



Standard Specification for Impact Attenuation of Turf Playing Systems as Measured in the Field¹

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INTRODUCTION

The impact attenuation of turf playing systems can be measured in a laboratory, but such tests are often conducted under optimal or tightly controlled conditions. To accurately assess the impact attenuation an athlete will encounter on an installed field, that specific field must be tested *in situ*. That objective was the impetus for the development of this specification. Initially, the stated scope of the specification was limited to measuring the impact attenuation of North American football fields. The scope of the current revision encompasses a broader range of sport-specific field configurations and a protocol for conducting tests on multi-sport fields.

1. Scope

1.1 This specification establishes an *in situ* test method and maximum impact attenuation value for all types of turf playing systems and for a number of sport-specific field layouts. It also includes a protocol for determining test point locations on fields that are lined for multiple sports.

1.1.1 Turf playing systems may be located outdoors or indoors, and typically include field areas within the in-bounds lines and areas outside the in-bounds lines extending to sport-specific limit lines; areas where an athlete should expect to encounter impact attenuation performance that complies with this specification.

1.1.2 Site-specific conditions may exist wherein non-turf surface materials, such as track surfacing and/or covers over subsurface structures, are found within the boundaries of the limit lines. These alternate surface materials are not included in the scope of this specification.

1.2 This specification establishes a method for reporting test results and identifying areas within an existing turf playing system where impact attenuation measurements exceed required threshold values.

1.3 Nothing in this specification is intended to impose limitations on what fields can be tested, or how a particular field can be used. Test providers can adapt the procedures and guidelines contained herein to tests performed on any turf playing system.

1.4 This specification does not imply that an impact-related injury cannot be incurred if a turf playing system complies with its g-max performance requirement.

1.5 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.6 *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

F355 Test Method for Impact Attenuation of Playing Surface Systems and Materials

F1292 Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment

F1551 Test Methods for Comprehensive Characterization of Synthetic Turf Playing Surfaces and Materials

F1702 Test Method for Measuring Impact-Attenuation Characteristics of Natural Playing Surface Systems Using a Lightweight Portable Apparatus

F2650 Terminology Relating to Impact Testing of Sports Surfaces and Equipment

¹ This specification is under the jurisdiction of ASTM Committee F08 on Sports Equipment, Playing Surfaces, and Facilities and is the direct responsibility of Subcommittee F08.65 on Artificial Turf Surfaces and Systems.

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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.