

POLYMER MODIFIED STRUCTURAL REPAIR

PRODUCT NO. 1241-25, -58

PRODUCT DESCRIPTION

QUIKRETE® Polymer Modified Structural Repair is a polymer modified, shrinkage-compensated, rapid setting, high strength repair material designed to make horizontal, vertical, and overhead structural repairs to any concrete surface. QUIKRETE® Polymer Modified Structural Repair consists of special fast-setting hydraulic cement, graded sands, and other proprietary ingredients.

PRODUCT USE

QUIKRETE® Polymer Modified Structural Repair demonstrates low sag, making it ideal for vertical or overhead repairs. Its unique properties allow it to be used for partial-depth repairs and can be sculpted to match the contour of existing concrete surfaces. Use to repair concrete cracks, curbs, steps, loading docks, retaining walls, decorative moldings, and virtually any vertical or overhead concrete surface. This product can be built up to at least 1-1/2 in (38 mm) in one application. For full-depth repairs, the product should be extended with up to 10 lb (4.5 kg) of clean, high quality -1/2 inch (-13 mm) gravel per 20 lb (9 kg) pail, or 25 lb (11.3 kg) of gravel per 50 lb (22.6 kg) bag.

SIZES

QUIKRETE® Polymer Modified Structural Repair is available in:

- 20 lb (9 kg) pails
- 50 lb (22.6 kg) bags

YIELD

- Each 20 lb (9 kg) pail of QUIKRETE® Polymer Modified Structural Repair will yield approximately 0.18 ft³ (5.0 L) of material.
- Each 50 lb (22.6 kg) bag of QUIKRETE® Polymer Modified Structural Repair will yield approximately 0.45 ft³ (12.7 L) of material.

TECHNICAL DATA

APPLICABLE STANDARDS

- ASTM C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 in. or [50-mm] Cube Specimens)
- 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 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
- ASTM C928 Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete

DIVISION 3

03 01 00 Maintenance of Concrete
03 31 00 Structural Concrete



- 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)

PHYSICAL/CHEMICAL

Typical results obtained for QUIKRETE® Polymer Modified Structural Repair, when tested in accordance with the referenced ASTM test methods, are shown in Table 2.

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. Large vertical or overhead patches deeper than 2 in (50 mm) should contain reinforcing steel. If none is present, new steel should be inserted using appropriate techniques. Dampen the repair area with clean water before patching. No standing water should be left in the repair area.

MIXING

Refer to Table 1 for water quantities. Begin by using a mid-range water quantity, then adjust, if needed, to achieve a placeable, gel-like 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 or mixing container first, followed by the QUIKRETE® Polymer Modified Structural Repair. Mix by hand, or mechanically using a standard mortar mixer, for a minimum of 3 minutes. Adding excessive water that causes a flowable consistency is not recommended, because this will cause a reduction in performance of the product. Where large quantities of material are needed for patches deeper than 2 in (50 mm) QUIKRETE® Polymer Modified Structural Repair may be extended with 10 lb (4.5 kg) of -1/2 inch (-13 mm) gravel per 20 lb (9 kg) pail, or 25 lb (11.3 kg) gravel per 50 lb (22.6 kg) bag. The gravel used should be clean, high quality, and in a damp condition. Adjust water, if needed, to achieve a slump of about 3 inches (75 mm) to 5 inches (125 mm). Extension with gravel will affect the properties listed

in Table 2. Performance and yield will be affected by the characteristics of the gravel utilized and the amount of water added.

TABLE 1 TYPICAL WATER CONTENT

<u>Amount of Material</u>	<u>Minimum</u>	<u>Maximum</u>
20 lb (9 kg)	3 pt (1.4 L)	3-1/4 pt (1.5 L)
50 lb (22.6 kg)	7-1/2 pt (3.5 L)	8 pt (3.8 L)

APPLICATION

QUIKRETE® Polymer Modified Structural Repair should be trowel applied to the damp surface. Apply a thin layer with heavy trowel pressure, and then go back and build up to the desired thickness. QUIKRETE® Polymer Modified Structural Repair obtains high bond strength without the use of bonding adhesives or acrylic additives. After initial set, the material may be trimmed and shaped to match the existing contours of the patch area.

CURING

During the first 24 hours, it is best to keep the patch covered or damp to prevent excessive loss of water. Under hot, dry and windy placing conditions, all concrete tends to lose moisture unevenly and may develop plastic shrinkage cracks. The use of sheeting, as well as application of a very fine fog spray of water, has been quite successful in limiting shrinkage cracking. Curing compounds such as QUIKRETE® Acrylic Concrete Cure and Seal (No. 8730) provide the easiest and most convenient method of curing. Curing compounds should be applied via appropriate methods, once final set has been reached.

PRECAUTIONS

- Mix no more than can be used in 15 minutes. Use for patches less than 2 ft² (0.19 m²).
- Do not apply as a coating.
- Do not use if temperatures are below 40 °F (4 °C) or are expected to go below 32 °F (0 °C) within a 24 hour period.
- Use cold water in hot weather or hot water in cold weather to help maintain sufficient working time of the mixed product.
- In most cases, concrete repair materials will not be an exact color match to surrounding concrete.
- For best results, do not overwork the material or remix the material with additional water after it starts to harden.

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

TABLE 2 TYPICAL PHYSICAL PROPERTIES

Setting Time, ASTM C191	
Initial	Approx. 20 minutes
Final	20 to 40 minutes
Compressive Strength, ASTM C109 (Modified)	
Age	PSI (MPa)
3 hours	2500 (17.2)
24 hours	4000 (27.5)
7 days	5500 (37.9)
28 days	6500 (44.8)
Length Change, ASTM C157	
Age, Condition	
28 days, air	≥ -0.05%
28 days, water	≤ 0.05%
Slant Shear Bond Strength, ASTM C882	
Age	PSI (MPa)
24 hours	1000 (6.8)
7 days	1500 (10.3)
28 days	2000 (13.7)
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	≤ 0.5 (2.44)
Tensile Strength by Direct Tension (Pull Off Method), ASTM C1583	
Age	PSI (MPa)
28 days	≥ 250 (1.7)

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.