

DURAPATCH HIWAY™

Rapid Set, Repair Mortar

MANUFACTURER

L&M Construction Chemicals, Inc.
14851 Calhoun Road
Omaha, NE 68152
Phone: (402)453-6600
FAX: (402)453-0244
Website: www.lmcc.com

PRODUCT DESCRIPTION

DURAPATCH HIWAY is a one-component, fiber-reinforced, rapid strength-gaining cement based patching system. This non-shrink, high strength cement patch contains the necessary ingredients to assure rapid strength, sulfate resistance, elevated temperature stability, superior bondability and increased flexural and tensile strengths.

Basic Uses: The time-proven benefits of non-shrink, positive bonding, rapid strength, and freeze-thaw stability assures trouble-free, precise patch repairs of parking decks, bridge decks, utilities, highways, bridge structures and ramps. The non-metallic, non-staining and instant strength assure a concrete repair patch for use in highly humid, cold and wet conditions.

FEATURES & BENEFITS

- Rapid strength gain.
- Just add water.
- Fast turn over of repair area.
- Excellent freeze/thaw properties.
- Flowable consistency.
- Only air curing required.

Versatility: For cold weather repairs, this is the patch for bridge decks, highway pavements, and structures. **DURAPATCH HIWAY** will set up and positively bond for rapid winter damage repair.

Pavement Joint Repair: The quick high strength allows repair of spalled pavement joints and reopening to traffic within 2 hours to eliminate costly overnight traffic disruption.

Full Depth Repair: For structural repairs, the early strength and all weather stability make **DURAPATCH HIWAY** an excellent replacement for sand and cement mortars.

ESTIMATING

DURAPATCH HIWAY is available in 50 pound (22.7 kg) multi-walled bags.

Coverage: One bag yields 0.44 cubic foot (12.5 liters) or 10 square feet (.9 square meter) ½ inch (13 mm) thick. A 60% extension using ½ inch (13 mm) hard, rounded aggregate yields approximately .63 cubic foot (18 liters).

TECHNICAL DATA

Applicable Standards: ASTM - C 928
ASTM - C 666
ASTM - C 387

Physical Properties at 72°F (22°C)

Data based on typical performance.

Flow ASTM C-230Plastic
Set Time ASTM-C-191: Initial set10-15 min.
Final set.....15-20 min.

Compressive Strength,	2 hours	2500 (17)
ASTM-C109, psi (MPa)	1 day	5000 (34)
	28 days	8100 (54)

Flexural Strength,	24 hours	1120 (8)
ASTM-C 78, psi (MPa)	7 days	1260 (9)
	28 days	1880 (13)

Freeze Thaw ASTM-C 666, 300 cycles
Durability factor on avg. 99.9

Adhesion, Shear
ASTM-C-882, psi (MPa) 28 days 3000 (20)

INSTALLATION

Surface Preparation: Prepare surface in accordance with ICRI Technical Guideline No. 03730. Saw cut a minimum of 1 inch (25mm) deep to form patch boundaries. Remove all concrete not bonded to the rebar down to 3/4"(20mm) below the rebar. Remove rust and scale from rebar by sandblasting. Abrade concrete surface to at least medium texture (Ref. CSP 5 or greater, ICRI 03732). Flush with water to remove all dust. Remove standing water before placing patch. Leave surface damp (saturated surface dry - SSD).

Equipment: Have proper measuring containers, tools and adequate labor to place the patch. For best results on large and medium sized projects, use a gas powered mortar mixer. For small batches, use a minimum 1/2" slow speed drill fitted with mixing paddle. Do not mix by hand.

Addition of Aggregate: In deep patches of 3 inches (over 75 mm) or more, extend each bag with up to 60% by weight (30 pounds per bag) with washed, sound, 1/2 inch (13 mm), hard, rounded aggregate or non-calcareous, crushed angular aggregate to reduce heat of hydration.

Mixing: Locate the mixing operation close to the repair areas. At 70°F (21°C) mix no more than be placed, and finished within 10 minutes. Proper water content is critical. Add 3 to 3 1/2 quarts (2.8 to 3.1 L) of water per bag depending on consistency desired.



DURAPATCH HIWAY



Mixing Order: Pour clean water into mixer. Add damp aggregates for deep patches. Add powdered **DURAPATCH HIWAY**; mix until uniform in consistency (3 minutes) and place immediately.

Placing: Immediately place in one lift in prepared area from one side to the other. Work firmly into bottom and sides of void to remove air and assure proper bond. Level and screed to elevation of existing concrete. Minimal finishing is required. Match existing concrete texture. Do not retemper.

Cold Weather--below 35°F (2°C): Heat the concrete until warm. Pre-condition **DURAPATCH HIWAY** to 70°F (21°C) before use. Use warm water to increase rate of hardening. Do not use accelerators or antifreeze.

Hot Weather--over 85°F (29°C): Use ice water and keep patch cool. Do not place on hot, dry substrate.

Curing: No curing is required, but in extreme heat and windy conditions keep patches covered and damp if possible. At 70°F (21°C) the patch will hold up to traffic within 2 hours.

FOR BEST RESULTS:

- Surface application temperature should be 35°F (2°C) and rising.
- Do not retemper.
- After placing, protect from direct heat and sun.
- Do not add cement, sand, fine aggregate or accelerator. Do not featheredge. Follow ACI recommended practices for placement.
- Mix no more **DURAPATCH HIWAY** than can be placed in 10 minutes.
- Perform surface preparation in compliance with ICRI Technical Guidelines No. 03730 and 03732
- Surfaces must be clean of oil, grease, dirt and laitance down to sound concrete. Soak surfaces with clean water prior to placement.

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

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

FAX ON DEMAND/WEBSITE

L&M's exclusive Fax On Demand and its convenient Internet website offer instant access to Tech Data Sheets, Material Safety Data Sheets, product updates, and other useful information. Simply dial 800-839-9887 or visit www.lmcc.com and follow the easy steps.

SHORT SPEC

03930: Concrete Rehabilitation: Rapid set, cement-based, repair mortar, minimum 2500 psi (17 mpa) in two (2) hours. "**DURAPATCH HIWAY**" 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.

For Professional Use Only.

©2005, L&M Construction Chemicals, Inc