



Designation: D1864/D1864M – 89 (Reapproved 2023)

Standard Test Method for Moisture in Mineral Aggregate Used on Built-Up Roofs¹

This standard is issued under the fixed designation D1864/D1864M; 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.

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

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 either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the standard.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D75/D75M Practice for Sampling Aggregates

D1863/D1863M Specification for Mineral Aggregate Used on Built-Up Roofs

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.

¹ This test method is under the jurisdiction of ASTM Committee D08 on Roofing and Waterproofing and is the direct responsibility of Subcommittee D08.03 on Surfacing and Bituminous Materials for Membrane Waterproofing and Built-up Roofing.

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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. Significance and Use

4.1 This test method measures the moisture in mineral aggregate required by Specification D1863/D1863M.

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 D75/D75M.

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 2×0.1 g [10^{-4} lb]. Place in an oven at 110 °C [230 °F] for 4 h. Cool in a desiccator. Weigh to the nearest 2×0.1 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, %
0 to 5

Repeatability, percentage points
 ± 0.5

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

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, %
0 to 5

Reproducibility, percentage points
 ± 1.0

10. Keywords

10.1 built-up roofs; mineral aggregate; moisture

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