



Designation: E3193 – 20

Standard Test Method for Measurement of Lead (Pb) in Dust by Wipe, Paint, and Soil by Flame Atomic Absorption Spectrophotometry (FAAS)¹

This standard is issued under the fixed designation E3193; 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 the determination of lead (Pb) in dust by wipe, paint, and soil collected in and around buildings and related structures by flame atomic absorption spectrophotometry (FAAS) and is derived from Test Methods [D4185](#) and [E1613](#). For determination of lead (Pb) and other metals in air by FAAS, see Test Method [D4185](#).

1.2 The sensitivity, detection limit, and optimum working concentration for lead (Pb) are given in [Table 1](#).

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

1.3.1 *Exception*—The SI and inch-pound units shown for wipe sampling data are to be individually regarded as standard for wipe sampling data ([13.4.1](#)).

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

1.5 *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

[D1193](#) Specification for Reagent Water

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

¹ This test method 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.

Current edition approved March 1, 2020. Published April 2020. Originally approved in 2019. Last previous edition approved in 2019 as E3193 – 19. DOI: 10.1520/E3193-20.

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.

[D4185](#) Test Method for Measurement of Metals in Workplace Atmospheres by Flame Atomic Absorption Spectrophotometry

[D4210](#) Practice for Intralaboratory Quality Control Procedures and a Discussion on Reporting Low-Level Data (Withdrawn 2002)³

[D4697](#) Guide for Maintaining Test Methods in the User's Laboratory (Withdrawn 2009)³

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

[D6785](#) Test Method for Determination of Lead in Workplace Air Using Flame or Graphite Furnace Atomic Absorption Spectrometry

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

[D7035](#) Test Method for Determination of Metals and Metalloids in Airborne Particulate Matter by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES)

[E456](#) Terminology Relating to Quality and Statistics

[E631](#) Terminology of Building Constructions

[E691](#) Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

[E1188](#) Practice for Collection and Preservation of Information and Physical Items by a Technical Investigator

[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

[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

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