Designation: D 466 – 42 (Reapproved 1989)

Standard Test Methods for Films Deposited From Bituminous Emulsions[1]

This standard is issued under the fixed designation D 466; 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.

RESISTANCE TO FLOW UNDER HEAT (SLIDE TEST)

1. Scope

1.1 The slide test is applicable to bituminous emulsions or reinforced emulsions intended to be applied at the rate of not less than 3 U.S. gal/100 ft^2 (1.2 L/m^2) and on substantially vertical surfaces.

1.2 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems 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 Document

2.1 *ASTM Standard:*

C 67 Methods of Sampling and Testing Brick and Structural Clay Tile[2]

3. Apparatus

3.1 *Brass Mask*—A brass mask nominal 7/64 in. (2.8 mm) in thickness with a rectangular opening 4 by 4 in. (100 by 100 mm).

3.2 *Tiles*—Unglazed ceramic tiles[3] white, nonvitreous, dust-pressed body with an absorption range of 10 to 18 % (determined in accordance with Methods C 67) approximately 6 by 6 in. (150 by 150 mm) by 3/8 to 1/2 in. (9.5 to 13 mm) in thickness, or of sufficient size to accommodate the opening of the mask.

4. Procedure

4.1 *Preparation of Tile*—Immerse the tile in distilled water for at least 10 min and remove the excess water immediately before application of the emulsion.

4.2 *Preparation of Film*—Thoroughly stir the sample of emulsion. Then apply the brass mask to the smooth face of the tile and spread the emulsion over the area of the tile within the mask opening. Doctor off the excess emulsion with a flat scraper so that the film after drying shall be not less than 0.04 in. (1 mm) in thickness.

4.3 *Drying*—Dry the coated tile to constant mass in an atmosphere of low relative humidity (30 to 50 % relative humidity) at room temperature, and weigh every 24 h. A film shall be considered dry when the loss in two successive 24-h weighings is not greater than 0.1 g.

NOTE—Drying may be hastened by placing the specimen in a current of air from an electric fan.

Tiles also dry faster if they are not laid flat on the surface. Support the tile horizontally on two pieces of metal or wood about 2 in. (50 mm) above the table for air circulation.

4.4 *Testing*—After drying and removing the brass mask, suspend the coated tile vertically in the center of an air oven maintained at 176 ± 5°F (80 ± 3°C). The internal dimensions of the oven shall be not less than 12 by 12 by 12 in. (300 by 300 by 300 mm). An electrically heated oven is recommended. Insert a thermometer in the oven to such a depth that its bulb will be in line with the center of the specimen. Maintain the tile at the prescribed temperature for exactly 2 h. Determine any sliding by a reference line placed originally on the tile, coincident with the lower edge of the dried film.

RESISTANCE TO WATER ACTION

5. Scope

5.1 The purpose of this test is to determine the ability of the dried film to retain its adhesion and to resist re-emulsification after immersion in water.

6. Procedure

6.1 *Preparation of Film*—Prepare the film to be tested as described in 3.1, 3.2, 4.1, 4.2, and 4.3.

6.2 *Testing*—After drying to constant mass at a room temperature of from 70 to 90°F (20 to 30°C), press a ring approximately 2 in. (50 mm) in diameter and 1 in. (25 mm) in height into the surface of the coated tile; the ring will press into the film easily if it is first warmed on a hot plate. Rubber cement may be placed on the ring to prevent water leakage where it is pressed into the emulsions. Fill the ring with tap water and maintain the test specimen at room temperature between 70 to 90°F (20 to 30°C). After 24 h, note the character of the bituminous film by cutting and attempting to lift a portion of the submerged film with a knife or teasing needle. Determine adhesion or bond by making intersecting cuts with the knife or needle and lifting the cut film at the point of intersection. Reemulsification is indicated if the water becomes darkened by rubbing the submerged surface of the uncut film lightly with a rubber policeman.

[1] These test methods are under the jurisdiction of ASTM Committee D-8 on Roofing, Waterproofing, and Bituminous Materials and is the direct responsibility of Subcommittee D08.09 on Bituminous Emulsions.

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[2] *Annual Book of ASTM Standards*, Vol 04.05.

[3] Suitable unglazed tile can be obtained from the Amsterdam Corp., 950 Third Ave., New York, N. Y. 10022; Gladding-McBean and Co., Los Angeles, Calif.; or Olin Corp., 120 Long Ridge Rd., Stanford Conn. 06904.