

..... DIVISION
**INSPECTION-IN-DEPTH
ASPHALT PAVEMENTS
1999**

Hot Mixed Asphalt - Paving and Plant (Code 8)

Note: These guidelines are based on the 401 special provision (metric version) for projects on the National Highway System .

Project Data:

Project Number:
County:
Inspection Made By:
In Company With:
Date of Inspection:
Percent Work Completed:
Percent Time Elapsed:
Contractor:
Contract Amount:

References:

1. 1994 Standard Specifications
2. 1998 Supplemental Specifications
3. 1980 DOH Construction Manual
4. MP 401.02.22 (as part of the 401 special provision)
5. MP 401.02.23 (as part of the 401 special provision)
6. MP 401.03.50 (as part of the 401 special provision)
7. MP 401.05.20 (as part of the 401 special provision)
8. Applicable Special Provisions

Scope of Work:

This guideline was prepared utilizing the above mentioned references. The checks included in the guidelines are considered to be the major items and can be supplemented as deemed necessary by the inspecting party. The Area Engineer is provided the flexibility of using the guideline in its entirety or portions depending on the job conditions and/or time limitations.

A. FIELD PORTIONS (Roadway)

1. Weather Restrictions (Section 401.7)

- a. What are the weather conditions?
- b. Is the minimum surface or air temperature being observed based on the course thickness?

2. Equipment

Do all the equipment, tools, machinery, and plant appear to be maintained in satisfactory condition?
(Section 401.3)

3. Open Graded Free Draining Base Course (Section 311)

- a. What is the mat temperature at the time of initial rolling? (66°C to 79°C)
- b. Are the correct number of roller passes performed (2 or 3 unless otherwise directed?)
- c. Is the finished surface check for line and grade with a 3 meter straight edge which has not greater deviation than 5 mm ?
- d. Are depth checks taken? (+ 13 mm)

4. Surface Preparation (Section 401.9.1)

Is the conditions of the aggregate, base or bituminous surface satisfactory for placement? (ex. clean, dry, etc.)

5. Tack or Prime (Section 408 & 409)

- a. Is tack or prime coat specified?
- b. If so, how is the application rate determined?
- c. Does the tack coat precede the asphalt paving such that the tack is not damaged?
- d. Is the asphalt being placed prior to the bituminous material being thoroughly cured and dry?
- e. Have the contacted surface of curbs, gutters, manholes, etc., been painted or sealed with bituminous material? (Section 401.9.3)

6. Paving Operation (Section 401.10)

- a. When placed, what is the temperature of the mix?
- b. Is the exact edge of pavement established by stringline?
- c. What type of mechanical spreading/finishing equipment is being utilized?
- d. Is the paver equipped with manual or automatic grade/slope controls?
- e. If a patching and leveling or scratch course is placed, is it properly compacted with a 3-wheeled roller or pneumatic tire roller?
- f. Is a constant head of material kept in front of the screed and in the hopper? Is any excess material dropped in front of the paver?
- g. Is the paver running at a constant speed to match the delivery of asphalt? If not, the paver should stop and start smoothly and quickly.
- h. When trucks are dumping into the hopper, are wheels in contact with rollers? Is any excess bumping observed?

7. Rolling Operation (Sections 401.9.10, 401.10.4)

- a. What type of compaction equipment is being used?
- b. Rolling of the mix should be done as follows: (1) transverse joints, (2) longitudinal joints, (3) outside edge, (4) initial or breakdown rolling, beginning on the low side and progressing toward the high side or from the edge to the center, (5) intermediate rolling, (6) finish rolling. Observe and comment on the rolling procedure.
- c. Are the rollers moving at a constant, slow speed with the drive wheels nearest the paver? Are the wheels being kept moist? (No fuel oil) Are any rollers standing on the finished mat?
- d. If the roller displaces any material, is the material replaced and grade restored to original grade?

8. Joints (401.10.5)

- a. Are the "heel in" joints being constructed in accordance with the plans?
- b. In a multilayer project, are longitudinal and transverse joints being offset as required?
- c. On the top layer, is the longitudinal joint on the lane line?

9. Quantity Check

- a. Is the project personnel checking the application rates?
- b. Does it compare favorably with plan quantities?
- c. Are depth checks being taken?
- d. Is thickness or plan tonnage being used as the overriding control?

10. Surface Tolerance (Section 401.7.1)

- a. Is the finished surface checked for line and grade with a 3 meter straight edge which has no greater deviation than 6 mm for base coarse and 5 mm for wearing course?
- b. Are any irregularities exceeding these specified limits corrected?
- c. Has any smoothness testing been done to date? What were the results?

11. Compaction Testing (Section 401.7.2)

- a. Is a qualified technician conducting the compaction testing?
- b. Is the required density being obtained prior to the mat temperature reaching 79°C?
- c. What are the results of the randomly located nuclear density tests? Is the density within the required range?

12. If the roadway is subject to traffic, have temporary pavement markings been applied at the end of each day in accordance with Section 401.11?

B. FIELD PORTION (Plant)

1. Plant

What type of plant is being used?

2. Stockpile

- a. Is the aggregate properly stockpiled?
- b. Is the area clean and properly kept?

3. Truck Transportation (Section 401.8.7)

- a. Are trucks, used for transporting the mixture, thinly coated with an acceptable lubricating mixture?
- b. Are the trucks insulated, covered, and have access for checking temperatures?
- c. Are the trucks being loaded properly?

4. Scales (Section 401.9.3)

- a. Are the scales capable of weighing the entire vehicle at one time?
- b. Is a bonded weighperson being provided by the producer?
- c. Are all plant and truck scales, and metering devices inspected and sealed by the
Department of Labor, Bureau of Weights and Measures?

- Date of Inspection:
- d. Is a digital recorder being used with the truck scales?
 - Is it interlocked?
- e. Is each truck being weighed empty prior to loading?

5. Surge or Storage Bins (Section 401.9.5)

- a. Is plant equipped with surge or storage bins?
- b. If in use, has the specified retention time been exceeded?

6. Field Laboratory

- a. Is a field laboratory provided within reasonable proximity of the plant?
- b. Is it supplied with the necessary equipment and materials as per Section 401.9.8?

C. OFFICE PORTION (Plant)

- 1. Has the plant been certified by the DOH?
 - a. By Whom?
 - b. Date of Certification?
- 2. Is there documented evidence of compliance with current air pollution requirements?
- 3. What sort of documentation is the State's plant inspector performing?

Where is it kept?

- 4. Is all required information readily available such as:
 - a. An approved plant mix formula (Form MC-14)
 - Date approved
 - b. Information noted in plant mix formula (PMF):
 - i. Identification of source and type of materials
 - ii. % of each sieve fraction
 - iii. % of asphalt cement
 - iv. temperature of completed mix
 - v. fines to asphalt ratio
 - c. Conformance of plant production with Marshall method mix criteria in the PMF:
 - i. Stability
 - ii. Flow
 - iii. Air Voids
 - iv. VMA
 - d. Has the mix been accepted based on gradation and asphalt content?
 - e. An approved quality control plan
 - Date approved

D. OFFICE PORTION (Roadway)

1. Quality Control Plan

- a. Has the contractor submitted and received approval of his Quality Control testing program?
 - b. Is the testing in accordance with this plan?
 - c. Is a copy at the Project Office?
 - d. Has the DOH done acceptance sampling and testing of 10% of that required by the contractor?
2. Pick a random date when the HLBC operation was in progress and cross check the supervisor's and inspector's daily reports (SDR's & IDR's), HL-440's and pay estimate for proper documentation of materials used, pay items involved, and required field tests and results (eg. temperatures of base and mix, yield and depth checks, % compaction, application rate of prime or tack).
- Dates sampled
 - SDR's & IDR's
 - HL-440's
 - Pay Estimate
 - Other Comments:

E. CONCLUDING REMARKS

1. From your plant and roadway reviews, do the plans and specifications appear adequate to obtain the desired product?

With your discussions with the State personnel, are there any suggestions for changes in the procedures or requirements that might better improve the process?

2. Hold a closeout conference and discuss all findings and how, if any, corrective actions will be performed?
3. Summarize findings that are not procedural/project related findings and will need to be pursued beyond the individual project. This would include items related to standard plans, specifications, construction directives, materials procedures and the like.