

## **OHD L-61**

### **METHOD OF TEST FOR EMULSIFIED ASPHALT RESIDUE BY EVAPORATION (PAN)**

#### **1. Scope**

This test method covers the quantitative determination of emulsified asphalt residue in emulsified asphalt composed principally of a semisolid or liquid asphalt base, water, and an emulsifying agent.

#### **2. Referenced Documents**

##### **2.1 AASHTO**

M 231 Weighing Devices Used in the Testing of Materials  
T 59 Standard Method of Test for Emulsified Asphalts

#### **3. Significance and Use**

- 3.1 The test may be used to indicate compositional characteristics of emulsified asphalt. Evaporation residue may also be subjected to other characterization tests outlined under T 59 “examination of residue” or other specification compliance tests.
- 3.2 Properties of the residue from this evaporation procedure may differ from those from the T 59 distillation residue.
- 3.3 Distillation method is required when residual material obtained by this method fails to meet specification requirements or in conflict resolution.

#### **4. Apparatus**

- 4.1 Sample Container—cylindrical tin metal container, approximately 32 oz. capacity, approximately 4 7/8” [124 mm] diameter and approximately 2 7/8” (71 mm) height.
- 4.2 Glass Rod—flame polished ends, approximately 1/4” [6 mm] diameter and approximately 8” [200 mm] length.
- 4.3 Balance—conforming to the requirements of M 231, Class G 2.
- 4.4 Hot Plate—temperature controllable hot plate.
- 4.5 Oven—A convection oven that is capable of maintaining a temperature of 325 ± 5°F [163 ± 3°C].

#### **5. Procedure**

- 5.1 Weigh and record the mass of the sample container and glass rod to the nearest 0.1 g at room temperature.
- 5.2 Add 200 g ± 0.1 g of a representative sample of emulsion at room temperature into the sample container.
- 5.3 Place the sample container onto the hot plate at the target temperature of 325 ± 5°F [163 ± 3°C] or bring to target temperature.

- 5.3.1 The temperature may be monitored by the use of a companion sample to be discarded for percent residual purposes.
- 5.3.2 The temperature target may be set by a calibration setting of the hot plate setting prior to performing the test.
- 5.3.3 During the emulsion sample's reduction in volatiles process on the hot plate, the temperature may optionally be monitored by a calibrated infra-red device.
- 5.4 Reduce the target temperature should potential splatters cause loss of material out of the sample container.
- 5.5 Stir the sample with the glass rod to reduce splatter potential.
  - 5.5.1 Take care to use safety gloves to avoid burns as the glass rod is left in the container. The glass rod is left in the sample container to prevent loss of material.
  - 5.5.2 Discard the sample if material spatters outside of the container and percent residual was to have been computed.
- 5.6 When no significant bubbles are occurring or one hour has expired, place the sample container into the pre-heated oven.
- 5.7 Remove the sample container from the oven after 1 hour  $\pm$  5 minutes.
- 5.8 Stir the sample and pour into a lidded tin container if the material is to be used at a later time for tests on the residual.
  - 5.8.1 The sample may be directly poured into other containers for separate tests after stirring.
  - 5.8.2 Discard the sample container.
    - 5.8.2.1 The glass rod may be cleaned and reused.

## 6. Calculation and Report

- 6.1 The report shall include the following:
  - 6.1.1 Unique lab number or other emulsion sample identification.
  - 6.1.2 Percent residual to nearest 0.1%.
    - 6.1.2.1  $R = (A - B) / 2$   
Where:
      - R = Percent residual, %;
      - A = Mass of the sample container + glass rod + sample's residual, g; and
      - B = Mass of the sample container + glass rod, g.

Revision Date	Revision Description
02/26/2016	Method created.