



PHOSCRETE® PRIMER

Very Rapid Hardening MALP (Magnesium Alumino Liquid Phosphate) Concrete Primer for pre-treatment of substrate for maximum concrete repair bond strength in High Stress Environments.

DESCRIPTION

Phoscrete Primer is a cementitious two-part system of a Dry Mix composed of magnesium and alumino-silicate aggregate, plus a Mono-Aluminum Liquid Phosphate Activator.

Phoscrete Concretes are very rapid hardening and gain strength early, allowing fast completion of repairs to concrete structures. Phoscrete Primer mixes to a putty consistency, is easy to apply by hand as a scrub-coat and easy to trowel to a ¼ inch (½ cm) thin layer. Phoscrete Primer bond to the concrete substrate prior to installation of Phoscrete concrete repair materials (HC, HF, VO, SG).

Phoscrete Primer is recommended as a pre-treatment for concrete repairs in high stress environments when maximum bond strength is desired. Phoscrete MALP concrete repair materials chemically bond to themselves and each other, wet or cured, with no cold joints, Phoscrete Primer is ideal for preparing substrates for vertical, overhead, and horizontal concrete repairs.

PROVEN APPLICATIONS

- › Vertical and Overhead: above grade and below grade concrete structures
- › Horizontal surfaces: poured/castable applications
- › Bridge beams, caps, piers, and columns
- › Bridge deck and parking deck repairs of reinforced concrete
- › Marine structures such as seawalls, piles, caps, beams, piers, navigation locks, guide walls, dams, powerhouses, and discharge tunnels
- › Sidewalks, stairs, sills, and culverts
- › Building facades, parking garages and industrial plants
- › New construction concrete defects, including pre-cast shapes

ADVANTAGES

- › Easy to apply - fast setting, high-build, non-sag, easy clean-up with water.
- › Easy to finish using trowels.
- › High early and ultimate compressive and bond strengths.
- › High flexural strength, ductility, and durability.
- › High adhesion to concrete surfaces - forms a both mechanical and chemical bond to clean, dry, cured concrete.
- › No cold joints - bonds to itself, wet or cured.
- › Shrinkage crack free.
- › Stops rust - converts iron oxide to metal phosphate and inhibits corrosion. For steel reinforced repairs, sacrificial zinc-based anodes are not required because Phoscrete VO does not cause the so-called "halo effect."
- › Freeze-thaw and salt scaling resistant.
- › Durable in marine environments - resists chloride penetration.
- › Not a vapor barrier. Does not out-gas after cure - accepts sealers and coatings as soon as one hour following initial set.
- › Environmentally friendly - no odor, no free silica.
- › All temperature use - same formula works from -5°F (-21°C) to +85°F (30°C)
-when used with Phoscrete Fast Setting Admixture in cold temperatures
-contact Phoscrete technical support to discuss your specific application.

PACKAGING

Pail: 1 Bag + 1 Jar

Dry Mix Bag: 9.7 lbs (4400 g)

Activator Jar: 1.6 lbs (737 g)

Pail Yield: 4 ft² at ¼ in thick layer
(0,37 m² at 0,37 cm thick layer)

Tub: 1.1 lb (0,5 g)

Dry Mix Baggie 0.55 lbs (250g)

Liquid Activator Jar 0.1 lbs (42g)

Plastic mixing/applicator stick

Tub Yield: 32 in², at ¼ in thick layer
(206 cm² at 0,37 cm thick layer)

Mixing Ratio

Wet-To-Dry Ratio: 16.75%

Mix Entire Pail: 1 jar + 1 bag

Mix Entire Tub: 1 jar + 1 baggie

Storage

Store in unopened, original packaging in clean, dry conditions.

Shelf Life (when properly stored)

Dry Mix: 24 months

Liquid Activator: 12 months

VOC Content

0 g/L- (less exempt solvents)

Color

Concrete Grey

Fresh Properties					
Test	Specification	Description	Time	Typical Results	
Set Time	ASTM C191	Time of Setting by Vicat Needles	lab temp supercooled*	<u>Initial</u> 5 min 9 min	<u>Final</u> 6 min 11 min
Density	ASTM C138	Density (Unit Weight) of Concrete		153 lb/ft ³	2450 kg/m ³
Air Content	ASTM C231	Air Content (Pressure Method)		8.3%	
Free Shrinkage	ASTM C157	Length Change of Hardened Concrete (Std)	28 Days Wet Dry	0.008%	-0.11%
Strength Properties					
Test	Specification	Description	Time	Typical Results	
				psi	MPa
Compressive Strength	ASTM C109	Compressive Strength of Hydraulic Cement Mortars Using 2-in. Cube Specimens	1 hour	7000	48
			1 day	9000	62
			28 days	12000	83
Flexural Strength	ASTM C78	Flexural Strength of Concrete Using Simple Beam with Third-Point Loading	1 day	600	4,1
			7 days	650	4,5
			28 days	800	5,5
Bond Strength	ASTM C882	Bond Strength by Slant Shear Phoscrete - Concrete	1 hour	2500	17
			7 days	3500	24
			28 days	3500	24
Tensile Strength	ASTM C496	Splitting Tensile Strength of Cylindrical Concrete Specimens	1 day	850	5,8
			28 days	900	6,2
Modulus of Elasticity	ASTM C469	Static Modulus of Elasticity [Chord Modulus] Poisson's Ratio of Concrete in Compression	28 days	4.24 E+06	2.92 E+04 0.243
Durability Properties					
Test	Specification	Description	Test	Typical Results	
Freeze Thaw	ASTM C666-A	Resistance of Concrete to Rapid Freezing and Thawing in a Saturated Condition (300 cycles)	Durability Factor	91%	
Scaling	ASTM C672	Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals (25 cycles)		Visual	Loss lbs./ft ²
			NaCl	2	0.42
			CaCl ₂ ,MgCl ₂	0	0.00
Chlorides	ASTM C1202	Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration (Current @5 min)	28 days	450 Coulombs	
	ASTM C1543	Penetration of Chloride Ion into Concrete by Ponding	90 days	10-20 mm	Cl: 0.056%
				55-65 mm	Cl: 0.057%
			180 days	10-20 mm	Cl: 0.033%
				55-65 mm	Cl: 0.061%

*Supercooling Phoscrete Activator in a freezer below 10°F (-12°C) extends working time and initial set time without affecting hardened properties. The freezing point of Phoscrete Activator is -20°F (-29°C). Dry mix may also be cooled for additional working time. Refer to [Phoscrete's All Temperature Guidelines](#) for additional information.

CONSIDERATIONS

- › Phoscrete MALP Concretes naturally bond to clean, dry concrete and also to itself whether wet or cured with no cold joints. Laboratory research and field experience inform that a thin bonded layer of Phoscrete maximizes both the chemical and mechanical bond to the substrate by curing quickly and minimizing any voids between the substrate and the repair mortar.
- › Phoscrete's bond to itself is even stronger than Phoscrete's bond to concrete. Therefore, the bond between Phoscrete Primer and the appropriate Phoscrete product delivers maximum adhesion and cohesion at both bond lines (primer to substrate, and primer to Phoscrete).
- › For best results, supercool Phoscrete Primer Activator in a freezer below 10°F (-12°C), or cool both Activator and Dry Mix in a cooler below 40°F (5°C) prior to mixing to increase flow and extend working time. Cold Phoscrete Primer flows best and provides sufficient working time to apply the scrub coat and the thin layer.

SURFACE PREPARATION

- › Concrete surface must be sound and fully cured.
- › Loose, damaged, and contaminated concrete must be removed.
- › Use a wire brush to remove loose scale (rust) from steel bars. Sandblasting is not required.
- › Clean the surface of the area to be repaired from oil, grease, and other bond-inhibiting materials.
- › Surface must be dry, free of standing water. Use heat (torch) to eliminate surface moisture.
- › In winter, concrete substrate must be frost free and dry before the application.
- › Concrete profile should reach minimum CSP of 5 per ICRI Guidelines. Use appropriate technical means. Water-blasting is not recommended.

MIXING

- › Mix Phoscrete Primer at the placement site.
- › Pour the Liquid Activator into Phoscrete Primer pail or any other clean plastic container. Add the Dry Mix component to the Liquid Activator, preferably while mixing.
- › Mix Phoscrete Primer Dry Mix into the Liquid Activator for about 1 minute, until the material is fully wetted out and shows a uniform consistency. Do not over-mix.
- › A batch of Phoscrete Primer must be mixed, placed, and finished within 5 - 15 minutes depending on ambient temperature.
- › When mixing pails of Primer, mix with a paddle, using a minimum 18v portable drill on the low speed setting. For professional use, Phoscrete's small urethane auger is highly recommended.
- › When mixing tubs of Primer, use the provided stirrer and mix by hand until the material is completely wetted out.
- › To control working time and set time, refer to Phoscrete's [All Temperature Guidelines](#), and contact Phoscrete customer support to discuss your specific application requirements.
- › Store Phoscrete Primer out of direct sunlight and heat.

APPLICATION

- › The concrete substrate surface must be dry before application.
- › Install immediately after mixing. Discard material that begins to setup in the pail.
- › Using a lightly moistened (with water) gloved hand or clean trowel, apply a scrub coat of Phoscrete Primer against the prepared substrate, being careful to fill all voids.
- › Remove any loose material from the scrub coat, then quickly add more Primer to completely coat the substrate surface to a thickness of ¼ in. (½ cm).
- › Wait 10 minutes to set and bond prior to installation of the appropriate Phoscrete Concrete Repair product.

CLEANING

- › Clean tools with water and wipe off excess water prior to contact with Phoscrete Primer.
- › When the job is completed, clean tools and gloves with water. Wash hands with soap and water.

LIMITATIONS

- › Do not use water when mixing and/or placing Phoscrete Primer
- › Do not extend Phoscrete Primer with aggregate. Do not add sand or any type of cement.
- › Do not pour water on surface when finishing Phoscrete Primer.
- › Do not use any primer other than Phoscrete Primer for Phoscrete installations.
- › No direct contact with galvanized steel (zinc).
- › Proper application is the responsibility of the user. Field visits by Phoscrete personnel are for the purpose of making technical recommendations, not for supervising or providing quality control on the jobsite.

LIMITED WARRANTY

LIMITED WARRANTY NOTICE Phoscrete Corporation (Phoscrete) warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, when used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond Phoscrete's control. PHOSCRETE MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS. The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is the replacement of product or refund of the purchase price, at the sole option of Phoscrete. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. PHOSCRETE WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND. Purchaser must determine the suitability of the products for the intended use and assumes all risks and liabilities in connection therewith. This information and all further technical advice are based on Phoscrete's present knowledge and experience. However, Phoscrete assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third-party intellectual property rights, especially patent rights, nor shall any legal relationship be created by or arise from the provision of such information and advice. Phoscrete reserves the right to make any changes according to technological progress or further developments. The Purchaser of the Product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with a full application of the product(s). Performance of the product described herein should be verified by testing and carried out by qualified experts.

HEALTH, SAFETY, AND ENVIRONMENTAL

Read, understand, and follow all Installation Instructions, Safety Data Sheets, and product label information for this product prior to use. The latest SDS can be obtained by visiting phoscrete.com, emailing your request to safety@phoscrete.com, or calling 561-420-0595. Use only as directed. 24 Hour Emergency: Chemtrec® 800-424-9300 Contracted by Phoscrete Corporation, Account #866520.

**Supercool Phoscrete Activator below 10°F (-12°C) in a freezer for additional flow during placement, and for additional working time when finishing. The freezing point of Phoscrete Activator is -20°F (-29°C). Dry mix may also be cooled.*