

# K A U F M A N

PRODUCT  
INFORMATION

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## Duracrete II FR

### Description

Duracrete II FR is a fast setting, fiber-reinforced, non-staining, non-metallic and very rapid hardening cement based repair mortar. Compressive strengths of 2000 psi are achieved in only 30 minutes, 4,000 psi. in one hour at 72 °F.

Duracrete II FR is composed of cement, special aggregates, accelerators, fibers, and water reducing agents. Since this is not a gypsum-based product, it can be used outdoors, and it will gain strength faster than any magnesium phosphate based grout, while maintaining dimensional stability. . In addition, Duracrete II FR includes our migrating corrosion inhibiting agent for longer lasting repairs.

### Uses

Duracrete II FR is designed for highways and bridge deck patches, pavement joint repair and other highway structural repairs. Parking garage repair are also an excellent use as well. The fast setting and high early strength properties reduces prolonged lane shut down and resulting traffic tie-ups.

### Advantages

Shrinkage compensated. Single component-just add water. Rapid hardening- open to traffic in just 1/2 hour. Duracrete II FR is water resistant after it's initial set. Excellent resistance to de-icing salts and sulfates. Hard wearing surface. Can be broom finished to achieve slip resistance on sloped areas.

### Specification

ASTM C-928, Very Rapid Hardening (R3)

### Packaging & Yield

50 lb. polyethylene lined bags yields approximately .45 cubic feet.

### Directions

#### Surface Preparation

The concrete surface must be clean, free of all contaminants and all deleterious materials. The surface must be prepared to a minimum of 1/16" or to a Concrete Surface Profile (CSP) of five, as per Guideline Number 03732, Selecting & Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays from the International Concrete Repair Institute (ICRI).

### Physical Properties, Regular, Neat – 75°F

Initial set:	10-16 min.	
Final set: (ASTM C-191)	18-22 min.	
Compressive Strength (ASTM C-109)	1 hr	2,500 psi
	2 hr.	5,000 psi
	3 hrs.	6,000 psi
	1 Day	8,000 psi
	7 Days	9,900 psi
Bond Strength (ASTM C-882)	28 Days	10,700 psi
	1 Day	1,710 psi
Flexural Strength (ASTM C-78)	7 Days	2,440 psi
	1 Day	700 psi
Length Change (ASTM C- 157)	7 Days	1,000 psi
	In Air:	-0.07%
Scaling Resistance (ASTM C-672, 50 cycles)	In Water:	+0.04%
	.68 lbs./ft <sup>2</sup>	
Chloride Ion Permeability (ASTM C-1202, 360 minutes)	Very Low	

Additionally, once prepared properly, the concrete surface must be saturated surface dry (SSD), unless using a bonding agent. If steel reinforcement is exposed, it should be prepared by mechanical means to remove all rust. If corrosion has occurred the steel should be prepared with high-pressure water after the mechanical preparation. For proper priming of the steel, use SurePoxym HMEPL, SurePoxym HM, Surepoxym HM Class B or SurePoxym HM 2

### Mixing

Use 2.4 quarts (4.8 pints) of water per 50 lb bag of Duracrete II FR. Always add the water to the mixing container first, then add the powder. Use a mortar-type or forced action type mixer to ensure optimum mixing. Mix for 5 minutes before using. Place immediately. For mixing less than a 50 lb bag, a power drill with a maximum 500-rpm with a Jiffy-type mixing blade is satisfactory. Do not mix by hand. Apply at least 1/2" deep. Do not ever add plasticizers, accelerators, retarders, or any other ingredients besides potable water unless advised by Kaufman Products in writing.

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*For patches >2" deep* - Duracrete II FR should be extended by adding up to 30 lbs. of clean, washed, and saturated surface-dried 3/8" pea gravel per 50 lb. bag. Up to 1 pint of additional water may be added for increased workability if the aggregate is dry. Always mix by adding aggregate, then Duracrete II FR to the water. Mix for 5 minutes to ensure thoroughly wetting out of the powder.

## Application

Saw cut the area to be patched so that edges are straight and flush. In temperatures less than 85°F, a maximum of 10 minutes should be allowed to mix, place, and finish Duracrete II FR. Immediately place the properly mixed Duracrete II FR into the prepared area, working from one side to the other. Work and tamp down the material firmly into the bottom and sides of the patch to ensure a good bond. Screed and trowel the material level to the existing concrete. Seal the edges and saw cuts with light troweling. Minimal finishing is required. When properly leveled, Duracrete II FR may be broomed for a slip-resistant surface.

The temperature of the mix as well as the ambient temperatures of the area to be repaired will greatly affect the working and set times of Duracrete II FR. If using when temperatures are greater than 85°F, we recommend the use of Duracrete II HWFR, since it will provide slightly longer setting and working times. However, if HW versions are used, the contractor would have to wait up to an hour before opening the patch up to traffic. As an alternate, the user could cool regular Duracrete II FR and use cool gauging water to slow down the set time.

During cold weather, (below 40°F) heat the area to be patched until warm to the touch. Also heat Duracrete II FR and use at least 90°F water or tent the area to retain heat during the initial set. Curing blankets may also help.

## Curing

Proper curing is extremely important. Immediately after finishing, apply a coat of good curing compound such as Krystal 25, Krystal 25 OTC, Krystal 25 Emulsion, and ThinFilm series products.

## Shelf Life

12 months from manufacture date, when stored unopened under recommended conditions. Store between 40 and 85°F at low humidity. Keep containers tightly closed.

## Precautions

Do not feather-edge. Thickness must be at least 1/2". Substrate should be damp during application. *Read Safety Data Sheet before using.*

## Technical Information

Test results were achieved under laboratory conditions. Statistical variations will occur based upon mixing methods, temperature & humidity, test methodology, site conditions, curing conditions, application methods, and equipment.

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