



Test Manual
for
Bunk Bed Entrapment Hazards

16 C.F.R. Part 1213, Part 1513, and Section (§) 1500.18

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**U.S. Consumer Product Safety Commission
Washington, D.C.**

<http://www.cpsc.gov>

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1. Scope

This test manual is intended as a guide for U. S. Consumer Product Safety Commission (CPSC) staff to use for compliance testing of bunk beds. Manufacturers and distributors may also use this as a guide for performing their own tests. This test manual is not a mandatory standard. The mandatory standards for bunk beds are set forth in the applicable regulations in the Code of Federal Regulations (C.F.R.), at Title 16 C.F.R. Parts 1213 and 1513, and § 1500.18 (a). These standards are intended to assure that openings in a bunk bed are not of a size and shape that can entrap a child's head and neck.

2. Background

On December 22, 1999, the CPSC published new rules for bunk beds codified at 16 C.F.R. Parts 1213 and 1513, and § 1500.18 (a). Part 1213, "Safety Standard for Entrapment Hazards in Bunk Beds," pertains to bunk beds intended for use by adults. Part 1513, "Requirements for Bunk Beds," pertains to bunk beds intended for use by children. Section 1500.18 provides that a bunk bed that does not comply with Part 1513 is a banned children's article.

The rules set forth requirements for bunk beds to reduce or eliminate the risk that children will become trapped in openings or guardrails or other specific structures in the bed. This test manual includes the following information for the testing of bunk beds:

- a. testing methods for testing bunk beds to assess compliance with the requirements of the standard;
- b. specifies the tools needed for testing, such as a wedge block probe, guardrail template, spherical probe, and neck-entrapment probe; and
- c. provides a report form (Appendix A) to record the test results.

An ASTM standard, ASTM F-1427-96, "Standard Consumer Safety Specification for Bunk Beds," contains additional requirements that address other bunk bed hazards, such as structural integrity.

3. Definitions of Bunk Bed Components

- a. *Bunk bed*: a bed in which the underside of any foundation is over 30 inches from the floor.
- b. *Bed end structure*: an upright unit at the head and foot of the bed to which the side rails attach.
- c. *Foundation*: the base or support on which a mattress rests.
- d. *Guardrail*: a rail or guard on a side of the upper bunk to prevent a sleeping occupant from falling or rolling out.
- e. *Side Rail*: a rail attached to a bed end structure to which the foundation support system is fastened.

4. Equipment Needed

- a. Tools specified for assembly of the bunk bed by the manufacturer's instructions;
- b. Tools and equipment in the Investigators Bunk Bed Test Kit, including:
 - i. Quarter-circle guardrail template.
 - ii. Wedge block. See Figure 3.
 - iii. 9-inch diameter rigid spherical probe. See Figure 4.
 - iv. Neck entrapment probe. See Figure 5.
 - v. Force gage: range 0 to approx. 50 lbf (± 1 lbf)
 - vi. 0.22-inch finger probe (unarticulated)
 - vii. 10 to 12-ft. tape measure
 - viii. Stop watch or a watch with a "seconds" hand
 - ix. 45-degree triangle and a small level, or an inclinometer
 - x. Colored wax pencils (blue, red, white, and black)
- c. One camera (35mm or digital)
- d. Blank copy of the Bunk Bed Test Report form (Appendix A) to fill out.

NOTE: The test kit is available for use by CPSC Laboratory or Field Operations staff only.

5. Summary of Requirements for Bunk Beds

16 C.F.R. Parts 1213 and 1513 contain three basic sets of requirements that a bunk bed must meet. These are summarized as follows:

- a. *Entrapment Requirements:* Entrapment requirements are established for guardrails and the end structures of bunk beds. (16 C.F.R. § 1213.3 and 1513.3)
 - Each bunk bed must have at least two guardrails, one on each side of the bed, for each bed with the underside of its foundation more than 30 inches from the floor.
 - The top of the guardrails must be at least 5 inches above the surface of the thickest mattress the manufacturer recommends.
 - The guardrail intended for the wall side must be continuous between the end structures.
 - The non-wall side guardrail can have an opening up to 15 inches wide between each end of the guardrail and an end structure.
 - The upper edge of each of the upper end structures must be at least 5 inches above the top surface of the mattress for at least half the distance between the two posts or corners at the head and foot of the upper bunk.
 - Testing for entrapment requires that the test operator check three areas: the guardrails, and the end structures of both the upper and lower bunks.

- In each area, one or more of the three probes - the wedge block probe, the spherical probe, and the neck-entrapment probe – are used to check for potential entrapment hazards.
- b. *Marking and Labeling Requirements:* A bunk bed must have specified labels on the bed frame that identify the manufacturer or importer, model information, as well as warn the user about safety issues. (16 C.F.R. § 1213.5 and § 1513.5)
 - c. *Instruction Requirements:* The standard requires that assembly instructions accompany each bunk bed set. They must specify the mattress size. They must include a warning to consumers against certain practices and uses that could be unsafe. (16 C.F.R. § 1213.6 and 1513.6)

6. Preliminary Set-Up for Bunk Bed Testing

This section describes the steps necessary to prepare a bunk bed for testing.

- a. Before testing the bed, make sure it is assembled according to the manufacturer’s instructions and that all the test equipment is available.
- b. Before conducting any of the tests, fill out the Bunk Bed Identification and Dimensions section using a copy of the Bunk Bed Test Report Form contained in Appendix A.
- c. Photograph the assembled bunk bed in its entirety. During testing, photograph parts of the bunk bed that are found to be non-complying.

7. Bunk Bed Test Procedures

The bunk bed is evaluated using the following procedure, which reflects all of the standard’s requirements for guardrails, end structures, labeling and instructions. The procedure is presented in the same sequence as stated in the regulations. The test operator may choose an alternate sequence to minimize installing and removing the mattress. A videotape that demonstrates the test procedure is available. The test operator records test results on a copy of the Bunk Bed Test Report Form (located in Appendix A) for submittal to the CPSC Office of Compliance.

- a. *Guardrails:* Check to see if the guardrails meet the general requirements at 16 C.F.R. § 1213.3 (a) or § 1513.3 (a).
 - i. Measurements can be taken with the tape measure, quarter-circle template and finger probe available in the test kit.
 - ii. Does each bed with the underside of its foundation greater than 30 inches off the floor have at least two guardrails, one on each side of the bed?

iii. One guardrail must be continuous between each of the bed's end structures, and be at least 5 inches above the maximum mattress height recommended by the manufacturer for the entire length. The continuous guardrail may end at the head and/or foot of the bed in a quarter-circle bend that is equal to or above the quarter-circle shown in Figure 1. Use the quarter-circle template supplied in the test kit. Adjust the template so that the top of the template is 5 inches above the top of the maximum thickness mattress and foundation recommended by the manufacturer. Compare the area of the guardrail to the quarter-circle template. All parts of the guardrail must be at least as high as, or higher than the quarter-circle template when viewed from the side.

1) The "continuous" requirement allows a small gap between the guardrail and the end structure that shall not exceed 0.22 inches. The purpose of this requirement is to prevent a child from getting his or her finger trapped. Use the finger probe in the test kit to make this assessment. Is the gap between the end of the guardrail and the end structure below the level of the maximum thickness mattress less than or equal to 0.22 inches at each end? (Answer "Yes" if the gap is smaller than the finger probe and prevents the probe from sliding down the gap to the foundation level.) If the top edge of a guardrail is straight across and physically attached to the end structure, (i.e. no gap between the top surface/edge of the guardrail), the "continuous" requirement is met. See Figure 1.

2) Is the continuous guardrail at least as high, or higher than the quarter-circle template in the zone that is within 5.22 inches of the end structure? See Figure 1.

3) Between the two 5.22-inch wide zones at the head and foot of the bed, the guardrail should stand at least 5 inches above the maximum recommended mattress thickness for the entire length of the guardrail. With the thickest mattress the manufacturer recommends, measure from the top of the thickest mattress to the top of the guardrail of the upper bunk on the bed. If the thickest mattress is not supplied, mark the height of the thickest mattress on the bed frame (with a contrasting color using a wax pencil supplied in the CPSC test kit), and measure from the marked point. Does the upper edge of the continuous guardrail stand 5 inches or more above the thickest mattress recommended by the manufacturer over its entire remaining length (above the 5.22-inch zones at the head end structure)? See Figure 1.

Continuous Guardrail

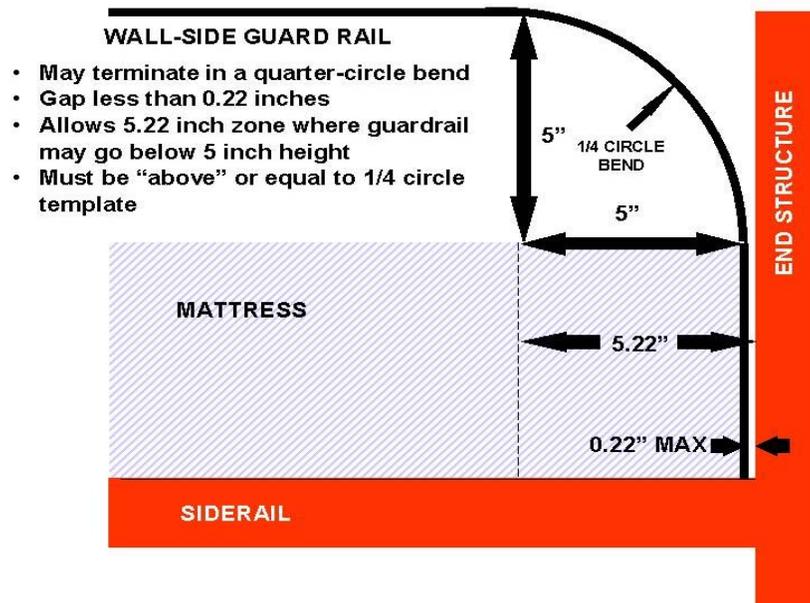


Figure 1 – Quarter-circle Continuous Guardrail

- iv. The other guardrail (non-wall side) must reach to within 15 inches of the nearest bed end structure. See Figure 2. Look at both ends of the guardrail. An opening in the middle is not allowed.
 - 1) Is the opening 15 inches or less between the guardrail and the bed end structure at the height 5 inches above the thickest mattress?
 - 2) With the thickest mattress the manufacturer recommends, measure from the top surface of the mattress to the top of the guardrail of the upper bunk on the bed. If the thickest mattress is not supplied, mark the thickest mattress dimension on the bed frame (with a contrasting color of a wax pencil supplied in test kit), and measure from the marked point. The other (non-wall side) guardrail should stand at least 5 inches or more above the mattress height at distances 15 inches or more from the head of the bed's end structure. Is the non-wall side guardrail 5 inches or more above the maximum thickness mattress at all distances greater than 15 inches from either end structure?
- v. Check to see if the guardrails are securely attached. Are the guardrails attached so that they can only be removed by either:
 - 1) intentionally releasing a fastening device; or
 - 2) applying forces sequentially in two different directions (e.g., up and over or vice-versa).

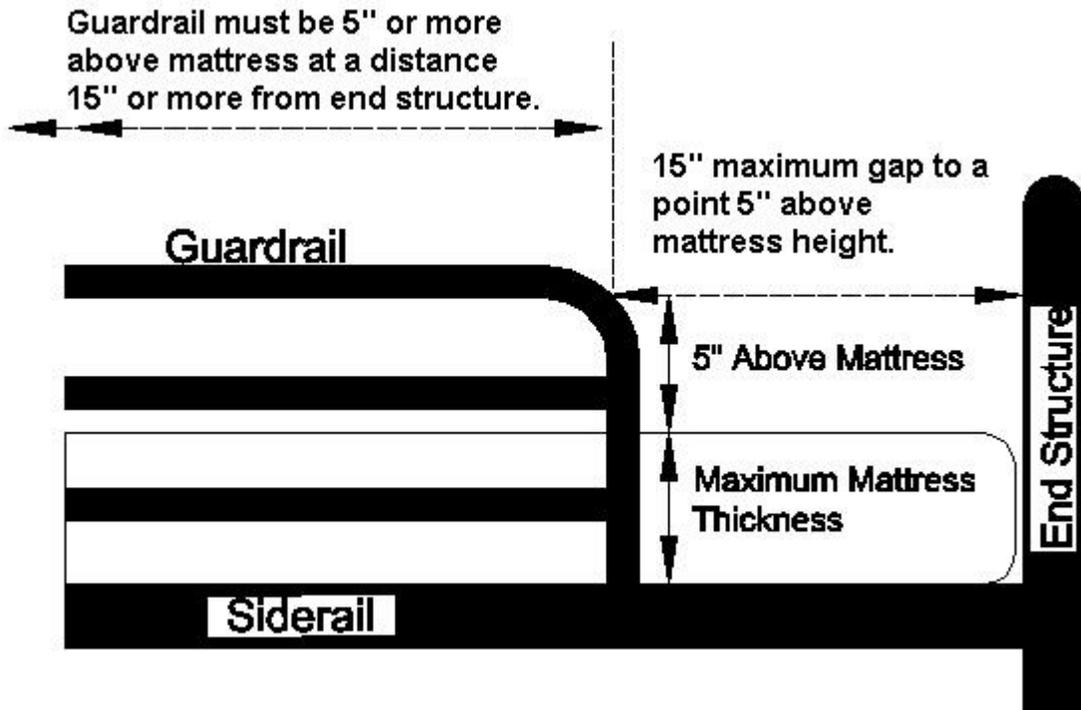


Figure 2 - Guardrail with Maximum 15-inch Gap

- vi. Check to see if the bunk bed is designed to have a ladder or has a ladder attached to one side of the bed. If yes:
 - 1) Is the continuous guardrail located on the other side of the bed?
 - 2) Some bunk beds may have two continuous guardrails and a ladder, or may have a ladder attached to the end structure.
- vii. Check for upper bunk guardrail-foundation entrapment:
 - 1) If there is a mattress and/or foundation, remove it from the upper bunk bed.
 - 2) Look for openings in the area below the lower edge of the highest portion of the guardrail, and the underside of the upper bunk's foundation.
 - 3) Place the wedge block shown in Figure 3 (simulating a child's torso) against each opening, tapered side first, and oriented so it is most likely to pass through the opening.
 - 4) Attach the force gage supplied with the test kit to the hook of the wedge block.

- 5) Gradually pull in the direction perpendicular to the plane of the large end of the wedge block. CAUTION should be exercised while pulling on the wedge block to avoid injury if it pulls through.
- 6) Pull for one minute with a force of 33-lbf.
- 7) Repeat the test for each opening. Does each opening prevent the wedge block from passing through it?
- 8) Describe the shape and location of openings that allow the wedge block to pass through. Document with photographs.

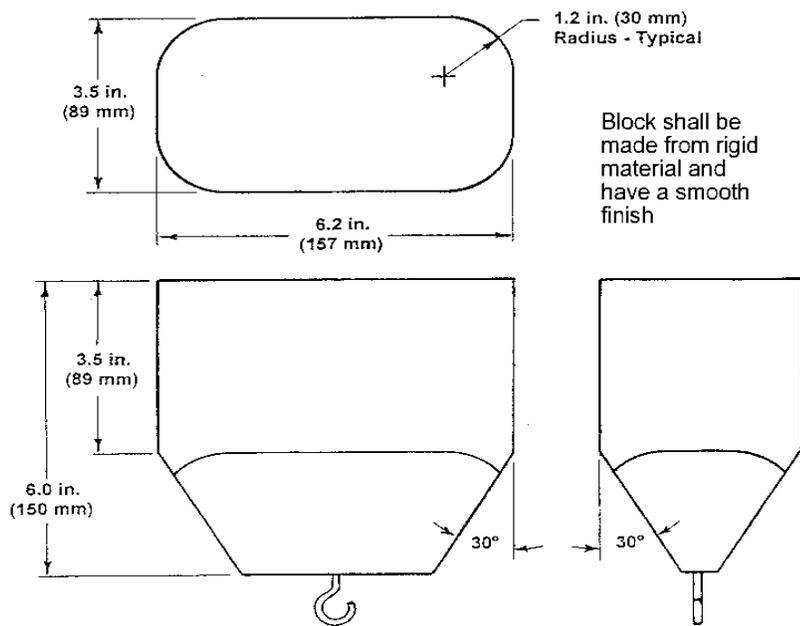
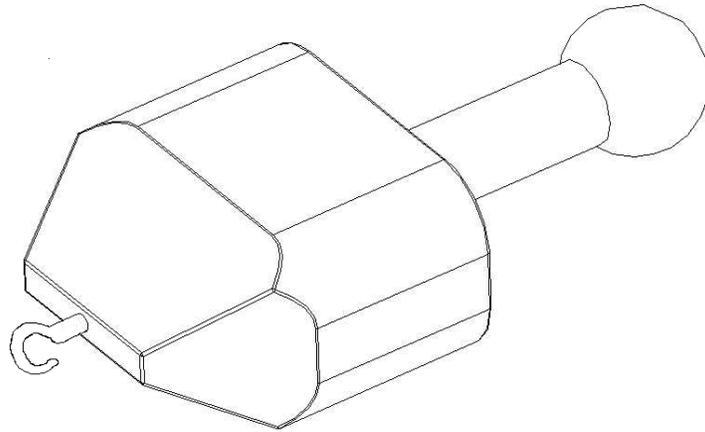


Figure 3 - Wedge Block Probe

- b. *Upper Bunk End Structure:* Check to see if the upper bunk bed end structures meet the requirements of 16 C.F.R. § 1213.3 (b) and § 1213.4, or § 1513.3 (b) and § 1513.4.
- i. Check to see if the end structures are tall enough. With the thickest mattress and, if applicable, foundation the manufacturer recommends, measure from the mattress surface to the top of the bed end structures. If the thickest mattress is not supplied, mark the thickest mattress dimension on the bed frame (with a contrasting color of a wax pencil supplied in test kit), and measure from the marked point. The bed end structures should stand at least 5 inches above the mattress height for at least 50 percent of the distance between the two posts at each end of the bed. Measure at both the foot and the head of the upper bunk.
 - ii. Check if there are potentially hazardous openings in upper bunk end structures:
 - 1) If there is a mattress and/or foundation on the upper bunk, remove it from the bed.
 - 2) Look for openings in the end structures above the foundation level of the upper bunk.
 - 3) Place the wedge block (Figure 3) tapered side first, oriented so it is most likely to pass through, in all possible openings.

Do all openings in the upper bunk bed end structures prevent the wedge block from passing through freely?

Note: The 33-lbf application does not apply to § 1213.4 (b) or § 1513.4 (b) tests for end structures.
- c. *Lower Bunk End Structure:* Check to see if the bed end structures meet the requirements of 16 C.F.R. § 1213.3 (b) and § 1213.4 (c), or § 1513.3 (b) and § 1513.4 (c).
- i. Check for potentially hazardous openings in the lower bunk end structures:
 - 1) Remove any mattress from the lower bunk bed.
 - 2) Look for openings in the area of the lower bunk end structure, located between the underside of the foundation of the upper bunk bed and the upper side of the foundation of the lower bunk bed.
 - 3) Place the wedge block (tapered side first) oriented so it is most likely to pass through in all possible openings. If each opening prevents the wedge block from passing through, stop here.

- 4) If the wedge block passes through, see if a 9-inch diameter rigid sphere freely passes through. See Figure 4. (The spherical probe, simulating a child's head, is supplied with the test kit). Is the opening large enough to freely pass the 9-inch rigid sphere? If the answer is "Yes," proceed to the neck entrapment test. If the answer is "No," describe the shape and location of the opening that does not comply with this requirement. Document with photographs and attach these to the report form with proper references and annotation.

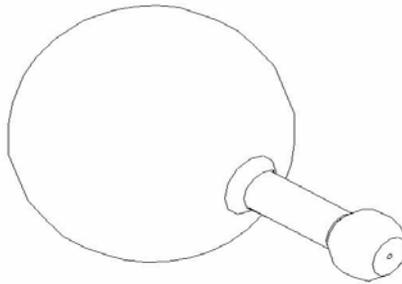


Figure 4 – 9-inch diameter Spherical Probe with Handle

- ii. Repeat above test procedure with the specified maximum thickness mattress (recommended by the manufacturer) and foundation installed. Are there potentially hazardous openings in the lower bunk bed end structures with the mattress installed? (If the mattress is not available, mark the height of mattress on end structure with a wax pencil).
 - 1) Look for openings in the lower bunk end structures.
 - 2) Against each opening of the end structure, place the wedge block tapered side first, oriented so it is most likely to pass through.
 - 3) If the wedge block passes through, see if the 9-inch diameter sphere freely passes through. Is the opening large enough to freely pass the 9-inch rigid sphere? If the answer is "Yes," proceed to the neck entrapment test. If the answer is "No," describe the shape and location of the opening that does not comply with this requirement. Document with photographs and attach these to the report form with proper references and annotation.

NOTE: The 33-lbf application does not apply to § 1213.4 (c) or § 1513.4 (c) tests for end structures.

- d. *Neck Entrapment*: Observe if the geometry of the lower bunk bed end structure openings may trap a child's neck. Each end structure opening that passes the wedge block and the 9-inch sphere, must now be tested for neck entrapment (16 C.F.R. § 1213.4 (c)(3)(i) and (ii) or § 1513.4 (c)(3)(i) and (ii)). Use the neck-entrapment probe shown in Figure 5. Note that the A-section and B-section of the probe may be separated from each other during the test to accommodate different geometries. The A-section represents a child's head, the B-section represents a child's neck.
- i. Insert the A-section (separated from the B-section of the probe, if necessary) into each opening as follows.
 - ii. Align the plane of the probe so it is parallel to the plane of the opening. See Figure 6.
 - iii. Hold the front of the probe centered on and perpendicular to the centerline of the opening.
 - iv. Move the probe in towards the "narrowing space" keeping it centered and perpendicular until it contacts the boundaries of the opening, as shown in Figure 6.

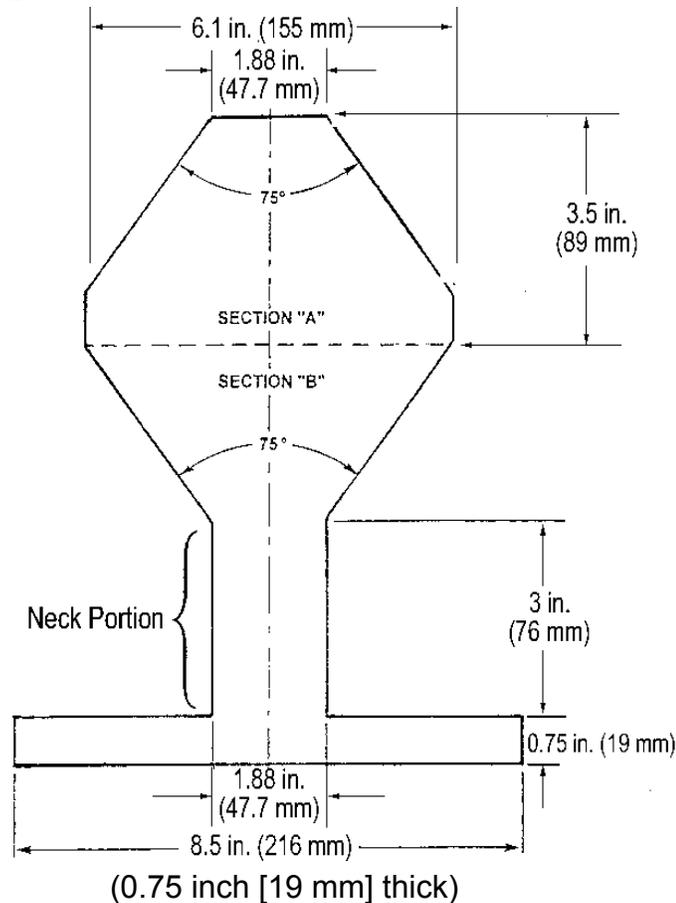


Figure 5 – Neck Entrapment Probe

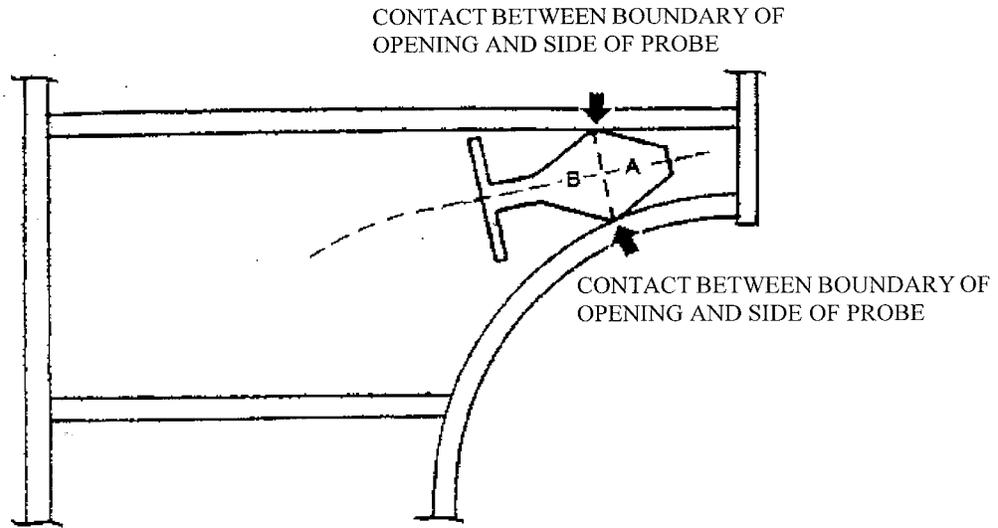


Figure 6 - Test Probe Simultaneously Touching Both Sides Boundaries of Opening

Do the sides of the A-section of the probe simultaneously touch the boundary, as shown in Figure 6? If only the corners of the front end (1.88" dimension) of the A-section of the probe touch the boundaries but none of the side portions of the probe touch the boundaries, then the boundary section does not pose a potential for neck entrapment. For example, most rectangular and square openings (90-degree corners) will meet the requirements of this section.

If the sides of the A-section of the probe simultaneously touch the boundary, then:

- 1) Mark both points on the boundary where the A-section touches it.
- 2) Remove the A-section of the probe, if necessary, and place the B-section into the opening. The A-section and B-section of the probe may be separated from each other during the test to accommodate different geometries.
- 3) As shown in Figure 7, align the B-section of the probe perpendicular to the plane of the opening.
- 4) Hold the neck portion of the B-section of the probe midway between the two marks that were made with the A-section end and perpendicular to the centerline of the opening as in Figure 7.
- 5a) Move the neck section of the probe into the narrowing space beyond the two marks.

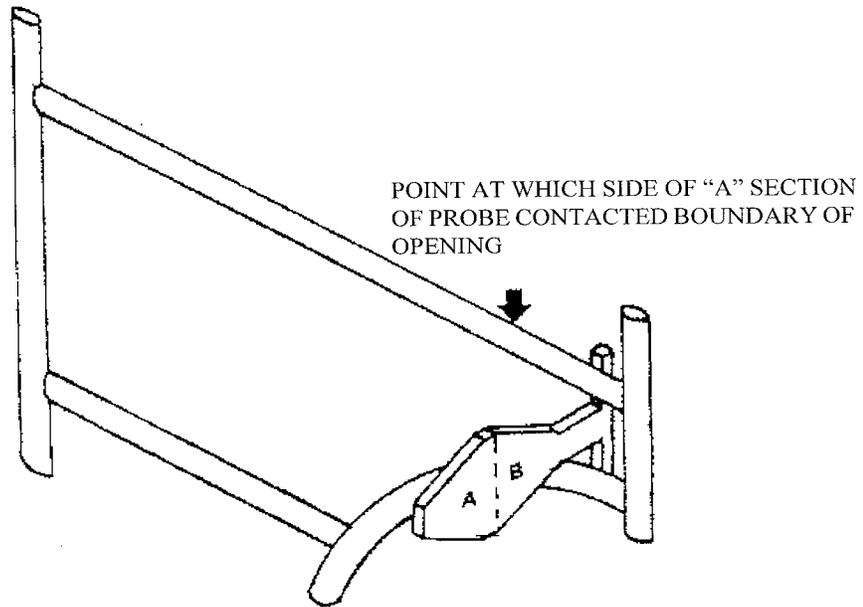


Figure 7 - Example of Entrapment: Neck Section Enters Area Beyond Marks

- 5b) Does the neck section move less than $\frac{3}{4}$ inch (thickness of the neck entrapment probe) past the two marks?

If the answer is “No” (if the neck section passes completely beyond the two marks) the opening is an entrapment hazard, *with one exception*. It is not a hazard if the lower boundary of the opening slopes down 45 degrees or more from the narrowest place that the neck probe can fit to the nearest place that the 9-inch sphere can fit. In this case, the steeper angle reduces the risk of strangulation.

- 5c) Measure the slope with a 45-degree triangle and level at each point from where the probe stops to where the 9-inch sphere can fit. Does this segment of the boundary slope down 45 degrees or more, along its entire length?

e. *Labeling:* Check if the bed has the required label for the manufacturer’s information and safety warnings (16 C.F.R. § 1213.5 and § 1513.5).

- i. Manufacturing Information Label: Check for a permanent label or marking on the bed that lists:
- the name of the manufacturer, distributor, or retailer
 - the firm’s address (city, state, and zip code)
 - the model number
 - the month and year that the bed was manufactured.

- 1) Is there a label or marking with all this information?
- 2) Does the label or marking appear to be permanent? Use the assessment method described below.

Permanent Label and Marking Assessment Method: A label or marking would be considered “permanent” if during an attempt to remove it without the aid of tools or solvents, either (1) it cannot be removed without damaging the underlying surface, or (2) it cannot be torn off in whole or in part. The printing in the area tested must be legible after attempting to remove it.

- ii. Warning Label - Is there a label:
 - 1) on the inside of the bunk bed’s upper bed end structure?
 - 2) placed where it cannot be covered by bedding (excluding the pillow)?
 - 3) providing at least the same information as the label in Figure 8?
 - 4) Does the label appear to be “permanent”?



Figure 8 - Warning Label

- f. *Instructions:* Evaluate the information in the manufacturer's literature (16 C.F.R. § 1213.6 and § 1513.6).
- i. Do assembly instructions accompany the bunk bed?
 - ii. Do the instructions include the following mattress information?
 - 1) size of the mattress, either according to length and width, or in conventional terms, such as: twin size, twin extra long, etc.
 - 2) the maximum allowed mattress thickness?
 - iii. Check to see that the instructions explicitly include the following safety warnings:
 - Do not allow children under 6 years of age to use the upper bunk.
 - Use guardrails on both sides of the upper bunk.
 - Prohibit horseplay on or under beds.
 - Prohibit more than one person on upper bunk.
 - Use ladder for entering or leaving upper bunk.
 - If the bunk bed will be placed next to a wall, the guardrail that runs the full length of the bed should be placed against the wall to prevent entrapment between the bed and the wall. (This applies only to bunk beds without two full-length guardrails).

Appendix A

Bunk Bed

Test Report Form

Bunk Bed Test Report Form

SAMPLE NUMBER _____

1. BUNK BED IDENTIFICATION AND DIMENSIONS	
Manufacturer/Importer, Distributor/Retailer	_____ _____ _____ _____
Firm's Address	_____ _____
Model Number	_____
Date of Manufacture	_____
Inside Dimensions Between End Structures and Side Rails	Between End Structures _____ inches Between Side Rails _____ inches
Foundation Height from Floor	_____ inches
Maximum Recommended Size of Mattress (for example, 60 inches, or twin size) (See Instruction Sheet)	Upper length _____ inches Upper width _____ inches
Maximum Recommended Thickness Of Mattress and Foundation (See Instruction Sheet)	Mattress _____ inches Foundation _____ inches
COMPLIANCE ASSESSMENT	
FIRM NAME _____ PRODUCT NAME _____	
CITY, STATE _____ MODEL NUMBER/NAME _____	
<p>ACTION: 1. CUSTOMS: () RELEASE SHIPMENT; () RELEASE SHIPMENT UNDER BOND; () SEIZE SHIPMENT</p> <p>2. MANUFACTURER/IMPORTER:</p> <p>() REQUEST FIRM TO CORRECT FUTURE PRODUCTION.</p> <p>() REQUEST FIRM TO STOP DISTRIBUTION AND CORRECT FUTURE PRODUCTION.</p> <p>() REQUEST FIRM TO STOP DISTRIBUTION, CORRECT FUTURE PRODUCTION AND RECALL TO:</p> <p>() DISTRIBUTOR LEVEL; () RETAIL LEVEL; () CONSUMER LEVEL; () OTHER _____</p> <p>NOTICE: MFR./IMP.; RETAILER; OTHER: _____</p>	
ORIGINAL RECORDS TO:	COPIES:
NAME AND TITLE: _____	DATE: _____

Bunk Bed Test Report Form

SAMPLE NUMBER _____

2. TEST RESULTS			
Reference Section in Procedure	a. GUARDRAILS § 1213.4 & § 1513.4	Meets Requirement	
		Yes	No
7 a. i	Is the distance from the underside of the foundation to the floor more than 30 inches? If “yes” it is a “bunk bed.”		
7 a. ii	Does each bunk bed have at least two guardrails, one on each side of the bed?		
7 a. iii. 1)	Is the wall-side guardrail continuous, the end gap between the guardrail and the end structure below the level of the top surface of the thickest mattress recommended by the manufacturer, less than or equal to 0.22 inches to prevent finger entrapment? See Figure 1, Page 5.		
7 a. iii. 2)	Is the continuous guardrail at least as high, or higher than the quarter-circle template in the zone that is within 5.22 inches of the end structure?		
7 a. iii. 3)	Is the upper edge of the continuous guardrail at least 5 inches high of higher than the top surface of the thickest mattress recommended by the manufacturer over its entire remaining length ? See Figure 1, Page 5.		
7 a. iv. 1)	Are openings between the end of the non-wall-side guardrail and the bed end structure 15 inches or less?		
7 a. iv. 2)	Is the non-wall-side guardrail 5 inches high or higher than the top surface of the thickest mattress recommended by the manufacturer at all distances greater than 15 inches from either end structure?		
7 a. v	Are the guardrails attached such that they are not removable without releasing a fastening device or by applying forces sequentially in at least two different directions?		
7 a. vi. 1)	For bunk beds that have a ladder attached to only one side of the bed, is the continuous guardrail located on the other side?		
7 a. vii 7)	Does each opening in the upper bunk prevent the wedge block from passing through it? Describe the shape and location of openings that allow the wedge block to pass through. Document with photographs.		
<u>COMMENTS FOR “NO” RESPONSES REQUIRED</u>			

Bunk Bed Test Report Form

SAMPLE NUMBER _____

2. TEST RESULTS (Continued)			
Reference Section in Procedure	b. UPPER BUNK BED END STRUCTURE § 1213.3 (b) (2) & § 1513.3 (b) (2)	Meets Requirement	
		Yes	No
7 b. i.	Is the bed end structure at least 5 inches above the mattress for at least 50 percent of the distance between the two posts at the each end of the bed?		
7 b. ii. 3)	All openings in upper bunk bed end structures pass if the wedge block does not pass through. (Test with no mattress or foundation on the upper bunk). If “No”, see NOTE below.		
<u>COMMENTS FOR “NO” RESPONSES REQUIRED</u>			

c. LOWER BUNK BED END STRUCTURE § 1213.3 (b)(3) & § 1513.3 (b)(3)			
7 c. i. 4)	Without a mattress, if the wedge block passes through any opening, is that opening large enough to freely pass the 9-inch rigid sphere? If “No”, see NOTE below. If yes, proceed to Neck Entrapment Test.		
7 c. ii	With the maximum thickness mattress installed, do the lower bunk end structures prevent the passing of the wedge block?		
7 c. ii. 3)	Is any opening large enough to freely pass the 9-inch rigid sphere? If “No”, see NOTE below. If yes, proceed to Neck Entrapment Test on page 4 of the Report Form.		
<u>COMMENTS FOR “NO” RESPONSES REQUIRED</u>			

<p>Note: If the answer is “No,” describe the shape and location of the opening that does not comply. Document with photographs and attach these to the report form with proper references and annotations.</p>			

Bunk Bed Test Report Form

SAMPLE NUMBER _____

2. TEST RESULTS (Continued)			
Reference Section in Procedure	d. NECK ENTRAPMENT (Lower End Structure Only) § 1213.3 (b)(4) & § 1513.3 (b)(4)	Meets Requirement	
		Yes	No
7 d. iv	Do the sides of the A-section of the probe simultaneously touch the boundary, as shown in Figure 6, Page 12?		
7 d. iv. 5b)	Does the B-section move less than 3/4 inch (thickness of the neck entrapment probe) past the two marks? (7 d. iv. 1) If answer is “No” (if the neck section passes completely beyond the two marks) the opening is an entrapment hazard, <i>with one exception</i> . It is not a hazard if the lower boundary of the opening slopes down 45 degrees or more from the narrowest place the neck probe can fit to the nearest place the 9-inch sphere can fit. In that case, the steeper angle reduces the chance of strangulation. Photograph any violations.		
7 d. iv. 5c)	Does the segment of the boundary slope down 45 degrees or more, along its entire length?		
<u>COMMENTS FOR “NO” RESPONSES REQUIRED</u>			
e. LABELING § 1213.5 and § 1513.5			
7 e. i. 1)	Is there a label or marking with the manufacturer’s name, address, model number and month and year of manufacture?		
7 e. i. 2)	Does the manufacturer’s information label appear to be “permanent?”		
7 e. ii. 1)	Is there a warning label on the inside of the upper bunk bed’s end structure?		
7 e. ii. 2)	Is the warning label placed where it cannot be covered by bedding (excluding the pillow)?		
7 e. ii. 3)	Is the warning label providing at least the same information as the label in Figure 8?		
7 e. ii. 4)	Does the warning label appear to be “permanent?”		
<u>COMMENTS FOR “NO” RESPONSES REQUIRED</u>			

