Test Procedure for

DETERMINING PERCENTAGES OF WHITE ROCK CONTAINED IN NATIVE ROCK ASPHALT

TxDOT Designation: Tex-220-F

Effective Date: April 2025

1. SCOPE

1.1 Use this test method to determine the percentage, by weight, of white rock (material having a naturally impregnated asphalt content of less than 1%) in a sample of crushed native rock asphalt.

1.2 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 *Sample-splitter, quartering machine, quartering cloth, or shovel and a smooth surface.*

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

2.3 *Drying oven*, capable of attaining a temperature of at least 140°F (60°C).

2.4 *Flat pan*, large enough to hold a 1500 g sample.

2.5 *Standard U.S. sieve,* 4.75 mm (No. 4), meeting the requirements of Tex-907-K.

2.6 *Ignition oven*, meeting the requirements of Tex-236-F.

3. MATERIALS

3.1 *Clean tap water.*

4. PROCEDURE

4.1 Obtain a representative sample of the crushed native rock asphalt from the processing plant just before the addition of the flux oil.

4.2 Quarter the material to secure a laboratory test portion weighing approximately 1500 g.

4.3 Dry screen the test sample over the 4.75 mm (No. 4) sieve and place the retained portion of aggregate in a pan of clean water.

4.4 Discard the portion passing the 4.75 mm (No. 4) sieve or, when required, use this fine material to determine the bitumen content of the minus 2.00 mm (No. 10) sieve material in accordance with Tex-236-F.

4.5 Wash the aggregate to remove dust or fine particles.

4.6 Place the sample in an oven and dry to a constant weight at a maximum temperature of 140°F (60ºC).

4.7 Weigh the dry rock asphalt particles retained on the 4.75 mm (No. 4) sieve. Record this weight as *B* under Section 5.

4.8 Spread the test sample out on an area of the worktable large enough to inspect the individual particles carefully.

4.9 Separate the white rock particles from the remainder of the sample.

4.10 Weigh the white rock particles separated from sample. Record this weight as *A* under Section 5.

4.11 Determine the asphalt content of a representative sample of the white rock particles in accordance with Tex-236-F.

4.11.1 If the asphalt content is less than 1%, calculate the percentage of white rock as indicated in Section 5.

4.11.2 If the asphalt content is greater than 1%, obtain a new sample and repeat Sections 4.1 – 4.11.

5. CALCULATIONS

5.1 Calculate the percent of white rock contained in native rock asphalt:

$$Percent\ White\ Rock = \frac{A}{B} \times 100$$

Where:

A = weight of white rock particles, g

B = weight of dry rock asphalt particles retained on the 4.75 mm (No. 4 sieve), g.

6. REPORTING TEST RESULTS

6.1 Report test results to nearest whole number.

7. ARCHIVED VERSIONS

7.1 Archived versions are available.