

## **ALDOT-415-04**

### **TESTING EMULSIFIED ASPHALT JOINT SEALER FOR HMA PAVEMENTS**

#### **1. Scope**

- 1.1 This test method covers the testing of emulsified asphalt joint sealer for HMA pavements. AASHTO T 59 (ASTM Designation: D 244), "Testing Emulsified Asphalts", shall be used to conduct the testing of emulsified asphalt joint sealer with modifications to Sections 13 and 14 of ASTM D 244 for the quantitative determination of residue and oil distillate as noted further in this procedure.

#### **2. Equipment**

- 2.1 The equipment required to conduct the testing of emulsified asphalt joint sealer shall be as specified in AASHTO T 59 with the following exceptions to the equipment required for the quantitative determination of residue and oil distillate:

In Section 13 of ASTM D 244, replace the required apparatus in 13.4 with the following:

13.4 *Thermometer*--Two ASTM Low-Distillation Thermometers graduated either in Fahrenheit or Celsius degrees as specified, having the range from 85-392°F or 30-200°C, respectively and conforming to the requirements for Thermometers 16F or 16C as prescribed in Specification ASTM E 1.

Also, add the following to the required apparatus in Section 13 of D 244:

13.6 *Boiler* -- Stainless steel 2-3 quart bowl.

#### **3. Procedure**

- 3.1 The procedures for testing emulsified asphalt joint sealer shall be as specified in AASHTO T 59 with the following exceptions to the procedures for the quantitative determination of residue and oil distillate:

3.1.1 In Section 14 of ASTM D 244, replace the procedure in 14.4 with the following:

14.4 Place the ring burner around the still about 6 inches from the bottom of the still. Apply heat by lighting this burner and adjusting to low flame. During the distillation process a 2 to 3 quart stainless steel bowl filled with ice water is to be used to lower the heat of the still to prevent foaming of the sample. The material must be monitored closely at all times during the distillation. When the material tries to foam, a sudden drop in temperature is noted in the thermometer used to monitor the air temperature in the still, immediately immerse the bottom of the still 2-3 inches in the ice water and reduce heat to the still. This could occur several times during the distillation process. Reapply the heat and continue the distillation.

3.1.2 In Section 14 of ASTM D 244, replace the procedure in 14.5 with the following:

14.5 Move the ring burner approximately level with the bottom when the temperature can be read on the lower thermometer, approximately 360°F (182°C). Increase the temperature to 375±10°F (190±5°C), maintaining this temperature for 15 to 20 minutes. Complete the total distillation in 1 hour and 45 minutes ±15 minutes.

3.1.3 In Section 14 of ASTM D 244, replace the procedure in 14.6 with the following:

14.6 Immediately at the expiration of the heating period, again weigh the still and accessories as described in 14.1. Then immediately pour residue from the still into molds for the required tests. Calculate and report the percentage residue by distillation. Record the volume of oil distillate to the nearest 0.5 mL. Calculate and report the oil distillate as a volume percentage on the total emulsion. Save this oil distillate if identification is desired.