



Standard Guide for the Selection of Test Methods for Fabrics Used for Fabric Formed Concrete (FFC)¹

This standard is issued under the fixed designation D6685; 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.

1. Scope

1.1 This guide lists ASTM standards available for the testing evaluation of fabrics used to form fine aggregate concrete.

1.2 This guide identifies the test methods available to manufacturers, engineers, testing organizations and other related parties.

1.3 This guide provides a list of test methods that can be used by the reader to determine the properties of fabric used to form fine aggregate concrete.

1.4 This guide is not intended to be used in the establishment of performance criteria, but as a guide for product development and purchasing contracts.

1.5 *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.*

1.6 *This guide offers an organized collection of information or a series of options and does not recommend a specific course of action. This document cannot replace education or experience and should be used in conjunction with professional judgement. Not all aspects of this guide may be applicable in all circumstances. This ASTM standard is not intended to represent or replace the standard of care of which the adequacy of a given professional service must be judged, nor should this document be applied without consideration of a project's many unique aspects. The word "Standard" in the title of this document means only that the document has been approved through the ASTM consensus process.*

¹ This guide is under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.25 on Erosion and Sediment Control Technology.

Current edition approved Feb. 15, 2015. Published March 2015. Originally approved in 2001. Last previous edition approved in 2008 as D6685 – 01(2008). DOI: 10.1520/D6685-01R15.

2. Referenced Documents

2.1 ASTM Standards:²

- D4354 Practice for Sampling of Geosynthetics and Rolled Erosion Control Products(RECPs) for Testing
- D4355 Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc Type Apparatus
- D4439 Terminology for Geosynthetics
- D4486 Test Method for Kinematic Viscosity of Volatile and Reactive Liquids
- D4491 Test Methods for Water Permeability of Geotextiles by Permittivity
- D4533 Test Method for Trapezoid Tearing Strength of Geotextiles
- D4595 Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method
- D4751 Test Method for Determining Apparent Opening Size of a Geotextile
- D4759 Practice for Determining the Specification Conformance of Geosynthetics
- D4873 Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples
- D4884 Test Method for Strength of Sewn or Bonded Seams of Geotextiles
- D5261 Test Method for Measuring Mass per Unit Area of Geotextiles
- D5321 Test Method for Determining the Shear Strength of Soil-Geosynthetic and Geosynthetic-Geosynthetic Interfaces by Direct Shear

3. Terminology

3.1 *Definitions*—For definitions of terms used in this standard, refer to the Terminology for Geosynthetics D4439.

3.2 *Definitions of Terms Specific to This Standard:*

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.

3.2.1 *Fabric Formed Concrete (FFC) Revetment*—A fine aggregate concrete filled woven mattress used to protect soils from erosion. A high strength synthetic fabric is used as a form to cast the fine aggregate concrete.

4. Significance and Use

4.1 This guide identifies test methods used in the process of determining the characteristics of fabrics used to form fine aggregate concrete for properties such as mass, apparent opening size, tensile strength, water permeability and other mechanical properties.

4.2 This guide is intended for general use by those who manufacture, specify or install fabric formed concrete (FFC) revetments.

4.3 Consult specific ASTM specifications for evaluation criteria.

4.3.1 A listing of all ASTM geosynthetic performance specifications may be found in Volume 04.09 of the *Annual Book of Standards*.

5. Test Methods

5.1 Recommended test methods for fabric used for forming fine aggregate concrete have been grouped in categories and are listed in the tables as follows:

5.1.1 **Table 1**—General Properties for Fabric Used for

TABLE 1 General Properties for Fabric Used for Forming Fine Aggregate Concrete

Characteristic	ASTM Standard
Terminology for Geosynthetics	D4439
Practice for Sampling of Geosynthetics for Testing	D4354
Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet And Water (Xenon-Arc Type Apparatus)	D4355
NOTE 1—Fabric Forms fulfill their requirements once the concrete has cured. Since concrete linings rely on the concrete’s properties for their long-term performance, Ultraviolet degradation is not an issue, provided that the forms have been properly stored at the project site.	
Practice for Determining the Specification Conformance of Geosynthetics	D4759
Guide for Identification, Storage, and Handling of Geotextiles	D4873

Forming Fine Aggregate Concrete.

5.1.2 **Table 2**—Physical Properties for Fabric Used for Forming Fine Aggregate Concrete.

5.1.3 **Table 3**—Mechanical Properties for Fabric Used for Forming Fine Aggregate Concrete.

5.1.4 **Table 4**—Hydraulic Properties for Fabric Used for Forming Fine Aggregate Concrete.

6. Keywords

6.1 geotextile; fine aggregate concrete; fabric formed concrete revetment

TABLE 2 Physical Properties for Fabric Used for Forming Fine Aggregate Concrete

Characteristic	ASTM Standard
Test Method for Abrasion Resistance of Geotextiles (Sand Paper/Sliding Block Method)	D4886
Test Method for Strength of Sewn Seam or Thermally Bonded Seams of Geotextiles	D4884
Test Method for Determining Apparent Opening Size of a Geotextile	D4751
Test Method for Measuring Mass Per Unit Area of Geotextiles	D5261
Test Method For Determining the Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method	D5321

TABLE 3 Mechanical Properties for Fabric Used for Forming Fine Aggregate Concrete

Characteristic	ASTM Standard
Test Method for Trapezoidal Tearing Strength of Geotextiles	D4533
Test Method for Tensile Properties of Geotextiles by the Wide Width Strip Method	D4595

TABLE 4 Hydraulic Properties for Fabric Used for Forming Fine Aggregate Concrete

Characteristic	ASTM Standard
Test Method for Water Permeability of Geotextiles by Permittivity	D4491

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