Designation: E 1792 – 96a

An American National Standard

Standard Specification for Wipe Sampling Materials for Lead in Surface Dust[1]

This standard is issued under the fixed designation E 1792; 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 specification covers requirements for wipe materials that are used to collect settled dusts on hard surfaces for the subsequent determination of lead.

1.2 *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:*

E 105 Practice for Probability Sampling of Materials[2]

E 691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method[2,3]

E 1613 Test Method for Analysis of Digested Samples for Lead by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES), Flame Atomic Absorption (FAAS), or Graphite Furnace Atomic Absorption (GFAAS) Techniques[4]

E 1644 Practice for Hot Plate Digestion of Dust Wipe Samples for Determination of Lead by Atomic Spectrometry[4]

E 1728 Practice for Field Collection of Settled Dust Samples Using Wipe Sampling Methods for Lead Determination by Atomic Spectrometry Techniques[4]

3. Terminology

3.1 *Definitions:*

3.1.1 *wipe, n*—a disposable, porous paper (cellulosic) towellette that is moistened with a wetting agent.

3.1.1.1 *Discussion*—The towellette is used to collect a sample of settled dust on a smooth, hard surface for subsequent lead analysis.

4. Manufacture

4.1 The wipes shall be made from materials using methods that ensure compliance with the requirements of Sections 5 and 7, and shall be clean and free of imperfections that would affect their performance.

5. General Requirements

5.1 Test data must be provided to assure compliance with the following requirements. Unless otherwise specified, test data are to be provided by the wipe producer. Users of wipes may also conduct prescribed tests.

5.1.1 Each wipe shall contain less than 5.0 µg of background lead, as determined by Practice E 1644 and Test Method E 1613, or NIOSH Method 7105 **(1)**,[5] or an equivalent analytical procedure **(2)**.

5.1.2 Wipes shall be sufficiently rugged to be used on a 1000 cm^2 surface area of a smooth surface, such as tile, plastic, metal, wood, or glass, without tearing. A smooth surface for purposes here is defined as having a roughness factor of ≤10 **(3)**, where a roughness factor of unity represents an ideally flat surface.

5.1.3 Wipes shall have a moisture content such that the coefficient of variation for a random sampling of the lot of wipes be no greater than 25 %. A minimum of 15 samples of the lot shall be tested.

5.1.4 Wipe dimensions shall be between 10 by 10 cm and 20 by 20 cm.

5.1.5 The dry wipe thickness shall be measured for at least 15 randomly selected samples of a lot. Wipes so measured shall have an average thickness of at least 0.005 cm but no greater than 0.10 cm.

5.1.6 The coefficient of variation in mass of dry wipes in a lot shall not exceed 5 %. A minimum of 15 samples of the lot shall be tested.

5.1.7 Lead recoveries from wipes spiked with National Institute of Standards and Technology (NIST) Standard Reference Materials (SRM) shall be 100 ± 10 %, 95 % confidence level, of the lead recovery from the SRM alone, that is, *sans* wipe material, as determined by Practice E 1644 and Test Method E 1613, or NIOSH Method 7105, or equivalent procedure.

NOTE 1—It is not imperative that the wipe be completely dissolved when digested in accordance with Practice E 1644 or an equivalent procedure to meet the recovery criterion. However, the solution that is to

[1] This specification is under the jurisdiction of ASTM Committee E-6 on Performance of Buildings and is the direct responsibility of Subcommittee E06.23 on Lead Paint Abatement.

Current edition approved Sept. 10, 1996. Published November 1996. Originally published as E 1792 – 96. Last previous edition E 1792 – 96.

[2] *Annual Book of ASTM Standards*, Vol 14.02.

[3] *ASTM Standards on Precision and Bias for Various Applications*, 3rd Ed., ASTM, Philadelphia, PA, 1988.

[4] *Annual Book of ASTM Standards*, Vol 04.11.

[5] The boldface numbers in parentheses refer to the list of references at the end of this standard.