# **Phoscrete Concrete Repair**

Capabilities Overview



# **Phoscrete Movie**

# **Company Background**



- Founded 1990 in Detroit, Michigan.
- Stellar's Liquid Phosphate Binder System is the patented process used in the technology of both Thermbond® Refractories and Phoscrete® Concretes.
- Headquarters in Boca Raton, Florida. Manufacturing operations in Whitmore Lake, Michigan. Subsidiaries in Mexico, Brazil, U.A.E. and The Netherlands. Installations worldwide.



# **Phoscrete Packaging**





# **Phoscrete Packaging**

#### **Two Component Binder System**

- Phoscrete is packaged in a 57 lb. bag of dry mix and a one [1] gallon jug of liquid activator. Shelf life = 2+ years
- Do not mix with water!
- "Neat" Mix
  - Phoscrete cannot be extended with pea gravel or other aggregates
- One unit = 1 bag = 1 jug
- Coverage: ½ cu ft. per unit or 6 board ft.
- 48 units per pallet of material, 12 pallets per truckload
- Supersacks available for large installations



#### **Permanent Repairs**

#### Partial Depth Repairs

 Because Phoscrete chemically bonds to existing poured concrete, partial depth repairs achieve faster results using less labor, material, and waste than full slab replacement.

### Zero Shrinkage Cracking

 The Phoscrete Binder System responds to occurring strains by tensile deformation and does not crack; as demonstrated by the ASTM C1531 Ring Test.

## Resists Freeze/Thaw Cycling

 Phoscrete repairs are highly resistant to freeze/thaw cycling and drastic weather changes as indicated by its very low porosity combined with its chemical bond.

#### **Withstands Harsh Environments**

#### Chemical Resistant

 Phoscrete is resistant to alkaline materials, including heavy concentrations of salt water as demonstrated by it's excellent Chloride Ion Penetration test results.

#### Heat Resistant

 Phoscrete formulations are available that resist continuous operating temperatures above 2500°F.

### Inhibits Rusting

 Phoscrete passivates rust. On contact, it converts iron oxides to metal phosphates, eliminating existing rust from reinforcing steel, and inhibiting further rusting.



#### **Easy to Mix and Place**

#### Accurate Mixing

 Phoscrete a pre-measured, two component (bag and jug) system that insures accurate and consistent mixing from batch to batch.

#### Fast Preparation and Placement

Simply remove all loose and deteriorated concrete and pour in Phoscrete.
 No surface treatment is necessary.

### Self Consolidating

 Phoscrete reduces the labor required for leveling and finishing. Phoscrete forms a smooth and flush surface that blends with the existing concrete surface.



#### Fix it Once and For Good

#### All Season Use

 Phoscrete cures once the exothermic reaction is complete. Formulations are available with specific setting and curing cycles for most climates and temperatures, including winter climates.

#### Rapid Return to Service

 Phoscrete is a rapid curing, high-early-strength material. Within one hour following placement, Phoscrete attains high compressive strengths, allowing the surface to be opened to heavy duty rubber tired traffic.

#### Green Product

 Using Phoscrete for permanent concrete repair is the ultimate sustainable solution. Save time, labor, material disposal and replacement costs, and extend the service life of aging structures.



## The Phoscrete Bond

#### Phoscrete is a MALP CONCRETE

- MALP: Mono-Aluminum Liquid Phosphate
- Phoscrete Concretes chemically bond both to themselves and to existing substrates. During the exothermic reaction between the dry aggregate (technical grade magnesium-alumina) and the liquid activator (MALP), ionic-bonding occurs to form alkali earth metal-oxide phosphates. This high-strength chemicallybonded compound insures both coherence and adherence and is therefore extremely durable in high stress environments.



## The Phoscrete Bond

### **Both Cementitious and Polymeric Properties**

- The Phoscrete Bond is rapid-setting with high-early strengths,
  but it is not brittle like other cementitious bonded materials.
- Due to the formation of chain and ring structures that are similar to polymers, after curing the Phoscrete Bond remains flexible.
- NO SHRINKAGE CRACKING!



## **Phoscrete Formulations**

#### **Use it Year-Round**

- Phoscrete 604-Seasons (New!)
  - Designed for DOT use, one product works in ambient temperatures below zero to above 100°F using accelerator or retarder.
- Phoscrete 601-P (patching for vertical/overhead)
- Phoscrete 601-AR (Abrasion Resistant)
- Phoscrete 601-G (gunnable mix)
  - Shot or conveyed pneumatically through a hose at high velocities onto surfaces including vertical and overhead surfaces

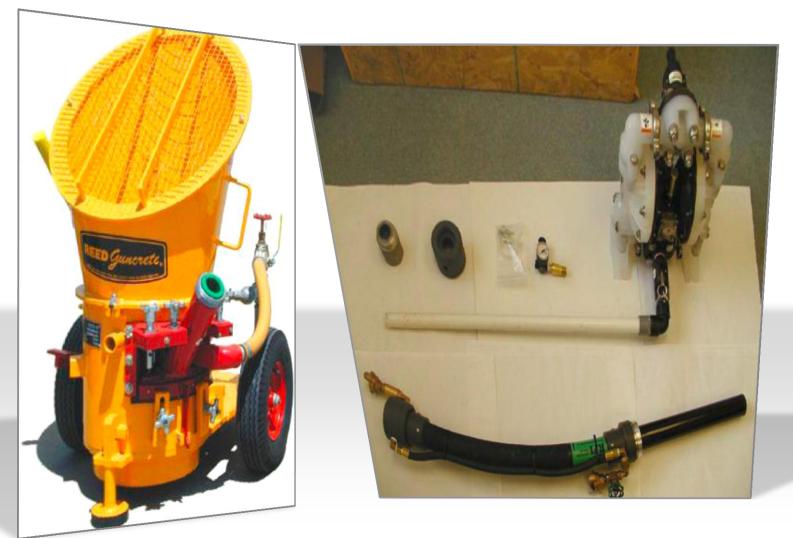


# **Phoscrete Gunnable V/O and Horizontal Surfaces**





# **Phoscrete Gunning Equipment**







## Fix It With Phoscrete!

We are available to answer any questions and discuss your application requirements.

## **Thank You!**



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