



Designation: D8155 – 17

Standard Practice for Shake Extraction of Solid Mining and Metallurgical Processing Waste with Water¹

This standard is issued under the fixed designation D8155; 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 practice covers a procedure for leaching of solid waste to obtain an aqueous solution to be used to determine the constituents leached under the specified testing conditions.

1.1.1 This practice includes a procedure for the shake leaching of metal mining ore, waste rock, or metallurgical processing 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 and for regulatory jurisdictions requiring a water leach practice.

1.2 This practice provides for the shaking of a known mass of waste with water of specified composition and the separation of the aqueous phase for analysis.

1.2.1 This practice 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.

1.3 The values stated in SI units are to be regarded as standard. Values given in parentheses are mathematical conversions to inch-pound units that are provided for information only and are not considered standard.

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.*

¹ This practice 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. Referenced Documents

2.1 ASTM Standards:²

- C471M Test Methods for Chemical Analysis of Gypsum and Gypsum Products (Metric)
- D75/D75M Practice for Sampling Aggregates
- D420 Guide to Site Characterization for Engineering Design and Construction Purposes (Withdrawn 2011)³
- D1193 Specification for Reagent Water
- D2216 Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- D2234/D2234M Practice for Collection of a Gross Sample of Coal
- D3370 Practices for Sampling Water from Closed Conduits
- D5681 Terminology for Waste and Waste Management
- D5744 Test Method for Laboratory Weathering of Solid Materials Using a Humidity Cell
- D6234 Test Method for Shake Extraction of Mining Waste by the Synthetic Precipitation Leaching Procedure
- E122 Practice for Calculating Sample Size to Estimate, With Specified Precision, the Average for a Characteristic of a Lot or Process
- 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

3. Terminology

3.1 For definitions of terms used in this practice, see Terminology D5681.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *metal mining waste, n*—overburden or waste rock excavated and disposed of during mining operations.

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.