

DESCRIPTION

VB 225FS is a fast setting, one-coat moisture vapor reduction system consisting of a unique combination of epoxy resins and other chemical compounds. VB 225FS is formulated to cure as short a time as possible and prevent floor failures on concrete slabs containing elevated levels of moisture vapor emission. VB 225FS has no upper limits for water vapor emissions; it resists moisture levels (100% RH) and a sustained pH of 14. VB 225FS. It is extremely dense with a perm rating of 0.05 grains/ft²/hour in Hg⁻¹. The low perm rating makes VB 225FS perfect as a primer for virtually all types of flooring, especially low permeance flooring, such as sheet goods and rubber tile. Its fast 2 – 3 hour cure time allows for extremely fast turnaround of floors.

VB 225FS is compliant with all state and federal VOC regulations with a content of <10 g/l. VB 225FS allows installation in sensitive areas such as active hospitals, schools and grocery stores.

Material Properties:

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| Pot Life | Approximately 30 minutes. Immediately empty container after mixing. |
| Cure Time | 2-3 hours (may vary depending on temperatures) |
| Solid Content | 100% |
| VOC, mixed | < 10 g/L |
| Flash Point | >200° F |
| Packaging | 1.30 gallon, 0.63 gallon, A/B Pack |
| Storage | Between 50°F - 90°F |
| Shelf Life | 1 year in original sealed container |
| Clean Up | Immediately with Xylene (or similar) after use |
| Disposal | Dispose of in accordance with current local, state and federal regulations. Collect with absorbent material. |

ASTM E96 Test Results:

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|---|------------------------|
| VB 225FS | ASTM E-96 (Wet Method) |
| Water Vapor Transmission, grams h ⁻¹ m ² | 0.021 |
| Water Vapor Transmission, lb/1000ft ² /24 hrs | 0.1 |
| Avg. Measured Permeance, grains h ⁻¹ ft ² in Hg ⁻¹ | 0.05 |

APPROPRIATE APPLICATION

VB 225FS is formulated to treat new or existing concrete floors with moisture and/or alkaline conditions which prevent or compromise the installation of floor covering systems. VB 225FS may be installed on concrete with moisture vapor emissions rates over 25+ lb/24hr/1000 ft² or 100% RH. (Contact sales representative for MVE rates greater than 25 lb.) VB 225FS is unaffected by a pH of 14. VB 225FS's low permeability of 0.05 grains/1hr/ft² in Hg⁻¹ offers long term protection under VCT, sheet-vinyl, wood, rubber, epoxy, polyurethane and solid backed carpet. VB 225FS may also be used as a finished floor. Contact a sales representative or the Penetron Specialty Products Inc. technical staff for finished floor limitations and details. VB 225FS can be applied on concrete slabs in offices, hospitals, schools, super-markets, manufacturing facilities, airplane hangers, residential housing, and many other applications. VB 225FS's low odor and fast cure allow for application in occupied buildings with minimum disruption.

Underlayments/Leveling Compounds:

Cementitious underlayments/leveling or skim coatings are not required over VB 225FS but are commonly used to smooth or level the VB 225FS coated surface in preparation for subsequent floor coverings and systems as required. VB 225FS is not formulated to be a floor leveling product.

All underlayments, leveling or skim coats must be applied on top of the cured VB 225FS unless otherwise specified by your representative or the Penetron Specialty Products Inc. technical staff. For proper adhesion always use an appropriate primer for non-porous surfaces, such as Primer STX 100, prior to the installation of any cementitious material. Check with your sales representative or the Penetron Specialty Products Inc. staff when using any other manufacturer's primers.

DO NOT INSTALL VB 225FS OVER ANY GYPSUM-BASED PRODUCTS.

Adhesives:

Most flooring systems and adhesives may be applied directly to the cured VB 225FS. Adhesives must be designed and formulated for use over a non-porous substrate. There is no absorption of any fluid or solvents from the adhesive into the VB 225FS coated concrete. Apply adhesives to a test area to check for compatibility prior to overall application.

Adhesives containing solvents (includes water) that are not allowed to flash off prior to the flooring installation may be applied to a minimum of 1/8 inch of a cementitious underlayment. Check with the adhesive manufacturer's recommendation for installation over an underlayment and the required thickness for use as a "blotter."

DIRECTIONS FOR USE**Surface Preparation:**

Concrete substrates to receive VB 225FS must be structurally sound, solid, absorptive and meet acceptable industry standards as defined in ACI Committee 201 Report "Guide to Durable Concrete". Surfaces must be free of adhesives, coatings, curing compounds, concrete sealers, efflorescence, dust, grease, oils and any other material or contaminant that may act as a bond breaker. Building envelope must be in place and environmentally stable prior to product application.

Penetron Specialty Products Inc. recommends older, existing concrete slabs be cored and analyzed for various contaminants such as sulfurous salts, ASR (Alkali Silica Reaction), unreacted water soluble silicates and any other deleterious compounds that may act as bond breakers. (Water soluble silicates are found in some curing compounds, floor hardeners and other vapor reduction products.) Slabs that have existing flooring failures are strongly recommended to have core samples taken to identify the failure mode or identify any deleterious constituents in the concrete. It is the owner or the owner's representative's responsibility to test the slab for contaminants. These tests are not required by Penetron Specialty Products Inc.

Contact Penetron Specialty Products technical staff for additional details and guidelines concerning this type of testing.

All patching, leveling materials, adhesives and old coatings must be entirely removed prior to VB 225FS application. Consult with Penetron Specialty Products Inc. prior to installing any underlayments underneath VB 225FS.

Shot blast or mechanically prepare the substrate to an ICRI Concrete Surface Profile (CSP) of 3-4. Grinding is permitted only in areas inaccessible to shot blasting or for edging purposes.

A FAST SETTING MOISTURE VAPOR EMISSIONS REDUCTION SYSTEM

Acid etching is not permitted. Upon completion of the bead blasting and grinding, the concrete slab must be vacuumed free of all dust, dirt and debris prior to VB 225FS installation. Do not use sweeping compounds that may contain oil.

The concrete surface must be at least 5°F above the Dew Point temperature. Avoid application in a dew point atmosphere or when the ambient relative humidity is above 95% or the concrete surface is wet.

To prevent pinholes, dampen all areas to be treated 2-3 times with clean potable water prior to application. Bring prepared substrate to SSD (Saturated Surface Dry) with no puddling or water sheen on surface. Maintain SSD throughout application. Have a finish mop and wringer pail available if excess water needs to be picked up.

On projects that have experienced a flooring failure of any type, a minimum of a CSP-4 is recommended for surface preparation.

Testing to determine the water vapor content of the substrate, either the calcium chloride tests (ASTM F-1869) or RH probe in situ tests (ASTM F-2170) may be used.

Application Instructions:

Mix Components A and B by combining both parts in total. Pour the B component into the short-filled A component container; mixing all the while. Mix with a slow speed motor (<400 RPM) and "jiffy-type" mixer for 3 minutes. Pour the fully mixed material onto the substrate immediately after mixing, emptying the can completely.

VB 225FS is applied in one coat using a squeegee and 3/8 inch nap epoxy rated roller. VB 225FS is poured from the container upon completion of mixing and spread to the appropriate coverage rates using a squeegee. VB 225FS is then back rolled at right angles (90 degrees) to the squeegee application evenly distributing product across the area to be treated with no missed areas. As VB 225FS is absorbed and penetrates into the surface of the concrete slab, air is displaced in the concrete capillaries resulting in "out gassing". Out gassing channels are self healed during the curing of VB 225FS and do not effect performance or warranties. High points created by the displacement can be scraped, lightly sanded, or skim coated if needed to produce an acceptable level, smooth surface. Concrete surface profile, absorption rate and moisture vapor rates will determine coverage requirement.

Apply VB 225FS at substrate and ambient temperatures between 50° to 90°F. Provide ventilation for VB 225FS during application and cure time. The maximum recoat window is 14 days. Prior to the installation of any subsequent flooring system, the cured VB 225FS must be clean and free of all dust, dirt and debris. Sanding is not required. If VB 225FS application is to remain uncovered for an extended period of time, contact the Penetron Specialty Products Inc. technical staff prior to installing floor covering systems. If installing MMA's or PMMA's, the maximum recoat window is 48 hours after VB 225FS has cured for 4 hours.

Treating Cracks and Expansion Joints:

Cracks and voids should be completely cleaned out and repaired using SURFIX FEP or VB 225FS mixed with an appropriate epoxy thickening agent. Cracks on existing concrete slabs that may be contaminated should be cut out 1/4 x 1/4 inch to remove the contaminants from the side walls. Expansion joints must be honored using the standard backer-rod method.

SUGGESTED COVERAGE RATES

Spread and mil rates are approximate and may vary due to the porosity, absorption rate and surface profile (CSP) of any given concrete substrate.

A FAST SETTING MOISTURE
VAPOR EMISSIONS REDUCTION SYSTEM**Vapor Testing per ASTM F 1869 (CACL) Protocol:**

Up to 10 lb/1000 ft²/24 hr 150 ft²/gal; approx 10 mils

10 to 15 lb/1000 ft²/24 hr 125 ft²/gal; approx 13 mils

15 to 25 lb/1000 ft²/24 hr 100 ft²/gal; approx 16 mils

Relative Humidity Testing per ASTM F 2170 or ASTM F 2420:

Due to the disparity between the (slab) RH and the CA-CL moisture tests there is no spread rate correlation between the two test protocols. Use the following table for approximate spread rate guidance when using only the RH test values: Contact Penetron Specialty Products, Inc. technical staff on any questions or concerns regarding product spread rates.

< 85% RH 150 ft²/gal

85-90% RH 125 ft²/gal

90-100% RH 100 ft²/gal

Product may be applied to concrete 5 – 7 days after placement.

For on-grade and below grade applications where concrete is placed per design and only specified water of convenience is present. VB 225FS can be applied at the rate of 125 ft²/gal at 100% RH. Proper ACI guidelines must be met for good concrete placing practices and visqueen moisture barriers.

PACKAGING

A/B Pack (1.3:0.7 gallon proportioned packaging).

STORAGE / SHELF LIFE

12 months from the manufactured date. Always keep in cool/dry place unexposed to sunlight.

SAFE HANDLING INFORMATION

Avoid skin and eye contact as well as prolonged exposure to vapors.

First Aid:

Eye Contact – Flush immediately with water and consult physician. Skin Contact – Wash immediately with soap and water.

WARRANTY

PENETRON SPECIALTY PRODUCTS INC. warrants that the products manufactured by it shall be free from material defects and will conform to formulation standards and contain all components in their proper proportion. Should any of the products be proven defective, the liability to PENETRON SPECIALTY PRODUCTS INC. shall be limited to replacement of the material proven to be defective and shall in no case be liable otherwise or for incidental or consequential damages. **PENETRON SPECIALTY PRODUCTS INC. MAKES NO WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED.** User shall determine the suitability of the product for its intended use and assume all risks and liability in connection therewith.

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