NON-SHRINK PRECISION GROUT

PRODUCT NO. 1585-00

DIVISION 3

Non-Shrink Grouting
03 62 00

PRODUCT DESCRIPTION

QUIKRETE® Non-Shrink Precision Grout is a high strength, non-metallic, Portland cement based material with expansive additives designed for grouting all types of machinery, steel columns, bearing plates, pre-cast concrete, and anchoring applications.

PRODUCT USE

Typical applications for QUIKRETE® Non-Shrink Precision Grout include grouting of:

- All types of machinery
- Steel columns
- Bearing plates
- Precast concrete
- Other anchoring conditions that require high in-service strength

The non-shrink characteristics of Non-Shrink Precision Grout make it stable and capable of handling high load transfers.

SIZES

- QUIKRETE® Non-Shrink Precision Grout – 50 LB (22.7 kg) bags

YIELD

- Each 50 lb (22.7 kg) bag of QUIKRETE® Non-Shrink Precision Grout will yield 0.45 cu ft (12.7 L) at flowable consistency.

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 C827 Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures
- 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 from Hydraulic-Cement Grout
- ASTM C1107 Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
- ASTM C1107 Standard Test Method for Flow of Hydraulic Cement Mortar
- ASTM E488 Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements

U.S. Army Corps of Engineers (USACE) - CRD 621

PHYSICAL/CHEMICAL PROPERTIES

QUIKRETE® Non-Shrink Precision Grout complies with all properties of ASTM C1107 and CRD 621 producing the results shown in Table 1.

TABLE 1 TYPICAL PHYSICAL PROPERTIES AT 73°F (23°C)

Compressive strength, ASTM C109 modified per ASTM C1107	
Plastic consistency	
1 day	3000 psi (20.7 MPa)
3 days	9500 psi (65.5 MPa)
7 days	10,000 psi (68.9 MPa)
28 days	14,000 psi (96.5 MPa)
Height change, ASTM C1090	
1, 3, 7 and 28 days	0 - 0.2%
Height change, ASTM C827	+ 0.6%
Flowable consistency	
1 day	3000 psi (20.7 MPa)
3 days	9000 psi (62.1 MPa)
7 days	9500 psi (65.5 MPa)
28 days	12,500 psi (86.2 MPa)
Height change, ASTM C1090	
1, 3, 7 and 28 days	0 - 0.2%
Height change, ASTM C827	+ 0.4%
Fluid consistency	
1 day	2500 psi (17.2 MPa)
3 days	5000 psi (34.5 MPa)
7 days	6000 psi (41.4 MPa)
28 days	8000 psi (55.2 MPa)
Height change, ASTM C1090	
1, 3, 7 and 28 days	0 - 0.2%
Height change, ASTM C827	+ 0.3%
Pull-out strength, ASTM E488[1]	35,000 psi (241 MPa)

[1] 1 1/4" (31 mm) bolts embedded 9" (225 mm) deep in 3" (75 mm) hole in 2000 psi (13.8 MPa) concrete.

INSTALLATION

SURFACE PREPARATION

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 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.

MIXING

Add the minimum amount of water necessary to produce the desired flow characteristics as indicated in Table 2. Do not add more water than the amount needed to produce a 20-second flow per ASTM Test Method C 939. QUIKRETE® Non-Shrink Precision Grout should be mechanically mixed for a minimum of 5 minutes.

TABLE 2

APPROXIMATE WATER REQUIRED FOR 50 LB (22.7 KG) OF GROUT	
Plastic	1 gal (3.8 L)
Flowable	1 gal + 1 pt (4.3 L)
Fluid	1 gal + 3 pt (5.2 L)

WORKING TIME

When properly mixed to a fluid consistency QUIKRETE® Non-Shrink Precision Grout will comply with all portions of ASTM C1107 and CRD 621 and retain a fluid consistency for the maximum usable working times stated in Table 3.

TABLE 3

WORKING TIME	
Temperature	Working time
50°F (10°C)	25 min
73°F (23°C)	25 min
90°F (32°C)	15 min

CURING

A damp cure of at least 3 days is necessary to control the non-shrink characteristics and maintain strength levels.

PRECAUTIONS

- Additions of cement or other materials will eliminate the designed product qualities
- Water quantities may be affected by temperature, mixing method and batch size
- QUIKRETE® Non-Shrink Precision Grout should not be re-tempered
- Grout temperature should be maintained from 50 - 90 degrees F (10 - 32 degrees C) to achieve specified results. Use cold water in hot weather or 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.
- Mix no more than can be used in 30 minutes

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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