



Designation: D7944 – 22

Standard Practice for Recovery of Emulsified Asphalt Residue Using a Vacuum Oven¹

This standard is issued under the fixed designation D7944; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice is suitable for recovery of the residue of emulsified asphalts composed principally of a semisolid or liquid asphaltic base, water, and an emulsifying agent. Asphalt base may be pre-modified with polymeric modifiers or latex polymer modifiers may be incorporated into the emulsified asphalt through co-milling or post emulsified asphalt production blending.

1.2 The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

- D244 Test Methods and Practices for Emulsified Asphalts
- D7175 Test Method for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer
- D7405 Test Method for Multiple Stress Creep and Recovery (MSCR) of Asphalt Binder Using a Dynamic Shear Rheometer

¹ This practice is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.42 on Emulsified Asphalt Test.

Current edition approved July 1, 2022. Published August 2022. Originally approved in 2015. Last previous edition approved in 2015 as D7944 – 15. DOI: 10.1520/D7944-22.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

2.2 AASHTO Standards:³

- R 28 Accelerated Aging of Asphalt Binder Using a Pressurized Aging Vessel (PAV)
- PP 72 Standard Practice for Recovery Residue from Emulsified Asphalt Using Low-Temperature Evaporative Techniques

3. Summary of Practice

3.1 A sample of emulsified asphalt is spread in a thin film on a silicone rubber mat and conditioned in a vacuum oven or other suitable vacuum chamber to remove the water.

4. Significance and Use

4.1 This practice can be used to obtain residues of emulsified asphalts. The residue may be used for further testing.

4.2 As approximately 5 g of residue is typically obtained, limited testing is possible.

NOTE 1—Rheological characterization as described in Test Methods D7175 and D7405 are suitable test methods. Additional test methods are being developed suited to the small amounts of residue obtained.

5. Apparatus

5.1 Silicone rubber mat⁴ approximately 30 by 20 by 0.3 cm (approximately 12 by 9 by 0.15 in.), minimum of 40A durometer.

5.2 *Supports for Silicone Rubber Mat*—Provide adequate support of the silicone rubber mat during draw-down of the film, while transporting to the vacuum oven or other suitable vacuum conditioning chamber, and while recovering the emulsified asphalt residue. The procedure uses two separate supports, one at ambient temperature for draw-down and transfer, and a second to support the silicone rubber mat and emulsified asphalt during residue recovery. Adequate supports

³ Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001, <http://www.transportation.org>.

⁴ The sole source of supply of the apparatus (referred to as “Silicone Rubber Sheetting” in catalog) known to the committee at this time is McMaster Carr, 200 New Canton Way, Robbinsville, NJ 08691-2343, www.mcmaster.com. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,¹ which you may attend.