RAPID ROAD REPAIR

PRODUCT NO. 1242

DIVISION **32**

Rigid Paving Repair
32 01 29

PRODUCT DESCRIPTION

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

PRODUCT USE

QUIKRETE® Rapid Road Repair® is made from specially blended cement 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. An un-fibered version of this product is also available. QUIKRETE® Rapid Road Repair® 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. Typically, traffic can be resumed 1 hour after set. QUIKRETE® Rapid Road Repair® is designed to exceed the requirements of ASTM C 928 Category R3 specifications for a high-performance repair material. This product may also be extended with up to 25 lb (11.3 kg) of gravel per 50 lb (22.6 kg) bag for repairs to roads and bridges at a minimum thickness of 2 in (50 mm).

SIZES

• QUIKRETE® Rapid Road Repair® - 50 lb (22.6 kg) bags

YIELD

A 50 lb (22.6 kg) bag of QUIKRETE® Rapid Road Repair® will yield 0.40 cu ft (11.3 L) of material.

TECHNICAL DATA

APPLICABLE STANDARDS

• ASTM C 33 Standard Specification for Concrete Aggregates
• ASTM C 78 Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
• ASTM C 109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
• ASTM C 143 Standard Test Method for Slump of Hydraulic Cement Concrete
• ASTM C 157 Standard Test Method for Length Change of Hardened Hydraulic-Cement, Mortar, and Concrete
• ASTM C 191 Standard Test Method for Time of Setting of Hydraulic Cement by Vicat Needle
• ASTM C 666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
• ASTM C 672 Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals
• ASTM C 882 Standard Specification for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear
• ASTM C 928 Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs
• ASTM C 1202 Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration
• ASTM C 1583 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 PROPERTIES

Typical results obtained for QUIKRETE® Rapid Road Repair®, when tested in accordance with the referenced ASTM procedures, 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

WEAR IMPERVIOUS GLOVES, such as nitrile when handling product. Mechanically mix QUIKRETE® Rapid Road Repair® for 4 to 5 minutes using a standard concrete or mortar mixer. Use approximately 3 quarts (2.8 L) of clean potable water per 50 lb (22.6 kg) bag of QUIKRETE® Rapid Road Repair®. Adjust water, if needed, to achieve

a place-able consistency. Exceeding an ASTM C 1437 flow of 120% is not recommended. This may cause a reduction in performance of the product.

APPLICATION

WEAR IMPERVIOUS GLOVES, such as nitrile when handling product.
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® 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® 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® 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 15 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.

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 under the authority of The Quikrete Companies, LLC.
(404) 634-9100 • Fax: (404) 842-1425

TABLE 1 TYPICAL PHYSICAL PROPERTIES

Compressive Strength, ASTM C 109 (Modified)

Age	*Typical Values PSI (MPa)*
1.5 hours	3000 (20.6)
3 hours	3500 (24.1)
24 hours	5500 (37.9)
7 days	7000 (48.2)
28 days	8000 (55.1)

Setting Time, ASTM C 191

Initial	15 to 25 minutes
Final	25 to 45 minutes

Length Change, ASTM C 157

Age, Condition	*Typical Values*
28 days, air	≥ -0.04%
28 days, water	≤ 0.04%

Slant Shear Bond Strength, ASTM C 882

Age	*Typical Values PSI (MPa)*
24 hours	2000 (13.7)
7 days	2500 (17.2)

Freeze Thaw Resistance, ASTM C 666

After 300 cycles	≥ 95% Durability Factor

Scaling Resistance after 25 Cycles, ASTM C 672

	Typical Value
Scaled Material	0

Tensile Strength by Direct Tension (Pull Off Method), ASTM C 1583

Age	*Typical Value PSI (MPa)*
28 days	≥ 200 (1.3)

Rapid Chloride Ion Penetration, ASTM C 1202

Age	*Typical Value coulombs*
28 days	≤ 1000

Flexural Strength, ASTM C 78

Age	*Typical Value PSI (MPa)*
1 day	800 (5.5)
28 day	1000 (6.8)