

# PERMACAST 4000

Polymer Concretes for Protection against Industrial Chemicals

## DESCRIPTION

PERMACAST 4000 is a 100% solids epoxy based polymer concrete. When placed by casting in the form of sumps, trenches, pump pads or floors, PERMACAST 4000 will exhibit excellent protection against most harsh chemicals and the physical abuses found in industry today.

## APPLICATION

- Pump Pads
- Tank Bases
- Process Floors
- Curbs
- Trenches

## FEATURES

**Chemical Resistance** – PERMACAST 4000 offers unsurpassed corrosion resistance to chemicals such as Hydrochloric Acid, Sodium Hydroxide, 40% Sulfuric Acid 75% as well as a wide range of other acids, alkalies and solvents. For specific chemicals please refer to the “general resins” corrosion chart or call ChemProof Polymers, Inc. at 918.584.0364

**Minimal Downtime** – At 75 deg. F at 3 inch pours PERMACAST 4000 polymer concrete will set in 3-6 hours and can be ready for full chemical service in as little as 48 hours. Contact ChemProof Polymers for chemical service recommendations.

**VOC Compliant** – All PERMACAST 4000 resins are 100% solids and essentially odor free. These systems are also USDA approved, and contain no V. O. C.'s

**High Strength** – Typically offering 2-4 times the strength of standard concrete, PERMACAST 4000 will offer excellent resistance to most impact and abrasion found in today’s processing environments.

## PACKAGING/COVERAGE

PERMACAST 4000 is available in the following grades and unit sizes:

Low Slump – Cast in place trenches, collection sumps and floors. Available in 2 cubic foot units.

Part A – 1 - 3.5 Gal Pail  
Part B – 1 - 2.5 Gal Jug  
250 lbs. Aggregate

## CURING RATES

Temperature – 75 degree F	
Working Time (Mins.)	30
Initial Set (Hrs.)	3-4
Light Traffic (Hrs.)	12
Heavy Traffic (Hrs.)	24-48
Chemical Service (Hrs.)	48-72

## TYPICAL PROPERTIES

Compressive Strength (psi) ASTM C-579	10,000
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Flexural Strength (psi) ASTM D-790	3,500
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Tensile Strength (psi) ASTM D-307	2,000
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Absorption (%) STM D-413	<.1
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Shrinkage	.10%
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## SURFACE PREPARATION

EXISTING CONCRETE -The concrete should be well cured for a minimum of 10 days, per ACI 308-81, (R-1986), clean, dust free and free of all contaminants. A minimum tensile strength of 200 psi is required of the prepared surface.

Concrete should be free of any chemical contaminants or oils prior to placing PERMACAST 4000.

The concrete profile should be obtained by mechanical preparation such as shot blasting, sand blasting or scarification. Prior to placing PERMACAST 4000, all dust should be removed from the surface by vacuuming or blowing off with clean air.

After concrete preparation is complete, reinforcement should be put in place with reinforcement meeting or exceeding the standards in place for Type 1 concrete.

The working area and surfaces to which the material is to be applied must be dry before and during the installation and must remain dry until the material is set (approximately 6 hours).

### **PRIMING**

Priming and placement of PERMACAST 4000 should take place out of direct sunlight and with steady or falling temperatures to reduce the chance of outgassing.

Prime concrete with the PERMACAST 4000 neat resins (Pt. A & Pt. B) or PermaCoat 3000 Primer to ensure proper wet out of the surface to be coated.

- 1) Mix the appropriate quantity of PERMACAST 4000 (Pt. A & Pt. B) or PermaCoat 3000 Primer thoroughly (appx. 1-2 minutes).
- 2) Apply to the substrate and allow to cure to a tacky state (appx. 2-3 hrs.) prior to applying the PERMACAST 4000 polymer concrete.

Note: Do not prime more area than can be cast within 6 hours.

### **MIXING AND APPLICATION**

PERMACAST 4000 is composed of three parts: blended aggregates, which is typically

PERMACAST Fine Blend, liquid resin (Part A) and hardener (Part B).

- 1) PERMACAST 4000 polymer concretes are mixed in a clean, dry, mortar type paddle mixer. The mixer should be capable of holding up to 3 cubic feet of mixed material.
- 2) Part A and Part B should be pre-mixed in a clean and dry mixing container for 1-2 minutes prior to pouring into the mortar mixer.
- 3) Pour this mixed material into the mortar mixer and add the desired amount of the PERMACAST 4000 aggregate. Mix an additional 2-3 minutes until uniform and all of the aggregate is completely "wetted out".
- 4) Immediately pour the mixed polymer concrete directly onto the floor or into the forms.
- 5) Finish the surface of the casting using a steel trowel to remove any air pockets or voids.
- 6) Protect installation from water, weather and light traffic for at least 12 hours after placement.
- 7) In areas subject to severe vibration and mechanical abuse, allow 72 hours before putting into service.

The use of thinners or solvents is not recommended with this product.

### **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 MSDS for handling considerations.

### **STORAGE and SHELF LIFE**

PERMACAST 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, PERMACAST 4000 has a minimum shelf life of one year.

## **SAFETY**

PERMACAST 4000 polymers concretes contain 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 physical immediately. MSDS 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 MERCHANTIBLE 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).

## **CONTACT INFORMATION**

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