



Designation: F 2640 – 07

## Standard Consumer Safety Specification for Booster Seats<sup>1</sup>

This standard is issued under the fixed designation F 2640; 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 reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

### INTRODUCTION

This consumer safety specification addresses incidents associated with booster seats that were identified by the United States Consumer Product Safety Commission (CPSC). CPSC has identified hazards resulting in injuries that occurred when children fell from booster seats, tipped over and out of a booster seat, among other types of incidents. In response to a review of the data received by the CPSC, this specification attempts to minimize the following: incidents related to tray disengagement, restraint disengagement or absence of restraint system, stability of a booster seat while attached to adult chairs and entrapment within a booster seat, in addition to other hazards presented during the use of booster seats. This specification does not cover booster seats that were either blatantly misused or used in a careless manner that disregards the warning statements and safety instructions provided with each booster seat. This specification is written within the current state-of-the-art of booster seat technology. It is intended that this specification will be updated whenever substantive information becomes available that necessitates additional requirements or justifies the revision of the existing requirements.

### 1. Scope

1.1 This consumer safety specification covers the performance requirements and methods of test to ensure the satisfactory performance of the booster seat.

1.2 This consumer safety specification is intended to minimize injuries to children resulting from normal usage and reasonably foreseeable misuse or abuse of booster seats.

NOTE 1—This consumer safety specification is not intended to address accidents and injuries resulting from the interaction of older children with children in booster seats or the accidents resulting from normal use and reasonably foreseeable misuse or abuse.

1.3 For purposes of this consumer safety specification, a booster seat is a juvenile chair, which is placed on an adult chair to elevate a child to standard dining table height. The booster seat is made for the purpose of containing a child, up to 5 years of age, and normally for the purposes of feeding or eating. A booster seat may be height adjustable and include a reclined position.

1.4 No booster seat 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 requirements contained herein.

<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 F15.16 on Highchairs, Hook-On Chairs and Expandable Gates.

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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 only to the test method portion, Section 7, of this 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*:<sup>2</sup>

**D 3359** Test Methods for Measuring Adhesion by Tape Test

**F 963** Consumer Safety Specification for Toy Safety

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 1500.48** Technical Requirements for Determining a

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto: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>.

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-.52** 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

### 3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.2 *conspicuous, n*—label which is visible, when the product is in the manufacturer’s recommended use position, to a person standing at the sides or front of the booster seat.

3.3 *fabric, n*—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.

3.4 *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.

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

3.5 *nonpaper 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.

3.6 *occupant, n*—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 which tears without the aid of tools and leaves a fibrous edge.

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

3.9 *static load, n*—vertically downward force applied by a calibrated force gauge 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 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 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 or 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 *Wood Parts*—Prior to testing, any exposed wood parts shall be smooth and free from splinters.

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

5.5 *Scissoring, Shearing, and 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) diameter at any accessible point throughout the range of motion of such parts.

5.6 *Openings*—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.

5.7 *Exposed Coil Springs*—Any exposed coil spring which is accessible to the occupant, having or capable of generating a space between coils of 0.210 in. (5.33 mm) or greater during static load testing in accordance with **6.3** shall be covered or otherwise designed to prevent injury from entrapment.

5.8 *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 **7.1**.

5.9 *Labeling:*

5.9.1 Warning labels (whether paper or non paper) shall be permanent when tested in accordance with **7.8.1-7.8.3**.

5.9.2 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 **7.8.4**.

5.9.3 Non-paper labels shall not liberate small parts when tested in accordance with **7.8.5**.

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

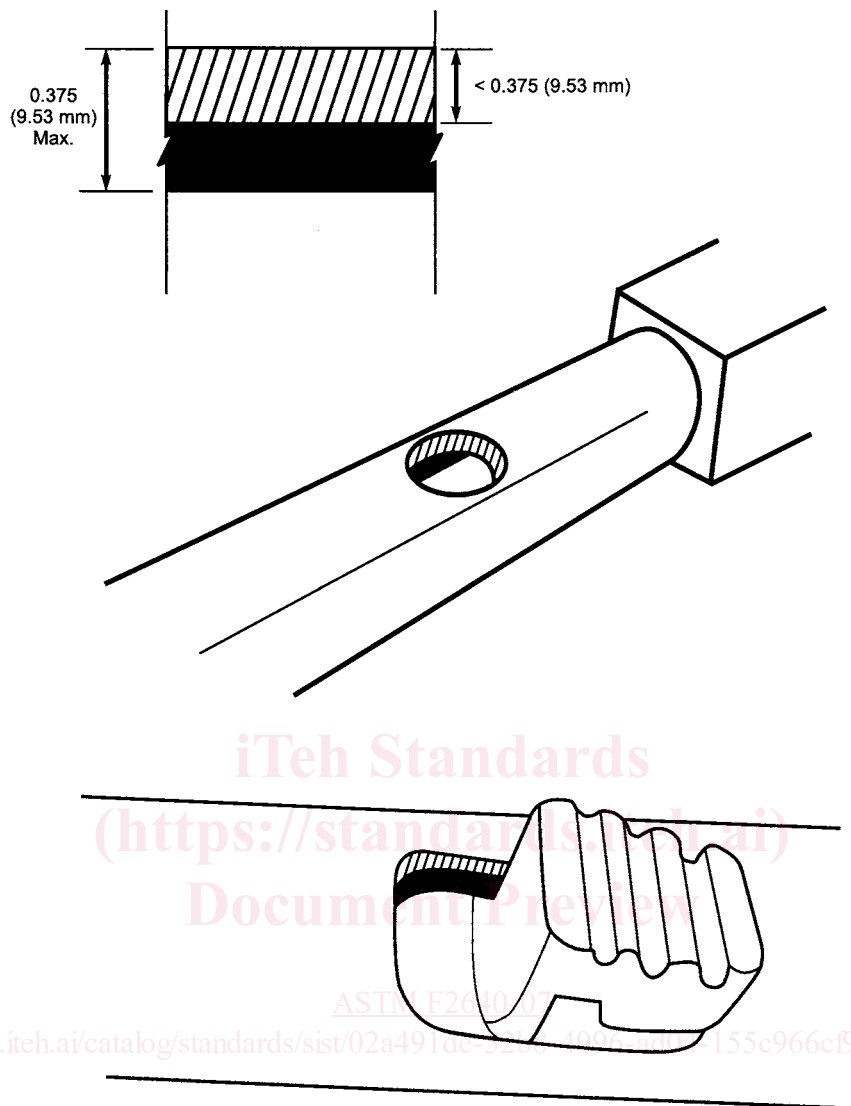


FIG. 1 Openings Examples

**6. Performance Requirements**

6.1 *Tray Performance (Drop)*—The tray shall remain functional with respect to the booster seat and exhibit no sharp points, sharp edges, or small parts when subjected to a drop test in accordance with 7.2.

6.2 *Tray Performance (Pull)*—The tray shall not become disengaged or dislocated from its original adjustment position, when tested in accordance with 7.3 and 7.4.

6.3 *Static Load*—A booster seat shall support static loads without causing any hazardous conditions as identified within this consumer safety specification. Tests shall be conducted in accordance with 7.5.

6.4 *Child Restraint System:*

6.4.1 Booster seats which are age graded for children less than 36 months shall provide a child restraint system to secure a child in any of the manufacturer’s recommended use positions.

6.4.2 The child restraint system shall include both waist and crotch restraint designed such that the use of the crotch restraints is mandatory when the restraint system is in use.