

DURAGROUT™

General Purpose, Non-Shrink Structural Grout

MANUFACTURER

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PRODUCT DESCRIPTION

DURAGROUT is a ready-mixed, non-shrink, non-metallic, flowable, high-strength structural grout. DURAGROUT contains a balanced blend of washed and graded silica sands, portland cement, flow improvement compounds, and a shrinkage compensating system which produces a volume stable structural grout.

DURAGROUT produces high early and ultimate strengths without intermediate or latent shrinkage. DURAGROUT remains stable without failure from compressive loading, impact, lateral thrusts, high heat or continuous vibration. It is scientifically proportioned and is ready for use at varied consistencies from plastic to fluid.

Basic Use: DURAGROUT is used where non-shrink, high-strength, structural, durable grout is required such as: precise machine bases, pump and equipment bases, structural columns, machine tools, compressors, and anchor bolts.

ESTIMATING

DURAGROUT is available in 50-pound (22.7-kilogram) bag and yields .44 cubic foot (13 liter) approximately.

TECHNICAL DATA

Applicable Standards:

CRD C 621
ASTM C 1107

Approximate Water Requirements

Mixing water per 50 lb. bag (22.7 kg):

Plastic 3.5 qts. (3.2 L)

Fluid 4.5 qts. (4.3 L)

Working Time: approximately 30 minutes

Initial Setting Time: approximately 5 hours

Typical Volume Change:

ASTM C 1090	3 days	28 days
Fluid	+ 0.02%	+0.03%

Typical Compressive Strength: psi (MPa)

ASTM C 1107 and CRD C 621

	<u>1 Day</u>	<u>7 Days</u>	<u>28 Days</u>
Stiff Plastic	4000(26)	8000 (54)	10000 (68)
Flowable	2300 (15)	7000 (48)	8300 (57)
Fluid	1400 (10)	5000 (34)	6500 (45)

INSTALLATION

Surface preparation: Clean surface of oil, grease, dirt, laitance and loose material, down to sound concrete. Metal surfaces are to be free of rust or other foreign material. Clean bolt holes, bolts and the underside of bed plates. After roughening the concrete surfaces, saturate the surfaces and bolt holes with water for 24 hours prior to grouting.

Forming: Construct a rigid, watertight form around the bearing plate or object to be grouted. Form elevation should be approximately one vertical inch higher than the highest point to be grouted. On large pours a form sloped at a 45-degree angle or "head box" should be employed to facilitate placement. Side and end forms should be positioned at least one horizontal inch from the bearing plate or equipment base. Placement side form should be at least two inches from the object to be grouted. Do not place grout in large, unsupported open areas.

Mixing instructions: Fluid to Plastic Locate the mixing equipment (a paddle-type mortar mixer) as close to the area to be grouted as possible. Prior to mixing the first batch of grout, wash out the mixer and determine the number of bags to be mixed at one time. Mix only the amount of grout that can be placed in 30 minutes. For fluid consistency, place into the mixer about $\frac{3}{4}$ of the required water. Mix the grout to a doughy state, being careful not to overload the mixer to the point of stalling. After all lumps have disappeared, add remaining water. Continue to mix for a total of 3 to 5 minutes or to uniform consistency. For consistencies stiffer than fluid, add the total amount of water at the beginning of the mixing cycle. Continue to mix for a total of 3 to 5 minutes or to uniform consistency.

Extending DURAGROUT with pea gravel: Choose a clean (free of organic material), well-graded, 3/8 inch (10 mm) aggregate. Soak with clean water. Drain off excess water prior to mixing. First mix DURAGROUT to desired consistency, then add no more than 25 pounds (12 kg) of 3/8 inch (10 mm) aggregate for every 50 lb. bag of DURAGROUT to the batch. Continue to mix until the aggregate is thoroughly dispersed throughout the batch.



Placing: Fluid to Flowable :Just before grouting remove all ponded water from the surface of the concrete substrate leaving only a damp surface. Whenever possible, place grout in bolt holes first. Grout should be placed from one direction only in order to reduce the amount of voids under the plate. Grout should be placed without stopping until the forms are overflowing and entrapped air can no longer be seen in the grout as it flows from under the plate and over the forms. **DURAGROUT**, when mixed to a **fluid or flowable** consistency, can be placed by either pumping or gravity flowing. If the pumping method is to be used, the discharge end of the pump hose should be placed at the most distant point to be grouted. The pump hose should be withdrawn as the grouting process continues. If the gravity flowing method is used, a slanted form at a 45° angle to the horizontal, or a funnel, should be mounted at the point at which the grout is introduced into the form. The height of the slanted form (or funnel) should be approximately 6 to 8 inches (150 mm to 200 mm) higher than the highest point to be grouted. The grout should be poured across the slant form, or through the funnel, until the grout has completely filled the formed area and is overflowing the forms. If **DURAGROUT** is **plastic**, use rods, chains or tamping to compact grout and to remove voids if necessary.

Curing instructions: Exposed **DURAGROUT** must be protected and cured immediately after placement. Cover with clear plastic, damp clean rags or burlap for a period of 72 hours. Do not let the rags or burlap dry out during the curing period. After the initial 72 hours curing period, and after the forms have been removed, an ASTM-C-309 compliant curing compound by L&M should be applied to all exposed areas for a long term cure.

FOR BEST RESULTS:

Do not mix more **DURAGROUT** than can be placed in 30 minutes. Avoid **DURAGROUT** placement when temperatures are, or will be, below 40°F (5°C) within 24 hours. Do not over-vibrate fluid consistency grout. Follow ACI recommended practices. Refer to L&M **Guide to Precision Structural Grouts**.

DO NOT ADD PLASTICIZER, ACCELERATORS OR ADDITIONAL CEMENT TO DURAGROUT.

PRECAUTIONS

Contains portland cement and silica sand. Freshly mixed cement is highly alkaline and may cause skin injury. Avoid creating and inhaling dust. Provide ventilation and respiratory protection. Wear skin and eye protection. Dust mask recommended. Please refer to Product Material Safety Data Sheet (MSDS) before using.

STORAGE/SHELF LIFE

DURAGROUT bags are to be kept in dry storage to prevent water contamination. Shelf life is one (1) year in unopened bags when properly stored.

WEBSITE

L&M's convenient internet website offers instant access to Tech Data Sheets, Material Safety Data Sheets, product updates, and other useful information. Visit www.lmcc.com and follow the easy steps. L&M is ready to respond to your concrete information needs - anytime - anywhere!

SHORT SPEC

036000: Cementitious non-shrink grout: shall meet ASTM C-1107, non-metallic and minimum 6,500 psi. "**DURAGROUT**" by L&M Construction Chemicals, Inc.

LIMITED WARRANTY

This product is warranted to be free of defects in material and workmanship, and conform to L&M Construction Chemicals ("L&M") quality control standards. All recommendations, statements and technical data herein are based on tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty or guaranty of any kind, expressed or implied including but not limited to, an implied warranty of merchantability or an implied warranty of fitness for a particular purpose. Satisfactory results depend upon many factors beyond L&M's control. User shall rely on his or her own information and tests to determine suitability of the product for the intended use and user assumes all risk, loss, damage, expense and liability resulting from his or her direct use, indirect use or consequential to their use of the product. L&M shall not be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use or inability to use the product. L&M's sole responsibility shall be to replace that portion of the product which proves to be defective. Any warranty claim must be made within six (6) months from the date of the claimed breach. This limited warranty applies only if the product was properly installed and used according to all instructions and was properly stored prior to use.

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