



Designation: **E1728 – 16 E1728/E1728M – 20**

## Standard Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination<sup>1</sup>

This standard is issued under the fixed designation ~~E1728~~; E1728/E1728M; 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 the collection of settled lead-containing dust on surfaces using the wipe sampling method. These samples are collected in a manner that will permit subsequent extraction (see Practices [E1644](#) and [E1979](#)) and determination of lead using laboratory analysis techniques such as atomic spectrometry (see Test Methods [E3193/E3193M](#) and [E3203](#) or electroanalysis<sup>-</sup>) or electroanalysis (see Practice [E2051](#)). For collection of settled dust samples for determination of lead and other metals, use Practice [D6966](#).

1.2 This practice does not address the sampling design criteria (that is, sampling plan which includes the number and location of samples) that are used for ~~clearance~~, clearance (see Practices [E2271/E2271M](#) and [E3074/E3074M](#)), lead hazard evaluation, risk assessment, or risk assessment (see Guide [E2115](#)), and other purposes. To provide for valid conclusions, sufficient numbers of samples should be obtained as directed by a sampling plan.

1.3 This practice contains notes that are explanatory and are not part of the mandatory requirements of this practice.

1.4 The values stated in either SI units or inch-pound units are to be regarded as standard. ~~No other units of measurement are included in this standard.~~ separately as standard. The values stated in each system are not necessarily exact equivalents; therefore, to ensure conformance with the standard, each system shall be used independently of the other, and values from the two systems shall not be combined.

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

1.6 *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>

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

[D4840 Guide for Sample Chain-of-Custody Procedures](#)

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

[E1605 Terminology Relating to Lead in Buildings](#)

[E1613 Test Method for Determination of Lead by Inductively Coupled Plasma Atomic Emission Spectrometry \(ICP-AES\), Flame Atomic Absorption Spectrometry \(FAAS\), or Graphite Furnace Atomic Absorption Spectrometry \(GFAAS\) Techniques](#)

[E1644 Practice for Hot Plate Digestion of Dust Wipe Samples for the Determination of Lead](#)

[E1792 Specification for Wipe Sampling Materials for Lead in Surface Dust](#)

[E1979 Practice for Ultrasonic Extraction of Paint, Dust, Soil, and Air Samples for Subsequent Determination of Lead](#)

[E2051 Practice for the Determination of Lead in Paint, Settled Dust, Soil and Air Particulate by Field-Portable Electroanalysis \(Withdrawn 2010\)](#)<sup>3</sup>

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee [D22](#) on Air Quality and is the direct responsibility of Subcommittee [D22.12](#) on Sampling and Analysis, of Lead, for Exposure and Risk Assessment.

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<sup>2</sup> 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.

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

[E2115 Guide for Conducting Lead Hazard Assessments of Dwellings and of Other Child-Occupied Facilities](#)  
[E2271/E2271M Practice for Clearance Examinations Following Lead Hazard Reduction Activities in Multifamily Dwellings](#)  
[E2239 Practice for Record Keeping and Record Preservation for Lead Hazard Activities](#)

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[E3074/E3074M Practice for Clearance Examinations Following Lead Hazard Reduction Activities in Single Family Dwellings, in Individual Units of Multifamily Dwellings, and in Other Child-Occupied Facilities](#)

[E3193/E3193M Test Method for Measurement of Lead \(Pb\) in Dust by Wipe, Paint, and Soil by Flame Atomic Absorption Spectrophotometry \(FAAS\)](#)

[E3203 Test Method for Determination of Lead in Dried Paint, Soil, and Wipe Samples by Inductively Coupled Plasma-Optical Emission Spectroscopy \(ICP-OES\)](#)

2.2 *Federal U.S. Environmental Protection Agency Regulations:*<sup>4</sup>

40 CFR 745.63 U.S. Environmental Protection Agency Federal Register, Vol 66, No. 4, 5 Jan. 2001, p. 1206

2.3 *U.S. Department of Housing and Urban Development Guidance:*<sup>5</sup>

[HUD Guidelines Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing](#)

2.4 *International Standards:*

[ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories](#)<sup>6</sup>

### 3. Terminology

3.1 For definitions of terms not listed here, see [Terminology Terminologies D1356](#) or [E1605](#).

3.2 *Definitions:*

3.2.1 *batch, n*—a group of field or quality control (QC) samples that are collected or processed together at the same time using the same reagents and equipment.

3.2.2 *sampling location, n*—a specific area within a sampling site that is subjected to sample collection.

3.2.2.1 *Discussion*—

Multiple sampling locations are commonly designated for a single sampling site (see [site.3.2.3](#)).

3.2.3 *sampling site, n*—a local geographic area that contains the sampling locations (see [locations.3.2.2](#)).

3.2.3.1 *Discussion*—

A sampling site is generally limited to an area that is easily covered by walking.

3.2.4 *wipe, n*—a disposable towellette that is moistened with a wetting agent.

**E1792**

3.2.4.1 *Discussion*—

These towellettes are used to collect a sample of settled dust on a surface for subsequent lead analysis.

3.3 *Definitions of Terms Specific to This Standard:*

3.3.1 *field blank, n*—a wipe (see [3.2.4](#)) that is exposed to the same handling as field samples except that no sample is collected (no surface is actually wiped).

3.3.1.1 *Discussion*—

Analysis results from field blanks provide information on the analyte background level in the wipe combined with the potential contamination experienced by samples collected within the batch (see [3.2.1](#))—resulting from handling.

### 4. Summary of Practice

4.1 Wipe samples of settled dust are collected on surfaces from areas of known dimensions with wipes meeting Specification [E1792](#), using a specified pattern of wiping.

4.2 The collected wipes are then ready for subsequent sample preparation and analysis by procedures such as Practice [E1644](#), Practice [E1979](#), Practice [E2051](#), and Test Method [E1613](#), Practice [E3074/E3074M](#), and Test Method [E3203](#).

<sup>4</sup> Available from United States Environmental Protection Agency (EPA), William Jefferson Clinton Bldg., 1200 Pennsylvania Ave., NW, Washington, DC 20460, <http://www.epa.org> or <http://www.epa.gov>.

<sup>5</sup> [Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing](#), Available from U.S. Department of Housing and Urban Development (HUD), Washington, DC, 1995-Development, 451 7th Street S.W., Washington, DC 20410, <https://www.hud.gov>.

<sup>6</sup> Available from International Organization for Standardization (ISO), ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, <http://www.iso.org>.