Designation: F2440 – 11

An American National Standard

Standard Specification for Indoor Wall/Feature Padding[1]

This standard is issued under the fixed designation F2440; 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 covers wall padding and padding for other indoor structures. All padding constructions are included. The intended use of this specification is for the qualification of construction designs and comparison of products.

NOTE 1—This specification was developed due to the numerous designs in existence and the need to provide a method to determine if a wall pad meets a minimum level of protection.

NOTE 2—There is no equivalent ISO standard.

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

1.3 *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.* See 7.1 for specific hazards statement.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

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

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *coating*—polyvinyl chloride (PVC) or PVC copolymer, or both, or other suitable polymeric materials.

4. Classification

4.1 Classify padding in accordance with the specific application.

Type 1: Permanently attached	Type 2: Removable
Grade A: Coated	Grade B: Covered or encased

5. Significance and Use

5.1 The padding shall be constructed to yield the values listed in Table 1 throughout the impact area under the conditions of the manufacturer's warranty.

5.2 Special requirements for the padding shall be subject to purchase agreements. Special requirements shall never reduce any of the basic requirements listed in this standard.

5.3 Good manufacturing practices shall be used in the construction and inspection of the padding.

6. Performance Requirements

6.1 The requirements listed in this section and in Table 1 are minimal for new and reconditioned padding.

6.2 *Shock Absorption:*

6.2.1 Determine the shock absorption properties of the padding in accordance with instrumentation of Specification F1292.

6.2.2 The maximum g_{max} values for the padding shall not exceed 200 and the HIC shall not exceed 1000 as listed in Table 1. Lower values for g_{max} and HIC indicate better shock-absorbing values.

NOTE 3—Under the specified test conditions (that is, missile size, impact velocity, and so forth), lower g_{max} values indicate better shock-absorbing properties.

6.3 *Thickness*—The thickness of the new or reconditioned padding shall be sufficient to provide the shock-absorption properties listed in Table 1.

7. General Requirements

7.1 Wall padding is normally produced in sections that are assembled prior to use. The padding shall be installed such that these sections are fastened securely together to prevent them from becoming separated during use. (**Warning—**Areas of padding missing coating or covering are considered health hazards.)

8. Dimensions, Mass, and Permissible Variations

8.1 Padding should be used on walls and other facility features in or around the playing area that an athlete might contact during play.

[1] This specification is under the jurisdiction of ASTM Committee F08 on Sports Equipment and Facilitiesand is the direct responsibility of Subcommittee F08.12 on Gymnastics and Wrestling Equipment.

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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.

TABLE 1 Performance and Physical Property Values for Wall Padding[A]

Property	Section	Test Method	New
g_{max}	10.2	Specification F1292	
at 489 ± 22 cm/s (192.5 ± 9 in./s), max			200
Thickness, mm (in.), min			25.4 (1 in.)
HIC	6.3	Specification F1292	1000

[A] As specified by manufacturer

8.2 The length and width dimensions of the mats shall be appropriate to provide protection for that area. Padding shall be installed no more than 4 in. from the floor.

9. Specimen Preparation

9.1 The test specimens shall be representative of the finished padding, a section cut from a finished pad, or a smaller sample made at the same time and with the same construction and materials as the pad.

10. Test Methods

10.1 Conduct the tests at a temperature of 23 ± 2°C (73.4 ± 3.6°F) and 50 ± 5 % relative humidity, unless otherwise specified.

10.2 The shock absorption properties of the mats shall be determined using Specification F1292 with the following conditions:

10.2.1 Laboratory and field test.

10.2.2 Impact velocities of 489 ± 22 cm/s (192.5 ± 9 in./s). 4 ft drop height.

NOTE 4—Impact velocity, rather than a drop height, is specified to eliminate the problem of friction on the guide rails of the missile. Minor amounts of friction can be overcome by simply increasing the drop height. Cleaning or lubricating, or both, the guide rods and bearing will normally eliminate greater amounts of friction.

11. Keywords

11.1 protective pad; shock absorption pad; wall pad