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Standard Test Method for Size of Anthracite¹

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1. Scope

1.1 This test method covering screen analysis of anthracite is used to determine the percentage of undersize or oversize in any given commercial size.

1.2 The values stated in inch-pound units are to be regarded as the standard.

1.3 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems 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 346 Method of Collection and Preparation of Coke Samples for Laboratory Analysis²

D 2234 Methods for Collection of a Gross Sample of Coal²

E 11 Specification for Wire-Cloth Sieves for Testing Purposes²

E 323 Specification for Perforated-Plate Sieves for Testing Purposes²

3. Screens

3.1 The screens and sieve plate frames for testing the various sizes of anthracite shall consist of No. 16 U.S. gage metal plates with staggered round openings. The screens shall conform to the requirements for round-hole perforated plate screens prescribed in Specification E 11 or Specification E 323. Screens mounted in hardwood box frames 16 to 20 in. (40.6 to 50.8 cm) square are satisfactory for testing nut, pea, buckwheat, and rice sizes of anthracite. For broken, egg, and stove sizes, it is more convenient to use screens square or rectangular in shape having an area of 4 to 6 ft² (0.37 m² to 0.56 m²). The screens may conveniently be mounted in a rack, so as to slide like drawers, with a pan underneath to catch the undersize.

4. Screen Openings

4.1 See Table 1 for screen openings specified by the Commonwealth of Pennsylvania, Specifications for Coal, Anthra-

cite, effective February 16, 1953, as standard anthracite sizing specifications.

4.2 When testing coal to determine conformity with these specifications, use these sizes of screen openings in the test.

5. Unit for Sampling

5.1 Each lot as defined in Methods D 2234 shall be considered as a unit for sampling.

6. Collection of Gross Sample

6.1 The gross sample shall be not less than the quantities specified in Table 1 of Methods D 2234.

6.2 Collect the gross sample preferably in accordance with Methods D 2234.

6.2.1 When sampling from a railcar, sample to as great of a depth as possible according to the scheme shown in Fig. 1. For some sizes of anthracite, sampling at the normal coal surface (to a depth of 18 to 24 in.) may not be practical due to the slumping caused by the active angle of repose of the material.

NOTE—Sampling from a stationary source is the least preferred method of sampling, but where no other alternative sampling method is available, such as when sampling from a railcar, the limitations and potential bias of the method cannot be overstated.

6.3 The method of collection of the gross sample shall be such as to produce a minimum of degradation.

7. Preparation of Laboratory Sample

7.1 For broken, egg, stove, and nut sizes, screen the gross sample without mixing or division. For the pea size, mix the gross sample and divide by quartering, without crushing, in accordance with 9.3 of Method D 346. For the buckwheat and rice sizes, thoroughly mix the gross sample and divide by quartering, without crushing, in accordance with Section 7 of Method D 346. The laboratory samples shall consist of the following approximate minimum amounts:

TABLE 1 Screen Size

Size	Size of Round-Hole Openings in Testing Screens, in.	
	Passing	Retained on
Broken	4¾	3¼ to 3 ^A
Egg	3¼ to 3 ^A	27/16
Stove	27/16	1¾
Nut	1½	13/16
Pea	13/16	9/16
Buckwheat	9/16	5/16 ^A
Rice	5/16 ^A	3/16 ^A

^A Listed in ASTM Specification E 323, Table 1.

¹ This test method is under the jurisdiction of the ASTM Committee D-5 on Coal and Coke and is the direct responsibility of Subcommittee D05.07 on Physical Characterization and Beneficiation of Coal and Coal Slurries.

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² Annual Book of ASTM Standards, Vol 05.05.