



Standard Specification for Finished Glass Fabrics Woven From Rovings¹

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1. Scope

1.1 This specification primarily covers glass fabrics woven from “E” electrical continuous glass fiber rovings that are intended primarily as a reinforcing material in laminated plastics for structural use.

1.2 This specification specifies the terminology, definitions, general requirements, and physical requirements for woven roving glass fiber fabrics. This specification permits the application of sizing materials to the glass fiber roving during manufacture that helps facilitate weaving. When used as permitted in this specification, such materials are compatible with the resin matrix as specified in the contracting instrument.

NOTE 1—Sizing materials on glass fiber yarns, in most cases, are removed by various cleaning procedures as a first stage in preparing a finished fabric. When these yarn sizing materials are removed during a cleaning procedure, they need not be compatible with the subsequent resin matrix.

1.3 The values stated in either SI units or inch-pound units are to be regarded 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 nonconformance with the standard.

NOTE 2—This specification is one of a series to provide a substitute for the following Military Specifications:

- MIL-Y-1140H Yarn, Cord, Sleaving, Cloth, and Tape-Glass
- MIL-C-9084C Cloth, Glass Finished for Resin Laminates
- MIL-C-19663C Cloth, Glass, Woven Roving for Plastic Laminates

2. Referenced Documents

2.1 ASTM Standards:

- D 123 Terminology Relating to Textiles²
- D 578 Specification for Glass Fiber Strands²
- D 1776 Practice for Conditioning Textiles for Testing²
- D 2408 Test Method for Finish Content of Woven Glass Fabric, Cleaned and After-Finished with Amino-Silane Type Finishes for Plastic Laminates³
- D 2409 Test Method for Finish Content of Woven Glass Fabric, Cleaned and After-Finished with Vinyl-Silane Type

Finishes for Plastic Laminates³

- D 2410 Test Method for Finish Content of Woven Glass Fabric, Cleaned and After-Finished with Chrome Complexes, for Plastic Laminates³
- D 2660 Test Method for Finish Content of Woven Glass Fabric, Cleaned and After-Finished with Acrylic-Silane Type Finishes, for Plastic Laminates³
- D 3098 Test Method for Finish Content of Woven Glass Fabric, Cleaned and After-Finished with Epoxy-Functional Silane-Type Finishes for Plastic Laminates³
- D 3773 Test Methods for Length of Woven Fabric⁴
- D 3774 Test Methods for Width of Woven Fabric⁴
- D 3775 Test Method for Fabric Count of Woven Fabric⁴
- D 3776 Test Methods for Mass per Unit Area (Weight) of Woven Fabric⁴
- D 4029 Specification for Finished Woven Glass Fabrics⁴
- D 4963 Test Method for Ignition Loss of Glass Strands and Fabrics⁴

2.2 ANSI Standard:

- ANSI/ASQC Z1.4 Sampling Procedures for Inspection by Attributes⁵

3. Terminology

3.1 Definitions:

- 3.1.1 *continuous filament yarn, n*—a yarn made of filaments that extend substantially throughout the length of the yarn.
- 3.1.2 *roving, n—in glass textiles*, a multiplicity of filaments or yarns gathered together into an approximately parallel arrangement without twist.
- 3.1.3 For definitions of other textile terms used in this specification, refer to Terminology D 123.

CLASSIFICATION

4. Classification

4.1 *Designation of Woven Roving Fabric*—The basic designations for glass woven roving fabric is by mass per unit area and is given in grams per square metre (ounces per square yard). Historically, an ASTM type number has been used by the industry. These numbers have been sequentially assigned as new woven roving constructions as they were added to this specification. Numbers, 1 through 10, are shown in Table 1

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² *Annual Book of ASTM Standards*, Vol 07.01.

³ Discontinued 1990; see *Annual Book of ASTM Standards*, Vol 08.02.

⁴ *Annual Book of ASTM Standards*, Vol 07.02.

⁵ Available from American National Standards Institute 11 W. 42nd St., 13th Floor, New York, NY 10036.