8303 CrownShield® MVB Epoxy

TECHNICAL DATA SHEET Product Number: 8303-F and 8303-S

Negative Side Moisture Vapor Barrier Epoxy

DESCRIPTION

8303 CrownShield MVB can be used as a single primer coat negative side moisture vapor barrier suitable for various types of concrete. The low viscosity formula not only promotes deeper concrete penetration for superior substrate adhesion but also generates a higher propensity for sealing and blocking moisture drive than standard epoxy flooring products. It is intended for use when high moisture levels are present in the concrete which may cause loss of bond of moisture-sensitive flooring systems, including impervious and semi-pervious flooring, such as, epoxy, polyaspartic, polyurethane, carpets, vinyl tiles and covering, tile, wood floors, etc. It meets or exceeds ASTM F3010 Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings. It is VOC Compliant in all states and provinces in North America.

- **8303-F (Fast)**
- **8303-S (Standard)**

TYPICAL USES

- Aircraft Hangar and Maintenance Floors
- Automotive Show Room and Repair Floors
- Commercial Bakery and Kitchen Floors
- Hospital and Health Care Facility Floors
- Laboratory and Research Floors
- Manufacturing and Warehouse Floors
- Pharmaceutical Floors

BENEFITS

- Complies with USDA, FDA, Food Safety Modernization Act. **See Crown Polymers Technical Bulletin: 3 Food and Beverage Compliance.**
- Slip Resistance (ADA) **See Crown Polymers Technical Bulletin: 4 Coefficient of Friction.**
- LEED® and Green Seal® requirements. **See Crown Polymers Technical Bulletin: 5 LEED and Green Seal Information.**
- VOC and EPA Compliant all states and provinces in North America. Cures to an inert finish. **See Crown Polymers Technical Bulletin: 2 VOC Compliance.**
- Strong and Tough Floor.
- Excellent Chemical and Abrasion Resistance
- Designed for new floors and for resurfacing old floors

LIMITATIONS

- This product is best suited for applications when the temperature is between 60°F to 90°F (16°C to 32°C). Do not apply when Relative Humidity exceeds 85%. **See Crown Polymers Technical Bulletin: 7 Temperature and Relative Humidity Limits.**
- Higher temperatures will result in shortened working time and drying time.
- Requires primer when applied directly to concrete and cementitious overlayments. **See Crown Polymers Technical Bulletin: 20 Selecting a Primer.**

COLORS

- Clear Amber.

COVERAGE RATE PER GALLON

- Minimum of 100 sq. ft. (9.3 sq. m.) per gal (3.9 lt.) or a minimum of 16 mils (0.4 mm).

CONCRETE

Concrete must be structurally sound and free of curing agents, coatings, sealers, densifiers, and other bond breakers.

New Concrete:

- Place concrete per ACI 302.2R Guide for Concrete Slabs that Receive Moisture-Sensitive Floor Materials.
- Water Cement Ratio 0.4 to 0.5, and an approximate 4,000 psi (28 MPa) strength level.
- Requiring a positive side moisture barrier in direct contact with the concrete meeting ASTM E1745 Standard Specification for Plastic Water Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.
- The moisture barrier needs to be placed per ASTM E1643 Standard Practice for Selection, Design, Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs, Class A 15 mils (0.38mm)

Existing Concrete:

If field tests or laboratory analysis reveals inferior concrete

flooring slabs containing contaminants from previously applied unreacted silicate materials that will interfere with the bond, use 8201 CrownPrime WBC. **See Crown Polymers Technical Bulletin: 20 Selecting a Primer.**

- Contaminants include, but are not limited to organic hydrocarbon materials, calcium chlorides, and aluminum stearates.
- Concrete flooring slab can lose their structural strength over time, caused by conditions beyond the control of the flooring manufacturer or the installation contractor.
- If the concrete substrate deteriorates sufficiently, it will no longer support the bond of the remediation floor system.

Such conditions are detailed in ACI 201.2R "Guide to Durable Concrete" published by the American Concrete Institute. **See Crown Polymers Technical Bulletin: 1**

Physical Properties at 77°F (25°C)		
VOC (Volatile Organic Compounds), (VOC Calculated Per ASTM D3960)	<5 gr./lt.	
Mix Ratio, by Volume	2:1	
Minimum Application Surface Temperature	50°F	
Working Time	Fast	Standard
Pot Life,1 gallon (3.79 liters) Mass, Pot Life is Reduced by Increases in Mass & Temperature	10 - 15 Minutes	25 - 30 Minutes
Dry to Touch at 75°F (24°C)	4-5 Hours	7-8 Hours
Recoat Time	12 to 14 Hours	
Shelf Life (shipped and stored) at 40°F to 100°F (4.4°C to 38°C)	1 Years	
Packaging 3gal, 15 gal (11.4 lt., 56.8 lt.)		

Mechanical Properties at 77°F (25°C)		
Surface Preparation ICRI 310.2R Concrete Surface Profile (CSP 2 and above) Depending on System to be Installed and Condition of Concrete.		
	Fast	**Standard**
Compressive Strength, ASTM D695	10,000 psi	10,000 psi
Tensile Strength, ASTM D683	7,500 psi	7,500 psi
Tensile Elongation, ASTM D638	1.5%	2.0%
Hardness (Shore D), ASTM D2240	75 – 85	70 – 80
Adhesion, ASTM D7234	>400 psi	>400 psi
Water Absorption, D570	<0.1%	<0.1%
Permeance, ASTM E96	0.022 (gr/ft2/hr/inHg 100 sqft/gal	0.017 (gr/ft2/hr/inHg 100 sqft/gal
Moisture Vapor Emission Rate, F1869, Concrete Placed per ACI 302.2R, with Moisture Barrier ASTM E1745	25 Pounds	25 Pounds
Moisture Vapor Emission Rate, F1869, Concrete Place NOT per ACI 302.2R must be tested per Crown Polymers Technical Bulletin: 6 Moisture Mitigation Negative Side Moisture Barrier and Consult Crown Polymers Representative		
Relative Humidity, F2170, Concrete Placed per ACI 302.2R, Moisture Barrier ASTM E1745	99%	99%
Relative Humidity, F2170 Concrete Place NOT per ACI 302.2R must be tested per Crown Polymers Technical Bulletin: 6 Moisture Mitigation Negative Side Moisture Barrier and Consult Crown Polymers Representative		

Note: though testing is critical, it is not a guarantee against future problems. This is especially true if there is not a positive side vapor barrier or it is not functioning properly and/or concrete has contamination from oils, chemical spills, densifiers, excessive salts or other bond breakers.

Concrete Surface Preparation.

CHEMICAL RESISTANCE DATA

See Crown Polymers Technical Bulletin: 9 Chemical Resistance Guidelines and Chart.

CHECK CONCRETE MOISTURE

The concrete must be dry before application of this floor coating material. Concrete moisture tests are required, either ASTM F1869 (calcium chloride) or ASTM F2170 (in situ RH probe). **Refer to appropriate Technical Data Sheet limits and Crown Polymers Technical Bulletin: 6 Moisture Mitigation Negative Side Moisture Barrier.**

CHECK TEMPERATURE & HUMIDITY

Floor and material temperature must be at or above the published Technical Data Sheet. Dew Point must be 5°F (3°C) or more below the surface temperature. Do not apply if humidity is at or above 85%. **See Crown Polymers Technical Bulletin: 7 Temperature and Relative Humidity Limits.**

SURFACE PREPARATION

Surface preparation per: ICRI Guideline No. 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair. The pH of the concrete substrate should be at 9 or above. All bond-breaking material must be removed. **See Crown Polymers Technical Bulletin: 1 Concrete Surface Preparation.**

APPLICATION EQUIPMENT

Depending on system applied: Variable low-speed drill (450 rpm) with Jiffy® type impeller mixing paddle, disposable 3" brush for cutting in, 3/8 inch nap non-shedding phenolic core roller, and rubber squeegee for spreading 8303 CrownShield MVB. Pour, squeegee, and back-roll suggested.

OPTIONAL ANTIMICROBIAL

The antimicrobial additive is a non-heavy metal biocide that can be added during the manufacturing process. The antimicrobial agent can be added to the topcoat only for an economical application or it can be added to each step of the application, primer, body coat, and topcoat, which is recommended for abusive environments. **See Crown Polymers Technical Bulletin: 11 Understanding the Optional Antimicrobial Additive.**

MIXING

For ease of mixing and placement, the temperature of the "A" and "B" components should be between 70°F to 80°F (20°C to 26°C). Pre-mix the "A" and "B" components to ensure all raw material and pigments are dispersed uniformly. **See Crown Polymers Technical Bulleting: 10 Mixing Guidelines.**

APPLICATION

Pour all liquid material onto the properly prepared concrete substrate or next lift in ribbons and squeegee the material out evenly. Back-roll and cross-roll the material. Check for desired wet film thickness with a WFT Gauge. If broadcasting aggregate, such as 60 mesh or 90 mesh, broadcast a sprinkle (not full broadcast) into the wet material. Place all steps per Crown Polymer Installation Guidelines.

SKID-RESISTANCE

Skid-Resistance – Field (in situ) Wet Dynamic Coefficient of Friction (DCOF), ANSI A326.3. **See Crown Polymers Technical Bulletin: 12 Coefficient of Friction.**

SHIPPING and STORAGE

Ship and store material between 40°F to 90°F (4°C to 32°C). Store in a dry environment and out of direct sunlight.

SHELF LIFE

Shelf life is 1 year from the date of manufacture, provided the containers are unopened.

CLEAN-UP

Clean-up mixing station, tools, and equipment as required. Use acetone, a VOC exempt solvent, for cleaning up. Observe all legal, and health, and safety precautions when handling or storing solvents and materials, particularly in confined spaces. Make sure the working areas are well ventilated at all times during placement and curing time.

DISPOSAL

Dispose of empty packaging and other waste per federal, state, province, and local regulations.

MAINTENANCE

Inspect the installed floor by spot cleaning and spot repairing the damaged or cracked areas. To prolong the life of the flooring system, a daily maintenance program is highly recommended to ensure the floor is safe for its intended purposes. **See Crown Polymers Technical Bulletin: 8 Care and Maintenance.**

TECHNICAL SUPPORT

For questions, contact a Crown Polymers Representative. Additional Support Documents are available from Crown Polymers, including brochures, application guidelines, videos and more. Visit Crownpolymers.com or contact Crown for additional resources.

DISCLAIMER

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests. The accuracy and completeness of such tests are not guaranteed and are not to be construed as a warranty, expressed or implied. It is the responsibility of the user to document information and tests to determine the intent of the product for ones' own use. The application, job conditions and user assumes all risks and liability resulting from use of the product. We do not suggest or guarantee any hazards listed herein are the only ones, which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use the product. Recommendations or statements, whether in written or verbal, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and Crown Polymers makes no claim that these tests or any other tests accurately represent all environments. Not responsible for any typographical errors.

LIMITED WARRANTY

Crown Polymers warrants its products to be free of manufacturing defects and meets all Crown Polymers current published physical properties. Crown Polymers' sole responsibility shall be to replace the portion of any product proved to be defective. There are no other warranties by Crown Polymers of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. Crown Polymers shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. Crown Polymers shall not be responsible for the use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee pertaining to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator will be issued. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. Crown Polymers reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

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