



# BUREAU OF MATERIALS

# MATERIALS

# PROCEDURES

**MP NUMBER: 2-08**  
**EFFECTIVE DATE: 07/01/2008**

**APPROVAL:** *Eileen Sheehy*

## CONCRETE BATCHING PLANT DUTIES

### **PURPOSE:**

To establish a standard procedure for the inspection at concrete batching plants. Concrete plant inspectors will be randomly assigned to perform these duties at the discretion of the ME. When assigned, the inspector shall be responsible for the following duties.

### **SUPERSEDES:**

Materials Procedure Number 2 – Dated 10/1/2001

### **REFERENCES:**

Special Provisions, Addenda and Attachments.

NJDOT Standard Specifications Sections 901.06, 903.01, 903.02, 903.03, 919.08, 1010.01, NJDOT 990((A-6)

AASHTO T-2 Sampling of Aggregates

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 Aggregates.

AASHTO M-80 Coarse Aggregate for Portland Cement Concrete.

AASHTO T-255 Total Evaporable Moisture Content of Aggregate by Drying

NJDOT Procedure 1.701 - Submitting Samples for Tests

Do's and Don'ts of Sampling (FHWA)

### **FORMS:**

LB- 5 Portland Cement Analysis Form

LB-14 Miscellaneous Analysis (Admixtures)

LB-47 Daily Report Concrete Batching Plant Inspection

LB-88 Sample Envelope

LB-125 Portland Cement Concrete Proportions

LB-296 Notice of Non-Complying Materials

## **INSTRUCTIONS:**

### **I. Assignment Procedures:**

The inspectors shall receive from their supervisor or Regional Engineering Staff the following:

- A. The time to report to the plant.
- B. The time schedule giving the approximate quantity to be shipped to each Department job including class, item and item numbers.
- C. The applicable concrete proportions (LB-125)
- D. A list of approved concrete trucks.
- E. Telephone numbers of the supervisor, the Regional Materials Office, the RE, and the Field Team Leader.
- F. The information required for properly completing delivery tickets listed in Section 903.03.03(C) of the Standard Specifications.

**NOTE:** Inspectors must be certified as an ACI Field Grade 1 Concrete Technician, an NJSAT Asphalt Plant Technician, or a NJ Soil and Aggregate Technician.

### **II Quality Assurance Duties:**

The inspector shall make their presence known to the concrete supplier immediately upon arrival at the plant.

#### **A. Inspection/Testing Duties:**

##### **1. Duties Before Batching.**

The inspector shall:

- a. Make a visual check of aggregate stockpiles. Verify there is sufficient approved material on hand for a day's production. Examine aggregates for segregation, contamination and coated material.
- b. Sample fine and coarse aggregates. Determine moisture contents of these materials and the amount of free water. Also determine the amount of free water in admixtures to be used (reduce by the percent solids contained within each admixture). Determine if producer has adjusted batch weights for the total percentage of free water.
- c. Perform gradation tests to insure compliance with the specifications and retest when necessary.
- d. Make certain weigh hoppers are free from binding and buildup of

materials.

- e. Make certain batch weights are available to the batch man.
- f. Verify that trucks scheduled for use are on the approved list, equipped with revolution counters in working order, calibrated water measuring devices, and are free from leaks.
- g. Review the concrete supplier's raw materials delivery records to ensure that they are being supplied with sufficient Department approved materials.
- h. Document any corrective actions taken to meet the above criteria.

2. Duties During Operations.

The inspector shall:

- a. Assure that approved materials, as per the LB-125 form, are being batched.
- b. By personal observation, make certain the proper amount of cement and aggregates are weighed into each batch.
- c. Verify that the proper amounts of admixtures are being dispensed into each batch.
- d. Assure that interlock on cement scale is operative and properly utilized during batching.
- e. Make certain the delivery tickets contain all the required information, including gallons of free water, added water and total water per load, as per Section 903.03.03(C) in the Standard Specifications. The technician shall print and sign all tickets.
- f. Re-inspect truck revolution counters to confirm they are working properly and ensure supplier is returning counters to zero.
- g. Confirm that truck mixer barrels are free of water before loading. This is accomplished by having operator reverse truck mixer barrel for approximately 10 revolutions.
- h. During extreme (hot and cold) temperature conditions, follow those procedures outlined in Section 504.03.02.C in the Standard Specifications. For bridge decks, refer to Section 507.03.02.F for additional weather limitations. Also, contact supervisor for special instructions that may have been issued by the RE or the ME.

- i. As each truck is loaded or test is completed, fill out form LB-47.
- B. Monitoring of the supplier's quality control plan, when directed. This plan shall be made available, by the supplier, when requested.

### **III. Additional Duties**

The inspector shall:

- A. Run aggregate unit weight test when required. Report results on daily report (LB-47).
- B. Bring to the attention of your supervisor and the plant superintendent any questions or corrective actions regarding materials, equipment or methods of operation.
- C. Assure that the laboratory has the equipment required in Section 1010.01 in the Standard Specifications and equipment is in good working order. Report all deficiencies to plant supervision and your supervisor immediately, so corrective action may be taken.
- D. Perform a wash test to determine percentage of adherent fines. In order to determine compliance, follow NJDOT A-4 of the Standard Specifications, as modified below.

The modifications are as follows:

- 1. Sample used shall be between five and 10 pounds
  - 2. Wash coarse aggregate sample and calculate the percentage passing the No. 200 sieve. Report this as the "preliminary" adherent fines.
  - 3. If "preliminary" adherent fines exceed the specification limit of 1.0%, the coarse aggregate shall be re-tested in accordance with NJDOT A-4.
- E. At the end of each day, leave the plant laboratory in a clean and orderly condition.
- F. Cement and additives being used shall be sampled as directed by your supervisor and submitted to the Bureau of Materials Laboratory for testing.

#### **IV. Authority and Responsibility**

Should any of the above inspection procedures or test results reveal noncompliance with the specifications, one of the following actions should be taken by the inspector.

- A. If the problem can be isolated without affecting the overall operation (i.e. faulty truck counters, leaky water tanks, contaminated or segregated area of material in stockpiles, etc.) order the removal of the non-complying condition until it is corrected and continue operation. Documentation of the corrective action should be noted on the daily report (LB-47).
- B. If problem cannot be isolated or corrective action cannot be implemented, suspend the operation; immediately notify the RE, contact immediate supervisor, and/or Regional Materials Office for further instructions. Document the instructions received on the plant daily report (Form LB-47).
- C. Documentation of observations, happenings, and test results is to be carefully noted on the LB-47 and LB-296.

#### **V. Distribution of Forms**

<u>Form</u>	<u>Distribution</u>
LB-47	1. Original - Laboratory 2. Batching Plant Laboratory File
LB-296	1. Original - Bureau of Materials 2. RE 3. Regional Materials Office