



Standard Consumer Safety Specification for Toy Chests¹

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INTRODUCTION

This consumer safety specification addresses toy chest accidents that have been identified by the U.S. Consumer Product Safety Commission (CPSC).

For the period from 1973 through 1981, the Commission documented 21 fatalities and one case of permanent brain damage from falling toy chest lids. The pattern generally involves a toy chest lid falling on a child while he or she is leaning into the chest. If the child's neck is extended across the upper edge of the front of the chest when the lid falls, the child can be caught and strangled. Additional accidents and less serious injuries have been identified, including finger entrapment and pinching associated with toy chest hardware and attachments.

This consumer safety specification attempts to minimize the following: (1) possible entrapment and strangulation hazards associated with sudden lid closing or dropping; (2) possible crushing, pinching, and laceration hazards associated with folding mechanisms, hinges, and lid supports; and (3) possible suffocation hazards due to lack of adequate ventilation.

This consumer safety specification is written within the current state-of-the-art technology. It is intended to update this specification whenever substantive information becomes available which necessitates additional requirements or justifies the revision of existing requirements.

1. Scope

1.1 This consumer safety specification covers the performance requirements and test methods to ensure the safety of toy chests.

1.2 This consumer safety specification is intended to minimize the accidents and injuries to children resulting from normal use and reasonably foreseeable misuse or abuse of toy chests.

1.3 For the purposes of this consumer safety specification, these requirements apply to products known as toy chests or toy boxes that are designed and marketed as storage containers for toys. The products subject to the requirements are those with a volume of 1.1 ft³ (0.031 m³) or more.

1.4 No toy chest or toy box 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.

1.5 The following precautionary caveat pertains only to the test methods portion, Section 5, 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. Performance Requirements

2.1 Lid Support:

2.1.1 Toy chests with vertically opening hinged lids shall be provided with lid-support mechanisms to prevent sudden collapse or dropping of the lid.

2.1.2 The lid-support mechanism shall support the lid so that at no position in the arc of travel of the lid from within 2.0 in. (50.8 mm) of the fully closed position through an arc not to exceed 60° from the fully closed position shall it drop more than 0.50 in. (12.7 mm) under the influence of its own weight, except in the last 2.0 in. (50.8 mm) of travel. The test shall be conducted in accordance with 5.1.

2.1.3 The toy chest lid shall comply with this requirement before and after being subjected to 7000 opening and closing cycles, as described in Section 5.

2.1.4 The lid-support mechanism shall not require adjustment by the consumer to ensure adequate lid support, nor shall it require adjustment in order to comply with 2.1.2 after being cycled according to 5.1.2.

¹ This specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.22 on Toy Safety.

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2.1.5 Lid-support mechanisms shall be designed so as to prevent pinching, crushing, or laceration injuries to fingers. Clearances or gaps produced by the action of such mechanisms (between components of the mechanism or between the mechanism and the toy chest lid) shall be constructed so that if the gap admits a 0.19-in. (4.8-mm) diameter rod it will also admit a 0.50 in. (12.7 mm) diameter rod at all positions of the arc of travel of the lid. This requirement does not apply to lid-support mechanisms installed on the inside of the toy chest which are at least 12 in. (305 mm) from the front and side edges of the toy chest or its lid.

2.2 *Hinge-Line Clearance*—Toy chests having a gap or clearance along a hinge line between a stationary portion and a moveable portion shall be constructed so that if the gap admits a 0.19-in. (4.8-mm) diameter rod, it will also admit a 0.50-in. (12.7-mm) diameter rod at all positions of the arc of travel of the moveable portion.

2.3 *Closures*—Toy chest closures such as lids, covers, and doors shall not be fitted with automatic locking devices. Closures and lids shall be of a type which can be opened with a force of 10 lbf (45 N) less when tested in accordance with 5.2.

2.4 *Ventilation:*

2.4.1 Any toy chest having a door or lid which encloses a continuous volume greater than 1.1 ft³ (0.31 m³) and in which all the internal dimensions are 6 in. (152 mm) or more shall provide an unobstructed ventilation area of greater than a total of 2 in.² (12.9 mm²) over 2 or more separate openings situated at least 6 in. (152 mm) apart. The ventilation area shall be provided when the toy chest is placed on the floor in any position and adjacent to two vertical plane surfaces meeting at a 90° angle, so as to simulate the corner of a room.

2.4.2 If a permanent partition or bars (two or more) which limit the continuous space by making the largest internal dimension less than 6 in (152 mm) (excluding diagonal measurements) are used to subdivide a continuous space, the ventilation area shall not be required.

3. **Labeling**

3.1 Each toy chest shall be permanently and conspicuously labeled to identify the name and address (city, state, and zip code) of either the manufacturer, distributor, or seller.

3.2 A code mark or other shall be provided on the toy chest and either the packaging or shipping container which will identify the date (month and year) of manufacture and permit future identification of any given model.

3.2.1 The manufacturer shall change the model number whenever the toy chest undergoes a significant structural design or material modification, or a change that affects its conformance with this consumer safety specification.

4. **Instructional Literature**

4.1 Instructions for proper assembly and maintenance shall be provided in sufficient detail to describe the correct assembly

of components, the resulting hazard if the lid support device is not installed, and a description of how to determine if the support is working properly.

5. **Test Methods**

5.1 *Lid Support Mechanisms:*

5.1.1 Assemble the toy chest in accordance with manufacturer’s instructions.

5.1.2 Lift the lid to any position in its arc of travel to a distance greater than 2.0 in. (50.8 mm) but not to cause the lid to move through an arc of more than 60° from the lid’s fully closed position measured at the outermost edge of the lid. Release the lid and observe any dropping motion of a point in the approximate center of the outermost edge of the lid.

5.1.3 Subject the lid to 7000 opening and closing cycles. One cycle consists of raising the lid from its fully closed position to a fully open position and returning it to fully closed.

5.1.4 To prevent undue stress on screws or other fasteners used to attach lid support mechanisms, take care not to force the lid beyond its normal arc of travel.

5.1.5 Complete one cycle in approximately 15 s. Complete the 7000 cycles within a time period of 72 h, then repeat the test described in 5.1.2.

5.2 *Closures and Lids:*

5.2.1 *Vertically Hinged Lids*—With the lid in a closed position, apply a gradually increasing force in an upward direction perpendicular to the plane of the lid at a point within 1 in. (25.4 mm) from its geometric center. Record the maximum force to cause the lid to begin to open.

5.2.2 *Other lids, covers and doors*—For all other closures, apply a gradually increasing force in the direction required to open a completely closed toy chest. Record the maximum force to cause the closure to begin to open.


6. **General Requirements**

6.1 All finishes and materials used in the construction of toy chests must be nonhazardous as defined by regulations under the Federal Hazardous Substances Act and must conform to the requirements of the regulations for Lead in Paint under the Consumer Product Safety Act.²

6.2 All toy chests must be free of mechanical hazards as defined by regulations under the Federal Hazardous Substances Act establishing safety criteria for sharp points, sharp metal and glass edges, and accessible small parts.²

6.3 All toy chests should be tested for potential hazards in accordance with Test Methods for Simulating Use and Abuse of Children’s Articles published as regulations under the Federal Hazardous Substances Act.²

² Regulations promulgated under these acts can be found under Title 16 of the Code of Federal Regulations.

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