

GENERAL:

These UPM® bituminous patching mixes are designed in various seasonal grades for use when the outside ambient temperature is in the range of -15°F (-26°C) to 100°F (38°C). Each grade shall be manufactured specifically to accommodate anticipated climatic conditions.

The bituminous patching mix shall consist of asphalt and crushed limestone aggregate within prescribed quantities and specifications to make a mixture, which will provide satisfactory coating, workability and adhesion characteristics. The patching mixture will be available in grades to function as a patch during cold and damp or during hot weather in bituminous and concrete pavement. The asphalt blend and aggregate shall conform to the following requirements.

LIQUID ASPHALT:

The bituminous material shall be UPM® liquid asphalt blend, from UNIQUE Paving Materials Corp. (UNIQUE), Cleveland, Ohio or from one of its approved blending facilities. The UPM blend shall meet the following requirements:

Kinematic Viscosity @ 140°F (60°C)	ASTM D 2170	350 to 4000 cSt (mm²/s)
Flash Point, Tag Open Cup	ASTM D 1310	200°F (93°C) minimum
Percentage of Water	ASTM D 95	Less Than 0.2%
Distillation to 680°F (360°C)	ASTM D 402	See Values Below

Temperature	Volume % Minimum	Total Distillate Maximum	Volume % Minimum	Original Sample Maximum
to 437°F (225°C)	0	0	0	0
to 500°F (260°C)	0	0.5	0	0
to 600°F (316°C)	10	65	0	18
Residue from distillation to 680°F (360°C) % Volume by Difference			73	95

TESTS ON RESIDUE FROM DISTILLATION:

Absolute viscosity @ 140°F (60°C)	ASTM D 2171	50 to 425 Poise (10 ⁻¹ Pa × s)
Penetration, Modified with Cone	ASTM D 5*	180 minimum
Ductility, 39°F (4°C), 1 cm/minute	ASTM D 113	50 minimum
Solubility in Trichloroethylene	ASTM D 2042	99.0% minimum

* Make this test in accordance with ASTM Method D 5, except utilize a penetration cone in place of the standard penetration needle. The cone shall conform to the requirements given in ASTM Method D 217, except that the interior construction may be modified as one desires. The total moving weight of the cone and attachments must be 150 ± 0.1 gram. Also the level of water in the transfer dish shall be lowered to less than the height of the sample and decant water from the top of the sample before transferring from the bath to the penetrometer.

AGGREGATE:

The aggregate shall be 100% crushed limestone and shall meet the following requirements:

SIEVE ANALYSIS ASTM C 136

Sieve	#9 ASTM D 448 Percent Passing	COMBINATION #9 & #89 Percent Passing
1/2" (12.5 mm)	-	100
3/8" (9.5 mm)	100	90 - 100
# 4 (4.75 mm)	85 - 100	55 – 85
# 8 (2.36 mm)	10 - 40	5 - 40
# 16 (1.18 mm)	0 - 10	0 - 10
# 50 (0.30 mm)	0 - 5	0 - 5

Soundness Loss (Sodium, 5 cycles)	ASTM C 88	12.0 maximum
Los Angeles Abrasion Loss	ASTM C 131	45.0% maximum
Specific Gravity	ASTM C 127	2.45-2.85
Absorption	& 128	3.0% maximum
Minus 200 Sieve (0.075 mm) Wash Loss	ASTM C 117	2.5% maximum

MIXTURE:

The UPM® asphalt cold mix shall meet the following requirements:

Coating	ASTM D 2489	Greater than 95%
Stripping in distilled water ¹	Visual	Less than 5%
Extraction of Bituminous Material	ASTM D 2172	3.5 min - 9.0% max.
Sieve Analysis of Extracted Aggregate	ASTM C 136	See Aggregate Specification
Minus 200 (0.075mm) of Extracted Aggregate	ASTM C 117 & ASTM C 136	4.0% Maximum ²
Shelf Life		18-Month Minimum

Note 1: Place approximately 100 grams in a 250 ml glass beaker and cover with distilled water for 24 hours before observation.

Note 2: This value shall not be confused with the 2.5% maximum allowed for the Minus 200 (0.075 mm) Wash Loss on the raw aggregate before the production of UPM mix. That value is necessary to minimize the effect of the plant when producing the finished UPM cold mix.



Specification – UPM® Cold Mix Bags and Pails

CERTIFICATE OF ANALYSIS:

A certificate of analysis stating the material meets the above requirements shall be made available upon request.

CONTAINER:

UPM bag mix shall be supplied in 50-lb. bags (22.7 kg) consisting of $\pm 0.5\%$ co-extruded skid resistant nylon. The bags shall come palletized 56 bags per pallet.

UPM pail mix shall be supplied in 60-lb. pail (27.3 kg) consisting of $\pm 0.5\%$ plastic buckets. The buckets shall come palletized 36 pails per pallet.

CONTRACT:

Before being awarded a contract, a successful bidder will be required to furnish an affidavit that this product meets or exceeds the above specifications. The affidavit shall have attached, an analysis done by an independent testing laboratory, certifying that the material conforms to these specifications. If the successful bidder does not submit the affidavit of the lab analysis, they will not be awarded the contract.

PERFORMANCE GUARANTEE:

The supplier of the material shall guarantee the performance of the patching mix to meet the following requirements:

- A. When properly stored, the bagged material shall remain workable for its designated climatic conditions for a period of not less than 18 months.
- B. Repaired potholes shall not show any significant signs of shoving, rutting, tracking, kick-up or ravel-out within a period of 12 months from the time of repair.

In the event the material furnished does not meet all of the above requirements, the supplier shall replace the unsatisfactory with acceptable material. The acceptable material shall be provided and delivered at no extra charge to the department.

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

“Providing valuable products from valuable people to valuable customers.”

This document contains confidential proprietary and trade secret information of UNIQUE Paving Materials Corp., and copying, dissemination, or use by anyone other than UNIQUE's intended recipient is strictly prohibited by law.