



Standard Test Methods for Air Permeability of Asbestos Fibers¹

This standard is issued under the fixed designation D2752/D2752M; 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.

^{ε1} NOTE—Units information was editorially corrected in February 2012.

1. Scope

1.1 These test methods cover the measurement of the relative degree of openness or degree of fiberization of milled asbestos fiber by air permeability instruments.

1.2 Method A is the recommended procedure and describes a determination by means of the Rapid Surface Area apparatus. This test method is limited to fibers with an effective surface area in the range from 10 to 250 dm²/g [490 to 12 000 ft²/lb].

1.3 Method B is an alternative procedure and covers the use of the Dyckerhoff apparatus. This test method is limited to fibers within the range from 10 to 600 Dyckerhoff seconds.

1.4 Only those asbestos specimens which are of similar specific gravities will bear strict comparison by these air permeability methods since differences in density result in specimens being tested under different conditions of porosity.

1.5 Samples containing excessive quantities of nonfibrous particles or contaminants will not give reliable or meaningful results.

1.6 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.

1.7 **Warning**—Breathing of asbestos dust is hazardous. Asbestos and asbestos products present demonstrated health risks for users and for those with whom they come into contact. In addition to other precautions, when working with asbestos-cement products, minimize the dust that results. For information on the safe use of chrysotile asbestos, refer to “Safe Use of Chrysotile: A Manual on Preventive and Control Measures.”²

1.8 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:³

D2590 Test Method for Sampling Chrysotile Asbestos

D3879 Test Method for Sampling Amphibole Asbestos (Withdrawn 2009)⁴

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods

2.2 Other Standard:⁵

NNN-P-1475B Federal Specification for Paper, Filter, Analytical

3. Summary of Test Methods

3.1 In both test methods the resistance to air flow of a compressed specimen of fixed weight and volume is determined.

3.2 Test Method A:

3.2.1 The apparatus is arranged so that the total resistance to air flow remains equal to a fixed hydraulic pressure head. Total resistance includes the resistance of the specimen and the pressure drop across a calibrated capillary tube of known resistance. The contribution of the specimen to total resistance is measured on a manometer calibrated in specific surface area units.

3.2.2 Optional calibration of the manometer in equivalent Dyckerhoff seconds, which are the units of Test Method B, permits comparison of results by both test methods on the same basis.

¹ These test methods are under the jurisdiction of ASTM Committee C17 on Fiber-Reinforced Cement Products and are the direct responsibility of Subcommittee C17.03 on Asbestos - Cement Sheet Products and Accessories.

Current edition approved Nov. 1, 2011. Published February 2012. Originally approved in 1968. Last previous edition approved in 2006 as D2752 – 88 (2006). DOI: 10.1520/D2752_D2752M-88R11E01.

² Available from The Asbestos Institute, http://www.chrysotile.com/en/sr_use/manual.htm.

³ 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.

⁴ The last approved version of this historical standard is referenced on www.astm.org.

⁵ Available from the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.