



## PHOSCRETE® ENDURE™

### INSTALLATION GUIDE

#### Installation Overview

Using Phoscrete Endure penetrating concrete protector is easy, but for best results, it is important to follow the directions provided in this installation guide.

**Quick Start Guides** are included with all Phoscrete products and are published at [phoscrete.com](https://phoscrete.com)<sup>i</sup>

Visit our website for the latest documentation. Contact our support team for help anytime.

#### Properties of Phoscrete Endure

Phoscrete Endure is a Soy Methyl Esther Polystyrene (SME-PS) penetrating concrete protector, manufactured under license by the Indiana Soy Alliance (ISA) under the trademark PoreShield™. Upon application, SME-PS fills the air entrainment pores of cured concrete to protect concrete from moisture penetration, ion transfer (Ca, Cl, Mg), and other contaminant ingress. Even when concrete cracks, SME-PS prevents these contaminants from penetrating into the concrete, and the reinforcing underlayment (rebar) is protected from oxidizing agents, and the damage fueled by corrosion.

Field and laboratory studies demonstrate Phoscrete Endure enhances concrete's resistance to freeze/thaw and salt/scaling, prevents alkali-silica reaction (ASR), alkali-carbonate reaction (ACR), calcium-oxychloride formation (CaOCl<sub>2</sub>), and concrete efflorescence. Studies indicate service life of SME-PS treated concrete is extended 5x to 9x compared to untreated concrete. Phoscrete Endure remains in the treated concrete, protecting for at least ten [10] years, then reapplication is advised.

For detailed technical data and performance characteristics, visit [phoscrete.com](https://phoscrete.com).

#### Applications

- › Horizontal or vertical concrete structures
- › Portland Cement Concrete Pavement (PCCP) Joints
- › Mortar/blocks/pavers
- › Admixture for Phoscrete MPC concretes.

#### Important things to know when working with Phoscrete Endure:

- › **Only apply Phoscrete Endure to clean, dry concrete.** If concrete was previously treated with curing compounds or penetrating sealers, the SME-PS will not penetrate.
- › **Test concrete prior to application** to assess permeability of the concrete pores, and determine best site preparation methods, and appropriate application rate.
- › **Phoscrete Endure dissolves Polystyrene** (foam board). When using as an admixture with Phoscrete concretes and forming with foam board, apply painter's (masking) tape on areas in direct contact with Phoscrete concrete products.
- › Clean tools and buckets and boots with water. Clean hands with soap and water.



## Phoscrete Installation Support

Phoscrete technical support personnel are available to travel on-site for application training and start of work. Virtual interactive training is also available, and the most up-to-date documentation and installation videos are published at [phoscrete.com](https://phoscrete.com).

## Packaging and Delivery

Phoscrete Endure is manufactured and delivered in *Jugs, Pails, Drums, and Totes*. Refer to the Technical Data Guides found at [phoscrete.com](https://phoscrete.com) for weights and yields of specific products.

Phoscrete Endure is packaged in metal containers or polyethylene terephthalate (PET) plastic. Do not transfer or store material in high-density polyethylene (HDPE) or low-density polyethylene (LDPE) plastic containers for more than 30 days. Never attempt to transfer or store Phoscrete Endure in polystyrene (Styrofoam®) containers. The foam container will dissolve into the liquid!

## Storage, Shelf Life, Lot Numbers, PPE, Cleanup, Disposal, Safety and Environmental

When material is properly stored, **shelf life of Phoscrete Endure is [18] months**. Close container after use. Store Phoscrete Endure indoors, away from direct sunlight, at temperatures above 41°F (10°C).

**Lot numbers** are printed on every container of Phoscrete Endure. Be sure to check the lot numbers before installing. Here is how to decode a Phoscrete Endure product batch number:

**[PE-YYMMDD-TT]** PE- indicates Phoscrete Endure. YY is the two-digit year, followed by two-digit month and two-digit day of month. TT is the tank number. For example: "PE-210626-02" indicates Phoscrete Endure was produced on June 26, 2021 (tank 02).

**Phoscrete STRONGLY advises against installing expired material, material improperly stored, or material opened or damaged.** Do not dilute or alter material. Use as supplied.

**Personal Protection Equipment:** Phoscrete Endure is non-toxic. No personal protective equipment (PPE) is required.

**Cleanup:** Use soap and water to clean equipment, hands, and surfaces.

**Disposal:** Phoscrete Endure can be disposed in using standard chemical disposal procedures. Contact your Phoscrete representative for any questions regarding disposal of improperly stored or expired material. Always follow local environmental regulations when disposing of Phoscrete products.

**Health, Safety, and Environmental:** Read, understand, and follow all Installation Instructions, Safety Data Sheets (SDS), and product label information for this product prior to use. The latest SDS can be obtained by visiting [phoscrete.com](https://phoscrete.com), emailing your request to [safety@phoscrete.com](mailto:safety@phoscrete.com), or calling +1-561-420-0595. Use only as directed. For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC® 24 Hours 800-424-9300 / +1 703-527-3887. Contracted by Phoscrete, CCN 866520.

## Penetrating Absorption

Rather than setting or curing on the surface like common sealers, Phoscrete Endure protects by absorbing into the pore network of concrete. The time and amount absorbed will vary depending on the concrete's porosity.

Phoscrete Endure is designed to penetrate sufficiently into the concrete pores after four [4] hours, at which time it is ready to reopen pavement to traffic. Short duration traffic closures creates less traffic congestion which reduces user costs, reduces the cost of traffic control, and reduces the possibility for accidents.



### Estimating Material Requirements

Spray and roller tools do not precisely meter liquid dosage. If you under apply, you will compromise efficacy. If you over-apply you will wait longer for absorption and/or you may need to absorb excess material at the surface. The following procedure helps you determine the appropriate application rate, using 240 ft<sup>2</sup> per gallon (approx. 6 m<sup>2</sup> per liter) as a baseline:

1. Perform this test on clean, dry concrete only. Use level concrete when possible.
2. Mark off 15 ft<sup>2</sup> (1.5 m<sup>2</sup>) using painter’s tape
3. Measure and spread out 8 ounces (0.25 l) of Endure (1/16 of a gallon)
4. Observe absorption over 4+ hours.

Time to Full Absorption	Application Rate
4 hours	240 sf per gallon (6 m <sup>2</sup> per liter)
Less than 4 hours	Increase rate (apply more Endure)
More than 4 hours	Decrease rate (apply less Endure)

### Surface Preparation

- ▶ **Surface must be clean.** Use compressed air to remove debris. Power wash to remove stains.
- ▶ **Surface must be dry.** Do not apply Endure until 24-48 hours after last exposure to water.
- ▶ **Surface must be absorbent.** If needed, shot blast, waterblast, or mill the concrete surface.
- ▶ **Fresh Concrete must cure 14-28 days before application** to allow development of pore structure.
- ▶ **PCCP Joints:** Remove joint fillers and debris buildup the entire length, width, and depth of the joint.
- ▶ **Use Painter’s Tape to protect rubber expansion joints and plastic trims** prior to spraying.
- ▶ **Ambient, surface, and material temperature** must all be between 41°F and 120°F
- ▶ The deck surface temperature shall be at least 5°F above the dew point.
- ▶ Do not apply Endure if rain is forecasted within the estimated cure time.

### General Application

- ▶ Endure can be applied with a sprayer, roller, or brush on horizontal or vertical applications. Use a roller brush on overhead concrete.
- ▶ When spraying, apply a single coat at the determined application rate.
- ▶ Use a roller brush to distribute pooled areas or puddles.
- ▶ Do not over-apply Endure. This will extend dry time.

### Joint Application

Spray Endure in two passes:

- ▶ First with spray pattern perpendicular to joint to create overspray of 3-6” on each side.
- ▶ Second with the spray pattern parallel to the joint to spray directly on interior joint faces.

Endure will create a reservoir within the joint, providing deep penetration at the base of the joint. Do not install joint fillers until SME-PS is absorbed and dry.

Endure can be used in combination with joint seal products. Seven [7] days after applying Endure, clean the joint with compressed air to remove all foreign matter. Then fill the joint with silicone or hot mix asphalt (HMA) joint fill.



## **Drying Time, Opening to Traffic, Painting**

Allow treated surface up to 4 hours to dry prior to opening to traffic.

If surface remains too slippery after 4 hours, broadcast baking soda on the surface. Wait 30 minutes, then brush and blow the surface clean.

Once absorbed, the coefficient of friction of the concrete returns to pre-application measurement because SME-PS is absorbed below the very top layer of the concrete. Endure is non film-forming.

Paint or other coatings may be applied. SME-PS will not affect adhesion.

## **Post Application**

Concrete surfaces may have a mottled appearance for up to 14 days after application.

Once absorbed, the concrete has no visible change in color or appearance. The surface texture and form are as they were pre-application.

After application and absorption, SME-PS is not visible on the surface and there is no hydrophobic beading effect. Fluids spread thin, then evaporate. SME-PS blocks the driving force of capillary action stopping absorption cycles and preventing damage.

## **Phoscrete Technical Support**

Visit our website for the latest installation guides and technical data. Contact Phoscrete installation support anytime for guidance regarding your concrete repair projects:

**If you have questions, contact your local Phoscrete representative  
or call our corporate offices for application assistance.**

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## **URLs for Referenced Hyperlinks in this Document**

This document is published at [phoscrete.com](https://www.phoscrete.com) where you can click on the referenced hyperlinks in the document. If you have a printed version, full URLs are end-noted below.

<sup>i</sup> Refer to the latest published Phoscrete Technical and Safety Data Guides Phoscrete Quick Start Guides, Full Installation Guides, Best Practices, and Videos: <https://www.phoscrete.com/technical/>