



Designation: D1739 – 98 (Reapproved 2017)

Standard Test Method for Collection and Measurement of Dustfall (Settleable Particulate Matter)¹

This standard is issued under the fixed designation D1739; 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 test method covers a procedure for collection of dustfall and its measurement. This test method is not appropriate for determination of the dustfall rate in small areas affected by specific sources. This test method describes determination of both water-soluble and insoluble particulate matter.

1.2 This test method is inappropriate for industrial hygiene use except where other more specific methods are also used.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 *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

B57 Specification for Copper-Alloy Condenser Tube Plates; Replaced by **B 171** (Withdrawn 1941)³

D1193 Specification for Reagent Water

D1356 Terminology Relating to Sampling and Analysis of Atmospheres

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

IEEE/ASTM SI-10 American National Standard for Use of the International System of Units (SI): The Modern Metric System

¹ This test method is under the jurisdiction of ASTM Committee **D22** on Air Quality and is the direct responsibility of Subcommittee **D22.03** on Ambient Atmospheres and Source Emissions.

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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.

³ The last approved version of this historical standard is referenced on www.astm.org.

3. Terminology

3.1 *Definitions*—For definitions of terms used in this test method, refer to Terminology **D1356**. An explanation of units, symbols, and conversion factors may be found in Practice E380.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *settleable particulate material*—any material composed of particles small enough to pass through a 1-mm screen (see Specification **E11**) and large enough to settle by virtue of their weight into the container from the ambient air.

4. Summary of Test Method

4.1 Containers of a standard size and shape are prepared and sealed in a laboratory and then opened and set up at appropriately chosen sites so that particulate matter can settle into them for periods of about 30 days. The containers are then closed and returned to the laboratory. The masses of the water-soluble and -insoluble components of the material collected are determined. The results are reported as grams per square metre per 30 days $g/(m^2 \cdot 30 \text{ d})$.

5. Significance and Use

5.1 This test method has the advantage of extreme simplicity. It is a crude and non-specific test method, but it is useful in the study of long-term trends. It requires very little investment in equipment and can be carried out without a large technically-skilled staff.

5.2 This test method is useful for obtaining samples of settleable particulate matter for further chemical analysis (**1**).⁴

6. Interferences

6.1 The results from this test method are obtained by weighings. Any material that gets into the container and passes through the sieve used in analysis, but which did not settle into the container after air entrainment can be considered an interferent.

7. Apparatus

7.1 *Container*—An open-topped cylinder not less than 150 mm [6 in.] in diameter with height not less than twice its

⁴ The boldface numbers in parentheses refer to the list of references at the end of this test method.