



BUREAU OF MATERIALS

MATERIALS

PROCEDURES

MP NUMBER: 32-08

EFFECTIVE DATE: 07/01/2008

APPROVAL: Eileen Sheehy

ASPHALT DRUM MIX PLANT CALIBRATION

PURPOSE:

To establish a standard procedure for calibrating an Asphalt Drum Mix Plant

REFERENCES:

Special Provisions, Supplemental Specifications, Addenda and Attachments
Standard Specifications for Road and Bridge Construction

FORMS:

LB-XXX Asphalt Drum Plant Calibration Worksheet

INSTRUCTIONS:

I. Determining When to Calibrate

- A. Asphalt Drum Plant Calibration shall be performed:
 - 1. Prior to the initial use of a drum plant.
 - 2. Annually and before the start of production.
 - 3. When there are major changes in or modifications to the equipment or operation.
 - 4. When the finished mixture displays composition deficiencies as determined by the ME.

- B. Procedure
 - 1. Notification shall be given to the Department 7 working days prior to calibration.
 - 2. The ME or his representative will witness the calibration if available.

II. Instructions

All work shall be completed by the Supplier or their representative.

- A. Material used for calibration shall be dry and free from moisture.
- B. The combined aggregates shall pass over a weigh belt or belt scale that is electronically interlocked with the asphalt binder metering system in such a manner as to automatically vary the asphalt binder rate, as required, to maintain the required asphalt binder content in the mixture.
- C. The size of material used for the main aggregate belt, rap belt and the rap feeder shall be 3/8" stone. The size of the material used for cold feeds shall be 3/8" stone or whichever size stone is used in the bin for a standard mix as determined by the manufacturer's recommendations.
- D. The dry weight of the composite aggregate flow shall be continuously displayed by electronic readout at the operator's station in units of tons per hour and shall be totaled.
- E. The method used to calibrate the mineral filler feeder system is subject to approval.

III. Procedure

The supplier or their representative shall:

- A. Calibrate the main aggregate belt, the individual cold feeders for each bin, the rap belt, the rap feeder, and the asphalt cement. This is performed at several production rates throughout the range of the plants capacity. Five consecutive readings must be within the required tolerance. One reading is performed at a low production speed. Two readings are performed at mid-range production speeds. Two readings are performed at high production speeds. The production speeds can be determined as per the manufacturers recommendations. When any of the five readings are out of the tolerance range, the process is discontinued and must be started from the beginning.
- B. The aggregates shall travel over the respective weigh bridges and be independently diverted into trucks to determine the rate of delivery. Such calibration points shall be determined in increments of approximately 100 tons per hour of total aggregate flow.
- C. The ME will witness a check on the mineral filler and asphalt binder feeds at several production rate increments throughout the range of the plants capacity. Calibration of the asphalt binder metering system and subsequent checks shall be accomplished by diverting the asphalt binder into an asphalt tanker truck for weight. The method used to calibrate the mineral filler feeder system is subject to approval.

IV. Calculations

- A. The main aggregate belt, the individual cold feeders for each bin, the rap belt, and the rap feeder have a tolerance of +/- 1.0%.

The computer printout of diverted aggregate weights in tons must be within 1% of the actual weight of aggregate as measured by a calibrated scale.

- B. The asphalt cement has a tolerance of +/- 0.5%

The computer printout of diverted asphalt cement weight in tons must be within 0.5% of the actual weight of asphalt cement as measured by a calibrated scale.

- C. A copy of the computations for the combined rate of flow shall be submitted to the ME. The computations shall indicate the rate of aggregate delivery in tons for the main aggregate belt, the cold feeder, the rap belt and the rap feeder in addition to the dial settings and gate openings as recommended by the plant manufacturer.

V. Distribution of Forms

Form
LB-XXX

Distribution
Original –ME

LB-XXX
New Jersey Department of Transportation
Worksheet for Calibration of Asphalt Drum Plant

Plant: _____
Location: _____

Start Date: _____
End Date: _____

(ALL WEIGHT ARE IN TONS)

MAIN AGG BELT						
TEST	1	2	3	4	5	6
SCALE						
ACTUAL						
% ERROR						

FEEDER No. 1						
TEST	1	2	3	4	5	6
SCALE						
ACTUAL						
% ERROR						

FEEDER No. 2						
TEST	1	2	3	4	5	6
SCALE						
ACTUAL						
% ERROR						

FEEDER No. 3						
TEST	1	2	3	4	5	6
SCALE						
ACTUAL						
% ERROR						

FEEDER No. 4						
TEST	1	2	3	4	5	6
SCALE						
ACTUAL						
% ERROR						

FEEDER No.5						
TEST	1	2	3	4	5	6
SCALE						
ACTUAL						
% ERROR						

FEEDER No. 6						
TEST	1	2	3	4	5	6
SCALE						
ACTUAL						
% ERROR						

FEEDER No. 7						
TEST	1	2	3	4	5	6
SCALE						
ACTUAL						
% ERROR						

RAP BELT						
TEST	1	2	3	4	5	6
SCALE						
ACTUAL						
% ERROR						

RAP FEEDER						
TEST	1	2	3	4	5	6
SCALE						
ACTUAL						
% ERROR						

ASPHALT						
TEST	1	2	3	4	5	6
SCALE						
ACTUAL						
% ERROR						

SPAN	HIGH	LOW	MED.
Main Aggregate Belt			
FEEDER # 1			
FEEDER # 2			
FEEDER # 3			
FEEDER # 4			
FEEDER # 5			
FEEDER # 6			
FEEDER # 7			
RAP BELT			
RAP FEEDER			
ASPHALT			