



# BUREAU OF MATERIALS

# MATERIALS

# PROCEDURES

**MP NUMBER: 3-08**  
**EFFECTIVE DATE: 07/01/2008**

**APPROVAL: Eileen Sheehy**

## HOT MIX ASPHALT (HMA) PLANT DUTIES

### **PURPOSE:**

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

### **SUPERSEDES:**

Materials Procedure Number 3 - Dated 10/1/2001

### **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

NJDOT Procedure 1.701 - Submitting Samples for Tests

**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 form LB-83 for all appropriate Department projects and LB-325 for each JMF's.
- 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. Assure that proper weights or feeder percentage of each ingredient is placed into the computer.
- c. Verify that scales are zeroed and automatic control panel sealed.
- d. Assure that materials are from the sources listed on the LB-325, cold feed bins are properly loaded, that bins are properly divided with no carryover between the bins, and that 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. Assure 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 in order to ensure all materials are from the approved sources listed on the LB-325. Record the source, lot number and tank number on LB-64.
- h. Assure 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 trucks for clean bodies and verify that they are equipped with waterproof canvas tarps or other such material in good condition and that loads are being 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 LB-325 (and with printer at 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. Assure that material processed through surge and storage bins is free of lumps, uniform in appearance, and at an acceptable, consistent temperature when loaded into trucks.
- m. At batch plants make certain that all components of the mixture (based on the total batch weight of the bituminous mixture) comply with the following tolerances:

<u>Weighing Tolerances</u>	<u>Percent</u>
Each Aggregate Component	± 1.5%
Mineral Filler	± 0.5%
Bituminous Material	± 0.1%
Zero Return (Aggregate)	± 0.5%
Zero Return (Bituminous Material)	± 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. Assure that interlocking devices and automatic recordation equipment are functioning properly.
- o. Assure that hoppers are discharging completely and that scale indicators return to zero when the hoppers are emptied.
- p. Ascertain 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 an unannounced random basis, that gross and tare weights recorded on delivery tickets are correct. Compare the batch weight to the net weight. If the batch and net weights do not check within 1%, call the Regional Materials office for instructions. Record all results on LB-64.

- r. Immediately report to your Regional Materials Office any truck with a gross weight exceeding State weight laws. Document any calls on the LB-64 and LB-310.
- s. Bring to the attention of the plant superintendent and their supervisor 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. Assure that outgoing delivery tickets contain all the information required by the specifications, including job mix and lot number, and 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. Assure that no production is permitted until the producer's certified quality control technician is present.
- c. Secure and make certain the random sampling schedule is not available to contractor's/supplier's personnel.
- d. Obtain unannounced 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 and form LB-16 enclosed.
- i. Bring to the attention of the plant superintendent and your supervisor, 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 assure that this information is readily available at all times.
- 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.
- l. The inspector shall sign the first ticket.

### **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 or material or assure the non-complying condition is corrected and continue operation. Documentation of the corrective action shall be reported on LB-64. Notify their 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

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