



Designation: F1235-98

~~Standard Specification for Consumer Safety for Portable Hook-On Chairs~~ Designation: F 1235 – 03 (Reapproved 2008)

Standard Consumer Safety Specification for Portable Hook-On Chairs¹

This standard is issued under the fixed designation F 1235; 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 addresses incidents associated with portable hook-on chairs (chairs) that were identified by the United States Consumer Product Safety Commission (CPSC).

CPSC has identified injuries which occurred when chairs fell because the child pushed off the table, components of the chair became detached or broke, and, to a lesser extent, when the table to which the chair was attached tipped over. In response to a review of the data received by the CPSC, this specification attempts to minimize the following: falls due to detachment of the chair from the table or due to breakage or detachment of components; a child falling out of the chair; and chair and table tipping over.

This specification does not cover chairs that are either blatantly misused or are used in a careless manner that disregards the warning statements and safety instructions provided with each chair. This specification is written within the current state-of-the-art of chair technology. It is intended that this specification will be updated whenever substantive information becomes available that necessitates additional requirements or justifies revising the existing requirements.

1. Scope

1.1 This specification covers the performance requirements and test methods designed to ensure the satisfactory performance of the portable hook-on chair.

1.2 This specification is intended to minimize injuries to children resulting from normal use and reasonably foreseeable misuse or abuse of chairs.

1.3 For the purposes of this specification a chair is:

1.3.1 A seat made for the express purpose of seating and holding a child who can remain in a sitting position due to his or her own coordination.

1.3.2 Usually a legless seat constructed to locate the occupant at a table in such a position and elevation so that the surface of the table can be used as the feeding surface for the occupant.

1.3.3 Supported solely by the table on which it is mounted. These chairs are intended for use by children between the ages of six months and three years and who weigh no more than 37 lb (16.8 kg) (95th percentile male at three years).

1.4 No chair 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 applicable requirements contained herein.

~~1.5 The values stated in inch-pound units are to be regarded as the standard. The SI units given in parentheses are for information only.~~

1.5 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.

1.6 The following precautionary caveat pertains to the test methods portion only, Section 67, of this specification: *This standard*

⁺ This specification is under the jurisdiction of ASTM Committee F-15 on Consumer Products and is the direct responsibility of Subcommittee F15.40 on Juvenile Products. Current edition approved Jan. 10, 1998. Published August 1998. Originally published as F1235-89. Last previous edition F1235-89 (1993).

¹ This specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.16 on Highchairs, Hook-On Chairs and Expandable Gates.

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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

D 3359 Test Methods for Measuring Adhesion by Tape Test

2.2 Federal Regulations:

~~16CFR 1500 Hazardous Substances Act Regulations including sections:~~

~~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 1303 Ban of Lead-Containing Paint, and Certain Consumer Products Bearing Lead-Containing Paint³~~

~~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 Age³~~

~~16 CFR 1500 Hazardous Substances Act Regulations including sections:~~

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~~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 Age³~~

~~1500.50.52 Test Methods for Simulating Use and Abuse of Toys and Other Articles Intended for Use by Children³~~

~~16CFR 1303 Ban of Lead-Containing Paint, and Certain Consumer Products Bearing Lead-Containing Paint³~~

~~16CFR-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 Parts³~~

2.3 ANSI Standards:

~~ANSI Z535.4 Product Safety Signs and Labels~~

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *conspicuous*—a label ~~that~~ that is visible when the portable hook-on chair is in a manufacturer's recommended use position, is visible position to a person standing near the chair at any one position near the chair but is not necessarily visible from all positions.

3.1.2 *fabric*—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.

3.1.3 *manufacturer's recommended use position*— 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 *nonpaper label*—any label made of fabric or other 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*—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*—any label material (except fabric) that tears without the aid of tools and leaves a fibrous edge.

3.1.7 *permanent*—(label/warning attachment):

3.1.7.1 *labels not attached by a seam* :

(1) A nonpaper label or decal shall be considered permanent if, during an attempt to manually remove it without the aid of tools or solvents, it cannot be removed, or such action damages the surface to which it is attached.

(2) A paper label 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.

3.1.7.2 *labels attached by a seam*—a label attached by a seam shall be considered permanent if it complies with the requirements of 6.11 and does not tear, yielding a separate part, during the test.

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

3.1.9

3.1.8 *static load*—a vertically downward load applied by a calibrated force gage or by dead weight.

3.1.10 *warning statements*—warning statements applied directly onto the surface of the product by hot stamping, heat transfer, printing or wood burning, etc. shall be considered permanent if the printing in the area tested is still legible and attached after being subjected to the test prescribed in 6.12.

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

³ Available from U.S. Government Printing Office, N. Capital and H Streets, NW, Washington, DC 20401.

3.1.10.1 Discussion—If warning statements are on labels, refer to 3.1.7.1 or 3.1.7.2. ~~—a vertically downward force applied by a calibrated force gage or by dead weights.~~

4. General Requirements

4.1 The portable hook on chair shall conform to the regulations specified in Section 2 of this specification both before and after testing.

4.2 Prior to testing, any exposed wood parts shall be smooth and free of splinters.

4.3 Latching or Locking Mechanisms—Any unit that folds shall have a latching or locking device or other provision in the design that will prevent the unit from unintentionally folding when properly placed in the manufacturer's recommended use position. During and upon completion of the test, the unit shall remain in its manufacturer's recommended use position. If a unit is designed with a latching or locking device, that device shall remain engaged and operative after testing in accordance with 6.3 Calibration and Standardization

4.1 All testing shall be conducted on a concrete floor that may be covered with $\frac{1}{8}$ 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 $73 \pm 9^\circ\text{F}$ ($23 \pm 5^\circ\text{C}$) for at least 1 h 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 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 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 The paint and surface-coatings on the product shall comply with 16 CFR 1303.

4.4 Nonpaper Labels:

4.4.1 Nonpaper labels or decals (such as warning labels, brand name labels, decorative labels, or pin-striping) which may present a choking hazard if removed must be permanent.

NOTE 1—Paper labels are exempt from the small parts requirements of 16 CFR 1501 because paper cannot be meaningfully tested.

4.4.1.1 Nonpaper labels that may present a choking hazard are those that upon removal, fit entirely within the small parts cylinder as defined in 16 CFR 1501. Non-paper labels that tear upon an attempt to remove them are considered labels that may pose a choking hazard, since the size of the torn piece could fit within the small parts cylinder.

4.4.1.2 Nonpaper labels attached by a seam, except warning labels, that tear along a seam only and do not yield a part that fits entirely within the small parts cylinder, as defined in 16 CFR 1501, are not considered labels that pose a choking hazard and thus are not required to be permanent. (Warning labels must be permanent.)

4.5

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

5.5 Latching or Locking Mechanisms—Any unit that folds shall have a latching or locking device or other provision in the design that will prevent the unit from unintentionally folding when properly placed in the manufacturer's recommended use position. The unit shall remain in its manufacturer's recommended use position during and upon completion of the test in accordance with 7.3. If a unit is designed with a latching or locking device, that device shall remain engaged and operative after testing.

5.6 Scissoring, Shearing, and Pinching—A portable hook-on chair, 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 exists shall not be permissible when the edges of any rigid parts admit a probe greater than 0.210 in. (~~5.30~~5.33 mm) and less than 0.375 in. (~~9.50~~9.53 mm) diameter at any accessible point throughout the range of motion of such parts.

4.6.7.7 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. (5.30 mm) or greater during static load testing in accordance with ~~6.67.6~~, shall be covered or otherwise designed to prevent injury from entrapment.

4.7

5.8 Openings—Any shaped holes, slots, or cracks that exist in the product that is in its manufacturer's recommended use position, and that are accessible to the toes and fingers of the occupant through and/or recessed into the surface of any rigid material that admits a 0.210 in. (5.30 mm) diameter rod, shall also admit a 0.375 in. (9.50 mm) diameter rod. Openings that have a minor dimension between 0.210 in. (5.30 mm) and 0.375 in. (9.50 mm) shall be permissible, providing the depth is no greater than the minor dimension of the opening.

5. Performance Requirements

~~5.1~~—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. 1). The product shall be evaluated in all manufacturer's recommended use positions.

5.9 Labeling:

5.9.1 Warning labels (whether paper or non paper) shall be permanent when tested in accordance with 7.11.

5.9.2 Warning statements applied directly onto the surface of the product by hot stamping, heat transfer, printing, wood burning, and so forth shall be permanent when tested in accordance with 7.11.

5.9.3 Nonpaper labels shall not liberate small parts when tested in accordance with 7.11.

5.10 *Protective Components*—If ~~the~~ a child can grasp ~~protective components, such 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 ~~between the thumb and forefinger, toes~~), or teeth, or if there is at least a 0.040 in. (1.00 mm) gap between the ~~protective component~~ and its adjacent parent component, such ~~protective component~~ shall not be removed when tested in accordance with ~~6.47.4~~.

5.2

6. Performance Requirements

6.1 *Chair Drop Test*—The chair shall permit subsequent tests and exhibit no mechanical hazards (sharp points, sharp edges, or small parts) when tested in accordance with ~~6.57.5~~.

5.3

6.2 *Static Load Test*—The chair shall support a static load on the seat without causing any hazardous conditions as identified within this specification when tested in accordance with ~~6.67.6~~.

5.4

6.3 *Seat and Seat Back Disengagement Test*—The seat back and seat shall remain fully attached to the frame of the chair when forces are applied in accordance with ~~6.77.7~~.

5.5

6.4 *Chair Bounce Test*—The chair shall remain attached to the standard test surface as described in ~~6.116~~ ~~7.1.16~~ and allow no movement greater than 1 in. (25 mm) when forces are applied in accordance with ~~6.87.8~~.

5.6

6.5 *Chair Pull/Push Test*—The chair shall remain attached to the standard test surface when tested in accordance with ~~6.97.9~~.

5.7

6.6 Restraint Systems:

~~5.7.1A~~6.6.1 A restraint system shall be provided to secure a child in the seated position in each of the manufacturer's recommended use positions.

~~5.7.1.1~~6.6.1.1 The restraint system shall include both waist and crotch restraint. The crotch restraint shall be designed such that its use is mandatory when the restraint system is in use.

NOTE 2—~~It~~ 1—It should be noted that this test applies to all designs of restraining systems, whether they be of the traditional “active” or of the “passive” type.

~~5.7.2~~6.6.2 The restraint system and its closing means (for example, buckle) shall not break, separate or permit removal of the CAMI test dummy (see Fig. 12) from the chair when tested in accordance with ~~6.107.10~~.

5.7.2.1

6.6.2.1 If during the tests in ~~6.107.10~~ the posterior of the test dummy, with the force applied, is pulled past the front edge of the seat, the dummy shall be considered removed.

5.7.2.2

6.6.2.2 After the tests in ~~6.106~~ ~~7.10.6~~ and ~~6.1077.10.7~~, the CAMI dummy shall not be fully released.

5.7.3

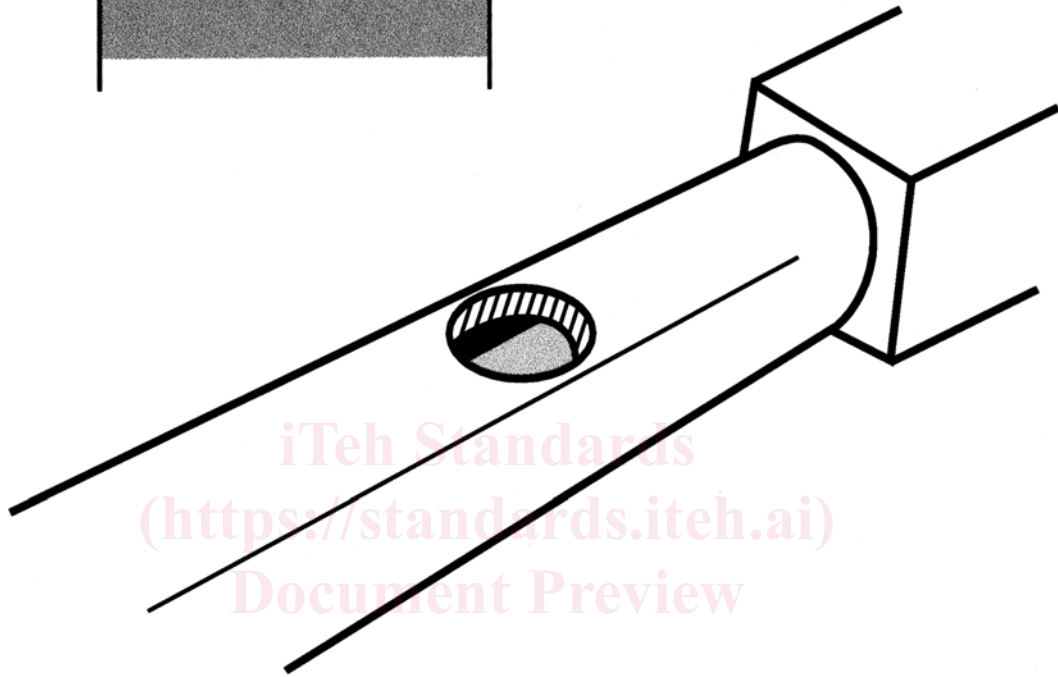
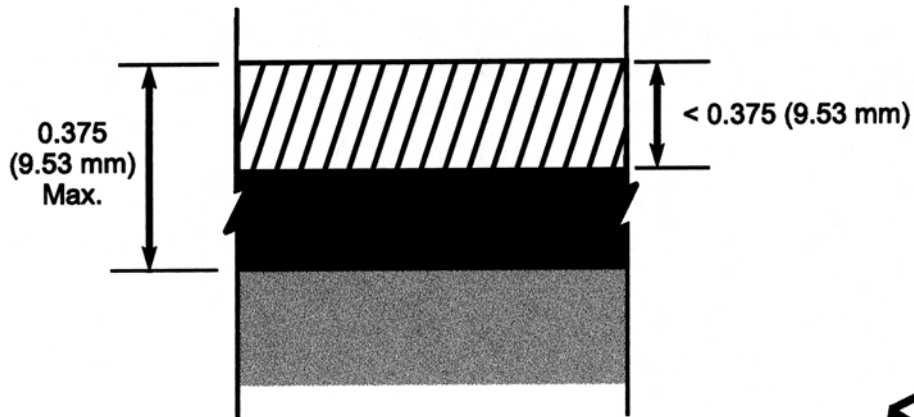
6.6.3 The waist restraint shall be capable of adjustment with a positive self-locking mechanism that is capable, when locked, of withstanding the forces of tests in ~~6.107.10~~ without allowing restraint movement or slippage of more than 1 in. (25 mm).

~~5.7.4A~~6.6.4 A connecting means and adjustment means for the waist restraint shall be capable of usage independent of one another. The connecting means shall not be an adjustment means, but may have one integrally attached to it.

~~5.7.56~~6.6.5 Before shipment, the restraining system must be attached to the chair in such a manner as to not become detached through normal use. For chairs requiring consumer assembly, buckles must be completely threaded and the restraining system must be attached to a component that would render the chair unusable if not properly assembled.

6. Test Methods

6.1



iTeh Standards
(<https://standards.itih.ai>)
Document Preview

[ASTM F1235-03\(2008\)](https://standards.itih.ai/catalog/standards/sist/807cb670-191a-403d-8076-3d2eb83ba4e9/astm-f1235-032008)

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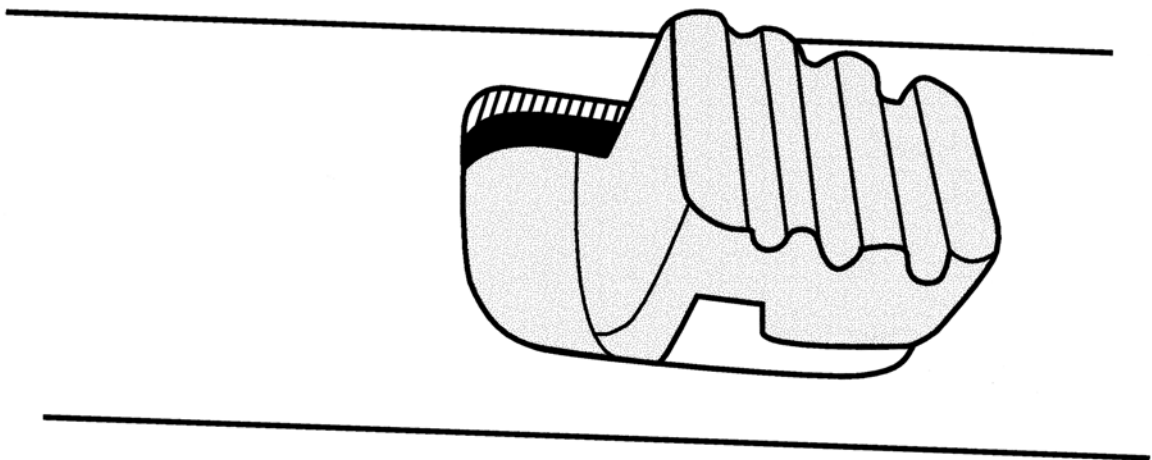


FIG. 1 Opening Example

7. Test Methods

7.1 Test Equipment:

- 6.1.1A push-pull gage (Chatillon DPPH-100 or equivalent);
- 6.1.2A CAMI Infant Dummy Mark II (see Fig. 1);

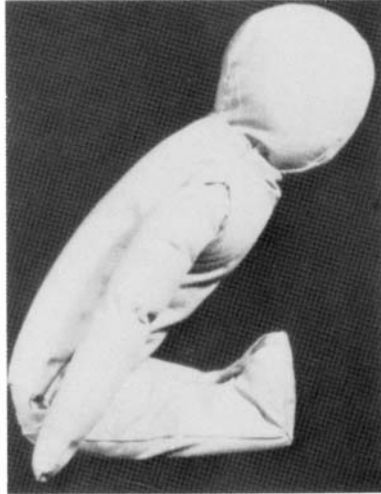


FIG.-1 2 CAMI Infant Dummy, Mark II⁶

6.1.3 Tension test adapter/clamp (see

7.1.1 A push-pull gage.

7.1.2 A CAMI Infant Dummy Mark II (see Fig. 2).⁴

7.1.3 Tension test adapter/clamp (see Fig. 3).

6.1.4A 7.1.4 A 0.040 in. (1.00 mm) feeler gage.

6.1.5A 7.1.5 A wood block 6 by 6 by 3/4 in. thick (150 by 150 by 19 mm). In all cases where there is a hammock type seat, use the weld cap as described in 6.1.6.

6.1.6

7.1.6 A 6 in. (150 mm) weld cap, as identified in Fig. 3 Fig. 4, for use with a hammock type seat.

NOTE 3—If 2—If using a weld cap, subtract the weight of the cap from the indicated test weight.

6.1.7A 7.1.7 A wood block 2 by 2 by 3/4 in. thick, (50 by 50 by 19 mm).

⁴ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

⁶ CAMI Infant Dummy (Mark II), Department of Transportation, Federal Aviation Administration, Cami Infant Dummy, Drawing No. SA-100I, Memorandum Report AAC-119-74-14, Revision II, by Richard F. Chandler, July 2, 1974.

15 lbf (67N) MAX TENSION

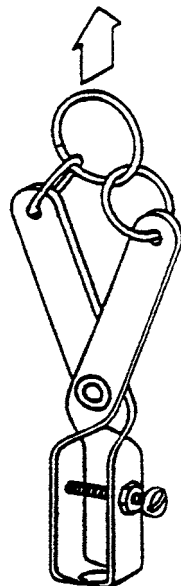


FIG.-2 3 Tension Test Adapter/Clamp