



**Pre-extended, Packaged
High Temperature
CONCRETE**



Updated 6.16.11

1 General Characteristics

FIREROK VR™ is a cementitious, rapid setting, non-Portland cement, vertical surfacing mortar. It is a single component powder that is water activated. **FIREROK VR™** has 30 to 45 minutes of working time.

FIREROK VR™ can be applied in ambient temperature ranges from 30 to 120 degrees Fahrenheit. **FIREROK VR™** is a low permeability mortar and is an ideal repair material for areas exposed to intermittent high temperatures.

RECOMMENDED USES: **FIREROK VR™** has been designed for areas which are exposed to high temperatures either from an intermittent or a continuous heat source. This would include runway areas exposed to jet blast, HPUs, oven, and metal casting areas.

2 Additional Physical Properties

UNIT WEIGHT

136 lb/ft³

SETTING TIME

Set Times at 72°F/22°C
Initial set: 30 - 45 minutes
Final set: 50 minutes

VOLUME YIELD

0.41 ft³ / 48.5 lb. 5 Gallon Bucket

3 Specifications

Results shown below have been derived from internal CERATECH testing. Actual results may vary. CERATECH's materials meet and/or exceed established internal quality control standards, which will be provided upon request. All samples were air cured.

Property	Results	Test Method
Compressive Strengths, psi (MPa)		
1 day - 24 hours	4500 (31.0)	ASTM C 109
7 days	6900 (47.5)	ASTM C 109
28 days	7125 (49.1)	ASTM C 109
Flexural Strength, psi (MPa)		
24 Hours	500 (3.4)	ASTM C 78
28 Days	689 (4.7)	ASTM C 78
Splitting Tensile Strength, psi (MPa)		
24 Hours	559 (3.8)	ASTM C 496
28 Days	648 (4.4)	
Bond Strength, psi (MPa)		
24 hours	1700 (11.7)	ASTM C 882
28 Days	3483 (24.0)	

COVERAGE

1/16" (1.5mm)	69.1 ft ²
1/8" (3.0 mm)	34.5 ft ²
1/4" (6.0 mm)	17.3 ft ²
1/2" (12.0 mm)	8.6 ft ²
3/4" (19 mm)	5.8 ft ²
1.0" (25 mm)	4.3 ft ²

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4 Site Preparation

All surfaces in contact with **FIREROK VR™** shall be free of oil, grease, laitance and other contaminants. Concrete must be clean, sound and roughened to ensure a good bond. Soak concrete surfaces with potable water leaving the concrete saturated and free of standing water (SSD).

5 Mixing Instructions

Standard Mixing Procedures (Heavy Duty Drill & Paddle)

- Place **FIREROK VR™** in a suitable, smooth bottom plastic mixing container
- Dry mix material for 30 seconds
- Add in 2 quarts of water per 48.5 lb. bucket of **FIREROK VR™**
- Mix for 3 1/2 minutes
- Place material

6 Packaging & Shelf Life

PACKAGING

48.5 lb (21.9 kg) Plastic Bucket or Bag

SHELF LIFE & STORAGE

3 year / Bags must be kept dry

7 Limitations

- Do not exceed 0.25" thickness per lift.
- Not recommended for placement in temps below 30°F/-1°C and above 120°F/49°C.
- Will not bond to polymers.
- Not Pumpable.
- Do not exceed maximum mix water requirement.

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.

8 Application & Finish

Suggested application procedure for Firerok VR

1. Cementitious substrates must be dampened with clean potable water prior to and during installation. Make sure there is no standing water.
2. Mix Kemrok VR in accordance with the manufacturers recommendations.
3. Working time: skin coat capable immediately; pargeable from 2 minutes after mixing to 20 minutes after mixing.
Final set: 47 minutes
4. Applying pressure to the trowel, install a thin tight coat then immediately double back to achieve a thickness not to exceed 1/4".
5. If a thicker build is required, scratch (using a plasterers raking tool) the surface in a horizontal direction and allow a minimum of 10 - 15 minutes prior to installing the next layer. Follow above procedure when applying additional layers.
6. Kemrok VR may be floated using a sponge, rubber, magnesium or wood float designed for this purpose. Avoid placing water on the surface of the Kemrok VR during the floating process as this could lead to surface cracking. Dampen the float with water and not the surface of the Kemrok VR. Finish texture and color can vary depending on the type of float and method used.
7. Avoid installations in the direct sun as this can decrease working time and cause rapid drying and/or cracking. Plan the work so that a wet edge can be maintained during installation.
8. Follow Industry recommendations regarding the use of Joints and Sealants.
9. Working times are influenced by ambient & surface temperatures. For optimum performance, maintain mortar, host concrete to within a range of 32°F / 2°C and 90°F / 32°C prior to, during and for 48 hours after placement of mortar. 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)
10. At low temperatures (below 50°F / 10°C) mortar setting time is extended.
11. At high temperatures (above 86°F / 30°C) mortar setting time is reduced, affecting placement. CTI recommends that repairs at high temperatures be protected from direct sun and heat or be placed early in the morning. Keep materials cool and use cold water for mixing.
12. **Self-curing**
13. Clean all tools and equipment with water prior to the material reaching final set.

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