Designation: D1571/D1571M – 95 (Reapproved 2009)$^{\varepsilon 1}$

Standard Specification for Woven Asbestos Cloth[1]

This standard is issued under the fixed designation D1571/D1571M; 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.

ε^1 NOTE—Units information was corrected editorially in March 2010.

1. Scope

1.1 This specification covers woven asbestos cloth having a minimum of 75 % asbestos fiber by weight, excluding the mass of other inorganic reinforcing strands which may be present.

1.2 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.

1.3 **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 chrysoltile asbestos, refer to "Safe Use of Chrysotile Asbestos: A Manual on Preventive and Control Measures."[2]

1.4 The following safety caveat pertains only to the test methods portion, Section 13, described in this specification: *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. For specific safety hazard, see 1.3.*

2. Referenced Documents

2.1 *ASTM Standards:*[3]

D123 Terminology Relating to Textiles
D299 Specification for Asbestos Yarns
D1682 Test Method for Breaking Load and Elongation of Textile Fabric (Withdrawn 1992)[4]
D1777 Test Method for Thickness of Textile Materials
D1910 Methods of Test for Construction Characteristics of Woven Fabrics; Replaced by D 3773, D 3774, D 3775, D 3776, D 3882, D 3883 (Withdrawn 1981)[4]
D1918 Test Method for Asbestos Content of Asbestos Textiles
D2100 Specification for Asbestos Textiles Used for Electrical Insulating Purposes
D2946 Terminology for Asbestos and Asbestos–Cement Products
D3774 Test Method for Width of Textile Fabric
D3775 Test Method for Warp (End) and Filling (Pick) Count of Woven Fabrics
D3776 Test Methods for Mass Per Unit Area (Weight) of Fabric

3. Terminology

3.1 For definitions of other textile terms used in this specification, refer to Terminology D123. For asbestos terms, refer to Terminology D2946.

3.2 *Definitions:*

3.2.1 *asbestos textile, n*—hydrous magnesium silicate serpentine mineral designated as chrysotile and having the empirical formula $Mg_3Si_2O_5(OH)_4$.

4. Classification

4.1 The classes of asbestos cloth are based on the nature of the yarns from which they are woven.

4.1.1 *Class A*—Cloth constructed of asbestos yarns containing no reinforcing strands.

4.1.2 *Class B*—Cloth constructed of asbestos yarns containing wire reinforcement.

4.1.3 *Class C*—Cloth constructed of asbestos yarns containing organic reinforcing strands.

4.1.4 *Class D*—Cloth constructed of asbestos yarns containing nonmetallic inorganic reinforcing strands.

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

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[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.

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TABLE 1 Grades of Woven Asbestos Tape

Grade	Asbestos Content, weight percent
Commercial	75 up to but excluding 80
Underwriters	80 up to but excluding 85
A	85 up to but excluding 90
AA	90 up to but excluding 95
AAA	95 up to but excluding 99
AAAA	99 to 100 inclusive

4.1.5 *Class E*—Cloth constructed of two or more of the yarns used in cloth Classes *A* through *D*.

4.2 *Grades*—The grades of asbestos cloth are based on the percentage of asbestos content by mass as stated in Table 1.

4.3 *Styles:*

4.3.1 The style designation employed by the ATI uses both a numerical and alphabetical classification. In metallic cloths, the first two digits denote the weight per square yard expressed in ounces. The letter "M" indicates that the fabric is made with metallic or wire-inserted yarns, and the final digit or digits indicate the cut number of the yarns employed. In plain or non-metallic cloths, the meaning of each numerical designation is the same as that used in the metallic cloth classification. The alphabetical letter designates the weave used. The letter "P" stands for plain weave, "H" indicates a herringbone construction, and "T" denotes a twill.

4.3.2 Typical styles of non-metallic asbestos cloths are presented in Table 2.

4.3.3 Typical styles of metallic (wire-inserted) asbestos cloths are presented in Table 3.

5. Ordering Information

5.1 Woven asbestos cloth is normally purchased on the basis of class, grade, weave, style, mass per unit area (weight), thickness, and width as specified in the order. Asbestos cloth is normally furnished in rolls of 50 or 100 m [50 or 100 yd].

6. Materials and Manufacture

6.1 *Yarn*—Asbestos cloth shall be uniformly woven from a specified grade of asbestos yarn with or without reinforcement.

6.2 *Wire Reinforcement*—The wire reinforcement may be brass, copper, zinc, nickel, nichrome, inconel, monel, or other metal or alloy as specified in the order.

6.3 *Organic Reinforcement*—The organic reinforcements may be cotton, nylon, rayon or other spun or filament yarn(s) as specified in the order.

6.4 *Inorganic Reinforcement*—The inorganic reinforcement may be glass, or other ceramic or vitreous spun or filament yarn(s) as specified in the order.

7. Chemical Composition

7.1 *Asbestos Content*—The asbestos content of the particular grade specified shall conform to the limits stated in Table 1.

8. Physical Properties

8.1 *Electromagnetic Properties*—Cloth to be used for electrical insulating purposes shall conform to the requirements in Specification D2100.

9. Mechanical Properties

9.1 *Tensile (Breaking) Strength*—The breaking strength (breaking load) of asbestos cloth shall be as agreed upon between the purchaser and the seller.

10. Dimensions, Mass, and Permissible Variations

10.1 *Width*—The width of asbestos cloth shall be within the following limits:

Nominal Width	Permissible Limits
Up to and including 1 m [40 in.]	±12 mm [0.5 in.]
Over 1 m [40 in.] up to and including 1.5 m [60 in.]	±19 mm [0.75 in.]
Over 1.5 m [60 in.]	±25 mm [1.00 in.]

10.2 *Thickness:*

10.2.1 The thickness of asbestos cloth shall be within the following limits:

Nominal Thickness	Permissible Limits
1.25 mm [0.050 in.] and under	±0.12 mm [0.005 in.]
Over 1.25 mm [0.050 in.]	+0.25 mm [0.010 in.] −0.12 mm [0.005 in.]

10.2.2 The thicknesses of single-ply cloths range from approximately 0.4 to 2.5 mm [0.015 in. to 0.100 in.]. Fabrics up to 40 mm [1.5 in.] in thickness can be woven in multi-ply construction.

10.3 *Mass per Unit Area (Weight)*—The mass per unit area (weight) of asbestos cloth shall be within ±7 % of the specified mass.

10.4 *Fabric Count*—The warp ends or filling picks shall be within the following limits:

Ends or Picks per Unit Length	Permissible Limits
500 or less/mm [20 or less/in.]	±1 end or pick/25 mm [1 in.]
More than 500 mm [20/in.]	±5 % of the specified count

10.5 *Yarn Number (Cut)*—The yarn number (cut) shall be as specified and shall conform to the requirements stated in Specification D299.

11. Sampling

11.1 From each lot of cloth, take a lot sample in a random manner to be representative of the lot in accordance with the schedule in Table 4. Cut a specimen from each sample roll, each specimen to be the full width of the roll and at least 0.5 m [0.5 yd] long. The specimen may be taken from the cut end of the roll.

12. Specimen Preparation

12.1 Condition all specimens (without preconditioning) for a period of 4 h, or until the specimen shows no progressive change in mass of more than 0.1% after an exposure of 0.5 h, in an atmosphere having a relative humidity of 50 ± 2 % at 21 ± 1.1°C.

13. Test Methods

13.1 *Mensuration:*

13.1.1 *Scope*—This test method covers the determination of the width, thickness, mass per unit area (weight), fabric count, and yarn number (cut) of woven asbestos cloth.

13.1.2 *Significance and Use*—The mensurations and dimensions of woven asbestos cloth are of prime importance in characterizing woven asbestos cloth. These dimensions are

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