



Standard Specification for Asbestos Textiles Used for Electrical Insulating Purposes¹

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1. Scope

1.1 This specification covers asbestos textile materials used for electrical insulating purposes having a minimum of 80% asbestos fiber, by mass, excluding the mass of other inorganic reinforcing material that may be present.

NOTE 1—Specifications for other asbestos textile products are covered in Specifications D 299, D 315, D 375, D 1061, and D 1571.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 The following safety hazards caveat pertains only to the test methods, Section 10, 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.*

2. Referenced Documents

2.1 ASTM Standards:

- D 123 Terminology Relating to Textiles²
- D 299 Specification for Asbestos Yarns³
- D 315 Specification for Woven Asbestos Tape³
- D 375 Specification for Asbestos Roving³
- D 1061 Specification for Asbestos Lap³
- D 1118 Test Method for Magnetic Rating of Asbestos Fiber and Asbestos Textiles³
- D 1571 Specification for Woven Asbestos Cloth³
- D 1918 Test Method for Asbestos Content of Asbestos Textiles³
- D 2946 Terminology Relating to Asbestos³

3. Terminology

3.1 For definitions of other textile terms used in this specification, refer to Terminology D 123. For asbestos terms, refer to Terminology D 2946.

3.2 Definitions:

¹ This specification is under the jurisdiction of ASTM Committee C-17 on Fiber-Reinforced Cement Products and is the direct responsibility of Subcommittee C17.03 on Asbestos-Cement Sheet Products and Accessories.

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² Annual Book of ASTM Standards, Vol 07.01.

³ Annual Book of ASTM Standards, Vol 04.05.

3.2.1 *asbestos, n*—1. *general*—a group of impure silicate minerals occurring in fibrous form. 2. *textile*—the hydrous magnesium silicate serpentine mineral designated as chrysotile, and having the empirical formula $\text{Mg}_3\text{Si}_2\text{O}_5(\text{OH})_4$.

4. Classification

4.1 *Types*—The types of asbestos textiles used for electrical insulating purposes are based on the following magnetic rating as determined by Test Method D 1118:

Type	Maximum Magnetic Rating
II	0.75
IV	2.0
VI	4.0

4.2 *Grades*—The grades of asbestos textiles used for electrical insulating purposes are based on the percentage of asbestos content by mass as stated in Table 1.

4.3 Significance of Types and Grades:

4.3.1 The types of asbestos textiles roughly define the electromagnetic characteristics of the material. Generally, the higher the magnetic rating, the poorer the electrical insulating properties of the material. The three types have the following intended applications:

4.3.1.1 *Type II* is intended for applications where the asbestos is of primary importance, such as electrical insulation used on magnetic wire and when used principally as a dielectric.

4.3.1.2 *Type IV* is intended for use where the asbestos is of secondary importance as electrical insulation or where, as primary electrical insulation, it is applied relatively thickly usually in combination with other materials of comparably high dielectric strength, as in the construction of heat and flame-resistant electrical insulating walls over unit conductors of electrical cables.

4.3.1.3 *Type VI* is intended for use where the asbestos is of minor importance as a dielectric, as in fillers for heat- and flame-resistant cables, overall wraps or braids for such cables, and linings for enclosures subject to exposure to electric arcs (arc chutes).

4.3.2 The grade of asbestos textile used is largely dependent on the service temperature required of the insulation. Specific temperature limits for the various grades cannot be given, as these will depend on the textile construction. In general, the higher the asbestos content, the higher the temperature the textile will withstand.

NOTE 2—Where breaking strength retention is important, good serviceability at temperatures up to approximately 540°C (1000°F) can be expected using the higher grades. If breaking strength retention is not