



QUIKRETE® CABLE DUCT GROUT

PRODUCT NO. 1551-21

DIVISION 3

Maintenance of Stressing
Tendons
03 01 23

PRODUCT DESCRIPTION

QUIKRETE® Cable Duct Grout is a premium quality, high flow, unsanded, cementitious grout. QUIKRETE® Cable Duct Grout is specially formulated for the grouting of stressed cables, bars, and anchorages. QUIKRETE® Cable Duct Grout provides superior durability in bonded post tension systems by reducing chloride penetration and corrosion potential of steel tendons.

PRODUCT USE

QUIKRETE® Cable Duct Grout is designed for uses where high fluidity, low permeability, extended working time, no bleed, no settlement shrinkage, high strength, and chloride resistance is required. Typical applications include: grouting post tension cables or bars, pumping grout through small openings for relatively long distances, and grouting cable anchorages for highly stressed reinforcing steel.

SIZES

- QUIKRETE® Cable Duct Grout is packaged in 55 lb (25 kg) bags.

YIELD

- One 55 lb (25 kg) bag of QUIKRETE® Cable Duct Grout will yield approximately 0.6 ft³ (17 L).

TECHNICAL DATA

APPLICABLE STANDARDS

ASTM International

- ASTM C185, *Standard Test Method for Air Content of Hydraulic Cement Mortar*
- ASTM C939, *Standard Test Method for Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone Method)*
- ASTM C940, *Standard Test Method for Expansion and Bleeding of Freshly Mixed Grouts for Preplaced-Aggregate Concrete in the Laboratory*
- ASTM C942, *Standard Test Method for Compressive Strength of Grouts for Preplaced-Aggregate Concrete in the Laboratory*
- ASTM C953, *Standard Test Method for Time of Setting of Grouts for Preplaced-Aggregate Concrete in the Laboratory*
- ASTM C1090, *Standard Test Method for Measuring Changes in Height of Cylindrical Specimens of Hydraulic-Cement Grout*
- ASTM C1152, *Standard Test Method for Acid-Soluble Chloride in Mortar and Concrete*
- ASTM C1202, *Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration*
- PTI Guide Specification, *Specification for Grouting of Post-Tensioned Structures*

PHYSICAL PROPERTIES

QUIKRETE® Cable Duct Grout typical physical properties are shown in Table 1.

TABLE 1 TYPICAL LABORATORY TEST RESULTS FOR QUIKRETE® CABLE DUCT GROUT

Fluidity (Initial), <i>ASTM C939 (PTI)</i> seconds	9 – 20
Fluidity (30 minutes), <i>ASTM C939 (PTI)</i> seconds	9 – 30
Compressive strength, <i>ASTM C942</i>	
1 day	2,500 psi (17.2 MPa)
3 days	4,500 psi (31.0 MPa)
7 days	7,500 psi (51.7 MPa)
28 days	9,000 psi (62.1 MPa)
Pre-Hardened Expansion (3 hours), <i>ASTM C940</i>	0 – 2 %
Bleeding (3 hours), <i>ASTM C940</i>	0%
Bleeding (3 hours) – <i>ASTM C940 (PTI), Wick Induced</i>	0%
Bleeding (% at 50 PSI), <i>PTI Clause 4.4.6.2 Schupack Pressure Bleed Test</i>	0%
Restrained Volume Change, <i>ASTM C1090</i>	
1 day	> 0%
28 days	< 0.2%
Setting Time, <i>ASTM C953</i>	
Final	3 - 12 Hours
Chloride Ion Penetration, <i>ASTM C1202 (PTI)</i> coulombs	< 2,500
Total Acid Soluble Chlorides, <i>ASTM C1152</i>	< 0.08%
Wet Density - Laboratory, <i>ASTM C185</i>	~120 lbs / ft ³ (1922 kg / m ³)

INSTALLATION

EQUIPMENT

QUIKRETE® Cable Duct Grout should be used in equipment that allows for continuous operation with little variation in pressure and a recirculation system to ensure fluidity is maintained while grouting is not in progress. QUIKRETE® Cable Duct Grout should be mixed using mixing equipment specifically designed to ensure proper mixing of post tension materials is achieved. Optimal mixing is typically achieved using high-speed shear mixers (*Jiffler, etc.*)

METHODS

QUIKRETE® recommends that Post Tensioning Institute (PTI) procedures be followed for surface preparation, equipment, application, and curing procedures. Refer to the following publications:

- PTI: Specification for Grouting of Post-Tensioned Structures

PREPARATION

Ensure all ducts, anchorages, block-outs, opening, inlets are kept clean and free of debris, etc. after the tendons have been installed. Confirm all connections from the grout hoses to the inlets and outlets are airtight and clean. Immediately prior to grouting, it is recommended that oil-free compressed air be blown through the system to confirm ducts are clean. All grout vents should be open and grout should be injected from near the lowest end of tendons in an uphill direction.

APPLICATION

Wear impervious gloves, such as nitrile. QUIKRETE® Cable Duct Grout can be mixed to plastic, flowable, or fluid consistencies depending on the job application. When used as a grout for post-tension applications, the grouting should be initiated as quickly as possible after the steel is stressed. Add water sparingly until the specified fluidity in Table 1 is achieved. Do not exceed 1.5 gallons (5.7 liters) of water per 55 lb (25 kg) of QUIKRETE® Cable Duct Grout. The grout should be mixed for a minimum of 5 minutes. It is recommended to only mix enough QUIKRETE® Cable Duct Grout that can be placed in 1 hour to take full advantage of the product's expansive properties. QUIKRETE® Cable Duct Grout is designed to be used in applications which are fully restrained or confined on all surfaces.

PRECAUTIONS

- **Wear impervious gloves, such as nitrile.**
- QUIKRETE® Cable Duct Grout should not be placed in pours exceeding 2 inches (50 mm).
- It is best to apply QUIKRETE® Cable Duct Grout when ambient temperatures are between 50° F (10° C) and 86° F (30° C). The proper precautions and approvals from specifying authorities are required if product is applied when ambient temperatures are not within this temperature range.
- For more information, refer to Safety Data Sheet (SDS) online at www.quikrete.com

WARRANTY

The QUIKRETE® Companies, Inc. warrant this product to be of merchantable quality when used or applied in accordance with the instructions hereon. 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 at One Securities Centre, 3490 Piedmont Rd., NE, Suite 1300, Atlanta, GA 30305. THIS WARRANTY IS ISSUED AND ACCEPTED IN LIEU OF ALL OTHER EXPRESS WARRANTIES AND EXPRESSLY EXCLUDES LIABILITY FOR CONSEQUENTIAL DAMAGES.

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