Designation: D2590/D2590M – 98 (Reapproved 2019)

Standard Test Method for Sampling Chrysotile Asbestos[1]

This standard is issued under the fixed designation D2590/D2590M; 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 test method covers procedures for taking a composite or a master composite sample, at the mine or at the factory or from a consignment, of a lot of milled asbestos fiber used as raw material in the chrysotile asbestos industry, conditioning this sample and reducing it in quantity through a series of steps to provide a relatively small test specimen of loose asbestos fibers, representative of the lot and suitable for the determination of a single property.

1.2 This sampling method is suitable for taking test specimens of chrysotile asbestos for Test Methods: C1119, C1120, C1121, C1122, C1123, C1124, C1125, C1162, D1118, D2589, D2752, D2946, D2947, D2985, D2987, D3639, D3752 and D3880.

1.3 Test Method D3879 covers the sampling of amphibole asbestos fibers.

1.4 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, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.5 *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.*

1.6 *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.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

C1119 Test Method for Vacuum Drainage of Asbestos-Cement Mixes
C1120 Test Method for Wash Test of Asbestos
C1121 Test Method for Turner and Newall (T and N) Wet-Length Classification of Asbestos
C1122 Test Method for Wet Volume of Asbestos
C1123 Test Method for Compressibility and Recovery of Asbestos
C1124 Test Method for Kerosene Retention of Asbestos
C1125 Test Method for Penetration Index of Asbestos
C1162 Test Method for Loose Density of Asbestos
D1118 Test Method for Magnetic Rating of Asbestos Fiber and Asbestos Textiles
D2589 Test Method for McNett Wet Classification of Dual Asbestos Fiber
D2752 Test Methods for Air Permeability of Asbestos Fibers
D2946 Terminology for Asbestos and Asbestos–Cement Products
D2947 Test Method for Screen Analysis of Asbestos Fibers
D2985 Test Method for Color of Asbestos
D2987 Test Method for Moisture Content of Asbestos Fiber
D3639 Test Method for Classification of Asbestos by Quebec Standard Test
D3752 Test Method for Strength Imparted by Asbestos to a Cementitious Matrix
D3879 Test Method for Sampling Amphibole Asbestos (Withdrawn 2009)[3]
D3880 Test Method for Asbestos Strength Units

2.2 *ASTM Adjuncts:*
Laboratory Filter Drawings[4]

3. Terminology

3.1 *Definitions:*

[1] This test method is under the jurisdiction of ASTM Committee C17 on Fiber-Reinforced Cement Products and is the direct responsibility of Subcommittee C17.03 on Asbestos - Cement Sheet Products and Accessories.

Current edition approved April 15, 2019. Published May 2019. Originally approved in 1967. Last previous edition approved in 2011 as D2590 – 98 (2011)ε1. DOI: 10.1520/D2590_D2590M-98R19.

[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.

[4] Available from ASTM International Headquarters. Order Adjunct No. ADJD2590.

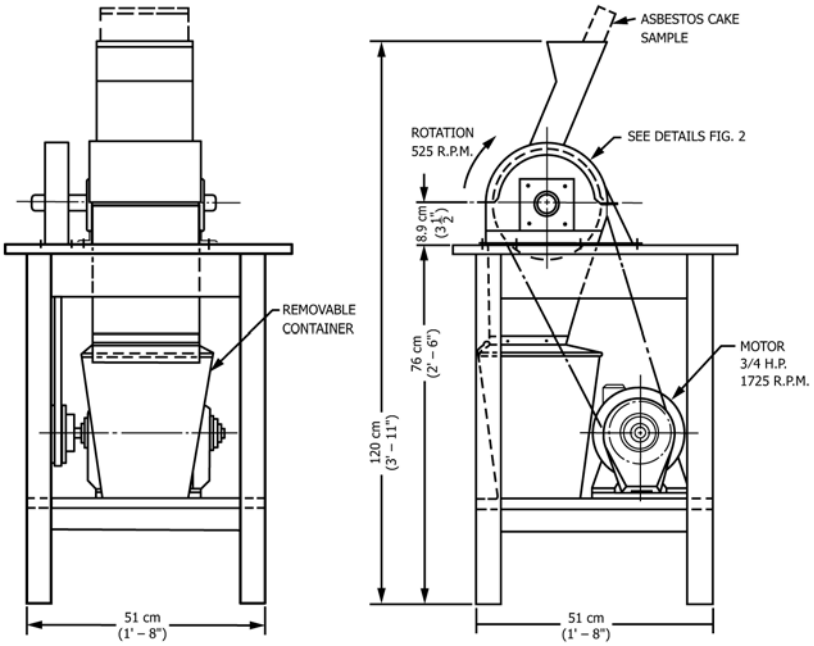

FIG. 1 Laboratory Fiber Conditioner

3.1.1 *bag*—any quantity of asbestos fiber corresponding to one particular grade that is packed in a suitable container.

NOTE 1—In the asbestos industry, the typical quantity contained in a bag is 45 kg [100 lb approximately].

3.1.2 *composite sample*—a set of unit samples of asbestos fiber (drawn systematically or at random) taken from a lot, comprising not less than two and not more than 200 bags, for use in the laboratory as a test sample; that is as a source of test specimens.

3.1.3 *conditioning*—process by which the fiber is put into proper condition to be tested. This can be done by hand (Method A) or mechanically (Method B).

3.1.4 *fines, n—in asbestos,* the class of material having the smallest range of particle size that is segregated by particle size classification of asbestos by any relevant test method. Customarily the fraction that passes through the finest aperture screen used in Test Method D2589 for McNett classification of asbestos fiber.

3.1.5 *grade*—asbestos fiber that has the same chemical, physical, and mechanical properties and which is designated by a particular code corresponding to any given specifications.

3.1.6 *handful*—as much fiber as the hand can contain.

3.1.7 *lot*—not less than two and not more than 2000 bags of asbestos fiber of the same type and grade offered at any one time for delivery or testing.

3.1.8 *master composite sample*—not less than two and not more than ten composite samples so combined and reduced as to form a test sample that represents a lot that consists of more than 200 bags but not more than 2000 bags.

3.1.9 *milled asbestos, n*—all grades of asbestos that are recovered as the result of mechanical comminution and screen classification or air classification of asbestos ore.

3.1.10 *pinch*—as much fiber as can be taken up between the tips of the index finger and thumb.

3.1.11 *random sample*—the composite sample is random if each individual bag in the lot being examined has an equal chance of being included in the sample.

3.1.12 *referee sample*—a sample on which acceptability is based. Acceptability will be based on a composite sample if the lot is 200 bags or less, or on a master composite sample if over 200 bags, but not in excess of 2000 bags.

3.1.13 *shipment*—any consignment formed of one or several lots of asbestos fiber.

3.1.14 *systematic sample*—the composite sample is systematic if it is formed of every *k*th bag of the lot to be examined.

3.1.15 *test specimen*—the specific portion of a test sample upon which a test is to be performed, and that is obtained by systematically reducing the size of the sample until a representative specimen of the required mass is obtained.

3.1.16 *unit sample*—a sample drawn from one bag.

3.1.17 Additional definitions are contained in Terminology D2946.

4. Significance and Use

4.1 Sampling and conditioning are equally as important as testing. The reliability of the test results depends primarily upon how well the specimens tested represent the true character and condition of the lot of asbestos fiber. Much care and effort are required to be sure that all the sampling operations are systematic or at random and are representative. Failure to provide a test specimen that accurately represents the lot from which it is drawn will produce misleading test results regardless of the accuracy and the precision of the test method.