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Standard Consumer Safety Specification for Child Safety Locks and Latches for Use with Cabinet Doors and Drawers[1]

This standard is issued under the fixed designation F3492; 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 child safety locks and latches for use with cabinet doors and drawers that were identified by the U.S. Consumer Product Safety Commission (CPSC).

In response to incident data compiled by the CPSC, this specification attempts to minimize the following hazards: entrapment and access to hazardous chemicals and materials.

This specification is intended to cover normal use and reasonably foreseeable misuse or abuse of the product(s).

This specification is written within the current state-of-the-art of cabinet door and drawer locks and latches technology and will be updated whenever substantive information becomes available that necessitates additional requirements or justifies the revision of existing requirements.

1. Scope

1.1 This specification covers safety requirements, test methods, and warnings for child safety locks and latches intended to be installed by consumers to the interior of residential cabinet doors or drawers to restrict access to household cabinets by children under the age of 48 months.

1.2 Child safety locks and latches that are not covered under this specification include devices:

1.2.1 Installed on the exterior of a cabinet door or drawer,

1.2.2 Requiring installation by professionals, or

1.2.3 That are an integral part of the cabinet door or drawer system.

1.3 This specification does not cover child safety locks, latches, and straps intended for use on furniture or appliances as anchoring devices to prevent tip over.

1.4 The values stated in inch-pound units are to be regarded as the 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 The following precautionary caveat pertains only to the test methods 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, 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 *Federal Standards:*[2]

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 sharp point in toys and other articles intended for use by children under 8 years of age

16 CFR 1500.49 Technical requirements for determining a sharp metal or glass edge in toys and other articles intended for use by children under 8 years of age

16 CFR 1501 Method for identifying toys and other articles intended for use by children under 3 years of age which present choking, aspiration, or ingestion hazards because of small parts

[1] This test method is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.76 on Locks and Latches.

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[2] Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, http://www.access.gpo.gov.

3. Terminology

3.1 *Definitions:*

3.1.1 *catch, n*—mating part for a lock or latch.

3.1.2 *device, n*—any lock or latch product or system that may include a catch and screws or other attachment means or a separate component that can unlock the lock or latch (such as a magnetic key), or both, that is intended to be installed by consumers to the interior of residential cabinet doors or drawers to restrict access to household cabinets by children under the age of 48 months.

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

3.1.4 *effective strength, n*—force required to disengage or break/damage any component of the device, including the attachment means.

3.1.5 *mounting block, n*—hard wood block with smooth surfaces having sufficient length, width, and depth to provide adequate attachment area for the lock, latch, or catch, as well as adequate surface area for securing the block to the tensile test machine.

3.1.5.1 *Discussion*—Mounting block examples shown in Fig. 1 are for reference only.

3.1.6 *static load, n*—vertically downward load applied by weights or other means.

4. Calibration and Standardization

4.1 The product shall be completely assembled, unless otherwise noted, in accordance with the manufacturer's instructions.

4.2 No testing shall be conducted within 48 h of manufacturing.

4.3 The product to be tested shall be in a room with an ambient temperature of 73 °F ± 9 °F (23 °C ± 5 °C) for at least 1 h before testing. Testing shall then be conducted within this temperature range.

4.4 *Equipment*—Tensile test machine with a range of up to at least 11 lb/s (49.5 N/s) of force application over a 5 s time period and having an accuracy of ±0.5 % for all readings which is maintained within calibration limits on a periodic basis.

FIG. 1 Mounting Block Examples with Latch and Catch Attached

5. General Requirements

5.1 There shall be no accessible hazardous sharp points or edges as defined in 16 CFR 1500.48 and 16 CFR 1500.49 respectively, both in the "as sold" condition and after the device has been tested to this specification, excluding screws used for installation.

5.2 There shall be no small parts, as defined by 16 CFR 1501, liberated as a result of attaching the device to the mounting blocks in accordance with the manufacturer's instructions or testing the device to this specification.

5.3 Magnetic key components attached to or sold with devices shall comply with the requirements specified in 5.1 and 5.2.

5.4 All paint and surface coatings on the product shall comply with 16 CFR 1303.

5.5 *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. and 0.375 in. (9.53 mm and 5.33 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. The device shall be evaluated after installation for testing.

6. Performance Requirements

6.1 *Effective Strength:*

6.1.1 When tested in accordance with Section 7, the effective strength of the device shall not be less than 45.3 lbf (20.6 kgf) when evaluated as follows:

6.1.1.1 Thirty (30) samples of the device shall be tested per Section 7 to determine the 99.8 % percentile (±3 sigma) effective strength range.

6.1.1.2 Determine the mean of the recorded test results for the 30 samples.

6.1.1.3 Determine the standard deviation (sigma) of the recorded test results for the 30 samples.

6.1.1.4 Calculate 3 sigma by multiplying the value of sigma obtained in 6.1.1.3 by 3.

6.1.1.5 Calculate the lower limit of the effective strength by subtracting the value obtained in 6.1.1.4 from the mean calculated in 6.1.1.2.

7. Test Method

7.1 Assemble the device to one set of mounting blocks in accordance with the manufacturer's instructions and simulating the configuration described by the manufacturer as to how the device is intended to be installed on a cabinet door or drawer (Fig. 1).

7.1.1 If no torque is specified for attachment screws, secure them so they are fully seated without overtightening.

7.1.2 If adhesive(s) is provided for installing the device, follow the manufacturer's instructions for cleaning the surface(s) of the mounting blocks and installing the device using the adhesive(s).

7.2 Attach the assembled mounting blocks to the tensile test machine so that the components of the device can be pulled in a direction tending to disengage or break during the test.

7.2.1 All mating components of the device shall be engaged or in contact with each other in accordance with the manufacturer's instructions. (See Fig. 2 for an example.)

7.3 Zero the force gauge.

7.4 Set the tensile test machine to 2.5 in. per minute and a sampling rate of 100 samples per second.

7.5 Begin the test and continue until the device either disengages (an example is shown in Fig. 3) or any component of the device or its attachment means breaks either partially or completely.

7.6 Record the maximum force at which either the disengagement or the breakage/damage has occurred and identify the specific failure mode.

8. Marking and Labeling

8.1 Each device shall be permanently marked with the name of the manufacturer, distributor, or seller and a code mark or other means that identifies the date (month and year as a minimum) of manufacture.

8.2 Each retail package shall be marked or labeled clearly and legibly to indicate the following:

8.2.1 The name, place of business (city, state, and mailing address, including zip code), and telephone number of the manufacturer, distributor, or seller.

8.2.2 A code mark or other means that identifies the date (month and year as a minimum) of manufacture.

9. Warnings

9.1 Warnings specified in this section shall be included with the device when sold, either at the beginning of a separate instructions insert or, if a separate insert is not provided, as printing or a label on the retail package above the instructions.

FIG. 2 Mounting Block Examples with Latch and Catch Engaged

FIG. 3 Example of Failure due to Disengagement

9.1.1 Warning statements shall be in contrasting color(s) to the background, permanent, in sans serif style font, and in the English language at a minimum.

9.1.2 In warning statements, the safety alert symbol ⚠ and the signal word "**WARNING**" shall not be less than 0.2 in. (5 mm) high and the remainder of the text shall be in characters whose upper case shall be at least 0.1 in. (2.5 mm).

9.2 Warnings shall include the following exactly as stated:

⚠ WARNING
Failure to follow these warnings and the instructions could result in death or serious injury.

9.3 Warning statements shall address the following:

Read these warnings and the instructions carefully before installing and using this device.

- Adult installation required. Keep small parts away from children during installation.
- Properly store any extra or unused components out of reach of children.
- This device is intended to restrict access by young children to the contents of a cabinet or drawer, but some children may still be able to defeat it.
- Replace the device if it becomes damaged or broken or fails to function properly

9.4 If a separate instructions insert is provided, then the warnings on the package specified in 9.2 and 9.3 shall be replaced in their entirety by the following warning exactly as stated:

⚠ WARNING
Read included warnings and instructions before installation and use.

10. Instructions

10.1 Instructions specified in this section shall be included with the product when sold, either as a separate instruction insert or, if a separate insert is not provided, as printing or a label on the retail package. Instructions shall be easy to read and understand, and shall be in the English language at a minimum.

10.2 Instructions shall address the following information:

10.2.1 **Keep these instructions for future reference.**

10.2.2 Information regarding what types of cabinet doors and drawers the device is intended for use with,