



FASTSET™ LATEX MODIFIED DOT OVERLAY .50"

DIVISION 03/32

Structural Concrete
03 31 00
Rigid Paving Repair
32 01 29

PRODUCT DESCRIPTION

QUIKRETE® FastSet™ Latex Modified DOT Overlay .50" is a fiber reinforced, very low permeability, rapid-setting overlay material specifically designed to fast track concrete bridge deck repair and extend the service life of concrete bridge decks and pavements.

PRODUCT USE

QUIKRETE® FastSet™ Latex Modified DOT Overlay .50" is designed to be used as a rapid setting traffic surface overlay at a thickness of .5" – 1.5" (12.7 – 38.1 mm). This product can be utilized for both overlay and full depth repair simultaneously, see application section for further details. QUIKRETE® FastSet™ Latex Modified DOT Overlay .50" 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® FastSet™ Latex Modified DOT Overlay .50" is available in 3000 lb (1369 kg) bulk bags.

YIELD

• Each 3000 lb (1369 kg) bulk bag of FastSet™ Latex Modified DOT Overlay .50" will yield approximately 0.89 cu yd (680 L). This equates to approximately 576 square feet at .5", 288 square feet at 1" or 192 square feet at 1.5" depths.

TECHNICAL DATA

APPLICABLE STANDARDS

ASTM International

- 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 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 Repairs
- ASTM C1090 Standard Test Method for Measuring Changes in Height of Cylindrical Specimens of Hydraulic-Cement Grout
- ASTM C1202 Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration

PHYSICAL/CHEMICAL

QUIKRETE® FastSet™ Latex Modified DOT Overlay .50" is a blend of rapid hardening cement, sand and special additives which exceeds the requirements of an ASTM C928 R3 Mortar. Typical results obtained on FastSet™ Latex Modified DOT Overlay .50", when tested in accordance with the applicable ASTM test methods, are shown in Table 1.

INSTALLATION

SURFACE PREPARATION

All surfaces should be clean and free of foreign substances that would cause bond failure. The substrate should be "sounded" with chains or hammers to ensure there is no delamination (hollow areas) requiring repair. Remove all spalled areas and areas of unsound concrete. The use of scarifiers, milling or hydrodemolition equipment is typically required to remove the surface layer of the concrete. Care should be taken to minimize microcracking while preparing the surface. Water blasters should be used to remove any laitance, chipped concrete or areas with extensive micro-cracked concrete. Aggregate should be exposed in the substrate and a minimum surface profile of SP5 (as described by ICRI R3 10.2-1997) should be achieved. Prepare steel reinforcement appropriately. Care should be taken to remove any rust scale from existing reinforcing steel and ensure all reinforcement is of adequate condition. Wet the surface for one hour before placement. No puddles of water should be left on the substrate.

MIXING

FastSet™ Latex Modified DOT Overlay .50" is designed to be mixed either continuously by a mobile volumetric mixer, or batched on site.

The use of standard ready mix trucks for mixing is acceptable. This material should be mixed to a 3 to 8 inch slump. Use approximately 37 gallons (140.1 L) of clean potable water per 3000 lb (1369 kg) bulk bag of FastSet™ Latex Modified DOT Overlay .50".

TABLE 1 TYPICAL PHYSICAL PROPERTIES

Compressive strength, ASTM C109 (Modified)

Age	ASTM C928 Specification	Typical Values
3 hours	3000 psi (20.7 MPa)	3000 psi (20.7 MPa)
24 hours	5000 psi (34.5 MPa)	5000 psi (34.7 MPa)
7 days	5000 psi (34.5 MPa)	6000 psi (41.4 MPa)
28 days	-	7000 psi (48.3 MPa)

Setting time, ASTM C191

Final	30 – 60 minutes
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Length change, ASTM C157

Condition	ASTM C928 Specification	Typical Values
28 days, air	> -0.15%	-0.060%
56 days, air	-	-0.060%
84 days, air	-	-0.060%
28 days, water	< +0.15%	+0.030%
56 days, water	-	+0.030%
84 days, water	-	+0.030%

Cylindrical height change, ASTM C1090

24 hours	+0.02%
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Slant shear bond strength, ASTM C882

Age	ASTM C928 Specification	Typical Values
24 hours	1000 psi (6.9 MPa)	1200 psi (8.3 MPa)
7 days	1500 psi (10.3 MPa)	1600 psi (11.0 MPa)

Scaling resistance testing, ASTM C672

Condition	ASTM C928 Specification	Typical Values
Mass Lost	1 lb/ft ² (5 kg/m ²)	0

Freeze-Thaw Resistance, ASTM C666

Condition	Typical Values
300 cycles Durability Factor	100

Chloride Ion Penetration, ASTM C1202

Permeability	Coulombs	Typical Values
Very Low	< 1,000	500

BOND COAT APPLICATION

The use of a bond coat is not required for overlay application. A bond coat will improve performance. Bond coat is described in ACI 548.4-11.

OVERLAY APPLICATION

Spread newly placed material in front of the finishing machine utilizing shovels and hoes. The use of self-propelled rotating cylinder machine is recommended for finishing. This machine should be capable of

continuously and automatically spreading, consolidating and finishing the fresh material. For areas not reached by the finishing machine bull floats or straight edges can be utilized. Note: For best results, do not overwork the material. Maintain existing Control Joints from the substrate through the overlay

FULL DEPTH REPAIR

FastSet™ DOT Overlay .50" can be applied up to 8" in a single application where full depth repairs are incorporated into the overlay application. Finishing operations must consolidate the material and eliminate air pockets throughout the repair. Large cross sections over 12 square feet, should be repaired with extended product prior to overlay application. Contact QUIKRETE® for repair recommendations.

CURING

The overlay should be moist cured from the time it is placed until it is opened to traffic. The moist curing shall be initiated with the application of wet burlap and plastic to the surface of the overlay as soon as practicable and before the surface dries. The burlap shall be maintained in a wet condition during the curing period.

PRECAUTIONS

- Mix no more than can be used in 15 to 25 minutes depending on conditions.
- During extremely hot or dry conditions, cold water should be used to maintain mix at a moderate placement temperature and other hot weather precautions should be employed.
- Precautions should be taken to minimize evaporation.
- During cold weather, hot water and warm FastSet™ DOT Overlay .50" should be utilized as well as other cold weather precautions.
- Contact QUIKRETE® for other recommendations for accommodating weather conditions.

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.

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