



**Pre-extended, Packaged  
Chemical Resistant  
REPAIR CONCRETE**



Updated 4.21.11

## 1 General Characteristics

**KEMROK™** is an extremely versatile, cementitious, rapid setting, semi-leveling structural repair concrete. It is a single component powder that is water activated.

**KEMROK™** has 30 minutes of working time and will reach compressive strengths of more than 4,500 psi within 3 hours from the addition of water.

**KEMROK™** can be applied in ambient temperature ranges from 30 to 120 degrees Fahrenheit.

**KEMROK™** finishes like traditional Portland based concrete and cleans up easily with water.

### RECOMMENDED USES:

**KEMROK™** has been designed for horizontal and near horizontal applications providing for *repair* of Industrial concrete infrastructure, secondary containment, sulfuric acid exposure and form and pour projects. **KEMROK™** has been engineered for low permeability and is resistant to chemical attack by sulfuric compounds and related acids.

## 2 Additional Physical Properties

**UNIT WEIGHT** (with water, sand & aggregate)  
152 lb/ft<sup>3</sup> (2434 kg/m<sup>3</sup>)

**SETTING TIME**  
Set Times at 72°F/22°C at 2" (5 cm) material depth  
Initial set: 30 - 35 minutes  
Final set: 35 - 45 minutes

**VOLUME YIELD** (#8 - 3/8" fractured stone- included)  
Concrete (binder + sand + coarse agg. + H<sub>2</sub>O) =  
**0.40ft<sup>3</sup>** (.011m<sup>3</sup>)

## 3 Specifications

Results provided by licensed engineering test laboratory and represent typical results from production materials. Actual results may vary from third party testing results; however, CERATECH's materials meet and/or exceed established internal quality control standards, (available upon request) . All samples were air cured.

Property	Results	Test Method
<b>Compressive Strengths, psi (MPa)</b>		
<b>3 hours</b>	<b>4540</b> (31.3)	<b>ASTM C 39</b>
<b>1 day - 24 hours</b>	<b>7477</b> (33.8)	<b>ASTM C 39</b>
<b>7 days</b>	<b>7415</b> (51.6)	<b>ASTM C 39</b>
<b>28 days</b>	<b>12049</b> (83.1)	<b>ASTM C 39</b>
<b>Flexural Strength, psi (MPa)</b>		
<b>7 days</b>	<b>1050</b> (7.2)	<b>ASTM C 78</b>
<b>28 days</b>	<b>1110</b> (7.7)	<b>ASTM C 78</b>
<b>Splitting Tensile Strength, psi (MPa)</b>		
<b>28 days</b>	<b>600</b> (4.1)	<b>ASTM C 496</b>
<b>28 days</b>	<b>720</b> (5.0)	<b>ASTM C 496</b>
<b>Bond Strength, psi (MPa)</b>		
<b>7 days</b>	<b>4365</b> (30.1)	<b>ASTM C 882</b>
<b>28 days</b>	<b>6310</b> (43.5)	<b>ASTM C 882</b>
<b>Rapid Freeze Thaw Resistance</b> (Durability Factor - Retained percentage of Dynamic Modulus)		
<b>300 cycles</b>	<b>100%</b>	<b>ASTM C 666A</b>
<b>Scaling Resistance, lbs/ft<sup>2</sup> (kg/m<sup>2</sup>)</b>		
<b>50 cycles</b>	<b>0</b>	<b>ASTM C 672</b>
<b>Modulus of Elasticity, msi (GPa)</b>		
<b>28 days</b>	<b>4.7</b> (31.8)	<b>ASTM C 469</b>
<b>Coefficient of Thermal Expansion, in/in/°F</b>		
<b>28 days</b>	<b>1.37</b>	<b>AASHTO TP 60</b>
<b>Length Change, % of total length</b>		
<b>28 days soak / 28 days dry</b>	<b>-0.052 / -0.057</b>	<b>ASTM C 157</b>
<b>Abrasion Resistance, mm of wear</b>		
<b>28 days</b>	<b>0.17</b>	<b>ASTM C 944 (2005)</b>
<b>Chemical Resistance, 68% Sulfuric Acid Immersion</b>		
<b>7 days (% change in mass)</b>	<b>5.3</b> (Portland Cement = 33.8)	



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## 4 Site Preparation

Surfaces should be prepared in accordance with ICRI 03730, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion." and / or ACI 546R-96 "Concrete Repair Guide". Concrete surfaces should be prepared by appropriate mechanical methods to obtain an exposed aggregate surface with a minimum surface profile of +/- 1/16" (1.5 mm) in accordance with ICRI 03732. Pre-existing coatings or surface treatments should be completely removed. Dry, clean, stable surfaces are required. Remove all standing water. Reinforcing steel should have no loose scale. **Surfaces of host concrete must be damp.**

## 5 Mixing Instructions

### Standard Mixing Procedures (Rotating Drum Concrete Mixer)

- Pre-wet cement mixer with water then drain all water from mixer (away from repair area)
- Start mixer - Add Water - **KEMROK™** requires a total of 2 quarts of water per 53.5 lb. unit. Initially, add-in only 1 quart of water. (**KEMROK™** is a water to binder sensitive cement. NEVER use less than 2 quarts of water nor MORE THAN 2 1/8 quarts of water per 53.5 lb. unit of **KEMROK™**.)
- Add pre-determined units of **KEMROK™** Mix for 1 minute
- Add - in remaining quart of water per 53.5 lb. unit of **KEMROK™**
- Mix for 6 additional minutes or 7 minutes total
- Pour all contents into repair area
- Clean mixer or repeat process for next batch

### Notes:

1. In ambient temperatures, < 50°F / 10°C, use warm water between 70°F/22°C and 90°F/32°C
2. In ambient temperatures > 85°F/ 29°C, use cooler water between 50°F/ 10°C and 70°F/22°C
3. Working times will vary when mix water temperature's are outside of these recommendations
4. **Minimum recommended batch size is 2 units ( Use 4 quarts of water for 2 bag batches)**

### WARRANTY:

CERATECH, Inc. ("CERATECH") warrants that its products are free from defects in materials and workmanship. If any CERATECH product fails to conform to this warranty, CERATECH will replace the product at no cost to the buyer or refund the purchase price, at CERATECH's election. Any warranty claim must be made within one (1) year from the date of the shipment of the product to the buyer. In no event shall CERATECH be liable to the buyer for any consequential or incidental damages of any nature. CERATECH MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, WRITTEN OR ORAL AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF ITS PRODUCTS AND EXCLUDES THE SAME. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

## 6 Packaging & Shelf Life

### PACKAGING

53.5lb (24.3 kg) Plastic Bag

### SHELF LIFE

1 year

### STORAGE

Bags must be kept dry

## 7 Limitations

- Not recommended for placement in temps below 30°F/-1°C and above 120°F/49°C.
- Will not bond to polymers.
- Pumpable with proper precautions

## 8 Application & Finish

- Working times are influenced by surface temperature and repair profile. **Working time can be extended by adding CERATECH's Set Retarder Admixture to mix water. (See Set Retardant product data sheet for more information )**
- Working times are influenced by surface temperature and repair profile.
- Minimum profile thickness is 1.13". There are no restrictions to the maximum depth of the repair profile.
- For best results, CERATECH recommends monolithic placement of repair materials. Maintain a minimum thickness of 1.00 inch if repair material must be layered. Material must also be layered before final set has been reached.
- Upon initial set, a broom finish can be applied. Upon final set, the material can be saw-cut, drilled, sanded and/or polished
- Do not re-temper. The addition of water to the surface of the repair will negatively affect the materials final properties.
- General loading in 4 hours for wheeled traffic and 2 hours for foot traffic after addition of water.
- All previously existing joints must be re-established within 4 hours of final set.
- Self-curing, (Protect with blankets or equivalent in ambient temperatures below freezing (32°F / 0°F).
- Clean all tools and equipment with water prior to the material reaching final set.