



Designation: F 2613 – 07

## Standard Consumer Safety Specification for Children's Folding Chairs<sup>1</sup>

This standard is issued under the fixed designation F 2613; 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 Children's folding chairs that were identified by the U.S. Consumer Product Safety Commission (CPSC). Incidents identified by the CPSC and addressed in this standard involve lacerations, fractures, pinches and amputations of children's fingers in folding mechanisms. This specification also addresses structural integrity and labeling for the product. This specification is not intended to cover children's folding chairs that are either blatantly misused or abused. This specification is written within current state-of-the-art children's folding chairs and is intended to be updated if substantive information becomes available that necessitates additional requirements or justifies revision of existing requirements.

### 1. Scope

1.1 This consumer safety specification establishes testing requirements for structural integrity and performance requirements for children's folding chairs. It also provides requirements for labeling. The term unit or product will refer to a child's folding chair.

1.2 This specification covers a folding chair intended to be used by a child with a seat height 15 in. or less.

1.3 No product 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, before and after all testing.

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.5 *This standard does not purport to address all of the 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.*

<sup>1</sup> This consumer safety specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.59 on Children's Folding Chairs.

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### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>2</sup>

D 3359 Test Methods for Measuring Adhesion by Tape Test

F 404 Consumer Safety Specification for High Chairs

F 406 Consumer Safety Specification for Non-Full-Size Baby Cribs/Play Yards

F 963 Consumer Safety Specification for Toy Safety

F 1561 Performance Requirements for Plastic Chairs for Outdoor Use

#### 2.2 Federal Regulations:<sup>3</sup>

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

16 CFR 1500.3 (c) (6) (vi) Definition of "Flammable Solid"

16 CFR 1500.48 Technical Requirements for Determining a Sharp Point In Toys and 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 1501 Method for Identifying Toys and Other

<sup>2</sup> 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.

<sup>3</sup> Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, http://www.access.gpo.gov.

Articles Intended for Use By Children Under Three Years of Age Which Present Choking, Aspiration, or Ingestion Hazards Because of Small Parts

### 3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

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

3.3 *folding chair, n*—seating furniture that is intended to be used as a support for the body, limbs, or feet when sitting or resting in an upright or reclining position and which can be folded for transport or storage.

3.4 *manufacturer's recommended use position, n*—any position that is presented by the manufacturer in any descriptive or instructional literature as a normal, allowable, or acceptable configuration for use of the product. This specifically excludes positions that the manufacturer shows in a like manner in its literature to be unacceptable, unsafe, or not recommended.

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

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

3.7 *paper label, n*—any label material that 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 that may be covered with 1/8-in. (3-mm) thick vinyl flooring cover, unless test instructs differently.

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

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

5.3 There shall be no small parts, as defined by **16 CFR 1501**, before testing or liberated as a result of testing in accordance with this specification.

5.4 The paint and surface coating on the product shall comply with **16 CFR 1303**.

5.5 There shall be no flammable solids as defined in **16 CFR 1500.3 (c) (6) (vi)** before or after testing in accordance with this specification.

5.6 Toy accessories attached to, removable from, or sold with a product, as well as their means of attachment, must meet applicable requirements of Consumer Safety Specification **F 963**.

5.7 *Scissoring, Shearing, or Pinching*—A product, when in any manufacturer's recommended use position, shall be designed and constructed 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 the rigid parts admit a probe that is greater than 0.210 in. (5.30 mm) and less than 0.375 in. (9.50 mm) diameter at any accessible point throughout the range of motion of such parts.

5.8 *Folding Mechanisms and Hinges*—These requirements are intended to eliminate possible crushing, laceration, or pinching hazards that might occur in folding mechanisms and hinges. Examples are the sudden collapse or unexpected motion of a folding mechanism or hinge that produces a scissor action; and the changing clearances at the hinge line between two hinged portions, such that the gap will admit fingers at one position of the hinge but not at all positions.

5.8.1 *Folding Mechanisms*—Products shall have a locking device or other means to prevent unexpected or sudden movement or collapse of the product, or have adequate clearance to provide protection for the fingers, hands, and toes from crushing or laceration in the event of sudden movement or collapse of the product.

5.8.2 Locking devices and other means to prevent unexpected or sudden movement or collapse of the product shall engage automatically when the product is placed in any manufacturer's recommended use position. Latches may be manually activated to allow placement into the use position but must engage automatically when released. During and upon completion of the testing in **6.1**, the unit shall remain in its recommended use position.

5.8.3 If a unit is designed with a locking device:

5.8.3.1 Each single action device shall require a minimum force of 10 lbf (45 N) to activate the release mechanism when tested in accordance with **6.2**.

5.8.3.2 Each double action locking device shall require either two consecutive actions, the first of which must be maintained while the second is carried out, or two separate and independent single action locking mechanisms that must be activated simultaneously to fully release. There are no force requirements for double action locking devices.

5.8.4 *Hinge Line Clearance*—Products having a gap or clearance along the hinge line between a stationary portion and a movable portion shall be so constructed that, if the accessible gap at the hinge line will admit a 3/16-in. (5-mm) diameter rod, it will also admit a 1/2-in. (13-mm) diameter rod at all positions of the hinge.

5.8.5 No product shall give the appearance of being in any manufacturer's recommended use position unless the locking device is fully engaged.

5.9 *Circular Holes in Rigid Materials*—This requirement is intended to prevent finger entrapment (which may cut off blood