BUREAU OF MATERIALS
MATERIALS PROCEDURES

MP NUMBER: 3-25
EFFECTIVE DATE: 03/03/2025

APPROVAL: *Edward Inman*

HOT MIX ASPHALT (HMA) PLANT DUTIES

PURPOSE:

To establish a standard procedure for inspection of hot mix asphalt (HMA) plants.

SUPERSEDES:

Materials Procedure Number 3 - Dated 07/01/2008

REFERENCES:

Special Provisions, Addenda and Attachments
NJDOT Standard Specifications Section 901.05, 902, NJDOT B-2, NJDOT B-5, NJDOT B-8
AASHTO T-11 Amount of Material Finer than No. 200 Sieve in Mineral Aggregates by Washing
AASHTO T-27 Sieve Analysis of Fine and Coarse Aggregate
AASHTO T-166 Bulk Specific Gravity Compacted HMA Mixtures Using SSD Specimens
AASHTO T-209 Maximum Specific Gravity and Density of Hot-Mix Paving Mixtures (Rice Method)
AASHTO T-308 Determining the Asphalt binder Content of HMA by the Ignition Method.
AASHTO T-312 Preparing and Determining the Density of HMA Specimens by Means of the Superpave Gyratory Compactor
AASHTO T-329 Moisture Content of HMA by Oven Method

FORMS:

LB-3 Analysis of Bituminous Concrete
LB-14 Analysis of Miscellaneous Materials
LB-16 Analysis of Asphalt Cement
LB-64 Asphalt Plant Inspection-Daily Report
LB-88 Sample Envelope
LB-256 Bituminous Concrete-Lot Data
LB-259 Current Lot Sampling Status
LB-263 Request for Change of Job Mix Formula
LB-400 Ignition Oven Method
LB-310 Daily Activities Report
LB-325 Bituminous Concrete Mix Design-Master Copy

INSTRUCTIONS:

I. Assignment Procedures

The inspector(s) shall receive from the supervisor the following:

A. The time schedule, including the approximate quantity of each mixture to be shipped to each Department project.

B. The applicable assignment notification for all appropriate Department projects and LB-325 for each JMF.

C. Telephone numbers of their supervisor, the Regional Materials Office, and the RE.

D. A random sampling schedule for each mixture.

E. All pertinent information, specifications, test and inspection data required for the inspector to properly accomplish their duties. (This includes surge/storage limitations.)

F. The designation of the inspector-in-charge.

NOTE: The lead inspector must be certified as an NJSAT Level 2 Asphalt Plant Technician.

II. Inspection Duties

A. When one inspector is assigned, that person is expected to accomplish as many of the procedures under Plant Monitoring and Testing Duties as possible.

B. When two inspectors are assigned, it shall be the responsibility of the inspector-in-charge to assure that as many of the following duties as possible are accomplished:

1. Plant Monitoring Duties

a. Make your presence known to the supplier upon arrival and immediately establish the batch weights for the day. Any changes in bin pulls or feeder percentage from those listed on the LB-325 are to be noted on the LB-64.

b. Ensure the proper weight or feeder percentage of each ingredient is placed into the plant computer.

c. Verify that scales are zeroed and the automatic control panel is sealed.

d. Ensure that materials are from the sources listed on the LB-325, cold feed bins are properly loaded, bins are properly divided with no carryover between them, and stockpiles are properly maintained, separated and not contaminated.

e. Obtain a copy of the plant's quality control plan and verify that the supplier follows the plan.

f. Ensure that the plant's certified quality control technician is present during production. Request quality control testing results to ensure the quality of the mix; (when appropriate) attach quality control data to the original LB-64. (Quality control testing should include, but is not limited to, stockpile gradations and maximum specific gravity tests.)

g. For incoming truck deliveries, spot check delivery tickets for the sources of aggregate, mineral filler, and asphalt cement to ensure all materials are from the approved sources listed on the LB-325. Record the source, lot number and tank number on the LB-64.

h. Ensure that the weighmaster is licensed by the State of New Jersey; the seal number must correspond with the information noted on the license.

i. Inspect the trucks for clean bodies. Verify they are equipped with waterproof tarps in good condition and ensure each load is covered. If the truck bodies are being sprayed ensure that a non-petroleum based product is being used.

j. Observe the batching to see that weights or feeder percentages agree with the LB-325 (and with the printer at the automated plant).

k. Verify that mixing times, both dry and wet, as established by the plant, are proper and that time lock is being utilized. (batch plants)

l. Ensure that material processed through surge and storage bins is free of lumps, uniform in appearance, and at an acceptable, consistent temperature when loaded into the trucks.

m. At batch plants, ensure that all components of the mixture (based on the total batch weight of the bituminous mixture) comply with the following tolerances:

Weighing Tolerances	Percent
Each Aggregate Component	± 1.5%
Mineral Filler	± 0. 5%
Asphalt Binder	± 0.1%
Zero Return (Aggregate)	± 0. 5%
Zero Return (Asphalt Binder)	± 0.1%

If mineral filler is used in a batch cycle, the allowable tolerance for the aggregate component weighed just prior to the filler in a cumulative weighing system shall be plus or minus 0.5 percent.

n. Ensure that interlocking devices and automatic recordation equipment are functioning properly.

o. Ensure that hoppers are discharging completely and that scale indicators return to zero when the hoppers are emptied.

p. Ensure that the temperature of the asphalt cement in the storage tank and feed line complies with the specifications.

q. At the batch plant, verify on a random basis that the gross and tare weights recorded on the delivery tickets are correct. Compare the batch weight to the net weight. If the batch and net weights are not within 1%, call your supervisor for instructions. Record all results on the LB-64.

r. Immediately report any truck with a gross weight exceeding State weight laws to the weighmaster & plant operator for corrective action.

s. Inform the plant superintendent and your supervisor of any questions or problems regarding materials, procedures, equipment or methods of operation. Document any problem and its solution under remarks on the LB-64.

t. Ensure that outgoing delivery tickets contain all of the information required by the specifications, including mix serial number with the RAP content, DP number, and the NJDOT job name.

2. Testing Duties

a. Using the random sampling schedule, calculate the truck from which to take the sample to satisfy testing requirements.

b. Ensure that production is not permitted until the producer's certified quality control technician is present.

c. Ensure the random sampling schedule is not available to contractor's/supplier's personnel.

d. Obtain random samples utilizing the methods as defined in the specifications.

e. Perform all acceptance testing in accordance with the defined test methods and procedures.

f. Confirm frequently (at least every half hour) that the finished mix temperature is in accordance with the project requirement and is well coated and homogeneous. Make frequent temperature checks (at least every 2 hours) to verify that material being made for storage in surge/storage bins never exceeds the maximum allowable temperature.

g. Perform moisture test on finished mix as described in the specifications and record on the appropriate form.

h Sample asphalt cement according to the specification and submit to the Bureau of Materials Laboratory.–Samples shall be submitted with sample envelope LB-88. Enclose Form LB-16 and the site manager sample id.

i. Inform the plant superintendent and your supervisor of~~,~~ any questions or problems regarding materials test procedures or test equipment. Document any problem and its solution under remarks on the LB-64.

j. Bin pulls and feeder percentage changes shall be noted on the LB-64 and ensure that this information is always readily available.

k. Upon receipt of a Request for Change of JMF (LB-263) from the producer's certified quality control technician, contact the Regional Materials office to receive verbal authorization for tentative approval. Forward four copies to Regional Materials Office for approval.

III. Authority and Responsibility

Should any of the aforementioned inspection procedures or test results reveal noncompliance with the specifications, one of the following actions shall be taken by the inspector(s):

A. If the problem can be isolated without affecting the overall operation of the plant, order the removal of the non-complying equipment/material or ensure the non-complying condition is corrected and continue operation. Documentation of the corrective action shall be reported on LB-64. Notify your immediate supervisor.

B. If the problem can not be isolated or corrective action cannot be implemented; suspend the operation. Immediately notify the RE(s) , and contact your immediate supervisor and/or Regional Materials Office for further instructions. Document the instructions received on LB-64.

C. If samples fail to conform, consult Section 902 of the Standard Specifications.

IV Distribution of Forms

The inspector-in-charge shall convey the forms to the Regional Materials Office for proper distribution as follows:

Forms		
LB-14, LB-16, LB-281	1.	Original - Laboratory
LB-64	1.	Original - Regional Materials Office (with QC data attached)
	2.	RE(s)
	3.	Plant Laboratory File
LB-256	1.	Original - Laboratory
	2.	RE(s)
	3.	Regional Materials Office

	4.	Supplier
	5.	Contractor(s)
	6.	Plant Laboratory File
LB-259	1.	Original - Regional Materials Office
	2.	Plant Laboratory File
LB-400	1.	Original - Regional Materials Office
	2.	Plant Laboratory File

Laboratory is the Bureau of Materials, 930 Lower Ferry Road, P. O. Box 607, Trenton, NJ 08625-0607.