



Standard Specification for Emulsified Refined Coal Tar (Mineral Colloid Type)¹

This standard is issued under the fixed designation D 5727; 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.

^{ε1} NOTE—Editorial changes were made throughout in December 2004.

1. Scope

1.1 This specification covers mineral-colloid-stabilized, concentrated, emulsified, refined coal tar suitable for use as weather-protective and aliphatic-solvent resistant coatings over bituminous pavements, such as those found at airports, parking areas, and driveways. The specification for this material was previously covered by **Federal Specification RP355**.

NOTE 1—Dilute the concentrated emulsion after testing and prior to application to meet the application specification requirements. Application shall be made in accordance with Practice **D 3423**.

1.2 The values stated in SI units are to be regarded as the standard. The inch-pound units shown in parentheses are for information only.

1.3 The following precautionary caveat pertains only to the test methods portion, Section 6, of this specification: *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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

- D 95** Test Method for Water in Petroleum Products and Bituminous Materials by Distillation
- D 140** Practice for Sampling Bituminous Materials
- D 490** Specification for Road Tar
- D 2939** Test Methods for Emulsified Bitumens Used as Protective Coatings
- D 3423** Practice for Application of Emulsified Coal-Tar Pitch (Mineral Colloid Type)

¹ This specification is under the jurisdiction of ASTM Committee D08 on Roofing and Waterproofing and is the direct responsibility of Subcommittee D08.09 on Bituminous Emulsions.

Current edition approved Dec. 1, 2004. Published December 2004. Originally approved in 1995. Last previous edition approved in 2000 as D 5727 – 00.

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 Federal Specification:³

Federal Specification RP355

3. Materials and Manufacture

3.1 The emulsion shall be made using tars having viscosities of RT-11 or higher. The tars shall conform to the requirements of Specification **D 490**.

3.2 The emulsion shall be fortified with antifreeze when specified.

4. Physical Requirements

4.1 The emulsion shall be homogeneous and exhibit no separation or coagulation of components that cannot be overcome by moderate stirring.

4.2 The material shall conform to the physical properties prescribed in **Table 1**.

5. Sampling

5.1 Sample in accordance with Practice **D 140**.

6. Test Methods

6.1 Use Test Methods **D 2939** or, as noted:

- 6.1.1 Uniformity,
- 6.1.2 Wet film continuity,
- 6.1.3 Resistance to freezing (when specified),
- 6.1.4 Density,
- 6.1.5 Residue by evaporation,
- 6.1.6 Water content, Test Method **D 95**,
- 6.1.7 Resistance to volatilization,
- 6.1.8 Solubility of residue in CS₂,
- 6.1.9 Ash of residue,
- 6.1.10 Drying time,
- 6.1.11 Resistance to heat,
- 6.1.12 Resistance to kerosene,
- 6.1.13 Resistance to water, and
- 6.1.14 Flexibility.

7. Inspection

7.1 Inspection of material shall be made as agreed upon between the purchaser and the supplier.

³ Obsolete. Previously available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

TABLE 1 Physical Requirements for Emulsified Refined Coal Tar (Mineral Colloid Type)

Property ^A	Characteristics	
	min	max
Uniformity	No separation, coagulation, or settlement that cannot be overcome by moderate stirring.	
Wet film continuity	Uniform homogeneous consistency.	
Resistance to freezing (when specified)	Shall return to a homogeneous consistency when stirred.	
Density at 25°C (77°F), g/mL (lb/gal)	1.2 (10)	...
Residue by evaporation, %	47	...
Water content, %	...	53
Resistance to volatilization, residue weight loss, %	...	10
Solubility of residue in CS ₂ , %	20	...
Ash content of residue, %	30	40
Drying time, firm set, h	...	8
Resistance to heat	No blistering, sagging, or slipping.	
Resistance to kerosine	No loss of adhesion or penetration. No softening of the film.	
Resistance to water	No loss of adhesion and no blistering or tendency to re-emulsify.	
Flexibility	No flaking, cracking, or loss of adhesion to the substrate.	

^A The test for "resistance to impact" has been deleted because the equipment that was specified is no longer readily available. Ongoing work is being conducted in Task Group D8.09.01 to discover a suitable replacement.

8. Packaging and Marking

8.1 Emulsion shall be packaged to permit acceptance by the carrier for transportation and to afford adequate protection from the normal hazards of shipping and handling.

8.2 Each package shall be marked plainly with the name and brand of the manufacturer or supplier, the ASTM designation as well as the type or grade of the product, and the production

code or lot number. The before-mentioned information shall be so noted on the bill of lading if the shipment is by bulk tanker load.

9. Keywords

9.1 coal tar; emulsified; mineral colloid; refined; tar

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).