SunTrax Autonomous Facility. April 19th, 2023 - ACAF Specifications Committee

Specifications Committee Meeting Packet

For the Specification Committee of the Asphalt Contractors Association of Florida, Inc

April 10th, 2024 @ 9:30AM (CST)

National Center for Asphalt Technology
277 Technology Parkway
Auburn, Alabama 36830

Virtual Teams Link: **Click here to join the meeting**

Auburn/NCAT Faculty and Engineers you may run into this week

Dr. Randy West

Director and Research Professor

Specialization: Sustainable pavements, life-cycle cost analysis, balanced mix design, asphalt specifications, test methods, quality assurance, asphalt production, pavement construction

Dr. Benjamin Bowers

Assistant Professor (Pavements and Materials)

Research Interests: Sustainable Design, Pavement Materials, Infrastructure Resilience, Integration of Reclaimed Materials into Pavement, Cold Recycling

Dr. Adriana Vargas

Associate Research Professor

Specialization: Pavement Management, Pavement Preservation

Dr. Nam Tran

Assistant Director and Research Professor

Specialization: Advanced asphalt materials characterization, interlayer bond strength, rejuvenators, pavement design, pavement economics, pavement sustainability

Jason Moore

Lab Manager

Specialization: Asphalt testing, asphalt mix design, bond strength testing, pavement evaluation

Nathan Moore

Assistant Research Engineer

Specialization: Asphalt material properties, asphalt mix design, aggregate testing, asphalt mixture performance testing, pavement evaluation

Jason Nelson

Test Track Manager

Specialization: Accelerated pavement testing, pavement performance measurement, inertial profilers

Dr. Fan Yin

Assistant Director and Associate Research Professor

Specialization: Advanced asphalt materials characterization, balanced mix design, recycled asphalt materials and rejuvenators, warm mix asphalt, stone matrix asphalt, recycled plastics

Our Schedule:

Wednesday (April 10th)

9:30am – 12:00pm – Specifications Meeting (Main Facility - Don Brock Classroom)

12:00pm – 12:45pm – Catered Lunch, Welcome from NCAT Director Randy West, Introductions from FDOT Guests (Mary Jane Hayden, Sue Zheng)

12:45pm – 3:00pm – Specifications Meeting (Additional time allotted if needed, else continue to CR 159 Site Visit)

3:00pm – 4:00pm – Lee County Road 159 Site Visit (Dr. Adriana Vargas)

6:00pm – 8:30pm –Dinner at The Hound

Thursday (April 11th)

9:00am – 10:45am – NCAT Lab Tour (Main Facility)

10:45am – 11:30am – Presentations by NCAT Asst. Directors Dr. Fan Yin and Dr. Nam Tran

11:30am – 12:00pm – Travel to NCAT Test Track

12:00pm – 12:45pm – Catered Lunch

12:45pm – 3:00pm – NCAT Test Track Tour (Jason Nelson)

Locations to know for our visit:

NCAT Main Facility
277 Technology Parkway, Auburn, AL 36830

NCAT Test Track
1600 Lee Road 151, Opelika, AL 36804

Crenshaw Guest House
371 N College St, Auburn, AL 36830

Auburn University Hotel
241 South College Street Auburn, Alabama 36830

The Collegiate Hotel
205 S Gay St, Auburn, AL 36830

The Hound
124 Tichenor Ave, Auburn, AL 36830

Meeting Agenda

ANTI-TRUST POLICY OF THE ASPHALT CONTRACTORS ASSOCIATION OF FLORIDA, INC

The antitrust laws seek to preserve a free competitive economy in the United States and in commerce with foreign countries. As a general rule, competitors may not restrain competition among themselves through understandings or agreements as to the price, the production, or the distribution of their products or services, or other agreements which unreasonably restrict competition. With some exceptions, competitors may not act in concert to restrict the competitive capabilities or opportunities of their competitors, their suppliers, or their customers.

The antitrust laws, however, are often of unclear applicability, and in certain circumstances unlawful agreements can be inferred from circumstantial evidence. Furthermore, penalties for violating the antitrust laws are severe. The guidelines set forth below are designed to avoid even the appearance of questionable activity by the Association and its members.

ACAF through its meeting activities brings together representatives of competitors throughout the industry. The subject matters of ACAF's activities are technical or educational in nature. Nevertheless, ACAF's Board of Directors recognizes the remote possibility that the Association and its activities can be abused and be seen by those unaware of or determined to violate the law as providing an opportunity for anticompetitive conduct. Through this statement of policy, the ACAF Board reiterates its unequivocal support for the policy of competition served by the antitrust laws and uncompromising intent as individual companies and as an Association to comply strictly in all respects with those laws governing competitive activities.

At all meetings of the Asphalt Contractors Association of Florida's Board of Directors and committees, as well as all association-sponsored seminars, conferences, webinars and task force and working group sessions and among Association members, the following will not be discussed:

- Individual company prices, price changes, price differentials, markups, discounts, credit terms, etc.
- Individual company data on costs, production, capacity, inventories, sales, labor, supplies, etc.
- Agreements on terms of sale, warranties, or contract provisions.
- What constitutes a "fair profit level."
- Standardization or stabilization of prices.
- Pricing procedures or formulas.
- Confidential future marketing or pricing plans.
- Control of sales.
- Allocation of customers or geographic division of markets – agreements not to compete.
- Refusal to deal with a company because of its pricing or distribution practices.

- Whether or not the pricing practices of any industry member are unethical or constitute an unfair trade practice.
- Information concerning any individual company's costs, profits, inventory, market share, or other commercial information of a non-public nature.

Notwithstanding the prohibitions on certain cooperation between competitors described above, Association members may be immunized from antitrust liability when they cooperate to influence governmental action, such as joint legislative or regulatory initiatives. It should be viewed as very limited permission to influence jointly any branch of the government. It is important to remember that the doctrine immunizes cooperating competitors from liability only from any harm to competition that is caused by the resulting governmental action. It does not immunize competitors who behave or share information improperly at any time, even if they are doing so in the course of influencing law- or policymakers. For example, competitors may not share future pricing moves with each other in preparation for an effort to convince a lawmaking body to set a price floor for an industry.

Further, if the Association embarks on the development of specific product standards or a code of ethics for its members or the compilation of industry statistics, such activities shall be developed and conducted in a manner consistent with applicable antitrust laws with the prior approval of the Board of Directors of the Association and advice of counsel. To avoid even the appearance of questionable activity, as well as to guard against inadvertent conduct, Association meetings should observe the following guidelines and procedures:

- A written agenda will be prepared and adhered to.
- Accurate minutes of every meeting will be prepared and approved.
- Minutes of the meeting will be distributed to all committee members.
- In case of doubt about the propriety of a discussion, or a particular topic of discussion, Association counsel will be consulted.
- If a member has a reservation concerning remarks or discussion at an Association meeting, that member should state the reservation.

Revised March 2020

CONFLICT OF INTEREST POLICY

Article I. Purpose

The purpose of a conflict-of-interest policy is to protect the Association's interest when it is contemplating entering into a transaction or arrangement that might benefit the private interest of one of its officers or directors, or might result in a possible excess benefit transaction. This policy is intended to supplement, but not replace, any applicable state and federal laws governing conflicts of interest.

Article II. Definitions

1. Interested Person

An Interested Person is any director, principal officer, or member of a committee with governing board-delegated powers who has a direct or indirect Financial Interest, as defined below.

2. Financial Interest

A person has a Financial Interest if the individual has, directly or indirectly, any actual or potential ownership, investment, or compensation arrangement with the Asphalt Contractors Association of Florida, Inc or with any entity that conducts transactions with the Asphalt Contractors Association of Florida, Inc.

A Financial Interest is not necessarily a conflict of interest in all cases. Under Article III, Section 2 of IRS Form 1023, a person with a Financial Interest may have a conflict of interest only if the appropriate governing board or committee decides that a conflict of interest exists.

Article III. Procedures

1. Duty to disclose

In connection with any actual or possible conflict of interest, an Interested Person must disclose the existence of the Financial Interest and be given the opportunity to disclose all material facts to the directors and members of the committees with governing board-delegated powers considering the proposed transaction

or arrangement. In an effort to aid such disclosure, each member (board, committee, or staff) shall complete a conflict-of-interest questionnaire as circumstances warrant, but no less frequently than annually.

2. Determining whether a conflict of interest exists

The board shall review each member questionnaire and any other disclosures regarding the Financial Interests of its members and vote on whether a conflict of interest exists.

3. Procedures for addressing the conflict of interest

After exercising due diligence, the governing board or committee shall determine whether the organization can obtain with reasonable effort a more advantageous transaction or arrangement from a person or entity that would not produce a conflict of interest.

If an alternative transaction or arrangement is not possible, the governing board or committee shall determine by a majority vote of the disinterested directors whether the transaction or arrangement is in the best interests of the organization, for its own benefit, and fair and reasonable. Based on these determinations, the board or committee shall make its decision on whether to enter into the transaction or arrangement.

4. Disciplinary action

If the committee has reason to believe an individual has failed to disclose actual or potential conflicts of interest, it will inform the member and allow him/her to explain the alleged failure to disclose. If the committee still has reason to believe a conflict of interest exists after the alleged conflict is explained, it will take corrective action.

SPECIFICATIONS COMMITTEE MEMBERS

Name	Company	Email	Phone
David Allain	ACAF	dallain@acaf.org	(205) 616-8758
Johnny Blankenship	Masci General Contractors	jblankenship@mascigc.com	(352) 638-6816
Tracey Boggs	Anderson Columbia Co., Inc.	Tracey.Boggs@andersoncolumbia.com	(850) 209-6854
Jency Carmenate	General Asphalt Company, Inc.	jency@generalasphalt.com	(786) 509-1005
Tim Carter	P&S Paving, Inc.	tcarter@pandspavinginc.com	(386) 624-3208
Eron Chambers	Hubbard Construction	eron.chambers@hubbard.com	(407) 623-3865
Grant Cool	The Asphalt Group	grant.cool@demoya.com	(305) 322-5597
Mickey Cox	Ajax Paving Industries	mcox@ajaxpaving.com	(941) 650-0770
Carl Dempsey	Asphalt Technologies Inc.	Carl.Dempsey@andersoncolumbia.com	(386) 752-4921
Joe Donaruma	Preferred Materials, Inc.	Joseph.Donaruma@preferredmaterials.com	(904) 813-0650
Rick Fort	Preferred Materials, Inc.	Richard.Fort@preferredmaterials.com	(941) 650-6230
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Adam Mallard	V.A. Paving, Inc.	Adam.mallard@vapaving.com	(321) 302-6815
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Carl Moorefield	Hubbard Construction	Carl.Moorefield@hubbard.com	(407) 947-2416
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Patrick Pienkos	Ranger Construction	patrick.pienkos@rangerconstruction.com	(772) 215-8096
Mike Woodford	V.E. Whitehurst and Sons	Mikew@vewhitehurst.com	(352) 318-5234

SPECIFICATIONS COMMITTEE AGENDA

Wednesday, April 10th, 2024

9:30 –3:00pm CST

1. Call to Order, Tim Carter - Chair
2. Recognition of Anti-Trust Policy
3. Recognition of Conflict-of-Interest Policy
4. Minutes from Previous Meeting
5. New Business
    1. July 2024/2025 Standard Specifications Book
    2. July 2025/2026 Standard Specifications Workbook
    3. FDOT Discussion Topics
    4. Contractor Proposed Topics
    5. Asphalt Construction Updates – Rich Hewitt
    6. Open Discussion
6. Adjournment

MINUTES FROM PREVIOUS MEETING

Wed. April 19th, 2023
10:00AM – 5:00M EST
SunTrax Autonomous Facility
100 Transformation Way, Auburndale, FL
Committee Members and Guests in attendance:

- In-Person
  - David Allain – ACAF
  - Johnny Blankenship – MASCI GC
  - Wesley Bruaw – MASCI GC
  - Tim Carter – P&S Paving
  - Eron Chambers – Hubbard Construction
  - Mickey Cox – AJAX Paving Industries
  - Rick Fort – Preferred Materials, Inc.
  - Carl Moorefield – Hubbard Construction
  - Carmine Pace – Hubbard Construction
  - Renato Reis – Ranger Construction
- Virtual (Teams)
  - Rich Hewitt – FDOT
  - Greg Sholar – FDOT
  - Jency Carmenate – General Asphalt
  - Jeff James – Middlesex Co.
  - Calvin Lewis – CWR Contracting
  - Adam Mallard – V.A. Paving
  - Tanya Nash – Asphalt Testing Solutions
  - Darren Phillips – CWR Contracting

- **Call to Order**
  - Chair Carter calls the meeting to order at 10:00 AM.
- **Acknowledgement of Anti-Trust Policy**

- Chair Carter recognizes ACAFs Anti-Trust Policy. Unanimous consent is given to agree to adhere to its direction.

❖ **Acknowledgement of Conflict-of-Interest Policy**

- Chair Carter recognizes ACAFs Conflict of Interest Policy. Unanimous consent is given.

❖ **FDOT Discussion**

➢ Specification 337, Aggregate Classification

- If aggregate classification is approved, the specification will be announced in a memo and be retroactive.
- Diorite, Quartzite, and Basalt aggregates are expected to be approved by the end of 2023.

➢ Specification 300, Prime & Tack Coats

- The Specifications Committee votes that the specification currently should not change.
  - The opinion of the committee is that allowing trackless tack in place of prime would not be beneficial, and that allowing the contractors to decide whether or not to prime a freshly prepared base may hurt various subcontractors.

➢ FC-5

- FDOT is researching better urban alternatives to FC-5
  - NCAT Research includes higher binder contents, fibers, lime. Etc.

❖ **New Business**

➢ FDOT has revised the LAP334 specification using most comments from the ACAF Specifications Committee, previously provided by TD Allain.

➢ Rich Hewitt working with Stationing Company to integrate work zone stations to Google Maps

❖ **Next Meeting Date**

➢ NCAT visit expected to be scheduled for Spring 2024.

❖ **Meeting Adjourned at Noon**

NEW BUSINESS

❖ July 2024/25 Standard Specifications: Asphalt Specs that will be in effect July 1st, 2024

See attached documents:

Appendix A

Prime and Tack Coats: Section 300 Revisions

DCE Memo: 23-07

Appendix B

Fine Aggregate Angularity & APA Testing: Section 334 Revisions

Appendix C

Aggregate Classifications: Section 337 Revisions

❖ FDOT 2025/2026 Specification Workbook

1. Limestone Friction Courses & RAP Inclusion
2. Visual Inspection Lot Sizes
3. Master Production Range Tentative Changes
4. PWL Static and Vibratory Tentative Changes
5. Asphalt Binder and Mixture Sampling
6. IRI Incentive/Disincentive Smoothness Specs (currently SP and MSP)
    a. Move Limited Access (LA) and Non-Limited Access (Non-LA) IRI-based Incentive Disincentive Smoothness Specification language to Standard Spec Workbook. (Occurs in conjunction with removing the Ride Number Spec language.)
    b. LA and Non-LA specification language currently exists as a Special Provision (SP) and a Modified Special Provision (MSP), respectively.
    c. Largest volume of changes of all spec changes listed here, but should be very familiar to contractors through their experience with IRI Smoothness SP on all LA projects and IRI Smoothness MSP on Non-LA pilot projects.
7. Roundabout Intersections
    a. Establish language to define straightedge and density testing limits of roundabout intersections.
    b. Just started on this one as project issues brought it to light.
    c. I still have to work with SMO and others, so more internal and industry discussion is to occur.

8. RAP Base

a. Use of Modified Proctor Testing to establish RAP Base Density Target results in very low density target when viewed from a % RAP Gmm perspective. I've seen what would be considered acceptable RAP Base Target Values that when density target is viewed with respect to % of RAP Gmm, the targets range in the 70% range. Likely cause of past issue with RAP Base performance. Need to raise the targets and look at target density from a % of RAP Gmm perspective. Looking in the mid to upper 80% range. Likely 85% to 88%.

9. Driveway Base Spec

a. Simple change to add language to state Plan quantities are based on using spread rates determined using spreadrate and Gmm in accordance with 334-1.4. Since this can also be a SY pay item, likely need language specifying spreadrate, Gmm IAW 334-1.4 are when 286 tonnage pay item is used.

❖ FDOT Discussion Topics:

1. Recycled Binder Availability (RBA) Implementation
   i. PG 52-28

2. Mix Design Statistics

3. Potentially Requiring Shuttle-Buggy for FC-5

4. Potentially utilizing 1-load of FC-5 at the start of paving each day for heating equipment.

❖ Contractor Proposed Topics:

1. VT/IV Testing Results & Lot Closures

2. Binder Additive Blending Locations

3. Delineation Consistency Across Districts

4. Truck Ticketing Sequential Load Numbers

5. Cross Slope Tolerances

❖ Asphalt Construction Topics – Rich Hewitt

1. Paving with SDX Paver Screed –The End of Low-Density failures?

2. Automating Construction Inspection – Obtaining Construction Inspection Data from Construction Equipment

3. Longitudinal Grooving

4. PrePave Meeting Agenda - Streamline & Modernize

5. Tack Coverage – Seeing Great Coverage

6. End of Load Segregation - Seeing Increase on Projects Around the State

❖ Open Discussion Notes Section

Appendix A

300-7 Application of Prime Coat.

300-7.1 General: Clean the surface to be primed and ensure the moisture content of the base does not exceed the optimum moisture. Heat the prime coat material to the temperature recommended by the prime coat manufacturer. Apply the material with a pressure distributor. Determine the application amount based on the character of the surface. Use an amount sufficient to coat the surface thoroughly and uniformly with no excess.

The Contractor may elect to omit application of bituminous prime coat on previously prepared or exposed bases when an asphalt lift is placed within 24 hours of final preparation of such bases. Keep base moisture content within acceptable range. Protect finished base from rain and ensure base bonds adequately to the new lift of asphalt pavement. Apply prime to base when asphalt is not placed within 24 hours of final preparation of base. Apply prime to full depth reclamation and cement stabilized bases.

FDOT

Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

JARED W. PERDUE, P.E.
SECRETARY

December 5, 2023

DCE MEMORANDUM NO. 23-07
(FHWA Approved: 12/5/23)

TO: DISTRICT CONSTRUCTION ENGINEERS

FROM: Tim Lattner, P.E., Director, Office of Construction

COPIES: Dan Hurtado, Patrick Overton, Ananth Prasad (FTBA), Jose Ortiz (FHWA)

SUBJECT: RETROACTIVE IMPLEMENTATION OF JULY 2024 STANDARD SPECIFICATION SECTIONS: 009, 300, 350, 353, 415, 522

The Department has implemented revisions to several Section of the July 2024 Standard Specifications, as listed below.

Section 009 – Measurement and Payment
Changes made to add ITS and signal components for partial payments.
Contact: Patrick Overton (850) 414-4273

Section 300 – Prime and Tack Coats
Changes made to address the specified conditions related to the application of a bituminous prime coat.
Contact: Rich Hewitt (386) 943-5305

Section 350 – Cement Concrete Pavement
Changes made to add flexibility in saw cutting time and lowering the strength for opening concrete pavement to traffic.
Contact: Rich Hewitt (386) 943-5305

Section 353 – Concrete Pavement Slab Replacement
Changes made to address temperatures for section 353 slab replacement mix designs.
Contact: Patrick Overton (850) 414-4273

Appendix B

EXPECTED IMPLEMENTATION JULY 2024
(FY 2024-25)

DRAFT

334 SUPERPAVE ASPHALT CONCRETE.
(REV 7-26-23) (FA 10-24-23) (FY 2024-25)

SUBARTICLE 334-3.2.3.2 is deleted and the following substituted:

334-3.2.3.2 Fine Aggregate Angularity: When tested in accordance with AASHTO T 304, Method A, meet the uncompacted void content of fine aggregate specified in AASHTO M 323. For Traffic Level C and E base and structural course mixtures, a fine aggregate angularity value less than 45.0 and greater than or equal to 42.0 is allowable provided testing parameters of AASHTO T 340-10 (2019) meet the following requirements:

1. Rutting tests are performed on two gyratory specimens compacted to N_{des} level of gyrations with a height of 115 ± 5 mm and a diameter of 150 mm.
2. The air void (V_a) content of each gyratory specimen after compacting to N_{des} shall be within the following range: $3.0 \leq V_a \leq 4.8$.
3. Rutting tests are performed at 64.0 C.
4. The average rut depth for two specimens shall not exceed 4.5 mm.

Appendix C

EXPECTED IMPLEMENTATION JULY 2024
(FY 2024-25)

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337 ASPHALT CONCRETE FRICTION COURSES.
(REV 4-20-23) (FA 9-18-23) (FY 2024-25)

SUBARTICLE 337-3.2.1.1 is deleted and the following substituted:

337-3.2.1.1 Aggregates: Use an aggregate blend which consists of either 100% Class A friction aggregate or 100% Class B and/or C aggregates in accordance with Table 337-1. Do not blend Class A aggregate with Class B or C aggregate for FC-5 mixtures.

A list of aggregates approved for use in friction course may be available on the Department's website. The URL for obtaining this information, if available, is: https://mac.fdot.gov/.

SUBARTICLE 337-3.2.1.3 is deleted and the following substituted:

337-3.2.1.3 Hydrated Lime: Add hydrated lime at a dosage rate in accordance with Table 337-1.

SUBARTICLE 337-3.2.2.1 is deleted and the following substituted:

337-3.2.2.1: Aggregates: Use an aggregate blend of approved friction course aggregates in accordance with Table 337-1. For classifications that allow non-friction aggregate, up to 20% RAP and the remaining fine aggregate from other sources of aggregate not approved for friction courses may be used. Mixtures utilizing High Polymer (HP) binder are not allowed to contain RAP.

A list of aggregates approved for use in friction course may be available on the Department's website. The URL for obtaining this information, if available, is: https://mac.fdot.gov/.

SUBARTICLE 337-3.2.2.2 is deleted and the following substituted:

337-3.2.2.2: Asphalt Binder: Use an asphalt binder as called for in the Contract Documents meeting the requirements of Section 916. High polymer binder may be substituted in a mixture with PG 76-22 binder at no additional cost to the Department.

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Table 337-1 Friction Aggregate Classification			
Classification	Minimum percentage of approved friction course aggregates for FC-5 mixtures	Minimum percentage of approved friction course aggregates for FC-9.5 and FC-12.5 mixtures	Percentage of hydrated lime required in FC-5 mixtures
A	100	100	0
B	100	60	1.0
C	100	60	1.5

SUBARTICLE 337-3.3.1 FC-5 is deleted and the following substituted:

337-3.3.1 FC-5: Use a mixture having a gradation at design within the ranges shown in Table 337-2.

Table 337-2 FC-5 Gradation Design Range									
3/4 inch	1/2 inch	3/8 inch	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200
100	85-100	60-75	15-25	5-10	--	--	--	--	2-5

SUBARTICLE 337-4.1 FC-5 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 three weeks to design the mix.

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

Table 337-3 FC-5 Percent Binder Content	
Aggregate Classification	Percent Binder Content
A	6.5 – 8.0
B or C	6.0 – 7.5

SUBARTICLE 337-4.3 is deleted and the following substituted:

337-4.3 Revision of Mix Design: For FC-5, FC-9.5 and FC-12.5, meet the requirements of 334-3.3. For FC-5, all revisions must fall within the gradation limits defined in Table 337-2.

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SUBARTICLE 337-6.2 FC-5 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 ($P_{-3/8}$, P_{-4}, and P_{-8}), and asphalt binder content (P_b) only.

2. Testing in accordance with AASHTO T 312 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 334-7 are modified to include ($P_{-3/8}$, P_{-4}, and P_{-8}) with a maximum difference per FM 1-T 030 (Figure 2).

5. Table 334-6 (Master Production Range) is replaced by Table 337-4.

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 337-4
FC-5 Master Production Range

Characteristic	Tolerance (1)
Asphalt Binder Content (%)	Target ± 0.60
Passing 3/8 inch Sieve (%)	Target ± 7.50
Passing No. 4 Sieve (%)	Target ± 6.00
Passing No. 8 Sieve (%)	Target ± 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 sublot for asphalt binder content does not meet the requirements of Table 337-4,

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 337-4. 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

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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.

SUBARTICLE 337-9.2 is deleted and the following substituted:

337-9.2 Hydrated Lime Supply System: For FC-5 mixes containing Class B or C aggregate, use a separate feed system to accurately proportion the required quantity of hydrated lime into the mixture in such a manner that uniform coating of the aggregate is obtained prior to the addition of the asphalt binder. Add the hydrated lime in such a manner that it will not become entrained in the exhaust system of the drier or plant. Interlock the proportioning device with the aggregate feed or weigh system to maintain the correct proportions for all rates of production and batch sizes and to ensure that all mixture produced is properly treated with hydrated lime. Control the proportion of hydrated lime to within plus or minus 10% of the amount of hydrated lime required. Provide flow indicators or sensing devices for the hydrated lime system, interlocked with plant controls so that an alarm will be activated if introduction of the hydrated lime fails. Stop production of the asphalt mixture and resume production once the hydrated lime supply system is operating correctly. The addition of the hydrated lime to the aggregate may be accomplished by Method A or B as follows:

337-9.2.1 Method A - Dry Form: Add hydrated lime in a dry form to the mixture according to the type of asphalt plant being used.

When a batch plant is used, add the hydrated lime to the aggregate in the weigh hopper or as approved and directed by the Engineer. Increase the batch dry mixing time by eight to twelve seconds, or as directed by the Engineer, from the time the aggregate is completely emptied into the pugmill. Uniformly distribute the hydrated lime prior to the addition of asphalt binder into the pugmill.

When a drum-mix plant is used, add and uniformly disperse the hydrated lime to the aggregate prior to the addition of the asphalt binder. Add the hydrated lime in such a manner that it will not become entrained in the exhaust system of the drier or plant.

337-9.2.2 Method B - Hydrated Lime/Water Slurry: Add the required quantity of hydrated lime (based on dry weight) in a hydrated lime/water slurry form to the aggregate. Provide a solution consisting of hydrated lime and water in concentrations as directed by the Engineer. Use a plant equipped to blend and maintain the hydrated lime in suspension and to mix it with the aggregates uniformly in the proportions specified.

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SUBARTICLE 337-9.3 is deleted and the following substituted:

337-9.3 Hydrated Lime Pretreatment: For FC-5 mixes containing Class B or C aggregate, as an alternative to 337-9.2, pretreat the aggregate with hydrated lime prior to incorporating the aggregate into the mixture. Use a feed system to accurately proportion the aggregate and required quantity of hydrated lime and mix them in such a manner that uniform coating of the aggregate is obtained. Control the proportion of hydrated lime to within plus or minus 10% of the amount required. Aggregate pretreated with hydrated lime in this manner shall be incorporated into the asphalt mixture within 45 days of pretreatment.

337-9.3.1 Hydrated Lime Pretreatment Methods: Pretreat the aggregate using one of the following two methods:

Pretreatment Method A - Dry Form: Add the required quantity of hydrated lime in a dry form to the aggregate. Assure that the aggregate at the time of pretreatment contains a minimum of 3% moisture over saturated surface dry (SSD) conditions. Utilize equipment to accurately proportion the aggregate and hydrated lime and mix them in such a manner as to provide a uniform coating.

Pretreatment Method B - Hydrated Lime/Water Slurry: Add the required quantity of hydrated lime (based on dry weight) in a hydrated lime/water slurry form to the aggregate. Provide a solution consisting of hydrated lime and water in a concentration to provide effective treatment. Use equipment to blend and maintain the hydrated lime in suspension, to accurately proportion the aggregate and hydrated lime/water slurry, and to mix them to provide a uniform coating.

337-9.3.2 Blending QC Records: Maintain adequate QC records for the Engineer's review for all pretreatment activities. Include as a minimum the following information (for each batch or day's run of pretreatment): pretreatment date, aggregate certification information, certified test results for the hydrated lime, aggregate moisture content prior to blending, as-blended quantities of aggregate and hydrated lime, project number, customer name, and shipping date.

337-9.3.3 Certification: In addition to the aggregate certification, provide a certification with each load of material delivered to the hot mix asphalt plant, that the material has been pretreated in conformance with these specifications. Include also the date the material was pretreated.

SUBARTICLE 337-10 is deleted and the following substituted:

337-10 Failing Material.

Meet the requirements of 334-5.9. For FC-5, use the Master Production Range defined in Table 337-4 in lieu of Table 334-6.

SUBARTICLE 337-12.3 is deleted and the following substituted:

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

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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 337-5 replaces Table 334-8.
3. Table 337-6 replaces Table 334-9.
4. The Composite Pay Factor equation in 334-8.3 is replaced with the following:

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

Table 337-5
Small Quantity Pay Table for FC-5

Pay Factor	1-Test Deviation	2-Test Average Deviation
Asphalt Binder Content (%)		
1.05	0.00-0.25	0.00-0.18
1.00	0.26-0.50	0.19-0.35
0.90	0.51-0.60	0.36-0.42
0.80	>0.60	>0.42
3/8 inch Sieve (%)		
1.05	0.00-3.25	0.00-2.30
1.00	3.26-6.50	2.31-4.60
0.90	6.51-7.50	4.61-5.30
0.80	>7.50	>5.30
No. 4 Sieve (%)		
1.05	0.00-2.50	0.00-1.77
1.00	2.51-5.00	1.78-3.54
0.90	5.01-6.00	3.55-4.24
0.80	>6.00	>4.24
No. 8 Sieve (%)		
1.05	0.00-1.50	0.00-1.06
1.00	1.51-3.00	1.07-2.12
0.90	3.01-3.50	2.13-2.47
0.80	>3.50	>2.47

Table 337-6
Specification Limits for FC-5

Quality Characteristic	Specification Limits
Asphalt Binder Content (%)	Target ± 0.45
Passing 3/8 inch sieve (%)	Target ± 6.00
Passing No. 4 sieve (%)	Target ± 4.50
Passing No. 8 sieve (%)	Target ± 2.50