Designation: F2167 – 17

Standard Consumer Safety Specification for Infant Bouncer Seats[1]

This standard is issued under the fixed designation F2167; 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.

INTRODUCTION

This consumer safety specification is intended to minimize the risk of injury or death associated with a child's use of an infant bouncer seat. The specific hazards addressed by this specification are product disassembly/collapse, stability, and falls from elevated surfaces.

1. Scope

1.1 This consumer safety specification covers establishment of requirements, test methods, and marking requirements to promote safe use of an infant bouncer seat by an occupant and a caregiver.

1.2 For purposes of this consumer safety specification, an infant bouncer seat is a freestanding product intended to support an occupant in a reclined position to facilitate bouncing by the occupant, with the aid of a caregiver or by other means. Intended occupants are infants who have not developed the ability to sit up unassisted (approximately 0 to 6 months of age).

1.3 This consumer safety specification is intended to minimize the risk of injury to an occupant resulting from normal use and reasonably foreseeable misuse or abuse of an infant bouncer seat.

1.4 No infant bouncer seat produced after the approval date of this consumer safety specification shall, either by label or other means, indicate compliance with this specification unless it conforms to all requirements contained herein.

1.5 This consumer safety specification is not intended to address incidents and injuries resulting from the interaction of other persons with the occupant in an infant bouncer seat or the incidents resulting from abuse or misuse by other children.

1.6 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.

1.7 The following precautionary caveat pertains only to the test method portion, Section 7, of this consumer safety specification: *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 requirements prior to use.*

1.8 *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.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D3359 Test Methods for Rating Adhesion by Tape Test
F404 Consumer Safety Specification for High Chairs
F963 Consumer Safety Specification for Toy Safety
F2050 Consumer Safety Specification for Hand-Held Infant Carriers

2.2 *Federal Regulations:*[3]

16 CFR 1303 Ban of Lead-Containing Paint and Certain Consumer Products Bearing Lead-Containing Paint
16 CFR 1500.48 Technical Requirements for Determining a Sharp Point in Toys or Other Articles Intended for Use by Children Under Eight Years of Age
16 CFR 1500.49 Technical Requirements for Determining a Sharp Metal or Glass Edge in Toys or Other Articles Intended for Use by Children Under Eight Years of Age
16 CFR 1500.50-.51 Test Methods for Simulating Use and Abuse of Toys and Other Articles Intended for Use by Children

[1] This specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.21 on Infant Carriers, Bouncers and Baby Swings.

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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] Code of Federal Regulations, available from U.S. Government Printing Office, 732 North Capitol St., NW, Mail Stop: SDE, Washington DC 20401.

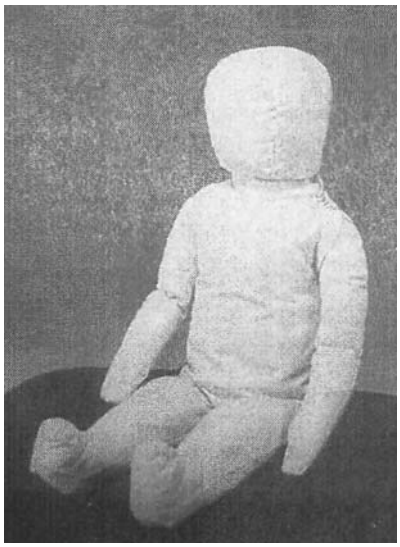


FIG. 1 CAMI Infant Dummy, Mark II (17.5 lb, 8.0 kg)

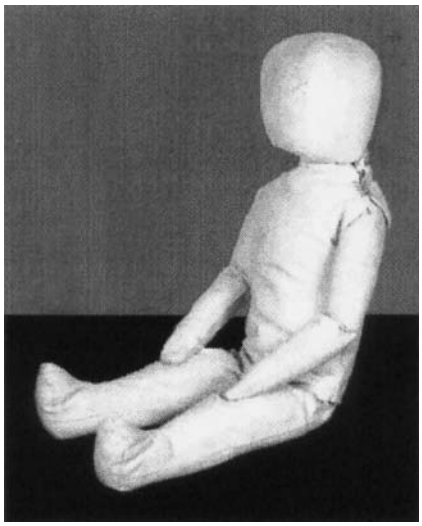


FIG. 2 CAMI Newborn Dummy (7.5 lb, 3.4 kg)

16 CFR 1501 Method for Identifying Toys and Other Articles Intended for Use by Children Under Three Years of Age Which Present Choking, Aspiration or Ingestion Hazards Because of Small Parts

2.3 *Other References:*

CAMI Infant Dummy, Mark II (see Fig. 1)[4]

CAMI Newborn Dummy (see Fig. 2)[4]

2.4 *ANSI Standards:*[5]

ANSI Z535.4 American National Standard for Product Safety Signs and Labels

ANSI Z535.6 Product Safety Information in Product Manuals, Instructions, and Other Collateral Materials

[4] Department of Transportation, Federal Aviation Administration, Drawing No. SA-1001.

[5] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

3. Terminology

3.1 *Definitions:*

3.1.1 *conspicuous, adj*—label that is visible, when the infant bouncer seat is in a manufacturer's recommended use position, to a person sitting near the infant bouncer seat at any one position around the infant bouncer seat but is not necessarily visible from all positions.

3.1.2 *cord, n*—length of slender, flexible material including monofilaments, rope, woven and twisted cord, plastic and textile tapes, ribbon, and those fibrous materials commonly called string.

3.1.3 *dynamic load, n*—application of an impulsive force through free fall of a weight.

3.1.4 *fabric, n*—any woven, knit, coated, laminated, extruded, or calendered flexible material that is intended to be sewn, welded, heat sealed, or glued together as an assembly.

3.1.5 *grasping point on toy bar, n*—five-inch wide section of the toy bar centered at the mid-point of the toy bar if the toy bar is attached at two points on the bouncer frame.

3.1.5.1 *Discussion*—If the toy bar has a single attachment point, the 5-in. dimension is either centered at the mid-point of the product or as close to the mid-point as possible, should the toy bar not extend far enough beyond the mid-point to achieve this. The load should be evenly distributed over this 5-in. dimension.

3.1.6 *manufacturer's recommended use position(s), n*—any position that is presented as a normal, allowable, or acceptable configuration for the use of the product by the manufacturer in any descriptive or instructional literature.

3.1.6.1 *Discussion*—This specifically excludes positions that the manufacturer shows in a like manner in its literature to be unacceptable, unsafe, or not recommended.

3.1.7 *non-paper label, n*—any label material (such as plastic or metal) that either will not tear without the aid of tools or tears leaving a sharply defined edge.

3.1.8 *occupant, n*—that individual who is in a product that is set up in one of the manufacturer's recommended use positions.

3.1.9 *paper label, n*—any label material that tears without the aid of tools and leaves a fibrous edge.

3.1.10 *seam, n*—means of joining fabric components, such as sewing, welding, heat sealing, or gluing.

3.1.11 *static load, n*—vertically downward force applied by a calibrated force gauge or by dead weights.

3.1.12 *toy bars, n*—any bar or mobile connected to the frame of the bouncer in any location with one or more attachment points typically used to suspend toys over the occupant.

3.1.12.1 *Discussion*—Canopies, fixed and rotating, are not considered a toy bar regardless of whether they allow for the attachment of toys.

4. Calibration and Standardization

4.1 All testing shall be conducted on a concrete floor, which may be covered with ⅛-in. (3-mm) thick vinyl flooring cover, unless the test instructs differently.

4.2 The product shall be completely assembled, unless otherwise noted, in accordance with the manufacturer's instructions.

4.3 No testing shall be conducted within 48 h of manufacturing.

4.4 The product to be tested shall be in a room with an ambient temperature of 73° ± 9°F (23° ± 5°C) for at least one hour prior to testing. Testing shall then be conducted within this temperature range.

4.5 All testing required by this specification shall be conducted on the same infant bouncer seat.

5. General Requirements

5.1 *Hazardous Sharp Points and Edges*—There shall be no hazardous points or edges as defined by 16 CFR 1500.48 and 16 CFR 1500.49 before and after testing to this consumer safety specification.

5.2 *Small Parts*—There shall be no small parts as defined by 16 CFR 1501 before testing or liberated as a result of testing to this specification.

5.3 *Lead*—There shall be no lead-containing paint as defined by 16 CFR 1303.

5.4 *Wood Parts*—Prior to testing, any exposed wood parts shall be smooth and free from splinters.

5.5 *Latching or Locking Mechanisms*—If the infant bouncer seat is designed with a latching or locking device that prevents unintentional folding, the infant bouncer seat shall remain in its manufacturer's recommended use position during and upon completion of the test, in accordance with 7.10. The latching or locking device shall remain engaged and operative after testing.

5.6 *Scissoring, Shearing, and Pinching*—A product, when in any manufacturer's recommended use position(s), shall be designed and constructed so as to prevent injury to the occupant from any scissoring, shearing, or pinching when members or components rotate about a common axis or fastening point, slide, pivot, fold, or otherwise move relative to one another. Scissoring, shearing, or pinching that may cause injury shall not be permissible when the edges of any rigid parts admit a probe greater than 0.210 in. (5.33 mm) and less than 0.375 in. (9.52 mm) in diameter at any accessible point throughout the range of motion of such parts.

5.7 *Openings*—Holes or slots that extend entirely through a wall section of any rigid material less than 0.375-in. (9.53-mm) thick and admit a 0.210-in. (5.33-mm) diameter rod shall also admit a 0.375-in. (9.53-mm) diameter rod. Holes or slots that are between 0.210-in. (5.33-mm) and 0.375-in. (9.53-mm) and have a wall thickness less than 0.375-in. (9.53-mm), but are limited in depth to 0.375-in. (9.53-mm) maximum by another rigid surface shall be permissible (see Fig. 3). The product shall be evaluated in all manufacturer's recommended use positions.

5.8 *Exposed Coil Springs*—Any exposed coil spring that is accessible to the occupant, having or capable of generating a space between coils of 0.210 in. (5.33 mm) or greater during static load testing in accordance with 7.5.2 shall be covered or otherwise designed to prevent injury from entrapment.

5.9 *Protective Components*—If a child can grasp components between the thumb and forefinger or between teeth, (such as caps, sleeves, or plugs used for protection from sharp edges, points, or entrapment of fingers or toes), or if there is at least a 0.040-in. (1.00-mm) gap between the component and its adjacent parent component, such component shall not be removed when tested in accordance with 7.9.

5.10 *Permanency of Labels and Warnings:*

5.10.1 Warning labels (whether paper or non-paper) shall be permanent when tested in accordance with 7.8.1 – 7.8.3.

5.10.2 Warning statements applied directly onto the surface of the product by hot stamping, heat transfer, printing, wood burning, etc. shall be permanent when tested in accordance with 7.8.4.

5.10.3 Non-paper labels shall not liberate small parts when tested in accordance with 7.8.5.

5.11 *Toys*—Toy accessories attached to, removable from, or sold with an infant bouncer seat, as well as their means of attachment, must meet applicable requirements of Specification F963.

6. Performance Requirements

6.1 *Restraint System:*

6.1.1 A restraint system shall be provided to secure a child in any of the manufacturer's recommended use positions.

6.1.2 The restraint system shall include both a waist and crotch restraint, where the crotch restraint's use is mandatory when the waist restraint is in use.

6.1.3 The anchorages for the restraint system shall not separate from their attachment points when tested in accordance with 7.2.

6.2 *Stability:*

6.2.1 *Forward Stability*—The infant bouncer seat shall not tip over when tested in accordance with 7.3.2. If the stability test fixture touches the test surface and prevents the product from tipping over, retest the product near the edge of an elevated test surface to allow the product to tip.

6.2.2 *Sideward and Rearward Stability*—The infant bouncer seat shall not tip over when tested in accordance with 7.3.3 – 7.3.6.

6.3 *Slip Resistance:*

6.3.1 *Dynamic Slip Resistance*—The infant bouncer seat shall not slip more than ½ in. (13 mm) when tested in accordance with 7.4.4.

NOTE 1—As this is a dynamic impact test, the ½ in. allows for a small amount of settling prior to the feet gripping.

6.3.2 *Static Slip Resistance*—The infant bouncer seat shall not slip more than ⅛ in. (3 mm) when tested in accordance with 7.4.5 – 7.4.9.

6.4 *Structural Integrity*—At test conclusion, there shall be no failure of seams, breakage of materials, or changes of adjustments that could cause the product not to fully support the child or create a hazardous condition as defined in Section 5.

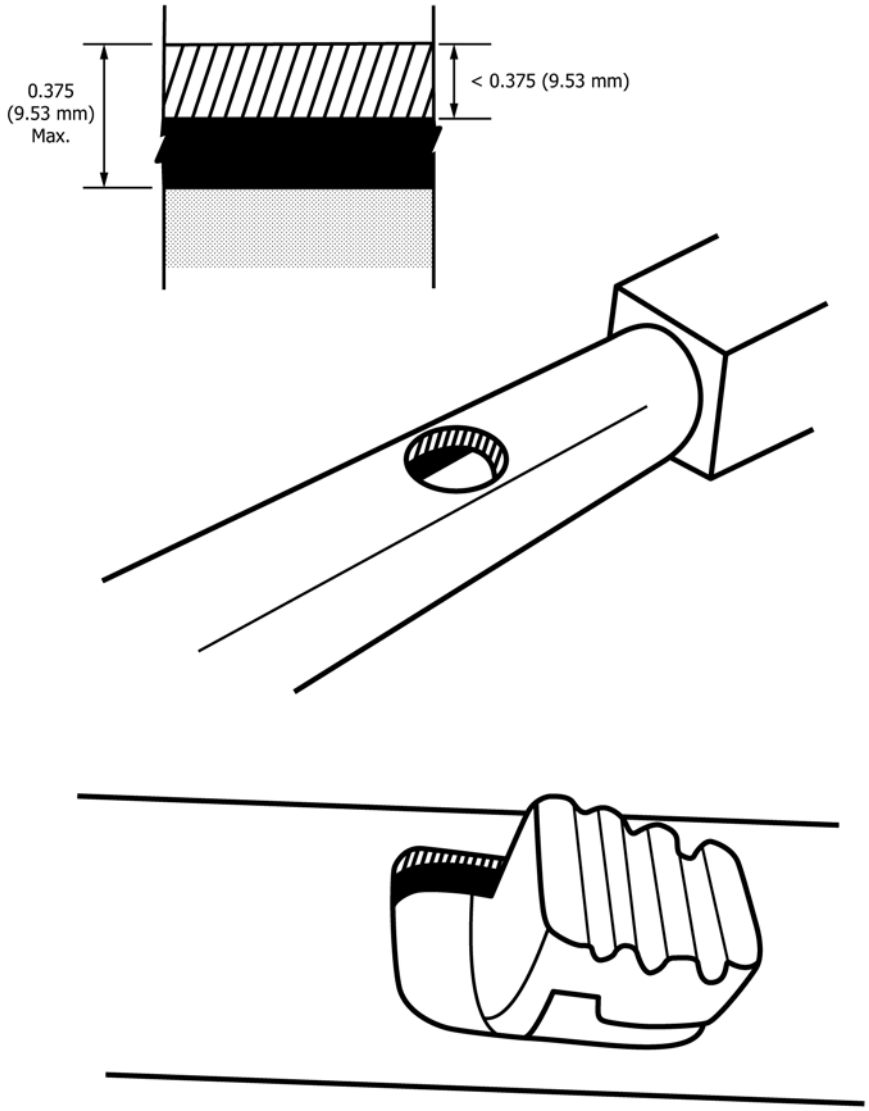


FIG. 3 Opening Example

6.4.1 *Dynamic Load*—The infant bouncer seat shall not create a hazardous condition as defined in Section 5 when tested in accordance with 7.5.1.

6.4.2 *Static Load*—The infant bouncer seat shall not create a hazardous condition as defined in Section 5 when tested in accordance with 7.5.2.

6.5 *Disassembly/Collapse*—The infant bouncer seat shall not disassemble or collapse when tested in accordance with 7.6.

6.6 *Drop Test*—The infant bouncer seat shall not create a hazardous condition as defined in Section 5 when tested in accordance with 7.7.

6.7 *Toy Bar Attachment Integrity:*

6.7.1 *Toy Bar Attachment Release*—Toy bars must meet the requirements in 6.7.1.1 or 6.7.1.2 or 6.7.1.3:

6.7.1.1 The toy bar must not completely release from the bouncer seat when tested to 7.12.1.1 and 7.12.2.

6.7.1.2 The toy bar must completely release before the entire bouncer lifts off the test surface when tested to 7.12.1.2.

6.7.1.3 For toy bars that contain a single attachment point, the toy bar must move more than 2 in. (5.1 cm) from its original resting position when measured at the furthermost point at the free end of the toy bar while attempting to lift the bouncer off the test surface when tested to 7.12.1.2.

6.8 *Battery Compartments (remote control devices are exempt from these requirements):*

6.8.1 Each battery compartment or area immediately adjacent to the battery compartment shall be marked permanently and legibly to show the correct battery polarity, size, and voltage.

6.8.2 Each battery compartment shall provide a means to contain the electrolytic material in the event of a battery leakage. This containment means shall not be accessible to the occupant.

6.8.3 Positive protection from the possibility of charging any primary (non-rechargeable) battery shall be achieved either through physical design of the battery compartment or through the use of appropriate electrical circuit design. This applies to

situations in which a battery may be installed incorrectly (reversed), and in which a battery charger may be applied to a product containing primary batteries. This section does not apply to a circuit having one or two batteries as the only source of power.

6.8.4 The surfaces of any accessible electrical component, including batteries, shall not achieve temperatures exceeding 160°F (71°C) when tested in accordance with 7.1. At the conclusion of the test, there shall be no battery leakage or, explosion or a fire to any electrical component. This test shall be performed prior to conducting any other testing within the performance requirements section.

7. Test Methods

7.1 The battery compartment shall be tested using fresh alkaline batteries or an a/c power source. If the function powered by the compartment can be operated using both, then both batteries and a/c power must be tested separately. If another battery chemistry is specifically recommended for use in the bouncer by the manufacturer, repeat the test using the batteries specified by the manufacturer. If the bouncer will not operate using alkaline batteries, then test with the type of battery recommended by the manufacturer at the specified voltage. The test is to be carried out in a draft-free location, at an ambient temperature of 68 ± 9°F (20 ± 5°C).

7.1.1 Operate the function powered by the battery compartment at the maximum speed or highest intensity. Do not disable any mechanical or electrical protective device, such as clutches or fuses. Operate the function powered by the battery compartment continuously, and record peak temperature. The test shall be discontinued 60 min after the peak temperature is recorded. If the function shuts off automatically or must be kept "on" by hand or foot, monitor temperatures for 30 s, resetting the function as many times as necessary to complete the 30 s of operation. If the function shuts off automatically after an operating time of greater than 30 s, continue the test until the function shuts off.

NOTE 2—The tests described in 7.2 through 7.7 are to be performed in the order specified without refurbishing or repositioning of adjustments, if any.

7.2 *Restraint System:*

7.2.1 Secure the infant bouncer seat so that it can not move vertically or horizontally.

7.2.2 Apply a force of 45 lbf (200 N) to a single attachment point of the restraint system in the normal use direction(s) that stress would be applied to the attachment. Gradually apply the force within a period of 5 s and maintain for an additional 10 s.

NOTE 3—This is in accordance with Specification F404.

7.2.3 Repeat 7.2.2 for each attachment point of the restraint system and fastening device.

7.3 *Stability Test:*

Forward Stability

7.3.1 *Stability Test Fixture:*

7.3.1.1 The stability test fixture is to be constructed of ¾-in. (19-mm) plywood or the equivalent of such product.

7.3.1.2 The fixture should be constructed according to Fig. 4.

7.3.2 *Test Procedure:*

7.3.2.1 Establish the restraint system adjustment by placing the CAMI Infant Dummy, Mark II (see Fig. 1) in the infant bouncer seat, fastening the restraint system in accordance with the manufacturer's instructions, and removing the dummy.

7.3.2.2 Insert the stability test fixture into the bouncer and pull forward to remove any slack in the crotch restraint.

7.3.2.3 Use a force gauge to apply a static load of 21 lbf (93 N) or the maximum manufacturer's recommended weight, whichever is greater, vertically downward on the stability test fixture in the location designated on the drawing (6 in. (152.4 mm) in front of the crotch post; see Fig. 4) within a period of 5 s and maintain for an additional 60 s (see Fig. 5).

7.3.2.4 The test surface shall be an impregnated high-pressure laminate of unspecified color with a smooth matte finish.

Sideward and Rearward Stability

7.3.3 Place a CAMI Infant Dummy, Mark II (see Fig. 1) in the infant bouncer seat with the restraint system fastened in accordance with the manufacturer's instructions.

7.3.4 Position the infant bouncer seat in the most unfavorable sideward or rearward position on a test surface inclined at 20°. The most unfavorable position could be a position in between the true sideward and rearward positions. If necessary, prevent the product from sliding but do not prevent it from tipping.

7.3.5 The test surface shall be an impregnated high-pressure laminate of unspecified color with a smooth matte finish.

7.3.6 Maintain for 1 min.

7.4 *Slip Resistance:*

Test Preparation

7.4.1 *Test Surface:*

7.4.1.1 The test surface shall be an impregnated high-pressure laminate of unspecified color with a smooth matte finish.

7.4.1.2 The laminate should be mounted on a flat surface, with a thickness no less than ¾ in. (19 mm), in accordance with the laminate manufacturer's instructions.

7.4.1.3 Clean the test surface with a damp cloth. Any products that will interfere with the performance of the laminate are unacceptable, for example, solvents or cleaners that leave residue or alter the surface finish.

7.4.1.4 Precautions should be taken to prevent the contamination of the testing surface. Graduation or pencil marks are unacceptable unless located in a position that never interferes with the performance of the test product (that is, along the edge of the surface).

7.4.2 *Test Procedure:*

7.4.2.1 Incline the prepared laminate surface to 10°.

NOTE 4—The 10° incline is in accordance with Specification F2050.

7.4.2.2 Clean slip-resistant pads, feet, or any other objects on the infant bouncer seat that come in contact with the inclined surface with a damp cloth.

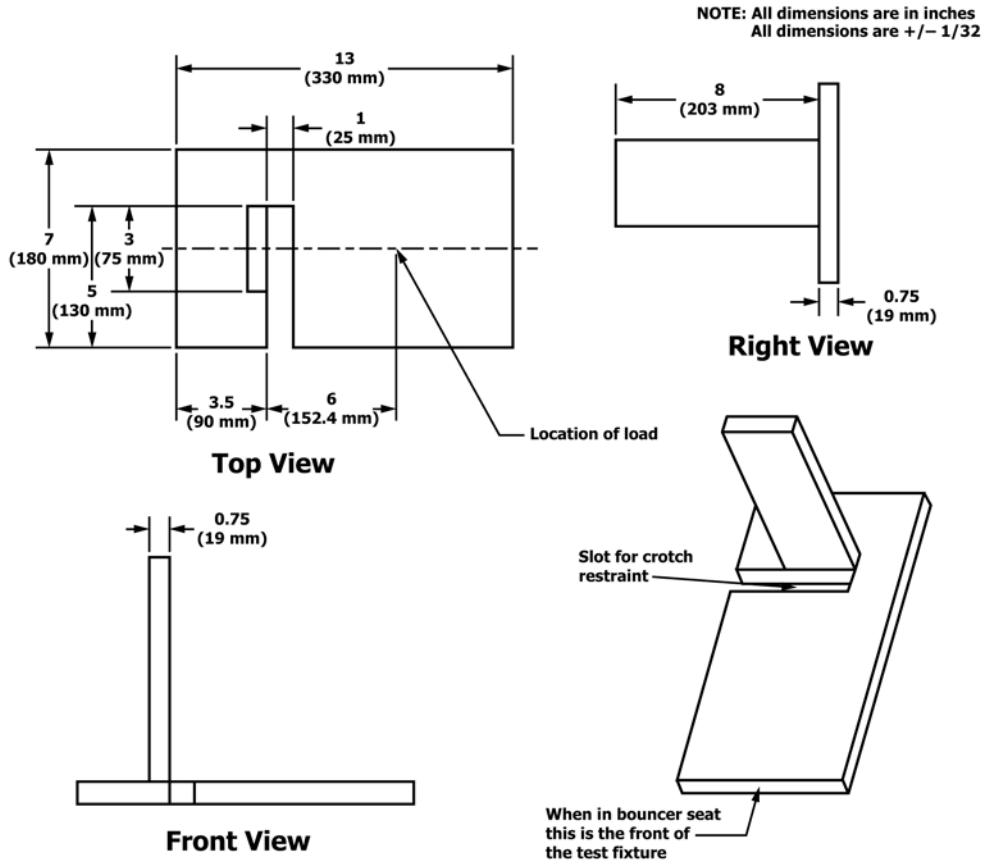


FIG. 4 Forward Stability Test Fixture

FIG. 5 Forward Stability Test

Dynamic Slip Resistance

7.4.3 *Dynamic Slip Resistance Test Fixture:*

7.4.3.1 The dynamic slip resistance test fixture is to be constructed of ¾-in. (19-mm) plywood or the equivalent of such product.

7.4.3.2 The fixture should be constructed in accordance with Fig. 6.

7.4.4 *Test Procedure:*

7.4.4.1 Prepare the test surface, clean the slip resistant pads by wiping with a damp cloth, and incline the test surface in accordance with 7.4.1 and 7.4.2.

7.4.4.2 Center and affix a static load of 7.5 lb (3.40 kg) to the slip resistance test fixture in the location designated on the drawing (6 in. (150 mm) from the front edge of the test fixture). The 7.5-lb (3.40-kg) static load is to be constructed of a 5-by-10–in. (125-by-250–mm) bag filled with sand.

7.4.4.3 Establish the restraint system adjustment by placing the CAMI Infant Dummy, Mark II (see Fig. 1) in the infant bouncer seat, fastening the restraint system in accordance with the manufacturer's instructions, and removing the dummy. Insert the slip resistance test fixture into the bouncer and pull forward to remove any slack in the crotch restraint.

7.4.4.4 Place weighted infant bouncer seat onto inclined surface with the front of the infant bouncer seat facing directly down the incline. If the bouncer has a vibration unit, turn the unit to the speed setting most likely to cause the infant bouncer seat to slide.

7.4.4.5 Drop a test weight of 2.5 lb (1.13 kg) onto the designated drop area from a distance of 6 in. (150 mm) ten times. The cycle time is to be 5 s/cycle, ±1 s. The 2.5-lb (1.13-kg) test weight shall be constructed of 3-in. (75-mm) diameter steel and be approximately 1.25 in. (31.8 mm) thick (see Fig. 7).

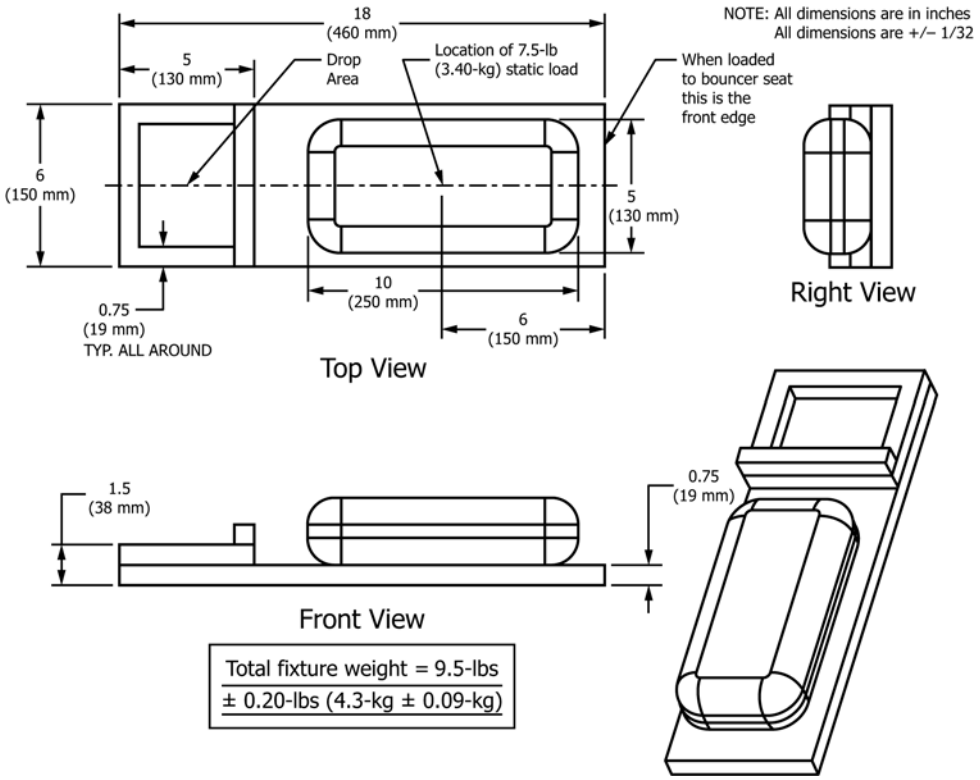


FIG. 6 Dynamic Slip Resistance Test Fixture

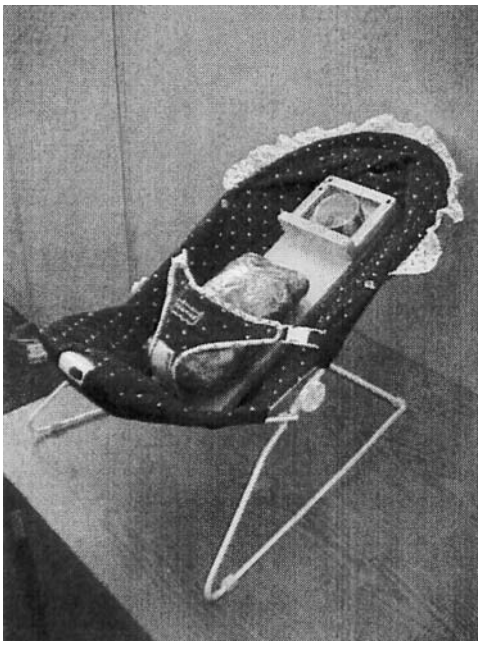


FIG. 7 Dynamic Slip Resistance Test

7.4.4.6 The infant bouncer seat should not move more than ½ in. (13 mm).

7.4.4.7 Repeat 7.4.4.4 – 7.4.4.6 for the left side, right side, and rearward directions.

NOTE 5—The 10-lb (7.5 lb + 2.5 lb) load represents a 5th percentile 3 to 5-month-old. The 7.5 lb load is intended to simulate the torso. The 2.5 lb load is intended to simulate upper body bouncing in the infant bouncer seat. It is believed that the 5th percentile weight is a worst case scenario for this dynamic slip test.

Static Slip Resistance

7.4.5 Prepare the test surface, clean the slip resistant pads, and incline the test surface in accordance with 7.4.1.

7.4.6 Place a 7.5-lb (3.40-kg) newborn dummy in the seat.

7.4.7 Place weighted infant bouncer seat onto an inclined surface with the front of the infant bouncer seat facing directly down the incline.

7.4.8 The infant bouncer seat should not move more than ⅛ in. (3 mm) in 1 min.

7.4.9 Repeat 7.4.7 and 7.4.8 for the left side, right side, and rearward directions.

7.5 *Structural Integrity:*

7.5.1 *Dynamic Load:*

7.5.1.1 Position the infant bouncer seat in the manufacturer's recommended use position(s).

7.5.1.2 Position a standard 6-in. (150-mm) weld cap (see Fig. 8) with the convex surface down. Affix a weight to the top of the weld cap to achieve a total weight of 33 lb (15.0 kg).

7.5.1.3 Drop the 33-lb (15.0-kg) test weight onto the seat from a distance of 1 in. (25 mm) one hundred times.

NOTE 6—This test is in accordance with the walker standard. The weight is higher than that of a 6-month-old in the 95th percentile to justify limiting the test to only 100 cycles, as well as eliminating the need for an additional seam strength test.

7.5.2 *Static Load:*

7.5.2.1 Position the infant bouncer seat in the manufacturer's recommended use position(s).

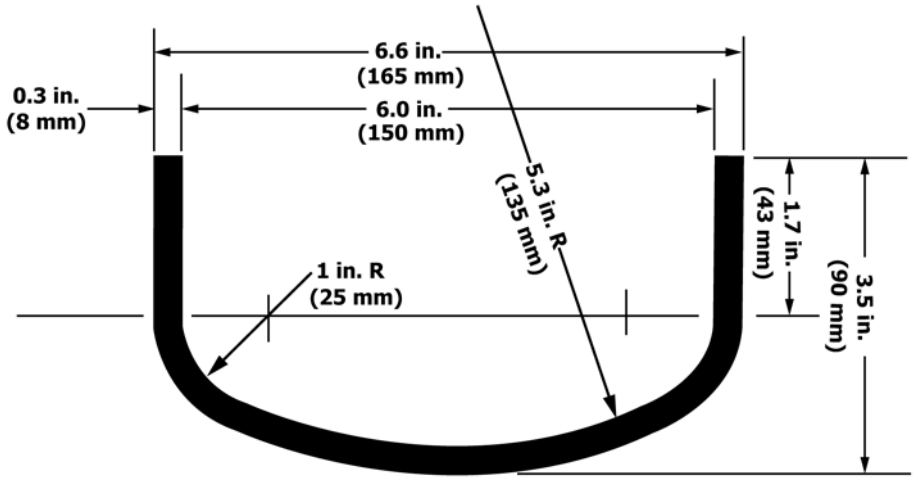


FIG. 8 Weld Cap

7.5.2.2 Place a 6-by-6–in. (150-by-150–mm) wood block that is ¾ in. (19 mm) thick on the center of the seat.

7.5.2.3 Gradually apply a static load of 60 lb (27.3 kg) or three times the maximum manufacturer's recommended weight, whichever is greater, on the wood block within a period of 5 s and maintain for an additional 60 s.

NOTE 7—The 60-lb static load is approximately three times the weight of a 95th percentile 6-month-old.

7.6 *Disassembly/Collapse:*

7.6.1 Position the infant bouncer seat in the manufacturer's recommended use position(s).

7.6.2 Place a 7.5-lb (3.40-kg) newborn dummy in the seat.

7.6.3 Apply a force of 15 lbf (67 N) to a single frame attachment point in the direction(s) associated with disassembly. Gradually apply the force within a period of 5 s and maintain for an additional 10 s. If necessary, secure a portion of the product to prevent it from moving. The means of securing the product shall not prevent disassembly.

NOTE 8—The 15-lbf force is intended to exceed the forces the attachment points would see while the product is slid across a surface or while the product is carried.

7.6.4 Repeat 7.6.3 for all other frame attachment points.

7.7 *Drop Test:*

7.7.1 The infant bouncer seat shall be dropped from a height of 36 in. (910 mm).

7.7.1.1 If the infant bouncer seat does not fold, drop the infant bouncer seat once on each of six different planes (top, bottom, front, rear, left side, and right side).

7.7.1.2 If the infant bouncer seat does fold, drop the infant bouncer seat once on each of six different planes, both in the folded and erect configurations.

7.8 *Permanency of Labels and Warnings:*

7.8.1 A paper label (excluding labels attached by a seam) shall be considered permanent if, during an attempt to remove it without the aid of tools or solvents, it cannot be removed, it tears into pieces upon removal, or such action damages the surface to which it is attached.

7.8.2 A non-paper label (excluding labels attached by a seam) shall be considered permanent if, during an attempt to remove it without the aid of tools or solvents, it cannot be removed or such action damages the surface to which it is attached.

7.8.3 A warning label attached by a seam shall be considered permanent if it does not detach when subjected to a 15-lbf (67-N) pull force applied in the direction most likely to cause failure using a ¾-in. (19-mm) diameter clamp surface. Gradually apply the force within a period of 5 s and maintain for an additional 10 s.

7.8.4 *Adhesion Test for Warnings Applied Directly onto the Surface of the Product:*

7.8.4.1 Apply the tape test defined in Test Method B of Test Method D3359, eliminating parallel cuts.

7.8.4.2 Perform this test once in each different location where warnings are applied.

7.8.4.3 The warning statements will be considered permanent if the printing in the area tested is still legible and attached after being subjected to this test.

7.8.5 A non-paper label, during an attempt to remove it without the aid of tools or solvents, shall not fit entirely within the small parts cylinder defined in 16 CFR 1501 if it can be removed.

7.9 *Protective Components:*

NOTE 9—Protective components shall be tested in accordance with each of the following methods in the sequence listed.

7.9.1 Secure the infant bouncer seat so that it cannot move during the performance of the following tests.

7.9.2 *Torque Test:*

7.9.2.1 A torque shall be gradually applied to any graspable component within a period of 5 s in a clockwise direction until either the component rotates 180° from the original position or the torque attains 2 lbf-in. (0.2 N-m). The torque or maximum rotation shall be maintained for an additional 10 s. The torque shall then be removed and the protective components permitted to return to a relaxed condition. This procedure shall then be repeated in a counterclockwise direction.

7.9.3 *Tension Test:*

7.9.3.1 Attach a force gauge to the protective component by means of any suitable device. For protective components that

cannot reasonably be expected to be grasped between thumb and forefinger or teeth on their outer diameter but have a gap of at least 0.040 in. (1.00 mm) between the rear of the surface of the protective component and the structural member of the infant bouncer seat to which they are attached, a clamp such as the one shown in Fig. 9 may be a suitable device.

7.9.3.2 Assure that the attachment device does not compress or expand the protective component so that it hinders any possible removal.

7.9.3.3 Gradually apply a 10-lbf (45-N) force in the direction that would normally be associated with the removal of the protective component over a 5-s period and maintain for an additional 10 s.

7.10 *Latching or Locking Mechanisms:*

7.10.1 *Products with a Single Action Release Mechanism*—With the product in the manufacturer's recommended use position, gradually apply a force of 10 lbf (45 N) to the latching or locking mechanism in the direction tending to release it.

7.10.2 *Products with a Double Action Release Mechanism*—The double-action latching or locking mechanism shall require two distinct and separate actions for release of the mechanism.

7.11 *Fall Hazard Label Visibility Test:*

7.11.1 Place infant bouncer seat on the floor.

7.11.2 Place and secure the Newborn CAMI dummy (Fig. 2) in the infant bouncer seat.

7.11.3 *Visibility Tests With and Without Accessories and Toy Bars:*

7.11.3.1 *Visibility With CAMI Dummy Restrained in Seat*—While standing in front of the product with the Newborn CAMI dummy installed, verify that the required warnings are visible and not obscured by any part of the dummy.

7.11.3.2 *Visibility with Accessories (Excluding Toy Bars)*—Infant bouncer seats that include any accessory(ies) that could potentially obscure the fall hazard warning shall comply with visibility requirements of 7.11 both with such accessory(ies) in place (in all configurations and combinations) and with the accessory(ies) removed.

FIG. 9 Tension Test Adapter/Clamp

7.11.3.3 *Visibility With Toy Bar*—If any part of the required warnings is obscured by a toy bar or its attached toys, but is visible with a shift of the observer's head position, then this is considered acceptable.

7.12 *Toy Bar Attachment Integrity:*

7.12.1 *Toy Bar Static Test:*

7.12.1.1 Place a 6 by 6-in. (150 by 150-mm) wood block that is ¾ in. (19 mm) thick on the center of the seating surface with one edge contacting the seat bight. Load the bouncer with 40 lb (18.2 kg) or two times the manufacturer's maximum recommended weight, whichever is greater, in the center of the block. Gradually lift the bouncer, at the grasping point upward, in a direction perpendicular to the test surface, within a period of 5 s and maintain for 1 min. Do not restrict movement of the product once lifted.

7.12.1.2 Place a 6 by 6-in. (150 by 150-mm) wood block that is ¾ in. (19 mm) thick on the center of the seating surface with one edge contacting the seat bight. Load the bouncer with a 5 lb (2.3 kg) weight in the center of wood block. Gradually lift the bouncer, at the grasping point upward, in a direction perpendicular to the test surface, within a period of 5 s. Do not restrict movement of the product during the test.

7.12.2 *Toy Bar Dynamic Test:*

7.12.2.1 Place and secure the infant CAMI dummy, Mark II (Fig. 1) in the bouncer using the restraint system. Attach a cable to the toy bar at the center of the grasping point. Lift the bouncer off the test surface and allow the bouncer to drop 2 in. (5.1 cm). Assure that the cable goes taut and that the bouncer does not contact the test surface.

7.12.2.2 Repeat 7.12.2.1 four additional times for a total of five times.

8. Marking and Labeling

8.1 Each product and its retail package shall be marked or labeled clearly and legibly to indicate the following:

8.1.1 The name, place of business (city, state, and mailing address, including zip code), and telephone number of the manufacturer, distributor, or seller.

8.1.2 A code mark or other means that identifies the date (month and year as a minimum) of manufacture.

8.2 The marking and labeling on the product shall be permanent.

8.3 Any upholstery labeling required by law shall not be used to meet the requirements of this section.

8.4 *Warning Design for Product:*

8.4.1 The warnings shall be easy to read and understand and be in English language at a minimum.

8.4.2 Any marking or labeling provided in addition to those required by this section shall not contradict or confuse the meaning of the required information, or be otherwise misleading to the consumer.

8.4.3 The warnings shall be conspicuous and permanent.

8.4.4 The warnings shall conform to ANSI Z535.4 – 2011, American National Standard for Product Safety Signs and Labels, sections 6.1 – 6.4, 7.2 – 7.6.3, and 8.1, with the following changes.

8.4.4.1 In sections 6.2.2, 7.3, 7.5, and 8.1.2, replace "should" with "shall."

8.4.4.2 In section 7.6.3, replace "should (when feasible)" with "shall."

8.4.4.3 Strike the word "safety" when used immediately before a color (for example, replace "safety white" with "white").

8.4.5 *Warning Groups*—Each infant bouncer shall include two separate groups of warning statements: A fall hazard warning and a suffocation warning. The safety alert symbol "⚠" and the signal word "WARNING" shall be at least 0.2 in. (5 mm) high and in bold capital letters. The remainder of the text shall be in characters whose upper case shall be at least 0.1 in. (2.5 mm) except where otherwise specified.

NOTE 10—For improved warning readability, typefaces with large height-to-width ratios, which are commonly identified as "condensed," "compressed," "narrow," or similar should be avoided.

8.4.6 *Message Panel Text Layout:*

8.4.6.1 The text shall be left aligned, ragged right for all but one-line text messages, which can be left aligned or centered.

NOTE 11—Left aligned means that the text is aligned along the left margin, and, in the case of multiple columns of text, along the left side of each individual column. Please see Fig. X1.1 in Appendix X1 for examples of left alignment text.

8.4.6.2 The text in each column should be arranged in list or outline format, with precautionary (hazard avoidance) statements by bullet points. Multiple precautionary statements shall be separated by bullet points if paragraph formatting is used.

8.4.7 *Fall Hazard Warning Location:*

8.4.7.1 The fall hazard warnings in 8.5.1.1 shall be on the front surface of the infant bouncer seat back so as to comply with the visibility requirements in 7.11.

8.5 Each product shall be marked or labeled with warnings as follows:

8.5.1 *Fall Hazard Warnings:*

8.5.1.1 The fall hazard warning statements shall address the following:

Fall hazard: Babies have suffered skull fractures falling while in and from bouncers.

- Use bouncer ONLY on floor.
- ALWAYS use restraints. Adjust to fit snugly.
- NEVER lift or carry baby in bouncer. [NOTE: Bouncer seats with a handle(s) intended for use to lift and carry a child are exempt from including this warning statement.]

NOTE 12—"Address" means that verbiage other than what is shown can be used as long as the meaning is the same or information that is product-specific is presented.

8.5.2 *Suffocation Hazard:*

8.5.2.1 The suffocation hazard warning statements shall address the following:

Suffocation hazard: Babies have suffocated when bouncers tipped over on soft surfaces.

- NEVER use on a bed, sofa, cushion, or other soft surface.
- NEVER leave baby unattended.

To prevent falls and suffocation:

- ALWAYS use restraints. Adjust to fit snugly.
- STOP using bouncer when baby starts trying to sit up or has reached [insert manufacturer's recommended maximum weight, not to exceed 20 lb], whichever comes first.

NOTE 13—"Address" means that verbiage other than what is shown can be used as long as the meaning is the same or information that is product-specific is presented.

8.5.3 Example warnings in the format described in this section are shown in Figs. 10 and 11 warning formats below are presented as EXAMPLES ONLY for the display of the required warnings. The safety alert symbol "⚠" and the signal word "**WARNING**" shall be as specified above. The warning statements' wording content, as well as the use of any underlining, capital lettering, or bold typeface, or a combination thereof, are at the discretion of the manufacturer.

9. Instructional Literature

9.1 Instructions must be provided with the infant bouncer seat and shall be easy to read and understand. Assembly, maintenance, cleaning, operating, and adjustment instructions and warnings, where applicable, must be included.

9.1.1 The instructions shall contain statements that address each of the following:

9.1.1.1 Read all instructions before use of the infant bouncer seat.

9.1.1.2 Keep instructions for future use.

9.1.1.3 Do not use this infant bouncer seat if it is damaged or broken.

9.1.1.4 Instructions on how to use the restraint system.

9.1.1.5 Instructions must indicate the manufacturer's recommended maximum weight, height, age, developmental level, or combination thereof of the occupant for which the infant bouncer seat is intended. If the infant bouncer seat is not intended for use by a child for a specific reason (insert reason), the instructions shall so state this limitation.

9.2 Warning statements with the instructional literature.

9.2.1 The instructions shall include all warnings specified in 8.4.5, 8.5.1, and 8.5.2, except warning statements may be in one group. An example warning that meets the requirements is shown in Fig. 12. The warning statements' wording content, as well as the use of any underlining, capital lettering, or bold typeface, or combination thereof, is at the discretion of the manufacturer.

FIG. 10 Fall Hazard Warnings

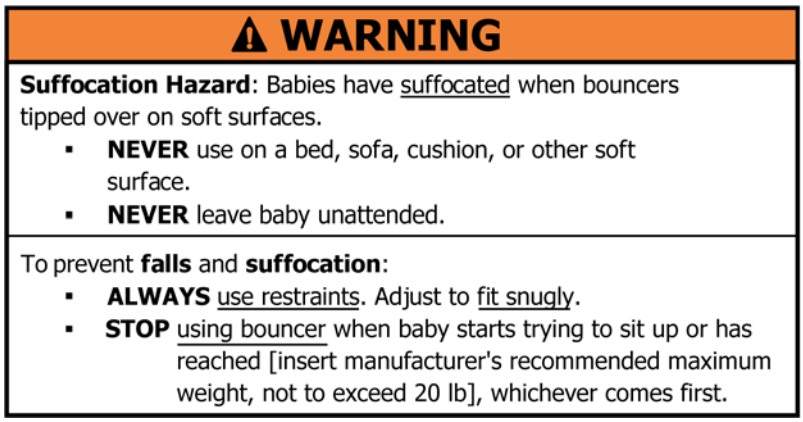


FIG. 11 Suffocation Hazard Warnings

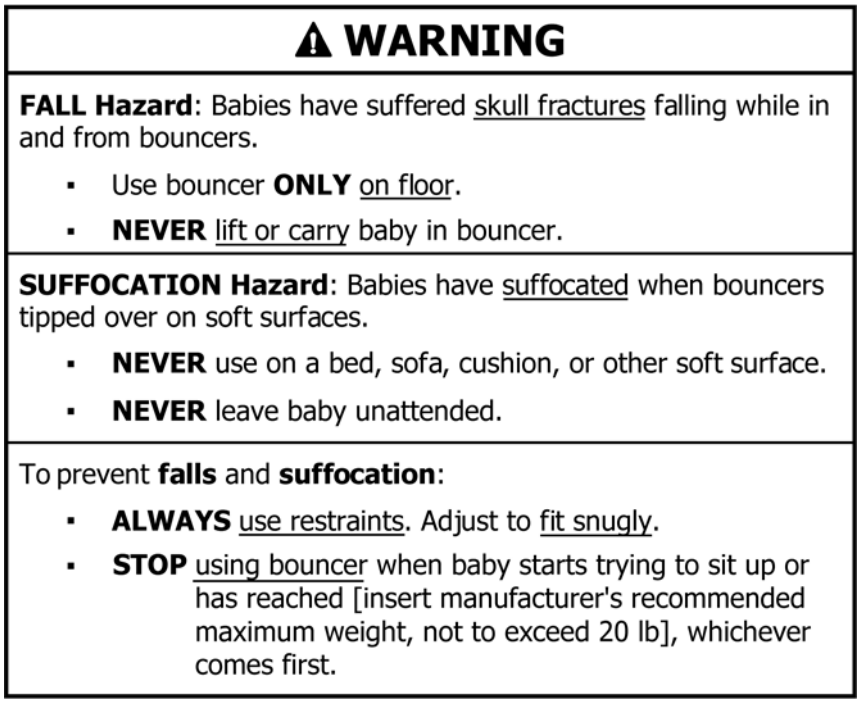


FIG. 12 Instruction Warning Statements

9.2.2 Warning statements in instructional literature shall meet the format requirements specified in 8.4.4, 8.4.5, and 8.4.6 with the following two exceptions: (*1*) the background of the Signal Word panel need not be in color, and (*2*) clause 6.4 of ANSI Z535.4 need not be applied. An example warning that meets the requirements is shown in Fig. 12. The warning statements' wording content, as well as the use of underlining, capital lettering, italics, or bold typeface, or combination thereof, are at the discretion of the manufacturer.

NOTE 14—For additional guidance on the design of warnings for instructional literature, please refer to ANSI Z535.6, American National Standard: Product Safety Information in Product Manuals, Instructions, and Other Collateral Materials.

9.3 Instructions for infant bouncer seats that use more than one battery in one circuit shall address the following:

9.3.1 Do not mix old and new batteries.

9.3.2 Do not mix alkaline, standard (carbon-zinc), or rechargeable (nickel-cadmium) batteries.

9.3.3 Remove batteries before putting infant bouncer seat into storage for a prolonged period of time.

10. Keywords

10.1 bouncing motion; caregiver facilitated action; infant seat

APPENDIX

(Nonmandatory Information)

X1. RATIONALE

X1.1 These requirements are intended to address the misuse of toy bars as handles. CPSC data from 1/1/00-12/7/05 reveals 12 such cases of misuses, 3 of which resulted in skull fractures when the occupant fell with/from the product. The toy bar should either be able to be used to lift the heaviest occupant, or should release when trying to lift the lightest occupant. The 5th percentile weight of a 0-2 month old is 7 lb (3.2 kg), so the 5 lb (2.3 kg) lower weight was chosen as a factor of safety. For the upper load limit we are specifying 40 lb (27.3 kg) or two times the maximum manufacturer's recommended weight, whichever is greater.

X1.2 Toy bars with a single attachment point may exhibit significant deflection by virtue of the fact they are a cantilever, unsupported, design. The toy bars will provide visual cues to the caregiver that they are not suitable handles and therefore are not likely to be carried. Therefore, the performance criteria have been defined to allow these types of toy bars.

X1.3 *Subsection 6.8*—This provision was included for electrically powered components of bouncers as a preventative measure to address the potential hazard resulting from consumers incorrectly orientating batteries within the battery compartment. Such a condition may result in battery swelling and eventual battery leakage and exposure to the occupant.

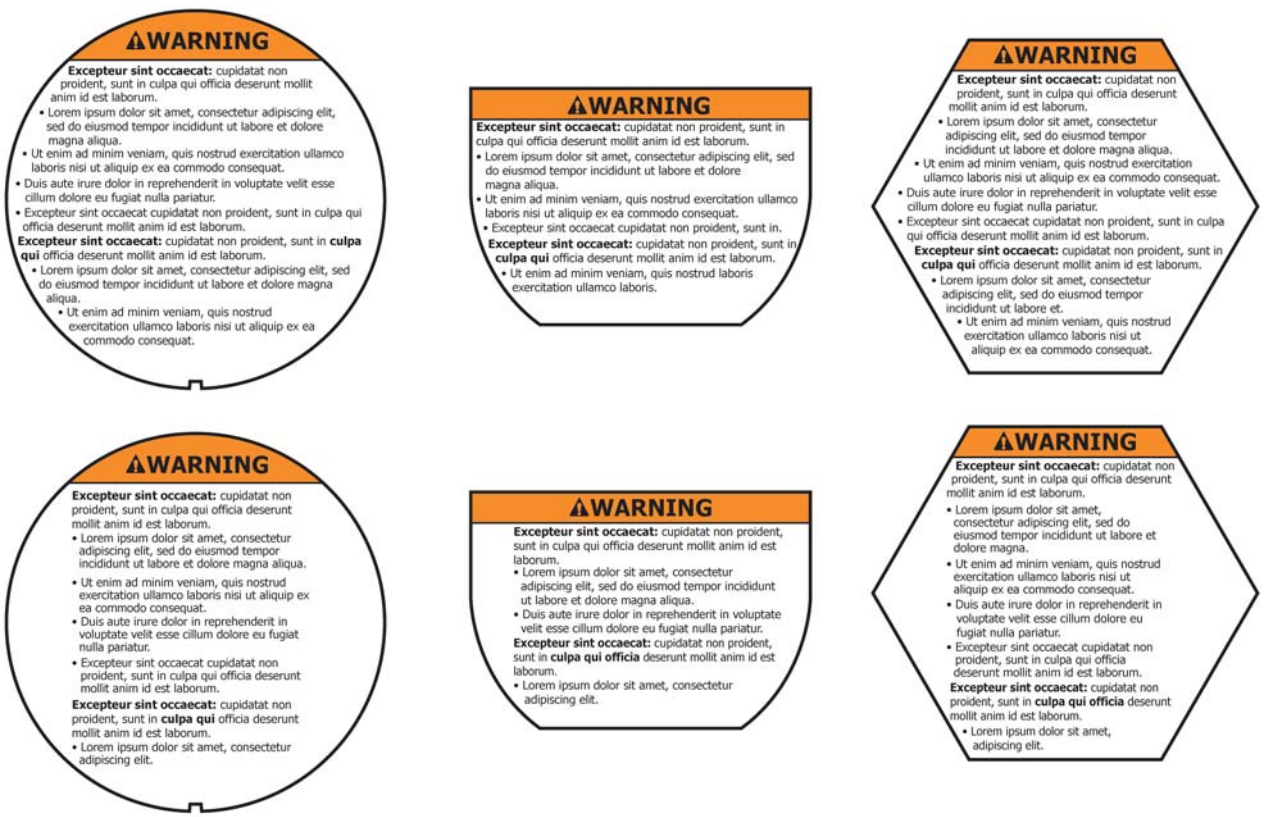
X1.4 *Subsection 7.3.2.3*:

X1.4.1 The 21-lb load is equivalent to the weight of a 95th percentile 6-month-old.

X1.4.2 It is believed that forward tip overs occur when the child is leaning forward. The test calls for the weight to be placed 6 in. (152.4 mm) in front of the crotch post. When the CAMI Infant Dummy, Mark II, is bent forward to where the head touches the toes, the center of mass is approximately 3 in. (76.2 mm) in front of the crotch. Three additional inches were added as a factor of safety.

X1.5 *Subsection 7.3.4*—CPSC incident data from 1/1/2006 to 12/31/2010 list falls from elevated surface as the #1 incident. Increasing the sideward and rearward inclined test surface from 12° to 20° will require infant seats to have more stable frames.

X1.6 *Subsection 8. Marking and Labeling*—This section was modified based on wording developed by the ASTM Ad Hoc Committee on Standardizing Wording for Juvenile Products Standards.



NOTE 1—The text shown for these warnings is filler text, known as lorem ipsum, commonly used to demonstrate graphic elements.

FIG. X1.1 Examples of Left Aligned Text

X1.7 *Subsection 8.3.4*—Falls pose a higher risk of severe injury, including skull fractures, when the child is on an elevated surface, is being carried in a bouncer, or is unrestrained, and the risk of a fall is increased if the restraints are not used. At present, improved warnings are the only option to address these hazards. It is essential to use the warning label to best advantage to increase the likelihood of effectiveness because warnings are known to have limited impact on consumer behavior.

X1.7.1 Prominent placement of the label is crucial so that the consumer can notice it when and where the hazard is likely to occur. The position adjacent to the child's head in the seat (as with strangulation warnings for handheld infant carriers that are also car seats, Specification F2050-13a) is the most conspicuous location for a warning label.

X1.7.1.1 The focus of a caregiver's visual attention while interacting with a child in the bouncer is likely to be on the child's face (Santrock, 2014 (**1**);[6] Cohn and Tronick, 1987 (**2**); Hsu and Fogel, 2003 (**3**); Theeuwes and Van der Stigchel, 2006 (**4**)).

X1.7.1.2 Placement of the label near the child's face ensures that the warning is within the caregiver's field of view when behavior may be influenced (for example, the caregiver may consider the surface height while putting the child in the bouncer) because peripheral vision to the side of the fixation point is superior to that in the areas either above or below it (Boff and Lincoln, 1988 (**5**); Spector, 1990 (**6**)). More important, the "useful field of view," that is, the extent of the visual field when our attention is actively engaged, is smaller (Wickens and Holland, 2000 (**7**)). At a basic level, it is more likely that a caregiver will notice the label if it is near the child's face because that is where she is likely to be looking while making choices that affect the child's safety.

X1.7.1.3 The presentation of the hazards and the potential consequence, a skull fracture, while a caregiver is looking at his or her child, may increase the perception of risk and the severity of related injuries, factors associated with warning compliance (DeJoy, 1999a (**8**), 1999b (**9**); Silver and Braun, 1999 (**10**)).

X1.7.2 Although their use is not required, the example warnings include format and highlighting techniques for emphasis consistent with best practices.

X1.7.2.1 The format organizes the information into brief chunks, which makes it easier to read and understand (Miller, 1994 (**11**); Shiffrin and Nosofsky, 1994 (**12**); Chandler and Sweller, 1991 (**13**); see also Young, Frantz, Rhoades, & Wisniewski, 2006 (**14**); Shaver and Wogalter, 2003 (**15**)).

X1.7.2.2 Various research-based guidelines for document design recommend their use to emphasize key information (for example, Fischoff, Brewer, & Downs, 2011 (**16**); Singer, Balliro, & Lerner, 2003 (**17**), October; Felker, Pickering, Charrow, Holland, & Redish, 1981 (**18**)). Based on the incident data, the label contains several messages. The highlighting emphasizes key elements in each message, so that if a caregiver glances at the warning, he or she is more likely to notice one or more of the most important phrases ("skull fractures," "ONLY on floor," "ALWAYS use restraints…fit snugly," and "NEVER lift or carry") than if the text were uniformly plain.

X1.7.3 Review of CPSC incident data from 1/6/2006 to 2/2/2015 indicates that most witnessed instances in which the child's activates reportedly preceded tip-over or resulted in the child hanging out of the bouncer involved children 5 months of age or older. The developmental milestone of when the baby starts trying to sit up is reached, on average, at 4.8 months (**19**).

X1.8 *Subsection 7.11*—Defines a repeatable test where the fall hazard warning must be visible on the seat back when the newborn cami dummy is placed in the seat while standing in front of the bouncer. This test allows manufacturers the ability to vary placement depending on seat geometry and when multiple language warnings are needed.

X1.9 *Subsection 8.5.2.1*—Statement "Always use restraints. Adjust to fit snugly" has been determined to be a clear and concise warning. Subcommittee determined that the proposal to add reference to sleep "Always use restraints. Adjust to fit snugly even if baby is sleeping" implies that sleeping is acceptable and may encourage caregivers to use product for more prolonged periods of sleep or unattended use.

[6] The boldface numbers in parentheses refer to a list of references at the end of this standard.

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