



Designation: **F 2194 – 024**

Standard Consumer Safety Specification for Bassinets and Cradles¹

This standard is issued under the fixed designation F 2194; 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 performance specification addresses infant bassinet and cradle incidents identified by the U.S. Consumer Product Safety Commission (CPSC).

In response to the incident data compiled by the CPSC, this consumer safety performance specification attempts to minimize the following hazards: (1) suffocation, (2) tip over, (3) collapse, and (4) hood detachment. This specification does not cover products that are blatantly misused or used in a careless manner that disregards the safety instructions and warnings provided with each bassinet or cradle.

1. Scope

1.1 This consumer safety performance specification establishes performance requirements, test methods, and marking requirements to promote safe use of bassinets and cradles.

1.2 This consumer safety performance specification is intended to minimize the risks of incidents to an infant resulting from normal use and reasonably foreseeable misuse of a bassinet or cradle.

1.3 This specification covers products intended to provide sleeping accommodations (excluding full-size cribs, non–full-size cribs, and bassinets attached to play yards or swings) for an infant up to approximately 5 months in age. Products used in conjunction with a play yard, non–full-size crib, or an infant swing are not covered by this standard.

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

1.5 This safety performance specification is not intended to address incidents and injuries resulting from alteration or unreasonable abuse or misuse of the product by a child or child care giver.

1.6 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 This specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.18 on Cribs, Toddler Beds, Play Yards, Bassinets, Cradles, and Changing Tables.

Current edition approved June 10, 2002; March 1, 2004. Published July March 2004. Originally approved in 2002. Last previous edition approved in 2002 as F 2194–02.

2. Referenced Documents

2.1 ASTM Standards:²

D 3359 Test Methods for Measuring Adhesion by Tape Test

F 963 Consumer Safety Specification for Toy Safety

F 966 Consumer Safety Specification for Full-Size and Non-Full-Size Baby Crib Corner Post Extensions

2.2 Federal Regulations:

16 CFR 1303 Ban of Lead-Containing Paint and Certain Consumer Products Bearing Lead-Containing Paint

16 CFR 1500 Hazardous Substances Act Regulations Including Sections

16 CFR 1500.48 Technical Requirements for Determining a Sharp Point in Toys and Other Articles 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

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

16 CFR 1509 Requirements for Non-Full-Size Baby Cribs

2.3 Other References:

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*, Vol. 06.04, volume information, refer to the standard's Document Summary page on the ASTM website.



FIG. 1 CAMI Infant Dummy, Mark II 17.5 lb (7.9 kg)

CAMI Dummy, MARK II (see Fig. 1)³

3. Terminology

3.1 Definitions:

3.1.1 *bassinet/cradle, n*—a small bed for infants supported by free standing legs, a wheeled base, a rocking base, or which can swing relative to a stationary base.

3.1.2 *conspicuous, adj*—describes a label that is visible, when the bassinet/cradle is in a manufacturer's recommended use position, to a person standing near the bassinet/cradle at any one position around the bassinet/cradle but not necessarily visible from all other positions.

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

3.1.4 *manufacturer's recommended use position, 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. This specifically excludes positions that the manufacturer shows in a like manner in its literature to be unacceptable, unsafe, or not recommended.

3.1.5 *mesh, n*—mesh may be either a woven fabric in which the warp and filling yarns are interlaced, knitted fabric in which the wales and courses yarns are interlocked, or any other type of fabric that may be developed that provides openings therein.

3.1.6 *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.

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

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

3.1.9 *seam, n*—a means for joining fabric components, such as sewing, welding, heat sealing, or gluing.

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

4. Calibration and Standardization

4.1 All testing shall be conducted on a concrete floor that may be covered with 1/8-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 ambient temperature of $73 \pm 9^\circ\text{F}$ ($23 \pm 5^\circ\text{C}$) for at least 1 h prior to testing. Testing then shall be conducted within this temperature range.

4.5 All testing required by this specification shall be conducted on the same unit.

5. General Requirements

5.1 *Lead in Paints*—The paint or surface coating on the product shall comply with 16 CFR 1303.

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

5.3 *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.

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

5.5 *Scissoring, Shearing, or Pinching* :

5.5.1 A product, when in the manufacturer's recommended use position shall be designed and constructed so as to prevent injury to the occupant from scissoring, shearing, or pinching when members or components rotate about a common axis, or fastening points, 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 that is greater than a 0.210-in. (5.33-mm) and less than a 0.375-in. (9.53-mm) diameter at any accessible point throughout the range of motion of such parts.

5.6 *Unintentional Folding*:

5.6.1 Products designed without latching or locking devices must remain in the manufacturer's recommended use position during and upon completion of the test, in accordance with 7.5.1.

5.6.2 Products designed with a single action release mechanism latching or locking devices must remain in the manufacturer's recommended use position during and upon completion of the test, in accordance with 7.5.2.

5.6.3 Products with a double action release mechanism latching or locking device shall require two distinct and separate actions for release of the mechanism.

5.7 *Openings*—~~Any shaped holes, slots,~~ Holes or cracks slots ~~that exist in the bassinet/cradle in the manufacturer's recommended use position and that are accessible to the toes or fingers of the occupant~~ extend entirely through or recessed, or both,

Annual Book

³ Department of ASTM Standards, Vol 15.07: Transportation Memorandum Report AAC-119-74-14, Revision II, Drawing No. SA-1001 by Richard Chandler, July 2, 1974. Federal Aviation Administration, Civil Aeromedical Institute, Protection and Survival Laboratory, Aeromedical Center, Oklahoma City, OK 73125.

into the surface 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, also rod shall also admit a 0.375-in. (9.53-mm) diameter rod. Openings Holes or slots that have a minor dimension 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, providing the depth is no greater than the minor dimension of the opening—permissible (see Fig. 2). The product shall be evaluated in all manufacturer’s recommended use positions.

5.8 Labeling:

5.8.1 Warning labels (whether paper or non-paper) shall be permanent when tested per 7.2.1-7.2.3.

5.8.2 Warning statements applied directly onto the surface of the product by hot stamping, heat transfer, printing, wood burning, etc. shall be permanent when tested per 7.2.4.1-7.2.4.3.

5.8.3 Non-paper labels shall not liberate small parts when tested per 7.2.5.

5.9 Fasteners—Woodscrews shall not be used in the assembly of any components that must be removed by the consumer in the normal disassembly of a bassinet/cradle.

5.10 Corner Post Extensions—The product must meet the Consumer Safety Specification F 966.

5.11 Toys—Toy accessories attached to, removable from, or sold with a bassinet or cradle, as well as their means of attachment, must meet the applicable requirements of Consumer Safety Specification F 963.

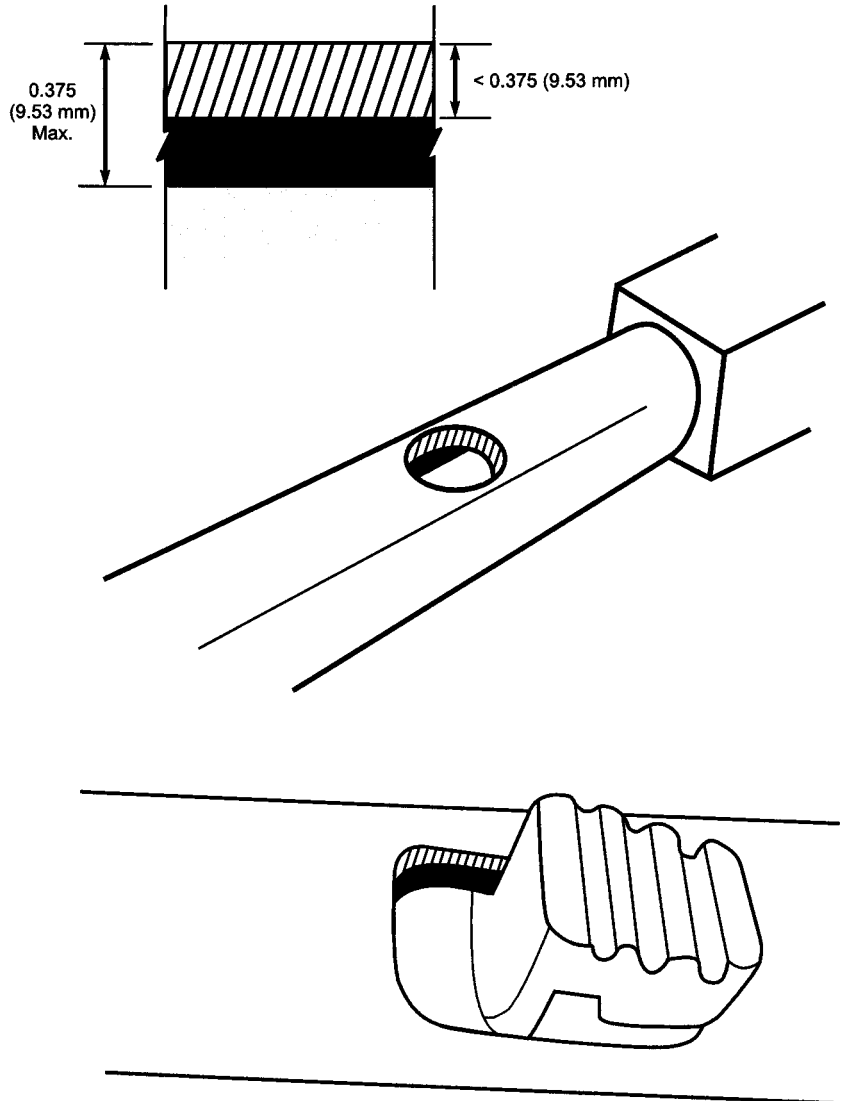


FIG. 2 Opening Example

6. Performance Requirements

6.1 *Spacing of Rigid Sided Bassinet/Cradle Components*—Spacing must comply with 16 CFR Part 1509 Section 1509.4 when tested according to 7.1.

6.2 *Openings for Mesh/Fabric Sided Bassinet/Cradle*—Openings in the mesh shall be designed to prevent entrapment of fingers, toes, and snaring of buttons normally used on infant clothing. A mesh opening shall not fully accept the specified rod when tested in accordance with 7.6.

6.3 *Static Load*—A product in all manufacturer’s recommended use positions shall support the static load without causing any hazardous conditions as identified within this consumer safety specification. This test shall be conducted in accordance with 7.3.

6.4 *Stability*—A product in all manufacturer’s recommended use positions shall not tip over when subjected to the test described in 7.4.

6.5 *Sleeping Pad:*

6.5.1 *Pad Thickness*—The filling material of the uncompressed sleeping pad such as foam, fiberfill, etc. shall not exceed a nominal 1-in. (25-mm) thickness. The total thickness of the uncompressed pad including all fabric or vinyl layers and filling material shall not exceed 1½ in. (38 mm). The pad must be provided by the manufacturer.

6.5.2 *Pad Dimensions*—The dimensions of the sleeping pad supplied with the product shall be such that the pad, when inserted in the center of the unit in a noncompressed state at any of the adjustable positions, shall not leave a gap of more than ½ in. (13 mm) at any point between the perimeter of the pad and the perimeter of the unit. When the pad is placed against the perimeter of the unit, the resulting gap shall not exceed 1 in. (25 mm).

6.6 *Protective Components*—If the occupant can grasp components between the thumb and forefinger or 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 7.7.

7. Test Methods

7.1 *Component Spacing*—Refer to 16 CFR Part 1509. For spacing of components, see CFR 1509.4. For component spacing test apparatus, see CFR 1509.5 and for component spacing test method, see CFR 1509.6.

7.2 *Permanency of Labels and Warnings :*

7.2.1 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 upon removal, or such action damages the surface to which it is attached.

7.2.2 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.

7.2.3 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 any direction most likely to cause failure using a clamp with a ¾-in. (19-mm) diameter clamping surface. Apply the force evenly over 5 s and maintain for an additional 10 s.

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

7.2.4.1 Apply the tape test defined in Test Method B, Cross-Cut Tape Test of Test Method ~~Standard~~ D 3359, eliminating the parallel cuts.

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

7.2.4.3 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.

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

7.3 *Static Load:*

7.3.1 Assemble bassinet/cradle per manufacturer’s instructions.

7.3.2 Place a 6-in. (152-mm) by 6-in. (152-mm) wood block with a nominal thickness of 1 in. (25 mm) in the bassinet/cradle at the center of the sleeping pad. Gradually apply a weight of 54 lbs (24 kg) or 3 times the manufacturer’s recommended weight (whichever is greater) within 5 s on the wood block and maintain for 60 s.

7.3.2.1 *Rationale*—54 lbs is 3 times the weight of the 95 percentile of a 3- to 5-month-old infant.

7.3.3 Test the unit in all manufacturer’s recommended use positions.

7.4 *Stability:*

7.4.1 Assemble bassinet /cradle per manufacturer’s instructions.

7.4.2 Establish a horizontal test plane with a piece of 1 in. (25.4 mm) high by 1 in. (25.4 mm) wide aluminum angle stop whose length is at least 6 in. (152 mm) longer than the length of the unit being tested as shown in (a), (b), and (c) of Fig. ~~3~~ 4. For units with a rocking base as shown in (b) of Fig. ~~3~~ 4, the height or position of the angle stop must be such that no part of the unit’s arched base will move on top of the angle stop when tilted.

7.4.3 Position the unit on the floor and place against the angle stop.

15 lbf (67N) MAX TENSION

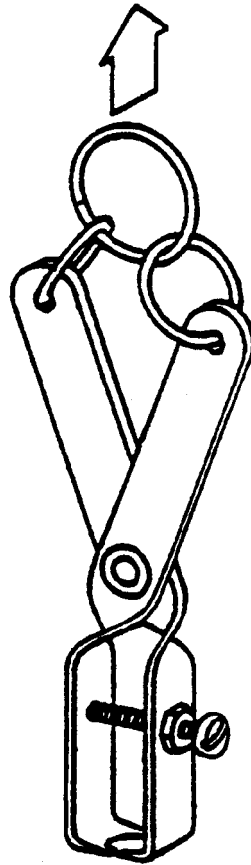


FIG. 2 3 Sketch of Clamping Device

7.4.4 Place the CAMI Infant Dummy, Mark II, on the sleeping pad in the center of the product face up with the arms and legs straightened.

7.4.5 Gradually apply a 23-lb (10.35-kg) weight within 5 s to hang from the center of the highest point of the uppermost horizontal side rail on the side closer to the angle stop.

7.4.6 Gradually apply a horizontal force of 5 lbs (22 N) within 5 s at the same location of the uppermost horizontal side rail where the vertical weight is hanging. The direction of the load is such that the unit is forced against the stop.

7.4.6.1 *Rationale*—The dual application of horizontal and vertical forces will simulate an angled load tipping the unit over. The 23-lb load is approximately the 20th percentile of a 2-year-old.

7.4.7 Maintain for 10 s and note if the product tips over.

7.4.8 Test the unit in all manufacturer's recommended use positions.

7.5 *Unintentional Folding Test* :

7.5.1 *Products designed without latching or locking devices:*

7.5.1.1 Place the unit in the manufacturer's recommended use position.

7.5.1.2 Place a CAMI Infant Dummy, Mark II, in the center of the product face up with the arms and legs straightened.

7.5.1.3 Place a stop on the floor in a manner that would prevent the unit from sliding and tipping but will not prevent it from folding.

7.5.1.4 Position the unit against the stop in the orientation most likely to cause it to fold. Apply a ~~20-lb force horizontally~~ 20-lbf (89-N) in direction most likely to fail to the top edge of the bassinet.

7.5.2 *Products designed with a single action release mechanism latching or locking devices*— With the product in the manufacturer's recommended use position, gradually apply a force of 10 lb (45 N) to the latching or locking mechanism in the direction tending to release it.

7.6 *Mesh Opening Test:*

7.6.1 *Equipment*—A steel rod of 0.250 in. (6.35 mm) in diameter with a 0.125-in. (3.18-mm) full radius tip.

7.6.2 *Procedure*—With the product in the fully erect position, gradually apply a force of 5 lbs (22 N) perpendicular to the plane of the mesh opening using the rod specified above.

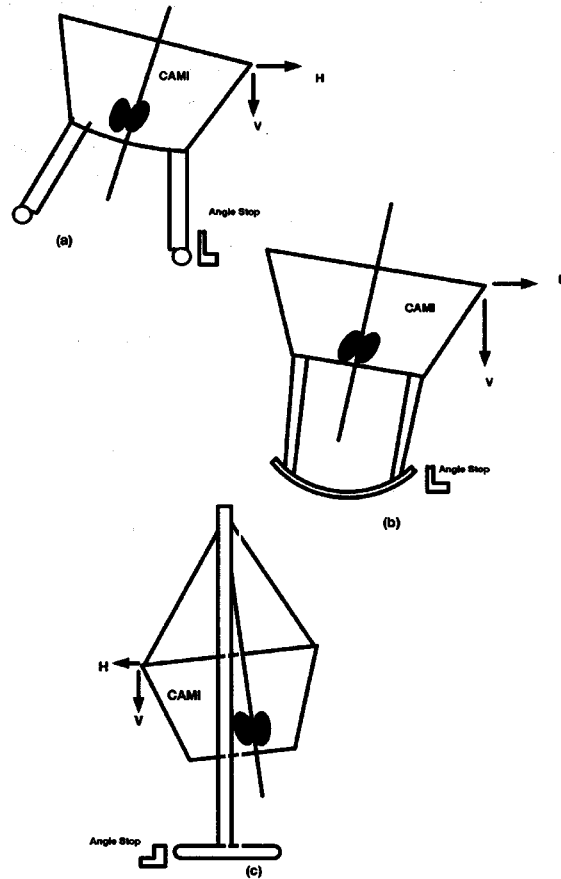


FIG. 3 4

7.7 Removal of Protective Components :

7.7.1 Any protective component shall be tested in accordance with each of the following test methods in the sequence listed.

7.7.2 Secure the product so that it cannot move during the performance of the following test methods:

7.7.3 *Torque Test*—A torque of 2 lbs-in. (0.23 N·m) shall be applied evenly within a period of 5 s in a clockwise direction until a rotation of 180° from the original position has been attained or 2 lbs-in. (0.23 N·m) has been reached. The torque or maximum rotation shall be maintained for an additional 10 s. The torque shall be removed and the protective components permitted to return to a relaxed condition. The procedure shall be repeated in the counter-clockwise direction.

7.7.4 *Tension Test:*

7.7.4.1 Attach a force gage to the cap, sleeve, or plug 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. (1.0 mm) between the rear surface of the component and the structural member of the bassinet/crib to which it is attached, a clamp such as that shown in Fig.-2 3 may be a suitable device.

7.7.4.2 Be sure that the attachment device does not compress or expand the component hindering any possible removal.

7.7.4.3 Gradually apply 15 lbf (67 N) in the direction that would normally be associated with the removal of the protective component over a 5-s period and hold for an additional 10 s.

8. Labels Marking and Warnings Labeling

8.1 Each bassinet/crib product and its retail package shall be marked or shipping container must have a permanent label or marking that identifies labeled clearly and legibly to indicate the following:

8.1.1 The name of the manufacturer, distributor, or seller and address either the place of business (city, state, and mailing address, including zip code at a minimum) of the manufacturer, distributor, code) or seller. Any upholstery label required by law shall not be used for this purpose.

8.2 A permanent telephone number, or both.

8.1.2 A code mark or other product identification shall be provided on means that identifies the product and its package or shipping container, if multiple packaging is used. The code will identify the date (month and year at as a minimum) of manufacture and permit future identification of any given model. Any manufacture.

8.1.3 The markings on the product shall be permanent.

8.2 ~~Any upholstery label required by law shall not be used to bear meet the code label or mark requirements in 8.1.~~

8.2.1 The manufacturer shall change the model number whenever the product undergoes a significant structural or design modification or a change that affects its conformance to this consumer safety specification.

8.3 Each bassinet/cradle shall have warning statements. The warning statements shall be in contrasting color(s), permanent, conspicuous, and in sans serif style font.

8.3.1 In the warning statements, the safety alert symbol \triangle and the word **WARNING** shall not be less than 0.2 in. (5 mm) high. The remainder of the text shall be in letters not less than 0.1 in. (2.5 mm) high.

8.3.2 The following warning statement shall be included exactly as stated below:

8.3.2.1 \triangle **WARNING**—Failure to follow these warnings and instructions could result in serious injury or death.

8.4 Additional warning statements shall address the following:

8.4.1 **FALL HAZARD**—To help prevent falls, do not use this product when the infant begins to push up on hands and knees or has reached manufacturer’s recommended maximum weight, whichever comes first.

8.4.2 **SUFFOCATION HAZARD**

8.4.2.1 Infants can suffocate:

- In gaps between an extra pad and side of the bassinet/cradle
- On soft bedding

NEVER add a mattress, pillow, comforter, or padding. Use ONLY the pad provided by manufacturer.

8.4.2.2 If a sheet is used with the pad, use only the one provided by the bassinet or cradle manufacturer or one specifically designed to fit the dimension of the bassinet or cradle mattress.

8.4.3 To reduce the risk of SIDS, pediatricians recommend healthy infants be placed on their backs to sleep, unless otherwise advised by your physician.

9. Instructional Literature

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

9.1.1 The instructions shall contain statements that address the warning statements in 8.3 and 8.4.

9.2 Warning statements within the instructional literature shall be in sans serif type and meet the same requirements as specified in 8.3.1.

10. Keywords

10.1 bassinets; cradles

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).