



## Specification –101G Bid for UPM® Cold Mix

### GENERAL:

These UPM® various seasonal grades of bituminous patching mixes are designed 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 aggregate within prescribed quantities to make a mixture that will provide satisfactory coating, workability and adhesion characteristics. The patching mixtures will function during cold and damp or during hot weather in bituminous and concrete pavement. The asphalt blend 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 blend shall meet the following requirements:

Kinematic Viscosity @ 140°F (60°C)	ASTM D 2170	350 to 4000 cSt (mm <sup>2</sup> /s)
Flash Point, Tag Open Cup	ASTM D 1310	200°F (93°C) min.
Percentage of Water	ASTM D 95	Less than 0.2%
Distillation To 680°F (360°C)	ASTM D 402	See Values Below

<u>Temperature</u>	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	75 to 425 Poise (10 <sup>-1</sup> x s)
Penetration, Modified with Cone	ASTM D 5*	180 minimum
Ductility, 39°F (4°C), 1 cold mix/minute	ASTM D 113	100 minimum
Solubility in Trichloroethylene	ASTM D 2042	99% 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 a limestone or gravel and shall meet the requirements specified.

### MIXTURE:

The mixture shall consist of an aggregate and asphalt combined in the following proportions:

Aggregate	96.5 to 91%
Asphalt	3.5 to 9%

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