

FASTSET™ ALL-CRETE™

PRODUCT NO. 1585-53

DIVISION 3

Non-Shrink Grouting

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PRODUCT DESCRIPTION

FastSet™ All-Crete™ is a high early strength commercial grade grout, requiring only the addition of water.

PRODUCT USE

FastSet™ All-Crete™ is a dual-purpose product. As a non-metallic fluid grout meeting ASTM C1107, it is used for anchoring and grouting of anchor bolts, retrofitted reinforcing steel, steel column bases, bearing plates, precast concrete key ways and other installations that require high early and high ultimate strength.

Non-shrink characteristics make it stable and capable of handling load transfers. As a repair material, the product meets ASTM C928 R3 and is used to make partial depth or full depth repairs to roads, bridges, industrial floors and other concrete surfaces.

SIZES

- FastSet™ All-Crete™ – 22.7 kg (50 lb) bags

YIELD

• Yield will vary with water content. When used as a fluid grout, a 22.7 kg (50 lb) bag will yield approximately 13.6 L (0.48 cu. ft.) Yield will be reduced to approximately 12.3 L (0.43 cu. ft) per bag at a flowable consistency. As a repair material placed at a 76-152 mm (3-6 in.) slump, a 22.7 kg (50 lb) bag will yield approximately 12.3 L (0.43 cu. ft.) When extended with 11.3 kg (25 lb) of high quality -12 mm gravel, a 22.7 kg (50 lb) bag will yield approximately 16 L (0.56 cu. ft.)

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 C143/C143M Standard Test Method for Slump of Hydraulic Cement Concrete
- ASTM C191 Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle
- ASTM C672/C672M Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals
- ASTM C928 Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs
- ASTM C939 Standard Test Method for Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone Method)



- ASTM C1090 Standard Test Method for Measuring Changes in Height of Cylindrical Specimens of Hydraulic-Cement Grout
- ASTM C1107 Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink)
- ASTM C1437 Standard Test Method for Flow of Hydraulic Cement Mortar

PHYSICAL/CHEMICAL PROPERTIES

Typical results, obtained with FastSet™ All-Crete™ used as a grout, are shown in Table 1. Product complies with all the properties of ASTM C1107 when tested at 23 degrees C at a fluid consistency. Typical results obtained with FastSet™ All-Crete™ used as a repair material are shown in Table 2. Product complies with applicable portions of ASTM C928 R3 when tested at the conditions specified in Table 2.

INSTALLATION

INSTRUCTIONS FOR USE AS A GROUT

MIXING

FastSet™ All-Crete™ should be mechanically mixed for a minimum of 3 minutes.

- Use the minimum amount of water necessary to provide the desired flow (approximately 5.5 L (1.5 gallons) for a fluid consistency)
- Do not exceed a flow of 20 seconds by ASTM C939
- Add most of the mixing water to the mixer first
- Add the powder to the water and adjust as needed to achieve the desired consistency
- For a flowable consistency, reduce the water content to approximately 4.7 L (1.25 gallons) per bag

PLACEMENT

Surfaces to receive the grout must be clean and free of any type of foreign matter, grease, paint, oil, dust or efflorescence. In some cases, it may be necessary to roughen smooth surfaces or etch old ones with acid. The area should be thoroughly flushed and soaked with clean water prior to grouting, leaving no standing water. Place

the grout quickly and continuously using light rodding to eliminate air bubbles.

CURING

A damp cure of at least 1 day is necessary to control the non-shrink characteristics and maintain strength levels.

WORKING TIME

When properly mixed to a fluid consistency, FastSet™ All-Crete™ will fully comply with ASTM C1107 and retain a fluid consistency for 20 minutes at 21 degrees C (70 degrees F).

TEMPERATURE

Grout temperature should be maintained at 10 - 32 degrees C (50 to 90 degrees F) for best results. To achieve specified performance in accordance with ASTM C1107, maintain temperature as close to 21 degrees C as possible. Use cold water in hot weather and hot water in cold weather to achieve desired grout temperature. Do not pour grout if temperature is expected to go below 0 degrees C (32 F) within a 12 hour period.

INSTRUCTIONS FOR USE AS A REPAIR MORTAR

MIXING

FastSet™ All-Crete™ should be mechanically mixed for a minimum of 3 minutes. Use the minimum amount of water necessary to provide a slump of about 76-152 mm (3 – 6 in.) Add approximately 3.2 L (7 pints) of water to the mixer first. Add the powder to the water and adjust as needed to achieve the recommended consistency. For repairs deeper than 51 mm (2 in.), add 11.3 kg (25 lb) of high quality gravel with a top size of 13 mm or less to the mix. Mix water will vary depending on the dampness of the aggregate. Do not add more water than needed to achieve a slump of 76-152 mm (3 – 6 in.)

SURFACE PREPARATION

- Remove all spalled areas and areas of unsound concrete and patching
- The hole should have a vertical edge of 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

PLACEMENT

- 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 special curing procedures are required. Curing at ambient conditions is preferable.

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.

TABLE 1 FASTSET™ ALL-CRETE™ TESTED AS A GROUT			
Consistency	Fluid	Flowable	Plastic
Approximate water content per bag	5.5 L (1.5 gallon)	4.7 L (1.25 gallons)	3.2 L (7 pints)
Flow, ASTM C939	20 - 30 sec	-	-
Flow, at 5 drops, ASTM C1437	-	125 - 145	100 - 125
Working time	About 20 min	About 15 min	About 15 min
Setting time Final, ASTM C191	20 - 45 min	20 - 45 min	20 - 45 min
Compressive strength, ASTM C109			
3 hours after set	13.8 Mpa (2000 psi)	17.2 MPa (2500 psi)	20.7 Mpa (3000 psi)
24 hours	27.6 Mpa (4000 psi)	31 MPa (4500 psi)	34.5 Mpa (5000 psi)
7 days	34.5 Mpa (5000 psi)	37.9 MPa (5500 psi)	41.4 Mpa (6000 psi)
28 days	44.8 MPa (6500 psi)	51.7 MPa (7500 psi)	55.2 MPa (8000 psi)
Slant shear bond strength, ASTM C928			
1 day	6.9 Mpa (1000 psi)	6.9 Mpa (1000 psi)	6.9 MPa (1000 psi)
7 days	10.3 Mpa (1500 psi)	10.3 MPa (1500 psi)	10.3 MPa (1500 psi)
Height change, ASTM C1090			
1, 3, 7 and 28 days	0 - 0.2%	0 - 0.2%	0 - 0.2%

TABLE 2 FASTSET™ ALL-CRETE™ TESTED AS A REPAIR MATERIAL			
	ASTM C928 R3 Specifications	FastSet™ ALL-CRETE™	FastSet™ ALL-CRETE™
Aggregate extension	None	None	13.6 kg of -12 mm gravel
Slump, ASTM C143	75 mm	75 - 150 mm	75 - 150 mm
Setting time, ASTM C191 Final	No requirement	20 - 45 min	20 - 45 min
Compressive strength, ASTM C109			
3 hours	20.7 Mpa (3000 psi)	20.7 MPa (3000 psi)	20.7 MPa (3000 psi)
24 hours	34.5 Mpa (5000 psi)	34.5 Mpa (5000 psi)	34.5 Mpa (5000 psi)
7 days	34.5 Mpa (5000 psi)	41.4 Mpa (6000 psi)	41.4 Mpa (6000 psi)
28 days	No requirement	55.2 MPa (8000 psi)	55.2 MPa (8000 psi)
Slant shear bond strength, ASTM C928			
1 day	6.9 Mpa (1000 psi)	6.9 Mpa (1000 psi)	6.9 Mpa (1000 psi)
7 days	10.3 Mpa (1500 psi)	10.3 Mpa (1500 psi)	10.3 Mpa (1500 psi)
Scaling resistance, ASTM C672	5 kg/m3 (1 lb/ft3)	0.064 kg/m3 (0.004 lb/ft3)	-

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