

ITEM 424 FINE GRADED POLYMER ASPHALT CONCRETE

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424.01 Description. This work consists of constructing a surface course of aggregate and polymer modified asphalt binder mixed in a central plant and spread and compacted on a prepared surface. The requirements of [401](#) apply, except as modified by this specification.

424.02 Composition. For Type A mixes use 8.5 percent modified asphalt binder by total mix weight.

For Type B mixes, submit a proposed JMF according to [441.02](#) to the Laboratory that meets the requirements of a Type 1 surface course, except as follows:

- A. Minimum VMA, 15.0 percent
- B. Minimum total binder content, 6.4 percent
- C. Design air voids, 4.0 percent

424.03 Materials. Furnish clean, uncoated aggregate conforming to the applicable requirements of Table [424.03-1](#) and quality requirements of [703.05](#).

Use a PG 76-22M asphalt binder; or a PG 64-22 asphalt binder modified by adding 5.0 ±0.3 percent by weight Styrene Butadiene Rubber (SBR) solids and meeting the requirements of PG 76-22. Provide SBR conforming to [702.14](#). Provide mineral filler conforming to [703.07](#). Provide binders conforming to [702.01](#).

Ten percent reclaimed asphalt concrete pavement may be used in a Type B mix if all requirements of footnote [3] are met by the reclaimed asphalt concrete. Do not use reclaimed asphalt concrete pavement in a Type A mix.

TABLE 424.03-1 - MIX GRADATION

Sieve Size		Total Percent Passing	
		Type A ^{[1][2]}	Type B ^{[1][3][4]}
1/2 inch	(12.5 mm)		100
3/8 inch	(9.5 mm)	100	95 to 100
No. 4	(4.75 mm)	95 to 100	85 to 95
No. 8	(2.36 mm)	90 to 100	53 to 63
No. 16	(1.18 mm)	80 to 100	37 to 47
No. 30	(600 μm)	60 to 90	25 to 35
No. 50	(300 μm)	30 to 65	9 to 19
No. 100	(150 μm)	10 to 30	--
No. 200	(75 μm)	3 to 10	3 to 8

[1] Gradation includes any mineral filler and is specified in percent passing.

[2] Use natural sand with at least 50 percent silicon dioxide by weight according to [ASTM C 146](#). Include with a JMF submittal certified test data from an AASHTO accredited laboratory showing conformance to the 50 percent silicon dioxide requirement. Ensure data is no more than one year old at time of submittal.

[3] Fine Aggregate - Use natural sand with at least 50 percent silicon dioxide by weight according to [ASTM C 146](#). Include with a JMF submittal certified test data from an AASHTO accredited laboratory showing conformance to the 50 percent silicon dioxide requirement. Ensure data is no more than one year old at time of submittal. For medium mixes, use no more than 20 percent limestone sand by weight of total aggregate. For heavy mixes, use 20 percent limestone sand or air cooled slag sand by weight of total aggregate. If 10 percent RAP is used the silicon dioxide content of the total natural sand blend must be at least 50 percent. Contact the Office of Materials Management, Asphalt Materials section for guidance on submitting RAP aggregate silicon dioxide data.

[4] Coarse Aggregate - For medium mixes, for the final blend of all coarse aggregate use a minimum 10 percent two or more fractured faces aggregate. For heavy mixes, use 100 percent two or more fractured faces aggregate. Meet the two or more fractured faces aggregate criteria of [ASTM D5821-01](#) (Reapproved 2006).

424.04 Mixing. Ensure the mixing plant conforms to [402](#). Discharge the mix from the plant at temperatures between 335 °F to 370 °F (168 °C to 188 °C) for hot mix asphalt or 300 °F to 340 °F (149 °C to 171 °C) for warm mix asphalt.

424.05 Weather Limitations. Do not place the asphalt concrete when the surface of the existing pavement is less than 60 °F or the air temperature is less than 60 °F.

424.06 Spreading Compacting and Finishing. Compact Type A or B mixes conforming to [401.13](#) and [401.16](#). If compacting a mixture 1 inch (25 mm) thick or less do not use a spreading rate that exceeds twice the total capacity of the rollers in use. Use a minimum of two rollers. Do not allow traffic on the compacted mixture until it has cooled sufficiently to prevent damage.

424.07 Surface Tolerances. Ensure the completed surface course conforms to [401.19](#).

Remove raised pavement markers according to [621.08](#). The Contractor may fill the depression caused by the removal of the casting with material meeting this specification.

424.08 Acceptance. For Type A mixes comply with acceptance requirements of [301](#). For Type B mixes comply with all requirements of [448](#).

424.09 Method of Measurement. For Type A mixes use a unit weight conversion of 1.75 tons/cubic yard (2.08 metric tons/cubic meter).

The Department will measure the number of raised pavement markers removed.

424.10 Basis of Payment. The Department will pay for removal of existing raised pavement markers according to Item [621](#) Raised Pavement Markers Removed.

The Department will make payment for accepted quantities, completed in place, at the contract price as follows:

Item Unit Description

424 Cubic Yard Fine Graded Polymer
(Cubic Meter) Asphalt Concrete, Type A
424 Cubic Yard Fine Graded Polymer
(Cubic Meter) Asphalt Concrete, Type B