Test Procedure for

DETERMINING DRAINDOWN CHARACTERISTICS IN BITUMINOUS MATERIALS

TxDOT Designation: Tex-235-F

Effective Date: February 2016

1. SCOPE

1.1 Use this test method to determine the amount of draindown in a laboratory or plant mixed bituminous sample when subjected to temperatures comparable to those encountered during production, storage, transport, and placement.

1.2 The test particularly applies to coarse graded mixtures such as stone matrix asphalt, coarse matrix high binder, and permeable friction course.

1.3 The values given in parentheses (if provided) are not standard and may not be exact mathematical conversions. Use each system of units separately. Combining values from the two systems may result in nonconformance with the standard.

2. APPARATUS

2.1 *Forced draft oven*, capable of maintaining the temperatures specified in this test procedure.

2.2 *Balance*, Class G2 in accordance with Tex-901-K.

2.3 *Metal or glass plates*, of appropriate size.

2.4 *Wire basket*, constructed with 0.25-in. sieve cloth, dimensions shown in Figure 1.

2.5 *Spatulas, trowels, bowls, and mixing pans*, as needed.

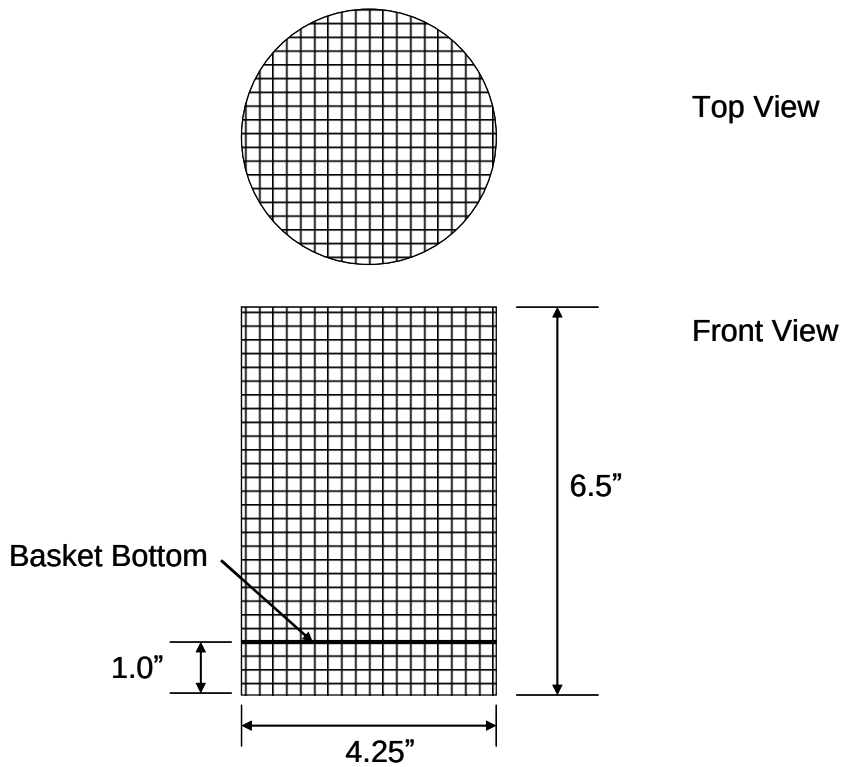

Figure 1—Wire Basket Assembly

3. PROCEDURE

3.1 Obtain a representative sample of:

- processed aggregates in accordance with Tex-221-F, or
- bituminous mixture in accordance with Tex-222-F.

3.1.1 For laboratory mixtures, dry the aggregate in an oven at a temperature between 38°C (100°F) and 150°C (302°F).

3.1.2 For plant mixtures, thoroughly mix, breaking up large lumps.

3.2 Prepare 2 samples by one of the following methods:

3.2.1 For laboratory mixtures, prepare samples of approximately 1200 g in accordance with Tex-205-F.

3.2.2 For plant mixtures, quarter the materials, blend thoroughly, and take small portions from several different locations covering the entire area of the pan. Prepare samples of approximately 1200 g.

3.3 Weigh a metal or glass plate to the nearest 0.1 g and record the weight as P_1 in Section 4.1.

3.4 Leave the plate on the balance, and place the wire basket on the plate. Tare the balance.

3.5 Add the plant or lab mix sample to the basket. Record the weight to the nearest 0.1 g as *S* in Section 4.1.

3.6 Place the plate-basket assembly containing the mixture into the oven for 1 hr. at the following temperatures.

3.6.1 For PFC and SMA mixtures, use 350 ± 5°F (177 ± 3°C).

3.6.2 For other mixtures, use their anticipated plant mixing temperature.

3.7 Remove the test sample from the oven. Remove the basket from the plate.

3.8 Carefully remove any aggregate that may have fallen onto the plate. Weigh the plate and record the weight as P_F in Section 4.1

4. CALCULATIONS

4.1 Calculate the percent of mixture that drained:

$$\%\ Draindown = \frac{P_F - P_I}{S} \times 100$$

Where:

P_F = final weight of metal or glass plate

P_I = initial weight of metal or glass plate

S = initial sample weight.

4.2 The reported results should represent the average of 2 samples. Report results to the nearest 0.01%.

5. ARCHIVED VERSIONS

5.1 Archived versions are available.