

# PERMATEC 4000

For Protection Against Industrial Chemicals

## DESCRIPTION

PERMATEC 4000 is a 100% solids, modified epoxy floor topping. The PERMATEC 4000 system consists of a two component resin binder and graded aggregate. It is applied with a trowel or screed rake at 1/8 -1/4 inches (125-250 mils) in a one coat application including a silica broadcast. There is no need for a primer or sealer coat. An optional glaze coat may be used to improve the appearance and cleanability.

The vertical formulation of PERMATEC 4000 is trowel applied at 1/8 inches (125 mils).

## FUNCTION

The primary use of PERMATEC 4000 is as a high strength floor topping for industrial service where severe mechanical abuse and/or chemical exposure is anticipated.

## TYPICAL APPLICATIONS

- Process floors
- Containment basins
- Trenches
- Sumps
- Any area in general where harsh chemicals are used

## FEATURES

PERMATEC 4000 is a 100% solids system and allows for a fast application where excellent chemical and wear resistance are required. PERMATEC 4000 can be installed over most sound floors including old or new concrete and most types of repair mortars. At varying thicknesses up to 1/4 inches, the

**PERMATEC 4000 system provides long term chemical resistance for splash and spill, or immersion service in many chemicals. (For specific recommendations refer to the "Chemical Resistance Guide" and your local distributor.)**

PERMATEC 4000 is similar to PERMATEC 3000 but gives a higher degree of chemical resistance to concentrated acids, caustics and solvents. As with all PERMATEC systems, PERMATEC 4000 provides excellent physical protection even in the harshest industrial settings.

## OTHER FEATURES INCLUDE:

- Rapid cure resulting in minimal downtime
- 100% non-porous
- Odor free
- Non-skid safety finish
- Can be applied over damp concrete

## TYPICAL PROPERTIES

Solids, by Volume	100 %
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Compressive Strength ASTM C579	14,000 psi
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Flexural Strength ASTM D790	5,500 psi
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Tensile Strength ASTM D307	2,200 psi
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Bond Strength to Concrete ASTM D4541	Exceeds tensile strength of concrete. Failure in concrete
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Taber Abrasion ASTM D4060 CS 17 Wheels	Loss/1000 cycles =25 mg
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Water Absorption ASTM D413	0.10% Maximum

## PACKAGING and COVERAGE

PERMATEC 4000 is available in 20, 100, and 1000 square foot units based on 1/4 inch applications. Each unit consists of pre-measured components, Part A

(Resin) and Part B (Hardener). Graded aggregates are available or may be sourced locally.

Application thickness may vary from 1/8 to 1/4 inches, depending on the expected service conditions. Factors to consider are 1) length of chemical exposure (i.e. immersion vs. splash/spill) and 2) mechanical abuses (i.e. tow traffic, loaded trucks vs. cart and foot traffic, etc.).

Note: Some applications may not require a 1/8 or 1/4 inch floor topping (i.e. secondary containment, many vertical applications, etc.) Consult ChemProof Polymers for more specific recommendations.

## CURE TIME

The cure time of PERMATEC 4000 and other resinous systems are very dependent upon the temperature of the substrate. The ambient temperature may not be the same as the substrate temperature. For example, during winter concrete may be colder than the surrounding ambient temperature. As temperatures during the day may increase, large masses of concrete will be much slower to react. During summer days direct sunlight will increase the concrete temperature over that of ambient air. The substrate temperature should be monitored and remain at or above 65 degrees F.

Service (hours)	65F	75F	90F
Foot Traffic	10	8	6
Light Chemical	24	16	10
Fork Lift	24	16	10

*\*Where heavy chemical abuses are anticipated, longer cure times may be required. Contact ChemProof Polymers or the local distributor for specific recommendations.*

## MIXING and APPLICATION

The following is a brief summary of concrete preparation and the application procedure for PERMATEC 4000. This information is intended for use in the system evaluation. Applicators should refer to the "Floor Topping" application bulletin for more detailed application procedures.

## SURFACE PREPARATION

**NEW CONCRETE** – The concrete should be well cured for a minimum of 10 (ten) days, per ACI 308-81, (R-1986), clean, dust-free and free of all

contaminants. Mechanical methods such as sandblasting, scarifying or shot blasting should be employed to remove the weak layer of surface laitance. A minimum tensile strength of 200 psi is required of the prepared surface. Acid etching with muriatic acid is acceptable but less desirable. Care must be taken to completely remove all residual acid prior to the application of PERMATEC 4000.

**EXISTING CONCRETE** – Concrete must be structurally sound and free of all contaminants. Weak or contaminated concrete must be removed until sound concrete is realized. Old coatings, toppings, waxes, oils, etc. must be removed prior to the application of PERMATEC 4000.

## MIXING

Prior to application, the PERMATEC 4000 (Resin, Hardener and Silica) and the substrate should be between 65 degrees F and 90 degrees F.

In order to maintain a clean mixer from batch to batch, the Resin (Part A) and a portion of the Silica (Part C) should be added to the mixer and agitated long enough to clean the blades. Add the Hardener (Part B) only when the batch is ready to be applied. Mix for approximately 30 seconds – 1 minute, then add the remainder of the Silica and mix for another 90 seconds. Pour immediately onto the floor.

## APPLICATION

A self-leveling tendency will be noticed after the material has been poured on the surface to be coated. However, some assistance is required in order to achieve the specified thickness. Conventional hand troweling and screed raking are the two recommended methods of application. Screed raking is generally preferred because of the uniformity in thickness that can be achieved. A Silica broadcast is required for proper filling of the system and for skid resistance. The surface should be saturated and the excess removed after the material has set.

## STORAGE and SHELF LIFE

PERMATEC 4000 should be stored at 50-90 degrees F out of direct sunlight. All containers should remain unopened until ready for use. If stored as set out above, PERMATEC 4000 has a minimum shelf life of one year.

## **WHERE PERMATEC 4000 SHOULD NOT BE INSTALLED**

PERMATEC 4000 should not be applied over substrates:

- subject to extreme hydrostatic pressure
- which are unsound
- which are contaminated and cannot be cleaned.
- at temperatures below 65 degrees F (Consult ChemProof Polymers).

## **SAFETY**

Read Safety Data Sheets (“SDS”) before using. PERMATEC 4000 contains blended Epoxies as the resin and blended Amines as the hardener. Protective clothing and gloves are recommended to prevent sensitization to these materials. In case of ingestion or eye contact, it is advisable to contact a physician immediately. SDS are available for this product upon request.

## **WARRANTY**

ChemProof Polymers, Inc. warrants that at the time of shipment, its products are free of defects in material and workmanship. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by ChemProof Polymers, Inc. ChemProof Polymers, Inc. makes no warranty concerning the suitability of its product for application to any surface, it being understood that the goods have been selected and the application ordered by the Owner/End User or Purchaser. CHEMPROOF POLYMERS, INC. MAKES NO WARRANTY, EXPRESS OR IMPLIED, THAT THE GOODS SHALL BE MERCHANTABLE OR THAT THE GOODS ARE FIT FOR ANY PARTICULAR PURPOSE. THE WARRANTY OF REFUND OR REPLACEMENT SET FORTH HEREIN IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES ARISING BY LAW OR OTHERWISE; AND CHEMPROOF POLYMERS, INC. SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOST PROFITS, DOWN TIME, DAMAGES TO PROPERTY OF THE OWNER/END USER, PURCHASER OR OTHER PERSONS, OR

DAMAGES FOR WHICH THE OWNER/END USER OR PURCHASER MAY BE LIABLE TO OTHER PERSONS, WHETHER OR NOT OCCASIONED BY CHEMPROOF POLYMERS, INC.’S NEGLIGENCE. This warranty shall not be extended, altered or varied except by written instrument signed by ChemProof Polymers, Inc. and Owner/End User or Purchaser.

The full product warranty is available at [www.chemproof.com](http://www.chemproof.com).

## **CLEAN-UP**

All mixing and application equipment should be cleaned immediately after use. If this is done, soap and water or biodegradable cleaners can be used. If the material has begun to set, more aggressive solvents will be necessary. Before using solvents, refer to their respective SDS for handling considerations.

## **RELATED & ANCILLARY PRODUCTS**

PERMATEC 3000  
Modified Epoxy Floor Topping

PERMATEC 5000  
Modified Epoxy Floor Topping

PERMAGROUT E  
Epoxy Grout/Resurfacer

PERMAFLEX 1100  
Flexible Epoxy Underlayment

Related Vertical Products

## **CONTACT INFORMATION**

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