Designation: F381 – 16

An American National Standard

Standard Safety Specification for Components, Assembly, Use, and Labeling of Consumer Trampolines[1]

This standard is issued under the fixed designation F381; 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 safety specification covers the components, the assembly, and the use of consumer trampolines.

1.2 This specification is delimited in its application to trampolines of (*1*) a minimum bed size of 3300 in.^{2} (21 300 cm^2), (*2*) a minimum height of 20 in. (51 cm), (*3*) intended for the purpose of continuous, vertical jumping activities and (*4*) intended for consumer use.

1.3 This specification is intended (*1*) to reduce the demonstrated hazards associated with the use of trampolines by consumers; (*2*) for trampolines used in a home environment by a single user; and (*3*) not to apply to institutional trampolines or trampolines intended for use on water. Trampolines that adhere to this specification are not recommended for use by children under six years of age.

1.4 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.

1.5 *This standard does not purport to address all of the hazards associated with trampolines. The standard's existence alone will not necessarily prevent injuries. Like other physical activities, trampoline use involves the risk of injury, particularly if the equipment is used improperly.*

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.*

1.7 This specification includes the following sections and selected subsections.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

B117 Practice for Operating Salt Spray (Fog) Apparatus

D638 Test Method for Tensile Properties of Plastics

D2240 Test Method for Rubber Property—Durometer Hardness

F355 Test Method for Impact Attenuation of Playing Surface Systems and Materials

F1487 Consumer Safety Performance Specification for Playground Equipment for Public Use

[1] This safety specification is under the jurisdiction of ASTM Committee F08 on Sports Equipment, Playing Surfaces, and Facilities and is the direct responsibility of Subcommittee F08.17 on Trampolines and Related 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.

F2225 Safety Specification for Consumer Trampoline Enclosures
F2774 Practice for Manufacturing Quality Control of Consumer Trampoline Bed Material

2.2 *AATCC Standard:*[3]
AATCC Method 169

2.3 *ANSI Standard:*[4]
ANSI Z535.4 Product Safety Signs and Labels

2.4 *Federal Standards:*[5]
16 CFR 1500.48 Technical Requirements for Determining a Sharp Point in Toys and Other Articles Intended for Use by Children Under 8 Years of Age
16 CFR 1500.49 Technical Requirements for Determining a Sharp Metal or Glass Edge in Toys and Other Articles Intended for Use by Children Under 8 Years of Age

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *access device, n*—device used for access to or egress from a trampoline bed including, but not limited to, trampoline ladders.

3.1.2 *bed, n*—flexible surface which the user contacts in the course of bouncing on a trampoline.

3.1.3 *bouncing, n*—action considered as normal use of a trampoline consisting of continuous, vertical jumping wherein each landing is in near proximity to the previous landing.

3.1.4 *consumer trampoline, n*—trampoline intended for use in a home environment.

3.1.5 *folding-type trampoline, n*—trampoline whose frame can be folded when not in use. See *portable*.

3.1.6 *frame, n*—framework constructed of rigid supportive materials from which the bed is suspended.

3.1.7 *frame padding, n*—shock-attenuating protective device(s) that attaches to the frame to cover the frame and suspension system in the plane of the bed.

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

3.1.9 *ladder, n*—see *trampoline ladder*.

3.1.10 *legs, n*—the framework constructed of rigid materials which support the frame above the ground or floor.

3.1.11 *mat, n*—common, though non-preferred term referring to bed.

3.1.12 *maximum specified user weight, n*—maximum weight of a user as specified by the manufacturer.

3.1.12.1 *Discussion*—The manufacturer must ensure the maximum specified user weight meets the requirements of Section 6.

3.1.13 *portable, adj*—able to be easily moved without disassembly, though usually requiring the assistance of devices such as roller stands. Folding-type trampolines are often intended to be portable.

3.1.14 *roller stand, n*—device that is used to assist in rolling/moving a folding-type trampoline frame.

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

3.1.16 *trampoline, n*—rebound device activated by vertical jumping, upon which gymnastics skills and exercises are performed.

3.1.17 *trampoline ladder, n*—ladder-like device specifically designed for use with a trampoline and designed to be easily removable.

4. Included Components

4.1 When a trampoline is offered for sale, it shall include the following: (*1*) a frame, (*2*) a bed, (*3*) a suspension system, (*4*) frame padding (where the frame is in the plane of the bed), (*5*) an enclosure in compliance with Safety Specification F2225, (*6*) an information packet, and (*7*) suitable markings.

4.2 When a trampoline is offered for sale, a trampoline ladder shall not be included as a component part or within the same packaging.

4.3 When a portable trampoline is offered for sale, it shall include all of the components in 4.1 plus appropriate roller stands.

4.3.1 For folding-type trampolines, the information in 7.5.1 and 8.3.3 shall also include the following:

4.3.1.1 Use two or more strong people to open and close folding-type trampolines.

5. Materials and Manufacture

5.1 The provisions in Section 5 shall apply to a trampoline assembled as instructed in the owner's manual. All performance tests shall be conducted on a fully assembled trampoline and enclosure (if sold as a unit) unless otherwise directed in the test requirements.

5.2 *Design Requirements:*

5.2.1 The trampoline shall be designed such that no part of the frame or legs can be contacted by the bed while bouncing. All frame and leg assemblies shall be joined or fastened together so that it requires either two distinct motions to separate those parts or tools to remove fasteners, to avoid unintentional separation.

5.2.2 The frame padding shall be of a color which contrasts with the color of the trampoline bed.

5.2.3 The suspension system shall be designed so as to protect the performer from injury due to contact with the sharp ends of the trampoline springs.

5.3 *Performance Requirements:*

5.3.1 The frame padding, where required, shall be designed to remain securely attached to the frame when tested to the requirements of 6.2 and 6.3. All tests shall be conducted at ambient temperatures (nominally 68 ± 5°F (20 ± 3°C)).

[3] Available from American Association of Textile Chemists and Colorists (AATCC), P.O. Box 12215, Research Triangle Park, NC 27709, http://www.aatcc.org.

[4] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

[5] Available from U. S. Government Accountability Office (GAO), 441 G St., NW, Washington, DC 20548, http://www.gao.gov.

5.3.2 Materials used in any pad cover, frame padding, cover attachments, tie down(s), and pad seams normally exposed to sunlight shall be made from ultraviolet (UV) resistant materials and meet the performance requirements of 6.6.

5.3.3 Material used in the trampoline mat shall meet the requirements specified in Practice F2774.

5.3.4 Except for necessary seams, the frame padding, where required, shall cover the entire top surface of the frame and be wide enough to completely cover the entire top surface of the suspension system and frame when subjected to the tests specified in 6.2.

5.3.5 All information, instructions, and warnings shall be provided in English in addition to any other formats used, for example, graphical, video, multilingual, etc.

5.3.6 When installed in accordance with the manufacturer's instructions, fasteners, lock washers, self-locking nuts, or other locking means shall be provided for all nuts and bolts to protect them from unintentional loosening; self-locking nuts must fully engage with the bolt. Hardware in moving joints shall also be secured against unintentional loosening. Any other fastening systems shall comply with the requirement that effective locking requires two separate and distinct motions for release.

5.3.7 There shall be no accessible sharp points or edges on fasteners when tested in accordance with 16 CFR 1500.48 and 16 CFR 1500.49.

5.3.8 Bolt ends projecting beyond the face of the nut shall be free of burrs, sharp points, and sharp edges when tested in accordance with 16 CFR 1500.48 and 16 CFR 1500.49. An accessible bolt end shall not extend more than the diameter of the bolt beyond the face of a nut when the nut is tightened to a torque between 20 and 25 lbf-in (2.3 to 2.8 N-m).

5.3.9 If the exposed bolt end is not free of burrs, sharp points, or sharp edges, or a combination thereof, then the threaded ends of bolts may be covered by smooth, tight-fitting caps that shall resist a torque of 4 lbf-in (0.45 N-m) and a tensile force of 15 lbf (67 N) without loosening.

5.3.10 All fasteners shall be corrosion resistant to a level where no rust is evident after a 24-h salt spray test to Practice B117.

5.3.11 No welds shall be made to any steel frame or accessory component with a thickness of less than 0.059 in. (1.5 mm).

5.3.12 No "saddle" welds shall be made to any steel frame or accessory component with a thickness of less than 0.071 in. (1.8 mm). An example of a saddle-welded tee fitting is shown in Fig. 1.

5.3.13 All welded joints shall be rendered corrosion resistant to a level where no rust is evident after a 24-h salt spray test to Practice B117.

5.3.14 No component shall be capable of presenting a protrusion hazard during foreseeable use.

NOTE 1—Test requirements that define a protrusion are in Specification F1487, Subsection 6.3.

5.3.15 There shall be no accessible burrs, sharp points, or sharp edges on tubing when tested in accordance with 16 CFR 1500.48 and 16 CFR 1500.49. End caps or plugs that cannot be

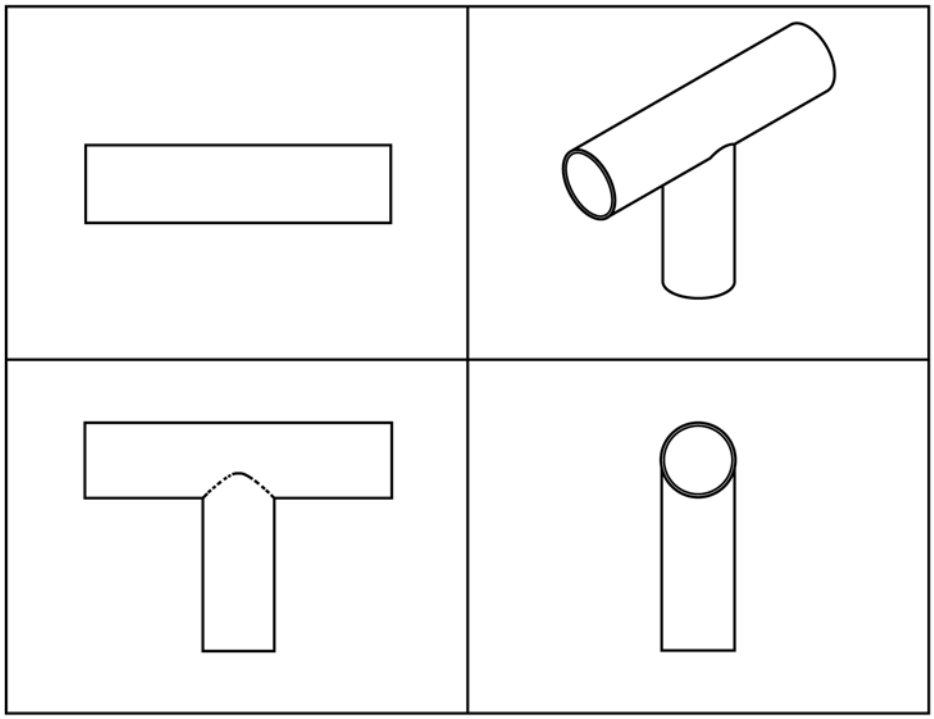

FIG. 1 Saddle Welded Tee Fitting

removed without the use of tools on tubing may be used to meet this requirement.

6. Performance Requirements

6.1 *Shock Attenuation*—Where padding is required, the shock-attenuating material used in the frame padding, as measured to include the frame and a minimum of 2 in. from the inside edge of the frame, shall limit the severity index to less than 450, when the same thickness as used in the frame padding is tested in accordance with Test Method F355 using a 20-lb (9-kg), 20-in.^{2} (129-cm^2) round, flat head dropped from a distance of 2 ft (61 cm).

6.1.1 Where padding is not required, the shock attenuating properties of any part of the trampoline edge shall limit the severity index to less than 450, when tested on a fully assembled trampoline in accordance with Test Method F355 using a 20-lb (9-kg), 20-in.^{2} (129 cm^2) round, flat head dropped from a distance of 2 ft (61 cm).

6.2 *Drop Test*—A drop test will be performed on the frame padding attached to a trampoline and assembled in accordance with the manufacturer's instructions. The drop test shall use the equipment and procedures described in 6.2.5 and 6.2.6. As a result of the test:

6.2.1 The impactor shall not tear the cover or completely penetrate the padding;

6.2.2 Seams of the padding shall not separate;

6.2.3 The pad attachments shall not separate from the pad or frame; and

6.2.4 The padding shall continue to cover the frame, springs, and frame hardware when the impactor is removed from the surface of the padding.

6.2.5 *Drop Test Weight and Impactor Shape*—The drop weight will consist of a 23-kg (50-lb) mass with a wooden impacting surface. See Fig. 2. The edges of the impact surface are radiused and the heel and toe of the surface are contoured as shown in Fig. 2.

6.2.6 *Drop Test Procedure*—The impactor shall be dropped in a guided free-fall to contact the surface of the padding. The surface of the impactor shall be flat and parallel (within 5°) to the surface of the padding on the initial contact with the pad. The impactor shall be dropped on the portion of the padding covering the springs. The impactor shall be centered to impact at a location midway between the inner edge of the frame rail and the edge of the trampoline bed. The impactor shall be raised to a height of 12 in. (tolerance -0/+5 in.) (305 mm [-0/+13 mm]) above the surface of the padding. The impactor

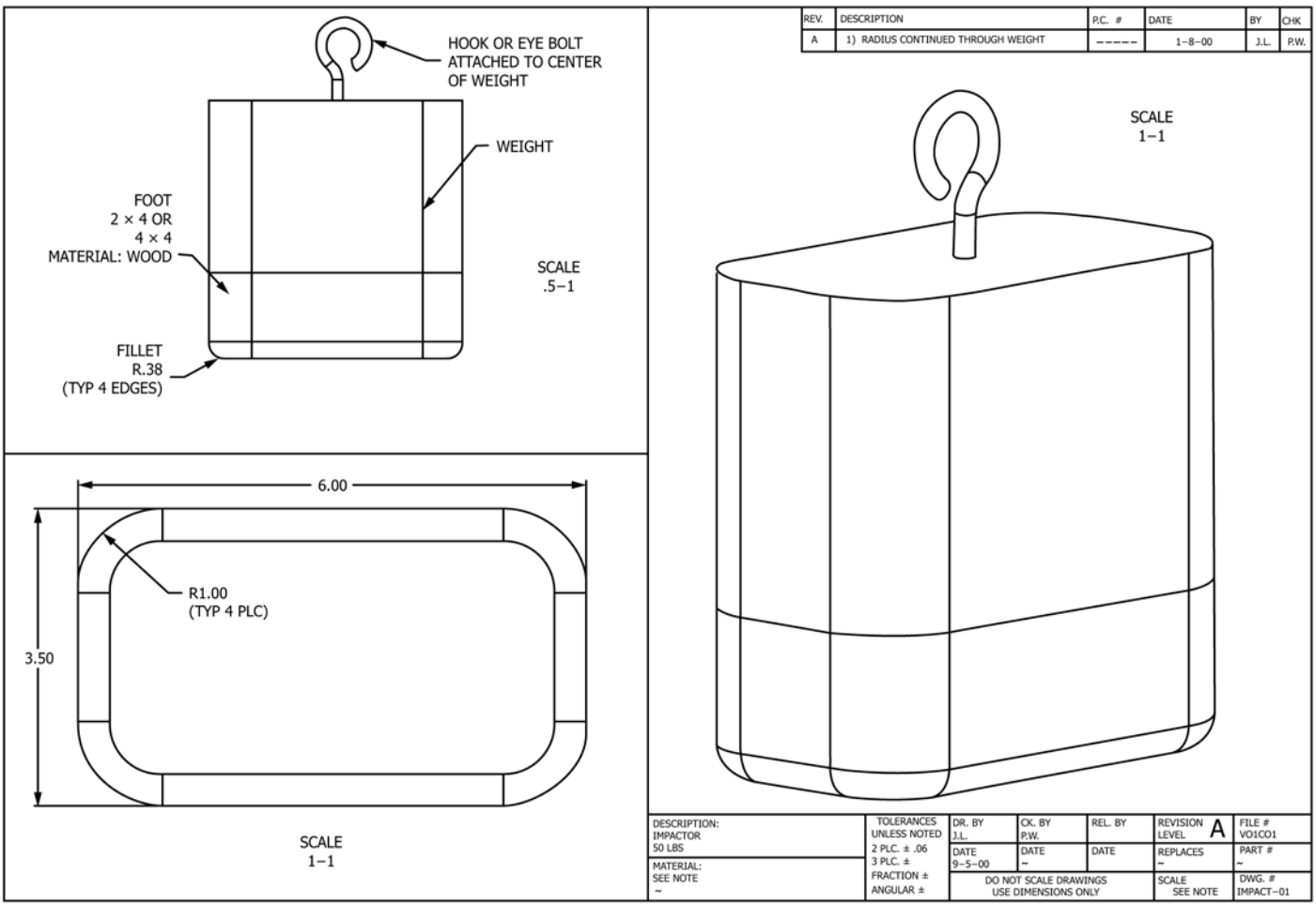

FIG. 2 Drop-Test Impactor Shape

shall be dropped at a minimum of two times near each of the following locations, consistent with the required spacing centered between the springs:

6.2.6.1 Midway between attachment points,

6.2.6.2 Adjacent to an attachment point,

6.2.6.3 At a pad seam, and

6.2.6.4 Above a leg.

6.2.7 After the first impact, the impactor shall be raised to its initial drop height. The results of the test with regard to pad integrity and coverage will be assessed. The padding shall not be disturbed after removal of the impactor. The impactor is dropped a second time and the results recorded.

6.3 *Padding Attachment System Tests*—The test described in 6.3.1 is intended to measure the ability of the padding attachment system to keep the frame pad in place when subjected to typical forces imposed by users. The test in 6.3.1 simulates a user climbing onto the trampoline by holding on to the edge of the padding and climbing onto the bed of the trampoline. The test is conducted on a fully assembled trampoline with padding attached, according to the manufacturer's instructions.

6.3.1 *Padding Retention:*

6.3.1.1 Secure the fully assembled trampoline to the floor or brace it to prevent movement of the trampoline as a result of the applied forces.

6.3.1.2 Place the trampoline pad pull fixture shown in Fig. 3 with the fixture hooks facing down on the trampoline pad. The fixture hook opening may be either of fixed thickness, adjustable to the padding thickness, or V-shaped.

6.3.1.3 Fixed thickness hooks shall be the thickness of the padding ±⅛ in. (±3 mm). Adjustable fixture hooks shall be adjusted to the thickness of the pad. Adjustable hooks shall be adjusted to the thickness of the padding ±⅛ in. (±3 mm). V-shaped hooks shall not compress the padding thickness more than ⅛ in. (3 mm).

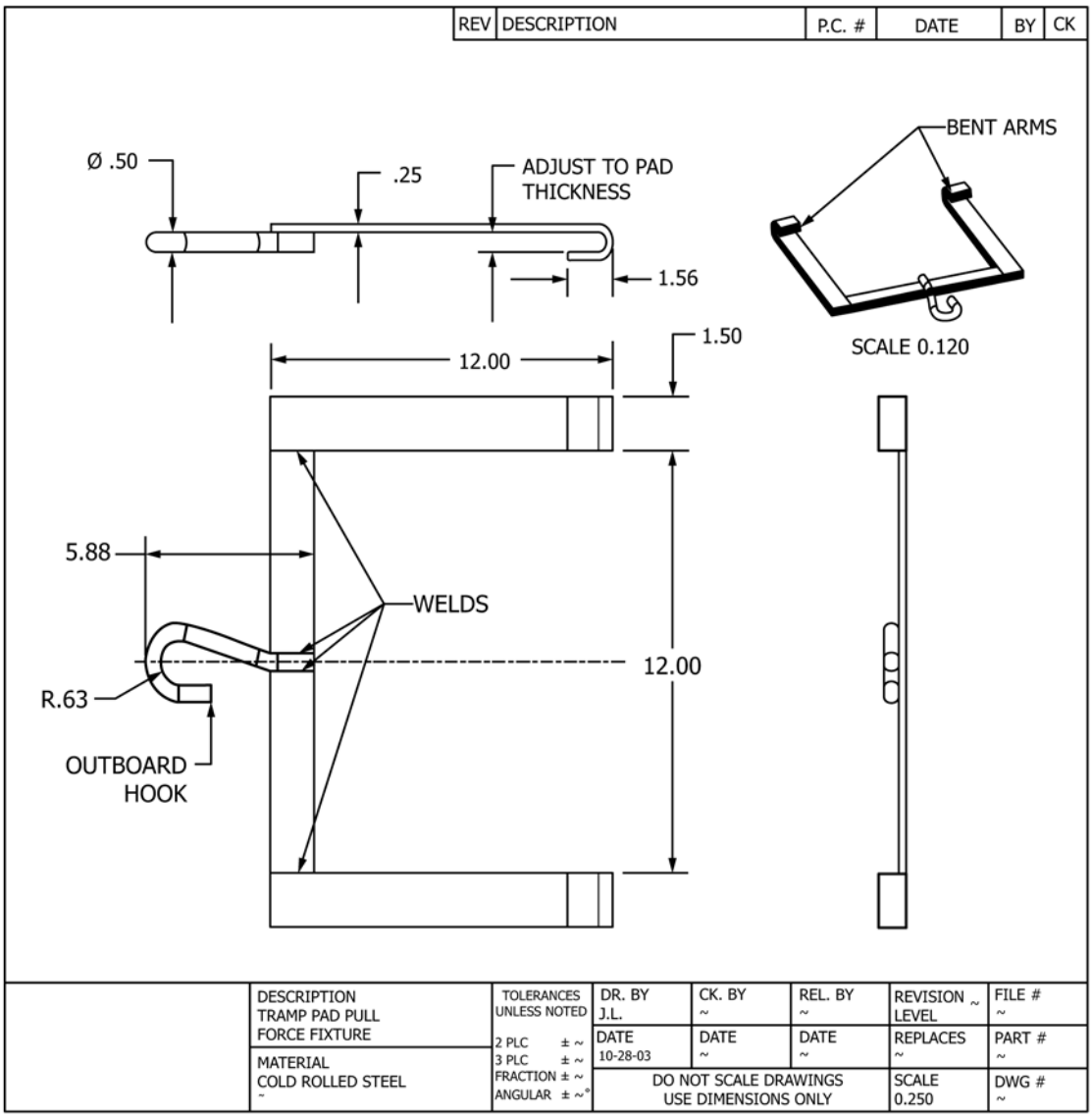

FIG. 3 Trampoline Pad Pull Fixture

6.3.1.4 Attach the fixture to the pad. Grasp the inside diameter edge of the frame pad as shown in Fig. 4.

6.3.1.5 Using the outboard hook of the fixture, gradually apply a horizontal force of 85 ± 5 lbf (380 ± 20 N) parallel to the plane of the mat and radially outward from the center of the trampoline. Apply the force at each of three locations shown in Fig. 4 such that: (*1*) a pad attachment tie down is centered between the fixture arms, (*2*) the fixture is centered between adjacent pad attachment tie downs, and (*3*) a pad seam is centered between the fixture arms.

6.3.1.6 Immediately release the force after it reaches 85 lbf (380 N). Repeat the force application two additional times at the same location. After the third application of the force, release the force and remove the fixture without adjusting the position of the pad.

6.3.1.7 The padding attachment system passes this test if after removal of the force and test fixture:

(1) The padding continues to cover the trampoline's frame, springs, and associated hardware,

(2) The pad attachment is not broken or separated from the pad or frame, and

(3) The pad cover (material or seams) is not torn.

6.4 *Drop Test for Trampoline Edge Survivability*—Where a system other than frame padding is used for impact attenuation, a survivability drop test will be performed on the edge system. The trampoline shall be assembled in accordance with the manufacturer's instructions. The drop test shall use the equipment and procedures described in 6.2 and 6.4.1. As a result of the test there shall be no evidence of permanent damage or deformation to the edge system.

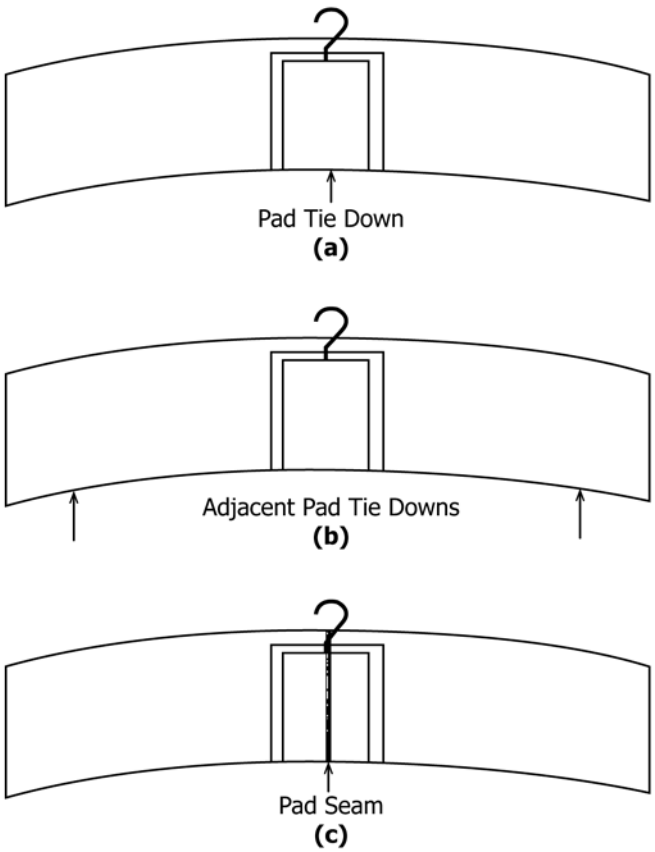

FIG. 4 Force Locations

6.4.1 *Drop Test Procedure for Trampolines Where Frame Padding Is Not Required*—The impactor shall be dropped in a guided free-fall to contact the surface. The surface of the impactor shall be flat and horizontal (within 5°) on initial contact with the surface. The impactor shall be dropped on any portion of the edge system, such that the impactor footprint does not extend into space beyond the edge of the edge system. The impactor shall be raised to a height of 12 in. (tolerance ±0.5 in.) (305 mm (±13 mm)) above the surface. The impactor shall be dropped a minimum of 2 times on each chosen location. At least the following three locations shall be tested:

6.4.1.1 Midway between the two suspension element attachment points, with the impactor long axis oriented perpendicular to the bed edge;

6.4.1.2 Centrally on a suspension element attachment point, with the impactor long axis oriented perpendicular to the bed edge; and

6.4.1.3 With the impactor edge aligned to any structural stitch line.

6.4.2 After the first impact, the impactor shall be raised to its initial drop height. The results of the test with regard to system integrity will be assessed. The impactor guides shall not be moved between impacts. The impactor shall be dropped a second time and the results recorded.

6.5 *Crush and Shear Points*—There shall be no crush or shear points caused by junctures of two components moving relative to one another, or at an opening present in any location on the assembled trampoline in normal use that could cause a contusion, laceration, abrasion, amputation, or fracture. A crush or shear point is any point that allows a 3⁄16 in. (5 mm) diameter neoprene rod to enter at one or more positions and entraps at one or more positions a ½-in. (13-mm) diameter neoprene rod. Entrapment shall mean that a force of more than 2 lbf (9 N) is required to pull out the rod. The neoprene rods shall have a hardness reading between 50 and 60 as determined by a Type A durometer in accordance with Test Method D2240.

6.6 *Ultraviolet (UV) Resistant Materials Test:*

6.6.1 Any pad cover, frame padding, cover attachments, tie down(s), and pad seams normally exposed to sunlight shall be exposed for ultraviolet (UV) resistance using accelerated weathering chambers and shall retain at least 80 % of its original tensile strength.

6.6.2 Specimens to be tested shall be normal tensile test samples from the finished material.

6.6.3 *Tensile Test*—Test exposed and non-exposed (control samples) tensile test samples, in accordance with Test Method D638, at a testing rate of 2 in. (51 mm)/min.

6.6.4 The specimens are to be exposed according to the following procedures: Accelerated Weathering Procedure (Xenon Lamp Exposure). The test procedure shall be in accordance with AATCC Method 169, except the following deviations shall apply:

(1) The apparatus shall be equipped with an automatic light monitor and shall be capable of automatically controlling irradiance, temperature, and humidity.

(2) The exterior (face) side of the cloth shall be exposed to the light source. The weathering test cycle shall be 40 min of light, 20 min of light with water spray on the fabric face, 60 min of light, 60 min of darkness. The test cycle shall be repeated until the total energy exposure is equal to 500 kJ/m^2 at 340 nm (or 61 MJ/m^2 at 300 nm – 400 nm), which is approximately 500 h exposure in the test apparatus.

(3) The irradiance level shall be either: 0.40 ± 0.01 W/m^2 bandpass at 340 nm, or 46 ± 1.0 W/m^2 at 300 nm – 400 nm.

(4) The glass filter combination shall be a borosilicate type "S" filter in the inner position and a borosilicate type "S" in the outer position. Alternate filter combinations are acceptable, provided that the equipment manufacturer provides a letter certifying that the irradiance levels are comparable to those specified within ±10 %.

(5) The relative humidity shall be 50 ± 5 % during the light cycle and not lower than 95 % during the dark cycle.

(6) The control set points shall be as follows:

	Dark Cycle	Light Cycle
Black panel	38°C	77°C
Black standard	38°C	84°C
Wet bulb depression	0°C	10°C

Note—As a guide only; adjust to achieve required relative humidity (see (*5*) above).

(7) The test specimens shall fit the specimen rack of the apparatus with no wrinkles or gaps. The test specimen shall be mounted on the outside of the rack with the use of appropriate stainless steel spring clips. After the required exposure period, the specimens shall be removed from the apparatus and allowed to dry and condition at standard atmospheric conditions. Then, test specimens for each required test shall be cut and tested appropriately.

6.7 *Static Load Tests*—The static load tests shall be performed on a trampoline, assembled to the manufacturer's instructions, including all components and accessories supplied with the trampoline. The static load tests shall use the equipment and procedures described in 6.7.1 – 6.7.4.

6.7.1 *Static Load Test on Trampoline Bed*—The purpose of this test is to verify the integrity of the bed and spring system for the maximum expected loads in normal use.

6.7.1.1 For this test the static load shall be applied once at the center of the bed. The load shall deflect the bed until it is in contact with the ground.

NOTE 2—The requirements of 6.8 may be carried out during this loading test.

6.7.1.2 The test is passed if the trampoline frame and other components do not exhibit signs of permanent deformation, or breakage during or after the application of the load.

6.7.2 *Static Load Test on Trampoline Frame*—The purpose of this test is to verify the integrity of the frame or edge system, and legs, for the maximum expected loads in use.

6.7.2.1 The load to be applied shall be no less than 4 (four) times the maximum specified user weight.

6.7.2.2 For this test the load shall be applied on the outer edge of the trampoline at any location likely to result in failure, such as midway between leg posts.

6.7.2.3 The test is passed if the trampoline frame, legs, or edge system do not exhibit signs of permanent deformation, or breakage during or after the application of the load.

6.7.3 *Static Load Base Shape*—The load shall be applied through a disk of 8 in. (200 mm) diameter with edges rounded to a radius of 0.5 in. (12 mm) as shown in Fig. 5.

6.7.4 *Procedure for Static Load Tests*—Secure the trampoline so that the trampoline cannot tip or slide during the test.

6.7.4.1 The test load shall be lowered slowly (at no more than 0.5 ft/s) on to the specified surface until the trampoline is supporting the required test load. The test load shall be left in place for between 1 and 5 min during which time the trampoline shall be examined to see whether it passes the test. The test load shall be raised slowly (at no more than 0.5 ft/s) until it is no longer in contact with the trampoline. The trampoline frame and other components supplied with the trampoline shall be examined for compliance with the test pass requirements in 6.7.1.2 or 6.7.2.3.

6.8 *Maximum User Weight*—The maximum specified user weight shall be no more than 21 % of the load to displace the bed 80 % (±0.5 in. (12mm)) of the distance to the ground, when the bed is loaded using the disk specified in Fig. 5.

NOTE 3—With suitable equipment the load may be determined during the bed loading test in 6.7.1.1.

7. Information Packet

7.1 *Packet Marking and Contents:*

7.1.1 Each trampoline shall be accompanied by a separate packet of materials, with the following notice:

Assembly, Installation, Care, Maintenance, and Use Instructions

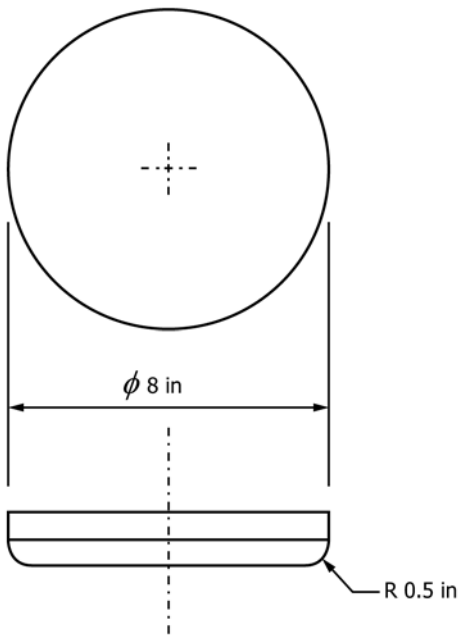

FIG. 5 Configuration of the Loading Disk

⚠WARNING

Read these materials prior to assembling and using this trampoline

7.1.1.1 This notice shall, without font or layout being implied, be well highlighted, and in enlarged boldface type in contrast to other text.

7.1.2 The packet shall contain: (*1*) assembly instructions, (*2*) care and maintenance instructions, (*3*) warning information, and (*4*) use instructions.

7.2 *Assembly and Installation Instructions:*

7.2.1 The manufacturer's assembly instructions for the trampoline shall be clearly written and presented such that the trampoline can be properly and safely assembled.

7.2.2 Where frame padding is used, the manufacturer's assembly instructions shall emphasize the importance of properly attaching the frame padding securely to the frame and in correct position prior to using the trampoline. The manufacturer shall provide a diagram illustrating the correct placement of the frame padding relative to the frame.

7.2.3 Any specific use limitations placed on the trampoline by the manufacturer shall be included in a statement appearing in a box at the bottom of the first page after the following notice:

⚠WARNING

7.2.4 Trampoline installation instructions shall be supplied by the manufacturer to aid the purchaser in proper installation and placement of the trampoline. The installation instructions shall include the following information:

7.2.4.1 Adequate overhead clearance is essential. A minimum of 24 ft from ground level is recommended. Provide clearance for wires, tree limbs, and other possible hazards.

7.2.4.2 Lateral clearance is essential. Place the trampoline away from walls, structures, fences, and other play areas. Maintain a clear space on all sides of the trampoline.

7.2.4.3 Place the trampoline on a level surface before use.

7.2.4.4 Use the trampoline in a well-lit area. Artificial illumination may be required for indoor or shady areas.

7.2.4.5 Secure the trampoline against unauthorized and unsupervised use.

7.2.4.6 Remove any obstructions from beneath the trampoline.

7.2.4.7 The owner and supervisors of the trampoline are responsible to make all users aware of practices specified in the use instructions.

7.3 *Care and Maintenance Instructions:*

7.3.1 Trampoline care and maintenance instructions shall be supplied by the manufacturer to aid the purchaser in the basic and proper care and maintenance of the trampoline.

7.3.2 The manufacturer's care and maintenance instructions for trampolines using frame padding shall contain the following information:

7.3.2.1 Inspect the trampoline before each use and replace any worn, defective, or missing parts. The following conditions could represent potential hazards:

(1) Missing, improperly positioned, or insecurely attached frame padding,

(2) Punctures, frays, tears, or holes worn in the bed or frame padding,

(3) Deterioration in the stitching or fabric of the bed or frame padding,

(4) Ruptured springs,

(5) A bent or broken frame,

(6) A sagging bed, or

(7) Sharp protrusions on the frame or suspension system.

7.3.3 The manufacturer's care and maintenance instructions for trampolines not requiring frame padding shall contain at least the following information:

7.3.3.1 Inspect the trampoline before each use and replace any worn, defective, or missing parts. The following conditions could represent potential hazards:

(1) Punctures, frays, tears, or holes worn in the bed or edge system,

(2) Deterioration of the stitching or fabric of the bed or edge system,

(3) A sagging bed,

(4) Broken or missing suspension elements or suspension elements disconnected from the bed edge,

(5) A bent or broken frame, or sharp protrusions on the frame.

7.4 *Warning Information:*

7.4.1 All warnings in the information packet shall: (*1*) be readily visible, (*2*) alert the reader to the potential hazard in time to take the appropriate action, and (*3*) have good pictorial, word and message legibility.

NOTE 4—The user of this safety specification is referred to ANSI Z535.4 for guidelines on warning labels.

7.4.2 The information packet shall contain the following warning information:

⚠WARNING

7.4.2.1 DO NOT attempt or allow somersaults. Landing on the head or neck can cause serious injury, paralysis, or death, even when landing in the middle of the bed.

7.4.2.2 Do not allow more than one person on the trampoline. Use by more than one person at the same time can result in serious injury.

7.4.2.3 Use trampoline only with mature, knowledgeable supervision.

7.5 *Use Instructions:*

7.5.1 The use instructions shall include the following information:

⚠WARNING

7.5.1.1 DO NOT attempt or allow somersaults. Landing on the head or neck can cause serious injury, paralysis, or death, even when landing in the middle of the bed.

7.5.1.2 Do not allow more than one person on the trampoline. Use by more than one person at the same time can result in serious injuries.

7.5.1.3 Use trampoline only with mature, knowledgeable supervision.

7.5.1.4 Trampolines over 20 in. (51 cm) tall are not recommended for use by children under 6 years of age.

7.5.1.5 Inspect the trampoline before each use. Make sure the frame padding is correctly and securely positioned. Replace any worn, defective, or missing parts.

(1) For trampolines not requiring frame padding, omit the sentence, "Make sure the frame padding is correctly and securely positioned."

7.5.1.6 Climb on and off the trampoline. It is a dangerous practice to jump from the trampoline to the floor or ground when dismounting, or to jump onto the trampoline when mounting. Do not use the trampoline as a springboard to other objects.

7.5.1.7 Stop bounce by flexing knees as feet come in contact with the trampoline bed. Learn this skill before attempting others.

7.5.1.8 Learn fundamental bounces and body positions thoroughly before trying more advanced skills. A variety of trampoline activities can be carried out by performing the basic fundamentals in various series and combinations, performing one fundamental after another, with or without feet bounces between them.

7.5.1.9 Avoid bouncing too high. Stay low until bounce control and repeated landing in the center of the trampoline can be accomplished. Control is more important than height.

7.5.1.10 While keeping the head erect, focus eyes on the trampoline toward the perimeter. This will help control bounce.

7.5.1.11 Avoid bouncing when tired. Keep turns short.

7.5.1.12 Properly secure the trampoline when not in use. Protect it against unauthorized use. If a trampoline ladder is used, the supervisor should remove it from the trampoline when leaving the area to prevent unsupervised access by children under 6 years of age.

7.5.1.13 Do not use or stand near the trampoline in windy or gusty conditions. A trampoline can become airborne when exposed to sustained wind or gusting wind conditions. This can result in serious injury, paralysis, or death, as well as property damage. To reduce these risks, disassemble the trampoline and enclosure and store them until weather conditions improve. Anchoring a trampoline frame may prevent the trampoline from moving as a result of the wind, but even anchored trampolines can become airborne or damaged. Consult a qualified contractor to determine what type of anchor works best in your location.

7.5.1.14 Keep objects away which could interfere with the performer. Maintain a clear area around the trampoline.

7.5.1.15 Do not use the trampoline while under the influence of alcohol or drugs.

7.5.1.16 For additional information concerning the trampoline equipment, contact the manufacturer.

7.5.1.17 For information concerning skill training, contact a certified trampoline instructor.

7.5.1.18 Bounce only when the surface of the bed is dry. Wind or air movement should be calm to gentle. The trampoline must not be used in gusty or severe winds.

7.5.1.19 Read all instructions before using the trampoline. Warnings and instructions for the care, maintenance, and use of this trampoline are included to promote safe, enjoyable use of this equipment.

7.5.2 Additional trampoline instructional materials shall be supplied by the manufacturer to aid the user in learning the fundamental trampoline skills. These instructional materials shall contain illustrations depicting trampolinists performing the fundamental skills positions, accompanied by printed material describing them and suggesting ways to accomplish them. These instructional materials shall be intended for use with consumer trampolines and shall not describe the use of trampoline devices for somersaulting, vaulting, diving, or other intermediate or advanced skills.

7.5.3 Suitable materials shall also include information pertaining to:

7.5.3.1 Trampoline safety and accident prevention.

7.5.3.2 Supervisor's role in preventing injuries.

7.5.3.3 Responsibilities of the owner/supervisor/instructor, and

7.5.3.4 Responsibilities of the user.

8. Product Marking

8.1 *Identification*

8.1.1 The trampoline shall be clearly marked with at least one label to indicate the name and place of business of either the manufacturer, importer, distributor, or seller, and to indicate the model number, stock number, catalog number, item number, or any other symbols relating to the item.

8.1.2 The identification shall be reasonably durable and permanent with good work and message legibility, and take into consideration the expected life of the component and the foreseeable environment of use.

8.2 *On-Trampoline Warnings:*

8.2.1 All on-trampoline warnings shall (*1*) be placed such that they will be readily visible to the intended viewer, (*2*) alert the viewer to the potential hazard in time to take the appropriate action, (*3*) be reasonably durable and permanent with good color stability, pictorial legibility and word and message legibility, and (*4*) take into consideration the expected life of the component and the foreseeable environment of use (see Note 4).

8.2.2 The on-trampoline warnings shall include but not be limited to the following information:

⚠WARNING

8.2.2.1 Do not attempt or allow somersaults. Landing on the head or neck can cause serious injury, paralysis, or death, even when landing in the middle of the bed.

8.2.2.2 Do not allow more than one person on the trampoline. Use by more than one person at the same time increases the chance of injury.

8.2.2.3 Use trampoline only with mature, knowledgeable supervision.

8.2.3 The frame or legs of the trampoline shall be clearly marked with at least two identical labels which shall include the information in 8.2.2.

8.2.4 The bed shall be clearly marked with two identical labels on opposite sides and in the horizontal plane, which shall include the information in 8.2.2.

8.2.5 The following warning information shall be marked on the trampoline frame:

MAXIMUM USER WEIGHT X lb (Y kg)

8.2.5.1 'X' and 'Y' are the maximum specified user weight decided upon by the manufacturer, and shall be no greater than that calculated in Section 6.

8.3 *Instruction Sign:*

8.3.1 A sign containing use instructions is to be posted in a highly visible and safe location by the owner. The seller/manufacturer shall supply said sign at time of sale.

8.3.2 The sign shall (*1*) be placed such that it will be readily visible to the intended viewer; (*2*) be reasonably durable and permanent with good color stability and word and message legibility, and (*3*) take into consideration the expected life of the trampoline and the foreseeable environment of use.

8.3.3 The instructions shall include an abbreviated listing of the use information in 7.5.3, specifically:

8.3.3.1 Do not attempt or allow somersaults. Serious injuries, paralysis, or death may result.

8.3.3.2 Do not allow more than one person on the trampoline at a time.

8.3.3.3 Use trampoline only with mature, knowledgeable supervision.

8.3.3.4 Not recommended for children under 6 years of age.

8.3.3.5 Inspect before use. Keep frame padding in place.

8.3.3.6 Climb on and off the trampoline. Do not use the trampoline as a springboard.

8.3.3.7 Stop bounce by flexing knees as feet come in contact with the bed.

8.3.3.8 Learn fundamental bounces and body positions thoroughly.

8.3.3.9 Avoid bouncing too high. Maintain control.

8.3.3.10 While keeping the head erect, focus eyes on the trampoline toward the perimeter.

8.3.3.11 Bounce in the center of the bed.

8.3.3.12 Avoid bouncing when tired.

8.3.3.13 Secure the trampoline against unauthorized use.

8.3.3.14 Keep objects away which could interfere with the performer.

8.3.3.15 Do not use the trampoline while under the influence of alcohol or drugs.

8.3.3.16 For equipment information, contact the manufacturer.

8.3.3.17 For skill training information, contact a trainer certification organization.

8.3.3.18 Do not use when trampoline is wet or in windy conditions.

8.3.3.19 Read instructions before use.

8.3.4 For trampolines not requiring frame padding, the instruction sign may omit the words "Keep frame padding in place" from 8.3.3.5.

9. Packaging and Package Marking

9.1 Packaging on principal display panels, point-of-purchase displays, and promotional literature shall be clearly marked with the following information:

9.1.1 Trampolines over 20 in. (51 cm) tall are not recommended for children under 6 years of age.

9.1.2 It is strongly recommended that the customer purchase, install and maintain an enclosure that complies with Safety Specification F2225.

10. Access Devices

10.1 *Trampoline Ladders:*

10.1.1 Ladders shall be designed such that they can be easily removed or otherwise disabled.

10.1.2 A ladder shall not be included as a component part or included in the same packaging of a trampoline. When a ladder is offered for sale it shall be sold only as a separate accessory.

10.1.3 Ladders shall be clearly marked with a label which shall include the information in 10.2.1.

10.2 *Ladder Warning:*

10.2.1 The ladder warning shall include the following information:

⚠WARNING

10.2.1.1 Ladder lets young children climb onto trampoline.

10.2.1.2 Trampolines not for children under 6 years.

10.2.1.3 Do not use ladder if children under six might be nearby.

10.2.1.4 Remove when trampoline is not in use.

NOTE 5—This warning is intended only for ladders designed for trampolines which conform to this safety specification.

10.2.2 The ladder warning shall appear: (*1*) at a prominent location on the ladder which is viewable when installed, (*2*) at the beginning of the ladder installation instructions, (*3*) on the principal display panel(s) of the ladder packaging, and (*4*) within any promotional literature or advertisement promoting trampoline ladders.

10.2.3 The ladder warnings shall: (*1*) be placed such that they will be readily visible to the intended viewer, (*2*) alert the viewer to the potential hazard in time to take the appropriate action, (*3*) be reasonably durable and permanent with good color stability and word and message legibility, and (*4*) take into consideration the expected life of the components and the foreseeable environment of use (see Note 4).

11. Keywords

11.1 bed; consumer trampolines; frame padding; gymnastics; institutional trampolines; ladders; mat; roller stands; springs; trampoline; trampoline ladders; warning information