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DIVISION 32 - EXTERIOR IMPROVEMENTS  
SECTION 32 01 16.75  
HEATER SCARIFYING OF ASPHALT PAVING  
**02/17**

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**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 within the text by the basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS  
(AASHTO)

AASHTO T 102 (2009; R 2013) Standard Method of Test for Spot Test of Asphaltic Materials

ASTM INTERNATIONAL (ASTM)

ASTM D92 (2012a) Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester

ASTM D140/D140M (2016) Standard Practice for Sampling Asphalt Materials

ASTM D244 (2009; R 2017) Standard Test Methods and Practices for Emulsified Asphalts

ASTM D977 (2019a; E 2019) Standard Specification for Emulsified Asphalt

ASTM D1250 (2019; E 2020) Standard Guide for Use of the Joint API and ASTM Adjunct for Temperature and Pressure Volume Correction Factors for Generalized Crude Oils, Refined Products, and Lubricating Oils: API MPMS Chapter 11.1

ASTM D2170/D2170M (2018) Standard Test Method for Kinematic Viscosity of Asphalts (Bitumens)

ASTM D2397/D2397M (2019a) Standard Specification for Cationic Emulsified Asphalt

1.2 SUBMITTALS.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the government officer that will review the submittal for the Government.

SD-04 Samples

Materials; G, COR

## SD-06 Test Reports

### Testing

#### 1.3 EQUIPMENT, TOOLS, AND MACHINES.

Maintain equipment, tools, and machines used in the performance of the work in a satisfactory working condition at all times and conforming to applicable governing regulations for local air pollution controls.

##### 1.3.1 Heater Scarifier

Provide a heater scarifier that is: 1) a self-propelled machine having, in combination, the means of heating and scarifying the existing asphalt concrete surface and spreading the scarified material in a uniform layer. 2) capable of producing a minimum thickness of 3/4 inch of uncompacted reclaimed mix without damaging the asphalt binder or violating pollution standards of the area. 3) capable of working at a rate of speed that allows heating and scarifying the pavement to meet the specified requirements. Provide a machine that heats, scarifys, and spreads material in equal widths.

##### 1.3.2 Bituminous Distributor

Provide a bituminous distributor mounted on pneumatic tires of such size and number to prevent rutting, shoving, or other damage to the base, surface, or other layers in the pavement structure. Design and equip the bituminous distributor to spray the bituminous material in a uniform double or triple lap at the temperature recommended by the manufacturer, at variable widths up to at least 12 feet, and at readily determined and controlled rates from 0.02 to 0.5 gallon/square yard with an allowable variation from the specified rate of not more than plus or minus 5 percent. Include with the distributor equipment 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 to areas inaccessible to the distributor. Equip the distributor to circulate and agitate the bituminous material during the heating process.

##### 1.3.3 Cleaning Equipment

Use power brooms, power blowers, and power vacuuming equipment suitable for cleaning the surface and cracks in the existing pavement prior to treatment.

#### 1.4 ENVIRONMENTAL REQUIREMENTS.

Perform heater scarifying procedures only when the existing pavement is dry and the pavement surface temperature is above 15 degrees C 60 degrees F.

## **PART 2 PRODUCTS.**

#### 2.1 BITUMINOUS MATERIAL.

Provide an emulsified asphalt, all grades, conforming to ASTM D977. The asphalt from which emulsion is required to have a negative spot when tested in accordance with AASHTO T 102.

## 2.2 TESTING.

### 2.2.1 Testing

Testing is the responsibility of the Contractor. Perform testing using an approved commercial testing laboratory or by the Contractor's testing laboratory, subject to the approval of the Contracting Officer. Test the materials to establish compliance with the specified requirements. Before delivery of materials, submit certified copies of the test reports establishing compliance with specifications detailed herein and in referenced publications. Submit test results on materials prior to and during construction.

## **PART 3 EXECUTION.**

### 3.1 PREPARATION OF SURFACE.

Repair all potholes, defective base areas, utility cuts, and large cracks. Adjust manhole covers, valve boxes, and like structures to the desired grade prior to pavement surface repair operations.

### 3.2 SCARIFYING OPERATION.

Use a heater scarifier to scarify the existing bituminous surface as shown. The temperature at which the work is performed, the nature and condition of the equipment, and the manner of performing the work should be such that no pavement damage occurs during the heating and scarifying operation. Accomplish heating with a unit or units that uniformly heat the pavement to the depth to be scarified. Uniformly spread the scarified material with the scarifier unit. Scarify the surface to a depth of at least 3/4 inch. Do not heat the pavement while in a loosened, scarified condition.

### 3.3 APPLICATION OF BITUMINOUS EMULSION AGENTS.

Uniformly apply the bituminous emulsion with a bituminous distributor or other approved equipment at a temperature between 75 and 130 degrees F in quantities of not less than 0.05, nor more than 0.30 gallon/square yard. The exact quantities, which may be varied to suit field conditions, will be determined by the Contracting Officer. Apply the emulsion while the scarified material is hot. The bituminous material or recycling agent should be added after the heating process and before the scarification process.

### 3.4 COMPACTION.

When a surface treatment is to be added, compact the scarified surface to provide a density that results in less than 8% air voids. When a thin asphalt overlay is to be applied the overlay asphalt material will be added on top of the scarified surface behind the scarifier. This can be placed prior to compaction of the scarified material and all material compacted together or it can be added after the scarified material has been compacted. Compact the entire area including the overlay and scarified material to a density that provides less than 7% air voids.

### 3.5 COMPLETION OF PAVEMENT.

After application of bituminous emulsion agents complete pavement construction.