VAPORSEAL™ DB

VAPORSEAL™-DB is a unique 2-component, moisture tolerant, low viscosity epoxy based product that blocks alkalinity, while retarding the transmission of moisture, odor and other elements through concrete slabs. This low viscosity product achieves excellent penetration on dry and damp surfaces. VAPORSEAL™-DB's high density enables it to reduce up to 25 lbs. of vapor emission to acceptable levels for the installation of most floor covering systems, including VCT, sheet vinyl, wood, laminates, carpet and epoxy floor systems.
VAPORSEAL™-DB allows the direct bond of most industrial coatings, floor level products and some adhesive systems. **VAPORSEAL™-DB is available in two formulations, one a 12-hour cure and the other a 5 hour cure for those jobs that have little downtime.**

Features and Benefits

- Treats 25 lb. MVER—100% humidity concrete
- Reduces vapor transmission to near zero
- Easy to install
- Zero VOC—Contributes to LEED (EQ 4.2)
- Compatible with most floor covering systems
- 10 year guarantee available

The DEPENDABLE Difference

- Covers the same day
- Direct bond of floor coverings & toppings
- Covers even 5-day old concrete
- Superior bond to dry or damp surfaces

Where to use…

VAPORSEAL™-DB is used to reduce vapor transmission in suspended, on-grade and below-grade concrete.
VAPORSEAL™-DB may be used in industrial facilities, office buildings, retail, institutional or residential buildings.

Application Conditions…

Slab (surface) and air temperature must be 55ºF or greater. Product must be kept between 60º and 75ºF at time of mixing.

Physical Characteristics:

Color: Clear
Volume Solids: 100%
Density: 9.08 lbs./gal. (1.09 kg/l)
VOC Content—Zero
Pot Life 73º (23ºC)
DB-5: 15 Minutes
DB-12: 35 Minutes
Accept Foot Traffic: 73º (23ºC)
DB-5: 4-5 Hours
DB-12: 12 Hours
Compressive Strength:
11,000 psi (80 Mpa)
Flexural Strength:
4,300 psi (30 Mpa)
Bond to Concrete:
>500 psi (>3.45 Mpa)
Failure in substrate

Sample Water Vapor Transmission Reduction Test:
ASTM E-96-95

TEST	Test Results: Before (Untreated Control Wet Method)	Test Results: After (VAPORSEAL DB 1 coat Wet Method)	Reduction
Water Vapor Transmission			
Lbs/24 hours **x** 1000 ft ^{2}	24.08	0.61	97%
Grams/hour **x** m^2	4.89	0.12	
Permeance:			
Perms	16.95	0.43	97%
Grams/Pa **x** s **x** m^2	9.69	2.64	

VAPORSEALTM-DB Application Rates and Yield of 2.4 Ga. (8.1L) kit - 1 coat

Moisture Vapor Emission Rate* (lb/24H / 1000 ft.2	Relative* Humidity	Application Rate ** (ft2/ gal.)	Yield per 2.4 gal. kit (ft2)	Approx WFT Thickness (mils)
0-15	**>90%**	**130**	**310**	**12**
15-20**	**90-95%**	**105**	**250**	**15**
20-25	**100%**	**80**	**190**	**20**

* tested in accordance with ASTM F1869 or F2170

**Application rate is best determined from actual MVER per ASTM F1869 tested in three days immediately prior to installation, otherwise based on RH of floor. Over new concrete (5 DAYS OLD) or where RH exceeds 95%, the 15-20 lb. MVER application rate of 250 sq. feet per kit should be used.

NOTE: Some variations may apply due to porosity and absorption of substrate. Values are theoretical and thicknesses are approximate, but yield is maximum. For emission rates 20-25 lbs. or Relative Humidity 95-100% a test application is required to verify structural integrity and emission rate reduction.

PACKAGING (do not allow to freeze)
2.4 gallon (9.2 liter) Kit - Part A—Resin Part B—Hardener

DEPENDABLE CHEMICAL CO., Inc.
PO Box 16307
Rocky River, OH 44116-0307

Phone: (440) 333-1123
Toll Free: (800) 227-3434
Fax: (440)-333-0070
Email: dependable@floorprep.com

PREPARATION AND APPLICATION

EMISSION TESTING

All areas to be treated must be tested in accordance with ASTM F1869, Anhydrous Calcium Chloride test to determine the vapor transmission rate (MVER) or in accordance with ASTM F2170 (the in situ probe test) to determine relative humidity (RH) of the concrete slab. Performing both tests is preferable, with the MVER determined immediately before installation in fully enclosed structure and HVAC operating 24x7. The floor area, location of tests, ambient temperature and humidity during test should be recorded and mapped and at least one test performed for each 1000 sq. feet of floor surface to be treated.

SURFACE PREPARATION

CONCRETE

All surfaces to be treated must be clean, sound, solid and open/absorptive. Testing such as core samples for porosity, reactive aggregates and the presence of penetrating sealers is advised. Concrete slab must be at least 4" thick to be considered structurally sound and any separate layer of concrete should be at least 2" thick. Concrete repair and leveling layers may only be considered structurally sound if they are hydraulic cement based, absorptive, profiled and at least 1" in thickness. Repairs containing latex or other components which prevent water absorption must be removed. Surfaces must also be clean and completely free of any dirt, dust, paint, sealer or other contaminant that might interfere with penetration or bond. If duct tape applied to surface and removed pulls up dust, the floor is not sufficiently clean. Do not apply to floors which have applied sealers unless the sealer is completely removed.

Concrete surfaces should be mechanically prepared to achieve a surface profile of ICRI CSP 3-5 (ICRI—International Concrete Repair Institute.) Shotblasting is preferred. Hydrodemolition is acceptable and grinding may be performed with care. Acid etching is never permitted. Leveling should be done on top of VAPORSEAL™ DB with suitable repair materials such as SKIMFLOW ES or SKIMCRETE XL.

NOTE: After mechanical preparation, test for absorptive surface and absence of sealers, place dime size drops of water at several places on floor. Water should penetrate concrete within about 30 seconds. If water beads, surface is not ready to receive VAPORSEAL™ DB

A final cleaning with a pressure washer would be advised where appropriate. Damp mopping is also acceptable. In all cases, a thorough vacuuming (using a dust containing filter) is needed prior to application.

Finally saturate the surface with water. The surface must be thoroughly dampened with no standing water, SSD (saturated surface dry). A damp surface allows proper penetration of the VAPORSEAL™ DB and helps prevent pin holing.

EXISTING TILE

VAPORSEAL™ DB may be used to seal well bonded terrazzo and quarry tile. Terrazzo should be shotblast. Remove terrazzo strips by grinding out to assure no movement or expansion from corrosion. Terrazzo should be shotblast and quarry tile should be scarified to remove glaze or sealers and allow Vaporseal DB to penetrate into material.

JOINTS

Expansion (cold or construction) joints should be left intact. VAPORSEAL™ DB is not warranted against structural movement at expansion joints. To help reduce moisture emissions through expansion joints, coat the walls and bottom of the cleaned joint with VAPORSEAL™ DB . Once allowed to dry, an expansion joint cover or an elastomeric sealant may be used. For concrete slabs over 6 months old, sawcut (control) joints and cracks should be filled by pouring VAPORSEAL™ DB full depth or to 3/4 of joint depth. If filling to 3/4 depth pour silica quartz into VAPORSEAL™ DB to create a mortar. Sweep away excess sand and proceed with VAPORSEAL™ DB installation.

MIXING

Use chemical resistant gloves and goggles when mixing or applying VAPORSEAL™ DB . Part A and Part B are supplied in the appropriate mix ratio (100:50 by weight). Pierce the hole in the top container of Part B and allow the Part B hardener to drain completely into Part A. Mix thoroughly. Mixing is accomplished mechanically with an appropriate mix paddle. Mix for 4-5 minutes at about 300 rpm to produce a streak free, homogenous product. Care must be taken to mix all the product and avoid any action that might entrap air. DO NOT THIN the product. Once mixed, pour the material into a separate clean, 5 gallon container to assure complete mixture. Once transferred, re-mix the unit to be certain of consistency.

APPLICATION

Application Conditions: Slab (surface) and air temperature must be 55ºF or greater. Product must be kept between 60º and 75ºF at time of mixing.

Tools needed: soft-edge squeegee, short nap synthetic roller, high quality stiff bristle masonry brush or broom. To ensure proper coverage rate, measure out the area of floor intended to be covered. Mark with tape or otherwise measure out the area of floor intended to be covered by the container or containers mixed. Film gauges are also useful to check the thickness of the wet material. Follow the coverage rate from appropriate emission rate (see chart). Millage thickness may vary with porosity but overall coverage of 80-130 sf/gallon must be maintained.

Very rough or porous concrete may require heavier application rate. Adjust the procedure to achieve the recommended coverage rate. Recommended coverage rates are the maximum rates of coverage allowed.

Pour a strip of DEPENDABLE VAPORSEAL™ DB across the surface. Move with a squeegee or broom in a uniform thickness. Carefully scrub the material into the surface with a stiff bristle broom/brush. Scrub the entire area at least twice in different directions each time. Back roll to achieve a uniform coverage and smoother surface.

CURING

Before covering VAPORSEAL™ DB, be sure to check relative humidity and dew point. Proceed only when in safe area.

VAPORSEAL™ DB is a temperature sensitive material. With warmer temperatures working time, cover and cure time is reduced. Cooler temperatures will extend working time cover and cure time.

TRAFFIC

VAPORSEAL™ DB may be exposed to foot traffic once it has completely hardened. If the product becomes wet, it may become slippery. When exposed to traffic, thoroughly clean with soap and water and allow to dry before proceeding.

COVERING

Many floor covering systems require a smooth, level substrate. Please also note that latex based adhesives require a minimum 1/8" thick cementitious layer to absorb moisture from the adhesive.

Most gypsum/cement-based underlayments and toppings, epoxy coatings/ terrazzo and floor covering must be applied within the appropriate hours recoat time. First, thoroughly check the coating for any fish eyes or pinholes which would be a weak point in the membrane. Grind these areas and clean off residue. Make sure the surface is dry and re-coat.

UNDERLAYMENT/TOPPINGS

Treat the substrate as non-porous, using the appropriate primer for self-leveling products such as for DEPENDABLE SKIMFLOW ES, coat with PRIMER SL, and follow the product instructions. Trowel applied patching materials like SKIMCRETE XL may be applied directly to the coating.

FLOOR COVERING

Floor covering adhesives that are applied directly to the membrane should follow instructions for bonding to a non-porous substrate. The adhesive will require a longer tack time. Follow the product information for installation times.

CLEAN-UP

Immediately clean all equipment and tools with denatured alcohol. If allowed to dry, clean with MEK.

WARRANTY—consult with DEPENDABLE and/or your DEPENDABLE sales representative regarding warranty requirements.

LIMITATIONS/PRECAUTIONS

- Do not apply over a slab while experiencing hydraulic pressure.
- MVER may fluctuate within slab areas an can have significant seasonal variations.
- Do not apply over existing coatings, sealers or floor coverings.
- Do not apply where either slab or air temperature falls below 50ºF (10ºC) at or within 72 hours after installation.
- Do not apply to concrete slabs with less than 2500 psi compressive strength. (Consult DEPENDABLE Technical Services.)
- Protect the area to be treated from strong sunlight, wind or drafts.
- Acid Etching should not be used as a method of preparation.
- Do not apply to new concrete slabs until at least 5 days old.
- Do not apply where VAPORSEAL™ DB will receive unprotected exposure to sunlight or UF radiation.
- Terrazzo strips may move and may corrode, therefore VAPORSEAL™ DB is not warranted over terrazzo strips.
- Can NOT be sprayed.
- DO NOT FREEZE.
- Do not apply to concrete slabs where water is under pressure.

24 HOUR EMERGENCY: CHEMTREC® 1-800-424-9300
NON-TOXIC and NON-FLAMMABLE.
Keep container closed and keep away from children. May cause slight eye abrasion or irritation if spilled or rubbed in eyes. Flush thoroughly with water . If taken internally, call a physician.

Technical Assistance: Visit our website at **www.floorprep.com** or call 1-800-227-3434

