

# EXPECTED IMPLEMENTATION JULY 2015

## **337 ASPHALT CONCRETE FRICTION COURSES.** **(REV 11-7-14) FA 1-16-15) (7-15)**

SUBARTICLE 337-1 is deleted and the following substituted:

### **337-1 Description.**

Construct an asphalt concrete friction course pavement with the type of mixture specified in the Contract Documents, or when offered as alternates, as selected. This Section specifies mixes designated as FC-5, FC-9.5, and FC-12.5.

Obtain Superpave asphalt concrete friction course from a plant that is currently on the Department's Production Facility Listing. Producers seeking inclusion on the list shall meet the requirements of Section 105. Producers must meet the plant and equipment requirements of Section 320, as modified herein. Meet the general construction requirements of Section 330, as modified herein.

SUBARTICLE 337-2.2 is deleted and the following substituted:

**337-2.2 Asphalt Binder:** Meet the requirements of Section 916, and any additional requirements or modifications specified herein for the various mixtures. For projects with a total quantity of FC-5, FC-9.5, or FC-12.5 less than 500 tons, the Contractor may elect to substitute a PG 76-22 (PMA) or PG 82-22 (PMA) for the PG 76-22 (ARB), meeting the requirements of Section 916. Obtain asphalt rubber binder from a plant that is currently on the Department's Production Facility Listing. Producers seeking inclusion on the list shall meet the requirements of Section 916.

SUBARTICLE 337-2.5 is deleted and the following substituted:

**337-2.5 Hydrated Lime:** Meet the requirements of AASHTO M 303-89 (2010), Type 1. Provide certified test results for each shipment of hydrated lime indicating compliance with the specifications.

ARTICLE 337-5 is deleted and the following substituted:

### **337-5 Contractor's Process Control.**

Provide the necessary process control of the friction course mix and construction in accordance with the applicable provisions of 320-2, 330-2 and 334-4.

The Engineer will monitor the spread rate periodically to ensure uniform thickness. Perform quality control procedures for daily monitoring and control of spread rate variability. If the spread rate varies by more than 5% of the spread rate set by the Engineer in accordance with 337-8, immediately make all corrections necessary to bring the spread rate into the acceptable range.

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SUBARTICLE 337-6.2.1 is deleted and the following substituted:

**337-6.2.1 Individual Test Tolerances for FC-5 Production:** Terminate the LOT if any of the following Quality Control (QC) failures occur:

- 1) An individual test result of a subplot for asphalt binder content does not meet the requirements of Table 337-2,
- 2) Two consecutive test results within the same LOT for gradation on any of the following sieve sizes (P<sub>-3/8</sub>, P<sub>-4</sub>, and P<sub>-8</sub>) do not meet the requirements of Table 337-2. The two consecutive failures must be on the same sieve.

When a LOT is terminated due to a QC failure, stop production of the mixture until the problem is resolved to the satisfaction of the QC Managers and/or Asphalt Plant Level II Technicians responsible for the decision to resume production after a QC failure, as identified in Section 105. In the event that it can be demonstrated that the problem can immediately be or already has been resolved, it will not be necessary to stop production. When a LOT is terminated, make all necessary changes to correct the problem. Do not resume production until appropriate corrections have been made. Inform the Engineer of the problem and corrections made to correct the problem. After resuming production, sample and test the material to verify that the changes have corrected the problem. Summarize this information and provide it to the Engineer prior to the end of the work shift when production resumes.

In the event that a QC failure is not addressed as defined above, the Engineer's approval will be required prior to resuming production after any future QC failures.

Address any material represented by a failing test result in accordance with 334-5.9.5. Any LOT terminated under this Subarticle will be limited to a maximum Pay Factor of 1.00 (as defined in 337-12.3) for each quality characteristic.

ARTICLE 337-12 is deleted and the following substituted:

## **337-12 Basis of Payment.**

**337-12.1 General:** Price and payment will be full compensation for all the work specified under this Section (including the applicable requirements of Sections 320 and 330).

Based upon the quality of the material, a pay adjustment will be applied to the bid price of the material as determined on a LOT by LOT basis. The pay adjustment will be assessed by calculating a Pay Factor for individual quality characteristics. The pay adjustment will be computed by multiplying a Composite Pay Factor for the LOT by the bid price per ton.

**337-12.2 FC-9.5 and FC-12.5:** Meet the requirements of 334-8.

**337-12.3 FC-5:** Meet the requirements of 334-8 with the following exceptions:

1. Pay factors will be calculated for asphalt binder content and the percentages passing the 3/8 inch, the No. 4, and the No. 8 sieves only.
2. Table 337-3 replaces Table 334-7.
3. Table 337-4 replaces Table 334-8.
4. The Composite Pay Factor equation in 334-8.3 is replaced with the following:

$$\text{CPF} = [(0.20 \times \text{PF } 3/8 \text{ inch}) + (0.30 \times \text{PF No. 4}) + (0.10 \times \text{PF No. 8}) + (0.40 \times \text{PF AC})]$$

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Table 337-3 Small Quantity Pay Table for FC-5		
Pay Factor	1-Test Deviation	2-Test Average Deviation
Asphalt Binder Content (%)		
1.00	0.00-0.50	0.00-0.35
0.90	0.51-0.60	0.36-0.42
0.80	>0.60	>0.42
3/8 inch Sieve (%)		
1.00	0.00-6.50	0.00-4.60
0.90	6.51-7.50	4.61-5.30
0.80	>7.50	>5.30
No. 4 Sieve (%)		
1.00	0.00-5.00	0.00-3.54
0.90	5.01-6.00	3.55-4.24
0.80	>6.00	>4.24
No. 8 Sieve (%)		
1.00	0.00-3.00	0.00-2.12
0.90	3.01-3.50	2.13-2.47
0.80	>3.50	>2.47

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Table 337-4 Specification Limits for FC-5	
Quality Characteristic	Specification Limits
Asphalt Binder Content (%)	Target $\pm$ 0.45
Passing 3/8 inch sieve (%)	Target $\pm$ 6.00
Passing No. 4 sieve (%)	Target $\pm$ 4.50
Passing No. 8 sieve (%)	Target $\pm$ 2.50

**337-12.4 Payment:** Payment will be made under:

Item No. 337- 7- Asphaltic Concrete Friction Course - per ton.

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