



Designation: D6234 – 13 (Reapproved 2020)

Standard Test Method for Shake Extraction of Mining Waste by the Synthetic Precipitation Leaching Procedure¹

This standard is issued under the fixed designation D6234; 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 a procedure for the shake leaching of mining waste containing at least 80 % dry solids (≤ 20 % moisture) in order to generate a solution to be used to determine the inorganic constituents leached under the specified testing conditions that conform to the synthetic precipitation leaching procedure (SPLP).

1.2 This test method calls for the shaking of a known weight of mining waste with acidic extraction fluid of a specified composition, as well as the separation of the liquid phase for analysis. The pH of the extraction fluid is to reflect the pH of acidic precipitation in the geographic region in which the waste being tested is to be disposed.

NOTE 1—Possible sources of information concerning the pH of the precipitation in the geographic region of interest include state and federal environmental agencies, state universities, libraries, etc. pH values given in USEPA Method 1312, that are 4.2 east of the Mississippi River and 5.0 west of the Mississippi River and are based on acid precipitation maps, are examples of values that can be used. If the pH of the laboratory water is less than the desired pH for the site, do not use this test method; use Practice [D3987](#) or Test Method [E2242](#).

NOTE 2—The method may also be suitable for use in testing of mineral processing waste from metal mining process operations for jurisdictions that do not require the use of Test Method [E2242](#).

1.3 This test method is intended to describe the procedure for performing single batch extractions only. It does not describe all types of sampling, sample preservation, and analytical requirements that may be associated with its application.

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

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 appro-*

priate safety, health, and 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:*²

[D75/D75M](#) Practice for Sampling Aggregates

[D420](#) Guide for Site Characterization for Engineering Design and Construction Purposes

[D653](#) Terminology Relating to Soil, Rock, and Contained Fluids

[D1129](#) Terminology Relating to Water

[D1193](#) Specification for Reagent Water

[D2234/D2234M](#) Practice for Collection of a Gross Sample of Coal

[D2777](#) Practice for Determination of Precision and Bias of Applicable Test Methods of Committee D19 on Water

[D3370](#) Practices for Sampling Water from Flowing Process Streams

[D3987](#) Practice for Shake Extraction of Solid Waste with Water

[D5744](#) Test Method for Laboratory Weathering of Solid Materials Using a Humidity Cell

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

[E877](#) Practice for Sampling and Sample Preparation of Iron Ores and Related Materials for Determination of Chemical Composition and Physical Properties

[E1915](#) Test Methods for Analysis of Metal Bearing Ores and Related Materials for Carbon, Sulfur, and Acid-Base Characteristics

[E2242](#) Test Method for Column Percolation Extraction of Mine Rock by the Meteoric Water Mobility Procedure

¹ This test method is under the jurisdiction of ASTM Committee [D34](#) on Waste Management and is the direct responsibility of Subcommittee [D34.01.04](#) on Waste Leaching Techniques.

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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.