



Designation: D3656/D3656M – 13 (Reapproved 2021)

Standard Specification for Insect Screening and Louver Cloth Woven from Vinyl-Coated Glass Yarns¹

This standard is issued under the fixed designation D3656/D3656M; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

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.

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 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not necessarily exact equivalents; therefore, to ensure conformance with the standard, each system shall be used independently of the other, and values from the two systems shall not be combined.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the*

Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 *ASTM Standards:*²

[D123 Terminology Relating to Textiles](#)

[D1776/D1776M Practice for Conditioning and Testing Textiles](#)

[D3374/D3374M Specification for Vinyl-Coated Glass Yarns](#)

[D3773/D3773M Test Methods for Length of Woven Fabric](#)

[D3774 Test Method for Width of Textile Fabric](#)

[D3775 Test Method for End \(Warp\) and Pick \(Filling\) Count of Woven Fabrics](#)

[D3776/D3776M Test Methods for Mass Per Unit Area \(Weight\) of Fabric](#)

[D3786/D3786M Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method](#)

[D4028/D4028M Specification for Solar Screening Woven from Vinyl-Coated Fiber Glass Yarn](#)

[D4372 Specification for Flame-Resistant Materials Used in Camping Tentage \(Withdrawn 2002\)](#)³

[D4912/D4912M Test Method for Fabric Stability of Vinyl-Coated Glass Yarn Insect Screening and Louver Cloth](#)

[D4929 Test Method for Determination of Organic Chloride Content in Crude Oil](#)

[D7018/D7018M Terminology Relating to Glass Fiber and Its Products \(Withdrawn 2021\)](#)³

2.2 *AATCC Standard:*⁴

[Evaluation Procedure 1, Gray Scale for Color Change](#)

¹ This specification is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.18 on Glass Fiber and its Products.

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² 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.

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from American Association of Textile Chemists and Colorists (AATCC), P.O. Box 12215, Research Triangle Park, NC 27709-2215, <http://www.aatcc.org>.

TABLE 1 Generally Available Mesh, Widths, and Colors

Product	Class	Nominal Yarn Diameter, µm [in.]	Standard Construction Warp by Fill Mesh/25.4 mm [Mesh/1 in.]	Standard Widths		Colors
				mm	in.	
Insect screening	1	292 [0.011]	18 × 16	610, 762, 813, 914, 1067, 1219, 1524, 1829, 2134	24, 30, 32, 36, 42, 48, 60, 72, 84	gray, charcoal
	2	330 [0.013]	18 × 14	914, 1219, 1524, 1829, 2134, 2438, 2743	36, 48, 60, 72, 84, 96, 108	gray, charcoal
	2	330 [0.013]	18 × 14	914, 1219, 1829, 2134	36, 48, 72, 84	aqua
	2	330 [0.013]	20 × 20	914, 1219, 1524, 1829, 2134	36, 48, 60, 72, 84	gray, charcoal
	2	330 [0.013]	Less than 12 × 12	152, 203, 305, 610, 914, 1219	6, 8, 12, 24, 36, 48	gray, charcoal

2.3 ANSI/ASQC Standards:⁵

ANSI/ASQC Z1.4 Sampling Procedures for Inspection by Attributes

ANSI/ASQC Z1.9 Sampling Procedures and Tables for Inspection Variables for Percent Nonconforming

2.4 Federal Standards:⁶

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

2.5 IFAI (Industrial Fabrics Association International)⁷

CPAI-84 Specification for Flame-Resistant Materials Used in Camping Tentage

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 25 mm [1 in.] from the edge or 0.9 m [1 yd] from the end of the roll.

REQUIREMENTS

3. Terminology

3.1 For all terminology relating to D13.18, Glass Fiber and Its Products, refer to Terminology D7018/D7018M.

3.1.1 The following terms are relevant to this standard: atmosphere for testing textiles, insect screening, louver cloth, mesh.

3.2 For all other terms related to textiles, refer to Terminology D123.

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 D3374/D3374M. These two classes are as follows:

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

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

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

6. General Requirements

6.1 Material:

6.1.1 *Workmanship*—Insect screening or louver cloth shall be made utilizing input yarns that meet the requirements specified in Specification D3374/D3374M. Products may contain a maximum of one defect in the filling direction affecting less than 50 lineal mm [2 lineal in.]. Examples of defects are listed in Table 2.

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.

⁵ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

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

⁷ Available from Industrial Fabrics Association International (IFAI), 1801 County Road B W, Roseville, MN 55113-4061, <https://www.ifai.com>.