



## Florida Department of Transportation

CHARLIE CRIST  
GOVERNOR

605 Suwannee Street  
Tallahassee, FL 32399-0450

STEPHANIE KOPELOUSOS  
SECRETARY

December 18, 2009

Monica Gourdine  
Program Operations Engineer  
Federal Highway Administration  
545 John Knox Road, Suite 200  
Tallahassee, Florida 32303

Re: Office of Design, Specifications  
Section 330  
Proposed Specification: **3300202 Hot Bituminous Mixtures – General Construction Requirements**

Dear Ms. Gourdine:

We are resubmitting, for your approval, two copies of the above referenced Supplemental Specification. The proposed specification was revised to address the comment from Rafiq Darji.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to ST986RP or rudy.powell@dot.state.fl.us.

If you have any questions relating to this specification change, please call Rudy Powell, State Specifications Engineer at 414-4280.

Sincerely,

Rudy Powell, Jr., P.E.  
State Specifications Engineer

RP/dt

Attachment

cc: Gregory Jones, Chief Civil Litigation  
Florida Transportation Builders' Assoc.  
State Construction Engineer

## HOT BITUMINOUS MIXTURES - GENERAL CONSTRUCTION REQUIREMENTS.

(REV ~~1211-1823-09~~)

SUBARTICLE 330-2.2 of the Supplemental Specifications is deleted and the following substituted:

**330-2.2 Minimum Process Control Testing Requirements:** Perform, as a minimum, the following activities at the testing frequencies provided below:

### Asphalt Plant

1. Asphalt Mix: Determine the asphalt binder content; mix gradation and volumetric properties at a minimum frequency of one per day. In the event that the daily production exceeds 1,000 tons, perform these tests a minimum of two times per day. Quality Control tests used in the acceptance decision may be used to fulfill this requirement. Verify modifier addition.
2. Aggregate: Test one sample for gradation per 1,000 tons of incoming aggregate, as it is stockpiled.
3. Aggregate moisture content from stockpiles or combined cold feed aggregate - one per day.
4. RAP: Test one sample per 1000 tons of incoming material (prior to incorporation into the mix) for gradation and asphalt binder content. Test one sample per 5,000 tons of incoming material (prior to incorporation into the mix) for maximum specific gravity ( $G_{mm}$ ) and recovered viscosity.
5. Mix temperature at the plant for the first five loads and one out of every five loads thereafter.
6. Other tests (as determined necessary by the Contractor) for process control.

### Roadway

1. Monitor the pavement temperature with an infrared temperature device. Monitor the roadway density with either 6 inches diameter roadway cores, a nuclear density gauge, or other density measuring device, at a minimum frequency of once per 1,500 feet of pavement. When the layer thickness is greater than or equal to 1 inch (or the spread rate is greater than or equal to 105 lb *per*  $\text{yd}^2$ ) and an approved rolling pattern is used in lieu of density testing, identify in the QC Plan how the pavement density will be monitored.
2. Mix temperature at the roadway for the first five loads and one out of every five loads thereafter.
3. Monitor the pavement smoothness with a 15-foot rolling straightedge, as required by these specifications.
4. Monitor the pavement cross slope at a frequency necessary to fulfill the requirements of these specifications, and identify a system to control the cross slope of each pavement layer during construction.
5. Monitor the mix spread rate at the beginning of each day's production, and as needed to control the operations, at a minimum of once per 200 tons placed to ensure that the spread rate is within 5% of the target spread rate. When determining the spread rate, use, *at a minimum*, an average of five truckloads of mix.

*When the average spread rate is beyond plus or minus 5% of the target spread rate, monitor the thickness of the pavement layer closely and adjust the construction operations.*

If the Contractor fails to maintain *an average spread rate within the acceptable tolerance (plus or minus 5% of the target spread rate) for two consecutive days* the construction process in accordance with the quality control requirements herein stated, the Engineer may elect to stop the construction operation at any time until the *problem is resolved* deficiencies are corrected.

~~When the deficiency of the average spread rate exceeds the maximum spread rate tolerance as specified in 330-9.2.4, address the deficient area in accordance with 330-12.5.~~

SUBARTICLE 330-9.2.24 of the Supplemental Specifications is deleted and the following substituted:

***330-9.2.2 Thickness and Spread Rate of Layers:*** Construct each course of Type SP mixtures in layers of the thickness shown in Section 334.

*When the deficiency of the average spread rate for the total course pavement thickness measured in accordance with 330-2.2 exceeds the following maximum spread rate tolerance, address the deficient area in accordance with 330-12.5.*

*1. Structural Course (non-friction)*

*a. For pavement of a design thickness of 2-1/2 inches or more: plus or minus 50 lbs per /sy.*

*b. For pavement of a design thickness of less than 2-1/2 inches: plus or minus 25 lbs per /sy.*

*2. Friction course*

*a. For open grade friction course: plus or minus 15 lbs per /sy.*

*b. For dense grade friction course: plus or minus 25 lbs per /sy.*

*As an exception, the Engineer may allow the Contractor to leave areas in place if it is determined by the Engineer that the deficiency is not a significant detriment to the pavement quality. A reduction to the pay item quantity will be made in accordance with 330-12.5.2. ~~to the above, pavement in any area which the Engineer determines will satisfactorily perform its intended function without correction, may be left in place as approved by the Engineer.~~*

SUBARTICLE 330-12.4.5.3 of the Supplemental Specifications is deleted and the following substituted:

***330-12.4.5.3 Intermediate Layers and Temporary Pavement:***

When the design speed is 55 mph or greater *and* the intermediate Type SP layer *or temporary pavement* ~~will is to~~ be opened to traffic, ~~and if~~ the Engineer identifies a surface irregularity that is determined to be objectionable, straightedge and address all

deficiencies in excess of 3/8 inch within 72 hours of placement in accordance with 330-12.5.

SUBARTICLE 330-12.4.5.4 of the Supplemental Specifications is deleted and the following substituted:

**330-12.4.5.4 Final Type SP Structural Layer:** Straightedge the final Type SP structural layer in accordance with 330-12.4.2, either behind the final roller of the paving train or as a separate operation. Notify the Engineer of the location and time of straightedge testing a minimum of 48 hours before beginning testing. The Engineer will verify the straightedge testing by observing the Quality Control straight edging operations. Address all deficiencies in excess of 3/16 inch in accordance with 330-12.5.

- *When the final structural course is to be opened to traffic, and the design speed is 55 mph or greater, if any defect is 3/8 inch<sup>2</sup> or greater, the Engineer may require deficiencies to be corrected within 72 hours after opening to traffic.*

For bicycle paths, straightedge the final Type SP structural layer with a rolling straightedge, either behind the final roller of the paving train or as a separate operation. Address all deficiencies in excess of 5/16 inch in accordance with 330-12.5. If the Engineer determines that the deficiencies on the bicycle path are due to field geometrical conditions, the Engineer will waive corrections with no deduction to the pay item quantity.

## **HOT BITUMINOUS MIXTURES - GENERAL CONSTRUCTION REQUIREMENTS.**

**(REV 12-18-09)**

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**330-2.2 Minimum Process Control Testing Requirements:** Perform, as a minimum, the following activities at the testing frequencies provided below:

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2. Mix temperature at the roadway for the first five loads and one out of every five loads thereafter.

3. Monitor the pavement smoothness with a 15-foot rolling straightedge, as required by these specifications.

4. Monitor the pavement cross slope at a frequency necessary to fulfill the requirements of these specifications, and identify a system to control the cross slope of each pavement layer during construction.

5. Monitor the mix spread rate at the beginning of each day's production, and as needed to control the operations, at a minimum of once per 200 tons placed to ensure that the spread rate is within 5% of the target spread rate. When determining the spread rate, use, at a minimum, an average of five truckloads of mix.

When the average spread rate is beyond plus or minus 5% of the target spread rate, monitor the thickness of the pavement layer closely and adjust the construction operations.

If the Contractor fails to maintain an average spread rate within plus or minus 5% of the target spread rate for two consecutive days, the Engineer may elect to stop the construction operation at any time until the problem is resolved.

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**330-9.2.2 Thickness and Spread Rate of Layers:** Construct each course of Type SP mixtures in layers of the thickness shown in Section 334.

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1. Structural Course (non-friction)
  - a. For pavement of a design thickness of 2-1/2 inches or more: plus or minus 50 lbs per sy.
  - b. For pavement of a design thickness of less than 2-1/2 inches: plus or minus 25 lbs per sy.
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As an exception, the Engineer may allow the Contractor to leave areas in place if it is determined by the Engineer that the deficiency is not a significant detriment to the pavement quality. A reduction to the pay item quantity will be made in accordance with 330-12.5.2.

SUBARTICLE 330-12.4.5.3 of the Supplemental Specifications is deleted and the following substituted:

**330-12.4.5.3 Intermediate Layers and Temporary Pavement:** When the design speed is 55 mph or greater and the intermediate Type SP layer or temporary pavement is to be opened to traffic, if the Engineer identifies a surface irregularity that is determined to be objectionable, straightedge and address all deficiencies in excess of 3/8 inch within 72 hours of placement in accordance with 330-12.5.

SUBARTICLE 330-12.4.5.4 of the Supplemental Specifications is deleted and the following substituted:

**330-12.4.5.4 Final Type SP Structural Layer:** Straightedge the final Type SP structural layer in accordance with 330-12.4.2, either behind the final roller of the paving train or as a separate operation. Notify the Engineer of the location and time of straightedge testing a minimum of 48 hours before beginning testing. The Engineer will verify the straightedge testing by observing the Quality Control straight edging operations. Address all deficiencies in excess of 3/16 inch in accordance with 330-12.5.

When the final structural course is to be opened to traffic; and the design speed is 55 mph or greater, if any defect is 3/8 inch or greater, the Engineer may require deficiencies to be corrected within 72 hours after opening to traffic.

For bicycle paths, straightedge the final Type SP structural layer with a rolling straightedge, either behind the final roller of the paving train or as a separate operation. Address all deficiencies in excess of 5/16 inch in accordance with 330-12.5. If the Engineer determines that the deficiencies on the bicycle path are due to field geometrical conditions, the Engineer will waive corrections with no deduction to the pay item quantity.

