E-Krete® Technical and Application Bulletin

The Revolutionary Approach to Pavement Maintenance

Description

The E-Krete Pavement Overlay System is a polymer modified cementitious micro-overlay designed for concrete or asphalt pavements where deterioration has occurred due to spalling, oxidation, wear or exposure to chemicals, oils, fuels, etc. E-Krete can be placed in multiple lifts (coats) for added thickness.

Recommended For

- Concrete or asphalt aircraft aprons, shoulders, taxiways or runways
- Parking lots and garages
- Refueling and maintenance areas
- Highly oxidized asphalt pavements
- Areas where a high coefficient of friction is needed

Features/Benefits

- High coefficient of friction
- Aesthetically pleasing
- Resistant to chemicals, oils, fuels, etc.
- Rapid setting
- No grade transition issues
- Short downtime
- Adheres to asphalt and concrete
- Cost effective alternative to other seal coats or asphalt overlays
- No odor or tracking issues

Packaging and Storage

The E-Krete industrial system comes ready to mix in the following prepackaged quantities:

High Production Kit

- 192.5 gal of liquid polymer
- 3 - 3000 lb totes of cementitious powder
- ± 65 gallons potable water added to Kit for desired workability and coverage

Low Production Kit

- 1 gal of liquid polymer
- 47 lbs cementitious powder
- ± 45 ounces potable water added to Kit for desired workability and coverage

Additional Options

- Friction Coarse: quartz aggregate topically applied
- Water-Based Sealer for black color variations
- Solvent-Based Sealer for additional chemical resistance

Precautions

- Keep from freezing
- Do not store in direct sunlight
- Keep containers sealed when not in use

Shelf Life

- Liquid Polymer – 12 months in unopened containers
- Powder – 6 months in dry indoor area
- Aggregate – Unlimited shelf life

Theoretical Coverage

A one layer industrial kit covers approximately 12,500 square feet on a moderately porous pavement surface at 1/16” in (3mm) thickness. Coverage will vary depending on concrete or asphalt condition and porosity.

Performance Data

Compressive Strength	ASTM C-109	3950 PSI
Flexural Strength	ASTM C-238	1835 PSI
Tensile Strength	ASTM C-190	615 PSI
Shear Bond Adhesion	ASTM C-882	>650 PSI
Chemical Resistance	ASTM C-2299	Unaffected
Slip Resistance - DF Tester	See Note 3	0.72
Slip Resistance - Runway Friction Tester	See Note 4	0.75
Accelerated Weathering (4000 hrs)	ASTM G-23	Unaffected

1) The data shown is representative of laboratory tests two (2) days moist cured samples. Reasonable variations from results shown may be experienced as a result of atmospheric and job site conditions. Mix entire sample kit of E-Krete when preparing compressive strength specimens.
2) Composite beam prepared by overlaying ¼” (6mm) of product on ¼” concrete wonderboard.
3) NASA Wallop’s Island friction testing: average of tester results
4) NASA Wallop’s Island friction testing: average runway friction test results (wet test 45 mph)

PolyCon® Systems, Inc.

Application
The E-Krete system is designed to be applied by the Polycon squeegee application device, Polycon mortar blade or Polycon approved spray rig. Material to be applied exclusively by an approved Polycon applicator.

Curing
On a sunny day (75°F with 50% - 75% relative humidity) the curing time is approximately 3 hours per single layer. The hotter the temperature and the drier the day, the faster the cure time.

Special Conditions
- Application temperature shall be a minimum of 50°F and rising
- Do not apply when rain is imminent or forecast within 10 hours of completed application
- Application surface must be structurally sound

Associated White Papers
- MSDS
- EPA Partnership Letter
- EB62
- USACE Unified Facilties Guide Specifications

Recommended Temperature Range
Ambient and surface temperatures of 50° F and rising to 100° F is the standard range of successful application. However, when the temperature reaches or exceeds 95° F, additional polymer and a small amount of water is required to keep the batch workable. Add additional polymer at a ratio of 3 gallons of polymer to 1 gallon of water to increase rate of flow of material. To decrease flow, add additional powder to achieve workable mix.

Mixing
Mechanical mixing is recommended. For large areas, Polycon recommends using a batch-mixing machine. The machine must mix the E-Krete composite to a consistent, homogenous mix. For smaller areas, a ½" drill with mortar paddle mixer may be used. For each High Production Kit, 65 gallons of potable water is added for desired workability and coverage. It is important to add liquid resin and water first to the mixing container or mixer, followed by the addition of the dry powder. Mix slowly and consistently for best results. Keep unused portions covered and out of heat.

Directions for use (new and existing asphalt and concrete surfaces)
1) Inspect surface for suitability of application. Extensive sub-base or substrate problems may require repairs outside the scope of Polycon's product line.
2) Repair any deteriorated areas such as spalling, cracks, pop-outs, bird baths, etc., with patching compound to restore profile. Minor cracks do not require patching prior to overlay application.
3) Ensure surface is free of all contaminants including oil, grease, dirt laitance, fungus, efflorescence, mildew or any other contaminant that may prevent adhesion. Effective means of preparation may include pressure washing, acid etching, shot or sand blasting, depending on whether it's asphalt or concrete.
4) New asphalt should be allowed to weather for 30 days prior to application of the E-Krete system. If timing is critical, then new asphalt surfaces should be thoroughly degreased and pressure washed. Two washings are recommended to remove excess oils.
4) New concrete should be allowed to cure a minimum of 28 days prior to application.
5) Prior to application, surface must be dry and free from all loose particles.
6) Set up equipment and mix materials as previously described.
7) Apply the E-Krete with approved application equipment.

Warnings
- All materials are formulated for industrial and professional use only. Keep out of reach of children
- When exposed to air, the liquid polymer emits a slight ammonia vapor. It is recommended that steps be taken not to breathe the vapor or the dust produced when mixing this product.
- Previously sealed surfaces may require additional prep work (i.e. scarifying).

Waste Disposal
These products, when discarded or disposed of in their liquid and cured form are not listed as a hazardous waste in Federal Regulations. Dispose in landfill in accordance with local regulations.