



Designation: D 3656 – 97

Standard Specification for Insect Screening and Louver Cloth Woven from Vinyl- Coated Glass Yarns

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1. Scope

1.1 This specification covers the requirements for vinyl-coated glass yarn insect screening and louver cloth.

1.2 This specification is intended to assist ultimate users by designating the sizes and types of these products that are generally available in the industry.

1.3 This specification shows the terminology and requirements for:

1.3.1 Commercial standard vinyl-coated glass yarn insect screening designed and woven primarily for installation in or on any dwelling, patio, screening enclosure, building, or structure for the purpose of keeping out flies, mosquitoes, and most insects, and

1.3.2 Vinyl-coated glass yarn louver cloth used extensively in soffit and louver vents to keep out most large insects, birds, and airborne litter, while at the same time providing for adequate ventilation and air circulation.

1.4 This specification shows the values in both SI units and inch-pound units. “SI units” is the technically correct name for a system of metric units known as the International System of Units. “Inch-pound units” is the technically correct name for the customary units used in the United States. The values stated in inch-pound units are to be regarded as the standard. The value in SI units are provided for information only.

1.5 The following precautionary caveat pertains only to the test methods portions, Sections 8-19, of 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 76 Specification for Tensile Testing Machines for Textiles¹

D 123 Terminology Relating to Textiles¹

D 578 Specification for Glass Fiber Strands¹

D 3374 Specification for Vinyl-Coated Glass Yarns²

D 3773 Test Methods for Length of Woven Fabric²

D 3774 Test Methods for Width of Woven Fabric²

D 3775 Test Method for Fabric Count of Woven Fabric²

D 3776 Test Methods for Mass Per Unit Area (Weight) of Woven Fabric²

D 3786 Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics—Diaphragm Bursting Strength Tester Method²

D 4028 Specification for Solar Screening Woven from Vinyl-Coated Fiber Glass Yarn²

D 4372 Specification for Flame-Resistant Materials Used in Camping Tentage²

D 4909 Test Method for Color Stability of Vinyl-Coated Glass Textiles to Accelerated Weathering

D 4912 Test Method for Fabric Stability of Vinyl-Coated Glass Yarn Insect Screening and Louver Cloth²

D 4929 Practice for Operating Light and Water Apparatus (Fluorescent and Condensation Type) for Exposure of Plastics

D 4963 Test Method for Ignition Loss of Glass Strands and Fabrics²

E 171 Specification for Standard Atmospheres for Conditioning and Testing Materials³

2.2 AATCC Standards:⁴

Evaluation Procedure 1, Gray Scale for Color Change

2.3 Military Standards:⁵

MIL-STD-105D Sampling Procedures and Tables for Inspection by Attributes

MIL-STD-414 Sampling Procedures and Tables for Inspection by Variables for Percent Defective

2.4 Federal Standards:⁶

² Annual Book of ASTM Standards, Vol 07.02.

³ Annual Book of ASTM Standards, Vols 08.03 and 15.09.

⁴ Available from American Association of Textile Chemists and Colorists, P. O. Box 12215, Research Triangle Park, NC 27709.

⁵ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

⁶ Available from General Services Administrations, Specification and Consumer Information Distribution Section (WFSIS), Washington Navy Yard, Bldg. 197, Washington, DC 20407.

¹ Annual Book of ASTM Standards, Vol 07.01.



CCC D-950 Specification, Dyeing and After Treating Processes for Cotton Cloths

Test Method Standard No. 191a, Textile Test Methods, Method 5872 Effect of High Temperature on Cloth Blocking

Standard 595A CHG Not 1, Color Volume 1

3. Terminology

3.1 Definitions:

3.1.1 *atmosphere for testing textiles, n—for glass*, air maintained at a relative humidity of at least 48 % and no greater than 67 %, and at a temperature of at least 68°F (20°C) and no greater than 77°F (25°C).

3.1.1.1 *Discussion*—Glass textiles are used in various products, such as reinforced plastics, mat-like material, tire cords, electrical insulation, etc. Each of these materials require different testing atmospheres. It is the intent of the wide spread in testing atmosphere to allow testing of glass textiles in respective laboratories where end product test atmosphere requirements differ. The test atmospheres for respective products should be controlled as specified in Specification E 171. It is the opinion of Subcommittee D13.18 that the physical properties cited in respective specifications would not be affected by the range selected. In any event, the test atmosphere should be stated in the report.

3.1.2 *insect screening, n—in coated glass yarn fabrics*, a woven netting having an approximately even-spaced mesh of 12 by 12 yarns or more per 1 in. (25 mm).

3.1.3 *louver cloth, n—in coated glass yarn fabrics*, a woven netting having an approximately even-spaced mesh of fewer than 12 by 12 yarns per 1 in. (25 mm).

3.1.4 *mesh, n—in coated glass yarn fabrics*, the number of warp yarns or ends per linear 1 in. (25 mm) followed by the number of filling yarns or picks per linear 1 in. (25.4 mm).

3.1.5 For terminology of other textile terms used in this specification, refer to Terminology D 123.

4. Classification

4.1 Vinyl-coated glass yarn insect screening is produced in two basic classes and mesh to afford required strength and insect protection using yarns as directed in Specification D 3374. These two classes are as follows:

4.1.1 *Class 1*—Insect screening woven from vinyl-coated glass yarn having a nominal thickness of 0.0115 in. (0.292 mm).

4.1.2 *Class 2*—Insect screening woven from vinyl-coated glass yarn having a nominal thickness of 0.013 in. (0.330 mm).

4.2 The mesh, width, and colors are listed in Table 1.

4.2.1 For vinyl-coated glass yarn insect screening not listed in Table 1, the mesh, width, and colors shall be agreed upon between the purchaser and supplier.

5. Sampling and Test Specimens

5.1 *Sampling*—On a continual basis, samples are selected randomly from each mesh and tested to insure compliance, unless otherwise agreed upon between the purchaser and the supplier.

5.2 *Test Specimens*—For insect screening or louver cloth appearance, width, and length testing, a roll shall serve as the

test specimen. For other properties, take the test specimen(s) from the roll. No specimen shall be taken closer than 1 in. (25 mm) from the edge or 1 yd (.9 m) from the end of the roll.

REQUIREMENTS

6. General Requirements

6.1 Material:

6.1.1 *Workmanship*—Insect screening or louver cloth shall be made of high grade material with good workmanship and meet the yarn requirements specified in Specification D 3374. Products may contain a maximum of one defect in the horizontal direction affecting less than 2 lineal in. (50 lineal mm). Examples of defects are listed in Table 2. The quality acceptance levels will be determined by agreement between the purchaser and the supplier.

6.1.2 *Plasticizers*—The material used to coat or impregnate the fibrous glass yarn shall be a compound of polymerized or copolymerized vinyl chloride resin, plasticized with phosphate or phthalate ester plasticizers exclusively, pigmented and stabilized to meet the requirements herein.

6.1.2.1 *Optional Plasticizer*—At the supplier's option, plasticizers other than phosphates and phthalates may be used provided the color is not affected and the coating compound is treated with solubilized copper 8 quinolinolate which is listed as inhibitor (e) in Federal Standard CCC-D-950. The amount of fungicide shall be based on the nonvolatile content of the coating. The coating compound shall be chemically analyzed for copper 8 quinolinolate content in accordance with Federal Standard CCC-D-950.

6.1.3 *Color*—The maximum and minimum shades limits shall be defined by color designations listed in Federal Standard 595A as agreed upon between the purchaser and supplier.

6.1.3.1 The color designated grey shall fall between No. 36492 and No. 36173 as listed in Federal Standard 595A.

6.1.4 *Selvage*—Vinyl-coated glass insect screening and louver cloth may be supplied with or without selvages as agreed between the purchaser and supplier.

6.1.5 *Yarn Splices*—Vinyl-coated glass yarn splices shall be permitted provided they show no tails and do not exceed 1 in. (25 mm) in length. Yarn splices in the insect screening or louver cloth shall not exceed 15 per standard 100 ft (30 m) roll, and no more than one splice shall occur in any 1 ft² (930 cm²) of product.

6.2 *Put-Up*—Vinyl-coated glass yarn insect screening and louver cloth shall be put-up on rolls and in containers whose dimensions shall be agreed upon between the purchaser and the supplier.

7. Physical Requirements

7.1 *Appearance*—Unless otherwise agreed upon between the purchaser and the supplier, a roll shall be defective if it contains two or more defects as described in 6.1.1.

7.2 *Mesh*—The standard average mesh shall be approximately even-spaced as specified in Table 1 ± 0.5 mesh per 1 in. (25 mm). There are no tolerance requirements within 0.5 in. (13 mm) of the selvage.

