



Designation: F2772 – 09

Standard Specification for Athletic Performance Properties of Indoor Sports Floor Systems¹

This standard is issued under the fixed designation F2772; 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 specification establishes levels for athletic performance properties of multi-purpose indoor sports floor systems, excluding turf and materials specific to running tracks and tennis courts.

1.2 The methods described are applicable in both the laboratory and field unless otherwise stated.

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

1.4 *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

F2569 Test Method for Evaluating the Force Reduction Properties of Surfaces for Athletic Use

2.2 *Other Standards:*

EN 12235/C1 Determination of Vertical Ball Rebound Behavior³

3. Terminology

3.1 *Definitions:*

3.2 *point-elastic, adj*—describes sports floors which are only comprised of an elastic layer or layers. (for example, surfaces such as poured urethanes, vinyl or rubber sheet goods).

3.3 *combination-elastic, adj*—describes sports floors having a point elastic upper layer in combination with a rigid structural layer (for example, wood, high density composites, poured non-resilient materials) and resilient support components (for example, elastic pads, foam blanket or poured urethane).

3.4 *area-elastic, adj*—describes sports floors having a rigid upper layer (for example, wood) supported by resilient components.

4. Summary of Test Methods

4.1 *Force Reduction*—Test Method **F2569** provides a non-destructive means for evaluating the force reduction properties of the surface in both laboratory and field settings. Force Reduction is a characteristic of sports surfaces indicating the degree of force attenuation provided or caused by the surface in certain movement situations. It is principally related to the give of the surface upon impact. The higher the force reduction, the greater the absorptive effect. The referenced test method is more closely associated with impacts generated by lower extremities, and is not an indication of the ability of the test surface to prevent head trauma.

4.2 *Ball Rebound*—EN 12235/C1 provides a non-destructive means that can be used both in the laboratory and in the field by which to identify the ball rebound height of various balls used for indoor sports activities. Ball Rebound is an optional consideration for certain activities commonly associated with indoor sports surfaces. Ball rebound values on particular surfaces indicate whether those floors provide suitable or desired values in relation to the preferred activity in the sports hall.

5. Specimen Preparation

5.1 Testing in the laboratory shall be performed at a temperature of $23 \pm 2^\circ\text{C}$ ($73 \pm 4/-3^\circ\text{F}$) unless otherwise specified with test sections acclimated to the test temperature for no less than 24 h prior to evaluation.

5.2 Field testing shall be conducted in the environmental range associated with the facility on ambient temperature of the surface, and with air temperature and humidity measured $0.76 \text{ m} \pm 100 \text{ mm}$ ($30 \pm 4 \text{ in.}$) above the playing surface with all

¹ This test method is under the jurisdiction of ASTM Committee F08 on Sports Equipment and Facilities and is the direct responsibility of Subcommittee F08.52 on Miscellaneous Playing Surfaces.

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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.

³ Available from <http://www.global.ihs.com/>.