



KOESTER VAP I[®] 2000

Specification Section 09699

A SYSTEM FOR THE REDUCTION OF MOISTURE VAPOR EMISSION AND ALKALINITY CONTROL

Description:

The KOESTER VAP I[®] 2000 is a one-coat system which consists of a unique combination of epoxy resins and other chemical substances. It is specifically formulated to overcome the poor long-term adhesion properties of most resin-based systems when curing in an environment of constant wetness, extreme alkalinity (pH 13-14), and water vapor drive. Because of its extreme density it is capable of reducing water vapor and moisture to levels acceptable for most coatings, adhesives and floor covering systems. (See Law Engineering test results.) The KOESTER VAP I[®] 2000 is in full compliance with current VOC regulations.

The KOESTER VAP I[®] 2000 SYSTEM has excellent chemical and abrasion resistance and is compatible with most 100% solid epoxy and/or polyurethane based materials. **ALWAYS TEST ADHESION PROPERTIES OF MATERIALS TO BE APPLIED ONTO VAP I[®] 2000 PRIOR TO APPLICATION.**

Before application of any material onto the KOESTER VAP I[®] 2000 SYSTEM, allow final coating to cure for a minimum period of 12 hours. This cure time is based on proper ventilation of entire work area during and after application. (See “environmental conditions.”)

Uses:

The primary recommended use for the KOESTER VAP I[®] 2000 System is to solve the problems of alkalinity and moisture/water vapor emission through mineral-based substrates such as concrete floors, floor underlayments (not containing gypsum), screeds etc., by reducing these vapors to levels that do not interfere with the adhesion of floor coverings. It provides an excellent base coat for most coatings and adhesives that cures fast and can be used indoors due to its low odor and non-flammability. The KOESTER VAP I[®] 2000 SYSTEM may be applied to concrete and other cement-based toppings that have been allowed to cure for a minimum period of 7 days. It is not pH sensitive in an alkaline environment. These unique properties allow the system to provide a solution as a base coat to pH/moisture/water vapor-sensitive coatings such as polyurethane with regard to their long-term adhesion. It enables their application on relatively fresh cement-based substrates. Since conditions vary from job to job, it is recommended a test area be coated and tested for water vapor transmission to ensure proper performance of the system.

The KOESTER VAP I[®] 2000 SYSTEM is best used in an environment protected from UV rays and extreme thermal movement of the substrate. It is not a low modulus material and therefore cannot accommodate substrate movement commonly encountered in an outdoor environment. This limitation applies specifically to cracks and/or expansion joints. Cracks must be repaired according to manufacturer’s recommendation prior to the application of the KOESTER VAP I[®] 2000 SYSTEM. (Contact manufacturer for details.) Substrate should have a minimum compressive strength of 2500 psi.

Surface Preparation:

The substrates to receive the KOESTER VAP I[®] 2000 SYSTEM must be sound, clean, ABSORPTIVE, and meet acceptable industry standards as defined in ACI Committee 201 report “Guide to Durable Concrete.” Any kind of surface contamination such as adhesives, coatings, curing compounds, efflorescence, dust, grease, oils, etc., must be removed completely by sand or shot blasting to ICRI CSP 3 or CSP 4 finish. However; for hard-troweled surfaces such as aircraft hangers, shot-blast to CSP-5. Smooth formed concrete surfaces such as precast panels must be roughened if not absorptive to allow the KOESTER VAP I[®] 2000 SYSTEM to penetrate. **ACID ETCHING IS NOT APPROVED AS A SURFACE PREPARATION METHOD, AND GRINDING IS NOT RECOMMENDED.** In the event surfaces are very uneven or have a rough texture, the use of a leveling underlayment may be beneficial. Consult with KOESTER AMERICAN prior to using underlayment/repair mortars/screeds. It is essential these materials are suitable for the use underneath vapor-reducing systems. Test adhesion properties prior to application. **DO NOT apply KOESTER VAP I[®] 2000 onto surfaces that have been treated with any kind of concrete sealer prior to consulting with KOESTER AMERICAN CORPORATION.** First make sure the substrate surface does not deteriorate due to the presence of alkaline silica reactive substances or sulphurous compounds encountered in certain areas. Testing for concrete deficiencies and contaminates such as A.S.R. (Alkaline Silica Reaction), un-reacted water-soluble silicates, organic residue etc. is the responsibility of the Building Owner, and is strongly recommended by Koester to avoid product failures.

Koester American Corp. strongly advises that surfaces to be treated with Koester material be inspected and evaluated by an experienced firm prior to the application of Koester Systems to determine its suitability to receive the VAP I[®] System.

ONLY a surface that **REMAINS** sound, clean, absorptive and free of any type of contamination is fit to receive the KOESTER VAP I[®] 2000 SYSTEMS.

If cementitious underlayments are to be used for any reason, **APPLY A NON-POROUS SUBSTRATE PRIMER AND THEN THE UNDERLAYMENT ON TOP OF THE KOESTER VAP I[®] 2000 SYSTEM.** Consult with KOESTER AMERICAN prior to using underlayments / repair mortars / and screeds. Always follow underlayment manufacturers’ instructions and specifications.

ASTM E96-95 TEST RESULTS

KOESTER AMERICAN CORPORATION / KOESTER COATING

	VAP I 2000 Wet Method (See Note)	CONTROL Wet Method (See Note)
Water Vapor Transmission, grains/hr.ft.	0.20	3.35
Water Vapor Transmission, grains/m.	0.14	2.34
Water Vapor Transmission, lbs./24hr. 1000 ft	0.69	11.48
Permeance, perms	0.53	8.81
Permeance, g/Pa.s.m.	3.03E08	5.04E07

Law Project Number: 5016003481.01.83

April 10, 2000

Application Instructions:

Before application of the KOESTER VAP I[®] 2000 SYSTEM, make sure all conditions as outlined for uses, surface preparation and mixing have been strictly adhered to.

The KOESTER VAP I[®] 2000 SYSTEM may be applied using a squeegee and/or 3/8" nap roller. The coverage rates for the VAP I[®] System depend on the surface texture and porosity of the substrate as well as the degree of moisture level. The KOESTER VAP I[®] 2000 SYSTEM is self-leveling and will flow into low areas where it can build up. Therefore it is recommended to start with a trial area of application to determine final coverage. On average, a coverage rate of 90 to 130 ft²/gal. should be expected, but may vary from project to project.

Approximate Suggested Coverages

Vapor Testing per ASTM F 1869 (CaCl)

Up to 10 lbs./1000 ft./24h. = 130 ft²/gal.

Up to 15 lbs./1000 ft./24h. = 100 ft²/gal.

Up to 25 lbs./1000 ft./24h. = 70 ft²/gal.

Relative Humidity Testing per ASTM F 2170 (rH)

< 80% rH = 130 ft²/gal

80-90% rH = 100 ft²/gal

90-100% rH = 70 ft²/gal

When applied onto absorptive concrete, the KOESTER VAP I[®] 2000 SYSTEM will penetrate deep into the voids of the substrate surface. This may result in the appearance of "outgassing" by displacing the air contained in the voids with resin. Extensive testing has shown this "outgassing" does NOT affect the vapor performance of the system. This displacement may result in high points which may be removed with a razor scraper or very light disc sanding. All "outgassing channels" are self-sealed during curing of the system.

If this "displacement / outgassing" will be an issue with the flooring installation, apply one coat of KOESTER VAP I[®] pH at a coverage rate of 200 ft²/gal. and wait a minimum of 12 hours before the application of the KOESTER VAP I[®] 2000. After KOESTER VAP I[®] 2000 has cured for a minimum of 12 hours; the subsequent flooring systems may be installed.

Mixing:

Mix Component A and B at a ratio of 2.4:1 by volume. This is accomplished by pre-mixing the A component; then pouring the B component into the short-filled A component; 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.

Material Properties:

Pot Life:	Immediately empty container after mixing
Solid Content:	100%
VOC, mixed:	< 10 gr./L
Flash Point:	>200° F
Packaging:	6 gallon, 2.4 gallon, .7 gal. Combi-Pack
Storage:	Between 50°F - 90°F
Shelf Life:	1 year in original sealed container
Clean Up:	Immediately with Xylene after use
Disposal:	Dispose of in accordance with current local, state and federal regulations. Collect with absorbent material.

Safety Precautions:

Component A contains epoxy resins. Component B contains amines. Avoid skin and eye contact as well as prolonged exposure to vapors. Use safety goggles and chemical-resistant gloves. Ventilate work area properly. Use NIOSH/MSHA approved vapor respirator.

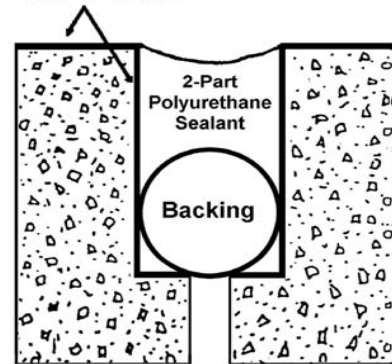
First Aid:

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

KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY
READ MATERIALS SAFETY DATA SHEET
BEFORE USING
EMERGENCY RESPONSE: Infotrac 800-535-5053

Cracks/Expansion Joints

VAP I[®] 2000



Allow VAP I[®] 2000 to cure a minimum of 24 hours, before applying backing and sealant.

Environmental Conditions:

The KOESTER VAP I[®] 2000 SYSTEM must be applied at ambient and substrate temperatures between 50° and 90° F. (10° C and 32° C) Temperature must be steady and/or falling but not rising at time of application. The relative humidity must not exceed 80%. IN ORDER TO AVOID ENTRAPMENT OF VOLATILE COMPONENTS, USE SOLVENT/WATER-FREE ADHESIVES ONLY (100% SOLIDS). Follow Adhesive manufacturer's recommendations for use over a non-porous substrate. A thorough examination of all areas with the KOESTER VAP I[®] 2000 SYSTEM must take place prior to subsequent applications of coating or other coverings. If necessary, imperfections such as pinholes, inadequate coat thickness may be touched up with a second application of the coating, allowing the first coat to cure for a minimum of 12 hours. Maximum recoat time (adhesives included) is 5 days.

Warranties:

LIMITED WARRANTY: KOESTER AMERICAN CORPORATION ("KOESTER") warrants that its products shall be in accordance with their published specifications and covenants that, in the event any of its products fail to meet their published specifications or their published performance standards (subject to published conditions such as proper application and surface preparation), KOESTER shall only replace those products proved defective, but KOESTER shall not be responsible for consequential damages due to the breach of its warranties. Notwithstanding the foregoing, KOESTER'S liability hereunder shall not exceed the cost of the defective product originally purchased. Please refer to our Koester 10-year warranty for specific terms and conditions. THIS TECHNICAL DATA SHEET MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, AND MAKES NO WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. This agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia, and all parties consent to jurisdiction in the courts located in the Cities of Norfolk and Virginia Beach, Virginia and agree that no other courts shall be an appropriate venue for any disputes arising out of the relationship between the Company and the Customer.

Distributed by:

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