Designation: F2613 – 22

Standard Consumer Safety Specification for Children's Chairs and Stools[1]

This standard is issued under the fixed designation F2613; 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 chairs and stools 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 chairs and stools that are either blatantly misused or abused. This specification is written within current state-of-the-art children's chairs and stools 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 chairs and stools. It also provides requirements for labeling. The standard does not apply to products used in a commercial setting or to products that do not have a *rigid frame* such as bean bag chairs or foam chairs. This standard does not apply to seats with restraint systems, infant or infant/toddler rockers, children's step stools, or children's potty chairs. The term unit or product will refer to a child's chair or stool.

1.2 This specification covers a chair or stool intended to be used by a single child who can get in and get out of the product unassisted and with a seat height 15 in. or less, with or without a rocking base.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *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

F406 Consumer Safety Specification for Non-Full-Size Baby Cribs/Play Yards

F963 Consumer Safety Specification for Toy Safety

F1561 Performance Requirements for Plastic Chairs for Outdoor Use (Withdrawn 2019)[3]

2.2 *Federal Regulations:*[4]

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

[1] 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 Childrenφs Chair and Stools.

Current edition approved July 1, 2022. Published August 2022. Originally approved in 2007. Last previous edition approved in 2021 as F2613 – 21. DOI: 10.1520/F2613-22.

[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] The last approved version of this historical standard is referenced on www.astm.org.

[4] 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.

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

2.3 *ANSI Standards:*[5]

ANSI Z535.4 – 2011 American National Standard for Product Safety Signs and Labels

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *chairs with side containment*—a *children's chair* or *folding chair* with armrests or otherwise designed in a shape which provides barriers in the vertical direction above the seating surface to the occupant's left and right which can act like arms or other side structures.

3.1.2 *children's chair, n*—seating furniture with a *rigid frame* that is intended to be used as a support for the body, limbs, or feet of a child when sitting or resting in an upright or reclining position.

3.1.3 *children's stool, n*—children's chair without back or armrests.

3.1.3.1 *Discussion*—This includes children's ottomans.

3.1.4 *conspicuous, adj*—visible to a person standing near the unit at any one position around the unit but not necessarily visible from all positions, when the unit is in a manufacturer's recommended use position with an occupant seated.

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

3.1.6 *double-action release system, n*—a mechanism requiring either two consecutive actions, the first of which must be maintained while the second is carried out, or two separate and independent simultaneous actions to fully release.

3.1.7 *elasticized component, n*—length of slender flexible material that returns to its original length or shape after being stretched.

3.1.7.1 *Discussion*—Cords and straps may be elasticized components.

3.1.8 *folding chair, folding stool, n*—a children's chair or stool which can be folded for transport or storage.

3.1.9 *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.

3.1.10 *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.

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

3.1.12 *occupant space, n*—product space that is bordered by the seat back, seat bottom, side containment, arm rest, leg rest, and underside of the canopy (if present).

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

3.1.14 *rigid frame, n*—a structure or support of stiff materials such as wood, plastic, or metal.

3.1.15 *strap, n*—piece of flexible material of which the width is significantly greater than the thickness.

4. Calibration and Standardization

4.1 All testing shall be conducted on a concrete floor that may be covered with ⅛-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 °F ± 9 °F (23 °C ± 5 °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 unless otherwise specified.

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 F963.

5.7 *Scissoring, Shearing, or Pinching*—The product, when in the 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,

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

slide, pivot, fold, or otherwise move relative to one another. Scissoring, shearing, or pinching that may cause injury exists 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) in diameter at any accessible point throughout the range of motion of such parts.

5.8 *Products that Fold*—Products that fold shall comply with either 5.8.1 or 5.8.2. These requirements are intended to eliminate possible crushing, laceration, or pinching hazards that might occur in latching or locking mechanisms and hinges. Examples are the sudden collapse or unexpected motion of a latching or locking 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 *Latching and Locking Mechanisms:*

5.8.1.1 Products shall have a latching or locking mechanism or other means to prevent folding of the product.

5.8.1.2 Latching and locking mechanisms and other means to prevent folding of the product shall engage automatically when the product is placed in any manufacturer's recommended use position. Latching and locking mechanisms may be manually activated to allow placement of the product 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.

5.8.1.3 If the product is designed with a latching and locking mechanism that prevents unintentional folding, the latching and locking mechanism either shall have a double-action release system or shall not release and remain operative when tested in accordance with 6.8.

5.8.1.4 No product shall give the appearance of being in any manufacturer's recommended use position unless the latching and locking mechanism is fully engaged.

5.8.2 *Products without Latching and Locking Mechanisms*—Products without latching and locking mechanisms shall be constructed such that a ½-in. (13-mm) diameter rod can be admitted at all positions between any adjacent moving parts and between any moving part and an adjacent stationary part along the entire length of the clearance, as shown in Fig. 1. The entire length of the clearance shall be assessed during folding and unfolding the product.

5.9 *Circular Holes in Rigid Materials*—This requirement is intended to prevent finger entrapment (which may cut off blood circulation) in accessible holes in sheet metal and other rigid materials (non-circular holes are believed to present no significant hazard of cutting off blood circulation in entrapped fingers). If an accessible, circular hole in any rigid material less than 0.062 in. (1.58 mm) in thickness can admit a ¼-in. (6-mm) diameter rod to a depth of ⅜ in. (10 mm) or greater, it shall also admit a ½-in. (13-mm) diameter rod. The product shall be evaluated in all manufacturer's recommended use positions.

5.9.1 *Rationale*—Based on requirements for toys from Consumer Safety Specification F963, since the age range of children using chairs and stools is similar to that for children using toys.

5.10 *Labeling:*

5.10.1 Warning labels (whether paper or non-paper) shall be permanent when tested in accordance with 6.2.

5.10.2 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 6.3.

5.10.3 Non-paper labels shall not liberate small parts when tested in accordance with 6.4.

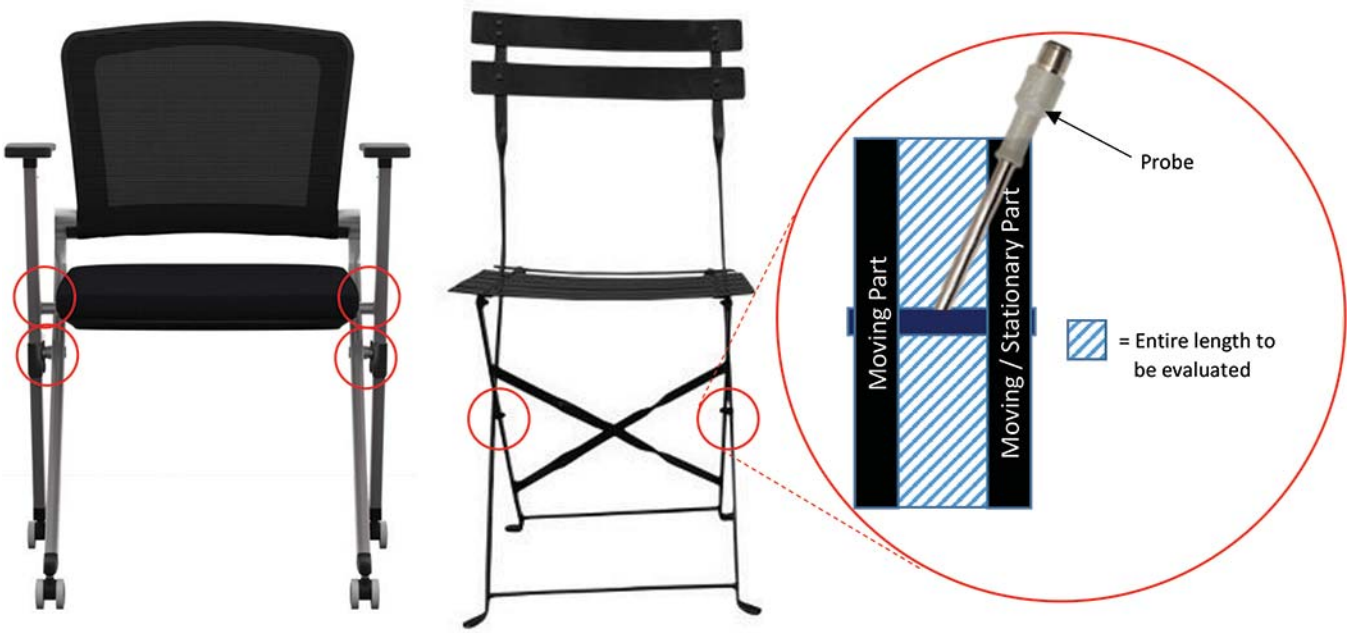

FIG. 1 Examples of Evaluation Between Moving Parts and Between Moving and Stationary Parts