
Test Procedure for**RUBBER CONTENT FOR RUBBER-ASPHALT
CRACK SEALANT****TxDOT Designation: Tex-544-C****Effective Date: August 2002**

1. SCOPE

- 1.1 Use this procedure to determine the percentage of tire rubber present in rubber-asphalt crack sealing compound.
 - 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 *Core drill device*, able to capture a core sample of the sealant that is 31.75–38.10 mm (1.25–1.50 in.) in diameter.
 - 2.2 *Metal beaker or round can*, 1000 mL/1 L (1 qt.)
 - 2.3 *Beaker*, 600 mL (20 fl. oz.)
 - 2.4 *Stirring rod*, glass or metal.
 - 2.5 *Thermometer*, capable of measuring the temperature between 150 and 200°C within $\pm 1^\circ\text{C}$ (nominally between 100 and 400°F $\pm 2^\circ\text{F}$).
 - 2.6 *Standard sieve*, No. 200 (75 μm), meeting ASTM E 11 specifications.
 - 2.7 *Oven*, capable of maintaining a temperature of $190 \pm 1^\circ\text{C}$ ($375 \pm 2^\circ\text{F}$).
 - 2.8 *Forced draft oven*, capable of maintaining a temperature of $60 \pm 1^\circ\text{C}$ ($140 \pm 2^\circ\text{F}$).
 - 2.9 *Balance*, conforming to AASHTO M 231, Class G2 (accurate to ± 0.1 g).
-

3. MATERIALS

- 3.1 *Trichloroethylene*, technical grade.
-

4. PROCEDURE

- 4.1 Core the sample as received from top to bottom.
Note 1—Acquire enough material to halfway fill the metal beaker or can when the material melts; multiple cores may be necessary.
- 4.2 Place cored material in the metal beaker or can.
- 4.3 Heat the sample in the 190°C (375°F) oven to a temperature of 177°C (350°F).
- 4.4 Stir the sample thoroughly and immediately pour 50 ± 5 g into a 600-mL (20-fl. oz.) beaker.
- 4.5 Record the weight of the sample to the nearest 0.1 g.
- 4.6 Add 300 mL (10 fl. oz.) of trichloroethylene to the sample.
- 4.7 Cover the container and allow it to stand for at least 4 hr. at room temperature, or until there appears to be complete separation between the asphalt and the rubber.
- 4.8 Weigh the No. 200 sieve to the nearest 0.1 g and record the result.
- 4.9 Pour the sample onto the sieve.
- 4.10 Wash the material on the sieve with clean trichloroethylene until the wash stream is the color of light straw.
- 4.11 Allow the sieve to sit in a well-ventilated area for a minimum of 30 min.
- 4.12 Place the sieve in the 60°C (140°F) oven for 30 min.
- 4.13 Cool the sieve for 15–20 min. at room temperature.
- 4.14 Weigh the sieve to the nearest 0.1 g.
- 4.15 Repeat Sections 4.12–4.14, until the weight of the sieve does not change by more than 0.1 g for two successive weighings.
- 4.16 Determine the rubber content as described in Section 5.

5. CALCULATIONS

- 5.1 Calculate the rubber content of the sample:

$$RC = \frac{(\textit{sieve final weight} - \textit{sieve initial weight})}{(\textit{weight of sample})} \times 100$$