



Standard Guide for Construction of High Performance Sand-Based Rootzones for Athletic Fields¹

This standard is issued under the fixed designation F2396; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This guide covers techniques that are appropriate for the construction of high performance sand-based rootzones for sports fields. This guide provides guidance for the selection of materials, including soil, sand, gravel, peat, and so forth, for use in designing and constructing sand-based sports turf rootzones.

1.2 Decisions in selecting construction and maintenance techniques are influenced by existing soil types, climatic factors, level of play, intensity and frequency of use, equipment available, budget and training, and the ability of management personnel.

1.3 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 judgment. Not all aspects of this guide may be applicable in all circumstances. This guide is not intended to represent or replace the standard of care by 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.

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

1.5 *This standard may involve hazardous materials, operations, and equipment. 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 requirements prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

- C88 Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
- C131 Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
- C1444 Test Method for Measuring the Angle of Repose of Free-Flowing Mold Powders (Withdrawn 2005)³
- D422 Test Method for Particle-Size Analysis of Soils
- D698 Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft³ (600 kN-m/m³))
- D1883 Test Method for CBR (California Bearing Ratio) of Laboratory-Compacted Soils
- D1997 Test Method for Laboratory Determination of the Fiber Content of Peat Samples by Dry Mass
- D2944 Test Method of Sampling Processed Peat Materials
- D2974 Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
- D2976 Test Method for pH of Peat Materials
- D2980 Test Method for Volume Mass, Moisture-Holding Capacity, and Porosity of Saturated Peat Materials
- D3080 Test Method for Direct Shear Test of Soils Under Consolidated Drained Conditions
- D4427 Classification of Peat Samples by Laboratory Testing
- D4972 Test Method for pH of Soils
- F1632 Test Method for Particle Size Analysis and Sand Shape Grading of Golf Course Putting Green and Sports Field Rootzone Mixes
- F1647 Test Methods for Organic Matter Content of Athletic Field Rootzone Mixes
- F1815 Test Methods for Saturated Hydraulic Conductivity, Water Retention, Porosity, and Bulk Density of Athletic Field Rootzones

¹ This guide is under the jurisdiction of ASTM Committee F08 on Sports Equipment, Playing Surfaces, and Facilities and is the direct responsibility of Subcommittee F08.64 on Natural Playing Surfaces.

Current edition approved April 1, 2011. Published May 2011. Originally approved in 2004. Last previous edition approved in 2004 as F2396 – 04. DOI: 10.1520/F2396-11.

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.