



# Standard Consumer Safety Specification for Baby Monitors<sup>1</sup>

This standard is issued under the fixed designation F2951; 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 corded baby monitors that were identified by the U.S. Consumer Product Safety Commission (CPSC).

Incidents identified by the CPSC and addressed in this consumer safety specification include strangulations as a result of entanglement in cords.

This consumer safety specification is not intended to address corded monitors that are either blatantly misused or abused. This consumer safety specification is written within current state-of-the-art technology 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 requirements for corded baby monitors, including audio monitors, video monitors, and motion sensor monitors. It also provides requirements for labeling, instructional material and packaging.

1.1.1 This consumer safety specification is intended to minimize injuries to children resulting from normal usage and reasonably foreseeable misuse or abuse of baby monitors.

1.2 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.

1.3 *Units*—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.

1.4 *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 specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.68 on Baby Monitors.

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## 2. Referenced Documents

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

[D3359 Test Methods for Measuring Adhesion by Tape Test](#)  
[F963 Consumer Safety Specification for Toy Safety](#)

### 2.2 *Federal Standards*:<sup>3</sup>

[16 CFR 1303 Ban of Lead-Containing Paint and Certain Consumer Products Bearing Lead-Containing Paint](#)

[16 CFR 1500 Hazardous Substances Act Regulations including sections: 1500.3 \(c\) \(6\) \(vi\) Definition of “Flammable Solid”](#)

[1500.48 Technical Requirements for Determining a Sharp Point In Toys and Other Articles Intended for Use By Children Under Eight Years of Age](#)

[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](#)

[1500.53 Test Methods for Simulating Use and Abuse of Toys and Other Articles Intended for Use by Children Over 36 but Not Over 96 Months of Age](#)

## 3. Terminology

### 3.1 *Definitions of Terms Specific to This Standard*:

3.1.1 *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.

<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>.

3.1.2 *cord, n*—External Power Supply (AC adapter) or other electrical cords which are connected to the monitor.

3.1.2.1 *Discussion*—Additionally, any non-electrical cords such as a length of slender, flexible material including monofilaments, woven and twisted cord, rope, plastic textile tapes, ribbon, and those fibrous materials commonly called string.

3.1.3 *corded monitor, n*—monitor that uses a cord or one that has an option to use a cord.

3.1.4 *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.

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

3.1.5 *nonpaper label, n*—any 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.

3.1.6 *occupant retention area, n*—any area designated by the manufacturer as being the recommended area for the occupant of the product.

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

3.1.8 *protective covering, n*—rigid shielding, rigid encasement, or other means of enclosing a cord.

## 4. Calibration and Standardization

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

4.2 The product to be tested shall be preconditioned in a room with an ambient temperature of  $73 \pm 9^\circ\text{F}$  ( $23 \pm 5^\circ\text{C}$ ) for at least 1 h before testing. Testing shall then be conducted within this temperature range.

4.3 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 Corded monitors shall provide warnings to instruct consumers not to place a baby monitor cord where it is accessible to a child, or, if intended to be attached to a crib or used within 3 ft (0.9 m) of a crib, shall have cords that are encased in a rigid protective covering to prevent access to a cord that could cause a strangulation hazard.

5.2.1 Corded monitors not intended to be attached to a crib shall have warning labels as defined in 7.2.

5.2.2 Corded monitors intended to be attached to a crib or used within 3 ft (0.9 m) of a crib shall have cords that are inaccessible to the occupant by rigid encasement, shielding, or other means. When installed according to the manufacturer's instructions, cords shall remain inaccessible when tested to 6.1. Cords are considered accessible if, after performing these tests, any portion of the cord is exposed within 36 in. (91 cm) to the

occupant retention area and can be contacted by any portion forward of the collar of the accessibility probe as described in 16 CFR 1500.48 and 16 CFR 1500.49. EXCEPTION: For units that are secured to a crib and the shield/enclosure extends downward to the floor, the cord is considered accessible if it can be exposed within 20 in. (51 cm) from the top of the mattress in the occupant retention area.

5.2.2.1 A protective covering provided by the manufacturer shall come assembled and attached to the cord or shall be designed such that the monitor cannot be attached to a crib rail or crib slat without the use of the protective covering over the cord. The protective covering shall comply with the requirement of 5.2.2 for accessibility.

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

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

### 5.5 Warning Labels:

5.5.1 Warning labels (whether paper or nonpaper) shall be permanent when tested in accordance with 6.2.

5.5.2 Warning statements applied directly onto the surface of the product by hot stamping, heat transfer, printing, wood burning, or other means shall be permanent when tested in accordance with 6.2.

5.6 Toy accessories included with baby monitors shall meet applicable requirements of Consumer Safety Specification F963 and shall not be attached to the baby monitor.

## 6. Test Methods

6.1 When in the manufacturer's recommended use position, rigid shielding, rigid encasements, or other means of enclosing a cord intended to prevent accessibility to the cord shall be tested per 16 CFR 1500.53 to both a 4 in.-lb (4.6 kg-cm) torque test and a 15-lb (7-kg) tension test to any attachment point in a direction normally associated with detachment.

### 6.2 Permanency of Warning Labels:

6.2.1 A paper label (excluding labels attached by a seam) shall be considered permanent if, during an attempt to remove it without the aid of tools or solvents, it cannot be removed, it tears into pieces upon removal, or such action damages the surface to which it is attached.

6.2.2 A nonpaper label (excluding labels attached by a seam) shall be considered permanent if, during an attempt to remove it without the aid of tools or solvents, it cannot be removed or such action damages the surface to which it is attached.

6.2.3 A warning label affixed to a cord shall be considered permanent if it does not completely detach when subjected to a 10-lbf (45-N) pull force applied in any direction most likely to cause failure using a  $\frac{3}{4}$ -in. (19-mm) diameter clamp surface. Gradually, apply the force over 5 s and maintain for an additional 10 s.

6.3 Adhesion test for warnings applied directly onto the surface of the product.

6.3.1 Apply the tape test defined in Test Methods D3359, Test Method B—Cross-Cut Tape Test eliminating parallel cuts.

6.3.2 Perform this test once in each different location where warnings are applied.

6.3.3 The warning statements shall be considered permanent if the printing in the area tested is still legible and attached after being subjected to this test.

**7. Product Marking and Labeling**

*7.1 Labeling:*

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

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

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

7.1.2 The markings on the product shall be permanent.

7.1.3 The warning statements on the product and retail package shall be in contrasting color(s), permanent, and sans serif style font.

7.1.4 Photographs on the product, retail package, or instructions of monitors that are not intended to be attached to a crib shall support the fact that the transmitter (camera or microphone or both) and cord shall be mounted out of the reach of children. No image shall imply that a corded transmitter (camera or microphone or both) may be mounted on the crib or placed in the crib.

7.2 *Warning Statements*—For products not intended to be attached to a crib, each product’s transmitter (camera or microphone or both) and receiver (parent unit) shall have a warning label. The warning label shall be permanently affixed to the cord of each unit and be placed no greater than 4 in. (10.16 cm) from the transmitter and receiver plug/jack as shown in Fig. 1.

7.2.1 The safety alert symbol and the 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) high.

7.2.2 The warning statements and pictogram (Fig. 2) in the following sections shall be addressed. The pictogram shall be as shown EXCEPT for the camera image which may be changed, at the manufacturers discretion, to more accurately reflect the actual manufacturer’s camera design. For the cord warning label and the retail package the pictogram shall be black with a red circle and slash on a white background.

NOTE 1—Addressed means that verbiage other than what is shown can be used as long as the intent is the same or information that is product specific is presented.

7.2.2.1 **Warning**—Strangulation Hazard—Children have STRANGLED in cords. Keep this cord out of the reach of children (more than 3 ft (0.9 m) away). Do not remove this tag.

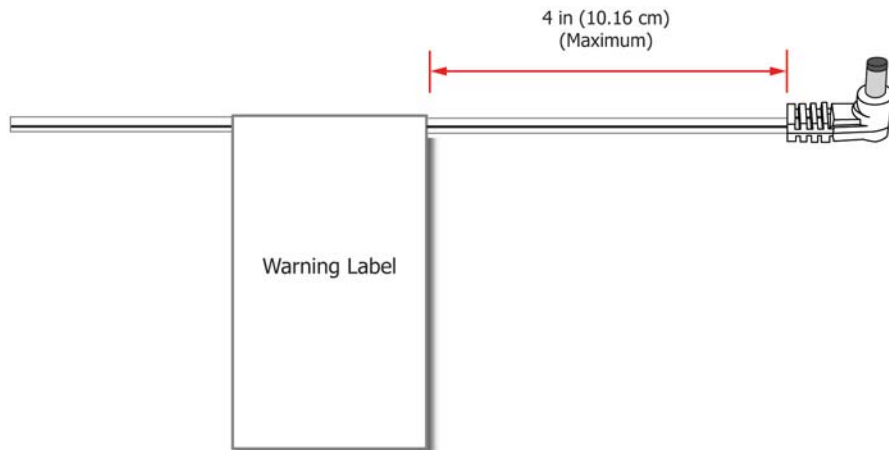
7.2.2.2 Pictogram as illustrated in Fig. 2 and detailed in 7.2.2.

7.3 *Warning Statements*—For products intended to be attached to a crib and designed, by the manufacturer, with a cord that is intended to always to be used with shielding, the receiver (parent unit) shall have a warning label as described in 7.2.

7.3.1 Each transmitter’s (camera or microphone or both) rigid shielding, rigid encasement, or other means of enclosing a cord shall have a warning label. The warning label shall be permanently affixed to the rigid shielding, rigid encasement, or other means of enclosing a cord such that the label is conspicuous.

7.3.2 The safety alert symbol and the 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) high.

7.3.3 The warning statements and pictogram in the following sections shall be addressed. The pictogram shall be as shown EXCEPT for the camera image which may be changed, at the manufacturers discretion, to more accurately reflect the actual manufacturer’s camera design. For the cord/rigid shielding/rigid encasement warning label and the retail package the pictogram shall be black with a red circle and slash on a white background.



**FIG. 1 Warning Label Affixed to Cord**



FIG. 2 Pictogram

NOTE 2—Addressed means that verbiage other than what is shown can be used as long as the intent is the same or information that is product specific is presented.

7.3.3.1 **Warning**—Strangulation Hazard—Children have STRANGLED in cords. NEVER attempt to use cord without the protective covering. Check protective covering before each use to ensure that the cord is not exposed to your child. Immediately discontinue use if protective covering is damaged or broken. Do not remove this tag.

7.3.3.2 Pictogram as illustrated in Fig. 2 and detailed in 7.3.3.

7.3.4 Each transmitter’s (camera or microphone or both) cord shall have a warning label. The warning label shall be permanently affixed to the cord such that the label is conspicuous when the protective covering is not used. The warning label shall be permanently affixed to the cord and be placed no greater than 4 in. (10.16 cm) from the transmitter plug/jack as shown in Fig. 1.

7.3.5 The safety alert symbol and the 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) high.

7.3.5.1 The warning statements and pictogram in the following sections shall be addressed. The pictogram shall be as shown EXCEPT for the camera image which may be changed, at the manufacturers discretion, to more accurately reflect the actual manufacturer’s camera design. For the cord warning label and the retail package the pictogram shall be black with a red circle and slash on a white background.

NOTE 3—Addressed means that verbiage other than what is shown can be used as long as the intent is the same or information that is product specific is presented.

7.3.5.2 **Warning**—Strangulation Hazard—Children have STRANGLED in cords. NEVER attempt to use cord without the protective covering. Do not remove this tag.

7.3.5.3 Pictogram as illustrated in Fig. 2 and detailed in 7.3.5.1.

7.4 *Warning Statements*—For corded monitors that are intended by the manufacturer to have the option of being attached to a crib and used with shielding, or used away from

the child (more than 3 ft) without shielding, the receiver (parent unit) shall have a warning label as described in 7.2.

7.4.1 Each transmitter’s (camera or microphone or both) rigid shielding, rigid encasement, or other means of enclosing a cord shall have a warning label. The warning label shall be permanently affixed to the rigid shielding, rigid encasement, or other means of enclosing a cord such that the label is conspicuous.

7.4.2 The safety alert symbol and the 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) high.

7.4.3 The warning statements and pictogram in the following sections shall be addressed. The pictogram shall be as shown EXCEPT for the camera image which may be changed, at the manufacturers discretion, to more accurately reflect the actual manufacturer’s camera design. For the cord/rigid shielding/rigid encasement warning label and the retail package the pictogram shall be black with a red circle and slash on a white background.

NOTE 4—Addressed means that verbiage other than what is shown can be used as long as the intent is the same or information that is product specific is presented.

7.4.3.1 **Warning**—Strangulation Hazard—Children have STRANGLED in cords. Always use protective covering when used within 3 feet of crib. Check before each use to ensure that the cord is not exposed to your child. Immediately discontinue use if protective covering is damaged or broken. Do not remove this tag.

7.4.3.2 Pictogram as illustrated in Fig. 2 and detailed in 7.4.3.

7.4.4 Each transmitter’s (camera or microphone or both) cord shall have a warning label. The warning label shall be permanently affixed to the cord such that the label is conspicuous when the protective covering is not used. The warning label shall be permanently affixed to the cord and be placed no greater than 4 in. (10.16 cm) from the transmitter plug/jack as shown in Fig. 1.

7.4.5 The safety alert symbol and the 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) high.

7.4.5.1 The warning statements and pictogram in the following sections shall be addressed. The pictogram shall be as shown EXCEPT for the camera image which may be changed, at the manufacturers discretion, to more accurately reflect the actual manufacturer’s camera design. For the cord warning label and the retail package the pictogram shall be black with a red circle and slash on a white background.

NOTE 5—Addressed means that verbiage other than what is shown can be used as long as the intent is the same or information that is product specific is presented.

7.4.5.2 **Warning**—Strangulation Hazard—Children have STRANGLED in cords. When using without protective covering, keep this cord out of the reach of children (more than 3 ft (0.9 m) away). Do not remove this tag.

7.4.5.3 Pictogram as illustrated in Fig. 2 and detailed in 7.4.5.1.

7.5 The retail package shall contain the applicable warning and pictogram in 7.2, 7.3, or 7.4. The applicable warning and pictogram shall be visible on the outside of the retail package.

## 8. Instructional Literature

8.1 Instructions shall be provided and shall be easy to read and understand. Assembly, maintenance, cleaning, operating, and warnings, where applicable, shall be included.

8.1.1 Instructions shall, at a minimum, contain statements that address the warning and pictogram in 7.2, 7.3, or 7.4.

## 9. Keywords

9.1 baby monitor; cord

# APPENDIX

## (Nonmandatory Information)

### X1. RATIONALE

X1.1 Subsection 6.1—The 20-in. (51-cm) (shoulder-to-fingertip) requirement was derived from the anthropometry of infants, children, and youths to age 18 for product safety design (UM-HSRI-77-17).

arm length plus seated shoulder height of a two year old, which is approximately 32.5 in. (82.5 cm). The additional 3.5 in. (9 cm) were added to ensure that the product is out of the child's reach.

X1.2 Subsection 7.2—The 3-ft (36-in.) (0.9-m) requirement is approximated based on the 95th percentile measurements of

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