



KOSTER VAP I[®] pH

A system for the reduction of moisture vapor emission and alkalinity control

Technical guideline / Article number 6.037
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Description:

The KOSTER VAP I[®] pH is a one-coat system, consisting 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 acceptable levels for most coatings, adhesives, and floor covering systems. The KOSTER VAP I[®] pH is in full compliance with current VOC regulations, is unaffected by a constant exposure to pH 14 (ASTM D-1308) and provides water vapor reduction up to 80% when tested according to ASTM E96-95, wet method. (10 lbs. to below 3 lbs. and 12 lbs. to below 5 lbs. /1000 ft²/24 hrs.) Always test adhesion properties of materials to be applied onto KOSTER VAP I[®] pH prior to application. Before application of any material onto the KOSTER VAP I[®] pH, allow coating to cure for a minimum period of 12-16 hours (depending upon environmental conditions.)

Uses:

The primary recommended use for the KOSTER VAP I[®] pH System is to solve the problems of alkalinity / moisture / water vapor emission, through mineral based substrates such as concrete floors, screeds etc., by reducing these vapors to levels that do not interfere with the adhesion of floor coverings. It provides an excellent primer for most coatings and adhesives, cures fast, and may be used indoors due to its low odor and non-flammability. The KOSTER VAP I[®] pH may be applied to concrete and other cement-based toppings that are compatible and fit to be used under vapor reduction systems and have been allowed to cure for a minimum period of 7 days. These unique properties allow the system to provide a solution as a base coat to pH/moisture/water vapor-sensitive coatings such as polyurethanes, epoxies, as well as adhesives. It enables their application on relatively fresh cement-based substrates. Since conditions vary from job to job, it is recommended that a test area be coated and tested for water vapor transmission to ensure performance of the system. Substrates should have a minimum compressive strength of 2500 PSI. The KOSTER VAP I[®] pH is not intended to be a stand alone wear surface.

Surface Preparation:

The substrate to receive the KOSTER VAP I[®] pH 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, chlorides etc., must be removed completely by sand or shot blasting to an ICRI CSP 3 – 4 finish. Smooth surfaces must be roughened if non-absorptive to allow the KOSTER VAP I[®] pH system to penetrate. Acid etching as surface preparation is NOT PERMITTED. For grinding preparation please consult with KOSTER American Corporation first.

In the event surfaces are very uneven or have a rough texture, the use of a leveling underlayment may be beneficial. Consult with KOSTER AMERICAN first before using repair mortars and screeds. It is essential these materials are suitable for the use underneath vapor reducing systems. Test adhesion properties prior to application. Do not apply KOSTER VAP I[®] pH onto surfaces treated with any kind of concrete sealer prior to consulting with KOSTER American Corporation. Make sure the substrate surface does not deteriorate due to the presence of sulphurous compounds or alkaline aggregate/silica reaction encountered in certain areas.

Testing for concrete deficiencies and contaminants, such as unreacted silicates, chlorides, A.S.R. (Alkaline Silica Reaction), organic residue, etc. is strongly recommended by KOSTER to avoid product failures. Testing is the responsibility of the building owner. Contact KOSTER American for testing recommendations.

KOSTER American Corporation strongly advises that surfaces to be treated be inspected and evaluated by an experienced firm prior to application to determine its suitability to receive the KOSTER VAP I[®] pH. Only a surface that remains sound, clean, and free of any contamination is fit to receive the KOSTER VAP I[®] pH system. Contact KOSTER American Corp. prior to application of solvent based materials to ensure compatibility. If self-leveling or trowelable underlayments are to be used for any reason, always apply a non-porous substrate primer and then the underlayment on top of the KOSTER VAP I[®] pH System. Consult with KOSTER American prior to using underlayments / repair mortars / and screeds. Always follow underlayment manufacturers' instructions and specifications.

ASTM E96-95 TEST RESULTS

Law Project Number: 6141-03-0079.01
 May 29, 2003

ANALYSIS	SAMPLE A	SAMPLE B	SAMPLE C	AVG	CONTROL
Slope of the Line, grains/hour	0.038	0.034	0.036	0.036	0.181
Water Vapor Transmission					
* grains / hour * ft ₂	0.67	0.61	0.65	0.64	3.32
* lbs/24 hours * 1000 ft ₂	2.31	2.10	2.21	2.21	11.05
*grains / hours * m ₂	0.47	0.43	0.45	0.45	2.25
Permeance					
* grains / ln Hg* h* ft ₂	1.53	1.39	1.46	1.46	7.31

Material Properties:

Pot Life:	1½ - 2 hours
Solid Content:	approx. 45%
VOC, mixed:	96 g/L
Flash Point:	>200°F
Packaging:	5 gallon unit
Storage:	Between 50°F and 90°F. Protect from freezing.
Shelf Life:	12 months in original sealed container

Mixing:

Mix component A and B at a ratio of 4:1 by pre-mixing the A component and completely emptying the B-component into the short-filled A component container. Mix thoroughly to obtain a homogeneous mixture using a slow speed motor (below 400 rpm) and a Jiffy-type mixer for 4 minutes. Avoid aeration of mix. Let stand for 5 minutes.

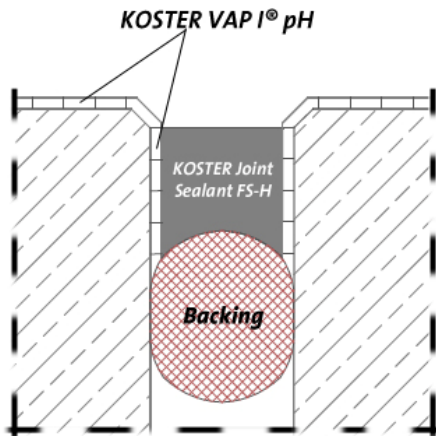
Application Instructions:

Dampen concrete surfaces, leaving no standing water. Surfaces must be damp, not wet to the touch. Apply KOSTER VAP I[®] pH by roller or squeegee leaving no areas untreated. Avoid pin holes and puddling. Wait approximately 20 minutes and back-broom with a soft-tip bristle broom. Apply one coat; allowing it to cure for a minimum of 12 hours. Provide continuous ventilation, air movement/exchange during curing. Apply KOSTER VAP I[®] pH system at a coverage rate of 200 ft²/gallon depending upon surface porosity of substrate. After the KOSTER VAP I[®] pH system has cured for a minimum of 12 hours; subsequent flooring systems may be installed. For resin based coatings, allow a minimum of 16 hours before installation.

Since performance characteristics may vary from substrate to substrate; always test water vapor emissions after the complete installation of the KOSTER VAP I[®] pH. Make sure water vapor emissions have been reduced to required levels. Check for pin holes. Apply KOSTER VAP I[®] pH as evenly as possible, leaving no areas void. Do not use the KOSTER VAP I[®] pH to fill voids or build up areas. It may only be applied as a thin coating.

Treating Cracks and Expansion Joints:

Cracks and voids should be completely cleaned out and repaired using KOSTER Repair Mortar or KOSTER VAP I[®] 2000 FS mixed with an appropriate epoxy thickening agent. Cracks on existing concrete slabs that may be contaminated should be cut out ¼ x ¼ inch to remove the contaminants from the side walls. Expansion joints must be honored using the KOSTER method detailed in this data sheet (see diagram).



Allow KOSTER VAP I[®] pH to cure a minimum of 24 hours before applying backing rod and sealant.

Protection:

- Do not apply KOSTER VAP I[®] pH when ambient surface temperatures are below 50°F and above 90°F.
- Always use clean potable water to pre-dampen surfaces.
- Protect application during specified cure period from any kind of traffic and topical water.
- Never apply KOSTER VAP I[®] pH to surfaces exposed to the sun.

Cleaning:

Clean all tools and equipment with water immediately after use.

Safety Precautions:

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.

Respiratory Problems – Take person to get fresh air.

Environmental Conditions:

The KOSTER VAP I[®] pH SYSTEM must be applied at ambient and substrate temperatures between 50° and 90°F. 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 covered with the KOSTER VAP I[®] pH must take place prior to subsequent applications of coatings or other coverings. If necessary, imperfections such as pinholes or 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:

KOSTER warrants that its product shall be in accordance with the specifications published in the current revision of the products data sheet. KOSTER covenants that in the event any of its products fail to meet their published specifications, KOSTER shall replace those products proved to be defective. KOSTER shall not be responsible for any incidental or consequential damages due to the breach of its warranties. Notwithstanding the foregoing, KOSTER's sole liability hereunder shall not exceed the cost of the defective product originally purchased. EXCEPT AS SET FORTH ABOVE, KOSTER MAKES NO OTHER WARRANTIES EXPRESS OR IMPLIED AND MAKES NO WARRANTY AS TO THE MERCHANTABILITY OR FITNESS OF THE PRODUCT FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. The user must determine if the product is suited for the intended use and the user must bear the risks and liabilities associated with it.