

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
FOG SEAL

C&T:KPK

1 of 3

C&T:APPR:TC:CJB:05-27-11

a. Description. This work consists of furnishing all materials, equipment, labor and preparation necessary for an application of a fog seal following a chip seal to protect against water infiltration and weathering and to prevent loss of aggregate from the chip seal. A fog seal is a light application of a slow-setting emulsified asphalt diluted with water. All work and materials must be in accordance with the standard specifications, except as modified herein.

b. Materials. The material must meet the following requirement:

Asphalt Emulsion: CSS-1h..... 904

Dilute asphalt emulsion, at one part asphalt emulsion to one part water, at the emulsion plant.

c. Equipment. Use equipment that is safe, environmentally acceptable, and capable of producing a quality product.

1. Pressure Distributor. The pressure distributor must have the following characteristics:

A. Have a ground speed computer controlled device interconnected with the asphalt emulsion pump such that the specified application rate is supplied at any speed;

B. Be capable of maintaining the asphalt emulsion at the specified temperature.

C. Have spray bar nozzles capable of producing a uniform fan spray and with shutoff control that is instantaneous, with no dripping.

D. Be capable of maintaining the specified application rate within ± 0.015 gal/syd for each load.

2. Miscellaneous. Provide a power broom and all necessary hand tools, thermometers, etc. Distributors and power brooms must be equipped with at least one visible approved flashing, rotating, or oscillating amber light.

d. Pre-Paving On-Site Meeting. A pre-paving meeting between the Engineer and Contractor will be held prior to beginning work. The agenda for this meeting will include a review of the following:

1. Work schedule,

2. Traffic control plan,

3. Equipment calibration and adjustments,

4. Condition of materials and equipment, and
5. Quality control plan (JMF, Yield Check Methods, etc.).

e. Construction. Place the longitudinal construction joint at the edge of metal of the driving lane; at a location requiring a minimal overlap onto the driving lane; or at a location requiring a minimal overlap of the new longitudinal joint resulting from milling and resurfacing.

Where corrugations are present joints are to be constructed at the outside edge of the far side of the corrugation on the first pass. The joint must be placed at the outside edge of the opposite side of the corrugation for the second application.

Complete application of the fog seal within 48 hours of the application of chip seal, but not on the same day as the application of chip seal.

Apply the fog seal only when the pavement and air temperature is 55 degrees F or above. Do not apply the fog seal if there is threatening weather and temperatures are forecast to be below 32 degrees F within 24 hours from the time of application.

Use pressure sufficient to apply emulsion at a uniform rate, but without splattering or drilling from the spray bar. Adjust nozzle angle and spray bar height to ensure correct spray pattern.

Apply fog seal at a rate of 0.10 to 0.15 gallons of diluted material per square yard of pavement treated. Ensure the fog seal applications results in a uniform coverage of emulsion just sufficient to flow into and seal the pavement pores, small cracks, and voids. The asphalt emulsion application rate, as determined by a yield check, must not exceed a tolerance of ± 0.015 gal/syd from the established JMF application rate.

If a condition is identified that causes an unsatisfactory fog seal, stop all production work and perform corrective action immediately at no additional cost to the contract. If there are adverse environmental conditions, provide the Engineer an action plan that clearly demonstrates how the fog seal operation will be adjusted for the actual environmental conditions.

Allow the Engineer access to all work in progress for the purpose of quality assurance review and testing.

f. Quality Control. Establish, maintain, and follow an effective quality control system in accordance with current Department procedures. The quality control system must detail plans, procedures, and organization necessary to furnish and apply a fog seal that complies with the contract. Follow the quality control system until work is accepted.

Establish, maintain, and follow a Contractor Quality Control (CQC) plan sufficient to ensure that the warranty related treatment complies with the contract. The CQC plan must cover all fog seal operations. Submit a copy of the plan to the Engineer, at the pre-construction meeting, for approval. Follow the approved plan throughout the project.

Include the following information, at a minimum, in the CQC plan:

1. Materials to be used on the project.
2. Sampling and testing methods used to determine compliance with material

specifications.

- 3. Equipment to be used on the project.
- 4. Calibration method used to determine compliance with the application rates.
- 5. Procedures for pavement preparation.
- 6. Controls implemented by the Contractor to ensure that the fog seal material is cured or set up satisfactorily before opening to traffic.
- 7. Procedures implemented by the Contractor to for monitoring initial acceptance requirements.

g. Documentation. Provide the Engineer a daily report including the following information:

- 1. Control section, project number, county, route, Engineer;
- 2. Date, air temperature, pavement temperature, humidity;
- 3. Asphalt emulsion temperature;
- 4. Beginning and ending stations;
- 5. JMF: application and dilution rates (asphalt emulsion);
- 6. Yield checks on asphalt emulsion (3 per day, minimum);
- 7. Length, width, total square yards; and
- 8. Contractor's signature.

Provide asphalt emulsion documentation in accordance with current Department acceptance procedures.

h. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Seal, Fog.....	Square Yard

- 1. **Seal, Fog** includes all materials, equipment, and labor for placement of the asphalt emulsion including surface preparation, stationing, and documentation.