~~Designation:F2050–08~~ Designation: F2050 – 09

Standard Consumer Safety Specification for Hand-Held Infant Carriers[1]

This standard is issued under the fixed designation F2050; 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 mitigate potential safety hazards associated with a child's use of a hand-held infant carrier and thereby minimize the risk of injury or death. The specific hazards addressed by this standard are carrier handle strength to support the occupant, product tip over, and falls from elevated surfaces.

1. Scope

1.1 This consumer safety specification establishes performance requirements, test methods, and marking requirements to promote safe use of a hand-held infant carrier by an occupant and caregiver.

1.2 This consumer safety specification is intended to minimize the risk of incidents to an occupant resulting from normal use and reasonably foreseeable misuse or abuse of a hand-held infant carrier.

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

1.4 This consumer safety specification is not intended to address accidents and injuries resulting from the interaction of other persons with the child occupant in a hand-held infant carrier or the accidents resulting from abuse and misuse by children able to walk.

1.5 This consumer safety specification is not intended to address incidents or injuries resulting from use of the product in a motor vehicle, nor is it intended to address any issues that may arise from the manufacturer meeting the certification requirements of FMVSS-213 or other applicable add-on child restraint standards.

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 limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D3359 Test Methods for Measuring Adhesion by Tape Test

F963 Consumer Safety Specification for Toy Safety

2.2 *Federal Regulations:*[3]

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 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 consumer safety performance 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.

Current edition approved ~~Dec. 1, 2008.~~Oct. 15, 2009. Published ~~January~~November 2009. Originally approved in 2000. Last previous edition approved in ~~2003~~2008 as F2050 – 0~~3~~8. DOI: 10.1520/F2050-08~~9~~.

[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, Washington, DC 20402.

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)[5]

3. Terminology

3.1 *Definitions:*

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

3.1.2 *hand-held infant carrier*, *n*—a freestanding, rigid-sided product intended to carry an occupant whose torso is completely supported by the product to facilitate transportation by a caregiver by means of hand-holds or handles.

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

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

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

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

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 covering, unless 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° ± 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 unit.

5. General Requirements

5.1 There shall be no hazardous sharp edges or points as defined by 16 CFR 1500.48 and 16 CFR 1500.49 before and after testing to this consumer safety specification.

[4] Department of 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.

[5] Drawing Numbers 126-0000 through 126-0015 (Sheets 1 through 3), 126-0017 through 126-0027, a parts list entitled "Parts List for CAMI Newborn Dummy", and a construction manual entitled, "Construction of the Newborn Infant Dummy" (July 1992). Copies of the materials may be inspected at NHTSA's Docket Section, 400 Seventh Street, SW, Room 5109, Washington, DC, or at the Office of the Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC.

FIG. 1 CAMI Infant Dummy, Mark II

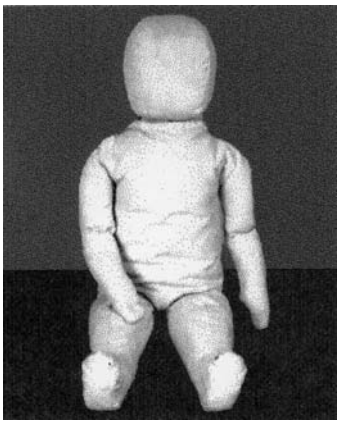

FIG. 2 CAMI Newborn Dummy

5.2 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 Product must comply with 16 CFR 1303.

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

5.5 *Openings*—Holes or slots that exist in the product in any manufacturer's recommended use position, that are accessible to the toes and fingers of the occupant, and 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.~~).

5.6 *Scissoring, Shearing, Pinching*—A product, when in a manufacturer's recommended use position, 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. (9.53 mm) in diameter at any accessible point throughout the range of motion of such parts.

5.7 *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 testing in any manufacturer's recommended use position(s) and tested in accordance with 7.1.2 and 7.1.3 shall be covered or otherwise designed to prevent injury from entrapment.

5.8 *Labeling*:

5.8.1 *Warning Labels*, whether paper or non-paper, shall be permanent when tested in accordance with 7.4.1-7.4.3.

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 in accordance with 7.4.4.

5.8.3 Non-paper labels shall not liberate small parts when tested in accordance with 7.4.5.

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

5.10 *Protective Components*—If a child 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 7.3.

6. Performance Requirements

NOTE 1—The forces that are to be applied to the sample in the tests described in Section 7 of this specification are readily applied by means of a calibrated force gage.

6.1 *Carrying Handle Integrity*—All tests of 7.1 are to be performed on the same product, sequentially and without refurbishing or repositioning of adjustment. The carrier handle shall not break or unlatch on either one or both sides of the carrier when tested in accordance to 7.1.2 and 7.1.3.

6.2 *Restraint System*—A restraint system shall be provided to secure a child in the seated positions in any of the manufacturer's recommended use positions.

6.2.1 For infant carriers that are not for use in motor vehicles, the restraint system shall include a waist restraint and crotch restraint. The crotch restraint's use shall be mandatory when the waist restraint is in use.

6.2.2 The system and its closing means shall not slip more than 1 in. (25 mm), break, separate, or permit the removal of the test dummy when tested in accordance with 7.5

6.3 *Slip Resistance*—An infant carrier shall not slip more than 0.12 in. (3.0 mm) within one minute when tested in accordance with 7.2.

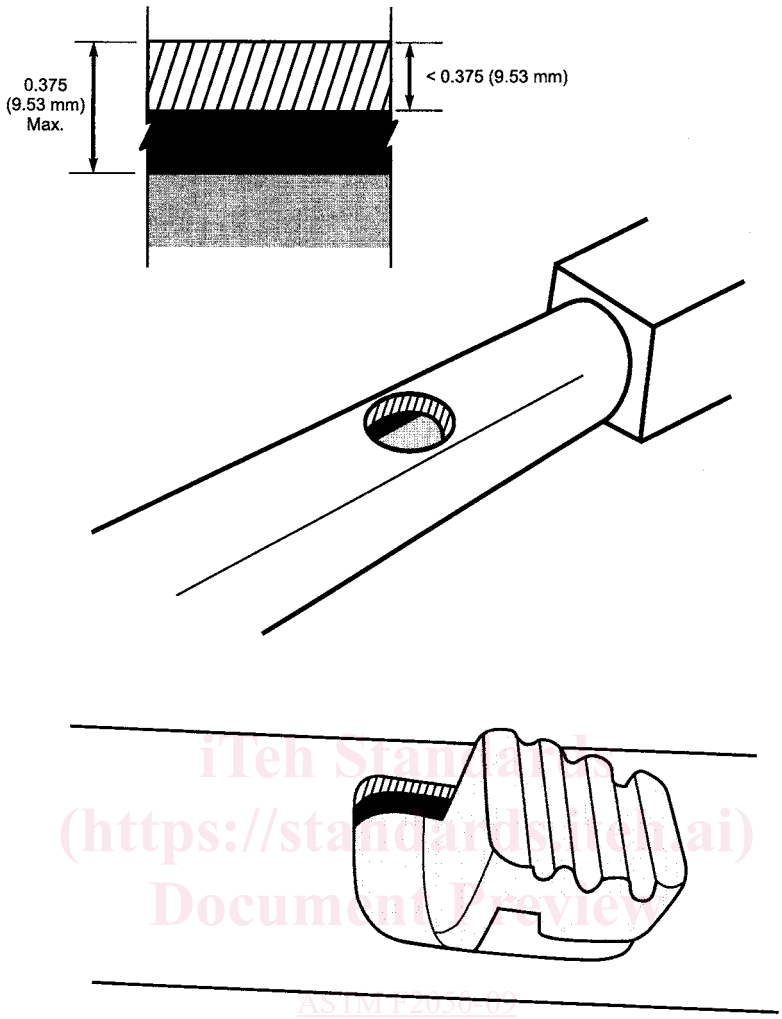

FIG. 3 Opening Example

7. Test Methods

7.1 *Carrying Handle Integrity*—For the tests in 7.1.2 and 7.1.3 the product shall be loaded to the manufacturer's maximum rated load or with CAMI dummy, whichever is greater. A weighted vest (see Fig. 4) with the CAMI dummy shall be used to achieve manufacturer's maximum rated load.

7.1.1 *Handle/Latch Preconditioning Cycling*:

7.1.1.1 Secure the infant carrier onto a test platform with the handle in the manufacturer's recommended carry position and so that the base of the carrier cannot move in the direction of the force being applied.

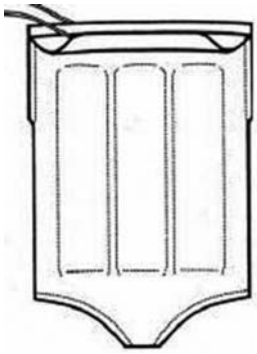

FIG. 4 Weighted Vest