



Standard Test Method for Nonvolatile Content of Cold Liquid-Applied Elastomeric Waterproofing Membranes¹

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1. Scope

1.1 This test method describes a laboratory procedure for determining the average nonvolatile content for one- or two-component cold liquid-applied elastomeric waterproofing membranes.

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 *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:*

C 717 Terminology of Building Seals and Sealants²

3. Terminology

3.1 *Definitions*—Refer to Terminology C 717 for definitions of compound, elastomeric, and waterproofing, used in this test method.

4. Summary of Test Method

4.1 This test method consists of preparing duplicate samples, each of known mass, and aging these samples for 72 h at $70 \pm 2^\circ\text{C}$ ($158 \pm 3.6^\circ\text{F}$) in an air-circulating oven.

5. Significance and Use

5.1 This test method is used to determine the nonvolatile content of cold liquid-applied elastomeric waterproofing membranes and can be useful in determining application coverage rates.

6. Apparatus

6.1 *Forced-draft Oven*, controlled to $70 \pm 2^\circ\text{C}$ ($158 \pm 3.6^\circ\text{F}$).

6.2 *Balance*, sensitive to 0.01 g.

6.3 *Two Aluminum Weighing Dishes*, 57 by 18 mm.

¹ This test method is under the jurisdiction of ASTM Committee C-24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.80 on Building Deck Waterproofing Systems.

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² *Annual Book of ASTM Standards*, Vol 04.07.

7. Conditioning/Mixing

7.1 Unless otherwise specified by those authorizing the tests, standard conditions for all tests are $23 \pm 2^\circ\text{C}$ ($73.4 \pm 3.6^\circ\text{F}$) and $50 \pm 5\%$ relative humidity.

7.2 Store all membrane materials to be tested in an unopened container at standard conditions for at least 24 h before any test specimens are prepared.

7.3 Follow the manufacturer's instructions for mixing and preparing membrane materials for testing. Thoroughly mix one-component materials before using. Mix two-component compounds in the ratio recommended by the manufacturer.

8. Procedure

8.1 For each test sample, prepare two test specimens as follows:

8.1.1 Mark each aluminum weighing dish for identification. Accurately weigh each aluminum weighing dish to the nearest 0.01 g. Record each mass.

8.1.2 Place an aluminum weighing dish on the balance and tare. Add 5.0 ± 0.2 g of compound and spread evenly over the interior surface area of the dish.

8.1.3 Reweigh the test specimen, combination membrane, and dish, and record the mass.

8.1.4 Repeat 8.1.2 and 8.1.3 for duplicate specimens.

8.1.5 Immediately place the dishes in a forced-draft oven for 72 h at $70 \pm 2^\circ\text{C}$ ($158 \pm 3.6^\circ\text{F}$).

8.1.6 Remove the specimens and allow them to cool at standard conditions for 30 min. Weigh the specimens and calculate the percent nonvolatile as follows:

$$\text{nonvolatile, \%} = [(W_3 - W_1)/(W_2 - W_1)] \times 100 \quad (1)$$

where:

W_1 = mass of aluminum weighing dish,

W_2 = mass of aluminum dish with fresh compound, and

W_3 = mass of heat-aged dish and compound.

$$\text{Volatile Content, \%} = 100 - (\text{nonvolatile}) \quad (2)$$

9. Report

9.1 Report the following information for each sample tested.

9.1.1 Identification of the compound tested,

9.1.2 Description of compound type, and

9.1.3 Nonvolatile content determined.

10. Precision and Bias

10.1 Round-robin testing is in process.

11. Keywords

11.1 membrane; nonvolatile; waterproofing

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