



Designation: F2970 – 22

Standard Practice for Design, Manufacture, Installation, Operation, Maintenance, Inspection and Major Modification of Trampoline Courts¹

This standard is issued under the fixed designation F2970; 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 The purpose of this practice is to delineate requirements regarding the design, manufacture, installation, operation, maintenance, inspection and major modification of commercial or institutional trampoline courts with the primary purpose of amusement, entertainment or recreation.

1.2 This standard applies to institutional trampoline courts that are located in and around amusement, entertainment or recreational facilities. Such facilities include but are not limited to trampoline parks, amusement parks, theme parks, water parks, family entertainment centers, fitness centers, gyms, gymnastics facilities, sports facilities, skate parks, camps, shopping centers, temporary special events, carnivals and municipal parks.

1.3 This standard applies to devices manufactured on or after the date of publication of this standard practice.

1.4 This practice establishes guidelines that will provide a level of conformity for the purpose of reducing potential hazards to patrons, court attendants, and spectators.

1.5 This standard does not purport to address all of the hazards associated with institutional trampoline courts. The standard's existence alone will not prevent injuries. Like other physical activities, institutional trampoline court use involves the risk of injury, particularly if the equipment is used improperly or if users exceed their capabilities, endurance, training, or experience.

1.6 The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

1.7 This practice includes an annex (mandatory), which provides additional information (for example, rationale, background, interpretations, drawings, commentary, and so forth) to improve the user's understanding and application of

the criteria presented in this practice. The annex information shall be interpreted as mandatory criteria.

1.8 This practice includes an appendix (non-mandatory), which provides additional information (for example, rationale, background, interpretations, drawings, commentary, and so forth) to improve the user's understanding and application of the criteria presented in this practice. The appendix information shall not be interpreted as mandatory criteria.

1.9 This standard includes the following sections:

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1.10 *Units*—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.

1.11 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.12 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

¹ This practice is under the jurisdiction of ASTM Committee F24 on Amusement Rides and Devices and is the direct responsibility of Subcommittee F24.61 on Adventure Attractions.

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2. Referenced Documents

2.1 ASTM Standards:²

- D737 Test Method for Air Permeability of Textile Fabrics
 - D3574 Test Methods for Flexible Cellular Materials—Slab, Bonded, and Molded Urethane Foams
 - D3786 Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method
 - D3787 Test Method for Bursting Strength of Textiles—Constant-Rate-of-Traverse (CRT) Ball Burst Test
 - D4533 Test Method for Trapezoid Tearing Strength of Geotextiles
 - D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles
 - D4833 Test Method for Index Puncture Resistance of Geomembranes and Related Products
 - D5034 Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)
 - D5672 Test Method for Testing Flexible Cellular Materials Measurement of Indentation Force Deflection Using a 25-mm [1-in.] Deflection Technique
 - D6413 Test Method for Flame Resistance of Textiles (Vertical Test)
 - E84 Test Method for Surface Burning Characteristics of Building Materials
 - E648 Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
 - F355 Test Method for Impact Attenuation of Playing Surface Systems, Other Protective Sport Systems, and Materials Used for Athletics, Recreation and Play
 - F747 Terminology Relating to Amusement Rides and Devices
 - F770 Practice for Ownership, Operation, Maintenance, and Inspection of Amusement Rides and Devices
 - F1193 Practice for Quality, Manufacture, and Construction of Amusement Rides and Devices
 - F2291 Practice for Design of Amusement Rides and Devices
 - F2374 Practice for Design, Manufacture, Operation, and Maintenance of Inflatable Amusement Devices
 - F2375 Practice for Design, Manufacture, Installation and Testing of Climbing Nets and Netting/Mesh used in Amusement Rides, Devices, Play Areas and Attractions
 - F2650 Terminology Relating to Impact Testing of Sports Surfaces and Equipment
- ### 2.2 AISC Manuals:³
- AISC 316 Manual on Steel Construction, Allowable Stress Design (ASD)
 - AISC M015 Manual on Steel Construction, Load & Resistance Factor Design (LRFD)
- ### 2.3 AWS Standards:⁴
- ANSI/AWS D1.1/D1.1M Structural Welding Code—Steel

ANSI/AWS D14.4 Specification for Welded Joints in Machinery and Equipment

2.4 NFPA Standards:⁵

- NFPA 70 National Electrical Code (NEC)
- NFPA 701 Standard Methods of Fire Tests for Flame Propagation of Textiles and Films
- NFPA 705 Recommended Practice for a Field Flame Test for Textiles and Films

2.5 State Documents:

- California Technical Bulletin 117 Requirements, Test Procedure and Apparatus for Testing the Flame Retardance of Resilient Filling Materials
- Title 19 California Code of Regulation, Flame Retardant Regulations⁶

3. Terminology

3.1 Reference Terminology F747.

3.2 Reference Terminology F2650.

3.3 Definitions of Terms Specific to This Standard:

3.3.1 *assembly area, n*—a designated area primarily used for mounting or dismounting the trampoline court.

3.3.2 *children zone, n*—a trampoline court, an area within a trampoline court, or an area adjacent to a trampoline court designated by the designer/engineer, manufacturer, or owner/operator primarily for use, activity, entry, or dismount by young children.

3.3.3 *court attendant, n*—individual trained in facility emergency procedures, familiar with fundamental trampolining and TC foam pit operations, monitoring patrons and responding to TC trampoline, and TC foam pit emergencies.

3.3.4 *dismount platform, n*—any surface for standing, walking, sitting, or climbing, or a flat surface larger than 2.0 in. (51 mm) wide by 2.0 in. (51 mm) long having less than 30° angle from horizontal.

3.3.5 *institutional trampoline, n*—a trampoline intended for use in a commercial or institutional facility.

3.3.6 *redundant barrier net, n*—net or mesh intended as secondary containment under or behind an elevated surface that helps passively contain the user(s) within the bounded area.

3.3.7 *suspension system, n*—bed-supporting system made up of elastic devices that connect the bed to the frame, for example, steel extension springs.

3.3.8 *trampoline court foam pit or TC foam pit, n*—a combination style dismount pit designed with a rebound device, covered with loose impact absorbing blocks.

3.3.9 *trampoline court trampoline or TC trampoline, n*—rebound device activated by vertical or lateral jumping used in a trampoline court.

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 American Institute of Steel Construction (AISC), One E. Wacker Dr., Suite 700, Chicago, IL 60601-2001, <http://www.aisc.org>.

⁴ Available from American Welding Society (AWS), 550 NW LeJeune Rd., Miami, FL 33126, <http://www.aws.org>.

⁵ Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169-7471, <http://www.nfpa.org>.

⁶ Available from Office of Administrative Law, 300 Capitol Mall, Suite 1250, Sacramento, CA 95814-4339, <http://www.oal.ca.gov/Default.htm>.