
Test Procedure for

PREPARING JOB-SITE SAMPLES OF ASPHALT CEMENT FOR SUPERPAVE TESTING



TxDOT Designation: Tex-537-C

Effective Date: August 1999

1. SCOPE

- 1.1 Use this procedure to provide a uniform method for preparing job-site samples of asphalt binder delivered to the laboratory for testing. Use this methodology without regard for the presence of modifiers or additives in the asphalt material.
 - 1.2 In cases where the material contains no modifiers or additive, or where the modifier or additive is pre-blended or contains no water, no special handling problems exist; however, when emulsified additives are injected into the asphalt line, there are some concerns that must be addressed.
 - 1.3 Experience has shown that occasionally materials arrive at the laboratory not completely mixed. This should not occur if the injection process includes an in-line blender that is properly maintained and functioning. To assess these materials fairly, the handling process should not aid in the mixing of the polymer into the asphalt.
 - 1.4 Another concern is that the material samples may contain water from the emulsified modifier. This water, which would normally all boil away on contact with hot aggregate in the hot-mix plant, still might be trapped in the material at the sampling point; thus, the handling procedure should include steps to remove excess water from the sample. These steps should not aid in mixing of the polymer, as mentioned above, and furthermore, should not damage the polymer or the modifier or additive, so they may be applied to all materials regardless of content.
 - 1.5 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.
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2. APPARATUS

- 2.1 *Cylindrical heating mantle*, in which a 1-L (1-qt.) round friction-lid can may be heated.
 - 2.2 *Mechanical stirring apparatus*, such as a Lightning Mixer, 51-mm (2-in.) rotor with six blades at 90° pitch (i.e., a paddle-wheel shaped rotor), capable of stirring the material in a 1-L (1-qt.) round friction-lid can at 100–200 rpm.
 - 2.3 *Round friction-lid can, 1 L (1 qt.)*
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- 2.4 Thermometer or temperature probe and transducer, capable of measuring temperatures from 40–180°C (100–350°F).
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3. PROCEDURE

- 3.1 Visually inspect the sample for signs of raw modifiers, such as white or yellow flecks, clumps of polymer, or an obvious skin of material over the top of the sample. Reject material having any of these signs, based on incompatibility.
- 3.2 Heat the sample in an oven or heating mantle to approximately 65°C (150°F) or until it is hot enough to pour.
- 3.3 Transfer the material into a 1-L (1-qt.) round friction-lid can, if not already in one.
- 3.4 Continue heating the sample in a heating mantle.
- 3.5 Begin stirring the sample as soon as it is soft enough to stir, at a speed of no more than 200 rpm. (The slow speed should not effectively mix the modifier into the asphalt if not already dispersed, but the stirring action will prevent damage to the material due to localized overheating and help to transport water vapors to the surface).
Note 1—Some foaming may occur as the water boils out of the material.
- 3.6 When the material reaches 150°C (300°F), continue stirring at that temperature for 10 min. or until no more foaming is evident.
Note 2—Do not heat the material to more than 163°C (325°F), as it may damage any modifiers in the material.
- 3.7 When stirring is finished, remove the container from the heating mantle and begin testing immediately.