



Designation: D3747 – 79(Reapproved 2007)

Standard Specification for Emulsified Asphalt Adhesive for Adhering Roof Insulation¹

This standard is issued under the fixed designation D3747; 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 specification covers emulsified asphalt adhesive for use in adhering preformed roof insulation to steel roof decks with inclines up to 33 %. When applied as a continuous film over an acceptable deck surface, the emulsion functions as both an adhesive and a vapor retarder.

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

1.3 The following precautionary caveat pertains only to the test method portion, Section 5, 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

C208 Specification for Cellulosic Fiber Insulating Board

D244 Test Methods and Practices for Emulsified Asphalts

D312 Specification for Asphalt Used in Roofing

D2939 Test Methods for Emulsified Bitumens Used as Protective Coatings

E96/E96M Test Methods for Water Vapor Transmission of Materials

3. Classification

3.1 *Type I*—Suitable for use at temperatures above 4°C (40°F).

3.2 *Type II*—Suitable for use at temperatures above –7°C (20°F).

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 May 1, 2007. Published May 2007. Originally approved in 1979. Last previous edition approved in 2000 as D3747 – 79 (2000)^{ε1}. DOI: 10.1520/D3747-79R07.

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.

4. Physical Requirements

4.1 The emulsion shall be homogeneous. There shall be no separation of water or coagulation of the asphalt base, and no settling or packing in the container that cannot be overcome by hand stirring at temperatures above 10°C (50°F).

4.2 The consistency of the emulsion shall permit application at a rate of 0.8 to 1.0 L/m² (2 to 2½ gal/100 ft²) with a brush, long-napped roller, or spray at the minimum temperature for each type. For the application of a continuous film, a spray application is recommended.

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

5. Sampling and Test Methods

5.1 Sample the material and determine the properties enumerated in this specification in accordance with Test Methods D2939.

5.2 *Water Vapor Permeance*—Test Methods E96/E96M, Procedure E. Prepare specimen in accordance with Test Methods E96/E96M, except for the following modifications:

5.2.1 *Specimen Preparation*—On a silicone-treated sheet of aluminum foil,³ cast a film of the emulsified asphalt at the rate of 0.8 to 1.0 L/m² (2 to 2½ gal/100 ft²) using a draw bar and suitable template. Allow to dry at room temperature for 24 h. After drying, remove the specimen from the silicone-treated aluminum foil and trim to a suitable diameter to fit the test dish.

5.2.2 *Test Cell Assembly*—Fill the test dish with desiccant as prescribed and insert a circular wire grid of 1.18 to 2.00-mm (10 by 10 to 16 by 16-mesh) openings and equal to the size of the specimen under test. Lay the test specimen on the grid and seal as prescribed.

NOTE 1—The specimen may be dusted with talc to facilitate handling.

5.3 *Adhesive Strength*:

5.3.1 *Scope*—This method covers a simple procedure to determine if the cured adhesive strength is adequate.

5.3.2 *Apparatus and Materials*:

5.3.2.1 *Ring Stand*, 225 mm (9 in.) high with 125-mm (5-in.) diameter ring.

³ Available from Daubert Chemical Co., 4700 South Central Ave., Chicago, IL 60638.