



Standard Specification for Competition Wrestling Mats¹

This standard is issued under the fixed designation F1081; 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.

~~ϵ^1 Note—Precision and Bias section was added and warning notes in Sections 8.3 and 11.2 were updated in September 2003.~~

1. Scope

1.1 This specification covers competition wrestling mats used at the high school and college levels. All mat constructions are included, except felt-core mats enclosed in sewn covers. The intended use of this standard is for the qualification of construction designs.

NOTE 1—The known constructions, as of the issuance of this specification are: (1) closed-cell foam cores with polyvinyl chloride (PVC) or PVC copolymer coatings, or both, which are integral parts of the mat; (2) closed-cell foam cores with attached fabric cover; (3) foam cores, either open- or closed-cell enclosed in sewn, loose covers, and (4) molded open-cell PVC foam with a dense skin on one surface which is an integral part of the mat.

NOTE 2—~~There is no equivalent ISO standard.~~ 2—There is no known ISO equivalent to this standard.

1.2 This specification covers mats used in the two major styles of wrestling: U.S. collegiate or high school, and international free style.

~~1.3 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 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.

1.4 ~~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. See Note 5 and Note 7.~~ See Note 6 for specific hazards statements.

2. Referenced Documents

2.1 ~~ASTM Standards:~~

~~D412~~ [ASTM Standards:](#)²

[D412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers Tension](#)

[D1056 Specification for Flexible Cellular Materials—Sponge or Expanded Rubber](#) · ~~D1682~~ ~~NO TITLE~~

[D1682 Methods of Test for Breaking Load and Elongation of Textile Fabrics](#)³

[F355 Test Method for Shock-Absorbing Properties of Playing Surface Systems and Materials](#)

2.2 *National Collegiate Athletic Association Document:*⁴

NCAA Official Wrestling Rules

2.3 *U.S. Wrestling Federation Document:*⁵

International Wrestling Rules, Freestyle, and Greco-Roman

2.4 *National Federation of State High School Associations Document:*⁶

Official High School Wrestling Rules

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

Current edition approved Aug. 10, 2003. Published September 2003. Originally approved in 1987. Last previous edition approved in 1997 as F1081-97. DOI: 10.1520/F1081-97R03E01.

Current edition approved Nov. 1, 2009. Published December 2009. Originally approved in 1987. Last previous edition approved in 2003 as F1081 - 97 (2003)^{ε1}. DOI: 10.1520/F1081-09.

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 Withdrawn.

⁴ Withdrawn. The last approved version of this historical standard is referenced on www.astm.org.

⁵ NCAA, Shawnee Mission, KN 66222.

⁶ US Wrestling Federation, 405 West Hall of Fame Ave., Stillwater, OK 74074.

⁶ National Federation of State High School Associations, P.O. Box 20626, Kansas City, MO 64195.

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.
- 3.1.2 *cure*—Evaporation of solvents from coating and coated foam mats only.

4. Classification

- 4.1 Classify mats in accordance with the style of wrestling being performed.
- 4.2 The classifications are:
 - 4.2.1 *Type I*—U.S. collegiate or high school style wrestling.
 - 4.2.2 *Type II*—International free style wrestling.

5. Significance and Use

- 5.1 The mats shall be constructed to yield the values listed in Table 1 throughout the mat area under the conditions of the manufacturer’s warranty.
- 5.2 Special requirements for the mats 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 mats.

6. Physical Properties

~~6.1 Tensile Strength~~—The minimum tensile strength of the cover and foam system shall be 8.8 N/mm (50 lbf/in.).

7. Performance Requirements

~~7.1~~6.1 The requirements listed in this section and in Table 1 are minimal for new and reconditioned mats.

~~7.2~~

6.2 Shock Absorption:

~~7.2.1~~6.2.1 Determine the shock absorption properties of the mats in accordance with Procedure A of Test Method F355.

~~7.2.2~~The maximum

6.2.2 The maximum g_{max} values for the mats shall be as listed in Table 1.

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

~~7.2.3~~6.2.3 Replace or recondition the mats when the g_{max} in the visibly deteriorated areas exceed the values listed in Table 1.

~~7.3~~

6.3 Thickness:

~~7.3.1~~6.3.1 The thickness of the new or reconditioned mat shall be sufficient to provide the shock-absorption properties listed in Table 1, but never less than the minimum values in Table 1.

~~7.3.2~~6.3.2 Replace or recondition the mats when the thickness in the visibly deteriorated areas falls below the values listed in Table 1, or fails to provide the necessary shock absorption. It is strongly recommended that the mat owner test the mat periodically to determine when to replace or recondition a mat.

NOTE 4—Contact the manufacturer if help is needed in testing the mat.

~~7.4~~The surfaces shall be smooth and free of step-offs or depression greater than 1.6 mm (1/16 in.).

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6.4 The surfaces shall be smooth and free of step-offs or depression greater than 1/16 in. (1.6 mm).

TABLE 1 Performance and Physical Property Values for Wrestling Mats

Property	Section	Test Method	New	Reconditioned	Used-Rejection Level
G_{max}	13.2				
—at 430 cm/s (170 in./s), max		F355	100	100	...
—at 167 ± 8.6 in./s (423 ± 22 cm/s), max		F355	100	100	...
Thickness, mm (in.), min	13.3	D1056	25 (1.00)	25 (1.00)	20 (0.80)
Thickness, in. (mm), min	13.3	D1056	25 (1.00)	25 (1.00)	20 (0.80)
Tensile strength	13.4				
—Foam construction, min, N/mm (lbf/in.)		D412	8 (50)
—Fabric covered, min, N/mm (lbf/in.)		D1682	8 (50)