

RAPID ROAD REPAIR - CA

PRODUCT No. 1242-56

PRODUCT DESCRIPTION

QUIKRETE® Rapid Road Repair - CA is a fast-setting, Calcium Aluminate based rapid-hardening mortar designed to repair concrete highways, bridge decks, concrete parking lots and concrete floors.

PRODUCT USE

QUIKRETE® Rapid Road Repair - CA utilizes a special blend of rapid setting cementitious materials with carefully graded aggregates to provide a permanent patch. It also contains AR glass fibers for improved flexural performance essential for applications of severe vibration as in the repair of bridge decks. QUIKRETE® Rapid Road Repair - CA can be used to replace sections of streets or highways, runways or taxiways of airports and other applications where quick return to usage is desired. In most cases, traffic can be resumed in less than 90 minutes after patching. QUIKRETE® Rapid Road Repair - CA is designed to exceed the requirements of ASTM C928 Category R3 specifications for a high-performance repair material. This product may also be extended with gravel as detailed in the mixing section, for repairs to roads and bridges requiring a minimum thickness of 2 in (50 mm).

SIZES

- 50 lb (22.6 kg) bags

YIELD

- A 50 lb (22.6 kg) bag of QUIKRETE® Rapid Road Repair - CA will yield approximately 0.40 ft³ (11.3 L) at a mortar consistency

TECHNICAL DATA

APPLICABLE STANDARDS

- ASTM C33 Standard Specification for Concrete Aggregates
- ASTM C78 Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
- ASTM C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 in. or [50-mm] Cube Specimens)
- ASTM C143 Standard Test Method for Slump of Hydraulic-Cement Concrete
- ASTM C157 Standard Test Method for Length Change of Hardened Hydraulic-Cement, Mortar, and Concrete
- ASTM C191 Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle
- ASTM C496 Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens
- ASTM C666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
- ASTM C672 Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals
- ASTM C882 Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear

DIVISION 3 & 32

03 01 00 Maintenance of Concrete
03 31 00 Structural Concrete
32 01 29 Rigid Pavement Repair



- ASTM C928 Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete
- ASTM C1202 Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration
- ASTM C1437 Standard Test Method for Flow of Hydraulic Cement Mortar
- ASTM C1583 Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method)
- ICRI Guideline No. 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair
- ACI 305R Guide to Hot Weather Concreting
- ACI 306R Guide to Cold Weather Concreting

PHYSICAL/CHEMICAL

Typical results obtained for QUIKRETE® Rapid Road Repair - CA, when tested in accordance with the referenced ASTM test methods, are shown in Table 1.

INSTALLATION

SURFACE PREPARATION

All surfaces should be clean and free of foreign substances including corrosion present on reinforcing steel. Remove all spalled areas and areas of unsound concrete. The appropriate personal protective equipment should be worn. The repair area should have a vertical edge of ½ in (13 mm) or more. Preparation work done on the repair area should be completed by high pressure water blast, breaker hammer, or other appropriate mechanical means to obtain an exposed aggregate surface. Refer to current ICRI Guideline 310.2R for additional surface preparation information. Saturate repair area with clean water before patching to ensure SSD condition. No standing water should be left in the repair area.

MIXING

Use approximately 4-3/4 pints (2.2 L) to 5-1/2 pints (2.6 L) of clean potable water per 50 lb (22.6 kg) bag of QUIKRETE® Rapid Road Repair - CA. Begin by using a mid-range water quantity, then adjust, if

needed, to achieve a place-able consistency. The water demand of the product may vary based upon environmental conditions. Starting with the maximum quantity of water is not recommended. Add the water to the mixer first, followed by the QUIKRETE® Rapid Road Repair - CA. Mechanically mix for minimum of 3 minutes using a standard concrete or mortar mixer. Additional mixing time may be needed when using a standard barrel type concrete mixer. Exceeding an ASTM C1437 flow of 120% is not recommended. This may cause a reduction in performance of the product. Where large quantities of material are needed for patches requiring a minimum thickness of 2 in (50 mm), extending QUIKRETE® Rapid Road Repair - CA with 20 lb (9 kg) of -1/2 in (-13 mm) aggregate per 50 lb (22.6 kg) bag is recommended for greatest workability. It may be extended using a maximum gravel quantity of 50% by weight of QUIKRETE® Rapid Road Repair - CA. The coarse aggregate used should be in SSD condition and meet ASTM C33 requirements. Adjust water, if needed, to achieve a place-able consistency. Exceeding an ASTM C143 slump of 5 inches (125 mm) is not recommended. This may cause a reduction in performance of the product.

APPLICATION

Fill the repair area completely working continuously from one end to the other. Avoid partial depth fills which could lead to cold joints. Consolidate the material using hand tamping and/or chopping with a shovel. It is particularly important to compact around the edges of the forms or patches. Mechanical vibration should be avoided in areas that will be exposed to de-icing salts.

After QUIKRETE® Rapid Road Repair - CA has been compacted and spread to completely fill the forms without air pockets, screed the surface and then apply a trowel or broom finish as desired.

CURING

No special curing methods are required. QUIKRETE® Rapid Road Repair - CA is often placed in service within a few hours after it sets, so conventional moist curing methods may not be practical. Curing compounds such as QUIKRETE® Acrylic Concrete Cure and Seal (#8730) provide the easiest and most convenient method of curing. Curing compounds should be applied via appropriate methods, once final set has been reached.

The application of epoxy coatings over QUIKRETE® Rapid Road Repair - CA may be done in as little as 6 hours. Consult with the epoxy coating manufacturer for their recommendations. Test a small area to evaluate epoxy performance and adhesion prior to applying full-scale.

PRECAUTIONS

- Mix no more than can be used in 20 minutes.
- Follow ACI 305R when using product in hot weather. An example of an additional step would be using cold water when mixing in extremely hot weather.
- Follow ACI 306R when using product in cold weather. Examples of additional steps would be using hot water when mixing in severely cold weather and using plastic sheeting and insulation blankets if temperatures are expected to fall below 32 °F (0 °C).
- For best results, do not overwork the material.

TABLE 1 TYPICAL PHYSICAL PROPERTIES

Flow, ASTM C1437	
At 5 Minutes	≥ 100%
Compressive Strength, ASTM C109 (Modified)	
Age	PSI (MPa)
1.5 hours	3000 (20.6)
3 hours	4500 (31.0)
24 hours	7000 (48.2)
7 days	8000 (55.1)
28 days	9000 (62.0)
Setting Time, ASTM C191	
Initial	20 to 30 minutes
Final	< 60 minutes
Length Change, ASTM C157	
Age, Condition	
28 days, air	≥ -0.05%
28 days, water	≤ 0.05%
Split Tensile Strength, ASTM C496	
Age	PSI (MPa)
28 days	≥ 400 (2.7)
Slant Shear Bond Strength, ASTM C882	
Age	PSI (MPa)
24 hours	≥ 1500 (10.3)
7 days	≥ 2500 (17.2)
Freeze Thaw Resistance, ASTM C666	
After 300 cycles	≥ 95% Durability Factor
Scaling Resistance after 25 Cycles, ASTM C672	
	lb/ft ² (kg/m ²)
Scaled Material	≤ 0.25 (1.22)
Tensile Strength by Direct Tension (Pull Off Method), ASTM C1583	
Age	PSI (MPa)
28 days	≥ 350 (2.4)
Rapid Chloride Ion Penetration, ASTM C1202	
Age	coulombs
28 days	≤ 1000
Flexural Strength, ASTM C78	
Age	PSI (MPa)
1 day	≥ 800 (5.5)
28 day	≥ 1000 (6.9)

SAFETY

IMPORTANT: Read Safety Data Sheet carefully before using. **WEAR IMPERVIOUS GLOVES**, such as nitrile, mask, and eye protection.

DANGER: Causes sever skin burns and serious eye damage. Prolonged or repeated inhalation of dust may cause lung damage or cancer.

KEEP OUT OF REACH OF CHILDREN

SHELF LIFE

12 months from date of manufacture as long as the undamaged package is stored in a dry location that is protected from moisture, and out of direct sunlight.

WARRANTY

NOTICE: Obtain the applicable **LIMITED WARRANTY** at www.quikrete.com/product-warranty or send a written request to The Quikrete Companies, LLC, Five Concourse Parkway, Atlanta, GA 30328, USA. Manufactured by or under the authority of The Quikrete Companies, LLC. © 2022 Quikrete International, Inc.