



Designation: D3172 – 07a

Standard Practice for Proximate Analysis of Coal and Coke¹

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 (ϵ) indicates an editorial change since the last revision or reapproval.

1. 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:*²

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

[D388 Classification of Coals by Rank](#)

[D2013 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[D4916 Practice for Mechanical Auger Sampling \(Withdrawn 2008\)](#)³

[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 Practice for Mechanical Collection and Within-System Preparation of a Gross Sample of Coal from Moving Streams \(Withdrawn 2008\)](#)³

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 as determined by prescribed methods. Other constituents such as sulfur and phosphorus are not included.

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 [D388](#), if the proximate analysis is to be used for classification of coal by rank. Other wise, coal sample collection shall be done in accordance with any of the following Guides or Practices as appropriate: Guide [D6609](#), Practice [D4596](#), Practice [D4916](#), Practice [D5192](#), and Practice [D6883](#). In all other cases, sample collection shall be in accordance with Practice [D2234/D2234M](#).

5.2 Coke sampling shall be done in accordance with Practice [D346](#).

6. Analysis Sample

6.1 For coal, sample preparations shall be in accordance with Practices [D2013](#) or [D7256/D7256M](#). The analysis sample shall be the material pulverized to pass a 250- μm (No. 60 sieve in accordance with Practice [D2013](#).

6.2 For coke, sample preparations shall be in accordance with Practice [D346](#).

7. Test Methods

7.1 *Moisture*—Test Method [D3173](#).

7.2 *Ash*—Test Method [D3174](#).

¹ 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.

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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.

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