SECTION 32 12 10.2

BITUMINOUS PRIME COAT

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only. Unless specifically noted, the current edition of the reference will be used.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 2995	Determining Application Rate of Bituminous Distributors

OKLAHOMA DEPARTMENT OF TRANSPORTATION (ODOT)

ODOT SSHC	Standard Specifications for Highway Construction. (SSHC)

1.2 SUBMITTALS

Government approval is required for all submittals. The following shall be submitted in accordance with Section 01 33 00, SUBMITTAL PROCEDURES:

SD-09 Reports; FIO.

1.2.1 Field Quality Control; Sampling and Testing

Copies of all test results for bituminous materials shall be submitted within 24 hours of completion of tests. Certified copies of the manufacturer's test reports indicating compliance with applicable specified requirements.

1.3 PLANT, EQUIPMENT, MACHINES AND TOOLS

1.3.1 General Requirements

Plant, equipment, machines, and tools used in the work shall be subject to approval and shall be maintained in a satisfactory working condition at all times. The equipment shall be adequate and shall have the capability of producing the results specified.

1.3.2 Bituminous Distributor

The distributor shall have pneumatic tires of such size and number to prevent rutting, shoving, or otherwise damaging the

base surface or other layers in the pavement structure. The distributor shall be designed and equipped to spray the bituminous material in a double or triple lap at the specified temperature, at readily determined and controlled rates with an allowable variation from the specified rate of not more than plus or minus 5 percent, and at variable widths. Distributor equipment shall include a separate power unit for the bitumen pump, full-circulation spray bars, tachometer, pressure gauges, volume-measuring devices, adequate heaters for heating of materials to the proper application temperature, a thermometer for reading the temperature of tank contents, and a hand hose attachment suitable for applying bituminous material manually to areas inaccessible to the distributor. The distributor shall be equipped to circulate and agitate the bituminous material during the heating process.

1.3.3 Power Brooms and Power Blowers

Power brooms and power blowers shall be suitable for cleaning the surfaces to which the prime coat is to be applied.

1.3.4 Storage Tanks

Tanks shall be capable of heating the bituminous material, under effective and positive control at all times, to the required temperature. Heating shall be accomplished by steam coils, hot oil, or electricity. An armored thermometer shall be affixed to the tank so that the temperature of the bituminous material may be read at all times.

1.4 WEATHER LIMITATIONS

The prime coat shall be applied only when the subgrade, subbase, or base course is dry enough to promote uniform coverage and the desired penetration into the treated surface. The prime coat shall be applied only when the atmospheric temperature in the shade is 50 degrees or above and when the temperature has not been below 35 degrees F for the 12 hours prior to application.

PART 2 PRODUCTS

2.1 BITUMINOUS MATERIALS

Emulsified asphalt, SS-1 or SS-1h, conforming to OSHC SSHC, Section 708.03. Bituminous material delivered to the job shall come from a source approved for use by the Oklahoma State Highway Commission. The seal number from the tank and a copy of the Oklahoma State Highway Commission's Laboratory test report shall accompany each shipment, or the Contractor shall furnish a test report certifying the material meets the specified requirements.

PART 3 EXECUTION

3.1 PREPARATION OF SURFACE

Immediately before applying the prime coat, all loose material, dirt, clay, or other objectionable material shall be removed from the surface to be treated. To assure a uniform spread of the bituminous material, the portion of the subgrade, subbase, or base course prepared for treatment, if excessively dry, shall be lightly sprinkled with water immediately before the application, as directed.

3.2 PRIME COATING

The exact quantities within the range specified, which may be varied to suit field conditions, will be determined by the Contracting Officer.

3.2.1 Application Rate

Bituminous material for the prime coat shall be applied in quantities of not less than 0.15 gallon nor more than 0.40 gallon per square yard of pavement surface.

3.2.2 Application Temperature

NORMAL SPRAY APPLICATION TEMPERATURES FOR

Emulsified Asphalt	70-160 degrees F *

Emulsified asphalt application temperature shall provide an application viscosity between 10 and 60 seconds, Saybolt Furol, or between 20 and 120 centistokes, kinematics. The temperature viscosity relation shall be furnished to the Contracting Officer.

*These temperature ranges include or exceed the flash point of the material, and care should be taken in their heating.

3.2.3 Application

Following preparation and subsequent inspection of the surface, the prime coat shall be applied at the specified rate with uniform distribution over the surface to be treated. To obtain uniform application of the prime coat on the surface treated at the junction of previous and subsequent applications, building paper shall be spread on the surface for a sufficient distance back from the ends of each application so that the prime coat may be started and stopped on the paper. Immediately after application, the building paper shall be removed and destroyed. All areas and spots missed by the distributor shall be properly treated with the hand spray. Following application of the prime material, the surface shall be allowed to cure without being disturbed for a period of at least 48 hours or longer, as may be necessary to attain penetration into the treated course and evaporation of the volatiles from prime material. As directed, sand shall be spread to effectively blot up and cure any excess bituminous material. Until the succeeding layer of pavement is placed, the primed surface shall be maintained by protecting the surface against damage and by repairing and repriming deficient areas at no additional cost to the Government. No smoking, fire, or flames other than the heaters that are a part of the equipment shall be permitted within 25 feet of heating, distributing, or transferring operation for bituminous materials other than emulsions.

3.3 FIELD QUALITY CONTROL

Samples of the bituminous material used will be obtained by the Contractor as directed, under the supervision of the Contracting Officer. The sample will be retained and tested by the Government at no cost to the Contractor.

3.4 SAMPLING AND TESTING

3.4.1 Initial Sampling and Testing

3.4.2 Calibration Test

The Contractor shall furnish all equipment, materials, and labor necessary to calibrate the bituminous distributor. Calibration shall be made with the approved job material and prior to applying the prime coat material to the prepared surface. Calibration of the bituminous distributor shall be in accordance with ASTM D 2995.

3.4.3 Trial Applications

As a preliminary to providing the complete prime coat, three lengths of at least 100 feet for the full width of the distributor bar shall be primed to evaluate the amount of prime that can be satisfactorily applied. Unless otherwise authorized, the trial application rate of bituminous materials shall be applied in the amount of 0.25 gallon per square yard. Other trial applications shall be made using various amounts of material as may be deemed necessary.

3.4.4 Sampling and Testing During Construction

Quality control sampling and testing shall be performed as required in paragraph FIELD QUALITY CONTROL.

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