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Standard Test Methods for Comprehensive Characterization of Synthetic Turf Playing Surfaces and Materials¹

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1. Scope

1.1 These test methods establish a recommended list of test methods to be used 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 The test procedures included in these test methods apply as a group to the description of synthetic turf playing surfaces.

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

1.4 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.

1.5 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:

2.1.1 Pile Fiber:

D 789 Test Methods for Determination of Relative Viscosity, Melting Point, and Moisture Content of Polyamide (PA)²

D 792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement²

D 1577 Test Methods for Linear Density of Textile Fibers³
D 2256 Test Method for Tensile Properties of Yarns by the Single-Strand Method³

2.1.2 Fabric:

D 418 Methods of Testing Pile Yarn Floor Covering Construction³

D 1335 Test Method for Tuft Bind of Pile Floor Coverings³

D 1682 Test Methods for Breaking Load and Elongation of Textile Fabrics⁴

D 1776 Practice for Conditioning Textiles for Testing³

D 2859 Test Method for Flammability of Finished Textile Floor Covering Materials³

D 4158 Test Method for Abrasion Resistance of Textile Fabrics (Uniform Abrasion Method)⁵

D 5251 Practice for the Operation of the Tetrapod Walker Drum Tester⁵

E 648 Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source⁶

F 1015 Test Method for Relative Abrasiveness of Synthetic Turf Playing Surfaces⁷

2.1.3 Shock Absorbing Cushion Underlayment:

D 395 Test Methods for Rubber Property—Compression Set⁸

D 412 Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers—Tension⁸

D 624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers⁸

D 1667 Specification for Flexible Cellular Materials—Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam)²

D 1876 Test Method for Peel Resistance of Adhesives (T-Peel Test)⁹

D 2126 Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging²

D 3574 Methods of Testing Flexible Cellular Materials—Slab, Bonded, and Molded Urethane Foams¹⁰

¹ These test methods are under the jurisdiction of ASTM Committee F08 on Sports Equipment, Surfaces, and Facilities and are the direct responsibility of Subcommittee F08.65 on Playing Surfaces and Facilities.

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² *Annual Book of ASTM Standards*, Vol 08.01.

³ *Annual Book of ASTM Standards*, Vol 07.01.

⁴ *Discontinued*—See 1991 *Annual Book of ASTM Standards*, Vol 07.01.

⁵ *Annual Book of ASTM Standards*, Vol 07.02.

⁶ *Annual Book of ASTM Standards*, Vol 04.07.

⁷ *Annual Book of ASTM Standards*, Vol 15.07.

⁸ *Annual Book of ASTM Standards*, Vol 09.01.

⁹ *Annual Book of ASTM Standards*, Vol 15.06.

¹⁰ *Annual Book of ASTM Standards*, Vol 08.02.