



Designation: D 1864 – 89 (Reapproved 1999)<sup>ε1</sup>

## Standard Test Method for Moisture in Mineral Aggregate Used on Built-Up Roofs<sup>1</sup>

This standard is issued under the fixed designation D 1864; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the Department of Defense.*

<sup>ε1</sup> NOTE—Editorially switched from English dominant to SI dominant.

### 1. Scope

1.1 This test method covers the determination of moisture in mineral aggregate for use on built-up roofs.

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

1.3 *This standard does not purport to address all of the safety problems, 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:*

D 75 Practice for Sampling Aggregates<sup>2</sup>

D 1863 Specification for Mineral Aggregate Used on Built-up Roofs<sup>3</sup>

### 3. Summary of Test Method

3.1 The aggregate is dried to constant mass in a 110°C (230°F) oven. The mass percent moisture is calculated as the loss in mass based on the mass of the oven dry aggregate.

### 4. Significance and Use

4.1 This test method measures the moisture in mineral aggregate required by Specification D 1863.

### 5. Apparatus

5.1 *Balance*, 1000-g (2.2-lb) capacity, sensitive to 0.01 % of the capacity.

5.2 *Oven*, large enough to hold the sample and capable of maintaining a temperature of 110°C (230°F)  $\pm$  1 %.

5.3 *Sample Container*, consisting of an evaporating dish or similar shallow container.

### 6. Sampling

6.1 Sample aggregates received in bulk in accordance with Practice D 75.

6.2 For aggregates received in bags or small containers, select a number of bags or small containers at random, equivalent to the cube root of the total number in the shipment.

### 7. Procedure

7.1 Transfer to a tared dish 500 g (1 lb)  $\pm$  1 % of the aggregate, weighed to the nearest  $2 \times 0.1$  g ( $10^{-4}$ -lb). Place in an oven at 110°C (230°F) for 4 h. Cool in a desiccator. Weigh to the nearest  $2 \times 0.1$  g ( $10^{-4}$ -lb). Repeat the drying for 1-h periods until constant mass is obtained.

### 8. Calculation

8.1 Calculate the percentage of moisture as follows:

$$\text{Moisture, \%} = [(B - C)/(C - A)] \times 100 \quad (1)$$

where:

A = mass of container,

B = original mass of sample and container, and

C = mass of sample and container after drying.

### 9. Precision and Bias

9.1 The following data should be used for judging the acceptability of results (95 % probability) on samples from the same lot from the same supplier:

9.1.1 *Repeatability*—Duplicate results by the same operator should not be considered suspect unless they differ by more than the following amount:

|                     |                                  |
|---------------------|----------------------------------|
| Moisture Content, % | Repeatability, percentage points |
| 0 to 5              | $\pm 0.5$                        |

9.1.2 *Reproducibility*—The results submitted by each of two laboratories should not be considered suspect unless they differ by more than the following amount:

|                     |                                    |
|---------------------|------------------------------------|
| Moisture Content, % | Reproducibility, percentage points |
| 0 to 5              | $\pm 1.0$                          |

9.2 *Bias*—There is no bias known in this test method.

### 10. Keywords

10.1 built-up roofs; mineral aggregate; moisture

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D08 on Roofing, Waterproofing, and Bituminous Materials and is the direct responsibility of Subcommittee D08.03 on Surfacing and Bituminous Materials for Membrane Waterproofing and Builtup Roofing.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 04.03.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 04.04.