

ORIGINATION FORM

Date: **5-10-13**

Originator: **Greg Sholar**

Contact Information: **352.955.2920** **gregory.sholar@dot.state.fl.us**

Specification Title: **Asphalt Concrete Friction Courses**

Specification Section, Article, or Subarticle Number: **337**

Why does the existing language need to be changed? **Refinement and cleanup of specification.**

Summary of the changes: **1. Increased the upper limit of the range for the design AC content for limestone FC-5 mixtures to accommodate more asphalt binder for increased durability. 2. Updated AASHTO/ASTM test method references to the current version.**

Are these changes applicable to all Department jobs? **Yes.**

If not, what are the restrictions?

Will these changes result in an increase or decrease in project costs? **Possible slight increase in cost due to increased asphalt binder. However, longer durability of these mixtures should result in a reduced life cycle cost.**

If yes, what is the estimated change in costs? **Not certain. Too many variables.**

With who have you discussed these changes? **The following groups have discussed these changes: Asphalt Specifications Working Group comprised of Department and Industry representatives.**

What other offices will be impacted by these changes? **None.**

Are changes needed to the PPM, Design Standards, SDG, CPAM or other manual? **No.**

Is a Design Bulletin, Construction Memo, or Estimates Bulletin needed? **No.**

Contact the State Specifications Office for assistance in completing this form.

Frances Thomas 850-414-4101 frances.thomas@dot.state.fl.us

Debbie Toole 850-414-4114 deborah.toole@dot.state.fl.us

Andy Harper 850-414-4127 clifton.harper@dot.state.fl.us



Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

ANANTH PRASAD, P.E.
SECRETARY

MEMORANDUM

DATE: May 24, 2013

TO: Specification Review Distribution List

FROM: Trey Tillander, Manager State Specifications and Estimates Office

SUBJECT: Proposed Specification: **3370207 Asphalt Concrete Friction Courses.**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change.

This change was proposed by Greg Sholar of the State Materials Office to update the language for current Department and industry practice.

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at SP965TT or trey.tillander@dot.state.fl.us. Comments received after **June 21, 2013**, may not be considered. Your input is encouraged.

TT/dt
Attachment

**ASHPALT CONCRETE FRICTION COURSES.
(REV 5-13-13)**

SUBARTICLE 337-2.7.1 (Page 284) is deleted and the following substituted:

337-2.7.1 Mineral Fibers: Use mineral fibers (made from virgin basalt, diabase, or slag) treated with a cationic sizing agent to enhance the disbursement of the fiber, as well as to increase adhesion of the fiber surface to the bitumen. Meet the following requirements for physical properties:

1. Size Analysis
 - Average fiber length: 0.25 inch (maximum)
 - Average fiber thickness: 0.0002 inch (maximum)
2. Shot Content (ASTM C612-10)
 - Percent passing No. 60 Sieve: 90 - 100
 - Percent passing No. 230 Sieve: 65 - 100

Provide certified test results for each batch of fiber material indicating compliance with the above tests.

SUBARTICLE 337-4.1 (Page 286) is deleted and the following substituted:

337-4.1 FC-5: The Department will design the FC-5 mixtures. Furnish the materials and all appropriate information (source, gradation, etc.) as specified in 334-3.2.7. The Department will have two weeks to design the mix.

The Department will establish the design binder content for FC-5 within the following ranges based on aggregate type:

Aggregate Type	Binder Content
Crushed Granite	5.5 - 7.0 7.5
Crushed Limestone (Oolitic)	6.5 - 8.0

SUBARTICLE 337-6.2 (Pages 287 – 288) is deleted and the following substituted:

337-6.2 FC-5: Meet the requirements of 334-5 with the following exceptions:

1. The mixture will be accepted with respect to gradation (P_{3/8}, P₄, and P₈), and asphalt binder content (P_b) only.
2. Testing in accordance with AASHTO T 312-~~11~~12 and FM 1-T 209 (and conditioning prior to testing) will not be required as part of 334-5.1.1.
3. The standard LOT size of FC-5 will be 2,000 tons, with each LOT subdivided into four equal sublots of 500 tons each.
4. The Between-Laboratory Precision Values described in Table 334-6 are modified to include (P_{3/8}, P₄, and P₈) with a maximum difference per FM 1-T 030 (Figure 2).
5. Table 334-5 (Master Production Range) is replaced by Table 337-2.
6. The mixture will be accepted on the roadway with respect to surface tolerance in accordance with 334-5.8. No density testing will be required for these mixtures.

Table 337-2 FC-5 Master Production Range	
Characteristic	Tolerance (1)
Asphalt Binder Content (%)	Target \pm 0.60
Passing 3/8 inch Sieve (%)	Target \pm 7.50
Passing No. 4 Sieve (%)	Target \pm 6.00
Passing No. 8 Sieve (%)	Target \pm 3.50
(1) Tolerances for sample size of n = 1 from the verified mix design	

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_{-3/8}, P₋₄, and P₋₈) 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 ~~quality control~~-QC failure, as identified in 105-8.6.4. 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.