



Designation: E2115 – 22

Standard Guide for Conducting Lead Hazard Assessments of Dwellings and of Other Child-Occupied Facilities¹

This standard is issued under the fixed designation E2115; 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 guide covers how to conduct, document, and report findings of a lead hazard assessment of dwellings and of other child-occupied facilities.

1.2 Procedures for assessment of personal items, such as toys, dishes, and hobby materials that may contribute to elevated lead levels in blood are not included in this guide.

1.3 Procedures for random sampling of units within dwellings having multiple units are not included.

1.4 This guide contains notes, which are explanatory, and are not part of the mandatory requirements of this guide.

1.5 The values stated in SI units are to be regarded as the standard.

1.5.1 *Exception*—The inch-pound and SI units shown for wipe sampling data are to be individually regarded as standard for wipe sampling data.

1.6 *Methods described in this guide may not meet or be allowed by requirements or regulations established by local authorities having jurisdiction. It is the responsibility of the user of this standard to comply with all such requirements and regulations.*

1.7 *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.*

1.8 *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

D1356 Terminology Relating to Sampling and Analysis of Atmospheres

D4840 Guide for Sample Chain-of-Custody Procedures

E631 Terminology of Building Constructions

E1583 Practice for Evaluating Laboratories Engaged in Determination of Lead in Paint, Dust, Airborne Particulates, and Soil Taken From and Around Buildings and Related Structures

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 (Withdrawn 2021)³

E1644 Practice for Hot Plate Digestion of Dust Wipe Samples for the Determination of Lead

E1645 Practice for Preparation of Dried Paint Samples by Hotplate or Microwave Digestion for Subsequent Lead Analysis

E1726 Practice for Preparation of Soil Samples by Hotplate Digestion for Subsequent Lead Analysis

E1727 Practice for Field Collection of Soil Samples for Subsequent Lead Determination

E1728/E1728M Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination

E1729 Practice for Field Collection of Dried Paint Samples for Subsequent Lead Determination

E1753 Practice for Use of Qualitative Chemical Spot Test Kits for Detection of Lead in Dry Paint Films

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,

¹ This guide 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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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.

Settled Dust, Soil and Air Particulate by Field-Portable Electroanalysis (Withdrawn 2010)³

E2119 Practice for Quality Systems for Conducting In Situ Measurements of Lead Content in Paint or Other Coatings Using Field-Portable X-Ray Fluorescence (XRF) Devices

E2239 Practice for Record Keeping and Record Preservation for Lead Hazard Activities

E2252 Practice for Selection of Lead Hazard Reduction Methods for Identified Risks in Residential Housing or Child Occupied Facilities

E2255/E2255M Practice for Conducting Visual Assessments for Lead Hazards in Buildings

E3193 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 Other Documents:

40 CFR 745 Environmental Protection Agency (EPA), Lead-Based Paint Poisoning Prevention in Certain Residential Structures (especially subparts D, L, and Q)⁴

HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, 2nd Edition, July 2012⁵

3. Terminology

3.1 Definitions—For definition of terms not appearing here, refer to Terminologies **D1356**, **E631**, and **E1605**.

3.1.1 lead hazard assessment, n—an investigation of buildings and associated areas in the immediate vicinity of the buildings conducted to determine the location, type, and severity of lead hazards.

4. Summary of Guide

4.1 This guide discusses the conduct of a lead hazard assessment, in a stepwise progression, using a systematic application of the three general tasks listed below. Simultaneous conduct of several activities within these tasks generally is performed.

4.1.1 Task 1—Pre-site visit activities: Preparing for the on-site visit.

4.1.2 Task 2—On-site activities: Conducting field work.

4.1.3 Task 3—Post-site visit activities: Analyzing information and reporting.

NOTE 1—The procedures described in this guide are based on the hazard identification portion of a risk assessment of dwellings and other facilities frequented by children as described in 40 CFR 745 and the HUD Guidelines.

5. Significance and Use

5.1 This guide is intended to help prevent lead poisoning of children by providing standardized procedures for conducting a lead hazard assessment and providing information needed to

develop and recommend lead hazard control options as described in Practice **E2252**.

5.2 This guide is applicable for use in either occupied or unoccupied dwellings and in other child-occupied facilities.

5.3 The procedures in this guide, when supplemented by recommendations for controlling lead hazards, provide for the conduct of a lead risk assessment of a dwelling or of other child-occupied facilities.

5.4 This guide may be used to supplement assessment procedures used to determine the causes of elevated blood lead (EBL) levels in young children.

NOTE 2—In cases of EBL levels, investigation of the total living environment of the child and a pediatric medical evaluation may also be needed. Reference should be made to documents such as *Managing Elevated Blood Lead Levels Among Young Children*,⁶ *Preventing Lead Poisoning in Young Children* (1991),⁷ the HUD Guidelines, and *Screening Young Children for Lead Poisoning* (1997).⁷

5.5 Although this guide was developed for dwellings and for other child-occupied facilities, this guide may be suitable for lead hazard assessments in non-residential buildings and other properties following agreement between assessor and client on appropriate lead action levels.

5.6 This guide is not intended for use in identifying building materials that when abraded or otherwise degraded, such as that which may occur in remodeling or renovation activities, may result in lead hazards.

5.7 Lead hazard assessment reports describe lead hazards identified at the time the assessment was performed. The locations, types, or severities of lead hazards can change over time as a result of property improvement or deterioration, significant changes in property use, or other factors.

NOTE 3—The term “lead-free” should never be used to describe the absence of lead hazards because testing methodologies are not designed to measure the total absence of lead. Small amounts of lead present in building materials and components or soil may result in a hazard with changes in building conditions or as a result of activities that create dust that contains lead.

5.8 This guide is applicable for assisting professionals, homeowners, owners or occupants of rental property, lenders, insurers, and others with a property interest in determining the presence of lead hazards.

5.9 This guide also is applicable for assisting designers of lead hazard mitigation projects to target resources toward lead hazard controls that are deemed most likely to result in the prevention of lead poisoning in young children.

6. Requirements for a Risk Assessor

6.1 The reliability of a lead hazard assessment depends on the training, experience and knowledge of the lead Risk Assessor. Lead hazard assessments shall be carried out by Risk

⁴ Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, <http://www.access.gpo.gov>.

⁵ Available from U.S. Department of Housing and Urban Development (HUD), 451 7th Street, SW, Washington DC 20410, <https://www.hud.gov>.

⁶ Recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention, Centers for Disease Control and Prevention (CDC), March 2002. Available from Centers for Disease Control & Prevention (CDC), 1600 Clifton Rd., Atlanta, GA 30329-4027, <http://www.cdc.gov>.

⁷ Available from Centers for Disease Control and Prevention (CDC), 1600 Clifton Rd., Atlanta, GA 30329-4027, <http://www.cdc.gov>.