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An American National Standard

Standard Practice for Manufacturing Quality Control of Consumer Trampoline Bed Material[1]

This standard is issued under the fixed designation F2774; 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 practice covers the manufacturing quality control of Consumer Trampoline-Bed Material (CTM), describing types of tests, the proper test methods, minimum testing frequencies, and best practices for sampling.

1.2 This practice is intended to aid manufacturers, suppliers, purchasers, installers, and end users of CTM in establishing a minimum level of effort for maintaining quality control.

1.3 This practice does not address manufacturing quality assurance, product acceptance testing, or conformance testing. These are independent activities taken by organizations other than the CTM manufacturer.

1.4 This practice covers procedures for sampling CTM for the purpose of manufacturing quality control (MQC). These procedures are designed to ensure the correct number of representative samples are obtained and properly reported by the manufacturer.

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

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]

D123 Terminology Relating to Textiles

D3786 Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method

D4271 Practice for Writing Statements on Sampling in Test Methods for Textiles (Withdrawn 2009)[3]

D4329 Practice for Fluorescent Ultraviolet (UV) Lamp Apparatus Exposure of Plastics

D5034 Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)

D5587 Test Method for Tearing Strength of Fabrics by Trapezoid Procedure

3. Terminology

3.1 *Definitions:*

3.1.1 For definition of other textile terms used in this standard, refer to Terminology D123.

3.1.2 *Organizational Definitions:*

3.1.3 *installer, n*—party who installs, or facilitates installation of, any materials purchased from manufacturers or suppliers.

3.1.4 *manufacturer, n*—group, corporation, partnership, or individual that manufactures a product.

3.1.5 *purchaser, n*—person, company, or organization that purchases any materials or work to be performed.

3.1.6 *supplier, n*—party who supplies material or services.

3.1.7 *Quality Definitions:*

3.1.8 *quality assurance (QA), n*—all those planned or systematic actions necessary to provide adequate confidence that a material, product, system, or service will satisfy given needs.

3.1.9 *quality control (QC), n*—planned system of activities whose purpose is to provide a level of quality that meets the needs of users; also, the use of such a system.

3.1.10 *Sampling Definitions:*

3.1.11 *lot, n*—unit of production, or a group of other unit or packages, taken for sampling or statistical examination, having one or more common properties and being readily separable from other similar units.

3.1.12 *sample, n*—(*1*) a portion of material which is taken for testing or for record purposes; (*2*) a group of specimens used, or of observations made, which provide information that

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

can be used for making statistical inferences about the population(s) from which samples are drawn.

3.1.13 *specimen, n*—specific portion of material or laboratory sample upon which a test is being performed or which is taken for that purpose.

4. Significance and Use

4.1 CTM must be properly manufactured in a manner consistent with a minimum level of quality control as determined by in-house testing of the final product. This practice suggest types of tests, the methods of the testing and the minimum testing frequencies.

4.2 It should be clearly recognized that manufacturers may perform additional tests or at a greater frequency than required in this practice, or both. In this case the manufacturer's quality control plan will take precedence over this practice. The quoted tests and test methods in Table 1 must appear in the QC plan and QC report.

4.3 It should also be recognized that purchasers and installers of CTM may require additional tests or a greater frequency than called for in this practice or both. The organization(s) producing such project specific specification or quality assurance plan should recognize that such requirements are beyond the current state of the practice. If such a request is made by the purchasers or installers, they should clearly communicate the requirements to the manufacturer or supplier during the contract decisions in order that disputes do not arise at a subsequent time.

4.4 This practice provides a means by which samples of CTM may be selected to provide a statistically valid sample for selection of test specimens without previous knowledge of the variability that may exist between production units.

TABLE 1 Number of Units to be Selected as Lot Sample – MQC

Number of Units in Lot	Number of Units Selected
1 to 2	1
3 to 8	2
9 to 27	3
28 to 64	4
64 to 125	5
125 to 216	6
217 to 343	7
344 to 512	8
513 to 729	9
730 to 1000	10
1000 or more	11

4.5 The principles stated in Practice D4271, and the illustrative text in that practice can be used by the test method authors in preparing sampling statements.

5. Sampling Procedure for Manufacturer's Quality Control (MQC) Testing

5.1 *Divisions into Lots*—Consider as a sample lot any portion of a production that represents the planned production quantity that a producer is testing; that differs from other portions in the specifications, style, or physical characteristics. If portions that are billed or designated as separate lots are shipped from different production plants, treat each separately shipped portion as a separate lot. When sampling is required during manufacturing, consider a lot to be the planned production quantity.

5.2 *Determination of Lot Sample Size:*

5.2.1 Use Table 1 to determine the lot sample size for quality control testing.

5.2.2 When time intensive tests, such as ultraviolet degradation, are used do not test more than two units from a single lot. Maintain information on the number of tests per lot and supply the information to the purchaser upon request.

5.2.3 If a sample is required during manufacture, select the units for the lot sample at uniformly spaced time intervals throughout the production period.

5.2.4 For properties that are evaluated as attributes, the units in the lot sample serve as both samples and specimens.

6. Procedure for Recommended Quality Control Tests and Requirements

6.1 The procedure for this practice is embodied in Table 2.

6.2 The minimum recommended quality control tests for the manufacture of CTM are given in Table 2. Although the tests can be performed on both pre-finished materials and the finished CTM it is recommended to test after CTM has been finished to create a smooth surface on at least one side.

6.3 Other Manufacturing Quality Assurance or Conformance tests may be requested by the purchaser or installer, these tests should be contracted separately and all parties involved satisfied with the practice or method being used, as well as the laboratory performing the testing.

7. Keywords

7.1 consumer trampoline bed material; CTM; trampoline; trampoline bed material

TABLE 2 Minimum Types of Tests and Requirements for MQC of CTMs

Test Designation	Units	ASTM Standard	Requirement	Reported Value
Burst Strength	kPa (psi)	Test Method D3786	4650 (675)	MARV
Tensile Strength	N (lb)	Test Method D5034	Warp – 1780 (400) Weft – 1550 (350)	MARV
Elongation	%	Test Method D5034	35	Maximum[A]
Trap Tear	N (lb)	Test Method D5587	445 (100)	MARV
UV Degradation	% Strength Retained	Practice D4329	70 % after 5000 h exposure	Minimum

[A] The highest sample value from documented MQC test results for a defined population obtained from one test method associated with a specific property.