

FASTSET™ Non-SHRINK GROUT

PRODUCT No. 1585-20, 1585-50, 1585-09

DIVISION 3

Maintenance of Concrete
03 01 00
Non Shrink Grouting
03 62 00

PRODUCT DESCRIPTION

FastSet™ Non-Shrink Grout is a multi-purpose product and can be used for structural repair, grouting, anchoring, leveling and much more.



PRODUCT USE

As a fluid grout meeting ASTM C1107, FastSet™ Non-Shrink Grout 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

• 60 lb (27.2 kg) bags • 50 lb. (22.7 kg) bags • 20 lb (9.1 kg) pails

YIELD

Yield will vary with water content. When used as a fluid grout, a 60 lb (27.2 kg) bag will yield approximately 0.58 cu ft (16.4 L). Yield will be reduced to approximately 0.55 cu ft (15.6 L) per bag at a flowable consistency. As a repair material placed at a 3" - 6" (75 - 150 mm)

slump, a 60 lb (27.2 kg) bag will yield approximately 0.52 cu ft (14.7 L). When extended with 30 lb (13.8 kg) of high quality -1/2" (-12 mm) gravel, a 60 lb (27.2 kg) bag will yield approximately 0.7 cu ft (20 L).

TECHNICAL DATA

- 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 Method 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

TABLE 1 – FASTSET™ NON-SHRINK GROUT TESTED AS A GROUT, TYPICAL

Consistency	Fluid	Flowable	Plastic
Approx. water content per bag	7 qt (6.6 L)	6 qt (5.7 L)	5 qt (4.7 L)
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	Fluid	Flowable	Plastic
3 hours after set	2,000 psi (13.8 MPa)	2,500 psi (17.2 MPa)	3,000 psi (20.7 MPa)
24 hours	4,000 psi (27.6 MPa)	4,500 psi (31.0 MPa)	5,000 psi (34.5 MPa)
7 days	5,000 psi (34.5 MPa)	5,500 psi (37.9 MPa)	6,000 psi (41.4 MPa)
28 days	6,500 psi (44.8 MPa)	7,500 psi (51.7 MPa)	8,000 psi (55.1 MPa)
Slant Shear, ASTM C928	Fluid	Flowable	Plastic
1 day	1,000 psi (6.9 MPa)	1,000 psi (6.9 MPa)	1,000 psi (6.9 MPa)
7 days	1,500 psi (10.3 MPa)	1,500 psi (10.3 MPa)	1,500 psi (10.3 MPa)
Height Change ASTM C1090	Fluid	Flowable	Plastic
1, 3, 7, and 28 days	0 – 0.2%	0 – 0.2%	0 – 0.2%

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Aggregate Concrete (Flow Cone Method)

- ASTM C1090 Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout
- ASTM C1107/C1107M Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
- ASTM C1437 Standard Test Method for Flow of Hydraulic Cement Mortar

PHYSICAL/CHEMICAL PROPERTIES

Typical results, obtained with FastSet™ Non-Shrink Grout used as a grout, are shown in Table 1. Product complies with all the properties of ASTM C1107 when tested at 73 degrees F (23 degrees C) at a fluid consistency. Typical results obtained with FastSet™ Non-Shrink Grout 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

INSTALLATION INSTRUCTIONS FOR USE AS A GROUT

MIXING

FastSet™ Non-Shrink Grout should be mechanically mixed for a minimum of 3 minutes.

- Use the minimum amount of clean water necessary to provide the desired flow (approximately 7 qt (6.6 L) 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 5.5 qt (5.2 L) 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™ Non-Shrink Grout will fully comply with ASTM C1107 and retain a fluid consistency for 20 minutes at 70 degrees F (21 degrees C).

TEMPERATURE

Grout temperature should be maintained at 50 - 90 degrees F (10 - 32 degrees C) for best results. To achieve specified performance in accordance with ASTM C1107, maintain temperature as close to 70 degrees F (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 32 degrees F (0 degrees C) within a 12 hour period.

INSTRUCTIONS FOR USE AS A REPAIR MORTAR

MIXING

FastSet™ Non-Shrink Grout should be mechanically mixed for a

TABLE 2 - FASTSET TESTED AS A REPAIR MATERIAL, TYPICAL

	ASTM C928 R3 Specifications	FastSet™ Non-Shrink Grout	FastSet™ Non-Shrink Grout
Aggregate extension		None	27.5 lb (12.5 kg) of -1/2" (-12 mm) gravel
Slump, ASTM C143	> 3" (75 mm)	3" - 6" (75 - 150 mm)	3" - 6" (75 - 150 mm)
Setting time, ASTM C191			
Final	No requirement	20 - 45 min	20 - 45 min
Compressive strength, ASTM C109			
3 hours	3,000 psi (20.7 MPa)	3,000 psi (20.7 MPa)	3,000 psi (20.7 MPa)
24 hours	5,000 psi (34.5 MPa)	5,000 psi (34.5 MPa)	5,000 psi (34.5 MPa)
7 days	5,000 psi (34.5 MPa)	6,000 psi (41.4 MPa)	6,000 psi (41.4 MPa)
28 days	No further requirement	8,000 psi (55.2 MPa)	8,000 psi (55.2 MPa)
Slant shear bond strength, ASTM C928			
1 day	1,000 psi (6.9 MPa)	1,000 psi (6.9 MPa)	1,000 psi (6.9 MPa)
7 days	1,500 psi (10.3 MPa)	1,500 psi (10.3 MPa)	1,500 psi (10.3 MPa)
Scaling resistance, ASTM C672	<1 lb/ft3 (5 kg/m3)	0.004 lb/ft3 (0.129 kg/m3)	-

minimum of 3 minutes.

- Use the minimum amount of water necessary to provide a slump of about 3" - 6" (75 - 150 mm).
- Add approximately 4 qt (3.8 L) 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 2" (51 mm), you can add 30 lb (13.6 kg) of high quality gravel with a top size of 1/2" (12 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 3" - 6" (75 - 150 mm).

SURFACE PREPARATION

- Remove all spalled areas and areas of unsound concrete and patching
- The hole should have a vertical edge of 1/2" (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.

AVAILABILITY

FastSet™ Non-Shrink Grout is available at leading concrete construction supply houses and distributors. Contact QUIKRETE® Construction Products for the name of the nearest dealer.

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.

MAINTENANCE

None required.

TECHNICAL SERVICES

The QUIKRETE® Companies maintain technical field representatives throughout the country.

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



www.quikrete.com