

MA 18P 22031700000000000090
NEW

State of Maine



Master Agreement

Effective Date: 04/01/22

Expiration Date: 03/31/23

Master Agreement Description: High Performance Concrete Repair Cold Patch

Buyer Information

William Allen 207-624-7871 ext. NULL WJE.Allen@maine.gov

Issuer Information

Sharon Krechkin 207-624-3038 ext. sharon.krechkin@maine.gov

Requestor Information

Sharon Krechkin 207-624-3038 ext. sharon.krechkin@maine.gov

Agreement Reporting Categories

Authorized Departments

ALL

Vendor Information

Vendor Line #: 1

Vendor ID

VS0000020197

Vendor Name

Phoscrete Corporation

Alias/DBA

Vendor Address Information

1800 NW 15TH AVE #130

POMPANO BEACH, FL 33069

US

Vendor Contact Information

Brian Mintz
561-420-0595 ext.
erica.gerhart@phoscrete.com

Commodity Information

Vendor Line #: 1
Vendor Name: Phoscrete Corporation
Commodity Line #: 1
Commodity Code: 96712
Commodity Description: High Performance Concrete Repair Cold Patch
Commodity Specifications:
Commodity Extended Description: High Performance Concrete Repair Cold Patch

Quantity	UOM	Unit Price
0.00000		0.000000
Delivery Days	Free On Board	
10		
Contract Amount	Service Start Date	Service End Date
0.00		
Catalog Name	Discount	
Phoscrete	0.0000 %	
	Discount Start Date	Discount End Date
	04/01/22	03/31/23

Please see authorized signatures displayed on the next page

Each signatory below represents that the person has the requisite authority to enter into this Contract.
The parties sign and cause this Contract to be executed.

State of Maine - Department of Administrative and Financial Services

DocuSigned by:

6D6437754DD0459... 3/31/2022

Signature Date

Jaime C. Schorr, Chief Procurement Officer

and

Phoscrete Corporation

DocuSigned by:

4F2D03BCBBF2450... 3/31/2022

Signature Date

Erica Gerhart, Operations Manager

RIDERS

<input checked="" type="checkbox"/>	The following riders are hereby incorporated into this Contract and made part of it by reference: (check all that apply)
<input checked="" type="checkbox"/>	Rider A – MA User Information and/or Specifications
<input checked="" type="checkbox"/>	Rider B – Terms and Conditions
<input type="checkbox"/>	Rider C - Exceptions
<input checked="" type="checkbox"/>	Bid Cover Page and Debarment Form – Appendix A from RFQ
<input checked="" type="checkbox"/>	Municipality Political Subdivision and School District Participation Certification – Appendix D from RFQ
<input type="checkbox"/>	Other – Included at Department's Discretion
<input type="checkbox"/>	Other – Included at Department's Discretion

RIDER A
Master Agreement User Information and/or Specifications
MA 220317-090

Commodity: High Performance Concrete Repair Cold Patch

The State reserves the right to add other similar items or commodities to the Master Agreement (MA) Contract if it's in the State's best interest but does not obligate the State to purchase similar noncontracted items or commodities from the selected bidder.

MA Competitive Bid RFQ: 17A 220307-223

Contract Period: Through March 31, 2023. The State of Maine with vendor approval can opt to issue up to four (4) one (1) year extensions.

Vendor Contact Person: The vendor contact person will help consumers place orders, inquire about orders that have not been delivered, all shipping issues, quality issues and any issues pertaining to the Master Agreement (MA) contract. All orders not submitted through a Delivery Order will be sent through the vendor contact person. The vendor contact person for this MA is:
Name: Erica Gerhart **Tel:** 561-420-0595 Ext 1201 **Email:** erica.gerhart@phoscrete.com

Prices: Prices are with shipping terms of "Free on Board (FOB) – Destination". The State intends for this to mean that all goods shall be priced to include shipping charges, if any, to the State's desired location. The "FOB – Destination" shipping term is also intended to mean that the State shall not bear any responsibility for the goods in question until the State takes possession of them at the destination point of delivery.

Quantities: It is understood and agreed that the MA will cover the actual quantities required by the State over the length of the contract.

Ordering Procedures: Delivery Orders (DO) will be created in AdvantageME for all orders over \$5000.00. If a DO is used, the DO will be emailed to the email address referenced on the MA as a .pdf file. Orders less than \$5000.00 can be placed using a State of Maine issued P-Card (credit card).

Using Departments: The primary using department of this Master Agreement is MaineDOT however all departments and agencies can utilize it.

Delivery: The vendor is responsible for the delivery of material in first class condition at the point of delivery, and in accordance with good commercial practice.

Delivery Addresses: MaineDOT Primary delivery addresses are as follows:

Region 1 Dunstan Maintenance Lot
570 US Route 1
Scarborough, ME 04070

Region 2 Region 2 MaineDOT Lot
420 Lewiston Rd.
West Gardiner, ME 04345

Region 3 Region 3 MaineDOT
547 Main St.
Dixfield, ME 04224

Region 4 MaineDOT Headquarters
219 Hogan Rd.
Bangor, ME 04401

MaineDOT Maintenance Lot
991 Fuller Rd.
Carmel, ME 04419

MaineDOT Maintenance Lot
327 Thorsen Rd.
Hancock, ME 04640

MaineDOT Maintenance Lot
58 Old County Rd.
Pembroke, ME 04666

Region 5 MaineDOT Maintenance Lot
159 Bangor St.
Houlton, ME 04730

MaineDOT Maintenance Lot
33 Spruce St.
Presque Isle, ME 04769

PRODUCT SPECIFICATIONS CONCRETE PATCH FOR REPAIRS

High Performance Concrete Repair Cold Patch, shall conform to the following properties:

Weight Per Bag	50 lbs
Volume Per Bag	0.42 cu ft
Slump	5 in
Yield	.42ft ²
Compressive Strength	4000 psi (1 hour)
Flexural Strength	400 psi (1 hour)

The product shall be delivered in 50 lbs. bags or pallets consisting of 48 bags. A price shall be established for each of these units. Please include correct amount of Patch Activator and a Fast Set Admix in bid price.



TECHNICAL DATA GUIDE

PHOSCRETE® HC (Horizontal/Castable)

Very Rapid Hardening MALP (Magnesium Alumino Liquid Phosphate) concrete for full and partial depth horizontal and castable concrete repairs.

DESCRIPTION

PHOSCRETE HC is a two-part cementitious concrete repair material composed of magnesium oxide, aluminosilicates, aggregates, and reinforcing fibers (Dry Mix), plus a liquid phosphate activator (Liquid Activator). PHOSCRETE HC is very rapid hardening, and gains strength suitable to vehicular traffic in less than one hour at a wide range of ambient temperatures. PHOSCRETE HC forms both a chemical and a mechanical bond to cured concrete and to itself.

PHOSCRETE HC meets ASTM C 928, Type R3.

PROVEN APPLICATIONS

- › Full depth and partial depth concrete repairs
- › Interior and exterior concrete installation and repairs
- › Horizontal surfaces: poured/castable applications
- › Vertical and overhead surfaces: form and pour applications
- › Bridge deck and parking deck repairs of reinforced concrete
- › Highway concrete spall and rutting repairs
- › Airport runway and apron concrete repairs
- › Dowel bar retrofit, pre-cast joint grouting, bearing locations
- › Freezer floors, industrial floors, and loading dock repairs
- › Expansion joint nosing construction and repairs

ADVANTAGES

- › Labor and time saving material: no sandblasting of steel bars, no anti-corrosion primer, no sacrificial anodes, no curing.
- › Easy and accurate mixing: two components, Dry Mix in a bag and Liquid Activator in a jug. No water, pre-extended mix. self-consolidating, fast setting, easy clean up with water.
- › Rapid return to service: exceeds 4,000 psi (28 MPa) compressive strength and 1,500 psi (10 MPa) bond strength 1 hour after placement at 68°F (20°C).
- › Durable: freeze-thaw and salt scaling resistant, even when exposed to $MgCl_2$ and $CaCl_2$.
- › Fiber reinforced: high flexural strength and ductility.
- › Strong mechanical and chemical bond to clean cured concrete and to itself with no cold joints
- › Stops rust and inhibits corrosion: converts iron oxide to metal phosphate.
- › Does not out-gas after cure: accepts sealers and polymer coatings as soon as 15 minutes following initial set.
- › Chemically stable: no added chlorides, resists chloride penetration.
- › Not a vapor barrier; allows on grade applications.
- › Environmentally friendly: no odor, no free silica.
- › All temperature use – sets in temperatures cold as -5°F (-20°C)
-use Phoscrete Fast-Set/Slow-Set Admixture to manage setting/working time.

Packaging

Full Kit: [1] bag + [1] jug

Dry Mix bag: 55 lb. (25 kg)
polyethylene-lined paper bag

Liquid Activator jug:
10.4 lb. (4.7 kg) HDPE plastic jug

Kit Yield: 0.45 ft³ (0.0127 m³)
48 kits per full pallet.

Small Pail: 12.8 lb. (5.8 kg)
HDPE pail contains Dry Mix paper bag and HDPE Liquid Activator jar.

Small Pail Yield: 1.0 bf
(144 in³, 0.0024 m³)

Patch Kit tub: 0.8 lb. (0.4 kg)
HDPE Patch Kit tub contains plastic Dry Mix zip bag
HDPE Liquid Activator jar
plus plastic mixing stick.
Patch Kit Yield: (8 in³, 131 mm³)

Mixing Ratio

Pre-extended mix. Do not extend with sand or aggregate.

Wet-To-Dry Ratio: 18.75%

Mix Entire Patch Kit: [1] jar + [1] bag

Mix Entire Small Pail: [1] jar + [1] bag

Mix Entire Full Kit: [1] jugs + [1] bag

Storage

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

Shelf Life

Dry Mix: 24 months

Liquid Activator: 12 months
(when properly stored)

VOC Content

0 g/L: Less exempt solvents

Fresh Properties						
Test	Specification	Description	Time	Typical Results		
Set Time	ASTM C191	Time of Setting by Vicat Needles	lab temp supercooled [†]	Initial 8 min 15 min	Final 10 min 19 min	
Slump	ASTM C143	Slump of Hydraulic-Cement Concrete	0 5 15 min supercooled [†]	9.5 in (24cm)	8.7 in (22cm)	6.2 in (16cm)
Density	ASTM C387	Density (Unit Weight) of Concrete		141 lb/ft ³		2259 kg/m ³
Air Content	ASTM C231	Air Content by Pressure Method		5.7%		
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	5000	34.5	
			1 day	9000	62.1	
			28 days	11500	79.3	
Flexural Strength	ASTM C78	Flexural Strength of Concrete Using Simple Beam with Third-Point Loading	1 day	500	3.4	
			28 days	700	4.8	
Bond Strength	ASTM C882	Bond Strength by Slant Shear: Phoscrete - Concrete	1 hour	1500	10.3	
			1 day	2500	17.2	
			28 days	3000	20.7	
		Bond Strength by Slant Shear: Phoscrete - Phoscrete	1 hour	1750	12.1	
			1 day	2500	17.2	
			28 days	3000	20.7	
Tensile Strength	ASTM C496	Splitting Tensile Strength of Cylindrical Concrete Specimens	1 day	1000	6.9	
			28 days	1200	8.3	
Modulus of Elasticity	ASTM C469	Static Modulus of Elasticity and Poisson’s Ratio of Concrete in Compression	28 days	3.1 E ⁺⁰⁶	21 E ⁺⁰⁶	
				0.274		
Durability Properties						
Test	Specification	Description	Test	Typical Results		
Free Shrinkage	ASTM C157	Length Change of Hardened Concrete (Std)	28 Days Wet Dry	0.00%	-0.03%	
Restrained Shrinkage	ASTM C1581	Age at Cracking and Induced Tensile Stress Characteristics under Restrained Shrinkage	180 Days Deformation	Did Not Crack	-60 μstrain	
Freeze Thaw	ASTM C666-A	Resistance of Concrete to Rapid Freezing and Thawing in a Saturated Condition (300 cycles)	Durability Factor	94%		
Scaling	ASTM C672	Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals (25 cycles) Results = Visual Material Loss lbs./ft²	NaCl	0	0.00	
			CaCl₂	0	0.00	
			MgCl₂	0	0.00	
Chlorides	ASTM C1202	Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration (Coulombs)	28 days	122 C (very low)		
	ASTM C1543	Penetration of Chloride Ion into Concrete by Ponding	90 days	10-20 mm	0.135%	
				55-65 mm	0.117%	
			180 days	10-20 mm	0.195%	
				55-65 mm	0.145%	
Abrasion	California CT-550	Determining the Surface Abrasion Resistance of Concrete Specimens (mass loss)	24 hours	16 g	1.8%	

All results were obtained at Lab temp of 68°F (20°C) with both components, Dry Mix and Liquid Activator, stored at Lab temp.

[†] Supercooled Liquid Activator at 17°F (-8°C)

GENERAL INSTALLATION GUIDELINES

- Refer to [Phoscrete MALP Full Installation Guide](#), for the most complete documentation on best installation practices.
- Refer to [Phoscrete All Temperature Guidelines](#), for information on how to mix Phoscrete materials in warm (>70°F/20°C) and cold climates (<50°F/10°C). The Guidelines contain information about the use of Phoscrete Fast- and Slow-Set Admixtures, and best practices for cooling or supercooling the Liquid Activator. Cooling the Liquid Activator can be achieved on ice at 40°F (4°C), supercooling in a freezer at 10°F (-12°C). Liquid Activator's freezing point is -20°F (-29°C).
- Refer to [Phoscrete Admixture Chart](#) for details on working with Phoscrete Admixtures (ENDURE, Fast-Set, Slow-Set)

SURFACE PREPARATION

- Concrete must be sound and fully cured (28 days).
- Remove loose, damaged, and contaminated concrete.
- Concrete profile should reach minimum CSP of 7-9 per ICRI Guidelines. Water-blasting is not recommended.
- Repair area must not be less than 1-inch (2.5 cm) deep. >2-inch (>5 cm) depth is recommended. Saw-cut the edges of the repair area parallel and perpendicular to traffic to limit the number of load-bearing stress points.
- Clean the surface of the area to be repaired from oil, grease, and other bond-inhibiting materials.
- Surface must be frost-free, dry, and free of standing water. Use heat (torch) to eliminate surface moisture.
- Remove loose scale (rust) from steel bars with a wire brush. Sandblasting is not required.
- Replace reinforcing bars according to instructions from the designer. Generally, bars that lost 25% or more of their original diameter must be replaced.

PRIMER COAT

For challenging applications, where maximum bond strength is required, use Phoscrete Primer. Using a cooled Liquid Activator, apply a scrub coat of Phoscrete Primer to the prepared concrete substrate. Be sure to fill all voids. Complete the primer coat by placing a ¼ in. (1.5 cm) thin layer of Phoscrete Primer over the scrub coat, either wet or dry. Wait at least 15 minutes for Phoscrete Primer to set and bond prior to proceeding with PHOSCRETE HC full repair installation. If Phoscrete Primer is not available, Phoscrete VO or HC can be used as an alternative, with cooled Liquid Activator.

MIXING

- Mix PHOSCRETE HC at the placement site.
- The mix ratio is 18.75% Liquid Activator to Dry Mix. On-site measurement for partial unit mixing is not recommended. Inaccurate measurements will lead to poor material performance.
- When mixing Full Kits, use a heavy-duty five [5] gallon bucket for mixing. Mix with a paddle (Phoscrete's urethane auger is highly recommended), using a dual or variable speed drill suitable for mixing (min. 7-amp, ½" chuck, side handle).
- When mixing multiple Full Kits at once, use a paddle-style mortar mixer for placing large quantities (>2 cy) of Phoscrete.
- When mixing Small Pails, use a minimum 18v variable speed drill on the high torque setting. Phoscrete's small urethane auger is highly recommended.
- When mixing Patch Kit tubs, use the provided stirrer and mix by hand until the material is completely wetted out.
- Pour the Liquid Activator in a clean bucket or the mortar mixer first. Next add admixtures (ENDURE and /or, Fast-Set or Slow-Set). Then add the Dry Mix into the bucket or mortar mixer, preferably while slowly running the mixer.
- Mix for about 1 minute, until the material is fully wetted out and shows a uniform consistency. Do not over-mix.
- A batch of Phoscrete MALP must be mixed, placed, and finished within 5 - 15 minutes depending on ambient temperature.

APPLICATION

- Install immediately after mixing. Discard the batch if the material begins to setup in the pail or mixer.
- Using a trowel or float, or with a gloved hand, scrub Phoscrete into the bottom and sides of the area to be repaired, being careful to fill all voids. Force the material against the edges of the repair.
- Place Phoscrete level to the adjacent concrete surface. Screed off excess.
- Finish Phoscrete using clean concrete floats and trowels. Magnesium floats work best. Tap on surface with trowel to bring liquid to the surface for best finish. Clean Phoscrete from trowels with a water-dampened cloth. Do not pour water on repair. Stop finishing once the surface of the placed material develops a "skin."
- If the material finishes higher than the adjacent surface, use a diamond grinder to level surface as soon as 15 minutes following final set.

APPLICATION *(continued from page 3)*

- › When multiple layers are applied, scarify the surface by scratching crisscross lines in the layer with a trowel prior to set for best adhesion. Phoscrete bonds to itself with no cold joints, whether wet or completely cured. If installing in lifts, do not apply a final layer thinner than 1-inch. (2.5 cm).
- › If rain begins prior to final set, cover the surface with plastic sheeting for at least 15 minutes following initial set.
- › On sloped surfaces, pour the material at the bottom of the slope and work your way up. Use a hand screed to move the material up the slope. When installing on steep inclines, use forms, or work in smaller increments (one kit at a time), and allow the material to set prior to the next pour.
- › For expansion joint nosings, ensure that the hardened repair material is not higher than the approach slab. Use a grinding tool to cut a 45° bevel at the edge of the joint no sooner than 15 minutes after initial set. Standard compression or silicone seals can be applied immediately after grinding. Refer to Phoscrete's [Expansion Joint Installation and Repair](#).

CLEANING

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

LIMITATIONS

- › Do not use any primer or admixtures other than those provided by Phoscrete.
- › Do not extend PHOSCRETE HC with aggregate. Do not add sand and/or any type of cement.
- › Do not mix partial units unless accurately pre-measured.
- › Minimum application thickness: 1-inch (2.5 cm), 2-inches (5 cm) recommended. Maximum application thickness: none
- › Minimum ambient temperature: -5°F (-20°C)
- › Do not use water when mixing, placing, or finishing PHOSCRETE HC
- › When wet, PHOSCRETE HC cannot be placed in 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 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 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 +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.



TECHNICAL DATA GUIDE

PHOSCRETE® HC-ENDURE™ (Horizontal/Castable)

Very Rapid Hardening MALP (Magnesium Alumino Liquid Phosphate) concrete for horizontal and castable installation and repairs. Provides long-term durability for cold weather applications.

DESCRIPTION

PHOSCRETE HC-ENDURE is a three-part cementitious concrete repair material composed of magnesium oxide, aluminosilicates, aggregates, and reinforcing fibers (Dry Mix), a liquid phosphate activator (Liquid Activator), plus a liquid soy-methyl-ester polystyrene (PHOSCRETE ENDURE) admixture that is a concrete durability enhancer. PHOSCRETE HC-ENDURE is very rapid hardening, and gains strength suitable to vehicular traffic in less than one hour at a wide range of ambient temperatures. PHOSCRETE HC-ENDURE forms both a chemical and a mechanical bond to cured concrete and to itself. PHOSCRETE HC-ENDURE meets ASTM C 928, Type R3.

PROVEN APPLICATIONS

- Full depth and partial depth concrete repairs
- Interior and exterior concrete installation and repairs
- Horizontal surfaces: poured/castable applications
- Vertical and overhead surfaces: form and pour applications
- Bridge deck and parking deck repairs of reinforced concrete
- Highway concrete spall and rutting repairs
- Airport runway and apron concrete repairs
- Dowel bar retrofit, pre-cast joint grouting, bearing locations
- Freezer floors, industrial floors, and loading dock repairs
- Expansion joint nosing construction and repairs

ADVANTAGES

- Labor and time saving material: no sandblasting of steel bars, no anti-corrosion primer, no sacrificial anodes, no curing.
- Easy and accurate mixing: three components, Dry Mix in a bag, Liquid Activator in a jug, and Endure in a pail (with a designated scoop). No water, pre-extended mix. self-consolidating, easy clean up with water.
- Rapid return to service: exceeds 4,000 psi (28 MPa) compressive strength and 1,500 psi (10 MPa) bond strength 1 hour after placement at 68°F (20°C).
- Durable and hydrophobic: exceptional freeze-thaw and salt scaling resistance, even when exposed to MgCl₂ and CaCl₂.
- Fiber reinforced: high flexural strength and ductility.
- Strong mechanical and chemical bond to clean cured concrete and to itself with no cold joints.
- Stops rust and inhibits corrosion: converts iron oxide to metal phosphate.
- Does not out-gas after cure: accepts sealers and polymer coatings as soon as 15 minutes following initial set.
- Chemically stable: no added chlorides, resists chloride penetration.
- Not a vapor barrier; allows on grade applications.
- Environmentally friendly: no odor, no free silica.
- All temperature use – sets in temperatures cold as -5°F (-20°C)
-use Phoscrete Fast-Set/Slow-Set Admixture to manage setting/working time.

Packaging

Full Kit: [1] bag + [1] jug + [1] bottle

Dry Mix bag: 55 lb. (25 kg)
polyethylene-lined paper bag

Liquid Activator jug:
10.4 lb. (4.7 kg) HDPE plastic jug

Kit Yield: 0.45 ft³ (0.0127 m³)
48 kits per full pallet.

ENDURE Jug: 1 gallon (3.8 l)
Add 1% ENDURE by weight of dry mix. Use provided measuring cup (provided).

ENDURE Bottle: 10 oz. (300 ml)
Use 1 ENDURE bottle per 50 lb. Large Pail of Dry Mix.

Small Pail: 12.8 lb. (5.8 kg)
HDPE pail contains Dry Mix paper bag, HDPE Liquid Activator jar, and HDPE Endure Jar.
Small Pail Yield: 1.0 bf
(144 in³, 0.0024 m³)

Mixing Ratio

Pre-extended mix. Do not extend with sand or aggregate.

Activator-To-Dry Ratio: 18.75%
Empty Liquid Activator into a clean plastic mixing bucket. Add 1% ENDURE Admix. Then add the entire pail of dry mix and mix thoroughly.

Storage

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

Shelf Life

Dry Mix: 24 months
Liquid Activator: 12 months
Endure: 18 months
(when properly stored)

VOC Content

0 g/L: Less exempt solvents

Fresh Properties						
Test	Specification	Description	Time	Typical Results		
Set Time	ASTM C191	Time of Setting by Vicat Needles	lab temp supercooled [†]	Initial 8 min 15 min	Final 10 min 19 min	
Slump	ASTM C143	Slump of Hydraulic-Cement Concrete	0 5 15 min supercooled [†]	9.5 in (24cm)	8.7 in (22cm)	6.2 in (16cm)
Density	ASTM C387	Density (Unit Weight) of Concrete		141 lb/ft³		2259 kg/m³
Air Content	ASTM C231	Air Content by Pressure Method		5.7%		
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	5000	34.5	
			1 day	9000	62.1	
			28 days	11500	79.3	
Flexural Strength	ASTM C78	Flexural Strength of Concrete Using Simple Beam with Third-Point Loading	1 day	500	3.4	
			28 days	700	4.8	
Bond Strength	ASTM C882	Bond Strength by Slant Shear: Phoscrete - Concrete	1 hour	1500	10.3	
			1 day	2500	17.2	
			28 days	3000	20.7	
		Bond Strength by Slant Shear: Phoscrete - Phoscrete	1 hour	1750	12.1	
			1 day	2500	17.2	
			28 days	3000	20.7	
Tensile Strength	ASTM C496	Splitting Tensile Strength of Cylindrical Concrete Specimens	1 day	1000	6.9	
			28 days	1200	8.3	
Modulus of Elasticity	ASTM C469	Static Modulus of Elasticity and Poisson’s Ratio of Concrete in Compression	28 days	3.1 E ⁺⁰⁶	21 E ⁺⁰⁶	
				0.274		
Durability Properties						
Test	Specification	Description	Test	Typical Results		
Free Shrinkage	ASTM C157	Length Change of Hardened Concrete (Std)	28 Days Wet Dry	0.00%	-0.03%	
Restrained Shrinkage	ASTM C1581	Age at Cracking and Induced Tensile Stress Characteristics under Restrained Shrinkage	180 Days Deformation	Did Not Crack	-60 μstrain	
Freeze Thaw	ASTM C666-A	Resistance of Concrete to Rapid Freezing and Thawing in a Saturated Condition (300 cycles)	Durability Factor	103%		
Scaling	ASTM C672	Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals (50 cycles) Results = Visual Material Loss lbs./ft²	CaCl₂	50 cycles: Visual = 0	50 cycles: 0.005 lbs/ft² (0.01%)	
Chlorides	ASTM C1202	Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration (Coulombs)	28 days	122 C (very low)		
	ASTM C1543	Penetration of Chloride Ion into Concrete by Ponding	90 days	10-20 mm	0.135%	
			180 days	55-65 mm	0.117%	
				10-20 mm	0.195%	
				55-65 mm	0.145%	
Abrasion	California CT-550	Determining the Surface Abrasion Resistance of Concrete Specimens (mass loss)	24 hours	16 g	1.8%	

All results were obtained at Lab temp of 68°F (20°C) with both components, Dry Mix and Liquid Activator, stored at Lab temp.

[†] Supercooled Liquid Activator at 17°F (-8°C)

GENERAL INSTALLATION GUIDELINES

- Refer to [Phoscrete MALP Full Installation Guide](#), for the most complete documentation on best installation practices.
- Refer to [Phoscrete All Temperature Guidelines](#), for information on how to mix Phoscrete materials in warm (>70°F/20°C) and cold climates (<50°F/10°C). The Guidelines contain information about the use of Phoscrete Fast- and Slow-Set Admixtures, and best practices for cooling or supercooling the Liquid Activator. Cooling the Liquid Activator can be achieved on ice at 40°F (4°C), supercooling in a freezer at 10°F (-12°C). Liquid Activator's freezing point is -20°F (-29°C).
- Refer to [Phoscrete Admixture Chart](#) for details on working with Phoscrete Admixtures (Endure, Fast-Set, Slow-Set)

SURFACE PREPARATION

- Concrete must be sound and fully cured (28 days).
- Remove loose, damaged, and contaminated concrete.
- Concrete profile should reach minimum CSP of 7-9 per ICRI Guidelines. Water-blasting is not recommended.
- Repair area must not be less than 1-inch (2.5 cm) deep. >2-inch (>5 cm) depth is recommended. Saw-cut the edges of the repair area parallel and perpendicular to traffic to limit the number of load-bearing stress points.
- Clean the surface of the area to be repaired from oil, grease, and other bond-inhibiting materials.
- Surface must be frost-free, dry, and free of standing water. Use heat (torch) to eliminate surface moisture.
- Remove loose scale (rust) from steel bars with a wire brush. Sandblasting is not required.
- Replace reinforcing bars according to instructions from the designer. Generally, bars that lost 25% or more of their original diameter must be replaced.

PRIMER COAT

For challenging applications, where maximum bond strength is required, use Phoscrete Primer. Using a cooled Liquid Activator, apply a scrub coat of Phoscrete Primer to the prepared concrete substrate. Be sure to fill all voids. Complete the primer coat by placing a ¼ in. (1.5 cm) thin layer of Phoscrete Primer over the scrub coat, either wet or dry. Wait at least 15 minutes for Phoscrete Primer to set and bond prior to proceeding with PHOSCRETE HC-ENDURE full repair installation. If Phoscrete Primer is not available, Phoscrete VO or HC can be used as an alternative, with cooled Liquid Activator.

MIXING

- Mix PHOSCRETE HC-ENDURE at the placement site.
- The mix ratio is 18.75% Liquid Activator to Dry Mix. On-site measurement for partial unit mixing is not recommended. Inaccurate measurements will lead to poor material performance.
- When mixing Full Kits, use a heavy-duty five [5] gallon bucket for mixing. Mix with a paddle (Phoscrete's urethane auger is highly recommended), using a dual or variable speed drill suitable for mixing (min. 7-amp, ½" chuck, side handle).
- When mixing multiple Full Kits at once, use a paddle-style mortar mixer for placing large quantities (>2 cy) of Phoscrete.
- When mixing Small Pails, use a minimum 18v variable speed drill on the high torque setting. For professional use, Phoscrete's small urethane auger is highly recommended.
- When mixing Patch Kit tubs, use the provided stirrer and mix by hand until the material is completely wetted out.
- Pour the Liquid Activator into a clean bucket or mortar mixer first. Next add three [3] Endure Admix scoops. Add Phoscrete Fast-or Slow-Set Admixture, as needed. Then add Dry Mix into the bucket or mortar mixer, preferably while slowly running the mixer.
- Mix for about 1 minute, until the material is fully wetted out and shows a uniform consistency. Do not over-mix.
- A batch of Phoscrete MALP must be mixed, placed, and finished within 5 - 15 minutes depending on ambient temperature.

APPLICATION

- Install immediately after mixing. Discard the batch if the material begins to setup in the pail or mixer.
- Using a trowel or float, or with a gloved hand, scrub Phoscrete into the bottom and sides of the area to be repaired, being careful to fill all voids. Force the material against the edges of the repair.
- Place Phoscrete level to the adjacent concrete surface. Screed off excess.
- Finish Phoscrete using clean concrete floats and trowels. Magnesium floats work best. Tap on surface with trowel to bring liquid to the surface for best finish. Clean Phoscrete from trowels with a water-dampened cloth. Do not pour water on repair. Stop finishing once the surface of the placed material develops a "skin."
- If the material finishes higher than the adjacent surface, use a diamond grinder to level surface as soon as 15 minutes following final set.

APPLICATION *(continued from page 3)*

- When multiple layers are applied, scarify the surface by scratching crisscross lines in the layer with a trowel prior to set for best adhesion. ~~Phoscrete bonds~~ Phoscrete bonds to itself with no cold joints, whether wet or completely cured. If installing in lifts, do not apply a final layer thinner than 1-~~inches~~ (2.5 cm).
- If rain begins prior to final set, cover the surface with plastic sheeting for at least 15 minutes following initial set.
- On sloped surfaces, pour the material at the bottom of the slope and work your way up. Use a hand screed to move the material up the slope. When installing on steep inclines, use forms, or work in smaller increments (one kit at a time), and allow the material to set prior to the next pour.
- For expansion joint nosings, ensure that the hardened repair material is not higher than the approach slab. Use a grinding tool to cut a 45° bevel at the edge of the joint no sooner than 15 minutes after initial set. Standard compression or silicone seals can be applied immediately after grinding. Refer to Phoscrete's [Expansion Joint Installation and Repair](#).

CLEANING

- In-between batches, clean tools with water and wipe off excess water prior to contact with Phoscrete.
- When the job is completed, clean tools with water. Clean hands with soap and water.

LIMITATIONS

- Do not use any primer or admixtures other than those provided by Phoscrete.
- Do not extend PHOSCRETE HC-ENDURE with aggregate. Do not add sand and/or any type of cement.
- Do not mix partial units unless accurately pre-measured.
- Minimum application thickness: 1-inch (2.5 cm), 2-inches (5 cm) recommended. Maximum application thickness: none
- Minimum ambient temperature: -5°F (-20°C)
- Do not use water when mixing, placing, or finishing PHOSCRETE HC-ENDURE
- When wet, PHOSCRETE HC-ENDURE cannot be placed in 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 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 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 +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.



TECHNICAL DATA GUIDE

PHOSCRETE® FORMULA 3E-HC

Rapid Hardening MKP (Magnesium Potassium Phosphate) concrete for overlays and repairs.
Provides long-term durability for cold weather applications.

DESCRIPTION

PHOSCRETE FORMULA 3E-HC (F3E-HC) is a two-part cementitious concrete composed of magnesium oxide, potassium phosphate, aluminosilicates, aggregates, reinforcing fibers (Dry Mix) that must be mixed with water, plus a liquid soy-methyl-ester polystyrene (PHOSCRETE ENDURE™) admixture that is a concrete durability enhancer. PHOSCRETE F3E-HC is rapid hardening, and gains strength suitable to vehicular traffic in two hours at moderate ambient temperatures. PHOSCRETE F3E-HC forms both a chemical and a mechanical bond to cured concrete and to itself. PHOSCRETE F3E-HC meets ASTM C 928, Type R3.

PROVEN APPLICATIONS

- Fast-track bridge deck overlay with a minimum thickness ½ inch (1.25 cm)
- Full depth and partial depth concrete repairs
- Horizontal surfaces: poured/castable applications
- Pavement repairs, parking structures, marine structures.
- Airport runway and apron concrete repairs

ADVANTAGES

- Labor and time saving material: fast setting, self-consolidating, no sandblasting of steel bars, no anti-corrosion primer, no curing treatments, easy clean up with water.
- Easy and accurate mixing: two components plus water - Dry Mix in a pail and ENDURE in a bottle. Pre-extended mix.
- Can be pumped using bulk sacks and metered water for large volume pours and concrete pavement overlays.
- Rapid return to service: exceeds 2,500 psi (17 MPa) compressive strength and 1,500 psi (10 MPa) bond strength 2 hours following placement at 68°F (20°C). Ultimate strengths exceed 10,000 psi (69 MPa) compressive and 4,500 psi (31 MPa) bond.
- Durable and hydrophobic: exceptional freeze-thaw and salt scaling resistance, even when exposed to MgCl₂ and CaCl₂.
- Fiber reinforced: high flexural strength and ductility.
- Strong mechanical and chemical bond to clean cured concrete and to itself. with no cold joints.
- Stops rust and inhibits corrosion: converts iron oxide to metal phosphate.
- Chemically stable: no added chlorides, resists chloride penetration.
- Not a vapor barrier; allows on grade applications.
- Environmentally friendly: no odor, no free silica.

Packaging

Bulk Sack 2200 lb. (1000 kg)

Bulk Sack Yield: 18 ft³ - 0.66 yd³
(0.509 m³)

Dry Mix Bag: 55 lb. (25 kg)

HDPE pail contains Dry Mix.

Bag Yield: 0.45 ft³ (0.0129 m³)
48 kits per full pallet.

ENDURE Jug: 1 gallon (3.8 l)

Add 1% ENDURE by weight of dry mix. Use designated measuring cup (provided) per [Admixture Chart](#).

ENDURE Jar: 10 oz. (300 ml)

Use 1 ENDURE jar per 55 lb. Dry Mix Bag.

Small Pail: 11 lb. (5 kg)

HDPE pail contains Dry Mix Bag, ENDURE + Water jar, containing: Endure 2 oz (59ml) and water 23 oz (680 ml)

and measuring cup for water

Small Pail Yield: 1.0 bf
(144 in³, 0.0024 m³)

Mixing Ratio

Pre-extended mix. Do not extend with sand or aggregate.

Water-To-Dry Mix Ratio: 13%

Measure 7.15 lbs water (114 oz, 3.4l) per 55 lb. Dry Mix Bag.

Pre-measure water + 1% ENDURE

Admix into clean plastic mixing bucket. Then add the entire pail of dry mix and mix thoroughly.

Storage

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

Shelf Life

Dry Mix: 24 months

ENDURE: 18 months

(when properly stored)

VOC Content

0 g/L: Less exempt solvents

Fresh Properties						
Test	Specification	Description	Time	Independent Test Results		
Set Time	ASTM C191	Time of Setting by Vicat Needles	Initial Final	20 min		21 min
Slump	ASTM C143	Slump of Hydraulic-Cement Concrete	0 5 15 min	9.5 in (24cm)	8.7 in (22cm)	6.2 in (16cm)
Density	ASTM C387	Density (Unit Weight) of Concrete		132 lb/ft³		2114 kg/m³
Air Content	ASTM C231	Air Content by Pressure Method		5.7%		
Strength Properties						
Test	Specification	Description	Time	Independent Test Results		
				psi	MPa	
Compressive Strength	ASTM C109	Compressive Strength of Hydraulic Cement Mortars Using 2-in. Cube Specimens	2 hours	2500	17.2	
			1 day	5000	34.5	
			28 days	10000	68.9	
Flexural Strength	ASTM C78	Flexural Strength of Concrete Using Simple Beam with Third-Point Loading	1 day	800	5.5	
			28 days	1000	6.9	
Bond Strength	ASTM C882	Bond Strength by Slant Shear: Phoscrete - Concrete	2 hours	1500	10.3	
			1 day	4000	27.6	
			28 days	4500	31.0	
		Bond Strength by Slant Shear: Phoscrete - Phoscrete	2 hours	2000	13.8	
			1 day	4000	27.6	
			28 days	5000	34.5	
Tensile Strength	ASTM C496	Splitting Tensile Strength of Cylindrical Concrete Specimens	1 day	1000	6.9	
			28 days	1200	8.3	
Modulus of Elasticity	ASTM C469	Static Modulus of Elasticity and Poisson’s Ratio of Concrete in Compression	28 days	4.3 E+06	3.0 E+04	
				0.274		
Durability Properties						
Test	Specification	Description	Test	Independent Test Results		
Free Shrinkage	ASTM C157	Length Change of Hardened Concrete (Std)	28 Days Wet Dry	0.00%		-0.00%
Freeze Thaw	ASTM C666-A	Resistance of Concrete to Rapid Freezing and Thawing in a Saturated Condition (300 cycles)	Durability Factor	103%		
Scaling	ASTM C672	Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals (50 cycles) Results = Visual Material Loss lbs./ft²(%)	CaCl₂	0	0.005 lbs/ft² (0.01%)	
Chlorides	ASTM C1202	Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration (Coulombs)	28 days	420 C (very low)		
	ASTM C1543	Penetration of Chloride Ion into Concrete by Ponding	90 days	10-20 mm	0.135%	
				55-65 mm	0.117%	
			180 days	10-20 mm	0.195%	
				55-65 mm	0.145%	

GENERAL INSTALLATION GUIDELINES

- › Refer to [Phoscrete MKP Full Installation Guide](#), for the most complete documentation on best installation practices.
- › Refer to [Phoscrete Admixture Chart](#) for details on working with Phoscrete Admixtures (ENDURE, Fast-Set, Slow-Set).
- › Cool water on ice below 40°F for additional flow during placement, and for additional working time when finishing.
- › Warm water when working in cold temperatures for faster set.

SURFACE PREPARATION

- › Concrete substrate must be sound and fully cured (28 days).
- › Remove loose, damaged, and contaminated concrete, such as oil, grease, and other bond-inhibiting materials.
- › Surface must be frost-free, dry, and free of standing water.
- › Concrete profile should reach minimum CSP (Concrete Surface Profile) of 7-9 per ICRI Guidelines.
- › Remove loose scale (rust) from steel bars with a wire brush. Sandblasting is not required.
- › In case of repair applications, the repair area should not be less than 1-inch (2.5 cm) deep. >2-inch (>5 cm) minimum depth is recommended. Saw-cut the edges of the repair area parallel and perpendicular to traffic to limit the number of load-bearing stress points.

MIXING

- › Mix PHOSCRETE F3E-HC at the placement site.
- › The mix ratio is 13% water to Dry Mix. On-site mixing of partial Dry Mix pails is not recommended. Inaccurate measurements will lead to poor material performance.
- › When mixing bulk sacks, use a silo-style continuous mortar mixer for large volume applications.
- › When mixing Large Pails, use a heavy-duty five [5] gallon bucket for mixing. Mix with a paddle (Phoscrete's urethane auger is highly recommended), using a dual or variable speed drill suitable for mixing (min. 7-amp, ½" chuck, side handle).
- › When mixing multiple Large Pails at once, use a paddle-style mortar mixer for placing large quantities (>2 cy) of PHOSCRETE F3E-HC.
- › When mixing Small Pails, use a minimum 18v variable speed drill on the high torque setting. For professional use, Phoscrete's small urethane auger is highly recommended.
- › When mixing Patch Kit tubs, use the provided stirrer and mix by hand until the material is completely wetted out.
- › Pre-measure and pour water into a clean bucket or mortar mixer first. Next add pre-measured ENDURE Admix liquid, and other Phoscrete admixtures (Fast-Set, Slow-Set) as needed. Then add Dry Mix into the bucket or drum, preferably while slowly running the mixer.
- › Mix for about 1 minute, until the material is fully wetted out and shows a uniform consistency. Do not over-mix.

APPLICATION

- › A batch of Phoscrete must be mixed, placed, and finished within 15 - 25 minutes from mixing, temperature dependent.
- › Phoscrete is thixotropic, so use vibration to increase flow.
- › For concrete overlays:
 - pour, place, and screed the material quickly to increase finishing time.
 - Finish PHOSCRETE F3E-HC by trowel, float screed or broom.
- › For repair applications:
 - scrub the first application of Phoscrete with a trowel, float, or a gloved hand into the bottom and sides of the area to be repaired, being careful to fill all voids. Force the material against the edges of the repair.
 - Finish the repaired area using clean concrete floats and trowels. Magnesium floats work best. Tap on surface with trowel to bring liquid to the surface for best finish.
- › Wipe Phoscrete from trowels with a water-dampened cloth. Do not pour water on repair. Stop finishing once the surface of the placed material develops a "skin."
- › If the material finishes higher than the adjacent surface, use a diamond grinder to level surface as soon as 15 minutes following final set. Scarify or groove as necessary to insure adequate tire traction.
- › When multiple layers are applied, scarify the surface by scratching crisscross lines in the layer with a trowel prior to set for best adhesion bond. Phoscrete bonds to itself with no cold joints, whether wet or completely cured. If installing in lifts, do not apply a final layer thinner than 1 inch (2.5 cm).
- › If rain begins prior to final set, cover the surface with plastic sheeting for at least 15 minutes following initial set.
- › On sloped surfaces, pour the material at the bottom of the slope and work your way up. Use a hand screed to move the material up the slope. When installing on steep inclines, use forms, or work in smaller increments (one kit at a time), and allow the material to set prior to the next pour.

CLEANING

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

LIMITATIONS

- › Do not use any primer or admixtures other than those provided by Phoscrete.
- › Do not extend PHOSCRETE F3E-HC with aggregate. Do not add sand and/or any type of cement.
- › Do not mix partial units unless accurately pre-measured.
- › Minimum application thickness for overlays: ½-inch (1.25 cm),
- › Minimum recommended thickness for partial depth repairs: 2 inches (5 cm)
- › Maximum application thickness for full and partial depth repairs: none
- › Minimum ambient temperature: 35°F (2°C)
- › When wet, PHOSCRETE F3E-HC cannot be placed in 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 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 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 +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.

**RIDER B
TERMS AND CONDITIONS**

- 1. DEFINITIONS:** The following definitions are applicable to these standard terms and conditions:
 - a. The term “Buyer” or “State” shall refer to the Government of the State of Maine or a person representing the Government of the State of Maine.
 - b. The term “Department” or “DAFS” shall refer to the State of Maine Department of Administrative and Financial Services.
 - c. The term “Bureau” or “BGS” shall refer to the State of Maine Bureau of General Services.
 - d. The term “Division” shall refer to the State of Maine Division of Purchases.
 - e. The term “Contractor”, “Vendor”, or “Provider” shall refer to the organization that is providing goods and/or services through the contract to which these standard terms and conditions have been attached and incorporated.
 - f. The term “Contract” or “Agreement” shall refer to the contract document to which these standard terms and conditions apply, taking the format of a Buyer Purchase Order (BPO) or Master Agreement (MA) or other contractual document that is mutually agreed upon between the State and the Contractor.
- 2. WARRANTY:** The Contractor warrants the following:
 - a. That all goods and services to be supplied by it under this Contract are fit and sufficient for the purpose intended, and
 - b. That all goods and services covered by this Contract will conform to the specifications, drawing samples, symbols or other description specified by the Division, and
 - c. That such articles are merchantable, good quality, and free from defects whether patent or latent in material and workmanship, and
 - d. That all workmanship, materials, and articles to be provided are of the best grade and quality, and
 - e. That it has good and clear title to all articles to be supplied by it and the same are free and clear from all liens, encumbrances and security interest.

Neither the final certificate of payment nor any provision herein, nor partial nor entire use of the articles provided shall constitute an acceptance of work not done in accordance with this agreement or relieve the Contractor liability in respect of any warranties or responsibility for faulty material or workmanship. The Contractor shall remedy any defects in the work and pay any damage to other work resulting therefrom, which shall appear within one year from the date of final acceptance of the work provided hereunder. The Division of Purchases shall give written notice of observed defects with reasonable promptness.

3. TAXES: Contractor agrees that, unless otherwise indicated in the order, the prices herein do not include federal, state, or local sales or use tax from which an exemption is available for purposes of this order. Contractor agrees to accept and use tax exemption certificates when supplied by the Division as applicable. In case it shall ever be determined that any tax included in the prices herein was not required to be paid by Contractor, Contractor agrees to notify the Division and to make prompt application for the refund thereof, to take all proper steps to procure the same and when received to pay the same to the Division.

4. PACKING AND SHIPMENT: Deliveries shall be made as specified without charge for boxing, carting, or storage, unless otherwise specified. Articles shall be suitably packed to secure lowest transportation cost and to conform to the requirements of common carriers and any applicable specifications. Order numbers and symbols must be plainly marked on all invoices,

packages, bills of lading, and shipping orders. Bill of lading should accompany each invoice. Count or weight shall be final and conclusive on shipments not accompanied by packing lists.

5. DELIVERY: Delivery should be strictly in accordance with delivery schedule. If Contractor's deliveries fail to meet such schedule, the Division, without limiting its other remedies, may direct expedited routing and the difference between the expedited routing and the order routing costs shall be paid by the Contractor. Articles fabricated beyond the Division's releases are at Contractor's risk. Contractor shall not make material commitments or production arrangements in excess of the amount or in advance of the time necessary to meet delivery schedule, and, unless otherwise specified herein, no deliveries shall be made in advance of the Division's delivery schedule. Neither party shall be liable for excess costs of deliveries or defaults due to the causes beyond its control and without its fault or negligence, provided, however, that when the Contractor has reason to believe that the deliveries will not be made as scheduled, written notice setting forth the cause of the anticipated delay will be given immediately to the Division. If the Contractor's delay or default is caused by the delay or default of a subcontractor, such delay or default shall be excusable only if it arose out of causes beyond the control of both Contractor and subcontractor and without fault of negligence or either of them and the articles or services to be furnished were not obtainable from other sources in sufficient time to permit Contractor to meet the required delivery schedule.

6. FORCE MAJEURE: The State may, at its discretion, excuse the performance of an obligation by a party under this Agreement in the event that performance of that obligation by that party is prevented by an act of God, act of war, riot, fire, explosion, flood or other catastrophe, sabotage, severe shortage of fuel, power or raw materials, change in law, court order, national defense requirement, or strike or labor dispute, provided that any such event and the delay caused thereby is beyond the control of, and could not reasonably be avoided by, that party. The State may, at its discretion, extend the time period for performance of the obligation excused under this section by the period of the excused delay together with a reasonable period to reinstate compliance with the terms of this Agreement.

7. INSPECTION: All articles and work will be subject to final inspection and approval after delivery, notwithstanding prior payment, it being expressly agreed that payment will not constitute final acceptance. The Division of Purchases, at its option, may either reject any article or work not in conformity with the requirements and terms of this order, or re-work the same at Contractor's expense. The Division may reject the entire shipment where it consists of a quantity of similar articles and sample inspection discloses that ten (10%) percent of the articles inspected are defective, unless Contractor agrees to reimburse the Division for the cost of a complete inspection of the articles included in such shipment. Rejected material may be returned at Contractor's risk and expense at the full invoice price plus applicable incoming transportation charges, if any. No replacement of defective articles of work shall be made unless specified by the Division.

8. INVOICE: The original and duplicate invoices covering each and every shipment made against this order showing Contract number, Vendor number, and other essential particulars, must be forwarded promptly to the ordering agency concerned by the Vendor to whom the order is issued. Delays in receiving invoice and also errors and omissions on statements will be considered just cause for withholding settlement without losing discount privileges. All accounts are to be carried in the name of the agency or institution receiving the goods, and not in the name of the Division of Purchases.

9. ALTERATIONS: The Division reserves the right to increase or decrease all or any portion of the work and the articles required by the bidding documents or this agreement, or to eliminate

all or any portion of such work or articles or to change delivery date hereon without invalidating this Agreement. All such alterations shall be in writing. If any such alterations are made, the contract amount or amounts shall be adjusted accordingly. In no event shall Contractor fail or refuse to continue the performance of the work in providing of articles under this Agreement because of the inability of the parties to agree on an adjustment or adjustments.

10. TERMINATION: The Division may terminate the whole or any part of this Agreement in any one of the following circumstances:

- a. The Contractor fails to make delivery of articles, or to perform services within the time or times specified herein, or
- b. If Contractor fails to deliver specified materials or services, or
- c. If Contractor fails to perform any of the provisions of this Agreement, or
- d. If Contractor so fails to make progress as to endanger the performance of this Agreement in accordance with its terms, or
- e. If Contractor is adjudged bankrupt, or if it makes a general assignment for the benefit of its creditors or if a receiver is appointed because of its insolvency, or
- f. Whenever for any reason the State shall determine that such termination is in the best interest of the State to do so.

In the event that the Division terminates this Agreement in whole or in part, pursuant to this paragraph with the exception of 8(f), the Division may procure (articles and services similar to those so terminated) upon such terms and in such manner as the Division deems appropriate, and Contractor shall be liable to the Division for any excess cost of such similar articles or services.

11. NON-APPROPRIATION: Notwithstanding any other provision of this Agreement, if the State does not receive sufficient funds to fund this Agreement and other obligations of the State, if funds are de-appropriated, or if the State does not receive legal authority to expend funds from the Maine State Legislature or Maine courts, then the State is not obligated to make payment under this Agreement.

12. COMPLIANCE WITH APPLICABLE LAWS: Contractor agrees that, in the performance hereof, it will comply with applicable laws, including, but not limited to statutes, rules, regulations or orders of the United States Government or of any state or political subdivision(s) thereof, and the same shall be deemed incorporated herein by reference. Awarding agency requirements and regulations pertaining to copyrights and rights in data. Access by the grantee, the subgrantee, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers and records of the Contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions. Retention of all required records for three years after grantees or subgrantees make final payments and all other pending matters are closed. Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h), section 508 of the Clean Water Act, (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15). (Contracts, subcontracts, and subgrants of amounts in excess of \$100,000). Mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).

13. INTERPRETATION: This Agreement shall be governed by the laws of the State of Maine as to interpretation and performance.

14. DISPUTES: The Division will decide any and all questions which may arise as to the quality and acceptability of articles provided and installation of such articles, and as to the manner of performance and rate of progress under this Contract. The Division will decide all questions, which may arise as to the interpretation of the terms of this Agreement and the fulfillment of this Agreement on the part of the Contractor.

15. ASSIGNMENT: None of the sums due or to become due nor any of the work to be performed under this order shall be assigned nor shall Contractor subcontract for completed or substantially completed articles called for by this order without the Division's prior written consent. No subcontract or transfer of agreement shall in any case release the Contractor of its obligations and liabilities under this Agreement.

16. STATE HELD HARMLESS: The Contractor agrees to indemnify, defend, and save harmless the State, its officers, agents, and employees from any and all claims and losses accruing or resulting to any and all contractors, subcontractors, material men, laborers and other persons, firm or corporation furnishing or supplying work, services, articles, or supplies in connection with the performance of this Agreement, and from any and all claims and losses accruing or resulting to any person, firm or corporation who may be injured or damaged by the Contractor in the performance of this Agreement.

17. SOLICITATION: The Contractor warrants that it has not employed or written any company or person, other than a bona fide employee working solely for the Contractor to solicit or secure this Agreement, and it has not paid, or agreed to pay any company, or person, other than a bona fide employee working solely for the Contractor any fee, commission, percentage, brokerage fee, gifts, or any other consideration, contingent upon, or resulting from the award for making this Agreement. For breach or violation of this warranty, the Division shall have the absolute right to annul this agreement or, in its discretion, to deduct from the Agreement price or consideration, or otherwise recover the full amount of such fee, commission, percentage, brokerage fee, gifts, or contingent fee.

18. WAIVER: The failure of the Division to insist, in any one or more instances, upon the performance of any of the terms, covenants, or conditions of this order or to exercise any right hereunder, shall not be construed as a waiver or relinquishment of the future performance of any such term, covenant, or condition or the future exercise of such right, but the obligation of Contractor with respect to such future performance shall continue in full force and effect.

19. MATERIAL SAFETY: All manufacturers, importers, suppliers, or distributors of hazardous chemicals doing business in this State must provide a copy of the current Material Safety Data Sheet (MSDS) for any hazardous chemical to their direct purchasers of that chemical.

20. COMPETITION: By accepting this Contract, Contractor agrees that no collusion or other restraint of free competitive bidding, either directly or indirectly, has occurred in connection with this award by the Division of Purchases.

21. INTEGRATION: All terms of this Contract are to be interpreted in such a way as to be consistent at all times with this Standard Terms and Conditions document, and this document shall take precedence over any other terms, conditions, or provisions incorporated into the Contract.

Appendix A

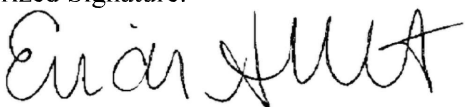
**STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
DIVISION OF PROCUREMENT SERVICES**

BID COVER PAGE and DEBARMENT FORM

Bidder's Organization Name: Phoscrete Corporation		
Chief Executive - Name/Title: Erica Gerhart, Operations Manager		
Tel: 561-420-0595	Fax: 561-420-0599	E-mail: erica.gerhart@phoscrete.com
Headquarters Street Address: 1800 NW 15 th Ave. #130		
Headquarters City/State/Zip: Pompano Beach, FL 33069		
<i>(provide information requested below if different from above)</i>		
Lead Point of Contact for Bid - Name/Title:		
Tel:	Fax:	E-mail:
Street Address:		
City/State/Zip:		

By signing below Bidder affirms:

- Their bid complies with all requirements of this RFQ;
- This bid and the pricing structure contained herein will remain firm for a period of 180 days from the date and time of the bid opening;
- That no personnel currently employed by the Department or any other State agency participated, either directly or indirectly, in any activities relating to the preparation of the Bidder's proposal;
- That no attempt has been made or will be made by the Bidder to induce any other person or firm to submit or not to submit a proposal; and
- The undersigned is authorized to enter into contractual obligations on behalf of the above-named organization.

Name: Erica Gerhart	Title: Operations Manager
To have your bid accepted, this Appendix MUST have an actual wet signature or utilize DocuSign or Adobe Sign forms of electronic signature.	
Authorized Signature: 	Date: 3/16/2022

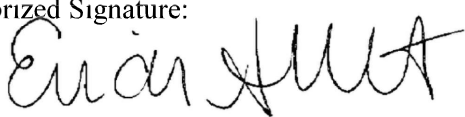
Debarment, Performance, and Non-Collusion Certification

By signing this document, I certify to the best of my knowledge and belief that the aforementioned organization, its principals, and any subcontractors named in this proposal:

- a. Are not presently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from bidding or working on contracts issued by any governmental agency.*
- b. Have not within three years of submitting the proposal for this contract been convicted of or had a civil judgment rendered against them for:*
 - i. fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government transaction or contract.*
 - ii. violating Federal or State antitrust statutes or committing embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;*
 - iii. are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or Local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and*
 - iv. have not within a three (3) year period preceding this proposal had one or more federal, state or local government transactions terminated for cause or default.*
- c. Have not entered into a prior understanding, agreement, or connection with any corporation, firm, or person submitting a response for the same materials, supplies, equipment, or services and this proposal is in all respects fair and without collusion or fraud. The above mentioned entities understand and agree that collusive bidding is a violation of state and federal law and can result in fines, prison sentences, and civil damage awards.*

- **Failure to provide this certification may result in the disqualification of the Bidder's proposal, at the discretion of the Department.**

To the best of my knowledge all information provided in the enclosed proposal, both programmatic and financial, is complete and accurate at the time of submission.

Name: Erica Gerhart	Title: Operations Manager
To have your bid accepted, this Appendix MUST have an actual wet signature or utilize Docu Sign or Adobe Sign forms of electronic signature.	
Authorized Signature: 	Date: 3/16/2022

Appendix D

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
DIVISION OF PROCUREMENT SERVICES

**MUNICIPALITY POLITICAL SUBDIVISION and SCHOOL DISTRICT PARTICIPATION
CERTIFICATION**

**RFQ # 17A 220307-223
High Performance Concrete Repair Cold Patch**

The Division of Procurement Services is committed to providing purchasing opportunities for **municipalities, political subdivisions and school districts** in Maine by allowing them access, through our vendors, to our contract pricing. A bidder's willingness to extend contract pricing to these entities will be taken into consideration in making awards.

Orders from Municipality, Political Subdivisions and School Districts (Appendix D): If the bidder elects to permit Municipality, Political Subdivisions and School Districts to utilize the resulting Master Agreement Contract, The State of Maine will not be responsible for any order placed by these groups. All orders will originate from these groups and they will be liable for all payments.

Will you accept orders from political subdivisions and school districts in Maine at the prices quoted?

 X Yes

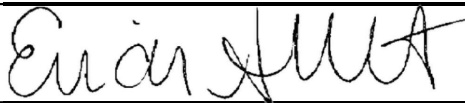
 Yes, with conditions as follows:

 No

Name of Company: Phoscrete Corporation

Address: 1800 NW 15th Ave. #130
Pompano Beach, FL 33069

Signature:



Date: 3/16/2022

Appendix E