to 90°F (10°C to 32°C). The relative air humidity must not exceed 90%. The temperature during application must be steady and/or falling as rising temperatures will reduce the working time.

1. Apply a smooth even coating over the subfloor using a flat squeegee followed by a 3/8" nap roller to achieve the desired coating thickness.
2. E-Bond 320 MRB, due to its low mixed viscosity, will flow into low areas filling all voids in the concrete surface. As the coating is absorbed and penetrates into the surface, air in the concrete capillaries is displaced causing "Out Gassing". Minimal out gassing is a normal occurrence and does not affect the moisture vapor transmission. If excessive out gassing is observed, contact E-Bond Epoxies Technical Services for recommendations.
3. Allow the coating to cure a minimum of 12 hours before applying any material on top of the E-Bond 320 MRB (Note: Low temperatures lengthen curing time and high temperatures shorten curing time.)
4. After curing, imperfections such as low coating thickness or pinholes must be corrected with a second application of E-Bond 320 MRB. Allow the first coating to cure a minimum of 12 hours prior to application of second coat.
5. Apply next layer of the finish flooring system within a maximum of 5 days of the final coat.

Cleaning

Clean tools immediately and before cured using xylene or MEK following all handling and safety precautions listed on the xylene container. Be sure to use rubber gloves when cleaning and have plenty of ventilation. (Note: Cured E-Bond 320 MRB can be removed only by mechanical abrasion.)

Limitations

- Do not apply if the substrate has a compressive strength less than 2500 psi and tensile bond strength of less than 175 psi.
- Do not apply on any surface that is not clean, solid and absorptive. Vacuum shot blasting is recommended.
- Do not apply to any substrate, cracks or voids that are subject to movement. For moving cracks repair determine the treatment procedure using a consultant or engineer.
- Do not acid etch, grind or sand to prepare the surface.
- Do not apply to concrete and other cement based topping that have cured less than 7 days.

Limitations (cont.)

- Do not apply to non-porous substrates.
- Do not apply if the substrate profile is greater than CSP 6. Reduce the profile and then re-blast to CSP 3.
- Do not dilute with water, admixtures or solvents.
- Do not apply over gypsum based substrates or gypsum based patching compounds.
- Do not apply onto surfaces that have been treated with a concrete sealer unless removed by mechanical means.
- Do not apply onto surfaces that have free standing water (wet) or when the surface temperature is < 5°F of the dew point temperature.
- Do not use as a wear surface.
- Do not use in areas that are subjected to freeze/thaw cycles or extreme thermal movement of the substrate.
- Do not apply over toppings, levelers or patching compounds.
- Do not use as a floor leveling product.
- Do not apply if the ambient, surface and material temperatures are not between 50°F - 90°F (10°C - 32°C).
- Do not apply any cement topping or underlayment without first using a primer.

Coverage

Required Dry Film Thickness & Coverage Rate

Thickness /Rate ³	Relative Humidity	Moisture Vapor Transmission (CaCl ₂)
	ASTM F 2170 ¹	ASTM F 1869 ²
>16mils / ~100 ft ² /gal	90 - 100% RH	5 to 25 lb. / 1000 ft ² / 24hr.
>13mils / ~125 ft ² /gal	85 - 90% RH	0 to 15 lb. / 1000 ft ² / 24hr.
>10mils / ~150 ft ² /gal	< 85% RH	< 10 lb. / 1000 ft ² / 24hr.

¹ ASTM F 2170: Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ probes

² ASTM F 1869: Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride

³ A minimum coating thickness of >16mil is required for concrete that is 7-28 days old.

NOTE: Printed coverage rates are over a CSP 3 profile. Actual coverage will vary depending on surface porosity, texture, profile, etc. For MVT over 25 lb./1000 ft² / 24hr. contact E-Bond Epoxies.

Clean Up

Clean tools using dish detergent mixed in warm water before the blended mixture hardens. Be sure to use rubber gloves when cleaning.

VOC, mixed

9 g/L

Packaging

3 gallon Kit:

Part A: 2 gal (7.6L) - Translucent blue liquid in a plastic container. Part B: 1 gal (3.8L) - Translucent yellow liquid in a plastic container.

Shelf Life

24 months from the date of manufacture when stored in the original, unopened container, away from moisture, under cool, dry conditions and out of direct sunlight.

WARNING

- Solvent free. Non-flammable. May cause irritation to eyes, skin, or respiratory system.
- Avoid contact with eyes or prolonged contact with skin. The wearing of gloves and safety goggles is strongly recommended.
- In case of eye contact, flush eyes with potable water and call physician. DO NOT RUB EYES.
- Do not take internally.
- Keep out of reach of children and animals.
- Provide good ventilation.
- Once cured, mixed product presents no ecological risk.
- Consult Material Safety Data Sheet (MSDS) for further information.

If you have to stand in wet product, wear waterproof boots high enough to keep product from getting inside. If working on hands and knees, wear kneepads. Indirect contact through clothing can be as serious as direct contact. Promptly, rinse out wet product from clothing.

KEEP OUT OF THE REACH OF CHILDREN AND ANIMALS.

This product contains a chemical known to the state of California to cause cancer. Consult Material Safety Data Sheet for further information.

FIRST AID:

Skin contact: Immediately wash with water and mild soap.

Eye Contact: Flood eyes with water for at least 15 minutes and consult a physician immediately. DO NOT RUB EYES. Skin Contact: Wash exposed skin area with soap and water. Consult a physician if irritation persists. Inhalation: Remove to fresh air. Ingestion: Immediately consult a physician.

LIMITED WARRANTY NOTICE: E-BOND EPOXIES, INC warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. The purchaser must examine the product when received and promptly notify E-BOND EPOXIES, INC in writing of any nonconformity before the product is used and no later than 30 days after such non-conformity is first discovered. If E-BOND, in its sole discretion, determines that the product breached the above warranty, it will, in its sole discretion, replace the non-conforming product, refund the purchase price or issue a credit in the amount of the purchase price. This is the sole and exclusive remedy for breach of this warranty.

The information in this data sheet supersedes all other sales information received by the customer during the sales process. THE FOREGOING WARRANTY SHALL BE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES OTHERWISE ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM, TRADE OR OTHERWISE.

E-BOND shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for loss of sales, revenues or profits; cost of capital or funds; business interruption or cost of downtime, loss of use, damage to or loss of use of other property (real or personal); failure to realize expected savings; frustration of economic or business expectations; claims by third parties (other than for bodily injury), or economic losses of any kind; or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform, its obligations under any contract for sale of product, even if E-BOND could foresee or has been advised of the possibility of such damages. The Parties expressly agree that these limitations on damages are allocations of risk constituting, in part, the consideration for this contract, and also that such limitations shall survive the determination of any court of competent jurisdiction that any remedy provided in these terms or available at law fails of its essential purpose.

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