



Designation: D5438 – 23

## Standard Practice for Collection of Floor Dust for Chemical Analysis<sup>1</sup>

This standard is issued under the fixed designation D5438; 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 reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

### 1. Scope

1.1 This practice covers a procedure for the collection of a sample of dust from carpets and bare floors that can be analyzed for inorganic metals such as lead and organic compounds such as pesticides and other semi-volatile organic compounds (SVOCs).

1.2 This practice is applicable to a variety of carpeted and bare floor surfaces. It has been tested for level loop and plush pile carpets and bare wood floors, specifically. This practice is not applicable to elevated, non-floor surfaces.

1.3 This practice is not intended for the collection and evaluation of dust for the presence of asbestos fibers.

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

1.5 This practice describes use of a sampling device, the High-Volume Small Surface Sampler (HVS3). Other event-based sampling devices that use commercially available vacuum attachments are not in scope. Composite sampling using whole vacuum cleaner bags is not in scope. Other approaches for floor or non-floor surface sampling (Practices [D6966](#), [D6661](#), [D7144](#)) are not within the scope.

1.6 This practice only applies to the HVS3. Other dust sampling methods may or may not be directly comparable. Method evaluation for other dust sampling approaches is encouraged. This could be done by comparison with methods outlined in this standard practice for HVS3 or through independent evaluation using field spikes and certified reference materials.

1.7 This practice provides information on dust loading, chemical dust concentration, and chemical dust loading. Information on the type of floor, the floor surface area sampled, and amount of dust collected is required (see Fig. 2). Cleaning the vacuum attachments in between sampling events is also required (see Section [13](#)).

1.8 *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.*

1.9 *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:*<sup>2</sup>

[D422](#) Test Method for Particle-Size Analysis of Soils (Withdrawn 2016)<sup>3</sup>

[D1356](#) Terminology Relating to Sampling and Analysis of Atmospheres

[D6661](#) Practice for Field Collection of Organic Compounds from Surfaces Using Wipe Sampling

[D6966](#) Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Determination of Metals

[D7144](#) Practice for Collection of Surface Dust by Microvacuum Sampling for Subsequent Determination of Metals and Metalloids

[E1](#) Specification for ASTM Liquid-in-Glass Thermometers

[E337](#) Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry-Bulb Temperatures)

[E1137/E1137M](#) Specification for Industrial Platinum Resistance Thermometers

[E1195](#) Test Method for Determining a Sorption Constant ( $K_{oc}$ ) for an Organic Chemical in Soil and Sediments (Withdrawn 2013)<sup>3</sup>

[E2251](#) Specification for Liquid-in-Glass ASTM Thermometers with Low-Hazard Precision Liquids

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee [D22](#) on Air Quality and is the direct responsibility of Subcommittee [D22.05](#) on Indoor Air.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).