



# Standard Test Methods for Comprehensive Characterization of Synthetic Turf Playing Surfaces and Materials<sup>1</sup>

This standard is issued under the fixed designation F1551; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 These test methods establish a recommended list from which suitable test methods shall be selected for the identification of physical property characteristics and comparison of the performance properties of synthetic turf systems or components for athletic and recreational uses, or both.

1.2 Some of the test procedures are suitable only for the laboratory characterization of either components or the complete system; others are suitable for tests on installed sports fields; and some tests may be applied in both the laboratory and the field.

1.3 The test procedures included in these test methods apply as a group to the description of synthetic turf playing surfaces.

1.4 Some of the test procedures are specific for components of the synthetic turf system, and others apply to the complete synthetic turf playing surface.

1.5 Reference to the methods for testing the synthetic turf playing surface and its components contained herein should state specifically the particular test or tests desired and not necessarily refer to these test methods as a whole.

1.6 This is a physical property characterization standard, and it shall not be construed as a safety standard.

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

1.8 *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*:<sup>2</sup>

2.1.1 *Pile Fiber*:

**D792** Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

**D1577** Test Methods for Linear Density of Textile Fibers

**D1907** Test Method for Linear Density of Yarn (Yarn Number) by the Skein Method

**D2256** Test Method for Tensile Properties of Yarns by the Single-Strand Method

**D3218** Specification for Polyolefin Monofilaments

**D7138** Test Method to Determine Melting Temperature of Synthetic Fibers

2.1.2 *Fabric*:

**D1335** Test Method for Tuft Bind of Pile Yarn Floor Coverings

**D1776** Practice for Conditioning and Testing Textiles

**D2859** Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials

**D4158** Guide for Abrasion Resistance of Textile Fabrics (Uniform Abrasion)

**D5034** Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)

**D5251** (Withdrawn 2014)<sup>3</sup>

**D5793** Test Method for Binding Sites per Unit Length or Width of Pile Yarn Floor Coverings

**D5823** Test Method for Tuft Height of Pile Floor Coverings

**D5848** Test Method for Mass Per Unit Area of Pile Yarn Floor Coverings

**E648** Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

**F1015** Test Method for Relative Abrasiveness of Synthetic Turf Playing Surfaces

<sup>1</sup> These test methods are under the jurisdiction of ASTM Committee F08 on Sports Equipment, Playing Surfaces, and Facilities and are the direct responsibility of Subcommittee F08.65 on Artificial Turf Surfaces and Systems.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).