

SECTION 2705

EMULSIFIED ASPHALT FOG SEAL

PART 1 - GENERAL

1.1 Description

A. Description of Work

The work to be performed in accordance with this section shall consist of cleaning the asphalt pavement surface and applying a light coat of emulsified asphalt fog seal to the entire pavement surface by means of a bituminous distributor.

The CONTRACTOR shall provide the necessary labor, tools and equipment required to apply an emulsified asphalt fog seal coat to asphalt concrete pavements as described in the Contract Documents, in accordance with these Specifications and as directed by the ENGINEER.

1.2 Quality Assurance

A. Reference Test Standards and Specifications

ASTM D244, Emulsified Asphalt
ASTM D5545, Cationic Emulsified Asphalt
ASTM D5546,94a, Polymer-Modified Asphalt Materials

1.3 Submittals

A. Certificates of Compliance

1. Emulsified Asphalt Fog Seal

B. Suppliers' Recommendation

1. Application Rate of the Emulsified Asphalt Fog Seal
2. Application Temperature and Dilution Recommendations

1.4 Product Delivery Storage and Handling

The Contractor shall take all precautions in handling, storing and applying the emulsified asphalt so as not to damage the product or damage the environment.

PART 2 - MATERIALS

2.1 Emulsified Asphalt Fog Seal

A. Surface Preparation

Prior to placement of the fog seal, each particular street must be cleaned not more than twenty-four (24) hours in advance of the fog seal being applied.

B. Bituminous Materials

Bituminous material shall conform to the requirements of MAG Standard Specification for Emulsified Asphalt, Section 1005 and Table 1005-3 for asphalt emulsion undiluted.

The amount of polymer added shall be 3% by weight of the finished emulsion (solid or latex). Latex modified systems shall be “co-milled” not “post-milled” to the finish emulsion.

Torsional Recovery %	CTM 332	18 Min.
or		
Polymer Content %	CTM 401	2.5 Min

C. Rate of Application

The rate of application for the fog seal material shall be at the approximate rate of 0.05 to 0.15 gallons per square yard. The exact rate of application shall be determined by the ENGINEER.

E. Application Temperatures

At the time of application, the temperature of the emulsified asphalt fog seal material shall be between 130° degrees and 165° degrees Fahrenheit.

PART 3 - EXECUTION

3.1 Preliminary Investigation of the Work

Verify all preliminary work has been performed in accordance with the Plans and Specifications prior to application of emulsified asphalt fog seal.

3.2 Time of Application

No fog seals shall be placed between the dates of December 1st through April 1st and between June 1st through October 1st, unless otherwise approved by the ENGINEER.

3.3 Weather Limitations

The emulsified asphalt fog seal shall be placed only when the roadway surface is dry

and there is no imminent threat of rain. The roadway surface temperature must be at least 85° degrees Fahrenheit and rising, with air temperature at least 70° degrees Fahrenheit and rising.

3.4 Notification

Written notice of the approximate schedule and explanation of the work shall be given to each resident, homeowner, business or school at least five (5) days prior to the commencement of work in that area and again one (1) day prior to the work beginning. A copy of the notice must be provided to the Engineer for approval.

3.5 Traffic Control

In order to maintain traffic flows, the contractor shall only perform work on half streets at a time each day due to the non-grid type street layout in this community. The Contractor will provide openings in the fog seal at intersections and commercial driveways to allow a place for motorists to cross through the work areas. No streets or cul-de-sacs will be closed to traffic unless prior arrangements have been made and approval has been obtained for the engineer.

In accordance with Section 2650 Traffic Control the Contractor shall use orange traffic cones, “fresh oil” , “directional arrows”, ”keep right/keep left” and similar signage to delineate the work area and traffic path at a maximum spacing of 500 lineal feet. Additional signage must be used as needed to provide advanced warning of the work area and at each intersection of the street being worked on. At the direction of the Engineer, some narrow streets with hills and curves may require the use of flagmen or additional signage such as “yield to oncoming traffic” or “one lane road”.

No work will be scheduled which will interrupt regular trash pickup to either residential or commercial properties. It will be the contractor’s responsibility to coordinate his activities with the local trash haulers.

3.6 Temporary Pavement Markers

Temporary pavement markers conforming to ADOT Standard Drawing 4-M-2.05 or equal shall be provided by the Contractor for placement on streets indicated in the Special Provisions. The Contractor will be responsible for placing the markers prior to the fog seal being placed. Immediately after the application of the fog seal coat, the plastic covers will be removed exposing the reflective tape surface.

3.7 Fog Seal Application

A. Preparation of Surfaces

Immediately before applying the fog seal material, the area to be coated shall be thoroughly cleaned of dirt and other objectionable material by the

CONTRACTOR. On streets with curbs the surface shall be cleaned with a self-propelled pick-up sweeper. On streets without curbs power brooms may be used. When necessary, cleaning shall be supplemented by hand brooms.

All manhole and valve covers, drop inlets, and other service entrances, etc. Shall be protected from the bituminous material by placing reinforced, waterproof, all-purpose paper or other suitable material, approved by the Engineer. The paper shall be held in place with spray glue and marked with a temporary pavement marker.

The fog seal material shall not be applied until an inspection of the street surface has been made by the ENGINEER and he has determined that it is suitable.

B. Application of Fog Seal

The emulsified asphalt fog seal shall be applied as soon as possible after preparation of surfaces. At the time of application, temperatures of the emulsified material shall be within the ranges specified. The exact rate of application shall be as directed by the ENGINEER.

The fog seal material shall be placed using a distributor truck as specified. Application methods shall ensure that a uniform distribution of the fog seal material is obtained over the entire area to be sealed.

The surfaces of concrete driveways, sidewalks, curbs, valley gutters, etc. adjacent to the area being seal coated shall be protected in such a manner as to prevent their being spattered with fog seal material. The CONTRACTOR shall be responsible for all damage to such items.

Adequate means shall be provided to protect the fresh fog seal coat from damage by traffic until such time that the material has cured sufficiently so that the seal coat will not adhere to and be picked up by the tires of vehicles.

In superelevated areas or due to over application a sand dam or other approved means may be necessary to prevent emulsion from running onto unintended work areas or on concrete structures adjacent to the work area.

3.8 Work Hours

In order to allow residents time to leave their neighborhoods and the work be completed before the residents return to their homes, the Contractor will only be allowed to apply emulsified asphalt fog seal on the streets between the hours of 8:00 a.m. and 2:00 p.m. Monday through Friday not including Holidays.

3.9 Distributing Equipment

Distributor trucks shall be of the pressure type with insulated tanks. Spray bars and extensions shall be of the full circulating type. The spray bar shall be adjustable to permit varying height above the surface to be treated.

The nozzle spacings, center to center, shall not exceed 6 inches. The valves shall be operated so that one or all valves may be quickly opened or closed in one operation. The valves which control the flow from the nozzles shall be of a positive acting design so as to provide a uniform, unbroken spread of bituminous material on the surface.

The distributor shall be equipped with devices and charts to provide for accurate, rapid determination and control of the amount of bituminous material being applied. The spreading equipment shall be designed so that the uniform application of an emulsified asphalt material can be applied in controlled amounts ranging from 0.05 to 0.2 gallons per square yard. The distributor shall be equipped with a hose and nozzle attachment to be used for areas inaccessible to the distributor.

PART 4 - MEASUREMENT AND PAYMENT

4.1 Measurement

Certified weight slips of all emulsified asphalt fog seal shall be delivered to the ENGINEER before the materials are applied. Certified weight slips of any material being sent back in for credit shall be delivered to the ENGINEER the next day.

The quantity of fog seal to be paid for will be determined by measurement of the number of square yards completed and tons of material applied and accepted by the OWNER as complying with the drawings and specifications. The quantity shall be based on the actual amount of square yards of streets that an emulsified asphalt fog seal has been placed on.

4.2 Payment

Payment for the fog seal shall be at the contract unit price per square yard for equipment and crew services and contract unit price per tons of asphalt emulsion placed. The bid price shall include all labor, material and equipment required to complete this item as described in the Special Provisions.

See Section 00310 Bid Schedule for Bid Items