



Designation: **D3172—07a D3172 – 13**

## Standard Practice for Proximate Analysis of Coal and Coke<sup>1</sup>

This standard is issued under the fixed designation D3172; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope\*Scope

1.1 This practice covers the determination of moisture, volatile matter, and ash and the calculation of fixed carbon on coals and cokes sampled and prepared by prescribed methods and analyzed according to ASTM established procedures.

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:*<sup>2</sup>

[D121 Terminology of Coal and Coke](#)

[D346 Practice for Collection and Preparation of Coke Samples for Laboratory Analysis](#)

[D388 Classification of Coals by Rank](#)

~~D2013~~[D2013/D2013M Practice for Preparing Coal Samples for Analysis](#)

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

[D3173 Test Method for Moisture in the Analysis Sample of Coal and Coke](#)

[D3174 Test Method for Ash in the Analysis Sample of Coal and Coke from Coal](#)

[D3175 Test Method for Volatile Matter in the Analysis Sample of Coal and Coke](#)

[D4596 Practice for Collection of Channel Samples of Coal in a Mine](#)

~~D4916 Practice for Mechanical Auger Sampling (Withdrawn 2008)~~<sup>3</sup>

[D5192 Practice for Collection of Coal Samples from Core](#)

[D6883 Practice for Manual Sampling of Stationary Coal from Railroad Cars, Barges, Trucks, or Stockpiles](#)

[D6609 Guide for Part-Stream Sampling of Coal](#)

~~D7256~~~~D7256M~~[D7430 Practice for Mechanical Collection and Within-System Preparation of a Gross Sample of Coal from Moving Streams Sampling of Coal \(Withdrawn 2008\)](#)

[D7582 Test Methods for Proximate Analysis of Coal and Coke by Macro Thermogravimetric Analysis](#)

### 3. Terminology

3.1 *Definitions:*

3.1.1 *proximate analysis of coal and coke*—~~an assay of the moisture, ash, volatile matter, and fixed carbon~~an assay of the moisture, ash, volatile matter, and fixed carbon ~~ash and volatile matter as determined by prescribed methods, methods and the calculation of fixed carbon by difference.~~ ash and volatile matter as determined by prescribed methods, methods and the calculation of fixed carbon by difference. Other constituents such as sulfur and phosphorus characteristics such as gross calorific value are not included.

3.1.2 For additional definitions of terms used in this practice, refer to Terminology [D121](#).

### 4. Significance and Use

4.1 Test methods, as herein described, can be used to establish the rank of coals, show the ratio of combustible to incombustible constituents, provide the basis for buying and selling, and evaluate for beneficiation or for other purposes.

### 5. Sampling

5.1 ~~Coal sample collection shall be in accordance the sampling section of Classification If the [D388](#), if the proximate analysis is to be used for classification of coal by rank. Other wise, rank, coal sample collection shall be in accordance with Classification~~

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee [D05](#) on Coal and Coke and is the direct responsibility of Subcommittee [D05.21](#) on Methods of Analysis. Current edition approved Oct. 1, 2007; Nov. 1, 2013. Published October 2007. Originally approved in 1973. Last previous edition approved in 2007 as [D3172—07](#); [D3172 – 07a](#). DOI: 10.1520/D3172-07A; 10.1520/D3172-13.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

\*A Summary of Changes section appears at the end of this standard