

COMMERCIAL GRADE FASTSET™ DOT MIX

PRODUCT No. 1244-56, -53, -59

DIVISION 32

Rigid Paving Repair
32 01 29

PRODUCT DESCRIPTION

QUIKRETE® Commercial Grade FastSet™ DOT Mix is a fiber reinforced, rapid-setting repair material specifically designed to exceed ASTM C 928 Category R3 specifications for a high-performance repair material.



PRODUCT USE

QUIKRETE® Commercial Grade FastSet™ DOT Mix is specially formulated for use in structural concrete repair, bridge decks, roadways and parking deck applications from ½ in to 24 in thick (13 mm to 610 mm). The product exceeds the requirements of ASTM C 928 R3 for concrete repair materials. This product may also be extended with up to 25 lb (11.3 kg) of gravel per 55 lb (24.9 kg) bag for repairs to roads and bridges at a minimum thickness of 2 in (50 mm). QUIKRETE® Commercial Grade FastSet™ DOT Mix is available with an integral corrosion inhibitor in cases where maximum corrosion protection is desired. The addition of corrosion inhibitor has no adverse effect on the other physical properties of the product.

SIZES

- QUIKRETE® Commercial Grade FastSet™ DOT Mix - 55 lb (24.9 kg) bags

YIELD

- A 55 lb (24.9 kg) bag of QUIKRETE® Commercial Grade FastSet™ DOT Mix will yield approximately 0.44 cu ft (12.5 L) at a mortar consistency

TECHNICAL DATA

APPLICABLE STANDARDS

- ASTM C 33 Standard Specification for Concrete Aggregates
- ASTM C 109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 in. or [50-mm] Cube Specimens)
- ASTM C 157 Standard Test Method for Length Change of Hardened Hydraulic-Cement, Mortar, and Concrete
- ASTM C 191 Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle
- ASTM C 496 Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens
- 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 Test Method 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
- ASTM C 1090 Standard Test Method for Measuring Changes in Height of Cylindrical Specimens of Hydraulic-Cement Grout
- 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

Typical results obtained for QUIKRETE® Commercial Grade FastSet™ DOT Mix, 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

WEAR IMPERVIOUS GLOVES, such as nitrile when handling product.

Mechanically mix QUIKRETE® Commercial Grade FastSet™ DOT Mix for 4 to 5 minutes using a standard concrete or mortar mixer. Use approximately 6-½ pints (3.1 L) of clean potable water per 55 lb (24.9 kg) bag of QUIKRETE® Commercial Grade FastSet™ DOT Mix. 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® Commercial Grade FastSet™ DOT Mix 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® Commercial Grade FastSet™ DOT Mix 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® Commercial Grade FastSet™ DOT Mix 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 10 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. © 2020 Quikrete International, Inc.

TABLE 1 TYPICAL PHYSICAL PROPERTIES

Compressive Strength, ASTM C 109 (Modified)

	<i>Typical Values</i>
<i>Age</i>	<i>PSI (MPa)</i>
1.5 hours	3000 (20.6)
3 hours	4500 (31.0)
24 hours	6500 (44.8)
7 days	8000 (55.1)
28 days	9000 (62.0)

Setting Time, ASTM C 191

Initial	15 to 30 minutes
Final	25 to 45 minutes

Length Change, ASTM C 157

<i>Age, Condition</i>	<i>Typical Values</i>
28 days, air	≥ -0.07%
28 days, water	≤ 0.04%

Cylindrical Height Change, ASTM C 1090

24 hours	+0.02%
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Slant Shear Bond Strength, ASTM C 882

	<i>Typical Values</i>
<i>Age</i>	<i>PSI (MPa)</i>
24 hours	2000 (13.7)
7 days	2500 (17.2)

Freeze Thaw Resistance, ASTM C 666

After 300 cycles	≥ 95% Durability Factor
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Scaling Resistance after 25 Cycles, ASTM C 672

Scaled Material	<i>Typical Value</i>
	0

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

<i>Age</i>	<i>Typical Value</i>
28 days	<i>PSI (MPa)</i>
	≥250 (1.7)

Split Tensile Strength, ASTM C 496

<i>Age</i>	<i>Typical Value</i>
28 days	<i>PSI (MPa)</i>
	≥400 (2.7)

* Refer to www.quikrete.com for the most current technical data and SDS