

UNIQUE® HIGH PERFORMANCE FAST SET MORTAR

DATA SHEET - UNIQUE® High Performance Fast Set Mortar

Product Description

UNIQUE® High Performance Fast Set Mortar (HPFS) is a blend of hydraulic cement, graded silica sand and performance-enhancing additives.

Recommended Uses

Use to repair roadways, industrial floors, loading docks, parking garages, bridge decks, footings and sidewalks.

Benefits / Features

- High early strength
- Freeze-thaw resistant
- Excellent bond strength
- Sulfate resistant
- Open to foot traffic in 1 hour
- Open to vehicle traffic in 3 hours
- Applicable to virtually every horizontal concrete application less than 6" deep

Limitations

Not intended for applications on unsound concrete or like surfaces. Not intended for applications over 6" deep. For deeper applications contact UNIQUE's Technical Department. For overlay applications at least one section should be prepared to evaluate the suitability of the materials and procedures.

Surface Determination

Why has the concrete failed? Is there presence of salt, freezing damage, drainage water, deteriorated control or expansion joints? The surface area to be repaired should be in solid condition.

Surface Preparation

The area to be repaired should be checked with a chipping hammer to ensure the exposed concrete is not scaling. If a section of concrete is deemed to be questionable, complete removal and replacement should be considered. Patching over control or expansion joints is not recommended. The quality and durability of the repair depends on the surface to be patched. Remove loose concrete, mineral salts, grease and paint that will limit bonding performance. Mineral salt should be treated with an acid wash to ensure its removal. Exposed rebar should be free of rust or scaling

then protected with a zinc oxide coating to reduce the probability of future rust development. Wet the repair area with water leaving it Saturated Surface Dry (SSD) during the repair. Any standing water should be removed.

For Best Results

For best results the water temperature should be between 55°F and 75°F.

- Warmer water will accelerate the set of the material
- Cooler water will slow the set of the material

Mixing

Organize work so that all personnel and equipment are in place before mixing. Roll or shake the sealed pail of **UNIQUE** HPFS mortar to ensure the product is thoroughly mixed prior to use. Use only clean, potable water. The use of a mortar mixer or variable speed drill is recommended.

UNIQUE HPFS mortar may be mixed using the percentages of water as shown in the table below:

Water	UNIQUE® High Performance Fast Set Mortar
20 - 22 oz.	10#
40 - 44 oz.	20#
3.3 - 3.4 qt.	50#

Use less water to achieve higher strengths. Do not exceed the recommended water percentages.

Place the desired quantity of water into the mixing container. While the mixer is running add **UNIQUE** HPFS mortar. Mix for the minimum amount of time required to achieve a lump-free, uniform consistency (usually 1 to 3 minutes). Do not re-temper. Do not mix more material than can be placed in a 10 minute period.

If mixing smaller amounts of **UNIQUE** HPFS mortar, thoroughly mix the entire pail of dry ingredients prior to adding the product to the water.

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UNIQUE Paving Materials Corp.
3993 East 93rd Street Cleveland, OH 44105
800-441-4880
www.uniquepavingmaterials.com

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Placement

Make sure surface is SSD and any standing water has been removed. Place, consolidate, screed and apply finish as soon as possible (DO NOT WAIT FOR BLEED WATER). Trowel mixed material into the voids of the existing concrete. Place product in full depth sections. Product may be trowel floated or texture finished. DO NOT layer material. DO NOT apply on frozen surfaces.

Extending

Option to extend up to 50% using clean pre-dampened 3/8" (ASTM-C33) aggregate.

Depth of Patch	ASTM C-33 Aggregate	HPFS Pounds	Aggregate pounds
1/2" to 1"	N/A	N/A	N/A
1" to 3"	25% by weight	10#	2.5#
3" to 6"	50% by weight	10#	5#
6"+	***	*** For thicker applications, contact UNIQUE's Technical Department	

Coverage Rates

HPFS	Water	Cubic Foot
10 #	22 oz.	.09
20 #	44 oz.	.19
50 #	3.4 qt.	.47

Packaging

Item #	Description	
52-00015	UNIQUE® High Performance Fast Set Mortar Bag (50#)	Special Order – 100 bags minimum quantity 50 (50#) bags per stretch wrapped pallet 840 (50#) bags per truckload
52-00001	UNIQUE® High Performance Fast Set Mortar Pail 5-gal (50#)	36 (50#) pails stretch wrapped per pallet 828 (50#) pails per truckload
50-00036	UNIQUE® High Performance Fast Set Mortar BLACK Pail 5-gal (50#)	
52-00038	UNIQUE® High Performance Fast Set Mortar Pail 5-gal (40#) (2-20# bags)	36 (60#) pails per stretch wrapped pallet 684 (60#) pails per truckload
52-00039	UNIQUE® High Performance Fast Set Mortar BLACK Pail 5-gal (40#) (2-20# bags)	

Clean up

Water soluble prior to drying. Clean container and tools prior to material drying.

Curing

Damp cure all **UNIQUE** HPFS mortar installations. Begin curing as soon as the surface has lost its moist sheen. Keep exposed surfaces wet for a minimum of 1 hour. When experiencing extended setting times due to cold temperature or the use of retarder, longer cure times may be required. The objective of damp curing shall be to maintain the continuously wet surface until the product has achieved sufficient strength.

Temperature

Warm environmental and materials temperatures will reduce the working time of **UNIQUE** HPFS mortar. To compensate for warm temperatures, keep material cool and use chilled water. Temperatures below 60°F will decrease the rate of strength gain. **UNIQUE** HPFS mortar should not be applied if surface temperature is below 45°F or above 90°F.

Shelf Life

Two years if stored in an unopened pail according to ACI Guidelines.

Freight

Class 55

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Truckload quantities are typical but may vary depending on destination, truck tare weight and/or trailer type (box van, flat bed, rail shipments or ocean freight container).

UNIQUE® HIGH-PERFORMANCE FAST SET MORTAR TEST RESULTS

ASTMC-109	Compressive Strength	<u>1hr.</u> 2500	<u>3 hrs.</u> 5500	<u>1 day</u> 6400	<u>7 days</u> 6900	<u>28 days</u> 8400
ASTMC-78	Flexural Strength			1000	1350	1575
ASTMC-882	Bond Strength (Slant Shear Test)			2300	3100	N/A
ASTMC-496	Splitting Tensile			625	975	1145
ASTMC-1473	Flow @ 5± min.				>148%	
ASTM C-403	Set Time	Initial: 15 minutes Final: 20 minutes				
ASTM C-267	Chemical Resistance (Sulfide solution)	No Weight Loss			56 days	
ASTM C-157 (As modified by ASTM C-928)	Length Change of Hardened Hydraulic-Cement				+0.036 wet bar -0.0144 dry bar	
ASTM C-672 (As modified by ASTM C-928)	Scaling Resistance	<u>Cycles</u>		<u>Rating</u>		
		5		0		
		10		0		
		15		0		
		20		0		
		25		0		
Test Temperature (Powder):	72° F	Water Content:		12.1 %		

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Caution:

This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive problems. THIS PRODUCT CONTAINS FREE SILICA. Any inhalation of dust may be harmful to your health. Excessive inhalation causes the risk of serious respiratory disease (SILICOSIS) and susceptibility to other possibly fatal disease. Some medical studies suggest a possible association between crystalline silica and incidence of cancer in humans. Take appropriate protective measure to avoid breathing dust. Use a NIOSH approved respirator for silica dust. For further information, please refer to the Safety Data Sheet.

Injurious to eyes and causes skin irritation. Contains Portland Cement and Lime. Avoid eye contact or prolonged contact with skin. Wash thoroughly after handling. In case of eye contact, flush with plenty of water for at least 15 minutes. Consult a physician immediately if irritation persists. Keep out of reach of children. Do not take internally.

Limited Warranty:

UNIQUE Paving Materials Corporation (UNIQUE) warrants that at the time and place we make shipment our materials will be of good quality and will conform with our published specifications in force on the date of acceptance of the order. THE FOREGOING WARRANTY SHALL BE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED. WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ALL OTHER WARRANTIES OTHERWISE ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM OR TRADE OR OTHERWISE ARE SPECIFICALLY DISCLAIMED. As the exclusive remedy for breach of this warranty, we will replace defective materials, provided, however, that the buyer examines the material when received and promptly notifies us in writing of any defect before the materials are used or incorporated into structure. Three (3) months after UNIQUE has shipped the materials, all our warranty and other duties with respect to the quality of the materials delivered shall conclusively be presumed to have been satisfied, all liability therefor terminates, and no action for breach of any duties may thereafter be commenced. UNIQUE shall in no event be liable for consequential damages. No warranty is made with respect to materials not manufactured by UNIQUE.

UNIQUE® is a registered trademark of Unique Paving Materials Corp.

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