



COMMERCIAL GRADE FASTSET™ DOT MIX

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

DIVISION 3 & 32

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

PRODUCT DESCRIPTION

QUIKRETE Commercial Grade FastSet® DOT Mix is a fiber reinforced; rapid-setting repair material specifically designed to exceed ASTM C928 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 C928 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

- 55 lb (24.9 kg) bags

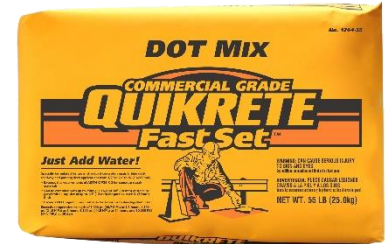
YIELD

- A 55 lb (24.9 kg) bag of QUIKRETE Commercial Grade FastSet® DOT Mix will yield approximately 0.44 ft³ (12.5 L) at a mortar consistency

TECHNICAL DATA

APPLICABLE STANDARDS

- ASTM C33 Standard Specification for Concrete Aggregates
- 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
- ASTM C928 Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete



- ASTM C1090 Standard Test Method for Measuring Changes in Height of Cylindrical Specimens of Hydraulic-Cement Grout
- 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 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 a minimum of 3 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 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 deeper than 2 in (50 mm) QUIKRETE Commercial Grade FastSet® DOT Mix may be extended with 25 lb (11.3 kg) of -1/2 in (-13 mm) aggregate per 55 lb (24.9 kg) bag. 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

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.

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	6500 (44.8)
7 days	8000 (55.1)
28 days	9000 (62.0)
Setting Time, ASTM C191	
Initial	15 to 30 minutes
Final	25 to 45 minutes
Length Change, ASTM C157	
Age, Condition	
28 days, air	≥ -0.07%
28 days, water	≤ 0.04%
Split Tensile Strength, ASTM C496	
Age	PSI (MPa)
28 days	≥ 400 (2.7)
Cylindrical Height Change, ASTM C1090	
24 hours	+0.02%
Slant Shear Bond Strength, ASTM C882	
Age	PSI (MPa)
24 hours	2000 (13.7)
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	≥ 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. © 2020 Quikrete International, Inc.