



Designation: D 2234 / D 2234 M – 02

Standard Practice for Collection of a Gross Sample of Coal¹

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INTRODUCTION

Data obtained from coal samples are used in establishing price, controlling mine and cleaning plant operations, allocating production costs, and determining plant or component efficiency. The task of obtaining a sample of reasonable weight to represent an entire lot presents a number of problems and emphasizes the necessity for using standard sampling procedures.

Coal is one of the most difficult of materials to sample, varying in composition from noncombustible particles to those which can be burned completely, with all gradations in between. The task is further complicated by the use of the analytical results, the sampling equipment available, the quantity to be represented by the sample, and the degree of precision required.

This practice gives the overall requirements for the collection of coal samples. The wide varieties of coal-handling facilities preclude the publication of detailed procedures for every sampling situation. The proper collection of the sample involves an understanding and consideration of the physical character of the coal, the number and weight of increments, and the overall precision required.

1. Scope

1.1 This practice covers procedures for the collection of a sample under various conditions of sampling. The sample is to be crushed and further prepared for analysis in accordance with Method D 2013. However, the procedures for dividing large samples before any crushing are given in this practice.

1.2 This practice describes general and special purpose sampling procedures for coals (1) by size and condition of preparation (for example, mechanically cleaned coal or raw coal) and (2) by sampling characteristics.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, use each system independently of the other. Combining values from the two systems may result in nonconformance with the 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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

D 121 Terminology of Coal and Coke

D 2013 Method of Preparing Coal Samples for Analysis²
D 6518 Practice for Bias Testing a Mechanical Coal Sampling System²

E 177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods³

E 456 Terminology Relating to Quality and Statistics²

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 accuracy:

3.1.1.1 *generally*—a term used to indicate the reliability of a sample, a measurement, or an observation.

3.1.1.2 *specifically*—a measure of closeness of agreement between an experimental result and the true value. Example: the observed and true sulfur content of a coal consignment. This measure is affected by chance errors as well as by bias.

3.1.2 *mechanical sampling system*—a single machine or series of interconnected machines whose purpose is to extract mechanically, or process (divide and reduce), or a combination thereof, a sample of coal.

3.1.3 *cross-belt sampler*—a single sampling machine or component of a mechanical sampling system designed to extract an increment directly from a conveyor belt surface by sweeping a sampling device (cutter) through the material on the conveyor.

3.1.4 *falling-stream sampler*—a single sampling machine or component of a mechanical sampling system designed to

¹ These methods are under the jurisdiction of ASTM Committee D05 on Coal and Coke and are the direct responsibility of Subcommittee D05.23 on Sampling.

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² Annual Book of ASTM Standards, Vol 05.06.

³ Annual Book of ASTM Standards, Vol 14.02.