

ITEM 06403.957302 M - SUPERPAVE HMA, LOW VOLUME 9.5 mm F3
ITEM 06403.957312 M - PLANT PRODUCTION QUALITY ADJUSTMENT to 06403.957302 M
ITEM 06403.127302 M - SUPERPAVE HMA, LOW VOLUME 12.5 mm F3
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ITEM 06403.197902 M - SUPERPAVE HMA, 19.0 mm
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ITEM 06403.257902 M - SUPERPAVE HMA, 25.0 mm
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The requirements of Section 403 - Hot Mix Asphalt Concrete Pavement shall apply except as modified and/or revised below.

DESCRIPTION

This work shall consist of developing Hot Mix Asphalt pavement courses using the *SUPERPAVE* Mix Design procedure detailed in Materials Method 5.16, “*SUPERPAVE* Hot Mix Asphalt Mixture Design and Mixture Verification Procedures,” in accordance with these specifications and in reasonable close conformity with the required lines, grades, thicknesses, and typical sections shown on the plans or established by the Engineer.

MATERIALS

The materials and composition for these mixtures shall meet the requirements specified in Subsection 403-2 Materials, except as noted herein. The specific Performance Graded Binder and the Design Estimated Traffic in 80 kN ESALs will be specified by a special note in the Contract Proposal.

Subsection 401-2.02 Composition of Mixtures shall be deleted and replaced with the following:

“Formulate and submit to the Regional Materials Engineer, a *SUPERPAVE* Mix Design that satisfies the design control points listed in Table 2 - Design Control Points and does not pass through the restricted zone listed in Table 3 - Restricted Zone of Materials Method 5.16, based on the specified nominal maximum aggregate size.

If for any reason, a change in gradation or materials occurs, prepare a separate job mix formula and *SUPERPAVE* mixture design to fit each change in material or gradation. Changes in Performance Graded Binder content can be made by the Regional Director or his representative providing the resultant mixture has properties within the specified mechanical and volumetric properties.

The mixtures shall be produced, delivered to the work site, and incorporated into the work within 10°C of the temperature specified by the Contractor but within the mixing and compaction range of 120°C and 175°C. Additionally, the Performance Graded Binder shall be introduced into the pugmill at a temperature compatible with that of the aggregate as determined by the Regional Director or his representative, between the limits of 110°C and 175°C.

The aggregates shall be those approved for use by the approved job mix formula and will be accepted at the plant site. The Performance Graded Binder will be conditionally accepted at the supplier’s source and at the plant on the basis of certification. Samples taken at the plant will be tested by the Department to determine specification compliance.

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Subsection 401-2.03A. Coarse Aggregate and 401-2.03B. Blending shall be deleted and replaced with the following:

A. Coarse Aggregates. For 12.5 mm F3 and 9.5 mm F3 top course HMA mixtures use crushed aggregate, from an approved source, meeting one of the following descriptions:

1. Limestone having an acid insoluble residue content of not less than 20.0%, excluding particles of chert and similar siliceous rocks.
2. Dolomite (excluding Wappinger dolomite, as defined by the Department).
3. Sandstone, granite, chert, traprock, ore tailings, slag or other similar non-carbonate materials. Non-carbonate particles are defined as having a minimum acid insoluble residue content of 80.0%.
4. Gravel, or a natural or manufactured blend of the following types of materials: limestone, dolomite (including Wappinger dolomite, as defined by the Department), gravel, sandstone, granite, chert, traprock, ore tailings, slag or other similar materials, meeting the following requirements:

12.5 mm Nominal Maximum Size Aggregate Mixes - Non-carbonate plus 3.2 mm particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus 9.5 mm particles must be non-carbonate.

9.5 mm Nominal Maximum Size Aggregate Mixes - Non-carbonate plus 3.2 mm particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus 4.75 mm particles must be non-carbonate.

Non-carbonate particles are defined as having a minimum acid insoluble residue content of 80.0%.

B. Blending. Where coarse aggregates for these mixes are from more than one source or of more than one type of material, they shall be proportioned and blended to provide a uniform mixture.”

Subsection 401-2.05 Bituminous Materials shall be deleted and replaced with the following:

“The Performance Graded Binder (PGB) used in the production of these mixes shall be defined by AASHTO Provisional Standard MP1 - Standard Specification for Performance Graded Asphalt Binder.

Acceptance of the PGB is based on the primary source appearing on the Department’s Approved List for Bituminous Material Primary Sources, A. Asphalt Cements for Paving. Acceptance of the PGB is contingent upon satisfactory test results from samples taken, as required by the Department’s procedural directives, at

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the location where the material is incorporated into the work. A primary source is defined as a firm that samples, tests, and certifies by Production Lot that the PGB is in conformance with the specifications. The procedural directives for sampling, testing, and certifying the PGB, and for achieving and maintaining approved list status, are available from the Materials Bureau.

The PGB shall not be delivered to the HMA Production Facility at a temperature in excess of 175°C.”

CONSTRUCTION DETAILS

The details of §401-3 Construction Details shall apply except as modified below:

Add the following to the end of Subsection 401-3.02 Bituminous Mixing Plant A. Requirements for All Plants No. 11:

- “Y. Gyrotory Compactor - A power driven gyrotory compactor capable of maintaining an angle of gyration of $1.25^\circ \pm 0.02^\circ$, a speed of gyration of 30.0 rpm ± 0.5 rpm, and a consolidation pressure of 600 k Pa $\pm 10\%$ for gyrations zero to five and $\pm 3\%$ for gyrations six and greater. The make and model of the gyrotory compactor supplied must be approved by the Director, Materials Bureau.
- Z. Gyrotory Specimen Mold Assembly - The specimen mold assembly consisting of the mold 150.00 mm + 0.00 mm and - 0.01 mm, base plate and top plate (if required). The minimum height of the mold is 250.00 mm. A minimum of 4 mold assemblies and an adequate supply of 150.00 mm paper discs shall be provided.
- AA. Gyrotory Specimen Extractor - A simple means of specimen extraction from the gyrotory molds shall be supplied.
- BB. Oven - A thermostatically controlled convection type oven having a minimum capacity of 0.15 cubic meters shall be supplied to preheat the *SUPERPAVE* Gyrotory Compactor mold assemblies and asphalt mix samples. The oven shall have a controlled temperature range up to 190°C with a $\pm 3^\circ\text{C}$ accuracy throughout the range.
- CC. Kraft Paper - 23 kg medium weight, 915 mm width.
- DD. Sheet Rock Taping Knives (minimum 2) - 254 mm length.
- EE. Aging Pans (minimum 4) - 457 mm x 457 mm x 38 mm H galvanized iron pans.
- FF. Miscellaneous Pans (minimum 4) - 394 mm x 280 mm x 51 mm H aluminum pans.
- GG. Screen trays (1 each) - 457 mm x 660 mm to include the following: 2.36 mm, 1.18 mm, 0.60 mm, 0.30 mm, 0.15 mm, 0.075 mm.”

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Subsection 401-3.12 Compaction shall apply including the following:

The minimum number of passes required for compaction will be as follows:

**TABLE 1
REQUIRED NUMBER OF PASSES (MINIMUM)**

Pavement Courses	Vibratory Roller	
	¹ Vibratory Passes	² Static Passes
37.5 mm	6	4
25.0 mm	6	4
19.0 mm	4	2
12.5 mm	4	2
9.5 mm	2	1

Notes

1. A vibratory pass is defined as one vibrating drum passing over a point.
2. A static pass is defined as one machine pass with dual drums in static mode passing over point.

If, in the opinion of the Engineer, adequate pavement density can be achieved with fewer roller passes than the number of passes shown in Table 1 can be reduced.

METHOD OF MEASUREMENT

The provisions of §401-4, §402-4 and §403-4, Method of Measurement shall apply.

BASIS OF PAYMENT

The provisions of subsection 403-5 Basis of Payment shall apply.

Payment will be made under:

ITEM NO.	ITEM	PAY UNIT
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This specification is
DisApproved