NON-SHRINK PRECISION GROUT

PRODUCT NO. 1585-00, -02

DIVISION **3**

03 62 00 Non-Shrink Grouting

PRODUCT DESCRIPTION

QUIKRETE® Non-Shrink Precision Grout is a high-strength, non-metallic, non-shrink grout designed for precision grouting and general construction applications. It can be mixed to a fluid, flowable, or plastic consistency requiring only the addition of clean water.

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 or void filling conditions that require high strength

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

SIZES

- 50 lb (22.6 kg) bags

YIELD

- Each 50 lb (22.6 kg) bag will yield 0.45 ft^3 (12.7 L) at flowable consistency

TECHNICAL DATA

APPLICABLE STANDARDS

- ASTM C109 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 C1437 Standard Test Method for Flow of Hydraulic Cement Mortar
- ASTM E488 Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements
- US Army Corps of Engineers (COE) CRD-C 621 Specification for Non-Shrink Grout
- 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

QUIKRETE® Non-Shrink Precision Grout complies with the physical requirements of ASTM C1107 and CRD 621. Typical results obtained for QUIKRETE® Non-Shrink Precision Grout, when tested at 73.5 ºF ± 3.5 ºF (23.0 ºC ± 2.0 ºC), are shown in Table 2.

INSTALLATION

SURFACE PREPARATION

Wear the appropriate personal protective equipment. All grouting surfaces should be clean and free of foreign substances including corrosion, if present on steel. Remove all spalled areas and areas of unsound concrete. Preparation work done on the grouting surfaces should be completed by high pressure water blast, breaker, hammer, or other appropriate mechanical means to obtain a properly prepared surface. Saturate repair area with clean water before grouting to ensure SSD condition. No standing water should be left in the repair area. Refer to current ICRI Guide 310.2R for additional surface preparation information.

MIXING

WEAR IMPERVIOUS GLOVES, such as nitrile when handling product.

QUIKRETE® Non-Shrink Precision Grout should be mechanically mixed for a minimum of 3 minutes using a 5 gallon (19 L) bucket with a ½ in (13 mm) drill and paddle mixer. For larger applications, a standard mortar mixer may be used. Add only enough water to achieve the preferred consistency listed in Table 2. Add the powder to the water and mix to a lump free consistency. Typical starting water contents can be found in Table 1.

APPLICATION

WEAR IMPERVIOUS GLOVES, such as nitrile when handling product. Place the grout quickly and continuously using proper consolidation techniques when possible (i.e. light rodding, vibrating, tamping, etc.) to eliminate air bubbles.

The typical application depth of QUIKRETE® Non-Shrink Precision Grout is up to 3 in (75 mm). For most applications, it may be placed up to 6 in (150 mm) in depth. When placing at depths over 3 in (75 mm), the product

may be extended with high quality 3/8 in (9.5 mm) pea gravel, at a rate of approximately 25 lb (11.3 kg) of gravel per 50 lb (22.6 kg) bag of QUIKRETE® Non-Shrink Precision Grout. For these applications which are over 3 in (75 mm) in depth, using either neat or extended material, care should be taken to not overwater, which may allow segregation to occur.

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 (other than gravel when extended as previously noted) 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
- Mix no more grout than can be placed in 25 minutes
- Follow ACI 305R when using product in hot weather
- Follow ACI 306R when using product in cold weather
- Use a consistent water temperature when mixing multiple batches, to prevent performance fluctuations

TABLE 1 TYPICAL WATER DEMAND PER 50 lb (22.6 kg) BAG

Consistency	Volume
Plastic	4-1/2 qt (4.3 L)
Flowable	5 qt (4.7 L)
Fluid	5-1/2 qt (5.2 L)

SAFETY

IMPORTANT: Read Safety Data Sheet carefully before using. **WEAR IMPERVIOUS GLOVES**, such as nitrile, mask, and eye protection.
DANGER: Causes sever skin burns and serious eye damage. Prolonged or repeated inhalation of dust may cause lung damage or cancer.
KEEP OUT OF REACH OF CHILDREN

SHELF LIFE

12 months from date of manufacture as long as the undamaged package is stored in a dry location that is protected from moisture, and out of direct sunlight.

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.

TABLE 2 TYPICAL PHYSICAL PROPERTIES AT 73.5 ºF (23 ºC)

Consistency	Plastic
Flow @ 5 Drops, ASTM C1437	100 to 125%
Compressive Strength, ASTM C109 (Modified)	
Age	*PSI (MPa)*
1 day	3500 (24.1)
3 days	9500 (65.5)
7 days	10000 (68.9)
28 days	14000 (96.5)
Height change, ASTM C1090	
@ 1, 3, 7 & 28 days	0.0 to 0.2%
Height change, ASTM C827	
	0.3%
Consistency	Flowable
Flow @ 5 Drops, ASTM C1437	125 to 145%
Compressive Strength, ASTM C109 (Modified)	
Age	*PSI (MPa)*
1 day	3000 (20.6)
3 days	9000 (62.0)
7 days	9500 (65.0)
28 days	12500 (86.2)
Height change, ASTM C1090	
@ 1, 3, 7 & 28 days	0.0 to 0.2%
Height change, ASTM C827	
	0.4%
Consistency	Fluid
Flow, ASTM C939	20 to 30 seconds
Compressive Strength, ASTM C109 (Modified)	
Age	*PSI (MPa)*
1 day	2500 (17.2)
3 days	5000 (34.4)
7 days	6000 (41.3)
28 days	8000 (55.1)
Height change, ASTM C1090	
@ 1, 3, 7 & 28 days	0.0 to 0.2%
Height change, ASTM C827	
	0.6%
Pull-Out Strength, ASTM E488[1]	
	35000 lbf

[1] 1-1/4 in (32 mm) bolts embedded 9 in (225 mm) deep in 3 in (75 mm) hole in 2000 psi (13.7 MPa) concrete.