

# RAPID ROAD REPAIR & RAPID ROAD REPAIR-EXTENDED

PRODUCT No. 1242

## **PRODUCT DESCRIPTION**

QUIKRETE® Rapid Road Repair® and QUIKRETE® Rapid Road Repair® - Extended are made from a rapid hardening hydraulic cement with carefully graded aggregates to provide a permanent patch. They also contains Akali-Resistant fiberglass fibers for improved flexural performance essential for applications of severe vibration as in the repair of bridge decks. Rapid Road Repair® can be used for partial depth repair under 2 in (50 mm) thick and can be extended with gravel for full depth repairs. Rapid Road Repair® - Extended is pre-blended with gravel for full depth repairs.



## **PRODUCT USE**

QUIKRETE® Rapid Road Repair® and QUIKRETE® Rapid Road Repair® - Extended are a fast-setting, rapid-hardening products designed to repair concrete highways, bridge decks, concrete parking lots and concrete floors. In most cases, traffic can be resumed in less than 1 hour after patching. 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.

## **SIZES**

- 50 lb (22.7 kg) bags
- 67 lb (30.4 kg) bag
- 80 lb (36.3 kg) bags (in Extended version)

## **YIELD**

- A 50 lb (22.7 kg) bag of QUIKRETE® Rapid Road Repair® will yield 0.40 cu ft (11 L) of material.
- A 67 lb (30.4 kg) bag will yield 0.54 cu ft (15 L).
- A 80 lb (36.3 kg) bag of QUIKRETE® Rapid Road Repair® - Extended will yield .64 cu ft (17.0 L)

## **LIMITATIONS**

During extremely hot or dry conditions, cold water should be used to maintain mix at a moderate placement temperature.

## **TECHNICAL DATA**

### **APPLICABLE STANDARDS**

ASTM International

- ASTM C39/C39M Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens

- ASTM C78 Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
- ASTM C109/C109M Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
- ASTM C157/C157M Standard Test Method for Length Change of Hardened Hydraulic- Cement, Mortar, and Concrete
- ASTM C191 Standard Test Method for Time of Setting of Hydraulic Cement by Vicat Needle
- ASTM C531 Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
- ASTM C642 Standard Test Method for Density, Absorption, and Voids in Hardened Concrete
- ASTM C666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
- ASTM C672/C672M 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
- ASTM C928 Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs

## **PHYSICAL/CHEMICAL PROPERTIES**

QUIKRETE® Rapid Road Repair®, when tested in accordance with ASTM procedures, provides results as listed in Table 1.

QUIKRETE® Rapid Road Repair® meets the requirements of ASTM C928/928M Grade R3. It can be modified to meet specific requirements of the Department of Transportation in various states.

**TABLE 1 – PHYSICAL/CHEMICAL**

Property & test	Typical values
<b>Setting ASTM C191</b>	
Initial	17 - 25 minutes
Final	25 - 45 minutes
<b>Flexural strength, ASTM C78</b>	
4 hr	550 psi (3.8 MPa)
1 day	900 psi (6.2 MPa)
7 days	950 psi (6.6 MPa)
28 days	1,000 psi (6.9 MPa)
<b>Compressive strength, ASTM C109</b>	
1 hr	3,000 psi (20.7 MPa)
3 hrs	3,400 psi (23.4 MPa)
24 hrs	5,200 psi (35.9 MPa)
7 days	8,100 psi (55.9 MPa)
28 days	8,370 psi (57.7 MPa)
<b>Bond strength, ASTM C882</b>	
1 day	2,000 psi (13.8 MPa)
7 days	2,500 psi (17.3 MPa)
<b>Absorption, ASTM C642</b>	5.1%
<b>Length change, ASTM C157</b>	
In water	+0.04%
In air	-0.04%
<b>Coefficient of thermal expansion, ASTM C531</b>	$4 \times 10^{-6} - 9 \times 10^{-6}$
<b>Freeze/thaw, ASTM C666</b>	96%
<b>Scaling resistance, ASTM C672</b>	Excellent

**INSTALLATION**

**SURFACE PREPARATION**

- Remove all spalled areas and areas of unsound concrete and patching
- The hole should have a vertical edge of 1/2" (12.7 mm) or more, formed by use of a pneumatic jackhammer or sawing. Holes should be chipped out to create a new, sound substrate
- After the chipping process is completed, the repair area must be cleaned by water blasting or other suitable method
- Dampen holes with clean water before patching. No puddles of water should be left in the hole

**MIXING**

- Use 3/4 gal (2.8 L) of water per 50 lb (22.7) bag  
Use 1 gal (3.8 L) of water per 67 lb (30.4 kg) bag  
Use 3/4 gal (2.8 L) of water per 80 lb (36.3 kg) bag of Rapid Road Repair - Extended

- All tools and equipment used in the mixing and finishing process should be clean
  - Place clean water in mixer. While mixer is running, add contents of bag
  - Mix 4 to 5 minutes. The mix will appear stiffer than normal concrete
  - Place in a wheelbarrow or other transporting vehicle. Place the mixture immediately after the mixing is completed
- Note - Working time is 10 - 20 minutes and will fluctuate: shorter time during severe hot weather and longer time during cold weather.

**PLACING**

- The hole should be filled by placing material full depth, from one end to the other to eliminate part depth lifts between batches
- Consolidate the material in the hole by hand tamping or chopping with a shovel. This is particularly important around the edges
- Screed and finish patches with hand tools to create a surface finish equivalent to the existing slab finish

**CURING**

No curing membranes or compounds are required. Traffic can be allowed over the patch in approximately 1 hour if the temperature is 70 degrees F (21 degrees C) or above. Cure under ambient conditions. Do not moist cure.

**AGGREGATE EXTENSION**

For deep patches, QUIKRETE® Rapid Road Repair® – Extended may be used or QUIKRETE® Rapid Road Repair® may be extended with up to 25 lb (11.3 kg) of minus 1/2" (12.7 mm) coarse aggregate per 50 lb (22.7 kg) bag or 33 lb (15 kg) per 67 lb (30.4 kg) bag. Water content must be adjusted depending on the moisture content of the aggregate. Adjust as needed to achieve a slump of about 3" - 4" (76 - 102 mm). Typical test results are found in Table 2.

**TABLE 2 - QUIKRETE® RAPID ROAD REPAIR - EXTENDED<sup>1</sup>**

Set Time, C191	Final 20-40 minutes
Slump, C143	3-5" (76-127 mm)
Property & test	Typical value
<b>Compressive strength, ASTM C39</b>	
90 min	2,000 psi (13.8 MPa)
3 hr	2,750 psi (19.0 MPa)
24 hr	6,150 psi (42.2 MPa)

<sup>1</sup> Product extended with 50% by weight minus 1/2" (12.7 mm) diameter coarse aggregate.

**PRECAUTIONS**

QUIKRETE® Rapid Road Repair® must be properly placed in a space surrounded by sound, high quality previously hardened concrete. Do not subject to de-icing salts for at least 7 days after placement.

**AVAILABILITY**

QUIKRETE® Rapid Road Repair® and QUIKRETE® Rapid Road Repair® - Extended are available at leading concrete construction supply houses and distributors. Contact QUIKRETE® Construction Products representative for the name of the nearest dealer.

**WARRANTY**

The QUIKRETE® Companies warrant this product to be of merchantable quality when used or applied in accordance with the instructions herein. The product is not warranted as suitable for any purpose or use other than the general purpose for which it is intended. Liability under this warranty is limited to the replacement of its product (as purchased) found to be defective, or at the shipping companies' option, to refund the purchase price. In the event of a claim under this warranty, notice must be given to The QUIKRETE® Companies in writing. This limited warranty is issued and accepted in lieu of all other express warranties and expressly excludes liability for consequential damages.

**MAINTENANCE**

None required.

**TECHNICAL SERVICES**

The QUIKRETE® Companies maintain technical field representatives throughout the country. Contact a local distributor for the name and number of the nearest representative, or call QUIKRETE® Construction Products.

The QUIKRETE Companies  
One Securities Centre  
3490 Piedmont Rd., NE, Suite 1300  
Atlanta, GA 30305  
(404) 634-9100  
Fax: (404) 842-1425

*\* Refer to [www.quikrete.com](http://www.quikrete.com) for the most current technical data, MSDS, and guide specifications*