UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MD 20814

BP - Toddler Beds Final Rule
The contents of this document will be discussed at the Open Commission Meeting on March 30, 2011.

THIS MATTER IS NOT SCHEDULED FOR A BALLOT VOTE.

A DECISION MEETING FOR THIS MATTER IS SCHEDULED ON: April 13, 2011

This document has been electronically approved and signed.

Date: March 23, 2011

TO : The Commission
Todd A. Stevenson, Secretary

THROUGH: Kenneth R. Hinson, Executive Director
Cheryl A. Falvey, General Counsel
Philip L. Chao, Assistant General Counsel, RAD

FROM : Patricia M. Pollitzer, Attorney

SUBJECT : Final Standard for Toddler Beds under Section 104 of the Consumer Product Safety Improvement Act

Section 104(b) of the Consumer Product Safety Improvement Act ("CPSIA") directs the Commission to issue safety standards for durable infant or toddler products. Attached is a briefing memorandum from the staff, recommending that the Commission issue a final rule that establishes a final standard for toddler beds that is substantially the same as ASTM F 1821 - 09, with several modifications. A draft *Federal Register* notice is attached for your consideration.

Please indicate your vote on the following options.

I. Approve publication in the *Federal Register* of the draft final rule with a standard for toddler beds without change.

_____ _____
Signature Date

II. Approve publication in the *Federal Register* of the draft final rule with a standard for toddler beds with changes (please specify changes):

_____

_____

_____

_____ _____
Signature Date

III. Do not approve publication in the *Federal Register* of the draft final rule with a standard for toddler beds.

_____ _____
Signature Date

IV. Take other action (please specify):

_____

_____

_____

_____ _____
Signature Date

Staff Briefing Package

Draft Final Rule for Toddler Beds
March 2011

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Briefing Memo

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MARYLAND 20814

This document has been electronically approved and signed.

Memorandum

DATE: March 23, 2011

TO: The Commission
Todd A. Stevenson, Secretary

THROUGH: Cheryl A. Falvey, General Counsel
Kenneth R. Hinson, Executive Director

FROM: Robert J. Howell, Assistant Executive Director
Office of Hazard Identification and Reduction
Celestine T. Kiss, Project Manager
Division of Human Factors, Directorate for Engineering Sciences

SUBJECT: Staff's Draft Final Rule for Toddler Beds

I. INTRODUCTION

Section 104 of the Consumer Product Safety Improvement Act (CPSIA), *Standards and Consumer Registration of Durable Nursery Products*, requires the U.S. Consumer Product Safety Commission (CPSC) to study and develop safety standards for certain infant and toddler products. The list of products in section 104 includes: full-size and non-full-size cribs; toddler beds; high chairs, booster chairs, and hook-on chairs; bath seats; gates and other enclosures for confining a child; play yards; stationary activity centers; infant carriers; strollers; walkers; swings; and bassinets and cradles. The Commission is charged with examining and assessing the effectiveness of any voluntary consumer product safety standard and with promulgating mandatory consumer product safety standards for these products.

Section 104 of the CPSIA also requires the Commission to consult with representatives of consumer groups, juvenile product manufacturers, and independent child product engineers and experts to examine and assess the effectiveness of the voluntary standards. For toddler beds, this consultation process commenced in late 2009, prior to the Notice of Proposed Rulemaking (NPR), when the Commission sought input and comments regarding the voluntary standard published by ASTM International (formerly known as the American Society for Testing and Materials). Consultation with stakeholders is ongoing.

This briefing package assesses the effectiveness of the voluntary standard for toddler beds, which includes convertible cribs, and presents staff's recommendations for a draft final rule.

II. BACKGROUND

A. ASTM Voluntary Standard Activity

a. Toddler Beds

ASTM F 1821, *Standard Consumer Safety Specification for Toddler Beds,* is the voluntary standard that was developed to address the identified hazard patterns associated with the use of toddler beds. The standard was first approved in 1997, and revised in 2003 and 2006. The current version, ASTM F 1821 – 09, was approved on April 1, 2009, and published in May 2009. During 2010, ASTM worked on revisions to the standard and put out the last ballot for vote on December 13, 2010. When the voting closed on January 13, 2011, ASTM had not received the minimum percentage of votes required to approve the standard; therefore, the standard must be balloted again. Staff's draft final rule is based on F 1821 – 09, as referenced in the NPR.

A "toddler bed" is defined in the ASTM voluntary standard as any bed sized to accommodate a full-size crib mattress having minimum dimensions of 51 5/8 inches (1310 mm) in length and 27 1/4 inches (690 mm) in width and is intended to provide free access and egress to a child not less than 15 months of age and who weighs no more than 50 pounds (27.7 kg). The standard was developed in response to incident data supplied by CPSC staff, and is intended to minimize the following hazards: entrapment in bed end structures, entrapment between the guardrail and side rail, and entrapment in the mattress support system. It also addresses corner post extensions, which may catch cords, ribbons, necklaces, or clothing.

b. Full-Size Cribs that Convert to Toddler Beds

Some cribs can be converted into toddler beds; therefore, the ASTM standard for full-size cribs and the Commission's recent mandatory crib rule are also of importance to the toddler bed final rule. On December 28, 2010, the Commission published mandatory standards for full-size and non-full-size cribs (75 Fed. Reg. 81766). The CPSC's full-size crib standard, which will be codified at 16 CFR part 1219, incorporates ASTM F 1169-10, *Standard Consumer Safety Specification for Full-Size Baby Cribs,* with some modifications. The full-size crib standard includes several provisions that were not in earlier versions of ASTM F 1169. These include two performance tests from the Health Canada crib regulation[1] designed to address side rail disengagement, hardware loosening, and poor mattress support integrity. In addition, the standard revised the slat strength requirement to be more stringent and revised the warnings to emphasize the fall hazard. These revisions impact cribs that convert into toddler beds.

III. DISCUSSION

A. NPR Comments

On April 28, 2010, the Commission published a Notice of Proposed Rulemaking (75 Federal Register 22291) regarding options to address toddler bed safety hazards. The NPR reviewed incident data related to falls, entrapment, hardware failures, product integrity, mattress fit, and miscellaneous issues. Changes to the warning labels were also discussed. The NPR solicited

[1] Health Canada SOR/86-962 *Cribs and Cradles Regulations*, Schedule III - Parts 1 & 2, December 2, 2009.

information and comments concerning all aspects of the proposed rule. Thirteen comments were received. Four of the comments stated general support for the proposed rule, with minor changes in wording to emphasize the hazard. The other nine comments raised specific issues that are addressed by topic below. The full comments can be found in Tab A. Individual CPSC staff responses can be found as additional tabs.

Guardrail Designs

Comments
The CPSC received one comment pertaining to the guardrail designs for toddler beds. The commenter suggested "*replacing spindles altogether on the toddler bed guardrails. By replacing the guardrail spindles with a full piece of wood or material, children will have a less likely risk of getting a body part entrapped within them*."

Staff Response
Staff acknowledges that currently, some manufacturers are employing solid panel guardrails on their toddler beds. However, mandating that all guardrails be solid panels may limit the utility of converting some types of cribs to toddler beds. While staff agrees with the commenter that limb entrapments might be reduced if guardrails were limited to solid panels, the incident data reported in the NPR indicate that only three reported injuries involving entrapment between slats were fractures of limbs, and the majority of the injuries were bumps and bruises. Only one fracture directly involved a guardrail. This occurred when the occupant fell from the bed after the occupant's leg became entrapped in the guardrail slats. The other two fractures involved entrapment between slats located on the headboard and footboard. Therefore, staff encourages manufacturers to consider solid panel guardrails; however, staff does not recommend adding this requirement in the draft final rule.

Guardrail Height

Comments
One commenter disagreed with the proposed rule regarding guardrail height. The commenter would like the guardrail requirement to specify that the guardrail must be 9 inches above the mattress support instead of 11 inches, which is the equivalent of 5 inches measured from the top of the mattress, allowing for the maximum thickness of a crib mattress, as worded in the proposed rule.

Staff Response
Staff disagrees with a guardrail height of 9 inches above the mattress support. Because the majority of full-size crib mattresses are approximately 6 inches thick, a guardrail height of 9 inches would provide a barrier of approximately 3 inches. Parents expect the guardrails to prevent their children from rolling/falling off the bed. Similarly, guardrails on bunk beds are intended to prevent children from rolling/falling off the bed. ASTM F 1427-07, *Standard Consumer Safety Specification for Bunk Beds*, requires a 5 inch barrier above the top of the mattress to prevent a sleeping child from rolling and falling off the bed. Therefore, staff does not recommend any change to the NPR regarding guardrail height.

Guardrail Structural Integrity Testing

Comments
One commenter disagreed with the proposed test methodology. The commenter did not see the need to test the guardrail in three locations instead of just testing at the most onerous point. The commenter states: *"Also the proposed regulation states to do the test "above the leg of the guardrail," what if there is no "leg? What about the case of a guardrail that has a contoured upper surface or one which is integral with the sides of the bed? Clearly the test method needs to specify the contact area of the force and how far from the top of the rail this force should be applied. Also the height of the bed rail should be fixed or measured from the mattress support platform so there will be consistency of measurement."*

The commenter also disagreed with proposing a force requirement of 50 lbf without reasonable justification and suggested using 40 lbf instead. The commenter suggested that the incident data only references two injuries from broken components and that the incidents do not mention that guardrails were involved. The commenter further stated: "*The purpose is to aid in the prevention of a sleeping child from inadvertently rolling off the bed. In that scenario, the resultant force would be a fraction of that being proposed. Additionally, a child pulling on the guardrail from outside of the bed in play would certainly tip most toddler beds over before reaching the 50lb force being proposed."*

In addition, the commenter would like an exemption for removable guardrails or guardrails that could be removed without the use of tools. The commenter's suggested language regarding the guardrail structural integrity test requirements and guardrail height is included in Tab A.[2]

Staff Response
Staff agrees with the commenter's suggested test methodology for applying the test force to the guardrail. The language in the proposed rule was adopted from the portable bed rail structural integrity test, as stated in section 8.1 of ASTM F 2085-09, *Standard Consumer Safety Specification for Portable Bed Rails*. An ASTM task group developed the commenter's suggested language after the proposed rule was published. This language is more applicable to the typical geometry inherent in toddler bed guardrails as opposed to portable bed rails. For example, the proposed rule specifies applying a horizontal force at three points along the uppermost horizontal edge of the rail. The test force is applied in the center of the upper rail and on the sides of the rail directly above each of the outermost legs. The majority of toddler bed guardrails only have one outermost leg or free end, as defined in staff's final rule. The other end of a toddler bed guardrail typically is secured to a corner post attaching the headboard to the guardrail. Each of the reported guardrail failure incidents involved a guardrail detaching or fracturing at the corner post attachment point. Staff agrees with the commenter that applying a single force above the rail's free end is the most onerous test position and exerts the largest force on the guardrail's attachment points. Furthermore, the commenter's suggested test methodology provides improved test repeatability by specifying a procedural method for applying the test force to a guardrail free end with a significantly contoured geometry. Staff recommends revising the NPR wording with language related to the test methodology provided by the commenter, as shown in Table 1.

[2] Proposed language included with comment submitted by the Juvenile Products Manufacturers Association (JPMA) in response to the NPR.

Staff disagrees with the application of 40 lbf to the guardrail and the commenter's claim that there have not been any incidents involving a guardrail breaking or detaching from a toddler bed. In one incident, the occupant fell to the floor and received a bruise and laceration to the head. Staff also disagrees with the commenter that 50 lbf is an excessive amount of force. Staff has received several detailed reports of children climbing on or leaning against guardrails resulting in subsequent structural failure of the guardrail or its means of attachment.

Staff tested several different makes and models of toddler beds to the 50 lbf requirement, incorporating the commenter's suggested test methodology and applying the test force 11 inches above the top of the mattress support. Staff conducted testing using the guardrail structural integrity test suggested by the commenter (described in Appendix A) and the language in the proposed rule (described in Table 1) on five toddler beds: two plastic and three wooden beds. Two of the five toddler beds chosen for testing had been involved in incidents where the guardrail detached or broke when the occupant leaned on the guardrail. The guardrails on all five toddler beds successfully withstood the application of 40 lbf (the force suggested by the commenter). Conversely, when performing the test as proposed, only the guardrails on the three toddler beds that had not been involved in incidents were able to withstand successfully the application of 50 lbf. The guardrail on one toddler bed that had been involved in an incident broke at one of its attachment points around 42 lbf. The guardrail of the other bed that had been involved in an incident withstood the initial application of 50 lbf but detached from the toddler bed within the first three seconds after maintaining 50 lbf. Based on this testing, staff concluded that 50 lbf is appropriate and adequate to identify guardrails that could be susceptible to detachment. Staff recommends retaining the 50 lbf, as stated in the NPR.

Finally, staff disagrees with exempting removable guardrails from the guardrail structural integrity test. A guardrail should be attached to a toddler bed with sufficient means to provide substantial rigidity. Guardrails that would require only the consumer's strength to install would be susceptible to the foreseeable forces that a toddler could apply to the guardrail. Such a guardrail would not be sufficient to protect a child.

<u>Spindle/Slat Strength of Guardrails, Side Rails, and End Structures</u>

Comments

The CPSC received two comments pertaining to the testing requirements for the spindles/slats. One commenter suggested: *"(w)e note that the language in the proposed Toddler Bed standard regarding slat strength should match that in the "new" version of the proposed F1169 Standard for Full Size Cribs in all respects.*" A second commenter agreed with the proposal to test 25 percent of slats at 80 lbf, but questioned the rationale for testing the remaining 75 percent of slats at 60 lbf.

Staff Response

Staff agrees that the toddler bed spindle/slat strength test should be consistent with the full-size and non-full-size crib spindle/slat strength requirements in ASTM F 1169-10 and ASTM F 406-10a, respectively, referenced in the recently published mandatory requirements, 75 Fed. Reg. 81766 (Dec. 28, 2010), to be codified at16 CFR part 1219 and 16 CFR part 1220, respectively. This will harmonize the spindle/slat strength requirements for cribs and toddler beds and provide consistency and clarity because many toddler beds are converted from cribs, and many toddler

bed manufacturers also manufacture cribs. Therefore, staff recommends modifying the spindle/slat strength test language proposed in the NPR to reflect the changes made in the full-size and non-full-size crib standards, as shown under the column titled, *Draft Final Language* in Table 1. Changing the spindle/slat strength requirement to be consistent with the requirement in the crib standard means that no slats would be tested at 60 lbf (the crib standard requires testing 25 percent of slats at 80 lbf and then another 25 percent of slats at 80 lbf if needed, with no more than 50 percent of the slats tested).

Mattress Retention and Warning

Comments
The CPSC received one comment requesting that the mattress retention requirements, corresponding tests, and related warning labels be removed from the standard. "*The F15.18 Subcommittee on Toddler Beds reviewed a proposal to revise the standard to have Sections 6.1, 6.1.1, 6.1.2 and 8.4.4.2 removed from the standard as they are now obsolete.*"

Staff Response
Staff agrees with the commenter that the mattress retention sections 6.1, 6.1.1, 6.1.2, test method section 7.1, and warning section 8.4.4.2, as identified in F 1821 – 09 and referenced in the NPR, are obsolete. Accordingly, those sections have been removed in the draft final rule. As noted by ASTM (and referenced by the commenter), these sections are obsolete and not germane to their original purpose. The original intent of these sections was to ensure that the mattress did not horizontally or vertically dislocate enough to allow a child access to potentially dangerous mattress support openings, which could entrap a child's torso or head, resulting in a fatality. In the current ASTM standard, ASTM F 1821 – 09, provisions were added to reduce entrapment hazards by testing for hazardous openings, not only in the mattress support system, but also in the bed's guardrails and end structures, including the headboard, footboard, and any point where these components could be joined. These requirements are more stringent than the mattress retention requirements recommended for removal. Staff agrees with this comment and has revised the draft final rule to eliminate these requirements.

Warning Labels

Comments
Two commenters recommended that the full-size crib and toddler bed standards be harmonized with respect to the required warnings because many full-size cribs convert into toddler beds and, therefore, would require the warnings specified in both standards. The commenters argued that such harmonization would eliminate redundant warning statements, making the warnings more effective.

Staff Response
Staff agrees that failing to harmonize similar warnings in the toddler bed rule and the full-size crib standard could introduce redundant and extraneous warnings on convertible cribs, and that this might diminish the effectiveness of the warnings. For example, the strangulation warning requirements for toddler beds specified in the NPR are redundant with the strangulation warning requirements specified in section 8.4.1.2 of ASTM F 1169–10, *Standard Consumer Safety Specification for Full-Size Baby Cribs*. Additionally, the entrapment warning requirements for

toddler beds specified in the NPR do not apply to full-size cribs that might convert to a toddler bed. Thus, staff recommends that the entrapment and strangulation warning requirements for toddler beds apply only to toddler beds that do not convert from a crib. Toddler beds that convert from a crib should use the warnings specified in ASTM F 1169–10, incorporated by reference at 16 CFR part 1219, *Safety Standard for Full-Size Baby Cribs*, with additional text that specifies the minimum mattress thickness, as detailed below. The specific wording for the warning labels set forth in the draft final rule can be found in Table 1 at the end of this memo.

The proposed rule for toddler beds shortened the warning regarding minimum mattress size that appears in section 8.4.4.1 of ASTM F 1821 – 09 to state, "ONLY use full-size crib mattress of the recommended size," based on the staff's understanding that section 8.3.2 of that standard already required both the bed and its retail carton to be clearly and legibly marked with the intended mattress size (Smith, 2010). Since then, staff has discovered that section 8.3.2 of ASTM F 1821 – 09 only requires the retail carton to be marked with the intended mattress size.[3] Given this, staff believes that it would be reasonable to maintain a mattress-size warning similar to that specified in section 8.4.4.1 of ASTM F 1821 – 09 in the draft final rule. Section 8.1.3 of the full-size crib standard, ASTM F 1169–10, specifies the exact wording of a warning statement regarding the intended mattress size. The language used in this warning is very similar to warning content specified in 8.4.4.1 of ASTM F 1821 – 09.

Therefore, staff recommends the following mattress size warning requirement for the draft final rule:

> ⚠CAUTION
> Any mattress used in this bed must be a full-size crib mattress at least 51 ⅝ in. (1310 mm) in length, 27 ¼ in. (690 mm) in width, and 4 in. (100 mm) in thickness.

Because full-size cribs that convert to toddler beds require the exact warning statement specified in section 8.1.3 of the full-size crib standard, ASTM F 1169–10, requiring the staff's recommended warning statement on all toddler beds would mean that convertible cribs would require two warning statements about mattress size that are largely redundant. Thus, as in the case of the entrapment and strangulation warnings, staff recommends that the warning requirement for mattress size for toddler beds apply only to toddler beds that do not convert from a crib. To address the fact that the full-size crib standard specifies a maximum mattress thickness of 6 inches, but the toddler bed standard specifies a minimum mattress thickness of 4 inches, staff recommends that toddler beds that convert from a crib include additional text indicating that a minimum mattress thickness of 4 inches. This language would be included at the end of the warning statement specified in section 8.1.3 of the full-size crib standard, ASTM F 1169–10.

Comments

One commenter generally supported the proposed warning requirements but suggested that the statement, *"ALWAYS follow assembly instructions," is not useful on the product itself.* The

[3] Although both the toddler bed and full-size crib standards require markings related to mattress size on the retail carton and on the product itself, the two standards address this requirement differently. Section 8.1 of both standards identifies markings that must appear on the product and on the retail carton; and the full-size crib standard includes mattress size markings within this section. The toddler bed standard, in contrast, addresses these markings through two separate requirements: section 8.3.2 (the retail carton) and section 8.4.4.1 (the toddler bed).

commenter suggested that more appropriate locations for this statement are on the packaging and at the top of the assembly instructions.

Staff Response
Staff disagrees with the commenter's assessment and believes that locating this warning statement on the product would be more beneficial to locating it either on the packaging or at the top of the assembly instructions. Generally, a warning should be located where the consumer is likely to be looking when the warning is needed (Wogalter & Vigilante, 2006[4]). The intent of this warning is to alert consumers of the need to follow the assembly instructions, and the target audience for such a message would be consumers who otherwise would not follow such instructions. For this reason, a warning located at the top of the assembly instructions is unlikely to be noticed or read by those who need the information most. Such a warning located on the product itself, however, is more likely to be noticed by these consumers because all consumers must interact with the product to assemble it, even if they do not examine the assembly instructions beforehand. Staff does not recommend making any changes to the NPR related to the placement of this warning statement.

Comments
One commenter suggested that the warning statement on the use of a guardrail as a means of containing the mattress, specified in section 8.4.4.2 of ASTM F 1821 – 09 and referenced in the NPR, be removed from the final rule because it, as well as the mattress retention requirements on which the warning statement is based, specified in sections 6.1, 6.1.1, and 6.1.2, are now obsolete.

Staff Response
Because the warning requirement related to guardrail use was based on the obsolete mattress retention requirements, staff agrees that the warning requirement regarding the use of a guardrail when a guardrail is used to contain the mattress is obsolete. The NPR specified two alternative entrapment warnings because of the requirement of a warning about guardrail use. Therefore, removing this obsolete warning statement about guardrail use eliminates the need for two alternative warning labels that address the entrapment hazard.

Legal Authority

Comments
A commenter objected to incorporating the ASTM standard by reference into the published regulation, arguing that the law requires that the terms of legal requirements must be freely available to the public, citing *Banks v. Manchester,* 128 U.S. 244, 9 S. Ct. 36, 40 (1888). The commenter also cited *Veeck v. Southern Building Code Congress International, Inc.* [SBCCI]., 293 F.3d 791 (5th Cir. 2002).

Staff Response
The cases to which the commenter refers do not apply to the rules under section 104 of the CPSIA. In *Banks,* the court held that a reporter authorized by the State of Ohio to publish the

[4] Wogalter, M. S., & Vigilante, Jr., W. J. (2006). Attention switch and maintenance. In M. S. Wogalter (Ed.), *Handbook of Warnings* (pp. 245–265). Mahwah, NJ: Lawrence Erlbaum Associates.

state's judicial opinions was not authorized by federal law to obtain a copyright on the opinions because he was not the author of those opinions. In the *Veeck* case, Veeck posted the local building codes of two Texas towns on his website. The text of the building codes was created and copyrighted by SBCCI and was adopted by the towns as law. The court stated, "As *law,* the model codes enter the public domain and are not subject to the copyright holder's exclusive prerogatives. As model codes, however, the organization's works retain their protected status." *Id.* at 793.

SBCCI had encouraged local government entities to adopt its code into law without any cost to the government entity. *Id.* at 794. In contrast, ASTM has not given its permission for the CPSC to adopt its standards. Thus, Commission staff believes that the cases cited by the commenter do not require the Commission to publish the copyrighted ASTM standard in the Code of Federal Regulations.

Validity of Data

Comments

One commenter believed that "*promulgated standards need to be based upon materially accurate data. The existing ASTM F 1821 – 09 defines a toddler bed as any bed sized to accommodate a full-size crib mattress having minimum dimensions of 51 5⁄8 inches in length and 27 1⁄4 inches in width and that is intended to provide free access and egress to a child not less than 15 months of age and weighing no more than 50 pounds. These parameters are important since the majority of the incident data involving fatalities cited children that were either too young to be in the bed or to a cord that was a strangulation risk. Three of the four incidents cited involved children less than 15 months of age, not yet qualified to be in a toddler bed. The NPR notice acknowledges this when it states: 'It is notable that three of the four reported fatalities involved victims under the age of 15 months, which is recommended in the current ASTM voluntary standard as the minimum age for use of a toddler bed.' We agree with this statement. However, there exists concern that the CPSC staff cited appears to be inflating the number of incidents and that data cited as 'related to' or 'associated with' are insufficient to rely upon in the absence of data and analysis that establishes that the products proximately caused the incident or injury complained of.*"

A second commenter expressed concern that although the current standard is intended to address children *"not less than 15 months and weighing no more than 50 pounds,"* the *"National Injury Estimates reported in the NPR identified victims between 4 months and 6 years."* The commenter believes that this difference could affect the basis for the standard.

Staff Response

The comments above express concerns about two issues. One concern is that CPSC staff does not have reliable data establishing that the product caused the incidents. The second concern is that CPSC staff appears to be inflating the number of incidents by including cases where direct product involvement may be questionable or the number of cases where users of an inappropriate age were involved.

The commenters misinterpret the discussion of incident data in the preamble to the proposed rule. That discussion was intended to provide an overall view of toddler bed-associated

problems that are reported to the CPSC. The discussion of the four fatalities noted that three of the decedents were under age and explained that the product involvement in the fourth fatality was incidental. The "National Injury Estimates" are used to identify the injuries associated with toddler beds; they are not used to change the age/weight designations in the standard. Age requirements for users and placement of toddler beds in relation to window blinds are addressed in the warning labels delineated in the current voluntary standard; therefore, these issues are relevant in evaluating the voluntary standard. In addition, the discussion in the proposed rule used appropriate qualifying statements (such as "associated with" and "related to"). These statements are intended to qualify the types of incidents reported to the CPSC and do not "inflate" the data. This approach reflects the statutory directive of Section 104 of the CPSIA to issue a consumer product safety standard for toddler beds that is substantially the same as, or more stringent than, the voluntary standard. The portions of the draft final rule that are more stringent than the ASTM standard are based upon human factors and engineering analyses, which concluded that the more stringent provisions would reduce further the identified risks of injury associated with toddler beds.

B. *Incident Data (Tab E)*

CPSC staff conducted a new search of the CPSC's epidemiological databases[5] to determine whether any new incidents have been reported since the data presented in the NPR. The new search showed that there were 41 toddler bed-related incidents reported between June 23, 2009 and December 12, 2010. While no fatalities were reported, 17 of the incidents reported an injury sustained by the child. Most of the injuries were bumps, bruises, sprains, and lacerations. In addition, one incident reported a child nearly choking on loose hardware; one reported a dental injury of a child from falling on the bed; and another reported a possible case of lead-poisoning of a child from chewing paint on the toddler bed. While most of these injuries did not require any major medical intervention, there was one hospitalization for a fractured limb.

Among the incidents that reported age (31 out of 41), four reported the involvement of a child younger than 15 months. The majority of the incidents (17 out of 31) reported the child's age to be between 17 months and two years. It was not always clear, however, that the age reported pertained to the child who was the regular user of the toddler bed. Occasionally, an incident report stated clearly that the injured child was playing on a sibling's toddler bed; a few others reported the injured child was playing/climbing on a toddler bed. This indicates that the reported victim's age need not always pertain to the child who was the regular user of the bed.

The hazard patterns identified among the 41 incident reports were as follows:

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[5] The CPSC databases searched were the In-Depth Investigation (INDP) file, the Injury or Potential Injury Incident (IPII) file, and the Death Certificate (DTHS) file. These reported deaths and incidents are neither a complete count of all that occurred during this time period nor a sample of known probability of selection. However, they do provide a minimum number of deaths and incidents occurring during this time period and illustrate the circumstances involved in the incidents related to toddler beds.

Date of extraction for reported incident data was 12/12/10. All data coded under product code 4082 was extracted. Upon careful joint review with ES staff, some cases were considered out-of-scope for the purposes of this memo. For example, a report of a youth bed was coded as a toddler bed in the CPSC database. However, other supporting documents showed it to be a twin bed, and it was excluded from the analysis.

- Broken, loose, or detached components of the bed, such as the guardrail, hardware, or other accessories were reported in 14 of the incidents; three injuries were associated with these problems.
- Entrapment was the next most commonly reported hazard. Ten incidents reported an entrapment (mostly of a limb), eight of which resulted in injuries ranging from fractures and sprains to bruises.
- Product integrity issues (mostly the integrity of the mattress-support) were reported in four incidents, one of which also reported a finger injury to the child.
- Inadequate mattress-fit issues were reported in three incidents, but no injuries were reported in this category.
- There were nine reports of miscellaneous issues, such as a sharp surface, lead paint, bed height/clearance, guardrail inadequacy, bed accessory involvement, and complaint of lack of JPMA certification. Four injuries were associated with these issues. There was one additional report of a fall injury, however, no issue related to the toddler bed was reported; the child was jumping on his toddler bed and fell off.

National Injury Estimates[6]

National injury estimates for toddler bed-related injuries in 2009, based on U.S. hospital emergency department data from the National Electronic Injury Surveillance System (NEISS), are not reportable because they fail to meet publication criteria.[7] Because the NEISS data for 2010 is not finalized, it is unavailable for reporting national estimates at this time. A summary of the 32 toddler bed-related injuries treated at NEISS emergency departments from January 1, 2009 through December 12, 2010, is presented below.

No deaths were reported through NEISS in 2009 or 2010. Listed below are the frequently occurring characteristics of the 32 toddler bed-related injuries:

- Hazard–falls out of the toddler bed to a lower level (78 percent);
- Injured body part–head and face (59 percent) and limbs (25 percent);
- Injury type–head injury (31 percent) and fractures (22 percent); and
- Disposition–treated and released (97 percent).

[6] NEISS is a statistically valid injury surveillance system. NEISS injury data are gathered from emergency departments of hospitals selected as a probability sample of all the U.S. hospitals with emergency departments. The surveillance data gathered from the sample hospitals enable CPSC staff to make timely national estimates of the number of injuries associated with specific consumer products.

All data coded under product code 4082 was extracted. Upon careful joint review with ES staff, certain records were considered out of scope for the purposes of this memo. For example, a daycare reported suspected abuse of a child whereas the parent reported it as a fall from a toddler bed. The report was excluded from this analysis. Another example was a reported injury when a toddler bed was accidentally pushed into the child.

[7] According to the NEISS publication criteria, an estimate must be 1,200 or greater, the sample size must be 20 or greater, and the coefficient of variation must be 33 percent or smaller.

About nine percent of the patients were reported to be younger than 15 months old, while about 69 percent were reported to be between 17 months and two years old. As was the case for the non-NEISS incident data, it was not always clear if the patient injured was the usual user of the toddler bed.

C. Potential Small Business Impact

Typically, toddler beds and convertible cribs are produced and/or marketed by juvenile product manufacturers and distributors or by furniture manufacturers and distributors, some of which have separate divisions for juvenile products. Currently, there are at least 73 known manufacturers or importers supplying toddler beds and/or convertible cribs to the U.S. market. Six are large domestic manufacturers; one is a domestic manufacturer of unknown size; two are large domestic importers; and 12 are foreign firms. Based on U.S. Small Business Administration definitions, there are 52 small firms—41 small domestic manufacturers and 11 small domestic importers—that are likely to be affected by the proposed standard, as described in the Directorate for Economic Analysis memo (Tab F).

It is possible that the staff-recommended final rule could have a significant impact on a substantial number of small entities. The Juvenile Products Manufacturers Association (JPMA), the major U.S. trade association that represents juvenile product manufacturers and importers, runs a voluntary Certification Program for several juvenile products. Approximately 29 firms (40 percent) supplying toddler beds and/or convertible cribs to the U.S. market supply products that are JPMA-certified as compliant with the current ASTM voluntary standard. Of the small domestic businesses, 11 out of 41 manufacturers (27 percent) and 6 out of 11 importers (55 percent) are JPMA-certified as ASTM compliant. Additionally, there are two small manufacturers that claim to produce products in compliance with the ASTM standard that are not part of the JPMA Certification Program. Firms supplying products already compliant with the voluntary standard may not need to make any product modifications to meet the draft final rule. However, some of these firms and all firms supplying products that do not comply with the voluntary standard will need to make at least some modifications to their toddler beds and convertible cribs to comply with the recommended standard. The extent of these costs is unknown; but because product redevelopment likely would be necessary in many cases, it is possible that the costs could be great and might have the potential to reduce firms' ability to compete with substitute products.[8]

A few small businesses have product lines consisting entirely or primarily of toddler beds, convertible cribs, and related products (such as accompanying furniture).[9] These firms may be affected disproportionately by any standard. If the cost of developing (or importing) a compliant product proves to be a barrier for these firms, the loss of toddler beds and convertible cribs as a

[8] Even if *all* the small firms that supply JPMA-certified products did not require any additional changes to comply with the draft final standard, there still would be 30 out of 52 firms (58 percent) that probably would require product redevelopment to comply. Typically, this would need to be done for multiple products. To the extent that some of the products not certified by JPMA may comply already, the impact will be reduced.

[9] There are five firms that apparently depend entirely on these products as the core of their product lines. There are an additional 14 firms that depend upon these products for the majority of their product. For the latter, however, it should be noted that a few firms also produce some nonconvertible cribs, and therefore, may be able to adjust their product lines to use nonconvertible cribs exclusively.

product category could be significant and may not be mitigated easily by the sale of other juvenile products.

D. Effective Date of Final Rule

The Administrative Procedure Act (''APA'') generally requires that the effective date of a rule be at least 30 days after publication of the final rule (5 U.S.C. 553(d)). To allow time for toddler beds to come into compliance after the final rule is issued, the NPR proposed that the standard should become effective six months after publication of a final rule as to products manufactured or imported on or after that date. Staff did not receive any comments, negative or positive, regarding this effective date. Since a six-month effective date is consistent with other section 104 rules (with the exception of cribs), staff recommends a six-month effective date.

IV. STAFF RECOMMENDATION

The Notice of Proposed Rulemaking for toddler beds proposed:

- Incorporating by reference ASTM F 1821 – 09, *Standard Consumer Safety Specification for Toddler Beds,* with the following modifications:
    - Add a height requirement for guardrails.
    - Add new performance requirements and associated test method to address incidents related to guardrail structural issues.
    - Add new performance requirements and associated test method for spindle/slat strength of guardrails, side rails, and end structures.
    - Change warning labels to address entrapment and strangulation hazards separately.

Staff's draft final rule is substantially the same, with the modifications noted below and specified in Table 1:

- Incorporate by reference ASTM F 1821 – 09, *Standard Consumer Safety Specification for Toddler Beds,* with the following modifications:
    - Add a height requirement for guardrails.
    - Add new performance requirements and associated test method to address incidents related to guardrail structural issues. Final rule test method is clarified based upon comments received on NPR.
    - Add new performances requirement and associated test method for spindle/slat strength of guardrails, side rails, and end structures. Final rule performance requirements and test methods are similar to requirements in full-size crib standard in response to comments.
    - Change warning labels to address entrapment and strangulation hazards separately. Warning requirements harmonized with full-size crib requirements in response to comments.

In addition, the draft final rule eliminates sections related to mattress retention (ASTM provisions: performance sections 6.1, 6.1.1, 6.1.2, test method section 7.1, and warning section 8.4.4.2) because more stringent entrapment requirements are already present in F 1821 – 09.

CPSC staff recommends that the Commission proceed with the rulemaking process for toddler beds by publishing the final rule, as drafted by the Office of the General Counsel and included in Tab G of this briefing package. CPSC staff also recommends an effective date of six months after publication of the final rule.

TABLE 1: CPSC Staff-Recommended Changes to the Proposed Rule for Toddler Beds

ASTM F 1821 – 09 Section #	NPR Language	Draft Final Language
6.1 *Mattress Retention*	Same as ASTM F 1821 – 09	Deleted from NPR Do not comply with ASTM F 1821-09
6.1.1 The mattress support system, end structures, and side containment shall control the horizontal position of the mattress and prevent it from being moved horizontally creating a horizontal opening that allows complete passage of the wedge block when tested in accordance with 7.1.	Same as ASTM F 1821 – 09	Deleted from NPR Do not comply with ASTM F 1821-09
6.1.2 The top of the mattress shall not deflect more than 1 in. (25 mm) below the bottom of the mattress support when tested in accordance with 7.1.6.	Same as ASTM F 1821 – 09	Delete from NPR Do not comply with ASTM F 1821-09
6.5 *Guardrails*—For products with guardrails, there shall be no opening in the guardrail structure below the lowest surface of the uppermost member of the guardrail and above the mattress support structure that will permit complete passage of the wedge block shown in Fig. 2 when tested in accordance with 7.4.	6.5 *Guardrails* 6.5.1 For products with guardrails, there shall be no opening in the guardrail structure below the lowest surface of the uppermost member of the guardrail and above the mattress support structure that will permit complete passage of the wedge block shown in Fig. 2 when tested in accordance with 7.4. 6.5.2 The upper edge of the guardrails shall be at least 5 in. (130 mm) above the sleeping surface when a mattress of a thickness that is the maximum specified by the manufacturer's instructions is used.	No changes from NPR
No section in ASTM	6.8 *Structural Integrity of Guardrails* - After testing in accordance with 7.9, there shall be none of the hazardous conditions described in Section 5.	6.5.3 When tested in accordance with 7.9 the guardrail shall not break, detach, or create a condition that would present any of the hazards described in Section 5. Guardrails that do not have any free ends, that is, they are attached to both the headboard and the footboard, are exempt from this test. For guardrails with two free ends, perform this test at each free end.
No section in ASTM	No section in NPR	6.8 *Spindle/Slat Static Load Strength* -
No section in ASTM	6.9 *Slat/Spindle Strength* - Toddler beds that contain wooden or metal slats or spindles shall meet the performance requirements in section 6.9.1.	6.8.1Toddler beds that contain wooden or metal spindles/slats shall meet the performance requirements outlined in section 6.8.2 or 6.8.3.
No section in ASTM	6.9.1 After testing in accordance with the procedure in 7.10, there shall be no slat or spindle breakage or separation of a slat or spindle from the guardrail, side rails or the bed end structures.	6.8.2 Except as provided in section 6.8.3, after testing in accordance with the procedure in 7.10, there shall be no complete breakage of a spindle/slat or complete separation of a spindle/slat from the guardrails, side rails or end structures.

ASTM F 1821 – 09 Section #	NPR Language	Draft Final Language
No section in ASTM	No section in NPR	6.8.3 Toddler beds that convert from a full-size crib, also known as convertible cribs, shall meet the requirements specified in section 6.7 of ASTM F 1169-10, incorporated by reference at 16 CFR Part 1219, Safety Standard for Full-Size Baby Cribs, instead of the requirements of 6.8.2.
7.1 *Mattress Retention:*	Same as ASTM F 1821 – 09	Delete from NPR Do not comply with ASTM F 1821-09
7.1.1 *Test Mattress*—A 4 ± 1⁄8 in. (100 ± 3 mm) thick by 51 5⁄8 ± 1⁄8 in. (1310 ± 3 mm) long by 27 1⁄4 ± 1⁄8 in. (690 ± 3 mm) wide, open cell, polyurethane foam pad having a density of 1 lb/ft3 (16 kg/m3), having a compression load deflection of 30 lbf (133 N) when tested in accordance with Test Methods D 3574, Method B1, to a 25 % deflection, covered with a 5 to 15 gage vinyl material, 0.005– to 0.015–in. (0.13– to 0.38–mm) thick shall be used to represent a mattress during the performance of the following tests:	Same as ASTM F 1821 – 09	7.1 *Test Mattress*—A 4 ± 1⁄8 in. (100 ± 3 mm) thick by 51 5⁄8 ± 1⁄8 in. (1310 ± 3 mm) long by 27 1⁄4 ± 1⁄8 in. (690 ± 3 mm) wide, open cell, polyurethane foam pad having a density of 1 lb/ft3 (16 kg/m3), having a compression load deflection of 30 lbf (133 N) when tested in accordance with Test Methods D 3574, Method B1, to a 25 % deflection, covered with a 5 to 15 gage vinyl material, 0.005– to 0.015–in. (0.13– to 0.38–mm) thick shall be used to represent a mattress during the performance of the test in 7.2.4:
7.1.2 Secure the bed so that it cannot move during the performance of the following tests:	Same as ASTM F 1821 – 09	Deleted from NPR Do not comply with ASTM F 1821-09
7.1.3 Using a 3-in. (76-mm) diameter flat, rigid disk, gradually apply a 5 lbf (22 N) horizontally within a period of 5 s to the edge of the mattress at the vertical midpoint and maintain for 30 s in a location that produces the largest gap in the horizontal plane between the end support structures, side rails, or guardrails and the edge of the mattress.	Same as ASTM F 1821 – 09	Deleted from NPR Do not comply with ASTM F 1821-09
7.1.4 After the test described in 7.1.3 has been performed, any gap in the horizontal plane that permits the passage of a vertically oriented 0.19 in. (5 mm) diameter probe with a length of 6 in. (150 mm), minimum, and that has a fully rounded end to pass through without touching either the mattress or the support structure shall be tested in accordance with 7.1.5.	Same as ASTM F 1821 – 09	Deleted from NPR Do not comply with ASTM F 1821-09
7.1.5 Insert the tapered end of the wedge block, shown in Fig. 2, into any gap identified in 7.1.4 in the most adverse orientation, and gradually apply a 39-lb (17.7 kg) dead weight to the wedge block within a period of 5 s; maintain the load for a period of 30 s.	Same as ASTM F 1821 – 09	Deleted from NPR Do not comply with ASTM F 1821-09
7.1.6 Place a 3 in. (76 mm) by 7.2 in. (183 mm) sheet of 3⁄4 in. (19 mm) thick plywood in the most adverse position on the top of the mattress. Do not allow any portion of the plywood to extend over the edge of the mattress. While keeping the plywood horizontal, gradually apply a 50 lbf (220 N) force normal to the plywood within a period a 5 s. Maintain the load for 30 s.	Same as ASTM F 1821 – 09	Deleted from NPR Do not comply with ASTM F 1821-09

ASTM F 1821 – 09 Section #	NPR Language	Draft Final Language
No section in ASTM	7.9 *Test Method for Guardrail Structural Integrity*	No changes from NPR
No section in ASTM	7.9.1 Firmly secure the toddler bed on a stationary flat surface using clamps. Gradually apply 50 lbf to the uppermost horizontal part of the mattress side of the guardrail in a direction perpendicular to the plane of the rail. The force should be applied in the center along the length of the rail and then repeated with the force applied directly over each of the outermost legs of the guardrail. The force should be applied in the direction away from the mattress within a period of 5 s and maintained for an additional 10 s.	7.9.1 Firmly secure the toddler bed on a stationary flat surface using clamps. Gradually over a period of 5 s apply a 50 lbf (222.4 N) to the guardrail from the inside of the toddler bed, outward and perpendicular to the plane of the rail, and hold for 10 s. The force is to be applied to the geometric center of a 3 x 6 x ½ in. (7.62 x 15.24 x 1.27 cm) piece of plywood with the long end parallel to the floor (see Fig. 11).
No section in ASTM	No section in NPR	7.9.2 For guardrails with a rectangular shape, the plywood should be placed with the upper long edge even with the upper long edge of the rail, which is 11 in. (27.94 cm) from the top of the rail to the top of the mattress support in its lowest position, and the short edge even with the free short edge of the rail.
No section in ASTM	No section in NPR	7.9.3 For contoured guardrails that are not rectangular, the plywood shall be placed with the upper long edge of the plywood even with a line drawn parallel to the rail which is 11 in. (27.94 cm) from the mattress support and the short edge placed so that the downward slope of the free rail edge intersects the corner of the plywood.
No section in ASTM	7.10 *Slat/Spindle testing for Guardrails, Side Rails and End Structures:*	No changes from NPR
No section in ASTM	7.10.1 The spindle/slat static load test shall be performed for all slats and spindles with the spindle/slat assemblies removed from the bed and supported only on the rail corners through a contact area not more than 3 $in.^2$ (7.62 cm^2) when measured parallel to the longitudinal axis of the end of the rail. Besides the corners, the upper and lower horizontal rails of both linear and contoured shall be free to deflect under the applied force.	7.10.1 Spindle/slat static force test shall be performed with the spindle/slat assemblies removed from the bed and supported only on the rail corners through a contact area not more than 3 in^2. (7.6 cm^2) when measured from the end of the rail in a direction parallel to the longitudinal axis of the rail. Besides the corners, the upper and lower horizontal rails of both linear and contoured rails shall be free to deflect under the applied force. For toddler beds incorporating folding or moveable sides for purposes of easier access to the occupant, storage and/or transport, each side segment (portion of side separated by hinges for folding) shall be tested separately as described above.
No section in ASTM	7.10.2 Gradually, over a period of not less than 2 s or greater than 5 s, apply the force specified in 7.10.3 or 7.10.4 at the midpoint between the top and bottom of the spindle/slat being tested. This force shall be applied through a contact area large enough to not cause visible indentation or cutting of the spindle/slat, but not wider than 1 in. (2.54 cm) when measured parallel to the longitudinal axis of the spindle/slat. This weight shall be maintained for 30 s.	7.10.2 Gradually, over a period of not less than 2 s nor greater than 5 s, apply an 80 lbf (355.8 N) perpendicular to the plane of the side at the midpoint, between the top and bottom of the spindle/slat being tested. This force shall be applied through a force measuring device and contact area 1 $\pm$ 1⁄16 in. (25.4 $\pm$ 1.6 mm) wide by a length at least equal to the width of the spindle/slat being tested at the point of application. This force shall be maintained for 10 s. The force measuring device must be capable of recording the force at breakage, if breakage occurs during this test. This force measuring device must be capable of a maximum measurement resolution of 0.25 lbf (1.11 N).

ASTM F 1821 – 09 Section #	NPR Language	Draft Final Language
No section in ASTM	7.10.3 Test, according to 7.10.2, 25% (or the next highest percentage if 4 does not divide evenly into the total number) of all spindles/slats with a force of 80 lb. Spindles/slats that offer the least resistance to bending based upon their geometry shall be selected to be tested within this grouping of 25%, except that adjacent spindles/slats shall not be tested per 7.10.2. Place an identifying mark on all tested spindles/slats.	7.10.3 Test, according to 7.10.2, 25 % (rounding up to the nearest percentage, if necessary) of all spindles/slats. Spindles/slats that offer the least resistance to bending based upon their geometry shall be selected to be tested within this grouping of 25 % except that adjacent spindles/slats shall not be tested.
No section in ASTM	7.10.4 Upon completion of the test described in 7.10.2 and 7.10.3, gradually apply, over a period of not less than 2 s or greater than 5 s, 60 lbf (266.9 N) at the midpoint between the top and bottom of all spindles/slats not previously tested under 7.10.2 and 7.10.3. This force shall be applied through a contact area large enough to not cause visible indentation or cutting of the spindle/slat, but not wider than 1 in. (2.54 cm) when measured parallel to the longitudinal axis of the spindle/slat. This force shall be maintained for 30 s.	7.10.4 Upon completion of testing as defined in 7.10.2 and 7.10.3, no spindle/slat shall have failed at an applied force less than or equal to 60 lbf. If no more than one spindle/slat fails and that failure occurs only as the result of an applied force greater than 60 lbf, then an additional 25 % of spindles/slats shall be tested per 7.10.2 and 7.10.3. During testing of this second 25 %, any spindle/slat failure (at or below 80 lbf) shall constitute failure of the test.
No section in ASTM	7.10.5 End vertical rails that are joined between the slat assembly top and bottom rails are not considered slats and do not require testing under 7.10.	No changes from NPR
8.4.2 The letters of the word "**WARNING**" shall be at least 0.2 in. (5 mm) high, and the remainder of the text shall be characters whose upper case shall be at least 0.1 in. (2.5 mm) high, san serif.	Same as ASTM F 1821 – 09	8.4.2 The safety alert symbol "⚠" and the word "WARNING" or "CAUTION" shall be at least 0.2 in. (5 mm) high, and the remainder of the text shall be characters whose upper case shall be at least 0.1 in. (2.5 mm) high, sans serif.
8.4.3 The warnings shall include the following exactly as stated: " **WARNING** **ENTRAPMENT/STRANGULATION HAZARD** Infants have died in toddler beds from entrapment and strangulation. Failure to follow these warnings and the assembly instructions could result in serious injury or death. NEVER use bed with children under 15 months. NEVER place bed near windows where cords from blinds or drapes may strangle a child"	8.4.3 Toddler beds that meet the performance requirements of sections 5.8.2 (torso entrapment), 6.1 (mattress retention), 6.2 (mattress support system integrity), 6.3 (mattress support system attachment to end structures), 6.4 (mattress support system openings), 6.6 (end structure openings), and 6.7 (partially bounded openings) with the guardrails removed may bear the following label, exactly as depicted, instead of the label required by section 8.4.4: ⚠**WARNING** **INFANTS HAVE DIED IN TODDLER BEDS FROM ENTRAPMENT.** Openings in and between bed parts can entrap head and neck of a small child. NEVER use bed with children younger than 15 months. ONLY use full-size crib mattress of the recommended size. ALWAYS follow assembly instructions.	8.4.3 Except as provided in 8.4.4 and 8.4.5, the following warnings shall appear on all toddler beds, exactly as stated.
No section in ASTM	No section in NPR	8.4.3.1 ⚠WARNING INFANTS HAVE DIED IN TODDLER BEDS FROM ENTRAPMENT. Openings in and between bed parts can entrap head and neck of a small child. NEVER use bed with children younger than 15 months. ALWAYS follow assembly instructions.

ASTM F 1821 – 09 Section #	NPR Language	Draft Final Language
No section in ASTM	No section in NPR	8.4.3.2 ⚠WARNING STRANGULATION HAZARD NEVER place bed near windows where cords from blinds or drapes may strangle a child. NEVER suspend strings over bed. NEVER place items with a string, cord, or ribbon, such as hood strings or pacifier cords, around a child's neck. These items may catch on bed parts.
No section in ASTM	No section in NPR	8.4.3.3 ⚠CAUTION Any mattress used in this bed shall be a full-size crib mattress at least 51 ⅝ in. (1310 mm) in length, 27 ¼ in. (690 mm) in width, and 4 in. (100 mm) in thickness.
8.4.4 Additional warning statements shall address the following: 8.4.4.1 The mattress intended for use on the bed shall be a full-size crib mattress having minimum dimensions of 51 5⁄8 in. (1310 mm) in length, 27 1⁄4 in. (690 mm) in width and 4 in. (100 mm) in thickness, or a greater thickness as specified by the manufacturer, and 8.4.4.2 If guardrails are used as the mattress containment means, guardrail(s) provided must be used to avoid the formation of a gap between the mattress and the bed that could cause an entrapment. If the guardrails are an integral part of the design, such that they cannot be removed, this need not be addressed. 8.4.4.3 Do not place bed near windows where cords from blinds or drapes may strangle a child. 8.4.4.4 Do not place items with a string, cord, or ribbon around a child's neck, such as hood strings or pacifier cords. 8.4.4.5 Do not suspend strings over a toddler bed for any reason.	8.4.4 All toddler beds that do not bear the label allowed for certain toddler beds by section 8.4.3, shall bear the following label, exactly as depicted: ⚠**WARNING** **INFANTS HAVE DIED IN TODDLER BEDS FROM ENTRAPMENT.** Openings in and between bed parts can entrap head and neck of a small child. NEVER use bed with children younger than 15 months. ALWAYS use supplied guardrails to avoid gaps between mattress and bed. ONLY use full-size crib mattress of the recommended size. ALWAYS follow assembly instructions.	8.4.4 Toddler beds that convert from a full-size crib, also known as convertible cribs, shall meet the warning requirements specified in section 8 of ASTM F 1169 – 10 (incorporated by reference at 16 CFR Part 1219, *Safety Standard for Full-Size Baby Cribs)* instead of the requirements of 8.4.3.
No section in ASTM	8.4.5 In addition to the label allowed by section 8.4.3 or required by section 8.4.4, all toddler beds shall bear the following label, exactly as depicted: ⚠ **WARNING** **STRANGULATION HAZARD** NEVER place bed near windows where cords from blinds or drapes may strangle a child. NEVER suspend strings over bed. NEVER place items with a string, cord, or ribbon, such as hood strings or pacifier cords, around a child's neck. These items may catch on bed parts.	8.4.5 Any toddler bed that can convert from a full-size crib, and has the warning specified in section 8.1.3 of ASTM F 1169 – 10 (incorporated by reference at 16 CFR Part 1219, *Safety Standard for Full-Size Baby Cribs)*, shall include additional text at the end of that warning that specifies the minimum mattress thickness of 4 inches (100 mm).

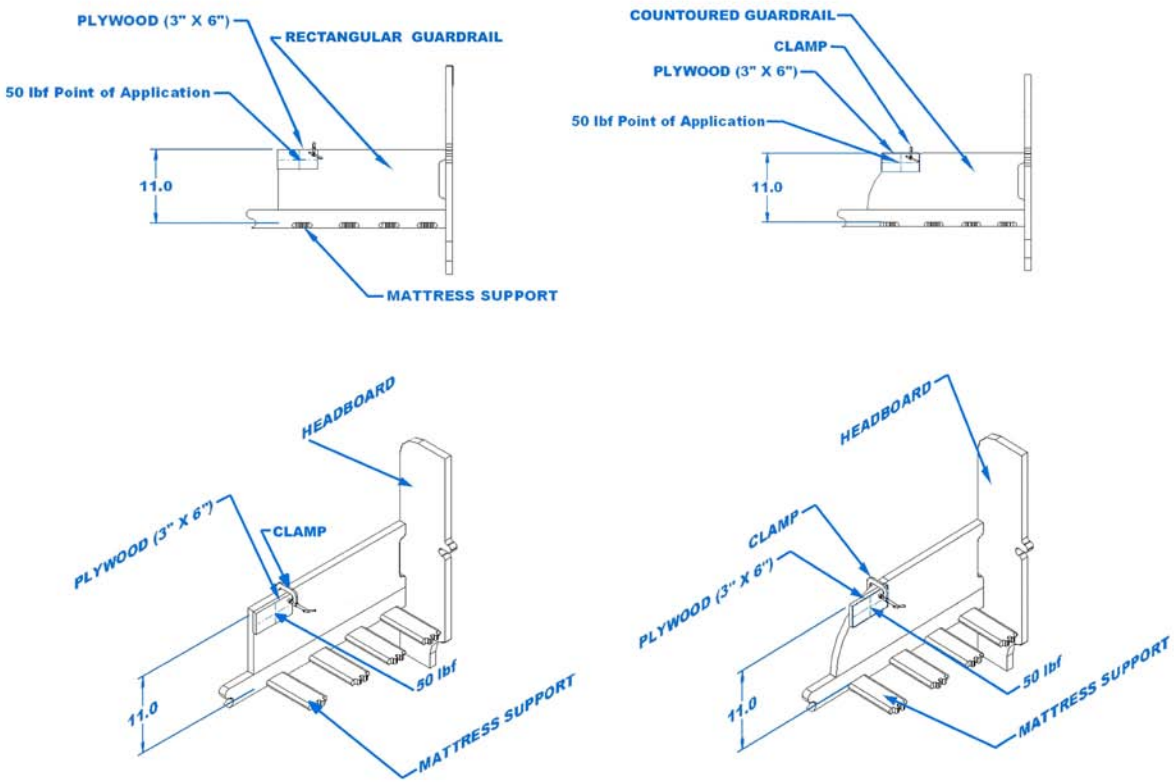

FIGURE 11 -- Guardrail Structural Integrity Test

TAB A: Comments to NPR

TAB A

Comments to Notice of Proposed Rulemaking

CPSC-2010-0022-0002 - Adam Baker
CPSC-2010-0022-0003 - Candace Feist
CPSC-2010-0022-0004 - Alexis Singleton
CPSC-2010-0022-0005 - Tulasi Vuyyuru
CPSC-2010-0022-0006 - Richard Robinson
CPSC-2010-0022-0007 - Susan Carper
CPSC-2010-0022-0008 - Nicholas Rarey
CPSC-2010-0022-0009 - Heather Dees
CPSC-2010-0022-0010 - Consumers Union * Consumer Federation of America* Kids in Danger
CPSC-2010-0022-0011 - Richard Novak
CPSC-2010-0022-0012 - Robert Waller (JPMA)
CPSC-2010-0022-0013 - China WTO/TBT
CPSC-2010-0022-0014 - Robert Waller (JPMA)

PUBLIC SUBMISSION **As of:** June 29, 2010

Tracking No. 80ae26b1
Comments Due: July 12, 2010
Docket: CPSC-2010-0022
Safety Standard for Toddler Beds
Comment On: CPSC-2010-0022-0001
Safety Standard for Toddler Beds
Document: CPSC-2010-0022-0002
Comment from Adam Baker

Submitter Information

Name: Adam Baker

General Comment

I support this proposed regulation and offer the following comments:
Considering that a number of accidents occurred from loose or missing parts, according to information provided by No. CPSC-2010-0022, RIN 3041-AC79. The ability for a consumer to accurately assemble a toddler bed should be given attention. I know that instructions can be vague and that required piece can be missing or there can be additional assembly components added.

Resulting in confusion as to why there are, for example, extra screws left over.
The ASTM F 1821-09 voluntary standard contains requirements addressing a number of hazards. The requirements state that instructions must be provided with the bed. I offer the following rewording of requirement 12 to read accurate instructions must be provided with the bed. The rewording would hopefully result in more attention given to product safety as well as safe assembly.

PUBLIC SUBMISSION **As of:** June 29, 2010

Tracking No. 80ae8bdf
Comments Due: July 12, 2010
Docket: CPSC-2010-0022
Safety Standard for Toddler Beds
Comment On: CPSC-2010-0022-0001
Safety Standard for Toddler Beds
Document: CPSC-2010-0022-0003
Comment from Candace Feist

Submitter Information

Name: Candace Feist

General Comment

I am in full support of this proposed regulation. Being a parent of a child who still uses a toddler bed, I want to know that my child is safe while in her bed throughout the night. Taking into consideration all the incidents of entrapments as stated in CPSC-2010-0022, manufacturers and regulators should consider replacing spindles altogether on the toddler bed guardrails. By replacing the guardrail spindles with a full piece of wood or material, children will have a less likely risk of getting a body part entrapped within them.

PUBLIC SUBMISSION **As of:** June 29, 2010

Tracking No. 80ae876d
Comments Due: July 12, 2010
Docket: CPSC-2010-0022
Safety Standard for Toddler Beds
Comment On: CPSC-2010-0022-0001
Safety Standard for Toddler Beds
Document: CPSC-2010-0022-0004
Comment from Alexis Singleton

Submitter Information

Name: Alexis Singleton

General Comment

As a manufacturer, we would like to harmonize the crib and toddler bed standards regarding warning statements on labels (regarding entrapment and strangulation hazards), so that particularly for convertible cribs, the language can be combined. We hope to eliminate redundant statements changing only the noun "crib" to "toddler bed". Combining these warnings will make them more effective.

PUBLIC SUBMISSION **As of:** June 29, 2010

Tracking No. 80ae97d3
Comments Due: July 12, 2010
Docket: CPSC-2010-0022
Safety Standard for Toddler Beds
Comment On: CPSC-2010-0022-0001
Safety Standard for Toddler Beds
Document: CPSC-2010-0022-0005
Comment from Tulasi Vuyyuru

Submitter Information

Name: Tulasi Vuyyuru

General Comment

I am writing with regard to the safety standard to the toddler beds. I feel that there should be mandatory standards in design and construction of the toddler beds. There were 1,380 injuries were treated in the emergency department in hospitals and 4 fatalities due to toddler beds with in 4 year period from 2005 to 2008. I would agree with the proposed regulation which would increase the safety standards for the toddler beds.

I feel that this is irresistible proof that the mandatory standards must be imposed to make sure that this misfortune does not beat another family in United States of America. As a mother, I can not imagine my kid is sleeping on a toddler bed which is unsafe. I am trying to accomplish with my comments is to revise/modify the safety rules which would be safe for the toddlers and also Mom's should not worry about their baby's safety.

May 12, 2010

Office of the Secretary,
Consumer Product Safety Commission
4330 East West Highway, Room 820,
Bethesda, MD 20814

Re: Comment Regarding Proposed Rules Implementing Safety Standards for Toddler Beds, docket no. CPSC-2010-0022, 75 Fed. Reg. 22291 (April 28, 2010)

To Office of the Secretary, Consumer Product Safety Commission,

The CPSC (Commission) has proposed a rule that adopts consumer product safety standards for toddler beds from ASTM International (formerly the American Society for Testing and Materials) with additional "modifications that strengthen the standard."[1] The Commission should not incorporate these standards by reference, however, because doing so would limit public access to relevant safety standards.

The ATSM standards are copyrighted, and ATSM restricts access to those willing to pay a membership fee or purchase a license to view a single copy. It is a fundamental principle of a free society that the law, which is binding upon all citizens, should be free for publication to all.[2] Substantive rules regulating toddler beds would have the force of law, and the public has the right to access these standards without being forced to pay a fee. Moreover, the substantive nature of the proposed standards, the extensive alterations included in the new regulation, and the relative brevity of the ATSM document all militate against incorporating the standard by reference. Rather, the Commission should publish the standards in full, complete with the agency modifications, in the federal register. In the alternative, the rule should include language that ensures the public will have free access to the relevant standards.

Public Access

The circuits are split regarding the issue of whether model codes adopted into law may retain any copyright protection.[3] Federal appeals courts across all circuits have consistently held, however, that the public must have access to any copyrighted material that carries the force

[1] Safety Standards for Toddler Beds, 75 Fed. Reg. 22291 (proposed April 28, 2010) (to be codified at 16 CFR pt. 1217)
[2] *See* Banks v. Manchester, 9 S.Ct. 36, 40 (1888); *See also* Veek v. Southern Bldg. Code Congress Int'l, Inc. 293 F.3d 791, 798 (5th Cir. 2002) (en banc) (addressing whether model codes adopted into law are copyrightable and noting that "citizens must have free access to the laws which govern them").
[3] *Compare* Practice Management Information Corp. v. American Medical Assn., 121 F.3d 516 (9th Cir. 1997) (holding that AMA coding system referenced by federal agency retained copyright protection) *with Veek*, 293 F.3d (explicitly rejecting *American Medical*'s analysis of Supreme Court precedent and holding that model codes adopted into law are not subject to copyright).

of law.[4] The procedures and business practices of ATSM, however, raise a serious issue as to whether the proposed standards for toddler beds would be sufficiently open to the public.

It is unclear whether the public would have free access to the adopted ATSM standard if the rule were promulgated in its current form. The proposed regulation states that "you may obtain a copy of this standard from ATSM International" and lists the company address and website. It also indicates that an interested party may "inspect copies" at the office of the Secretary of the CPSC or at the National Archives and Records Administration.[5] Despite this language announcing that copies are available, there is reason to believe that the standards will not be accessible if the rule is promulgated as written. In its notice of proposed rulemaking, the Commission states that "[t]he ATSM standard is copyrighted, but can be viewed as a read-only document, *only during the comment period* on this proposal" at the ATSM website.[6] This language implies that ATSM will control any access to the standards even after they are promulgated and carry the force of law.

An inspection of ATSM's licensing practices reveals that documents controlled by the organization are available only for a price, and only in a very limited form. According to the ATSM website, an individual may purchase a strictly limited license to view and print one copy of the standards for $38.00.[7] Even after paying this fee, however, the purchaser "[has] no ownership or other rights in the ASTM Product."[8] According to the ATSM License Agreement, licensees have a limited right to view one copy of the document for individual use.[9]

For a business, obtaining access to the standards is even more onerous. Organizations must pay additional fees to obtain a multi-user subscription, which provides similarly restricted access to authorized users.[10] Even after purchasing a subscription, access to the standards are limited for a year before a new subscription must be purchased. Presumably ATSM would continue to charge these fees for this restricted access after the Commission's proposed rule is promulgated.

Problems With Requiring The Public To Access ATSM's Standards

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[4] *See, e.g. American Medical* 121 F.3d at 1389 (noting that AMA code was published annually in the federal register).

[5] 75 Fed. Reg. 22301

[6] 75 Fed Reg. 22291 (emphasis added)

[7] www.astm.org/Standards/F1821. Individuals can become members of ATSM for one year for a $75 fee. Organizations can become members for $400. http://www.astm.org/MEMBERSHIP/MemTypes.htm.

[8] ATSM License Agreement, available at http://www.astm.org/COPYRIGHT/

[9] The license reads, in part:

> [purchasers have] the right to download, view or print *a single copy* of the individual Documents, or portions of such Documents, solely for Licensee's own use . . . Licensee may access and download an electronic file of a Document (or portion of a Document) *for temporary storage* on one computer for purposes of viewing, and/or printing *one copy* of a Document for *individual use*. Neither the electronic file nor the single hard copy print may be reproduced in any way. In addition, *the electronic file may not be distributed elsewhere over computer networks or otherwise* . . . The single hard copy print *may only be distributed to others for their internal use within your organization*; it may not be copied. ATSM License Agreement, available at http://www.astm.org/COPYRIGHT/ (emphases added). Incorporated as Appendix A.

[10] See ATSM Subscription License, available at http://www.astm.org/COPYRIGHT/. Incorporated as Appendix B.

There are a number of problems with this situation. First, businesses that manufacture Toddler Beds will be forced to enter into a legal relationship with ATSM before they can conform their conduct to the Commission's regulations. The ATSM subscription license requires organizations to police ATSM's copyright and prevent its unauthorized use. Furthermore, nothing in the proposed regulation prevents ATSM from imposing additional limitations or costs on businesses seeking access to the standards. These costs will be especially burdensome for small businesses.

Second, the regulation would burden private citizens who may be concerned that a product they purchase meets federal standards. Before an individual can find out whether a product meets federal standards, he or she must not only locate the relevant regulation, but additionally purchase a copy of the standard from ATSM. This is an unreasonable burden to place on concerned citizens, and it runs counter to the purpose of the Consumer Product Safety Improvement Act.

Conclusion

In light of the significant issues presented by the proposed rule, the Commission should alter the proposal by either publishing a complete version of the Commission's final standards in the federal register, or explicitly ensuring that the public will have free access to any standards in some other fashion.

Sincerely,

Richard Robinson
Stanford Law School

PUBLIC SUBMISSION

As of: June 29, 2010 **Tracking No.** 80af470c
Comments Due: July 12, 2010

Docket: CPSC-2010-0022 Safety Standard for Toddler Beds
Comment On: CPSC-2010-0022-0001 Safety Standard for Toddler Beds
Document: CPSC-2010-0022-0007 Comment from Susan Carper

Submitter Information

Name: Susan Carper

General Comment

To Whom It May Concern: According to the Safety Standards for Toddler Beds, I agree that the proposed Safety Standards should be addressed. The way to reduce the risk of injures pertaining to Toddler Beds is through notification. By adding regulations to the instructional literature, the bed, and the carton, you are addressing the seriousness of the Safety Standards pertaining to the bed. This could reduce the fatalities and injuries that have occurred. Furthermore, by doing additional testing on the structure of the Toddler Bed and by revising the ASTM Standard to insure safety, would allow for the consumer to be reassured that this product, if used properly, would be safe. Manufactures need to take responsibility to ensure the products they are bringing to the market are safe for the consumers use. Sincerely, Susan Carper

PUBLIC SUBMISSION

As of: June 29, 2010 **Tracking No.** 80b02e51
Comments Due: July 12, 2010

Docket: CPSC-2010-0022 Safety Standard for Toddler Beds
Comment On: CPSC-2010-0022-0001 Safety Standard for Toddler Beds
Document: CPSC-2010-0022-0008 Comment from Nicholas Rarey

Submitter Information

Name: Nicholas Rarey

General Comment

Since 2005 there has been over 1380 situations where a child has been harmed by the bed he/she was laying in. In 2005, 4 deaths were reported. Of those 4 deaths, 2 were reportedly due to entrapment. Entrapment is listed as the main culprit in toddler bed issues, accounting for 31% of the accidents reported to authorities. While most injuries reported run along the lines of bumps and bruises, it is also common to see lacerations and broken limbs. Broken or faulty guard rails and ill-fitting mattresses seem to be the biggest problem. Of the emergency department treated injuries, 87% were caused by the infant/toddler falling out of the bed to a lower level. All of this information is in the proposal packet. The biggest problems would seem to be the easiest to fix (Stronger railing and better fitting mattresses). It should be obvious that infants/toddlers cannot speak up for themselves, nor provide adequate care for themselves. It is everyone's job to make sure this age group is looked after safely. If a man with no children can see this needs fixed, surely the public at large will see this. I hope this proposed rule gets passed and creates a safer environment for all children to lay and play. Making a tougher standard for which these beds are tested will most definitely save lives and reduce injuries. Not only is a safer product in the best interest of the consumer, it also protects the manufacturer, thereby a win/win for everyone. I applaud you for your action and hope for the passing of this regulation.

PUBLIC SUBMISSION

As of: June 29, 2010 **Tracking No.** 80b062b9
Comments Due: July 12, 2010

Docket: CPSC-2010-0022 Safety Standard for Toddler Beds
Comment On: CPSC-2010-0022-0001 Safety Standard for Toddler Beds
Document: CPSC-2010-0022-0009 Comment from Heather Dees

Submitter Information

Name: Heather Dees **Submitter's Representative:** N/A **Organization:** Student of AMU

General Comment

I agree with the proposed rule to increase the safety standard of toddler beds. The United States Consumer Product Safety Commission requires the safety standards to meet the voluntary standards or be more stringent than the voluntary standard if the Commission concludes that more stringent requirements would further reduce the risk of injury associated with the product. In this case, I believe that having more stringent safety standards would reduce the risk of injury. After viewing the fatalities that occured with toddler beds, it is apparent that most fatalities occured because of parents negligents however, after looking over the injuries as well some of these could have been prevented if stricter safety standards were implemented. I feel that it is necessary to be specific with warning labels on infant and toddler equipment because some their are parents that just don't know that a 6 month old shouldn't be in a toddler bed. As much as this seems like common sense to most there are parents that don't know any better so these labels could prevent injuries or even deaths of children.

DRAFT

Consumers Union * Consumer Federation of America
*** Kids in Danger ***
July 12, 2010
Office of the Secretary
Consumer Product Safety Commission
Room 502
4330 East-West Highway
Bethesda, Maryland 20814
Via: www.regulations.gov
Facsimile (301) 504-7923

Comments of Consumers Union, Consumer Federation of America, and Kids in Danger to the U.S. Consumer Product Safety Commission
on "Safety Standard for Toddler Beds"
16 C.F.R. 1217

Introduction

Consumers Union of U.S., Inc. (CU), Consumer Federation of America (CFA), and Kids in Danger (jointly "We") submit the following comments in response to the U.S. Consumer Product Safety Commission ("CPSC" or "Commission") in the above-referenced matter.[1]

[1] "Safety Standard for Toddler Beds," Federal Register, Vol. 75, No. 81, 22291 (April 28, 2010).
[2] Id.

Background

Section 104(b) of the Consumer Product Safety Improvement Act of 2008, Public Law 110-314, 122 Stat. 3018 ("CPSIA"), requires the CPSC to promulgate consumer product safety standards for certain durable infant and toddler products. In this Notice of Proposed Rulemaking ("NPR") the CPSC is seeking comment on its proposed safety standard for Toddler Beds. The proposed standard is "largely the same as" the voluntary standard ASTM F 1821-09, "Standard Consumer Safety Specification for Toddler Beds," but with some modifications that strengthen the standard.

Recommendations

We agree with the CPSC staff's recommendations regarding adoption, with modification, of ASTM's F1821-09 standard. We support CPSC's efforts to establish safety standards more stringent than the voluntary ASTM standard where needed. We believe the additional proposed testing for guardrail stability and slat integrity are vital to keeping children safe in toddler beds. Further, we want to ensure that the scope of the standard includes all toddler beds on the market, including all types of guardrails.

In addition, we support the recommendation for a minimum height requirement for guardrails. As CPSC staff mentions, parents who buy a product with guardrails are most likely assuming that the rails will help retain their child in the product and avoid falls. With a guardrail of an inadequate height, parents have a false sense of security about the effectiveness of the product.

We also support the rewritten warning labels that more accurately reflect the hazards associated with toddler bed use. Warnings are often an inadequate solution to preventing hazards, thus, at a minimum, making them as clear and simple as possible to encourage caregivers to read them is vital. However, the use of the warning, "Always follow assembly instructions," is not useful in the location described. Presumably, the caregiver is reading the warning on a fully assembled product unit and is unlikely to refer to the assembly instructions

at that time, or to know if the product was or was not assembled according to directions. A more appropriate place for this warning is on the packaging and the top of the assembly instructions.

Conclusion
For the foregoing reasons, we urge the Commission to adopt these recommendations in its implementation of Section 104(b) of the CPSIA.

Respectfully submitted,

Nancy A. Cowles
Executive Director
Kids in Danger
Rachel Weintraub
Director of Product Safety and Senior Counsel
Consumer Federation of America
Donald L. Mays
Senior Director, Product Safety & Technical Policy
Consumers Union

PUBLIC SUBMISSION **As of:** July 15, 2010

Tracking No. 80b1275f
Comments Due: July 12, 2010
Docket: CPSC-2010-0022
Safety Standard for Toddler Beds
Comment On: CPSC-2010-0022-0001
Safety Standard for Toddler Beds
Document: CPSC-2010-0022-0011
Comment from Richard Novak

Submitter Information

Name: Richard Novak

General Comment

The proposed safety regulation to revise the standards of toddler bed design. I've researched this topic and I can see that is appears to have nearly universal appeal. All the past recalls pale in comparison to the deaths and injuries of the children who use the products. The Consumer Product Safety Commission (CPSC)–2010–0022 doesn't seem to have any opposition from the child care industry and that's almost expected. After all, what company is going to complain when the issue at hand involves the death of children? This proposal, dated 28 Apr 10, develops minimum specifications for several aspects of crib design, including height of the upper edge of the guardrail, structural integrity of the guardrail, using greater force when testing the slats of the guardrail, and etc. It covers "any bed sized to accommodate dull-size crib mattress having minimum dimensions of 51 5/8 inches by 27 ¼ inches" and which is designed "to provide free access and egress to a child not less than 15 months of age and weighing no more than 50 pounds." Clearly the proposed regulation is very broad in scope and will have an effect on millions of products if approved.
Richard E. Novak

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July 12, 2010
Office of the Secretary
U.S. Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814

Re: NOTICE OF PROPOSED RULEMAKING (NPR): CPSIA SECTION 104: Safety Standard for Toddler Beds: 16 CFR Part 1217
CPSC DOCKET Number: 2010–0022

Dear Mr. Stevenson:
The Juvenile Products Manufacturers Association (JPMA) is a not-for-profit trade association representing the producers, importers, or distributors of a broad range of childcare articles that provide protection to infants and assistance to their caregivers. We appreciate the opportunity to comment on the April 28, 2010, Federal Register Notice regarding 16 CFR Part 1217 Safety Standard for Toddler Beds ("NPR").The Consumer Product Safety Commission ("Commission" or "CPSC") invited comments on 16 CFR Part 1217 pursuant to Section 104 of the Consumer Product Safety Improvement Act ("CPSIA"), which directs the Commission to issue mandatory regulation on durable infant products. In response to the request of the Commission's staff, the Juvenile Products Manufacturers Association, Inc. ("JPMA") submits the following comments. JPMA hopes that these comments will assist the Commission in effectively implementing regulations in a consistent manner with hazard based requirements under ASTM F 1821–09 consensus, hazard based Safety Standards for Toddler Beds and other existing or proposed ASTM Standards promulgated for similarly situated or constructed products, such as the pending ASTM F-1169 version governing full size cribs. JPMA has previously submitted extensive comments on a variety of CPSIA issues. These comments provide our views on the proposed requirements of 16 CFR Part 1217. JPMA reserves the right to supplement or amend its comments as appropriate.

General Comments

JPMA believes that promulgated standards need to be based upon materially accurate data. The existing ASTM F1821-09 defines a toddler bed as any bed sized to accommodate a full-size crib mattress having minimum dimensions of 51 5⁄8 inches in length and 27 1⁄4 inches in width and that is intended to provide free access and egress to a child not less than 15 months of age and weighing no more than 50 pounds. These parameters are important since the majority of the incident data involving fatalities cited children that were either too young to be in the bed or to a cord that was a strangulation risk. Three of the four incidents cited involved children less than 15 months of age, not yet qualified to be in a toddler bed. The NPR notice acknowledges this when it states: " It is notable that three of the four reported fatalities involved victims under the age of 15

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months, which is recommended in the current ASTM voluntary standard as the minimum age for use of a toddler bed." We agree with this statement. However, there exists concern that the CPSC staff cited appears to be inflating the number of incidents and that data cited as "related to" or "associated with" are insufficient to rely upon in the absence of data and analysis that establishes that the products proximately caused the incident or injury complained of. In addition, restrictions on bounded perimeter openings in guard rails may prevent potential fatalities but can result in limb entrapment. For example when based upon mandatory slat opening limits for crib slats under 16 CFR 1508 as incorporated in ASTM F-1169, it has long been accepted that limb entrapment within mandatorily established slat dimensions does not present a significant risk of injury or substantial hazard for infant users of the product. The relative limited risk of limb as opposed to head entrapment needs to be accurately noted. In general the incident data is statistically very low with respect to the millions of units sold. It is conceivable that the most recent changes to the ASTM F-1821-09 Standard that just went into effect would likely be sufficient to deal with the relatively small number of incidents involving the product category.

Guard Rail Strength Test

The bed rail strength requirement of 50 pounds of pull resistance with no breakage is excessive without a reasonable justification for the force limit[1]. The incident data tangentially references only 2 injuries, both lacerations, from component breakage, but does not indicate guardrails were involved. A review of appropriate existing rationales in comparable standards supports this position. We note that increasingly consumers are using convertible cribs, which have features allowing transformation of cribs into toddler beds in order to prolong useful life of the product. Based upon data it appears that no reasonable basis exists for use of such force limit. ASTM meeting records indicate that CPSC staff had originally proposed a 40 lb force limit commensurate with the existing bedrail Standard force limit. The purpose of the guardrail is obviously not to contain/confine the child. The purpose is to aid in the prevention of a sleeping child from inadvertently rolling off the bed. In that scenario, the resultant force would be a fraction of that being proposed. Additionally, a child pulling on the guardrail from outside of the bed in play would certainly tip most toddler beds over before reaching the 50lb force being proposed. At a minimum, this force should be reduced to match the requirement as specified in the ASTM Bed Rail Standard.

1 See proposed: 7.9 *Test Method for Guardrail Structural Integrity:*
(A) 7.9.1 Firmly secure the toddler bed on a stationary flat surface using clamps. Gradually apply 50 lb f to the uppermost horizontal part of the mattress side of the guardrail in a direction perpendicular to the plane of the rail. The force should be applied in the center along the length of the rail and then repeated with the force applied directly over each of the outermost legs of the guardrail. The force should be applied in the direction away from the mattress within a period of 5 s and maintained for an additional 10 s.

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Test Methodology

Once the force limit is determined it remains necessary to have a clearly defined testing methodology. Technical issues regarding have been addressed in the ASTM Standard, but are not adequately or consistently referenced in the NPR. Clarity is required as regards the specific test methodology to be employed. Some of our members have noted that questions exist about the need to require that the guardrail be tested in 3 places, instead of just at the most onerous point. Also the proposed regulation states to do the test "*above the leg of the guardrail*", what if there is no "*leg*"? What about the case of a guardrail that has a contoured upper surface or one which is integral with the sides of the bed? Clearly the test method needs to specify the contact area of the force and how far from the top of the rail this force should be applied. Also the height of the bed rail should be fixed or measured from the mattress support platform so there will be consistency of measurement[2]. We recommend that the test methodology as specified in Appendix A supplied with these comments simply be incorporated fully by reference.
Similarly, the wording in the NPR in section 6.1.1 is not clear in that it states *"…..that allows complete passage of the wedge block,"* referencing the mattress support and not the opening above the mattress support between the mattress and bed side or end. This section reads as if the mattress must be contained. Section 8.4.4.2 also references mattress containment in labeling. These sections need to be addressed for clarity before the Standard is enacted. Whether the mattress must actually be contained within the toddler bed prior to application of testing needs to be clarified.
Clearly when possible, consistent requirements between product categories should be carefully reviewed, prior to adoption.

Slat Integrity Testing

In addition to requirements already contained in ASTM F-1821-09. Additional slat integrity requirements are being imposed[3]. We note that the language in the proposed

2 This was addressed in the March 16, 2010 ASTM meeting as follows – "It was suggested that the guard rail be measured from the top of the mattress support, not the top of the mattress. The dimension should be 10" above the mattress support, or a dimension that will result in the bed rail being 5" greater in height than the thickest mattress recommended by the manufacturer."
[3]SEE NPR (7) In addition to the changes to ASTM 1821–09 in paragraph (b)(5) of this section comply with the following:
7.10 *Slat/Spindle Testing for Guardrails, Side Rails, and End Structures:*
(A) 7.10.1 The spindle/slat static load test shall be performed for all slats and spindles with the spindle/slat assemblies removed from the bed and supported only on the rail corners through a contact area not more than 3 square inches when measured parallel to the longitudinal axis of the end of the rail. Besides the corners, the upper and lower horizontal rails of both linear and contoured shall be free to deflect under the applied force.
(B) 7.10.2 Gradually, over a period of not less than 2 s or greater than 5 s, apply the force specified in 7.10.3 or 7.10.4 at the midpoint between the top and bottom of the spindle/slat being tested. This force shall be applied through a contact area large enough to not cause visible indentation or cutting of the spindle/slat, but not wider than 1 in. (2.54 cm) when measured parallel to the longitudinal axis of the spindle/slat. This weight shall be maintained for 30 seconds.

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Toddler Bed standard regarding slat strength should match that in the "new" version of the proposed F1169 Standard for full Size Cribs in all respects.

Warning Statements

This proposed Toddler Bed Standard warning requirements need to match those incorporated in the "new" F1169 Full Size Crib Standard, since a large percentage of cribs on the marked today convert to toddler beds. To have similar, but not matching language will result in more labels, more verbiage and less attention paid by the consumer to the important warnings. Much of this issue could be resolved if the proposed Toddler Bed standard allowed language to address these issues rather than requiring exact language. In this regards consistency with the ASTM F-1169 requirement is appropriate. Therefore we propose the language in ASTM F-1169 (as pending) be specifically incorporated as follows in lieu of proposed Section 8.4.5[4] :

- 8.3.1 The warnings shall address the following including the hazard where identified. The warnings may be expressed in different words if those words convey clearly the same warning.
8.3.1.2 Strangulation Hazard:
**Strings can cause strangulation! Do not place items with a string around a child's neck, such as hood strings or pacifier cords. Do not suspend strings over a crib or attach*
strings to toys.
**DO NOT place crib near window where cords from blinds or drapes may strangle a child.]*

(C) 7.10.3 Test, according to 7.10.2, 25% (or the next highest percentage if 4 does not divide evenly into the total number) of all spindles/slats with a force of 80 lb. Spindles/slats that offer the least resistance to bending based upon their geometry shall be selected to be tested within this grouping of 25%, except that adjacent spindles/slats shall not be tested per 7.10.2. Place an identifying mark on all tested spindles/slats.
(D) 7.10.4 Upon completion of the test described in 7.10.2 and 7.10.3, gradually apply, over a period of not less than 2 s or greater than 5 s, 60 lbf (266.9 N) at the midpoint between the top and bottom of all spindles/slats not previously tested under 7.10.2 and 7.10.3. This force shall be applied through a contact area large enough to not cause visible indentation or cutting of the spindle/slat, but not wider than 1 in. (2.54 cm) when measured parallel to the longitudinal axis of the spindle/slat. This force shall be maintained for 30 s.
(E) 7.10.5 End vertical rails that are joined between the slat assembly top and bottom rails are not considered slats and do not require testing under 7.10.
[4] NPR proposed 8.4.5:
/!\ WARNING
STRANGULATION HAZARD
NEVER place bed near windows where chords from blinds or drapes may strangle a child.
NEVER suspend strings over bed.

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Conclusion

Whenever possible consistency and uniformity of test methods and procedures is essential to rule promulgation for durable infant products. In this regard consistent, uniform requirements for juvenile products, by category and with due regard to effective existing ASTM standards should be taken into consideration. The burden remains with the CPSC staff to justify any substantive deviation of such ASTM standards and to insure uniform application among similarly situated juvenile products.

Sincerely,
Robert Waller, CAE
President

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Appendix A

Terminology

Removable guardrail (n) – a guardrail that can be removed without the use of tools.

Guardrail Strength

6.8 When tested in accordance with 7.9 the guardrail shall not break, detach or create a condition that would present any of the hazards described in Section 5. Removable guardrails, and guardrails that do not have any free ends, that is that they are attached to both the headboard and the footboard, are exempt from this test. For guardrails with 2 free ends, perform this test at each free end.

7.9 Gradually over a period of 5s apply a 40 lb. force to the guardrail from the inside of the toddler bed, outward and perpendicular to the plane of the rail, and hold for 10 secs. The force is to be applied to the geometric center of a 3 x 6 x ½ in. piece of plywood with the long end parallel to the floor.

7.9.1 For guardrails with a rectangular shape, the plywood should be placed with the upper long edge even with the upper long edge of the rail and the short edge even with the free short edge of the rail.

7.9.2 For contoured guardrails that are not rectangular, the plywood shall be placed with the upper long edge of the plywood even with a line drawn parallel to the rail which is 9 in. from the mattress support and the short edge placed so that the downward slope of the free rail edge intersects the corner of the plywood.

Guardrail Height

6.5.2 The upper edge of the guardrail shall be at least 9 inches above the mattress support. This measurement is to be taken from the lowest point on the upper surface of the mattress support within 6 in. of the guardrail to the highest point of the upper edge of the guardrail within 6 in. from the headboard.

中国WTO/TBT 国家通报咨询中心

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Comments from P. R. China on USA
Notification G/TBT/N/USA/538 539 540
Safety Standard for Bassinets and Cradles: Notice of Proposed Rulemaking;
Safety Standard for Toddler Beds;
Third Party Testing for Certain Children's Products; Notice of Requirements for Accreditation of Third Party Conformity Assessment Bodies To Assess Conformity With Part 1505 and/or Sec. 1500.86(a)(5) of Title 16, Code of Federal Regulations

Comments from P. R. China on USA Notification G/TBT/N/USA/538 539 540

Safety Standard for Bassinets and Cradles: Notice of Proposed Rulemaking;
Safety Standard for Toddler Beds;
Third Party Testing for Certain Children's Products; Notice of
Requirements for Accreditation of Third Party Conformity Assessment
Bodies To Assess Conformity With Part 1505 and/or
Sec. 1500.86(a)(5) of Title 16, Code of Federal Regulations

Dear Sir or Madam,

We appreciate the opportunity to submit comments on the notified regulation proposed by Consumer Product Safety Commission (CPSC), the United States of America.

Enclosed please find comments in English and Chinese.

Please acknowledge receipt of the comments by e-mail to tbt@aqsiq.gov.cn.

Thank you very much in advance for Consumer Product Safety Commission (CPSC) taking into account comments from P. R. China. Your formal reply will be appreciated.

Best regards,

WANG Nini
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Comments from P. R. China on USA Notification G/TBT/N/USA/538 539 540

Safety Standard for Bassinets and Cradles: Notice of Proposed Rulemaking;
Safety Standard for Toddler Beds;
Third Party Testing for Certain Children's Products; Notice of
Requirements for Accreditation of Third Party Conformity Assessment
Bodies To Assess Conformity With Part 1505 and/or
Sec. 1500.86(a)(5) of Title 16, Code of Federal Regulations

The government of the People's Republic of China highly appreciates the efforts the United States have made in the safety of children's product, and thanks U.S.A the opportunity for WTO Members to make comments on notifications of G/TBT/N/USA/538, 539, and 540. After careful study, China would like to put forward following comments on the three U.S. notifications, for your careful consideration and your reply is appreciated.

I Comments on G/TBT/N/USA/538 *Safety Standard for Bassinets and Cradles*

1. In Section B of the Draft, it intents to include infant hammocks under the applicable scope of the new *Safety Standard for Bassinets and Cradles,* however, it also states in the notification that, the practice is unreasonable, and the modifications on the requirement for infant hammocks may lead to eliminate the market for infant hammocks intended to lull colicky babies, even lead caregivers to use similar products intended for older children instead, thereby creating a potentially new hazard.

It is one of the objectives of the WTO/TBT Agreement to protect the human safety

and health, and the establishment of *Safety Standard for Bassinets and Cradles* aims to protect the human safety in a better way, however, the elimination of the market for infant hammocks intended to lull colicky babies resulting from which will do harm to the health of infants to certain degree, and the lack for such products is likely to result in the occurrence of new injury accidents, which is obviously against the established goal of the standard, as well as the objectives of the TBT Agreement. Therefore, before an applicable standard is developed or a better solution is provided, it is suggested not to include infant hammocks for special purpose under the applicable scope of the new *Safety Standard for Bassinets and Cradles,* but provide appropriate instructions and warning label for this type of products.

2. In Section E of the Draft, requirements for maximum deflection angle and rest angle, in addition to testing with Mark II CAMI Dummy, the proposed regulation will test with Newborn Infant CAMI Dummy. Mark II CAMI Dummy is to imitate the children of six months old, while the bassinets and cradles only apply to 5 infants under 5 months. Therefore, it is unreasonable to test with Mark II CAMI Dummy. It is suggested to test all clauses required to be tested with dummy with Newborn Infant CAMI Dummy.

3. Also in Section E of the Draft, "Add a performance requirement and test method for the maximum allowable rock/swing angle and maximum allowable rest angle of sleep surface, and maximum allowable flatness angle", it will force enterprises to make modifications on their existing designs and production. It is suggested to consider the cycle required by the enterprise to change the design technology and set reasonable period of preparation, so that enterprises have enough time to change the existing technology, and the product meets the requirement of the standard.

4. In Paragraph (B) of "(iii) 7.10 *Fabric Release Test Methods for Enclosed Openings"* on the last page of the notified draft, it mentions "With the torso test probe attached to a force gauge", it is suggested to change to "Apply a 20 lb force against the fabric inside wall of the product with the torso test probe", that is, combine Article 7.10.2 with Article 7.10.3, and allow to use other modes of force application instead of the mode of force application with single force gauge.

II Comments on G/TBT/N/USA/539 *Safety Standard for Toddler Beds*

1. In E.2.d of the notified draft, the force to conduct *slat/spindle testing for guardrails, side rails, and end structures* is increased from 25lbf to 80lbf, the Commission's staff observed that testing adjacent slats significantly compromised the integrity of the bed rails. Accordingly, the Commission is proposing that 25 percent of the slats be tested at 80lbf and that the remaining 75 percent of slats be tested at 60lbf.

It has given a reasonable basis for testing with 80lbf force in the notification, but there is no relevant statistics or scientific basis for the remaining 75 percent of the slats to be tested at 60lbf. According to Article 2.2 of WTO/TBT Agreement, "Members shall ensure that technical regulations are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade", the Commission is suggested to assess the requirement for 60lbf, and give relevant statistics data, to justify the requirement, otherwise, the clause shall be re-revised, to avoid creating unnecessary obstacles to the trade.

2. The voluntary standard ASTM F 1821–09 defines a toddler bed as any bed sized

to accommodate a full-size crib mattress having minimum dimensions of 51⅝ inches in length and 27¼ inches in width and that is intended to provide free access and egress to a child not less than 15 months of age and weighing no more than 50 pounds. While in Article 4 on the second page of the notified draft "*National Injury Estimates*", the age of patients in these injuries ranged between 4 months and 6 years, which will affect the establishment basis for ASTM F 1821–09 to a certain degree.

III Comments on G/TBT/N/USA/540 *Third Party Testing for Certain Children's Products; Notice of Requirements for Accreditation of Third Party Conformity Assessment Bodies To Assess Conformity With Part 1505 and/or § 1500.86(a)(5) of Title 16, Code of Federal Regulations*

Compared to the baseline accreditation requirements for the third party conformity assessment body, there is no objective basis for assessment of additional accreditation requirements for governmental conformity assessment bodies, we believe that the notified regulation is obviously opt to the exclusion of the governmental laboratory, which is inconsistent with the principles of fairness and impartiality required for governmental conformity assessment bodies reflected in "The third party conformity assessment body is not accorded more favorable treatment than other third party conformity assessment bodies in the same nation who have been accredited", and is against the "mutual recognition principle of conformity assessment procedures" under the TBT Agreement.

It is suggested that a governmental conformity assessment body shall be recognized before there is no evidence that the conformity assessment body fails to meet these additional requirement, unless there is evidence that it fails to meet these additional requirement.

If a governmental conformity assessment body must be assessed before the recognition, the operable detail rules for implementation must be issued as soon as possible, to ensure that the legal interest of the governmental laboratory is free from harming.

Comments in Chinese are as the following:

中国政府非常赞赏美国在运输安全方面所做出的努力，同时感谢美方给予评议G/TBT/N/USA/538 539 540 号通报的机会。根据TBT 协定2.9.4 条"无歧视地给予其他成员合理的时间以提出书面意见，应请求讨论这些意见，并对这些书面意见和讨论的结果予以考虑"的规定，请对中方的评议意见予以考虑，具体意见如下：

中国政府非常赞赏美方为儿童用品的安全所做出的努力，感谢美方履行WTO 透明度义务，给予WTO成员评议G/TBT/N/USA/538，539，540号TBT通报的机会。经认真研究，中国愿就美国三项通报提出如下评议意见，请贵方予以慎重考虑，并给予答复。

一、对USA538《摇篮车和摇篮安全标准》的评议意见

1、草案第B 部分，拟将对婴儿吊床暂时列入新的《摇篮和摇篮车安全标准》的适用范围，但通报中同时说明，这一做法存在不合理性，对婴儿吊床要求的修订会导致安抚腹痛婴儿用吊床全部退市，甚至导致婴儿看护人转而使用面向年龄更大的儿童设计的类似产品，从而可能造成新的危险。

保护人身安全和人体健康是TBT 协定的目标之一，《摇篮和摇篮车安全标准》制定的目的是为了更好的保护人身安全，但其导致的安抚腹痛婴儿用吊床的

退市会在一定程度上对婴儿健康造成伤害，此类产品的缺失也极有可能导致新的伤害事故的出现，这一结果显然与该标准的制定目的相违背，也不符合TBT 协定的目标。因此，在没有制定适用标准或提供更好的解决办法之前，建议不要将特殊用途婴儿吊床划归到《摇篮和摇篮车安全标准》的使用范围中，而对此类产品规定合适的使用说明和警告标识。

2、草案第E 部分，最大偏斜角和静止角的要求中，除了使用Mark II CAMI 模型外，本提议法规将增加使用新生儿CAMI 模型进行试验。Mark II CAMI 模型为模拟6 个月大小的儿童，而摇篮和摇篮椅只适用于5 个月以下的婴儿。因此采用Mark II CAMI 模型来进行测试并不合理，建议所有需要使用模型测试的条款均使用新生儿CAMI 模型。

3、同样在草案的第E 部分，“增加关于睡卧面的最大允许摇晃角、最大允许静止角以及最大允许平整度角的性能要求和试验方法”，将迫使企业必须对现有设计、生产进行修改。建议考虑企业改变设计技术所必须的周期，设置合理的准备期，

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以使企业有足够时间更改现有技术，使产品达到符合标准要求。

4、通报草案最后一页“ (iii) 7.10 封闭式开口的织物松开测试方法 ”中的 (B) 条提及“将身躯测试探针附着于一个测力计上”，建议考虑更改为：“ 将身躯测试探针以20lb 的力顶住产品的织物内壁”，即将7.10.2 和7.10.3 条合并，并允许采用其他施力方式代替单一测力计的施力方式。

二、对USA539《幼儿床安全标准》评议意见

1、通报草案E.2.d 中将护栏、侧轨和床尾结构板条/主轴测试 (Slat/Spindle Testing for Guardrails, Side Rails, and End Structures) 的力由25lbf 提高到80lbf，委员会的工作人员观察到使用80lbf 测试相邻板条时会严重危及到护栏的完整性。因此，委员会提议对25%要测试的板条施加80lb 的力，剩下75%的板条在60lb 力条件下测试。

使用80lbf 测试在通报中已给出合理依据，但对剩下75%的板条使用60lbf 测试取没有给出相关统计或科学根据。根据WTO/TBT 条款2.2“各成员应保证技术法规的制定、采用或实施在目的或效果上均不对国际贸易造成不必要的障碍”，建议委员会对60lbf 的要求进行评估，并给出相应的统计数据，以说明这一要求的合理性，否则应重新修订此条款避免对贸易造成不必要的障碍。

2、ASTM F 1821-09 自愿性标准对幼儿床的定义是容纳标准婴儿床垫的睡床，最少长度和宽度分别为51$_{5}$/8 英寸和27$_{1}$/4 英寸，并能让15 个月或以上、体重不超过50 磅的儿童自由进出。而在本通报草案第2 页第4 条“全国伤害估计值”（ National Injury Estimates）中，所统计的患者的年龄从4 个月到6 岁不等，这一定程度会影响ASTM F 1821-09 的制定依据。

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三、对USA540《关于某些儿童用品的第三方测试；评定联邦法规法典第16 编第1505 部分和/或第1500.86(a)(5)项符合性的第三方合格评定机构的认可要求通告》评议意见

相比对于基准第三方合格评定机构认可要求，关于政府合格评定机构的附加认可要求没有客观的评判依据，我们认为该通报法规有明显排斥政府实验室的倾向，和对政府合格评定机构要求的“相对在同一个国家内被认可的其他第三方合格评定机构，该第三方合格评定机构不能被授予更优惠的待遇”所体现的公平公正原则相悖，并且违背了TBT 协定下“合格评定程序的互相认可原则”。

建议在CPSC 在没有任何证据证明某政府合格评定机构不符合这些附加条件之前，应该先认可该合格评定机构，除非有证据表明其不符合附加条件。如果必须在认可前对政府合格评定机构进行评估，则必须尽快出台具备可操作性的实施细则，以确保政府实验室的合法利益不受损害。

Stevenson. Todd

From:.	Lauren Pfeiffer [lpfeiffer@ahint com]
Sent:	Tuesday. January 04. 2011 11:17 AM
To:	Stevenson. Todd
Subject:	NOTICE OF PROPOSED RULEMAKING (NPR): CPSIA SECTION 104: Safety Standard for Toddler Beds
Attachments:	JPMA Toddler Bed NPR Supplemental Comments. pdf

Dear Mr Stevenson:

Attached for your reference are comments in response to the Toddler Bed NPR. JPMA submitted comments on July 12, 2010 is response to the NPR. Those comments stand as submitted; however, JPMA wishes to submit the following supplemental comments for your consideration.

Please feel free to contact me if you have any questions.

Regards, Lauren

Lauren M. Pfeiffer
Assistant Executive Director
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856-380-6818
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Juvenile Products Manufacturers Association, Inc. 15000 Commerce Parkway, Suite C ◷ Mt. Laurel, NJ 08054 ◷ 856.638.0420 ◷ 856.439.0525 E-mail: jpma@ahint.com ◷ Website: www.jpma.org

December 28, 2010
Office of the Secretary
U.S. Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814

Re: NOTICE OF PROPOSED RULEMAKING (NPR): CPSIA SECTION 104:
Safety Standard for Toddler Beds: 16 CFR Part 1217
CPSC DOCKET Number: 2010–0022

Dear Mr. Stevenson:

The Juvenile Products Manufacturers Association (JPMA) is a not-for-profit trade association representing the producers, importers, or distributors of a broad range of childcare articles that provide protection to infants and assistance to their caregivers.
The Consumer Product Safety Commission ("Commission" or "CPSC") invited comments on 16 CFR Part 1217 pursuant to Section 104 of the Consumer Product Safety Improvement Act ("CPSIA"), which directs the Commission to issue mandatory regulations on durable infant products. In response to the request of the Commission's staff, the Juvenile Products Manufacturers Association, Inc. ("JPMA") filed comments on July 12, 2010 on the April 28, 2010, Federal Register Notice regarding 16 CFR Part 1217 Safety Standard for Toddler Beds ("NPR"). Those comments **stand as submitted;** however, JPMA wishes to submit the following supplemental comments for your consideration. JPMA hopes that these comments will assist the Commission in effectively implementing regulations in a consistent manner with hazard based requirements under ASTM F 1821 consensus, hazard based Safety Standards for Toddler Beds and other existing or proposed ASTM Standards promulgated for similarly situated or constructed products. JPMA has previously submitted extensive comments on a variety of CPSIA issues. These comments provide our views on the proposed requirements of 16 CFR Part 1217. JPMA reserves the right to supplement or amend its comments as appropriate.

JPMA encourages the Commission to harmonize their final rule with the soon to be published ASTM F 1821-10. As a result, JPMA is noting the recent changes to the standard that were sent to ballot to revise the ASTM standard F-1821-09 Consumer Safety Specification for Toddler Beds. Those items are outlined as follows and referenced in Appendix A.

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Mattress Retention

The F15.18 Subcommittee on Toddler Beds reviewed a proposal to revise the standard to have Sections 6.1, 6.1.1, 6.1.2 and 8.4.4.2 removed from the standard as they are now obsolete. The subcommittee recommends the addition of an appendix section containing the listed rationale as well.

6.1 *Mattress Retention*:

6.1.1 The mattress support system, end structures, and side containment shall control the horizontal position of the mattress and prevent it from being moved horizontally creating a horizontal opening that allows complete passage of the wedge block when tested in accordance with 7.1.

6.1.2 The top of the mattress shall not deflect more than 1 in. (25 mm) below the bottom of the mattress support when tested in accordance with 7.1.6.

8.4.4.2 If guardrails are used as the mattress containment means, guardrail(s) provided must be used to avoid the formation of a gap between the mattress and the bed that could cause an entrapment. If the guardrails are an integral part of the design, such that they can not be removed, this need not be addressed.

X.1 Rationale: Appendix

Sections 6.1, 6.1.1, 6.1.2 and 8.4.4.2 are now obsolete to their original intended purpose. The mattress support requirements have been strengthened to eliminate possible entrapment. The platform is tested without the mattress in place.

Toddler Bed Guardrail Testing

The F-1821 subcommittee, after studying the incident data and how it relates to bedrails and bedrail systems, concluded that further definition was necessary to adequately and accurately test the bed rail. Two items need to be kept in memory while these revisions to the standard are considered. 1) The toddler bed is intended to be used by children 15 months old at a minimum, and 2) Recent changes to the current standard have removed all openings associated with the mattress support that could be an entrapment hazard. The height of the bed rail is proposed to be 9 inches from the top of the mattress support in its lowest position. This will provide a consistent point of measurement and is high enough to provide a barrier to prevent roll off from a sleeping child. The strength requirement being proposed is 40 lbs, which is taken from the portable bed rail standard. The application of the test force uses a 3" x 6" x ½" board to represent the size of the contact area that would be generated by a child who may roll or lean against it. Elements have been added to the standard that address contoured bedrails.

The F15.18 Subcommittee on Toddler Beds reviewed a proposal to revise the F1821 standard to include the following:

Section 3 – the definition for a *Removable Guardrail.*

Section 6 – performance requirements for *Guardrail Height & Guardrail Strength*

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Section 7 – test methods for the *Guardrail Strength Test.*
The subcommittee recommended the addition of an appendix section containing the listed rationale as well.

Terminology

Removable guardrail (n) – a guardrail that can be removed without the use of tools.

Guardrail Height

6.5.2 The upper edge of the guardrail shall be at least 9 inches above the mattress support. This measurement is to be taken from the top of the mattress support in its lowest position within 6 in. of the guardrail to the highest point of the upper edge of the guardrail within 6 in. from the headboard.

Guardrail Strength

6.8 When tested in accordance with 7.9 the guardrail shall not break, detach or create a condition that would present any of the hazards described in Section 5. Removable guardrails, and guardrails that do not have any free ends, that is that they are attached to both the headboard and the footboard, are exempt from this test. For guardrails with two free ends, perform this test at each free end.

Guardrail Strength Test

7.9 Gradually over a period of five seconds apply a 40 lb. force to the guardrail from the inside of the toddler bed, outward and perpendicular to the plane of the rail, and hold for ten seconds. The force is to be applied to the geometric center of a 3 x 6 x ½ in. piece of plywood with the long end parallel to the floor.

7.9.1 For guardrails with a rectangular shape, the plywood shall be placed with the upper long edge of the plywood even with a line drawn parallel to the rail, which is 9 inches from the top of the rail to the top of the mattress support in its lowest position, and the short edge even with the free short edge of the rail.

7.9.2 For contoured guardrails that are not rectangular, the plywood shall be placed with the upper long edge of the plywood even with a line drawn parallel to the rail, which is 9 inches from the top of the rail to the top of the mattress support in its lowest position, and the short edge placed so that the downward slope of the free rail edge intersects the corner of the plywood.

X.1 ***Toddler Bed Guardrail Testing Rationale: Appendix***

The F-1821 subcommittee, after studying the incident data and how it relates to bedrails, and bedrail systems, concluded that further definition was necessary to adequately and accurately test the bed rail. Two items need to be kept in memory while these revisions to the standard are considered. 1) The toddler bed is intended to be used by children 15 months old at a minimum, and 2) Recent changes to the current standard have removed all openings associated with the mattress support that could be an entrapment hazard. The height of the bed rail is proposed to be 9 inches from the top of the mattress support in its

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lowest position. This will provide a consistent point of measurement and is high enough to provide a barrier to prevent roll off from a sleeping child. The strength requirement being proposed is 40 lbs, which is taken from the portable bed rail standard. The application of the test force uses a 3" x 6" x ½" board to represent the size of the contact area that would be generated by a child who may roll or lean against it. Elements have been added to the standard that address contoured bedrails.

Conclusion

It is hoped that the Commission will consider adoption of the proposed ASTM requirement in whole as a mandatory federal requirement, with the added benefit that it can be subject to revision as merited based upon hazard data. We would encourage the CPSC to work with all stakeholders to assure an efficient, effective rule is finalized without unduly burdening small businesses. We are appreciative for the opportunity to submit these supplemental comments.

Sincerely,

Robert B. Waller

President

Website: www.jpma.org

APPENDIX A

September 27, 2010

TO: F15 Main Committee

FROM: Subcommittee F15.18 on Toddler Beds

SUBJECT: Revision to F 1821

The subcommittee has discussed and approved the following changes to the standard:

These proposed revisions are intended to address:

1. **Mattress Retention**
2. **Guardrail Strength Test**

Please submit your vote.

Technical Contact

Steven Anzaroot
Delta Children's Products
114 W 26th Street
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Phone 646-884-6514
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ITEM 1 – Mattress Retention

September 24, 2010

TO: F15 Main Committee

FROM: F15.18 Subcommittee on Toddler Beds

SUBJECT: Ballot

The F15.18 Subcommittee on Toddler Beds reviewed a proposal to revise the standard to have Sections 6.1, 6.1.1, 6.1.2 and 8.4.4.2 removed from the standard as they are now obsolete. The task group recommends the addition of an appendix section containing the listed rationale as well.

6.1 *Mattress Retention*:

6.1.1 The mattress support system, end structures, and side containment shall control the horizontal position of the mattress and prevent it from being moved horizontally creating a horizontal opening that allows complete passage of the wedge block when tested in accordance with 7.1.

6.1.2 The top of the mattress shall not deflect more than 1 in. (25 mm) below the bottom of the mattress support when tested in accordance with 7.1.6.

8.4.4.2 If guardrails are used as the mattress containment means, guardrail(s) provided must be used to avoid the formation of a gap between the mattress and the bed that could cause an entrapment. If the guardrails are an integral part of the design, such that they can not be removed, this need not be addressed.

X.1 Rationale: Appendix

Sections 6.1, 6.1.1, 6.1.2 and 8.4.4.2 are now obsolete to their original intended purpose. The mattress support requirements have been strengthened to eliminate possible entrapment. The platform is tested without the mattress in place.

ITEM 2 – Guardrail Strength Test

September 24, 2010

TO: F15 Main Committee

FROM: F15.18 Subcommittee on Toddler Beds

SUBJECT: Ballot

The F15.18 Subcommittee on Toddler Beds reviewed a proposal to revise the F1821 standard to include the following:

Section 3 – the definition for a *Removable Guardrail.*

Section 6 – performance requirements for *Guardrail Height & Guardrail Strength*

Section 7 – test methods for the *Guardrail Strength Test.*

he task group recommends the addition of an appendix section containing the listed rationale s well.

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Terminology

Removable guardrail (n) – a guardrail that can be removed without the use of tools.

Guardrail Height

6.5.2 The upper edge of the guardrail shall be at least 9 inches above the mattress support. This measurement is to be taken from the top of the mattress support in its lowest position within 6 in. of the guardrail to the highest point of the upper edge of the guardrail within 6 in. from the headboard.

Guardrail Strength

6.8 When tested in accordance with 7.9 the guardrail shall not break, detach or create a condition that would present any of the hazards described in Section 5. Removable guardrails, and guardrails that do not have any free ends, that is that they are attached to both the headboard and the footboard, are exempt from this test. For guardrails with 2 free ends, perform this test at each free end.

Guardrail Strength Test

7.9 Gradually over a period of 5s apply a 40 lb. force to the guardrail from the inside of the toddler bed, outward and perpendicular to the plane of the rail, and hold for 10 secs. The force is to be applied to the geometric center of a 3 x 6 x ½ in. piece of plywood with the long end parallel to the floor.

7.9.1 For guardrails with a rectangular shape, the plywood shall be placed with the upper long edge of the plywood even with a line drawn parallel to the rail, which is 9 inches from the top of the rail to the top of the mattress support in its lowest position, and the short edge even with the free short edge of the rail.

7.9.2 For contoured guardrails that are not rectangular, the plywood shall be placed with the upper long edge of the plywood even with a line drawn parallel to the rail, which is 9 inches from the top of the rail to the top of the mattress support in its lowest position, and the short edge placed so that the downward slope of the free rail edge intersects the corner of the plywood.

X.1 ***Toddler Bed Guardrail Testing Rationale: Appendix***

The F-1821 subcommittee, after studying the accident data and how it relates to bedrails, and bedrail systems, concluded that further definition was necessary to adequately and accurately test the bed rail. Two items need to be kept in memory while these revisions to the standard are considered. 1) The toddler bed is intended to be used by children 15 months old at a minimum, and 2) Recent changes to the current standard have removed all openings associated with the mattress support that could be an entrapment hazard. The height of the bed rail is proposed to be 9 inches from the top of the mattress support in its lowest position. This will provide a consistent point of measurement and is high enough to provide a barrier to prevent roll off from a sleeping child. The strength requirement being proposed is 40 lbs, which is taken from the portable bed rail standard. The application of the test force uses a 3 X 6 X 1/2 board to represent the size of the contact area that would be generated by a child who may roll or lean against it. Elements have been added to the standard that address contoured bedrails.

On the last ballot, the Committee approved the removal of sections 6.1, 6.1.1, 6.1.2. These sections referenced the tests described in 7.1.2 – 7.1.6. We neglected to, but should have, balloted to remove these as well since they will now be obsolete when the sections that reference them are removed. In addition, if they are removed then 7.1.1 can become 7.1 *Test Mattress* and the words *Mattress Retention* after 7.1 can be removed.

Standard Consumer Safety Specification for Toddler Beds[1]

7. Test Methods

7.1 *Test Mattress*—A 4 ± 1/8 in. (100 ± 3 mm) thick by 51 5/8 ± 1/8 in. (1310 ± 3 mm) long by 27 1/4 ± 1/8 in. (690 ± 3 mm) wide, open cell, polyurethane foam pad having a density of 1 lb/ft^3 (16 kg/m^3), having a compression load deflection of 30 lbf (133 N) when tested in accordance with Test Methods D3574, Method B1, to a 25 % deflection, covered with a 5 to 15 gage vinyl material, 0.005– to 0.015–in. (0.13– to 0.38–mm) thick shall be used to represent a mattress during the performance of the test in 7.2.4:

7.1.2 Secure the bed so that it cannot move during the performance of the following tests.

7.1.3 Using a 3-in. (76-mm) diameter flat, rigid disk, gradually apply a 5 lbf (22 N) horizontally within a period of 5 s to the edge of the mattress at the vertical midpoint and maintain for 30 s in a location that produces the largest gap in the horizontal plane between the end support structures, side rails, or guardrails and the edge of the mattress.

7.1.4 After the test described in 7.1.3 has been performed, any gap in the horizontal plane that permits the passage of a vertically oriented 0.19 in. (5 mm) diameter probe with a length of 6 in. (150 mm), minimum, and that has a fully rounded end to pass through without touching either the mattress or the support structure shall be tested in accordance with 7.1.5.

7.1.5 Insert the tapered end of the wedge block, shown in Fig. 2, into any gap identified in 7.1.4 in the most adverse orientation, and gradually apply a 39-lb (17.7 kg) dead weight to the wedge block within a period of 5 s; maintain the load for a period of 30 s.

7.1.6 Place a 3 in. (76 mm) by 7.2 in. (183 mm) sheet of 3/4 in. (19 mm) thick plywood in the most adverse position on the top of the mattress. Do not allow any portion of the plywood to extend over the edge of the mattress. While keeping the plywood horizontal, gradually apply a 50 lbf (220 N) force normal to the plywood within a period a 5 s. Maintain the load for 30 s.

7.2 *Mattress Support System*:

7.2.1 Conduct the following test without a mattress in place unless specified otherwise.

7.2.2 Center a sheet of 3/4 in. (19 mm) thick plywood 19 in. (480 mm) wide by 37 in. (940 mm) long on the mattress support system. Place a mass of 300 lb (136 kg) on the plywood sheet. The mass is to be distributed equally, applied gradually within a period of 5 s and shall remain in place for 5 min. Remove the mass.

7.2.3 Center a sheet of 3/4 in. (19 mm) thick plywood 19 in. (480 mm) square on the longitudinal centerline of the mattress support system with one edge in line with the inside vertical plane of one end structure of the bed. Place a mass of 225 lb (102 kg) on the plywood sheet. The mass is to be distributed equally, applied gradually within a period of 5 s and shall remain in place for 5 min. Remove the mass. Repeat this test at the opposite end structure.

7.2.4 Place the test mattress on the bed. Secure a sheet of 3/4 in. (19 mm) thick plywood 12 in. (305 mm) square in the center of the mattress support. Drop a 50 lb (22.7 kg) mass, whose size falls within the perimeter of the sheet of plywood from a distance of 12 in. (305 mm), 100 times onto the center of the sheet of plywood at a rate of 4 ± 1 seconds per cycle.

7.2.5 *Openings*—Without the test mattress on the bed, insert the tapered end of the wedge block shown in Fig. 2 in the most adverse orientation, into any opening in the mattress support system and gradually apply a 25 lbf (111 N) force perpendicular to the plane of the opening within a period of 5 s. Maintain this force for 30 s.

7.3 *Mattress Support System Attachment and Side Rails Integrity*:

7.3.1 Conduct the following test without a mattress in place.

7.3.2 Apply a downward vertical force of 225 lbf (1000 N) gradually within a period of 5 s evenly over a 2 in. (51 mm) length of the mattress support, 10 in. (255 mm) from the bed end structure attachment point for the mattress support. The load is to be maintained for 30 s. Apply the force to each end structure of the bed.

7.3.3 Apply a downward vertical force of 225 lbf (1000 N) gradually within a period of 5 s evenly over a 2 in. (51 mm) length on the side rail, 10 in. from the bed end structure attachment point for the side rail. The load is to be maintained for 30 s. Apply the force sequentially to each corner of the bed.

7.3.4 Apply a downward vertical force of 225 lbf. (1000 N) gradually within a period of 5 s over a 2 in. (51 mm) length on the side rail, centered between the foot and head end structures on the side rail. The load is to be maintained for a period of 30 s. Apply the load sequentially to each side rail.

TAB B: Engineering Sciences Memo

TAB B

United States
Consumer Product Safety Commission
4330 East West Highway
Bethesda, Maryland 20814

Memorandum

Date: January 24, 2011

TO: Celestine T. Kiss
Project Manager, Toddler Beds
Division of Human Factors
Directorate for Engineering Sciences

THROUGH: Erlinda Edwards
Acting Associate Executive Director
Directorate for Engineering Sciences

Mark Kumagai
Director, Division of Mechanical Engineering
Directorate for Engineering Sciences

FROM : Jacob J. Miller
Division of Mechanical Engineering
Directorate for Engineering Sciences

SUBJECT : Staff Responses to Technical Comments on the Notice of Proposed Rulemaking for Toddler Beds, Section 104 of the Consumer Product Safety Improvement Act of 2008 (CPSIA)

I. Introduction

This memorandum provides a summary of the technical comments received on the Notice of Proposed Rulemaking (NPR), published in the *Federal Register*, 75 FR 22291 (April 28, 2010), staff's responses to those comments, and a summary of staff's recommended changes to the NPR for the draft final toddler bed standard. The NPR proposed a safety standard for toddler beds under section 104 of the Consumer Product Safety Improvement Act of 2008 (CPSIA).

II. Staff's Responses to Comments

The U.S. Consumer Product Safety Commission (CPSC) received 13 comments on the NPR; six of those comments were reviewed by mechanical engineering (ESME) staff because they dealt with changes to the proposed performance requirements. The comments were consolidated into four issues: (1) replacing spindles with a solid panel on guardrails; (2) changing the guardrail height and structural integrity requirements; (3) matching the full-size crib spindle/slat strength

test; and (4) removing mattress retention requirements. These comments are discussed separately below.

A) Replace Spindles with a Solid Panel on Guardrails

One commenter stated that manufacturers and regulators should consider replacing spindles altogether on toddler bed guardrails. The commenter stated that replacing guardrail spindles with a full piece of wood or other material should reduce the likelihood of children getting a body part entrapped.

Staff's Response

Staff acknowledges that some manufacturers currently are employing solid panel guardrails on their toddler beds. However, mandating all guardrails to be solid panel may limit the utility of converting some types of cribs to toddler beds. While staff agrees with the commenter that limb entrapments might be reduced if guardrails were limited to solid panels, the incident data in the NPR indicated that only three reported injuries involving entrapment between slats were fractures of limbs, and the majority of the injuries were bumps and bruises. Only one fracture directly involved a guardrail. This occurred when the occupant fell from the bed after the occupant's leg became entrapped in the guardrail slats. The other two fractures involved entrapment between slats located on the headboard and footboard. Therefore, staff encourages manufacturers to consider solid panel guardrails, but staff does not recommend adding this requirement to the draft final rule.

B) Guardrail Height and Structural Integrity Test

One commenter disagreed with the proposed rule regarding guardrail height. The commenter would like the guardrail requirement to specify that the guardrail must be 9 inches above the mattress support, instead of 11 inches, which is the equivalent of 5 inches measured from the top of the mattress, allowing for the maximum thickness of a crib mattress, as worded in the proposed rule.

The commenter also disagreed with the proposed test methodology. The commenter did not see the need to test the guardrail in three locations as opposed to just testing the guardrail at the most onerous point. The commenter states: *"Also the proposed regulation states to do the test "above the leg of the guardrail," what if there is no "leg? What about the case of a guardrail that has a contoured upper surface or one which is integral with the sides of the bed? Clearly the test method needs to specify the contact area of the force and how far from the top of the rail this force should be applied. Also the height of the bed rail should be fixed or measured from the mattress support platform so there will be consistency of measurement."*

The same commenter disagreed with proposing a force requirement of 50 lbf without reasonable justification. The commenter suggested that the incident data references only two injuries from broken components and indicated that the incidents do not mention that guardrails were involved. The commenter further stated: "*The purpose is to aid in the prevention of a sleeping child from inadvertently rolling off the bed. In that scenario, the resultant force would be a*

fraction of that being proposed. Additionally, a child pulling on the guardrail from outside of the bed in play would certainly tip most toddler beds over before reaching the 50lb force being proposed."

The commenter also would like an exemption for removable guardrails or guardrails that could be removed without the use of tools. The commenter's proposed language regarding the guardrail structural integrity test requirements and guardrail height is included in Appendix A.[1]

Staff's Response

Staff disagrees with all but one of the comments. First, staff disagrees with a guardrail height of 9 inches above the mattress support. Because the majority of full-size crib mattresses are approximately 6 inches thick, a guardrail height of 9 inches would provide a barrier of approximately 3 inches. Parents expect the guardrails to prevent their children from rolling/falling off the bed. Similarly, guardrails on bunk beds are intended to prevent children from rolling/falling off the bed. ASTM F 1427-07, *Standard Consumer Safety Specification for Bunk Beds*, requires a 5-inch barrier above the top of the mattress to prevent a sleeping child from rolling and falling off the bed. Therefore, staff recommends keeping the guardrail height as stated in the NPR.

Second, staff agrees with the commenter's proposed test methodology for applying the test force to the guardrail. The language in the proposed rule was adopted from the portable bed rail structural integrity test, as stated in section 8.1 of ASTM F 2085-09, *Standard Consumer Safety Specification for Portable Bed Rails*. An ASTM task group developed the commenter's proposed language after the proposed rule was published. This language is more applicable to the typical geometry inherent in toddler bed guardrails as opposed to portable bed rails. For example, the proposed rule specifies applying a horizontal force at three points along the uppermost horizontal edge of the rail. The test force is applied in the center of the upper rail and on the sides of the rail directly above each of the outermost legs. The majority of toddler bed guardrails have only one outermost leg or free end, as defined in staff's final rule. The other end of a toddler bed guardrail typically is secured to a corner post attaching the headboard to the guardrail. Each of the reported guardrail failure incidents involved a guardrail detaching or fracturing at the corner post attachment point. Staff agrees with commenter that applying a single force above the rail's free end is the most onerous test position and exerts the largest force on the guardrail's attachment points. Furthermore, the commenter's proposed test methodology provides improved test repeatability by specifying a procedural method for applying the test force to a guardrail free end with a significantly contoured geometry. ESME staff recommends revising NPR wording with language related to the test methodology provided by the commenter, as shown in Table 1.

Third, the commenter suggested applying 40 lbf to a toddler bed guardrail. Staff disagrees with the application of 40 lbf and disputes the commenter's claim that there have not been any incidents involving a guardrail breaking or detaching from a toddler bed. In one reported incident, the occupant fell to the floor and received a bruise and laceration to the head. Staff also

[1] Proposed language included with comment submitted by the Juvenile Products Manufacturers Association (JPMA) in response to the NPR.

disagrees with the commenter that 50 lbf is an exuberant amount of force. Staff has received several detailed reports of children climbing on or leaning against guardrails leading to subsequent structural failure of the guardrail or its means of attachment.

Staff tested several different makes and models of toddler beds to the 50 lbf requirement, incorporating the commenter's proposed test methodology and applying the test force 11 inches above the top of the mattress support. ESME staff conducted testing using both the guardrail structural integrity test suggested by the commenter (described in Appendix A) and the staff-recommended final language (described in Table 1) on five toddler beds: two plastic and three wooden beds. Two of the five toddler beds chosen for testing had been involved in incidents where the guardrail detached or broke when the occupant leaned on the guardrail. The guardrails on all five toddler beds successfully withstood the application of 40 lbf (the force suggested by the commenter). Conversely, when performing the test recommended in the final rule, only the guardrails on the three toddler beds that had not been involved in incidents successfully withstood the application of 50 lbf. The guardrail on one toddler bed that had been involved in an incident broke at one of its attachment points around 42 lbf. The guardrail of the other bed that had been involved in an incident withstood the initial application of 50 lbf but detached from the toddler bed within the first three seconds after maintaining 50 lbf. Based on this testing, ESME staff concluded that 50 lbf is appropriate and adequate to detect guardrails that could be susceptible to detachment. Staff recommends retaining the 50 lbf as stated in the NPR.

Finally, staff disagrees with exempting removable guardrails from the guardrail structural integrity test. A guardrail should be attached to a toddler bed with sufficient means to provide substantial rigidity. Guardrails that would require only the consumer's strength to install would be susceptible to the foreseeable forces that a toddler could apply to the guardrail. Such a guardrail would not be sufficient to protect a child.

C) Spindle/Slat Strength Test

One commenter noted the importance of matching the toddler bed slat strength requirements to the current full-size crib spindle/slat strength requirement in ASTM F 1169-10, *Standard Consumer Safety Specification for Full-Size Baby Cribs*. A second commenter agreed with the proposal to test 25 percent of slats at 80 lbf, but questioned the rationale for testing the remaining 75 percent of slats at 60 lbf.

Staff's Response

Staff agrees that the toddler bed spindle/slat strength test should be identical to the full-size and non-full- size crib spindle/slat strength requirements in ASTM F 1169-10 and ASTM F 406-10a, respectively, referenced in the recently published mandatory requirements, 16 CFR part 1219 and 16 CFR part 1220, respectively. This will harmonize the spindle/slat strength requirements for cribs and toddler beds, providing consistency and clarity because many toddler beds are converted from cribs, and many toddler bed manufacturers also manufacture cribs. Staff recommends that the final rule provide that toddler beds that convert from a full-size crib, also known as convertible cribs, must meet the test failure definition requirements of the full-size crib ASTM standard referenced in the full-size mandatory standard, and that toddler beds that do not

convert from a full-size crib must meet the test failure definition requirements that were stated in the proposed toddler bed spindle/slat strength test. This distinction is necessary because the test failure definition for cribs includes verifying that the minimum component spacing, or slat spacing of 2.50 inches with an application of 20 lbf is not compromised after the spindle/slat strength test. Because the minimum component spacing for toddler beds that do not convert from a full-size crib is 3.30 inches (as required by use of the torso probe specified in ASTM F 1821-09, section 5.8.2 *Torso Entrapment)* a toddler bed that does not convert from a full-size crib would not be able to meet the test failure definition in the full-size crib standard. The staff-recommended spindle/slat strength test language, which is included in the toddler bed draft final rule, is shown under the column titled, *Draft Final Language* in Table 1. This new language also eliminates the second commenter's concern about the 60 lbf proposed because no slats would be tested at 60 lbf (the crib standard requires testing 25 percent of slats at 80 lbf and then another 25 percent of slats at 80 lbf if needed, with no more than 50 percent of the slats tested).

D) Removal of Mattress Retention Requirements

One commenter suggested that sections 6.1, 6.1.1, 6.1.2, and 8.4.4.2, related to mattress retention, are now obsolete to their original purpose. The commenter suggested that the mattress support requirements have been strengthened to eliminate possible entrapment. The mattress support system is now tested without the mattress in place.

Staff's Response

Staff agrees that the mattress retention requirements are obsolete to their original purpose and should be deleted. The original intent of these sections was to ensure that the mattress did not horizontally or vertically dislocate enough to allow a child access to potentially dangerous mattress support openings, which could entrap a child's torso or head, resulting in a fatality. In the current ASTM standard, ASTM F 1821-09, section 5.8.2 *Torso Entrapment*, there are provisions to reduce entrapment hazards by testing for hazardous openings, not only in the mattress support system, but also in the bed's guardrails and end structures, including the headboard, footboard, and any point where these components could be joined. These requirements are more stringent than the mattress retention requirements proposed for removal.

TABLE 1: CPSC Staff-Recommended Changes to the Proposed Rule for Toddler Beds

ASTM F 1821 -09 Section #	NPR Language	Draft Final Language
6.1 *Mattress Retention*	Same as ASTM F 1821-09	Deleted from NPR Do not comply with ASTM F 1821-09
6.1.1 The mattress support system, end structures, and side containment shall control the horizontal position of the mattress and prevent it from being moved horizontally creating a horizontal opening that allows complete passage of the wedge block when tested in accordance with 7.1.	Same as ASTM F 1821-09	Deleted from NPR Do not comply with ASTM F 1821-09
6.1.2 The top of the mattress shall not deflect more than 1 in. (25 mm) below the bottom of the mattress support when tested in accordance with 7.1.6.	Same as ASTM F 1821-09	Delete from NPR Do not comply with ASTM F 1821-09
6.5 *Guardrails*—For products with guardrails, there shall be no opening in the guardrail structure below the lowest surface of the uppermost member of the guardrail and above the mattress support structure that will permit complete passage of the wedge block shown in Fig. 2 when tested in accordance with 7.4.	6.5 *Guardrails* 6.5.1 For products with guardrails, there shall be no opening in the guardrail structure below the lowest surface of the uppermost member of the guardrail and above the mattress support structure that will permit complete passage of the wedge block shown in Fig. 2 when tested in accordance with 7.4. 6.5.2 The upper edge of the guardrails shall be at least 5 in. (130 mm) above the sleeping surface when a mattress of a thickness that is the maximum specified by the manufacturer's instructions is used.	No changes from NPR
No section in ASTM	6.8 *Structural Integrity of Guardrails* - After testing in accordance with 7.9, there shall be none of the hazardous conditions described in Section 5.	*6.5.3 Structural Integrity of Guardrails* - When tested in accordance with 7.9 the guardrail shall not break, detach, or create a condition that would present any of the hazards described in Section 5. Guardrails that do not have any free ends, that is, they are attached to both the headboard and the footboard, are exempt from this test. For guardrails with two free ends, perform this test at each free end.
No section in ASTM	No section in NPR	6.8 *Spindle/Slat Static Load Strength* -
No section in ASTM	6.9 *Slat/Spindle Strength* - Toddler beds that contain wooden or metal slats or spindles shall meet the performance requirements in section 6.9.1.	6.8.1Toddler beds that contain wooden or metal spindles/slats shall meet the performance requirements outlined in section 6.8.2 or 6.8.3.
No section in ASTM	6.9.1 After testing in accordance with the procedure in 7.10, there shall be no slat or spindle breakage or separation of a slat or spindle from the guardrail, side rails or the bed end structures.	6.8.2 Except as provided in section 6.8.3, after testing in accordance with the procedure in 7.10, there shall be no complete breakage of a spindle/slat or complete separation of a spindle/slat from the guardrails, side rails or end structures.
No section in ASTM	No section in NPR	6.8.3 Toddler beds that convert from a full-size crib, also known as convertible cribs, shall meet the requirements specified in section 6.7 of ASTM F 1169-10, incorporated by reference at 16 CFR Part 1219, Safety Standard for Full-Size Baby Cribs, instead of the requirements of 6.8.2.

ASTM F 1821 -09 Section #	NPR Language	Draft Final Language
7.1 *Mattress Retention:*	Same as ASTM F 1821-09	Delete from NPR Do not comply with ASTM F 1821-09
7.1.1 *Test Mattress*—A 4 ± 1⁄8 in. (100 ± 3 mm) thick by 51 5⁄8 ± 1⁄8 in. (1310 ± 3 mm) long by 27 1⁄4 ± 1⁄8 in. (690 ± 3 mm) wide, open cell, polyurethane foam pad having a density of 1 lb/ft3 (16 kg/m3), having a compression load deflection of 30 lbf (133 N) when tested in accordance with Test Methods D 3574, Method B1, to a 25 % deflection, covered with a 5 to 15 gage vinyl material, 0.005– to 0.015–in. (0.13– to 0.38–mm) thick shall be used to represent a mattress during the performance of the following tests:	Same as ASTM F 1821-09	7.1.1 *Test Mattress*—A 4 ± 1⁄8 in. (100 ± 3 mm) thick by 51 5⁄8 ± 1⁄8 in. (1310 ± 3 mm) long by 27 1⁄4 ± 1⁄8 in. (690 ± 3 mm) wide, open cell, polyurethane foam pad having a density of 1 lb/ft3 (16 kg/m3), having a compression load deflection of 30 lbf (133 N) when tested in accordance with Test Methods D 3574, Method B1, to a 25 % deflection, covered with a 5 to 15 gage vinyl material, 0.005– to 0.015–in. (0.13– to 0.38–mm) thick shall be used to represent a mattress during the performance of the test in 7.2.4:
7.1.2 Secure the bed so that it cannot move during the performance of the following tests:	Same as ASTM F 1821-09	Deleted from NPR Do not comply with ASTM F 1821-09
7.1.3 Using a 3-in. (76-mm) diameter flat, rigid disk, gradually apply a 5 lbf (22 N) horizontally within a period of 5 s to the edge of the mattress at the vertical midpoint and maintain for 30 s in a location that produces the largest gap in the horizontal plane between the end support structures, side rails, or guardrails and the edge of the mattress.	Same as ASTM F 1821-09	Deleted from NPR Do not comply with ASTM F 1821-09
7.1.4 After the test described in 7.1.3 has been performed, any gap in the horizontal plane that permits the passage of a vertically oriented 0.19 in. (5 mm) diameter probe with a length of 6 in. (150 mm), minimum, and that has a fully rounded end to pass through without touching either the mattress or the support structure shall be tested in accordance with 7.1.5.	Same as ASTM F 1821-09	Deleted from NPR Do not comply with ASTM F 1821-09
7.1.5 Insert the tapered end of the wedge block, shown in Fig. 2, into any gap identified in 7.1.4 in the most adverse orientation, and gradually apply a 39-lb (17.7 kg) dead weight to the wedge block within a period of 5 s; maintain the load for a period of 30 s.	Same as ASTM F 1821-09	Deleted from NPR Do not comply with ASTM F 1821-09
7.1.6 Place a 3 in. (76 mm) by 7.2 in. (183 mm) sheet of 3⁄4 in. (19 mm) thick plywood in the most adverse position on the top of the mattress. Do not allow any portion of the plywood to extend over the edge of the mattress. While keeping the plywood horizontal, gradually apply a 50 lbf (220 N) force normal to the plywood within a period a 5 s. Maintain the load for 30 s.	Same as ASTM F 1821-09	Deleted from NPR Do not comply with ASTM F 1821-09
No section in ASTM	7.9 *Test Method for Guardrail Structural Integrity*	No changes from NPR

ASTM F 1821 -09 Section #	NPR Language	Draft Final Language
No section in ASTM	7.9.1 Firmly secure the toddler bed on a stationary flat surface using clamps. Gradually apply 50 lbf to the uppermost horizontal part of the mattress side of the guardrail in a direction perpendicular to the plane of the rail. The force should be applied in the center along the length of the rail and then repeated with the force applied directly over each of the outermost legs of the guardrail. The force should be applied in the direction away from the mattress within a period of 5 s and maintained for an additional 10 s.	7.9.1 Firmly secure the toddler bed on a stationary flat surface using clamps. Gradually over a period of 5 s apply a 50 lbf (222.4 N) to the guardrail from the inside of the toddler bed, outward and perpendicular to the plane of the rail, and hold for 10 s. The force is to be applied to the geometric center of a 3 x 6 x ½ in. (7.62 x 15.24 x 1.27 cm) piece of plywood with the long end parallel to the floor (see Fig. 11).
No section in ASTM	No section in NPR	7.9.2 For guardrails with a rectangular shape, the plywood should be placed with the upper long edge even with the upper long edge of the rail, which is 11 in. (27.94 cm) from the top of the rail to the top of the mattress support in its lowest position, and the short edge even with the free short edge of the rail.
No section in ASTM	No section in NPR	7.9.3 For contoured guardrails that are not rectangular, the plywood shall be placed with the upper long edge of the plywood even with a line drawn parallel to the rail which is 11 in. (27.94 cm) from the mattress support and the short edge placed so that the downward slope of the free rail edge intersects the corner of the plywood.
No section in ASTM	7.10 *Slat/Spindle testing for Guardrails, Side Rails and End Structures:*	No changes from NPR
No section in ASTM	7.10.1 The spindle/slat static load test shall be performed for all slats and spindles with the spindle/slat assemblies removed from the bed and supported only on the rail corners through a contact area not more than 3 in.^{2} (7.62 cm^2) when measured parallel to the longitudinal axis of the end of the rail. Besides the corners, the upper and lower horizontal rails of both linear and contoured shall be free to deflect under the applied force.	7.10.1 Spindle/slat static force test shall be performed with the spindle/slat assemblies removed from the bed and supported only on the rail corners through a contact area not more than 3 in^2. (7.6 cm^2) when measured from the end of the rail in a direction parallel to the longitudinal axis of the rail. Besides the corners, the upper and lower horizontal rails of both linear and contoured rails shall be free to deflect under the applied force. For toddler beds incorporating folding or moveable sides for purposes of easier access to the occupant, storage and/or transport, each side segment (portion of side separated by hinges for folding) shall be tested separately as described above.
No section in ASTM	7.10.2 Gradually, over a period of not less than 2 s or greater than 5 s, apply the force specified in 7.10.3 or 7.10.4 at the midpoint between the top and bottom of the spindle/slat being tested. This force shall be applied through a contact area large enough to not cause visible indentation or cutting of the spindle/slat, but not wider than 1 in. (2.54 cm) when measured parallel to the longitudinal axis of the spindle/slat. This weight shall be maintained for 30 s.	7.10.2 Gradually, over a period of not less than 2 s nor greater than 5 s, apply an 80 lbf (355.8 N) perpendicular to the plane of the side at the midpoint, between the top and bottom of the spindle/slat being tested. This force shall be applied through a force measuring device and contact area 1 $\pm$ 1⁄16 in. (25.4 $\pm$ 1.6 mm) wide by a length at least equal to the width of the spindle/slat being tested at the point of application. This force shall be maintained for 10 s. The force measuring device must be capable of recording the force at breakage, if breakage occurs during this test. This force measuring device must be capable of a maximum measurement resolution of 0.25 lbf (1.11 N).

ASTM F 1821 -09 Section #	NPR Language	Draft Final Language
No section in ASTM	7.10.3 Test, according to 7.10.2, 25% (or the next highest percentage if 4 does not divide evenly into the total number) of all spindles/slats with a force of 80 lb. Spindles/slats that offer the least resistance to bending based upon their geometry shall be selected to be tested within this grouping of 25%, except that adjacent spindles/slats shall not be tested per 7.10.2. Place an identifying mark on all tested spindles/slats.	7.10.3 Test, according to 7.10.2, 25 % (rounding up to the nearest percentage, if necessary) of all spindles/slats. Spindles/slats that offer the least resistance to bending based upon their geometry shall be selected to be tested within this grouping of 25 % except that adjacent spindles/slats shall not be tested.
No section in ASTM	7.10.4 Upon completion of the test described in 7.10.2 and 7.10.3, gradually apply, over a period of not less than 2 s or greater than 5 s, 60 lbf (266.9 N) at the midpoint between the top and bottom of all spindles/slats not previously tested under 7.10.2 and 7.10.3. This force shall be applied through a contact area large enough to not cause visible indentation or cutting of the spindle/slat, but not wider than 1 in. (2.54 cm) when measured parallel to the longitudinal axis of the spindle/slat. This force shall be maintained for 30 s.	7.10.4 Upon completion of testing as defined in 7.10.2 and 7.10.3, no spindle/slat shall have failed at an applied force less than or equal to 60 lbf. If no more than one spindle/slat fails and that failure occurs only as the result of an applied force greater than 60 lbf, then an additional 25 % of spindles/slats shall be tested per 7.10.2 and 7.10.3. During testing of this second 25 %, any spindle/slat failure (at or below 80 lbf) shall constitute failure of the test.
No section in ASTM	7.10.5 End vertical rails that are joined between the slat assembly top and bottom rails are not considered slats and do not require testing under 7.10.	No changes from NPR

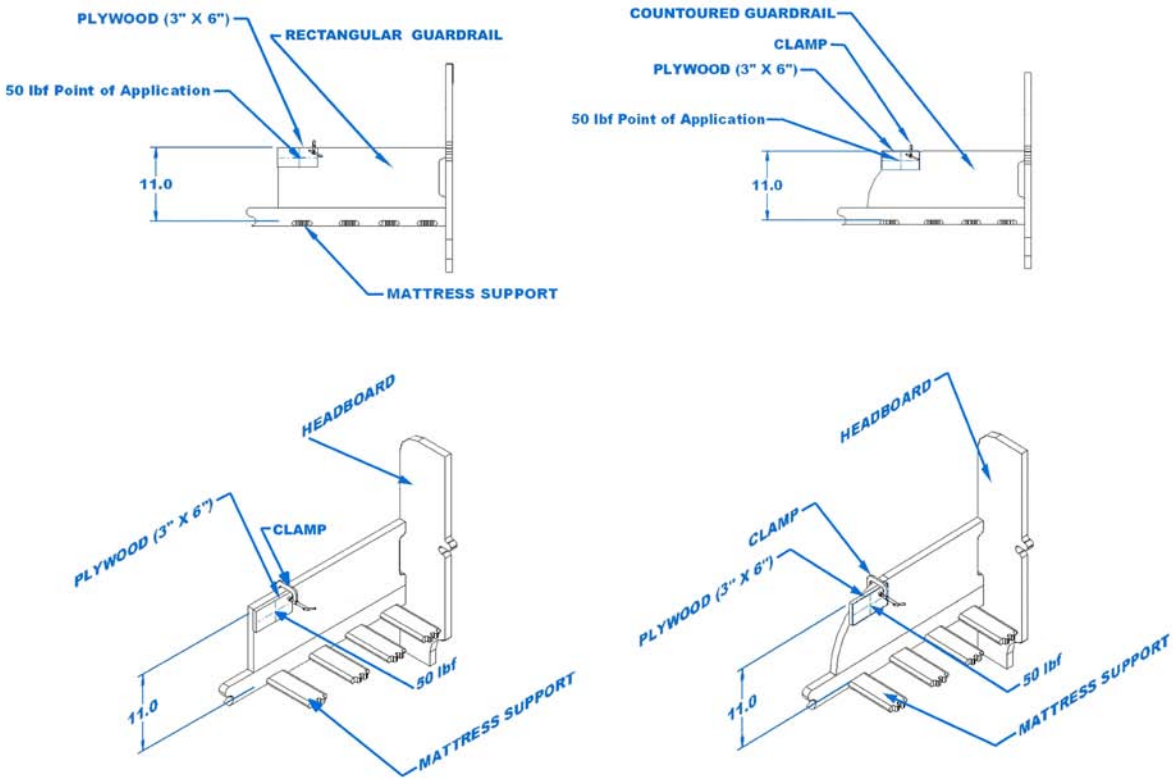

Figure 1: "FIG. 11 Guardrail Structural Integrity Test"

III. Summary of Staff's Recommended Changes to the Proposed Toddler Bed Rule

The proposed rule for toddler beds referenced ASTM F 1821-09, *Standard Consumer Safety Specification for Toddler Beds,* and included three technical changes related to:

- guardrail height,
- guardrail structural integrity, and
- spindle/slat strength.

Despite receiving a comment that did not agree with the proposed guardrail height and structural integrity performance requirements, staff continues to recommend the proposed guardrail height of 5 inches above the sleeping surface and the application of 50 lbf for the structural integrity test. Staff does recommend modifying the test methodology for improved test repeatability, as

suggested by one commenter. Staff also recommends including a figure depicting the guardrail structural integrity test in the final rule, as shown in Figure 1.

Since publication of the NPR, ASTM issued ballots on August 25, 2010, and December 15, 2010, related to ASTM F 1821-09. These balloted items pertain to mattress retention and also were the subject of one of the comments. In the December ballot, ASTM proposed the removal of the test methods associated with mattress retention, sections 7.1.2 through 7.1.6, to maintain consistency with the balloted item and comment received related to the removal of the mattress retention performance requirements. As of the submittal date of this briefing package to the Commission, ASTM has not published a revised version of ASTM F 1821 to include this change. Staff agrees with this ASTM-balloted approved item and, in parallel, recommends removal of both the performance requirements and associated test methods pertaining to mattress retention in the draft final toddler bed standard.

Also, since publication of the toddler bed NPR, ASTM approved additional language for the full-size and non-full-size crib spindle/slat strength test in ASTM F 1169-10 and ASTM F 406-10a, respectively. This additional language specifies test procedures for how to test crib sides with segmented sides that fold, either for access to the occupant, or for storage and transport. Because the commenter and staff agree that the toddler bed spindle/slat strength test should be similar to the full-size and non-full-size crib spindle/slat strength requirements, staff recommends adding this provision for toddler beds that may contain folding sides for access to the occupant or for storage and transport.

IV. Conclusions

In conclusion, staff is recommending that the Commission adopt the ASTM voluntary standard F 1821-09 for toddler beds, with the following technical modifications for the final toddler bed standard:

1) Remove the mattress retention performance requirements, sections 6.1, 6.1.1, and 6.1.2, and the associated test methods, sections 7.1.2, 7.1.3, 7.1.4, 7.1.5, and 7.1.6, as shown in Table 1.
2) Change the wording in 7.1 and 7.1.1, per Table 1, to align section numbers with the removal of the mattress retention requirements.
3) Add the new guardrail height and structural integrity general requirements, sections 6.51, 6.5.2, and 6.5.3.
4) Change the wording in 7.9.1 and add 7.9.2 and 7.9.3, related to the guardrail structural integrity test, per Table 1.
5) Add sections 6.8, 6.8.1, 6.8.2, 6.8.3, 7.10, 7.10.1, 7.10.2, 7.10.3, and 7.10.4 for the new slat strength test performance requirements and test methods, per Table 1.

Appendix A – Commenter Proposed Language Related to Guardrail Strength Test and Guardrail Height

Terminology

Removable guardrail (n) – a guardrail that can be removed without the use of tools.

Guardrail Strength

6.8 When tested in accordance with 7.9 the guardrail shall not break, detach or create a condition that would present any of the hazards described in Section 5. Removable guardrails, and guardrails that do not have any free ends, that is that they are attached to both the headboard and the footboard, are exempt from this test. For guardrails with 2 free ends, perform this test at each free end.

7.9 Gradually, over a period of 5s, apply a 40 lb. force to the guardrail from the inside of the toddler bed, outward and perpendicular to the plane of the rail, and hold for 10 secs. The force is to be applied to the geometric center of a 3 x 6 x ½ in. piece of plywood with the long end parallel to the floor.

7.9.1 For guardrails with a rectangular shape, the plywood should be placed with the upper long edge even with the upper long edge of the rail, which is 9 inches from the top of the rail to the top of the mattress support in its lowest position, and the short edge even with the free short edge of the rail.

7.9.2 For contoured guardrails that are not rectangular, the plywood shall be placed with the upper long edge of the plywood even with a line drawn parallel to the rail which is 9 in. from the mattress support and the short edge placed so that the downward slope of the free rail edge intersects the corner of the plywood.

Guardrail Height

6.5.2 The upper edge of the guardrail shall be at least 9 inches above the mattress support. This measurement is to be taken from the lowest point on the upper surface of the mattress support within 6 in. of the guardrail to the highest point of the upper edge of the guardrail within 6 in. from the headboard.

TAB C: Human Factors Staff Response to NPR Comments and Revised Requirements Associated with Warning Statements for Toddler Beds

TAB C

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MD 20814

MEMORANDUM

DATE: February 14, 2011

TO: Celestine T. Kiss, Project Manager,
Division of Human Factors, Directorate for Engineering Sciences

THROUGH: Erlinda M. Edwards, Acting Associate Executive Director,
Directorate for Engineering Sciences

Robert B. Ochsman, Ph.D., Director,
Division of Human Factors, Directorate for Engineering Sciences

FROM: Timothy P. Smith, Engineering Psychologist,
Division of Human Factors, Directorate for Engineering Sciences

SUBJECT: Human Factors Staff Response to NPR Comments and Revised Requirements Associated with Warning Statements for Toddler Beds

BACKGROUND

Section 104(b) of the Consumer Product Safety Improvement Act of 2008 (CPSIA) requires the U.S. Consumer Product Safety Commission (CPSC) to promulgate consumer product safety standards for durable infant or toddler products. These standards are to be "substantially the same as" applicable voluntary standards or more stringent than such standards if the Commission determines that more stringent standards would further reduce the risk of injury associated with these products. Section 104(f) defines a durable infant or toddler product as a durable product intended for use, or that may be reasonably expected to be used, by children younger than 5 years old, and includes toddler beds (104(f)(2)(B)).

The ASTM International[1] (ASTM) voluntary standard, ASTM F 1821, *Standard Consumer Safety Specification for Toddler Beds*, establishes requirements for toddler beds. This standard was developed by ASTM in response to incident data supplied by CPSC staff, and is intended to minimize entrapments in bed end structures, between the guardrail and side rail, and in the mattress support systems of toddler beds. Entrapment of a child's head or neck can result in asphyxiation. The most recent version of the standard is ASTM F 1821 – 09.

On April 28, 2010, a notice of proposed rulemaking (NPR) was published in the *Federal Register*, soliciting public comments. The NPR detailed proposed requirements for toddler beds. The proposed rule was largely the same as the 2009 version of the applicable ASTM standard, but with certain modifications. For example, the NPR proposed revisions to the warning text

[1] ASTM International was formerly known as the American Society for Testing and Materials.

that is specified in section 8.4 of ASTM F 1821 – 09 to separate the warning statements for entrapment hazards from the warning statements for strangulation hazards. The proposed rule also contained alternative wording for certain aspects of the required warnings.

The public comment period closed July 12, 2010,[2] and the CPSC received 13 comments. Five of these comments at least partially addressed the proposed warning requirements.[3] This memorandum responds to these comments and presents draft warning requirements intended to address these issues.

DISCUSSION

PUBLIC COMMENTS

As noted in the *Background*, the CPSC received five comments related to the proposed warning requirements for toddler beds. One comment (CPSC-2010-0022-0009) supported the proposed warning requirements and described the importance of specificity in the warnings to make sure that parents know the ages at which children should not be allowed to use a toddler bed. This comment did not introduce any significant issues. The remaining four comments raised potentially significant issues or concerns, which are discussed below.

Presence of the Statement, "ALWAYS follow assembly instructions"

One commenter (-0010) generally supported the proposed warning requirements but suggested that the statement, "ALWAYS follow assembly instructions," is not useful on the product itself. The commenter suggested that more appropriate locations for this statement are on the packaging and at the top of the assembly instructions.

ESHF staff disagrees with the commenter's assessment and believes that placing this warning statement on the product would be more beneficial than locating it on the packaging or at the top of the assembly instructions. Generally, a warning should be located where the consumer is likely to be looking when the warning is needed (Wogalter & Vigilante, 2006). The intent of this warning statement is to alert consumers of the need to follow the assembly instructions; the target audience for such a message would be consumers who would otherwise not follow such instructions. For this reason, a warning statement located at the top of the assembly instructions is unlikely to be noticed or read by those who need the information the most. Placement of the warning statement on the product itself, however, is more likely to be noticed by these consumers because all consumers must interact with the product to assemble it, even if they do not examine the assembly instructions beforehand.

Locating the warning statement on the product packaging would seem to offer advantages similar to locating the warning statement on the product because the consumer is likely to handle the product packaging before assembling the product. This would apply, however, only in those cases in which the product was received in the original packaging—for example, if the product

[2] The deadline for comments related to the instructional literature and bed and carton marking required by the proposed rule, as they relate to the Paperwork Reduction Act, was May 28, 2010.

[3] Comments CPSC-2010-0022-0004, -0009, -0010, -0012, and -0014.

was purchased new. If the product packaging is discarded—or the product is received without the packaging—the consumer would not be exposed to the relevant warning information. Staff also questions whether most consumers will notice, or take the time to read such a warning, even if they are exposed to it. One research study, for example, examined the placement of product warnings and found that a warning located on the shipping carton went unnoticed by every subject (Frantz & Rhoades, 1993). Improvements to the placement and conspicuity of a packaging warning could address this concern somewhat; but a warning located on the packaging also is more likely to become damaged and rendered illegible.

Staff agrees that placing the warning statement in one of the locations cited by the commenter might be useful if the warning served to supplement the on-product warning. But as ESHF staff noted in its memorandum accompanying the briefing package on the proposed rule (Smith, 2010), none of the available reports of incidents involving entrapment have been associated with the toddler bed being misassembled. Thus, mandating that the warning statement be included on the product and in one or more of these alternative locations is not supported by the available data.

Harmonization of Toddler Bed and Full-Size Crib Warnings

Two commenters (-0004 and -0012) recommended that the full-size crib and toddler bed standards be harmonized with respect to the required warnings because many full-size cribs convert into toddler beds and, therefore, would require the warnings specified in both standards. The commenters argued that such harmonization would eliminate redundant warning statements, thereby making the warnings more effective.

ESHF staff agrees that failing to harmonize similar warnings in the toddler bed rule and the full-size crib standard could introduce redundant and extraneous warnings on convertible cribs, which might diminish the effectiveness of the warnings. For example, the strangulation warning requirements for toddler beds specified in the NPR are redundant to the strangulation warning requirements specified in section 8.4.1.2 of ASTM F 1169 – 10, *Standard Consumer Safety Specification for Full-Size Baby Cribs*. Additionally, the entrapment warning requirements for toddler beds specified in the NPR do not apply to full-size cribs that might convert to toddler beds. Thus, staff recommends that the entrapment and strangulation warning requirements for toddler beds apply only to toddler beds that do not convert from a crib. Toddler beds that convert from a crib should use the warnings specified in ASTM F 1169 – 10, incorporated by reference at 16 CFR part 1219, *Safety Standard for Full-Size Baby Cribs*, with additional text that specifies the minimum mattress thickness, as detailed below.

The proposed rule for toddler beds shortened the warning regarding the minimum mattress size that appears in section 8.4.4.1 of ASTM F 1821 – 09 to state, "ONLY use full-size crib mattress of the recommended size," based on the understanding that section 8.3.2 of that standard already required both the bed and its retail carton to be clearly and legibly marked with the intended mattress size (Smith, 2010). Since then, staff has discovered that section 8.3.2 of ASTM F 1821 – 09 only requires the retail carton to be marked with the intended mattress size.[4] Given this,

[4] Although both the toddler bed and full-size crib standards require markings related to mattress size on the retail carton and on the product itself, the two standards address this requirement differently. Section 8.1 of both

staff believes that it would be reasonable to maintain a mattress size warning similar to that specified in section 8.4.4.1 of ASTM F 1821 – 09 in the draft final rule. Section 8.1.3 of the full-size crib standard, ASTM F 1169 – 10, which CPSC's mandatory crib rule incorporated by reference with section modifications, specifies the exact wording of a warning statement regarding the intended mattress size. The language used in this warning is very similar to warning content specified in 8.4.4.1 of ASTM F 1821 – 09, as shown in the chart below.

Section 8.4.4.1, ASTM F 1821 – 09 (Toddler Bed Standard)	Section 8.1.3, ASTM F 1169 – 10 (Full-Size Crib Standard)
The mattress intended for use on the bed shall be a full-size crib mattress having minimum dimensions of 51 5⁄8 in. (1310 mm) in length, 27 1⁄4 in. (690 mm) in width and 4 in. (100 mm) in thickness, or a greater thickness as specified by the manufacturer, and	The following warning shall appear on the retail carton and on inside of a side or end assembly or on the top surface of the mattress support in a type size of at least 1⁄4 in.: "CAUTION: Any mattress used in this crib shall be at least 27 1⁄4 by 51 5⁄8 in. with a thickness not exceeding 6 in."; or "CAUTION: Any mattress used in this crib shall be at least 69 by 131 cm with a thickness not exceeding 15 cm."

As is evident in the chart, the mattress size specified in the toddler bed and full-size crib standards are nearly identical, except that the toddler bed standard specifies a minimum mattress thickness of 4 inches, whereas the full-size crib standard specifies a maximum mattress thickness of 6 inches. Staff, therefore, recommends the following mattress size warning requirement for the draft final rule:

> ⚠CAUTION
> Any mattress used in this bed must be a full-size crib mattress at least 51 ⅝ in. (1310 mm) in length, 27 ¼ in. (690 mm) in width, and 4 in. (100 mm) in thickness.

Because full-size cribs that convert to toddler beds require the exact warning statement specified in section 8.1.3 of the full-size crib standard, ASTM F 1169 – 10, requiring the staff's recommended warning statement on all toddler beds would mean that convertible cribs would require two mattress size warning statements that are largely redundant. Thus, as in the case of the entrapment and strangulation warnings, staff recommends that the mattress size warning requirement for toddler beds apply only to toddler beds that do not convert from a crib. To address the fact that the full-size crib standard specifies a maximum mattress thickness of 6 inches, whereas the toddler bed standard specifies a minimum mattress thickness of 4 inches, staff recommends that toddler beds that convert from a crib include additional text that specifies the minimum mattress thickness of 4 inches at the end of the warning statement specified in section 8.1.3 of the full-size crib standard, ASTM F 1169 – 10.

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standards identifies markings that must appear on the product and the retail carton, and the full-size crib standard includes mattress-size markings within this section. The toddler bed standard, in contrast, addresses these markings through two separate requirements: section 8.3.2 (the retail carton) and section 8.4.4.1 (the toddler bed).

Removal of Guardrail Warning Statement

One commenter (-0014) suggested that the warning statement specified in section 8.4.4.2 of ASTM F 1821 – 09 and referenced in the NPR, regarding the use of a guardrail when one is used for the purpose of containing the mattress, be removed from the Standard because it, as well as the mattress retention requirements on which the warning statement is based, specified in sections 6.1, 6.1.1, and 6.1.2, are now obsolete.

Staff of the CPSC's Division of Mechanical Engineering (ESME) agrees that the mattress retention requirements are obsolete and should be removed from the draft final rule. According to the ASTM subcommittee, the original intent of the mattress retention requirements was to limit mattress movement that could provide access to openings in the mattress support system that might pose an entrapment hazard. Since these requirements were put into place, however, the performance requirements for entrapment in the mattress support system have become more stringent; the standard now specifies that all openings in the mattress support system shall be tested for torso entrapment without the mattress in place. Thus, even if a mattress does not prevent access to openings in the mattress support system, the openings themselves are unlikely to result in entrapment.

Because the warning requirement for guardrail use was based on the obsolete mattress retention requirements, ESHF staff agrees that the warning requirement regarding the use of a guardrail when a guardrail is used to contain the mattress is obsolete as well. The NPR specified two alternative entrapment warnings because of the requirement of a warning about guardrail use. Removing this obsolete warning statement about guardrail use, therefore, eliminates the need for two alternative warning labels that address the entrapment hazard.

ESHF STAFF-RECOMMENDED WARNING REQUIREMENTS

Based on all of the above, ESHF staff recommends that the warning requirements for staff's draft final rule be substantially the same as section 8.4 of the ASTM F 1821 – 09 standard, but that sections 8.4.2 through 8.4.4.5 of that standard be replaced with the following:

8.4.2 The safety alert symbol "⚠" and the word "WARNING" or "CAUTION" must be at least 0.2 in. (5 mm) high, and the remainder of the text must be characters whose upper case shall be at least 0.1 in. (2.5 mm) high, sans serif.

8.4.3 Except as provided in 8.4.4 and 8.4.5, the following warnings must appear on all toddler beds, exactly as stated.

8.4.3.1 ⚠WARNING
INFANTS HAVE DIED IN TODDLER BEDS FROM ENTRAPMENT.
Openings in and between bed parts can entrap head and neck of a small child.
NEVER use bed with children younger than 15 months.
ALWAYS follow assembly instructions.

8.4.3.2 ⚠WARNING
STRANGULATION HAZARD
NEVER place bed near windows where cords from blinds or drapes may strangle a child.
NEVER suspend strings over bed.
NEVER place items with a string, cord, or ribbon, such as hood strings or pacifier cords, around a child's neck. These items may catch on bed parts.

8.4.3.3 ⚠CAUTION
Any mattress used in this bed must be a full-size crib mattress at least 51 ⅝ in. (1310 mm) in length, 27 ¼ in. (690 mm) in width, and 4 in. (100 mm) in thickness.

8.4.4 Toddler beds that convert from a full-size crib, also known as convertible cribs, must meet the warning requirements specified in section 8 of ASTM F 1169 – 10, incorporated by reference at 16 CFR part 1219, *Safety Standard for Full-Size Baby Cribs*, instead of the requirements of 8.4.3.

8.4.5 Any toddler bed that can convert from a full-size crib, and has the warning specified in section 8.1.3 of ASTM F 1169 – 10, incorporated by reference at 16 CFR part 1219, *Safety Standard for Full-Size Baby Cribs*, must include additional text at the end of that warning that specifies the minimum mattress thickness of 4 inches (100 mm).

ESHF staff believes that the warning requirements recommended above are more stringent than those specified in ASTM F 1821 – 09, and that these improved requirements could reduce the likelihood of injury and death associated with toddler beds. Currently, the warning label specified in section 8.4.3 of the ASTM toddler bed standard merges the warning information related to entrapment and strangulation. As detailed in its memorandum that accompanied the briefing package containing the proposed rule (Smith, 2010), ESHF staff believes that separate warning statements regarding the entrapment and strangulation hazards will improve the likelihood that consumers will understand which behaviors recommended in the warnings are associated with each hazard. Additionally, staff's entrapment hazard places greater emphasis on the subpopulation most at risk and the hazard consequences, and includes a more explicit description of the mechanism that creates the entrapment hazard. Staff believes that these changes will improve the effectiveness of these warnings.

CONCLUSIONS

ESHF staff suggests revisions to the proposed warning requirements to address public comments received in response to the NPR for toddler beds. The most significant changes included harmonizing the warning requirements in the draft final rule for toddler beds with those specified in the full-size crib standard, and eliminating the required warning statement on guardrail use and entrapment.

REFERENCES

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TAB D: Hazard Analysis Staff Responses to Comments on Toddler Bed NPR

TAB D

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MARYLAND 20814

Memorandum

Date: February 23, 2011

TO : Celestine T. Kiss
Toddler Beds Project Manager
Division of Human Factors
Directorate for Engineering Sciences

THROUGH: Gregory B. Rodgers, Ph.D.
Acting Associate Executive Director
Directorate for Epidemiology

Kathleen Stralka
Director, Division of Hazard Analysis
Directorate for Epidemiology

FROM : Risana Chowdhury
Division of Hazard Analysis

SUBJECT : Hazard Analysis Staff Responses to Comments on Toddler Beds NPR

Following the directives under CPSIA Section 104, the Commission voted to publish a Notice of Proposed Rulemaking on toddler beds in March 2010. Among the comments received, the Commission received two pertaining to incident data. The comments are repeated below in italics. CPSC staff responses follow.

The first commenter believes that promulgated standards need to be based upon materially accurate data. The existing ASTM F 1821-09 defines a toddler bed as any bed sized to accommodate a full-size crib mattress having minimum dimensions of 51 5⁄8 inches in length and 27 1/4 inches in width and that is intended to provide free access and egress to a child not less than 15 months of age and weighing no more than 50 pounds. These parameters are important since the majority of the incident data involving fatalities cited children that were either too young to be in the bed or to a cord that was a strangulation risk. Three of the four incidents cited involved children less than 15 months of age, not yet qualified to be in a toddler bed. The NPR notice acknowledges this when it states: " It is notable that three of the four reported fatalities involved victims under the age of 15 months, which is recommended in the current ASTM voluntary standard as the minimum age for use of a toddler bed." We agree with this statement. However, there exists concern that the CPSC staff cited appears to be inflating the number of incidents and that data cited as "related to" or "associated with" are insufficient to rely upon in the absence of data and analysis that establishes that the products proximately caused the incident or injury complained of.

The second commenter indicates that the current standard is intended to address children "not less than 15 months and weighing no more than 50 pounds." However, because the "National Injury Estimates" reported in the NPR identified victims between 4 months and 6 years, the establishment basis for ASTM F 1821-09 to a certain degree will be affected.

The comments above expressed concerns on two issues. One, that CPSC staff does not have reliable data that establishes that the product caused the incidents; and two, that CPSC staff appears to be inflating the number of incidents, by including cases where direct product involvement may have been questionable or where users of an inappropriate age were involved.

The commenters misinterpreted the discussion of incident data in the preamble to the proposed rule. That discussion was intended to provide a general overall view of toddler bed-associated problems that are reported to the CPSC. The discussion of the four fatalities indicated that three of the decedents were underage and explained that the product involvement in the fourth fatality was incidental. The "National Injury Estimates" are used to identify the injuries associated with the toddler beds; they are not used to change the age/weight designations in the standard. Age requirements for users and placement of toddler beds are addressed in the warning labels delineated in the current voluntary standard; therefore, these issues are relevant in evaluating the voluntary standard. In addition, the discussion in the proposed rule used appropriate qualifying statements (such as "associated with" and "related to"). These statements are intended to qualify the types of incidents reported to the CPSC and do not "inflate" the data. Rather, this approach reflects the statutory directive of section 104 of the CPSIA to issue a consumer product safety standard for toddler beds that is substantially the same as or more stringent than the voluntary standard. The portions of the draft final rule that are more stringent than the ASTM standard are based on human factors and engineering analyses, which concluded that the more stringent provisions would reduce further the identified risks of injury associated with toddler beds.

TAB E: Update of Toddler Bed-Related Deaths, Injuries, and Potential Injuries; June 23, 2009–December 12, 2010.

TAB E

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MARYLAND 20814

Memorandum

Date: January 26, 2011

TO : Celestine T. Kiss
Toddler Beds Project Manager
Division of Human Factors
Directorate for Engineering Sciences

THROUGH: Gregory B. Rodgers, Ph.D.
Acting Associate Executive Director
Directorate for Epidemiology

Kathleen Stralka
Director, Division of Hazard Analysis
Directorate for Epidemiology

FROM : Risana T. Chowdhury
Division of Hazard Analysis

SUBJECT : Update of Toddler Bed-Related Deaths, Injuries, and Potential Injuries; June 23, 2009–December 12, 2010

The data presented in the Toddler Beds NPR briefing package in February 2010, was extracted on June 23, 2009. This memo includes toddler bed-related incident data reported to CPSC staff from June 23, 2009 through December 12, 2010, and hospital emergency department-treated injury data associated with toddler beds from January 1, 2009 through December 12, 2010.

Incident Data[1]

A search of the CPSC epidemiological databases showed that there were 41 toddler bed-related incidents reported between June 23, 2009 and December 12, 2010. While no fatalities were reported, 17 of the incidents reported an injury sustained by the child. Most of the injuries were bumps, bruises, sprains, and

[1] The CPSC databases searched were the In-Depth Investigation (INDP) file, the Injury or Potential Injury Incident (IPII) file, and the Death Certificate (DTHS) file. These reported deaths and incidents are neither a complete count of all that occurred during this time period nor a sample of known probability of selection. However, they do provide a minimum number of deaths and incidents occurring during this time period and illustrate the circumstances involved in the incidents related to toddler beds.

Date of extraction for reported incident data was 12/12/10. All data coded under product code 4082 was extracted. Upon careful joint review with ES staff, some cases were considered out-of-scope for the purposes of this memo. For example, a report of a youth bed was coded as a toddler bed in the CPSC database. However, other supporting documents showed it to be a twin bed and it was excluded from the analysis.

lacerations. In addition, one incident reported that a child nearly choked on loose hardware; one reported a dental injury of a child from falling on the bed; and another reported a possible case of lead-poisoning from a child chewing paint on the toddler bed. While most of these injuries did not require any major medical intervention, there was one hospitalization for a fractured limb.

Among the incident reports that indicated age (31 out of 41), four reported a child under age 15 months. The majority of the incidents (17 out of 31) reported the child's age to be between 17 months and two years. It was not always clear, however, that the reported age pertained to the child who was the regular user of the toddler bed. Occasionally, an incident report stated clearly that the injured child was playing on a sibling's toddler bed; a few others reported the injured child was playing/climbing on a toddler bed. This indicates that the reported victim's age need not always pertain to the child who was the regular user of the bed.

The hazard patterns identified among the 41 incident reports were as follows:

- Broken, loose, or detached components of the bed, such as the guard rail, hardware, or other accessories were reported in 14 of the incidents; three injuries were associated with these problems.
- Entrapment was the next most commonly reported hazard. Ten incidents reported an entrapment (mostly of a limb), eight of which resulted in injuries ranging from fractures and sprains to bruises.
- Product integrity issues, mostly integrity of the mattress-support, were reported in four incidents, one of which also reported a finger injury to the child.
- Inadequate mattress fit issues were reported in three incidents, but no injuries were reported in this category.
- There were nine reports of miscellaneous issues, such as a sharp surface, lead paint, bed height/clearance, guardrail inadequacy, bed accessory involvement, and complaint of lack of JPMA certification. Four injuries were associated with these issues. There was one additional report of a fall injury, however, no issue related to the toddler bed was reported; the child was jumping on his toddler bed and fell off.

National Injury Estimates[2]

National injury estimates for toddler bed-related injuries in 2009, based on U.S. hospital emergency department data (NEISS), are not reportable because they failed to meet publication criteria.[3] Because the NEISS data for 2010 is not finalized yet, it is unavailable for reporting national estimates at this time. A summary of the 32 toddler bed-related injuries treated at NEISS emergency departments from January 1, 2009 through December 12, 2010, is presented below.

[2] The source of the injury estimates is the National Electronic Injury Surveillance System (NEISS), a statistically valid injury surveillance system. NEISS injury data are gathered from emergency departments of hospitals selected as a probability sample of all the U.S. hospitals with emergency departments. The surveillance data gathered from the sample hospitals enable CPSC staff to make timely national estimates of the number of injuries associated with specific consumer products.

All data coded under product code 4082 was extracted. Upon careful joint review with ES staff, certain records were considered out-of-scope for the purposes of this memo. For example, a daycare reported suspected abuse of a child, whereas the parent reported it as a fall from a toddler bed. The report was excluded from this analysis. Another example was a reported injury when a toddler bed was pushed accidentally into the child.

[3] According to the NEISS publication criteria, an estimate must be 1,200 or greater, the sample size must be 20 or greater, and the coefficient of variation must be 33 percent or smaller.

No deaths were reported through NEISS in 2009 or 2010. Listed below are the frequently occurring characteristics of the 32 toddler bed-related injuries:

- Hazard–falls out of the toddler bed to a lower level (78%);
- Injured body part–head and face (59%) and limbs (25%);
- Injury type–head injury (31%) and fractures (22%); and
- Disposition–treated and released (97%).

About nine percent of the patients were reported to be younger than 15 months old, while about 69 percent were reported to be between 17 months and two years of age. As in the case of the non-NEISS incident data, it was not always clear whether the patient injured was the usual user of the toddler bed.

TAB F: Final Regulatory Flexibility Analysis of Proposed Standard for Toddler Beds

TAB F

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MARYLAND 20814

Memorandum

Date: January 11, 2011

TO : Celestine T. Kiss
Project Manager for Toddler Beds
Division of Human Factors
Directorate for Engineering Sciences

THROUGH: Gregory B. Rodgers, Ph.D., Associate Executive Director
Directorate for Economic Analysis

Deborah V. Aiken, Ph.D., Senior Staff Coordinator
Directorate for Economic Analysis

FROM : Jill L. Jenkins, Ph.D., Economist
Directorate for Economic Analysis

SUBJECT : Final Regulatory Flexibility Analysis of Proposed Standard for Toddler Beds

Introduction

On August 14, 2008, the Consumer Product Safety Improvement Act (CPSIA) was enacted. Among its provisions, section 104 requires the U.S. Consumer Product Safety Commission ("CPSC" or "Commission") to evaluate the existing voluntary standards for durable infant or toddler products and promulgate a mandatory standard substantially the same as, or more stringent than, the applicable voluntary standard. Toddler beds are among the durable products specifically named in section 104.

The Commission proposed adopting the voluntary ASTM International (formerly known as the American Society for Testing and Materials) standard for toddler beds (F 1821–09), hereafter referred to as the voluntary standard, with a few modifications.[1] Staff now recommends that the Commission finalize the proposed rule with four additional modifications: (1) make the slat/spindle strength requirements consistent with those for full-size cribs; (2) add a new test procedure to the guard rail structural integrity requirements; (3) specify different warning labels for toddler beds and convertible cribs to minimize redundant labels; and (4) remove the mattress retention requirements that are included in the voluntary standard, which also affects the warning labels.

[1] The modifications were: (1) an integrity requirement for guardrails; (2) a slat/spindle strength requirement for guardrails, side rails, and end structures; (3) guardrail height requirements; and (4) modified entrapment and strangulation warnings.

The Regulatory Flexibility Act (RFA) requires that final rules be reviewed for their potential economic impact on small entities, including small businesses. Section 604 of the RFA requires that CPSC staff prepare a final regulatory flexibility analysis when the Commission promulgates a final rule. The final regulatory flexibility analysis must describe the impact of the rule on small entities and identify any alternatives that may reduce the impact. Specifically, the final regulatory flexibility analysis must contain:

1. a succinct statement of the objectives of, and legal basis for, the rule;
2. a summary of the significant issues raised by public comments in response to the initial regulatory flexibility analysis, a summary of the assessment of the agency of such issues, and a statement of any changes made in the proposed rule as a result of such comments;
3. a description of, and, where feasible, an estimate of, the number of small entities to which the rule will apply;
4. a description of the projected reporting, recordkeeping, and other compliance requirements of the rule, including an estimate of the classes of small entities subject to the requirements and the type of professional skills necessary for the preparation of reports or records; and
5. a description of the steps the Agency has taken to reduce the significant economic impact on small entities, consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the rule, and why each one of the other significant alternatives to the rule considered by the Agency, which affect the impact on small entities, was rejected.

The Product

Basically, toddler beds are any beds that use a full-size crib mattress and are intended to be used only for children 15 months and older, who weigh up to 50 pounds. These beds are intended to allow a child to get on and off the bed easily. They may include side rails and/or guardrails. A side rail is, essentially, a rail that connects the headboard to the footboard of a bed, and which may or may not have any barrier purposes. Guardrails, on the other hand, serve as a barrier to prevent the occupant from rolling, sliding, or falling out of bed, and they cover only a portion of the space between the bed's headboard and footboard. The draft final standard covers the following products:

- toddler beds—separately marketed beds that use a full-size crib mattress; and
- convertible cribs—cribs that can be converted into a toddler bed using a full-size crib mattress.

Products not covered by the draft final standard include: twin beds and daybeds, both of which use twin-size mattresses rather than crib mattresses. In addition, inflatable children's beds or mattresses are not included in the draft final standard because they do not use a crib-size mattress. However, the standard would include what is referred to by some convertible crib manufacturers as a "daybed conversion." This type of conversion typically uses the original crib

mattress but does not use any guardrails. Conversion kits may be sold with the crib or separately; either would fall under the standard because the cribs are intended to convert into a toddler bed.

The Market for Toddler Beds

Toddler beds and convertible cribs are typically produced and/or marketed by juvenile product manufacturers and distributors or by furniture manufacturers and distributors, some of which have separate divisions for juvenile products. Currently, there are at least 73 known manufacturers or importers supplying toddler beds and/or convertible cribs to the U.S. market. Approximately 48 suppliers are domestic manufacturers (66 percent); 13 are domestic importers (18 percent); 11 are foreign manufacturers (15 percent); and the remaining firm is a foreign supplier who imports from other countries and exports to the United States.[2]

Under U.S. Small Business Administration (SBA) guidelines, a manufacturer of toddler beds or convertible cribs is small if it has 500 or fewer employees; an importer is considered small if it has 100 or fewer employees. Based on these guidelines, 11 of the domestic importers and 34 domestic manufacturers known to be supplying the U.S. market are small.[3] There are an additional eight domestic manufacturers of unknown size, most of which are likely to be small.[4] However, there are probably additional unknown small manufacturers and importers operating in the U.S. market as well.

The Juvenile Products Manufacturers Association (JPMA), the major U.S. trade association that represents juvenile product manufacturers and importers, runs a voluntary Certification Program for several juvenile products.[5] Approximately 29 firms supplying toddler beds and/or convertible cribs to the U.S. market make or import products that comply with ASTM F 1821-09 (40 percent).[6] Of the small domestic businesses,[7] 11 manufacturers (27 percent) and 6 importers (55 percent) make or import products that are JPMA-certified as ASTM compliant. Additionally, there are two small manufacturers that claim to produce products that comply with the ASTM standard that are not part of the JPMA Certification Program.

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[2] Staff made these determinations using information from Dun & Bradstreet and ReferenceUSAGov, as well as firm websites. Manufacturers include traditional manufacturers, as well as firms that send out their designs to be manufactured; firms that decorate ready-made products for final sale; and firms that import but are primarily manufacturers. Importers include one firm that is primarily a manufacturer, but also imports its toddler beds from a related, but separate firm. It is unclear whether the foreign supplier designs the products to be manufactured or simply imports ready-made products from other countries to ship to the United States.

[3] Six of these small domestic manufacturers have between 100 and 500 employees.

[4] In fact, there was sufficient information to include seven of these firms as small in the analysis that follows.

[5] JPMA has run this program since 1976, beginning with high chairs. Products submitted voluntarily by manufacturers are tested against the appropriate ASTM standard, and only products that pass the test are allowed to display JPMA's Certification Seal. See http://www.jpma.org/pdfs/certfacts08.pdf for more information.

[6] Twenty-six of these firms make or import products that are JPMA-certified as compliant, while an additional three firms claim that they supply compliant products.

[7] This includes firms suspected of being small, as well as those known to be small.

The most recent U.S. birth data shows that there are approximately 4.2 million births per year.[8] The majority of these babies eventually use cribs for sleeping purposes.[9] In fact, according to a 2005 survey conducted by the American Baby Group (*2006 Baby Products Tracking Study*),[10] 22 percent of new mothers[11] own convertible cribs. Approximately 16 percent of convertible cribs were handed down or purchased secondhand.[12] If these rates hold, this suggests annual convertible crib sales of about 776,000 (0.22 x 0.84 x 4.2 million births per year). Of those consumers with nonconvertible cribs,[13] some proportion of them eventually will use toddler beds when their children get older. However, consumers may choose to use a twin or larger bed and use portable bed rails rather than use a separate toddler bed.[14] Assuming that approximately 50 percent elect to use toddler beds and assuming that approximately 50 percent buy them new, this would mean that around 819,000 toddler beds are sold per year (0.78 percent nonconvertible cribs x 4.2 million births x 0.5 percent use toddler beds x 0.5 percent buy them new).[15] Adding this to the estimate of convertible cribs yields a total of approximately 1.6 million units (convertible cribs and toddler beds) sold per year that might be affected by the toddler bed standard.

Reason for Agency Action and Legal Basis for the Draft Final Rule

Section 104 of the CPSIA requires the CPSC to promulgate a mandatory standard for toddler beds that is substantially the same as, or more stringent than, the voluntary standard. CPSC staff is now recommending changes to the proposed rule. The first change would assure that the slat/spindle requirements are consistent with those for full-size cribs, a change that was supported by commenters. The second change would replace the test procedure for toddler bed guardrails with a revised procedure that staff believes is more consistent and covers possible designs that might not be covered sufficiently in the original test. This modified procedure was suggested in the notice of proposed rulemaking (NPR) comments. The third change would require different warning labels for toddler beds than the warning labels used for convertible cribs, which will harmonize the toddler bed standard with the full-size crib standard. The last change would remove an obsolete test procedure from the existing ASTM standard, as suggested

[8] U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, National Vital Statistics System, "Births: Final Data for 2008," *National Vital Statistics Reports* Volume 59, Number 1 (December 2010): 67 (Table I). Number of live births in 2008 is rounded from 4,247,694.

[9] Although there is some evidence that play yards are becoming a common substitute.

[10] The data collected for the *Baby Products Tracking Study* does not represent an unbiased statistical sample. The sample of 3,600 new and expectant mothers is drawn from American Baby magazine's mailing lists. Also, because the most recent survey information is from 2005, it may not reflect the current market.

[11] New mothers represent those who have given birth recently, as opposed to expectant mothers. Therefore, the application to annual births is appropriate.

[12] The data on secondhand products for new moms was not available. Instead, data for new moms and expectant moms was combined and broken into first-time mothers and experienced mothers. Data for first-time mothers and experienced mothers has been averaged to calculate the approximate percentage of cribs that were handed down or purchased secondhand.

[13] This assumes that all consumers without convertible cribs have nonconvertible cribs. This is likely an overestimate.

[14] These beds and rails may be purchased new, purchased secondhand, or borrowed.

[15] Any per-year estimate for toddler beds will be approximate because exactly when parents make such a purchase for their child is likely to vary.

by one commenter. ASTM has been working to eliminate this requirement in their next iteration of the toddler bed standard as well. CPSC staff believes that these requirements would provide greater consistency in testing.[16]

Compliance Requirements of the Draft Final Rule

CPSC staff recommends adopting the voluntary ASTM standard for toddler beds with several modifications. Key components of the current ASTM standard for toddler beds (F 1821–09) include:[17]

- Mattress retention—intended to control the horizontal position of the mattress and prevent torso entrapments, as well as assure that the mattress does not fall too far below the mattress support when used by a child of the maximum recommended weight (50 lbs);
- Mattress support systems—intended to prevent disengagement, which might result in a sharp edge or an opening in which a child might become entrapped;
- Mattress support systems attached to end structures—intended to assure that the mattress support system remains attached to the end structures and does not create a hazard, such as sharp edges or openings in which a child might become entrapped;
- Guardrails—intended to prevent openings in guardrails in which children might be trapped; and
- End structures—intended to prevent openings in end structures in which children might be trapped.

The voluntary standard also includes: (1) requirements for several features to prevent entrapment and cuts (minimum and maximum opening size, hazardous sharp points or edges, and edges that can scissor, shear, or pinch); (2) torque and tension tests to assure that components cannot be removed; (3) requirements for partially bounded openings; (4) marking and labeling requirements; (5) requirements for the permanency and adhesion of labels; (6) requirements for instructional literature; and (7) requirements to address corner post extensions, which may catch various children's items, such as clothing or pacifier strings, and pose a choking hazard.

As described below, CPSC staff recommends modifying the existing ASTM standard by revising the warnings, adding three new requirements, and removing one requirement:[18]

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[16] Memorandum from Jacob J. Miller, ESME, Directorate for Engineering Sciences, dated January 24, 2011, Subject: Staff Responses to Technical Comments on the Notice of Proposed Rulemaking for Toddler Beds, Section 104 of the Consumer Product Safety Improvement Act of 2008 (CPSIA).

[17] JPMA, *ASTM Standards listed in JPMA Directory*, http://www.jpma.org/pdfs/JPMA_Directory_Final2008.pdf.

[18] Memorandum from Jacob J. Miller, ESME, Directorate for Engineering Sciences, dated February 18, 2010, Subject: Proposed Changes to the ASTM Voluntary Standard for Toddler Beds, ASTM F 1821–09 for Incorporation in a Proposed Mandatory Standard, memorandum from Timothy P. Smith, Division of Human Factors, Directorate for Engineering Sciences, dated February 18, 2010, Subject: Warning Statements for Toddler Beds (CPSIA Section 104), memorandum from Jacob J. Miller, ESME, Directorate for Engineering Sciences, dated January 24, 2011, Subject: Staff Responses to Technical Comments on the Notice of Proposed Rulemaking for Toddler Beds, Section 104 of the Consumer Product Safety Improvement Act of 2008 (CPSIA), and memorandum from Timothy P. Smith, Division of Human Factors, Directorate for Engineering Sciences, dated February 9, 2011, Subject: Human Factors

- Addition to existing requirements:
    - Warnings—CPSC staff recommends requiring different warning labels for convertible cribs than the warning labels used for toddler beds. Essentially, in cases where the warning labels for full-size cribs are similar to those for toddler beds, convertible cribs should bear the warning for full-size cribs.[19] This will allow manufacturers and importers of convertible cribs to provide one warning rather than two for similar hazards.
- New requirements:
    - Structural integrity for guardrails—In addition to the existing test for guardrail openings, CPSC staff recommends adding a test for the overall stability of guardrails. This additional test is intended to prevent children from falling out of bed; it is also calculated to ensure that the guardrails remain intact when children lean against them or attempt to use them to climb into bed. While the CPSC included a guardrail structural integrity test in the proposed rule, staff recommends modifying the test methodology, as suggested by one commenter. The modified test procedure will allow a more consistent application of force, as well as accommodate additional guardrail designs.
    - Slat/spindle strength—CPSC staff recommends testing the slats and spindles in toddler bed guardrails, side rails, and end structures, as originally provided in the proposed rule. However, staff recommends modifying the proposed requirements to mirror those of the full-size crib rule passed recently by the Commission. This testing requirement is recommended by CPSC staff to ensure that toddler bed slats/spindles and their joints do not break and allow an opening in which a child could become entrapped. The recommendation to harmonize the requirements will provide manufacturers, particularly of convertible cribs, with consistency.
    - Guardrail height—CPSC staff continues to recommend that guardrails be a minimum height of 5 inches above the manufacturer's recommended sleeping surface. This is also intended to help prevent falls.
- Deleted requirement:
    - Mattress retention requirements—CPSC staff recommends removing the existing requirements from the ASTM standard as part of the draft final rule. Given the hazardous opening requirements in ASTM F 1821-09, the mattress retention requirements are now obsolete. ASTM has reached the same conclusion and is moving toward eliminating the requirements as well. This obviates the need for alternative entrapment hazard warnings that were in the proposed rule.

Staff recommends that the draft final rule require that toddler beds/convertible cribs entering commerce meet the new requirements within six months of publication of the final rule.[20] The rule would not be retroactive.

Staff Response to NPR Comments and Revised Requirements Associated with Warning Statements for Toddler Beds.

[19] An additional mattress size warning will also be required for convertible cribs.

[20] A shorter effective date would increase compliance costs for all firms.

The recommended slat/spindle strength requirement for guardrails, side rails, and end structures may help prevent incidents where slats break and children are either cut, fall through, or become entrapped. This modification of the current voluntary standard could potentially add significant costs to suppliers of toddler beds and convertible cribs. Preliminary testing indicates that some toddler beds and convertible cribs on the market would meet this requirement with no further modifications, while others would not.[21] Plastic toddler beds would be exempt from the slat/spindle strength requirement because they do not have slats/spindles. Therefore, it is believed that some products will require modification to meet the slat/spindle requirement. This is likely to affect at least a few firms.

Suppliers also may need to make product modifications to meet the new structural integrity and height requirements for guardrails. No testing has been performed so far that would indicate how many products currently on the market would meet these requirements, but casual observation suggests that at least some products will be able to meet the guardrail height requirements. It is possible for firms to eliminate guardrails from their products entirely as a way to address the requirements (guardrails are not a requirement). However, it is unreasonable to assume that all of the firms whose products may require modifications will take this approach. Therefore, it is expected that at least some products will require modifications to meet these guardrail requirements and that at least a few firms may be affected.

In meeting the slat/spindle strength and guardrail structural integrity requirements, it is possible that some firms may change the quality of materials used to make the slats/spindles and/or guardrails.[22] For wooden toddler beds/convertible cribs, switching to a stronger material is unlikely to exceed more than a few dollars per unit.[23] Plastic toddler beds/convertible cribs would not need to make modifications to comply with the slat/spindle testing requirement, although they might require modifications to meet the guardrail structural integrity requirement. Metal toddler beds/convertible cribs are less common than products made from wood or plastic, but it is not believed that material changes for either plastic or metal products would be substantially more expensive than for wooden products. Alternatively, firms could undertake product redevelopment to develop compliant toddler beds, which would likely be more expensive than using alternate materials. Therefore, it is likely that at least some would select the less expensive option.

Increasing the height of guardrails may prevent children from falling through them.[24] As discussed above, guardrails are not required to be included with toddler bed or convertible cribs; therefore, firms with noncompliant products have the option of eliminating guardrails entirely.

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[21] Based on discussions with Jacob J. Miller, Directorate for Engineering Sciences.

[22] Alternatively, they may increase the robustness of slat geometry or improve joint integrity (i.e., how the slats are attached to the side rails). Based on e-mail correspondence with Jacob J. Miller, Directorate for Engineering Sciences.

[23] For example, using white ash rather than western white pine improves average strength properties by an average of 74 percent (http://www.woodbin.com/ref/wood/strength_table.htm) while increasing price by an average of 26 percent (http://www.willardbrothers.net/ORDER%20FORM.htm) for a maximum of $1.55 more for the largest quantity listed. These cost differentials are based on raw lumber costs which would affect firms differently, depending upon how much wood was used in their particular product.

[24] Memorandum from Risana Chowdhury, EPI, Directorate for Epidemiology, dated January 28, 2010, Subject: Toddler Beds-Related Deaths, Injuries and Potential Injuries, and NEISS Injury Estimates; 2005–Present.

Alternatively, manufacturers could redesign their product (or the guardrail portion of their product) to make their guardrails higher. If the second option is selected, there likely will be some cost associated with product redevelopment, as well as some increased costs for additional materials.

Eliminating the mattress retention requirements is expected to reduce the impact of the draft final rule on toddler bed and convertible crib suppliers, because it will be one less test that suppliers are required to perform on their products. Similarly, the reduction in the number of warnings associated with deleting the mattress retention requirements and specifying different warning labels for convertible cribs will tend to reduce the impact of the draft final rule on suppliers.

Issues Raised by Public Comments

Public comments did not raise any issues in regard to the initial regulatory flexibility analysis. However, there were several public comments that resulted in modifications to the draft final standard. Other than a slight reduction in testing costs that would be associated with the elimination of the obsolete mattress retention requirements, none of the modifications affect the final regulatory flexibility analysis for toddler beds.[25]

Other Federal Rules

CPSC staff has not identified any federal or state rule that either overlaps or conflicts with the draft final rule.

Impact on Small Businesses

There are 73 firms known currently to be marketing toddler beds and/or convertible cribs in the United States. Six are large domestic manufacturers; one is a domestic manufacturer of unknown size; two are large domestic importers; and 12 are foreign firms. The impact on the remaining 52 small firms—34 small domestic manufacturers, 7 presumed to be small domestic manufacturers,[26] and 11 small domestic importers—is the focus of the remainder of this analysis.

[25] Memorandum from Jacob J. Miller, ESME, Directorate for Engineering Sciences, dated January 24, 2011, Subject: Staff Responses to Technical Comments on the Notice of Proposed Rulemaking for Toddler Beds, Section 104 of the Consumer Product Safety Improvement Act of 2008 (CPSIA).

[26] There are eight manufacturers of unknown size. A variety of evidence (including information from Dun & Bradstreet and ReferenceUSAGov, as well as firm websites) indicates that seven of these firms may be small. Assuming that these firms are small likely overestimates the impact of the staff-recommended rule on small businesses.

Small Domestic Manufacturers

For the most part, the impact of the draft final rule on small manufacturers will differ based on whether they currently are compliant with the voluntary ASTM standard. If they are not compliant, as is the case with 28 firms, the impact could be significant. These firms likely would have to undergo product redevelopment. As explained below, the cost of such an effort for toddler beds/convertible cribs is unknown but could be substantial for some firms.

Product development costs include product design, development and marketing staff time, product testing, and focus group expenses. These costs can be very high, particularly when there are multiple products[27]; but they can be treated as new product expenses and amortized over time. Other one-time costs include the retooling of manufacturing equipment, which could also be gradually recouped over the sales of numerous units. There also are expected to be increased costs of production. Producing toddler beds and convertible cribs that have greater structural integrity, stronger slats/spindles, and higher guardrails may require additional raw materials or possibly heavier materials. In addition to increasing the costs of production, this could increase the shipping costs as well.

Even if these firms are able to pass on some of their increased costs to consumers, the impact still could be considerable. This is because firms manufacturing toddler beds and convertible cribs are not simply competing against other producers of toddler beds and convertible cribs. They are competing against producers of substitute products as well, firms that would not be covered under the standard. Toddler beds must compete with twin (or possibly larger) beds, which can be used with portable guardrails. Similarly, convertible cribs must compete with adult-sized beds when children are older and with standard cribs for younger children.

There is expected to be less impact on the 13 firms that are known to make products that comply with the current voluntary standard. It is believed that at least some of these firms may be able to comply with the new requirements without product modifications (except for labeling).[28] The remaining firms may opt to redesign their product(s) as well, which again would result in some one-time costs, as well as a possible increase in production costs. It is also possible, however, that they may be able to select a potentially less expensive option to address some of the recommended requirements; a modification in the materials used may be sufficient for many products, and the associated cost is not expected to exceed a few dollars per unit.[29]

Two of the 28 manufacturers supplying noncompliant products would be affected differently by the draft final standard. They are firms that take already-manufactured toddler beds and convertible cribs, decorate them (often with original artwork), and sell them as a final product. Because these firms do not make the underlying toddler beds/convertible cribs, the impact of the draft final standard will be the same as that of an importer. They would need to find a new

[27] Although there may be some economies of scale for many of these development stages, thereby reducing the marginal costs for each new product under redevelopment.

[28] Preliminary testing is minimal at present. However, at least some products are able to meet the slat/spindle testing requirements, and some appear compliant with the guardrail height requirements. Based on discussions with Jacob J. Miller, Directorate for Engineering Sciences.

[29] This estimate is based on comparing the relative strength of various woods to their prices. See footnote 23 above for an example.

supplier of compliant products if their current supplier does not make the necessary modifications. The new products presumably would be higher quality, as well as more expensive, because some of the original manufacturer's production costs (and possibly redevelopment costs) will be passed on to these firms.

The scenario described above assumes that only those firms that are JPMA-certified or claim ASTM compliance will pass the voluntary standard's requirements. This is not necessarily the case. CPSC staff has identified many cases where products not certified by JPMA are actually compliant with the relevant ASTM standard; however, there is insufficient evidence of this for toddler beds/convertible cribs to quantify this impact.

Small Domestic Importers

The majority of small domestic importers supply products that are compliant with the current voluntary standard (6 out of 11). It is believed that at least some of these firms will not need to make any additional product modifications to meet the draft final standard (except for labeling). However, those whose products do require modifications will need to find an alternate supplier if their existing one does not come into compliance. The new products presumably will be more expensive, as well as higher in quality. However, the actual price increase is unknown and is likely to vary based upon the degree of modifications required. All of the remaining five firms supplying products not in compliance with the ASTM voluntary standard would need to find suppliers compliant with the standard or assure that their current supplier made the modifications necessary to comply. Depending on the degree to which their toddler beds and convertible cribs are out of compliance with the voluntary standard, the price increase (as well as the increases in quality and safety) could be relatively high. To the extent that some of these firms actually may comply with ASTM F 1821-09 or one or more of the new/modified requirements in the staff-recommended final standard, the impact of the draft final rule would be lower.

For the most part, the impact on importers tends to be smaller than on manufacturers. Even if importers responded to the rule by discontinuing the import of their noncomplying toddler beds and convertible cribs, either replacing them with a complying product or another juvenile product, deciding to import an alternative product would be a reasonable and realistic way to offset any lost revenue. The one exception would be firms for which convertible cribs/toddler beds and their associated products (*i.e.*, matching furniture) form the core of their product line. For these firms, a substantial price increase possibly could drive them out of business or require them to rebuild their business based on alternative products.

Alternatives

Under section 104 of the CPSIA, the primary alternative that would reduce the impact on small entities is to make the voluntary standard mandatory with no modifications. For small domestic manufacturers that already meet the requirements of the voluntary standard, adopting the standard without modifications may reduce their costs relative to the draft final standard, but only marginally. Similarly, limiting the requirements of the standard to those already in the voluntary standard probably would have little beneficial impact on small manufacturers that do

not currently meet the requirements of the voluntary standard. This is because, for these firms, most of the cost increases would be associated with meeting the requirements of the current voluntary standard, rather than the changes associated with the draft final standard. The difference for importers, whether compliant with the voluntary standard or not, also is likely to be minimal.

A second alternative would be to set an effective date later than the staff-recommended six months. This would allow suppliers additional time to modify and/or develop compliant toddler beds and convertible cribs, thereby spreading the associated costs over a longer period of time.

Conclusion

It is possible that the draft final standard could have a significant impact on a substantial number of small entities.[30] Firms supplying products already compliant with the voluntary standard may not need to make any product modifications to meet the draft final standard, but this is known to apply to only 42 percent of the small firms identified. Some of these firms and all other firms will need to make at least some modifications to their toddler beds and convertible cribs to comply with the recommended final standard. The extent of these costs is unknown; but because product redevelopment likely would be necessary in many cases, it is possible that the costs could be large and have the potential to reduce firms' ability to compete with substitute products.

A few small businesses have product lines consisting entirely or primarily of toddler beds, convertible cribs, and related products (such as accompanying furniture).[31] These firms may be affected disproportionately by any standard. If the cost of developing (or importing) a compliant product proves to be a barrier for these firms, the loss of toddler beds and convertible cribs as a product category could be significant and may not be mitigated easily by the sale of other juvenile products.

[30] Even if *all* the small firms that supply JPMA-certified products did not require any additional changes to comply with the proposed standard, there would still be 63 percent (33 out of 52 firms) that would probably need to undergo product redevelopment to comply. This would typically need to be done for multiple products. To the extent that some of the products not certified by JPMA may still comply, the impact will be reduced.

[31] There are five firms that seem to be entirely dependent on these products as the core of their product lines with an additional fourteen firms that are primarily dependent upon these products. For the latter, however, it should be noted that a few firms also produce some non-convertible cribs and may, therefore, be able to adjust their product lines to use non-convertible cribs exclusively.

TAB G: Draft Federal Register Notice

TAB G

DRAFT 3-22-11

[Billing Code 6355-01-P]

CONSUMER PRODUCT SAFETY COMMISSION

16 CFR Part 1217

RIN 3041-AC79

Safety Standard for Toddler Beds

AGENCY: Consumer Product Safety Commission.

ACTION: Final rule.

SUMMARY: Section 104(b) of the Consumer Product Safety Improvement Act of 2008 ("CPSIA") requires the United States Consumer Product Safety Commission ("Commission," "CPSC") to promulgate consumer product safety standards for durable infant or toddler products. These standards are to be "substantially the same as" applicable voluntary standards or more stringent than the voluntary standard if the Commission concludes that more stringent requirements would further reduce the risk of injury associated with the product. The Commission is issuing a safety standard for toddler beds in response to the direction under section 104(b) of the CPSIA.[1] The safety standard addresses entrapment in bed end structures, entrapment between the guardrail and side rail, entrapment in the mattress support system, and component failures of the bed support system and guardrails. The standard also addresses corner post extensions that can catch items worn by a child.

DATES: The rule will become effective on [**insert date 6 months after date of publication in the FEDERAL REGISTER**] and apply to products manufactured or imported on or after that date. The incorporation by reference of the publications listed in

[1] Insert info here about Commission vote and/or Commissioners' statements if necessary.

this rule are approved by the Director of the Federal Register as of [**insert date 6 months after date of publication in the FEDERAL REGISTER**].

FOR FURTHER INFORMATION CONTACT: Troy Whitfield, Office of Compliance and Field Operations, Consumer Product Safety Commission, Bethesda, MD 20814-4408; telephone (301) 504-7548; twhitfield@cpsc.gov.

SUPPLEMENTARY INFORMATION:

A. Background: Section 104(b) of the Consumer Product Safety Improvement Act

The Consumer Product Safety Improvement Act of 2008 ("CPSIA", Pub. Law 110-314) was enacted on August 14, 2008. Section 104(b) of the CPSIA requires the Commission to promulgate consumer product safety standards for durable infant or toddler products. The law requires that these standards are to be "substantially the same as" applicable voluntary standards or more stringent than the voluntary standards if the Commission concludes that more stringent requirements would further reduce the risk of injury associated with the product. The term "durable infant or toddler product" is defined in section 104(f) of the CPSIA as a durable product intended for use, or that may be reasonably expected to be used, by children under the age of 5 years. Toddler beds are one of the products specifically identified in section 104(f)(2) of the CPSIA as a durable infant or toddler product.

In this document, the Commission is issuing a safety standard for toddler beds. The standard is largely the same as a voluntary standard developed by ASTM International (formerly the American Society for Testing and Materials), ASTM F 1821 – 09, *Standard Consumer Safety Specification for Toddler Beds*, but with several modifications that strengthen the standard.

In the **Federal Register** of April 28, 2010, the Commission published a notice of proposed rulemaking that proposed to incorporate by reference ASTM F 1821 – 09, *Standard Consumer Safety Specification for Toddler Beds*, with several modifications. 75 FR 22291. The final rule is very similar to the proposed rule. We summarize the proposed rule in section F of this preamble and discuss the final rule (including differences between the proposal and the final rule) in section G of this preamble. The information discussed in this preamble comes from CPSC staff's briefing package for the toddler bed final rule, which is available on the CPSC's website at [**INSERT WEBSITE LINK**].

B. The Product

The ASTM voluntary standard defines a toddler bed as any bed sized to accommodate a full-size crib mattress having minimum dimensions of 51 ⅝ inches in length and 27 ¼ inches in width and that is intended to provide free access and egress to a child not less than 15 months of age and weighing no more than 50 pounds. The standard includes cribs that can be converted into a toddler bed using a full-size crib mattress.

CPSC staff estimates that there are currently at least 73 known manufacturers or importers supplying toddler beds and/or convertible cribs to the U.S. market. Approximately 48 suppliers are domestic manufacturers (66 percent); 13 are domestic importers (18 percent); 11 are foreign manufacturers (15 percent); and the remaining firm is a foreign supplier that imports from other countries and exports to the United States.

Based on information from a 2005 survey conducted by the American Baby Group, CPSC staff estimates annual convertible crib sales to number about 776,000 and annual sales of toddler beds to total about 819,000. Thus, a total of approximately 1.6

million units (convertible cribs and toddler beds) sold per year might be affected by the toddler bed standard.

C. Incident Data

The preamble to the proposed rule summarized the data for incidents related to toddler beds for the period 2005 to 2009. During this period of time, CPSC staff is aware of 4 fatalities and 81 nonfatal incidents (with and without injuries) related to toddler beds. The data were drawn from two databases: (1) actual injuries and fatalities of which the Commission is aware; and (2) estimates derived from reports of emergency room treatment in a statistical sample of hospitals that makes up the National Electronic Injury Surveillance System ("NEISS"). More information concerning those incidents is provided in the preamble to the proposed rule. 75 FR 22292 (April 28, 2010).

While preparing the final rule, CPSC staff conducted a new search of CPSC's epidemiological databases and found that 41 toddler bed-related incidents were reported between June 23, 2009 and December 12, 2010. None of these were fatalities. Seventeen incidents reported an injury (primarily bumps, bruises, sprains, and lacerations). One report was of a child nearly choking on loose hardware; another report was of a child suffering a dental injury from falling on the bed; and another report was of a possible case of lead poisoning of a child from chewing paint on the toddler bed. While most of these injuries did not require any major medical intervention, one child was hospitalized for a fractured limb.

In 31 of the 41 incidents, the age of the child was reported. In four of those incidents, a child younger than 15 months was involved. The majority of the incidents (17 out of 31) reported the child's age to be between 17 months and 2 years old. It was

not always clear, however, that the age reported pertained to the child who was the regular user of the toddler bed. Occasionally, an incident report stated specifically that the injured child was playing on a sibling's toddler bed; a few others reported that the injured child was playing or climbing on a toddler bed. This indicates that the reported victim's age was not always the age of the regular user of the bed.

Among the 41 incident reports, the following hazards were identified:

- Broken, loose, or detached components of the bed, such as the guardrail, hardware, or other accessories (14 incidents, 3 of which involved injuries);
- Entrapment, mostly of a limb (10 incidents, 8 of which resulted in injuries ranging from fractures and sprains to bruises);
- Product integrity issues, mostly the integrity of the mattress support (4 incidents, 1 of which also reported a finger injury to the child);
- Inadequate mattress fit issues (3 incidents, no injuries);
- Miscellaneous issues, such as a sharp surface, lead paint, bed height/clearance, guardrail inadequacy, and bed accessory involvement (9 reports, 4 of which reported associated injuries).

CPSC staff reviewed data from NEISS for injuries related to toddler beds for 2009 and 2010. A total of 32 such injuries, and no deaths, were reported through NEISS from January 1, 2009 through December 12, 2010. (The number of reported incidents was too small for NEISS to publish national injury estimates for injuries related to toddler beds.) The most frequent characteristics of the 32 toddler bed-related injuries reported through NEISS were:

- Hazard: falls out of the toddler bed to a lower level (78%);

- Injured body part: head and face (59%) and limbs (25%);
- Injury type: head injury (31%) and fractures (22%); and
- Disposition: treated and released (97%).

About 9 percent of the patients were reported to be younger than 15 months old, while about 69 percent were reported to be between 17 months and 2 years old. As was the case for incident data reported through sources other than NEISS, it was not always clear whether the patient injured was the usual user of the toddler bed.

D. The ASTM Voluntary Standard

ASTM F 1821, *Standard Consumer Safety Specification for Toddler Beds,* was first approved in 1997, and revised in 2003 and 2006. The current version, ASTM F 1821 - 09, was approved on April 1, 2009, and published in May 2009. ASTM has been working on revisions to the standard, but has not approved a subsequent version as of the date of this final rule.

Requirements in the ASTM F 1821 – 09 Standard for toddler beds include:

- Toddler beds must comply with the CPSC's regulations at 16 CFR part 1303 (ban of lead in paint); 1500.48 (sharp points); 1500.49 (sharp edges); 1500.50 through 1500.53 (use and abuse tests); and part 1501 (small parts that present choking, aspiration, or ingestion hazards), both before and after the product is tested according to the standard.
- Toddler beds must not present scissoring, shearing, or pinching hazards.
- Openings must meet specified dimensions to prevent finger entrapment.
- Openings that will permit passage of a specified block with a wedge on one end are prohibited to protect against torso entrapment.

- The distance that corner posts may extend above the upper edge of an end or side panel is limited.
- Protective components must not be removable with a specified force after torque and tension tests.
- There are requirements for marking and labeling each bed and its retail carton and for warning statements on the bed. There are requirements for the permanency of labels and warnings.
- The mattress must be supported and contained so that it does not move horizontally to cause an opening that will allow the passage of the wedge block when tested.
- There are tests for the physical integrity of the mattress support system and its attachments and the side rails.
- There are wedge block tests for openings in the guardrails and end structures to test whether they could cause entrapment.
- There is a probe test to protect against entrapment in partially bounded openings in the bed.
- Instructions must be provided with the bed.
- Warning statements are required on the bed to address entrapment and strangulation hazards.

E. Response to Comments on the Proposed Rule

In the **Federal Register** of April 28, 2010, we published a proposed rule for toddler beds (75 FR 22291). We received 13 comments on the proposed rule. Four of the comments stated general support for the proposed rule, with minor changes in wording to

emphasize the hazard. The other nine comments raised specific issues that are addressed by topic below.

We describe and respond to the comments in section E of this document and also describe the final rule. To make it easier to identify the comments and our responses, the word "Comment," in parentheses, will appear before the comment's description, and the word "Response," in parentheses, will appear before our response. We also have numbered each comment to help distinguish between different comments. The number assigned to each comment is purely for organizational purposes and does not signify the comment's value, or importance, or the order in which it was received.

1. Guardrail Designs

(Comment 1) - One commenter addressed guardrail designs for toddler beds. The commenter suggested that replacing spindles on the toddler bed guardrails with a full piece of wood or material would decrease the risk of children getting a body part entrapped in the guardrail.

(Response 1) - We acknowledge that currently, some manufacturers use solid panel guardrails on their toddler beds. However, mandating that all guardrails be solid panels may limit the utility of converting some types of cribs to toddler beds. Although limb entrapments might be reduced if guardrails were limited to solid panels, the incident data reported in the preamble to the proposed rule (75 FR at 22292) indicate that only three of the reported injuries involving entrapment between slats were fractures of limbs, and the majority of the injuries were bumps and bruises. Only one fracture directly involved a guardrail. This occurred when the occupant fell from the bed after the occupant's leg became entrapped in the guardrail slats. The other two fractures involved

entrapment between slats located on the headboard and footboard. Therefore, we encourage manufacturers to consider solid panel guardrails, but decline to make this a requirement in the final rule.

2. Guardrail Height

(Comment 2) - One commenter disagreed with the guardrail height specified in the proposed rule. (The proposed rule stated that the guardrail height must be 5 inches above the top of the mattress.) The commenter suggested specifying that the guardrail must be 9 inches above the mattress support.

(Response 2) - We disagree with a guardrail height of 9 inches above the mattress support. Because the majority of full-size crib mattresses are approximately 6 inches thick, a guardrail height of 9 inches above the mattress support would provide a barrier of only 3 inches approximately, which is not sufficient to prevent children from rolling/falling off the bed. Similarly, guardrails on bunk beds are intended to prevent children from rolling/falling off the bed. ASTM F 1427 - 07, *Standard Consumer Safety Specification for Bunk Beds*, requires a 5-inch barrier above the top of the mattress to prevent a sleeping child from rolling and falling off the bed. Therefore, the final rule does not change the proposed guardrail height provision.

3. Guardrail Structural Integrity Testing

(Comment 3) - One commenter disagreed with the proposed test methodology for guardrail structural integrity. The commenter suggested: (1) testing at the most onerous point instead of at three locations; (2) specifying the contact area of the force and how far from the top of the rail this force should be applied; and (3) specifying the height of the

bed rail or measuring from the mattress support platform so the measurement will be consistent.

(*Response 3)* - We agree with the commenter's suggested test methodology for applying the test force to the guardrail. The language in the proposed rule was adopted from the portable bed rail structural integrity test, as stated in section 8.1 of ASTM F 2085 - 09, *Standard Consumer Safety Specification for Portable Bed Rails*. After the proposed rule had been published, an ASTM task group developed the alternative language that the commenter suggests. This suggested language is more applicable to the typical geometry of toddler bed guardrails as opposed to portable bed rails. For example, the proposed rule would require applying a horizontal force at three points along the uppermost horizontal edge of the rail (*i.e*., in the center of the upper rail and on the sides of the rail directly above each of the outermost legs). The majority of toddler bed guardrails only have one outermost leg or free end. The other end of a toddler bed guardrail typically is secured to a corner post attaching the headboard to the guardrail. Each of the guardrail failure incidents that have been reported involved a guardrail detaching or fracturing at the corner post attachment point. We agree with the commenter that applying a single force above the rail's free end is more onerous than the proposed test and exerts the greatest force on the guardrail's attachment points. Furthermore, the commenter's suggestion provides improved test repeatability by specifying a procedural method for applying the test force to a guardrail free end with a significantly contoured geometry. The final rule uses the language suggested by the commenter instead of the proposed wording for the guardrail structural integrity test (§ 1217.2(c)(5)(i)).

(*Comment 4)* - Another commenter stated that there was not sufficient justification for the proposed 50-pound force requirement and suggested a 40-pound force instead. The commenter stated that the incident data only refers to two injuries from broken components and that the incidents do not mention that guardrails were involved. The commenter further stated that only a fraction of a 50-pound force would be used by a sleeping child inadvertently rolling off the bed, and that a child pulling on the guardrail from outside of the bed in play would tip most toddler beds over before reaching the proposed 50-pound force.

The commenter also requested an exemption for removable guardrails or guardrails that could be removed without the use of tools.

(*Response 4)* - We disagree with replacing the 50-pound force requirement with a 40-pound force requirement and disagree with the commenter's claim that there have not been any incidents involving a guardrail breaking or detaching from a toddler bed. In one reported incident, the occupant fell to the floor and received a bruise and laceration to the head. We also disagree with the commenter that 50 pounds is an excessive amount of force. We have received several detailed reports of children climbing on, or leaning against, guardrails, which resulted in subsequent structural failure of the guardrail or its means of attachment.

We tested several different makes and models of toddler beds to the 50-pound force requirement, incorporating the commenter's suggested test methodology and applying the test force 11 inches above the top of the mattress support. We used the guardrail structural integrity test suggested by the commenter and the language in the proposed rule to test five toddler beds: two plastic and three wooden beds. Two of the

five toddler beds chosen for testing had been involved in incidents where the guardrail detached or broke when the occupant leaned on the guardrail. The guardrails on all five toddler beds successfully withstood the application of 40 pounds (the force suggested by the commenter). Conversely, when performing the test as stated in the proposed rule, only the guardrails on the three toddler beds that had not been involved in incidents were able to withstand application of the 50-pound force. The guardrail on one toddler bed that had been involved in an incident broke at one of its attachment points at approximately 42 pounds. The guardrail of the other bed that had been involved in an incident withstood the initial application of 50 pounds, but detached from the toddler bed within the first 3 seconds after maintaining 50 pounds. Based on this testing, we concluded that the 50-pound force is appropriate and adequate to identify guardrails that could be susceptible to detachment. The final rule retains the 50-pound force requirement.

Finally, we disagree with exempting removable guardrails from the guardrail structural integrity test. A guardrail should be attached to a toddler bed with sufficient means to provide substantial rigidity. Guardrails that would require only the consumer's strength to install would be susceptible to the foreseeable forces that a toddler could apply to the guardrail. Such a guardrail would not be sufficient to protect a child.

4. Spindle/Slat Strength of Guardrails, Side Rails, and End Structures

(Comment 5) - Two comments addressed the testing requirements for the spindles/slats. One commenter suggested that language in the toddler bed standard regarding slat strength should match the language in the CPSC's new crib standards. A second commenter agreed with the proposal to test 25 percent of slats at 80 pound-force,

but questioned the rationale for testing the remaining 75 percent of slats at 60 pound-force.

(Response 5) - We agree that the toddler bed spindle/slat strength test should be consistent with the full-size and non-full-size crib spindle/slat strength requirements in ASTM F 1169 - 10 and ASTM F 406-10a, respectively, referenced in the recently published mandatory requirements, 75 FR 81766 (Dec. 28, 2010), to be codified at 16 CFR part 1219 and 16 CFR part 1220, respectively. This will harmonize the spindle/slat strength requirements for cribs and toddler beds and provide consistency and clarity because many toddler beds are converted from cribs, and many toddler bed manufacturers also manufacture cribs. Therefore, the final rule modifies the spindle/slat strength test language to reflect the changes made in the full-size and non-full-size crib standards. Changing the spindle/slat strength requirement to be consistent with the requirement in the crib standard means that no slats would be tested at 60 pound-force (the crib standard requires testing 25 percent of slats at 80 pound-force and then another 25 percent of slats at 80 pound-force if needed, with no more than 50 percent of the slats tested).

5. Mattress Retention and Warning

(Comment 6) - One commenter requested that the mattress retention requirements, corresponding tests, and related warning labels be removed from the standard because they are now obsolete.

(Response 6) - We agree with the commenter that the mattress retention sections 6.1, 6.1.1, 6.1.2, test method section 7.1, and warning section 8.4.4.2, as identified in ASTM F 1821 - 09 and referenced in the proposed rule, are obsolete. Accordingly, we

have removed those sections from the final rule. The original intent of these sections was to ensure that the mattress did not horizontally or vertically dislocate enough to allow a child access to potentially dangerous mattress support openings, which could entrap a child's torso or head, possibly resulting in a fatality. The current ASTM standard, ASTM F 1821 -09, includes provisions to reduce entrapment hazards by testing for hazardous openings, not only in the mattress support system, but also in the bed's guardrails and end structures, including the headboard, footboard, and any point where these components could be joined. These requirements are more stringent than the mattress retention requirements, making the mattress retention provisions unnecessary. Accordingly, we have eliminated these requirements from the final rule.

6. Warning Labels

(Comment 7) - Two commenters recommended that the full-size crib and toddler bed standards be harmonized with respect to the required warnings because many full-size cribs convert into toddler beds and, therefore, would require the warnings specified in both standards. The commenters argued that such harmonization would eliminate redundant warning statements, making the warnings more effective. One of these commenters suggested that specifying the content, but not the exact wording of the required warnings in the proposed toddler bed rule, would be one method of harmonizing these standards.

(Response 7) - We agree that failing to harmonize warnings in the toddler bed rule and in the full-size crib standard could introduce redundant and extraneous warnings on convertible cribs, and that this might diminish the effectiveness of the warnings. For example, the strangulation warning requirements for toddler beds specified in the

proposed rule are redundant with the strangulation warning requirements specified in section 8.4.1.2 of ASTM F 1169 – 10, *Standard Consumer Safety Specification for Full-Size Baby Cribs*. Additionally, the entrapment warning requirements for toddler beds specified in the proposed rule do not apply to full-size cribs that might convert to a toddler bed. Thus, we have revised the final rule's entrapment and strangulation warning requirements for toddler beds to apply only to toddler beds that do not convert from a crib. Toddler beds that convert from a crib must use the warnings specified in ASTM F 1169 – 10, incorporated by reference at 16 CFR part 1219, *Safety Standard for Full-Size Baby Cribs*, with additional text that specifies the minimum mattress thickness, as detailed below.

The proposed rule for toddler beds, shortened the warning for the minimum mattress size that appears in section 8.4.4.1 of ASTM F 1821 – 09 to state: "ONLY use full-size crib mattress of the recommended size," based on our understanding that section 8.3.2 of that standard already required both the bed and its retail carton to be clearly and legibly marked with the intended mattress size (75 FR at 22294 through 22295). Since then, we have discovered that section 8.3.2 of ASTM F 1821 – 09 only requires the retail carton to be marked with the intended mattress size. Given this, we believe that it would be reasonable to maintain a mattress size warning similar to that specified in section 8.4.4.1 of ASTM F 1821 – 09 in the final rule. Section 8.1.3 of the full-size crib standard, ASTM F 1169–10, specifies the exact wording of a warning statement regarding the intended mattress size. The language used in this warning is very similar to the warning content specified in 8.4.4.1 of ASTM F 1821–09.

Therefore, the final rule provides the following mattress size warning requirement:

> ⚠CAUTION
> Any mattress used in this bed must be a full-size crib mattress at least 51 ⅝ in. (1310 mm) in length, 27 ¼ in. (690 mm) in width, and 4 in. (100 mm) in thickness.

Because full-size cribs that convert to toddler beds require the exact warning statement specified in section 8.1.3 of the full-size crib standard, ASTM F 1169 – 10, requiring the warning statement on all toddler beds would mean that convertible cribs would need two warning statements about mattress size that are largely redundant. Thus, as in the case of the entrapment and strangulation warnings, the final rule provides that the warning requirement for mattress size for toddler beds apply only to toddler beds that do not convert from a crib. To address the fact that the full-size crib standard specifies a maximum mattress thickness of 6 inches, but the toddler bed standard specifies a minimum mattress thickness of 4 inches, the final rule provides that toddler beds that convert from a crib must include additional text indicating that a minimum mattress thickness of 4 inches is required. This language would be included at the end of the warning statement specified in section 8.1.3 of the full-size crib standard, ASTM F 1169 – 10.

(Comment 8) - One commenter generally supported the proposed warning requirements but suggested that the statement, *"ALWAYS follow assembly instructions,"* is not useful on the product itself. The commenter suggested that it would be more appropriate for this statement to be located on the packaging and at the top of the assembly instructions.

(Response 8) - We disagree with the commenter's assessment and believe that locating this warning statement on the product would be more beneficial than locating it either on the packaging or at the top of the assembly instructions. Generally, a warning should be located where the consumer is likely to be looking when the warning is needed. The warning is intended to alert consumers of the need to follow the assembly instructions, and the target audience for the message would be consumers who otherwise would not follow such instructions. For this reason, a warning located at the top of the assembly instructions is unlikely to be noticed or read by those who need the information most. A warning located on the product itself, however, is more likely to be noticed by these consumers because all consumers must interact with the product to assemble it, even if they do not examine the assembly instructions or product packaging beforehand. The final rule does not make any changes related to the placement of this warning statement.

(Comment 9) - One commenter suggested that the warning statement specified in section 8.4.4.2 of ASTM F 1821 - 09 and referenced in the preamble to the proposed rule (75 FR at 22294), concerning the use of a guardrail as a means of containing the mattress, should be removed from the final rule. The commenter asserted that the warning statement, as well as the mattress retention requirements on which the warning statement is based (specified in sections 6.1, 6.1.1, and 6.1.2), are now obsolete.

(Response 9) - We agree that the warning requirement regarding the use of a guardrail to contain the mattress is obsolete. The proposed rule would specify two alternative entrapment warnings because of the requirement of a warning about guardrail

use. Therefore, removing this obsolete warning statement about guardrail use eliminates the need for two alternative warning labels that address the entrapment hazard.

7. Legal Authority

(Comment 10) - A commenter objected to incorporating the ASTM standard by reference into the published regulation, arguing that the law requires that the terms of legal requirements must be freely available to the public, citing *Banks v. Manchester,* 128 U.S. 244, 9 S. Ct. 36, 40 (1888). The commenter also cited *Veeck v. Southern Building Code Congress International, Inc. ("SBCCI"),* 293 F.3d 791 (5th Cir. 2002).

(Response 10) - The cases to which the commenter refers do not apply to the rules issued under section 104 of the CPSIA. In *Banks,* the court held that a reporter authorized by the State of Ohio to publish the state's judicial opinions was not authorized by federal law to obtain a copyright on the opinions because he was not the author of those opinions. That is not an issue here where ASTM already has copyright protection for its standards. In the *Veeck* case, Veeck posted the local building codes of two Texas towns on his website. The text of the building codes was created and copyrighted by a building code organization and was adopted by the towns as law. The court stated: "As *law,* the model codes enter the public domain and are not subject to the copyright holder's exclusive prerogatives. As model codes, however, the organization's works retain their protected status." *Id.* at 793 (emphasis in the original).

The building code organization had encouraged local government entities to adopt its code into law without any cost to the government entity. *Id.* at 794. In contrast, ASTM has not given its permission for the CPSC to adopt its standards. Thus, the cases cited by the commenter do not require us to publish the copyrighted ASTM standard in

the Code of Federal Regulations. Because the U.S. government is not immune from suit for copyright infringement, *see Schnapper v. Foley*, 667 F.2d 102 (D.C. Cir. 1981, *cert. denied*, 102 S. Ct. 1448, the CPSC could be subject to a legal challenge if it copied the ASTM standard and published it in the *Federal Register* without permission from ASTM.

8. Validity of Data

(Comment 11) - One commenter observed that the majority of the incident data concerning fatalities involved children who were less than 15 months old (*i.e.*, the intended minimum age for toddler beds) or involved a cord that was a strangulation risk. The commenter noted that the preamble to the proposed rule had acknowledged this, but the commenter expressed concern that CPSC staff appeared to be "inflating the number of incidents and that data cited as 'related to' or 'associated with' are insufficient to rely upon in the absence of data and analysis that establishes that the products proximately caused the incident or injury complained of."

A second commenter expressed concern that although the current standard is intended to address children "not less than 15 months and weighing no more than 50 pounds," the "National Injury Estimates reported in the NPR identified victims between 4 months and 6 years." The commenter believed that this difference could affect the basis for the standard.

(Response 11) - The commenters misinterpret the discussion of incident data in the preamble to the proposed rule. The discussion was intended to provide an overall view of problems associated with toddler beds that are reported to the CPSC. The discussion of the four fatalities noted that three of the decedents were under the age intended for use of the product and explained that the product involvement in the fourth

fatality was incidental. The "National Injury Estimates" are used to identify the injuries associated with toddler beds; they are not used to change the age/weight designations in the standard. Age requirements for users and placement of toddler beds in relation to window cords are addressed in the warning labels specified in the current voluntary standard; therefore, these issues are relevant in evaluating the voluntary standard. In addition, the discussion in the proposed rule used appropriate qualifying statements (such as "associated with" and "related to"). These statements are intended to qualify the types of incidents reported to the CPSC and do not "inflate" the data. This approach reflects the statutory directive of section 104 of the CPSIA to issue a consumer product safety standard for toddler beds that is substantially the same as, or more stringent than, the voluntary standard. The portions of the final rule that are more stringent than the ASTM standard are based upon human factors and engineering analyses, which concluded that the more stringent provisions would reduce further the identified risks of injury associated with toddler beds.

F. Summary of Commission-Proposed Modifications

When the Commission issued its notice of proposed rulemaking in April 2010, the Commission proposed incorporating by reference ASTM F 1821 - 09, *Standard Consumer Safety Specification for Toddler Beds*, with four modifications that are described below.

The Commission proposed that guardrails be a minimum height of 5 inches above the manufacturer's recommended sleeping surface. This requirement was intended to help prevent falls from the bed.

The Commission proposed to add a test for the overall stability of guardrails. The proposed test requires applying a 50-pound force to the center along the length of the guardrail and directly over each of the outermost legs of the guardrail. The test was intended to keep children from falling out of bed and to ensure that guardrails remain intact when children lean against them or use them to climb into bed. The basis for selecting a 50-pound force was that 50 pounds is the maximum weight of a child intended to use a toddler bed.

The Commission proposed modifying the ASTM standard's test for spindles/slats on guardrails, side rails, and end structures. ASTM F 1821 - 09 uses a torso wedge and a 25-pound force on guardrails and end structures in the most adverse orientation to ensure that slats and spindles do not break and allow an opening in which a child could become entrapped. The Commission proposed modifying this provision to test 25 percent of all slats (rather than just those on the end structure and guardrails) using an 80-pound force. The 80-pound force was selected based on tests that CPSC staff performed on 20 cribs or toddler beds. (Details of this testing are provided in the preamble to the proposed rule, 75 FR 22293 (April 28, 2010).) The Commission proposed that the remaining 75 percent of slats be tested with a 60-pound force.

The Commission also proposed changes to the warning requirements in ASTM F 1821 - 09. The Commission proposed: (1) changing the warning specified in 8.4.3 of ASTM F 1821 - 09 to separate this into two warnings, one for entrapment and one for strangulation; (2) providing two options for entrapment warnings: one for beds where the guardrail is the means of mattress containment and one where the guardrail is not; and (3) removing provisions in 8.4.4 of ASTM F 1821 - 09 concerning warning statements

addressing issues (but not specifying wording and layout) because these warnings would be redundant and unclear with the warnings the Commission proposed to specify.

G. Assessment of the Voluntary Standard and Description of the Final Rule

1. Section 104(b) of the CPSIA: Consultation and CPSC Staff Review

Section 104(b) of the CPSIA requires the Commission to assess the effectiveness of the voluntary standard in consultation with representatives of consumer groups, juvenile product manufacturers, and other experts. This consultation process for the toddler bed standard began in late 2009, before we published the proposed rule. Our consultations with ASTM are ongoing.

2. Description of the Final Rule, Including Changes to the ASTM Standard's Requirements

While most requirements of ASTM F 1821 - 09 are sufficient to reduce the risk of injury posed by toddler beds, we have determined that modifying or adding several provisions to the standard will make the requirements more stringent and further reduce the risk of injury. The following discussion describes the final rule, including changes to the ASTM requirements, and notes any changes from the proposed rule.

a. Scope, Application, and Effective Date (§ 1217.1)

The final rule states that part 1217 establishes a consumer product safety standard for toddler beds manufactured or imported on or after a date which would be six months after the date of publication of a final rule in the **Federal Register**. We received no comments on this provision and are finalizing it without change.

b. Incorporation by Reference (§ 1217.2(a) and (b))

Section 1217.2(a) provides language to incorporate by reference ASTM F 1821 - 09, "*Standard Consumer Safety Specification for Toddler Beds*." The standard also incorporates by reference the labeling requirements in section 8 of ASTM's full-size crib standard (ASTM F 1169 - 10, "*Standard Consumer Safety Specification for Full-Size Baby Cribs*) because CPSC's toddler bed standard requires toddler beds that convert from cribs to comply with the labeling requirements in the ASTM crib standard. Section 1217.2(a) also provides information on how to obtain a copy of the ASTM standards or to inspect a copy of the standards at the CPSC.

We received no comments on this provision. We are changing it to include the language necessary to incorporate by reference the labeling provisions of the ASTM crib standard.

c. Mattress Retention Provisions (§ 1217.2(c)(1), (4), and (6))

The final rule removes provisions concerning mattress retention (in the ASTM standard, these are performance provisions in sections 6.1 through 6.1.2; test method provisions in sections 7.1.2 through 7.1.6; warning provision in section 8.4.4.2). As explained in response to a comment in section E.5 of this preamble, the mattress retention provisions are no longer necessary because of other changes in the standard that better address entrapment protection, which was the purpose of the mattress retention provisions. This is a change from the proposed rule.

d. Guardrails (§ 1217.2(c)(2) and (5)(i))

The final rule makes several additions or modifications to ASTM F 1821 - 09 to strengthen the guardrail provisions. As in the proposal, the final rule requires that the upper edge of the guardrail be at least 5 inches above the manufacturer's recommended

sleeping surface. In response to a comment discussed in section E.3 of this preamble, the final rule modifies the test methodology that we had proposed. These changes, suggested by a commenter, make the test more suitable for the geometry of a guardrail (as opposed to that of a portable bed rail) and improve repeatability of the test. With these changes, the test is better suited to toddler bed guardrails and thus, will better address the risk of injury.

e. Spindle/Slat Static Load Strength (§ 1217.2(c)(3) and (5)(ii))

As discussed in section F of this preamble, we had proposed adding requirements for testing the spindles/slats on guardrails, side rails, and end rails. These provisions in the final rule are largely the same as proposed. However, we received a comment (discussed in section E.4 of this preamble) asking that spindle/slat requirements for toddler beds match such requirements for cribs, which are stated in ASTM's full-size crib standard, ASTM F 1169 - 10. In response to this comment, we have revised the spindle/ slat requirements so that these provisions are more consistent with the requirements for cribs. Like the crib rule, the final rule requires testing 25 percent of spindles/slats at 80 pound-force and then another 25 percent of spindles/slats at 80 pound-force, if needed, with no more than 50 percent of the spindles/slats tested. The 80 pound-force is applied for a period of 2 to 5 seconds midway between the top and bottom of the spindle/slat being tested and is maintained for 10 seconds. The final rule also specifies, as provided in the crib standard, how to test toddler beds that may contain folding sides. The modifications make the standard in the final rule more stringent than ASTM F 1821 – 09 because ASTM F 1821 – 09 does not contain any requirements concerning spindle/slat strength.

f. Warning Label Requirements (§ 1217.2(c)(6))

As noted in the preamble to the proposed rule, the warning provisions in ASTM F 1821 - 09 are confusing and redundant, *see* 75 FR 22293-96. We proposed that the warning be separated into two warnings, one to address entrapment, and one to address strangulation.

Like the proposal, the final rule requires that specified warnings addressing entrapment and strangulation appear on toddler beds. The final rule also requires a specified warning concerning mattress size. As noted in section E.6 of this preamble, the Commission agrees with a commenter who asked that warning labels on toddler beds be harmonized with warning labels required for cribs because many toddler beds convert from cribs. Accordingly, the final rule requires toddler beds that convert from cribs to meet the warning requirements specified in the full-size crib standard, ASTM F 1169 - 10 (incorporated by reference at 16 CFR part 1219, *Safety Standard for Full-Size Baby Cribs*) instead of using the warnings specified in the toddler bed standard. The mattress thickness requirements are different for cribs and for toddler beds. In order to avoid requiring a convertible crib to have two warnings concerning mattress size (one to address the crib requirements and one to address the toddler bed requirements), the final rule provides that toddler beds that convert from cribs must provide the mattress size warning required by the crib standard and add a line to the warning specifying that the minimum mattress thickness is 4 inches. The modifications to ASTM F 1821 – 09 make the standard more stringent. Separating the strangulation and entrapment warnings should increase consumers' understanding of the connection between the relevant behaviors and hazards. In addition, the entrapment hazard warning emphasizes the group

most at risk and the consequences of the hazard, as well as provides a more explicit description of how the entrapment hazard occurs.

H. Effective Date

The Administrative Procedure Act ("APA") generally requires that the effective date of a rule be at least 30 days after publication of the final rule. 5 U.S.C. 553(d). The preamble to the proposed rule indicated that the standard would become effective six months after publication of a final rule (75 FR at 22296). We did not receive any comments on the proposed six-month effective date. The final rule provides a six-month effective date (as measured from the date of publication of this final rule in the **Federal Register**).

I. Regulatory Flexibility Act

The Regulatory Flexibility Act ("RFA") generally requires that agencies review proposed rules for their potential economic impact on small entities, including small businesses, and prepare an initial regulatory flexibility analysis. 5 U.S.C. 603. The RFA further requires agencies to consider comments they receive on the initial regulatory flexibility analysis and prepare a final regulatory flexibility analysis describing the impact of the final rule on small entities and identifying alternatives that could reduce that impact. *Id*. 604. This section summarizes CPSC staff's final regulatory flexibility analysis for the toddler bed standard. (CPSC staff's final regulatory flexibility analysis can be found at Tab F of the staff's briefing package.)

1. The Market

There are currently at least 73 known manufacturers or importers supplying toddler beds (including convertible cribs) to the U.S. market. Approximately 48

suppliers are domestic manufacturers (66 percent); 13 are domestic importers (18 percent); 11 are foreign manufacturers (15 percent); and the remaining firm is a foreign supplier who imports from other countries and exports to the United States.

Under U.S. Small Business Administration ("SBA") guidelines, a manufacturer of toddler beds or convertible cribs is small if it has 500 or fewer employees; an importer is considered small if it has 100 or fewer employees. Based on these guidelines, 11 of the domestic importers and 34 domestic manufacturers known to be supplying the U.S. market are small. There are an additional eight domestic manufacturers of unknown size, most (at least seven) of which are likely to be small. However, there are probably additional unknown small manufacturers and importers operating in the U.S. market as well.

The Juvenile Products Manufacturers Association ("JPMA"), the major U.S. trade association that represents juvenile product manufacturers and importers, runs a voluntary certification program for several juvenile products. Approximately 29 firms supplying toddler beds and/or convertible cribs to the U.S. market make or import products that comply with ASTM F 1821-09 (40 percent). Of the small domestic businesses, 11 manufacturers (27 percent) and 6 importers (55 percent) make or import products that are JPMA-certified as ASTM compliant. Additionally, there are two small manufacturers that claim compliance with the ASTM standard that are not part of the JPMA Certification Program.

The most recent U.S. birth data shows that there are approximately 4.2 million births per year (this figure has been updated since publication of the proposed rule). The majority of these babies eventually use cribs for sleeping purposes, although there is

some evidence that play yards are becoming a common substitute. In fact, according to a 2005 survey conducted by the American Baby Group (*2006 Baby Products Tracking Study*), 22 percent of new mothers own convertible cribs. Approximately 16 percent of convertible cribs were handed down or purchased secondhand. If these rates hold, this suggests annual convertible crib sales of about 776,000 (0.22 x 0.84 x 4.2 million births per year). Of those consumers with nonconvertible cribs, some proportion of them eventually will use toddler beds when their children get older. However, consumers may choose to use a twin or larger bed (and possibly use portable bed rails) rather than a separate toddler bed. Assuming that approximately 50 percent of consumers elect to use toddler beds, and assuming that approximately 50 percent buy them new, this would mean that around 819,000 toddler beds are sold per year (0.78 percent nonconvertible cribs x 4.2 million births x 0.5 percent use toddler beds x 0.5 percent buy them new). Adding this number to the estimate of convertible cribs, yields a total of approximately 1.6 million units (convertible cribs and toddler beds) sold per year that might be affected by the toddler bed standard.

2. Impact on Small Business

There are 73 firms currently known to be marketing toddler beds and/or convertible cribs in the United States. Of these, 6 are large domestic manufacturers; 1 is a domestic manufacturer of unknown size; 2 are large domestic importers; and 12 are foreign firms. The impact on the remaining 52 small firms (34 small domestic manufacturers, 7 presumed to be small domestic manufacturers, and 11 small domestic importers) is the focus of the remainder of this analysis.

a. Small Domestic Manufacturers

For the most part, the impact of the final rule on small manufacturers will differ based on whether they currently make products that comply with the voluntary ASTM standard. If they do not, as is the case with 28 firms, the impact on them could be significant. These firms likely would have to undergo product redevelopment. As explained below, the cost of such an effort for toddler beds/convertible cribs is unknown, but could be substantial for some firms.

Product development costs include: product design, development, and marketing staff time; product testing; and focus group expenses. These costs can be very high, particularly when there are multiple products; but they can be treated as new product expenses and amortized. Other one-time costs include the retooling of manufacturing equipment, which could also be recouped gradually over the sales of numerous units. There also are expected to be increased costs of production. Producing toddler beds and convertible cribs that have greater structural integrity, stronger slats/spindles, and higher guardrails may require additional raw materials or possibly heavier materials. In addition to increasing the costs of production, this could increase shipping costs as well.

Even if these firms are able to pass on some of their increased costs to consumers, the impact still could be considerable. This is because firms manufacturing toddler beds and convertible cribs are not simply competing against other producers of toddler beds and convertible cribs. They are competing against producers of substitute products as well, firms that would not be covered under the recommended standard. Toddler beds compete with twin (or possibly larger) beds, which can be used with portable guardrails. Similarly, convertible cribs compete with adult-size beds when children are older and with standard cribs for younger children.

There is expected to be less impact on the 13 firms that are known to produce products that comply with the current voluntary standard. It is believed that at least some of these firms may be able to comply with the new requirements without modifying their products (except for labeling). The remaining firms may opt to redesign their product(s) as well, which again would result in some one-time costs, as well as a possible increase in production costs. It is also possible, however, that they may be able to select a potentially less expensive option to address some of the requirements that differ from the ASTM standard; modifying the materials used may be sufficient for many products, and the associated cost is not expected to exceed a few dollars per unit.

Two of the 28 manufacturers supplying noncompliant products would be affected differently by the final rule. They are firms that take already-manufactured toddler beds and convertible cribs, decorate them (often with original artwork), and sell them as a final product. Because these firms do not make the underlying toddler beds/convertible cribs, the impact of the final rule on them will be the same as on an importer. They would need to find a new supplier of compliant products if their current supplier does not make the necessary modifications. The new products presumably would be higher quality, as well as more expensive, because some of the original manufacturer's production costs (and possibly redevelopment costs) will be passed on to these firms.

The scenario described above assumes that only those firms that produce products which are JPMA-certified or claim ASTM compliance will pass the voluntary standard's requirements. This is not necessarily the case. We have identified many cases in which products not certified by JPMA actually comply with the relevant ASTM standard. However, there is insufficient evidence of this for toddler beds/convertible cribs to

quantify this impact. To the extent that some products may already comply with non-U.S. standards, the effect of the new and modified requirements may be less substantial than outlined above. However, there is insufficient information to quantify this effect.

b. Small Domestic Importers

The majority of small domestic importers (6 out of 11) supply products that comply with the current voluntary standard. We believe that at least some of these firms will not need to make any additional product modifications to meet the final rule (except for labeling). However, those whose products do require modifications will need to find an alternate supplier if their existing one does not come into compliance. The new products presumably will be more expensive, as well as higher in quality. However, the actual price increase is unknown and is likely to vary based upon the degree of modifications required. All of the remaining five firms supplying products that do not comply with the ASTM voluntary standard would need to find suppliers whose products comply with the standard or ensure that their current supplier made the modifications necessary to comply. Depending upon the degree to which their toddler beds and convertible cribs are out of compliance with the voluntary standard, the price increase (as well as the increases in quality and safety) could be relatively high. To the extent that some of these firms actually may comply with ASTM F 1821 - 09 or one or more of the new/modified requirements in the final standard, the impact of the final rule would be lower.

For the most part, the impact on importers tends to be smaller than on manufacturers. Even if importers respond to the rule by discontinuing the import of their noncomplying toddler beds and convertible cribs, either replacing them with a complying

product or another juvenile product, deciding to import an alternative product would be a reasonable and realistic way to offset any lost revenue. The one exception would be firms for which convertible cribs/toddler beds and their associated products (*i.e.*, matching furniture) form the core of their product line. For these firms, a substantial price increase possibly could drive them out of business or require them to rebuild their business based on alternative products.

3. Alternatives

Under section 104 of the CPSIA, the primary alternative that would reduce the impact on small entities is to make the voluntary standard mandatory with no modifications. For small domestic manufacturers that already meet the requirements of the voluntary standard, adopting the standard without modifications may reduce their costs relative to the final rule, but only marginally. Similarly, limiting the requirements of the rule to those already in the voluntary standard probably would have little beneficial impact on small manufacturers that do not currently meet the requirements of the voluntary standard. This is because, for these firms, most of the cost increases would be associated with meeting the requirements of ASTM F 1821 - 09, rather than the changes associated with the final rule. The difference for importers also is likely to be minimal, whether they supply products that comply with the voluntary standard or not,

A second alternative would be to set a later effective date. This would allow suppliers additional time to modify and/or develop compliant toddler beds and convertible cribs, thereby spreading the associated costs over a longer period of time.

4. Conclusion

It is possible that the final rule could have a significant impact on a substantial number of small entities. Firms supplying products that already comply with the voluntary standard may not need to make any product modifications to meet the final rule, but this group is known to include only 42 percent of the small firms identified. Some of these firms and all other firms will need to make at least some modifications to their toddler beds and convertible cribs to comply with the final rule. The extent of these costs is unknown; but because product redevelopment likely would be necessary in many cases, it is possible that the costs could be large and have the potential to reduce firms' ability to compete with substitute products.

A few small businesses have product lines consisting entirely or primarily of toddler beds, convertible cribs, and related products (such as accompanying furniture). These firms may be affected disproportionately by any standard. If the cost of developing (or importing) a compliant product proves to be a barrier for these firms, the loss of toddler beds and convertible cribs as a product category could be significant and may not be mitigated easily by the sale of other juvenile products.

J. Environmental Considerations

The Commission's regulations provide a categorical exclusion for the Commission's rules from any requirement to prepare an environmental assessment or an environmental impact statement because they "have little or no potential for affecting the human environment." 16 CFR 1021.5(c)(2). This rule falls within the categorical exclusion, so no environmental assessment or environmental impact statement is required.

K. Paperwork Reduction Act

This rule contains information collection requirements under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520). The preamble to the proposed rule (75 FR at 22296 through 22297) discussed the information collection burden of the proposed rule and specifically requested comments on the accuracy of our estimates. We did not receive any comments concerning the information collection burden of the proposal, and the final rule does not make any changes to that burden. We have applied to the U.S. Office of Management and Budget (OMB) for a control number for this information collection, and we will publish a notice in the **Federal Register** providing the number when we receive approval from the OMB.

L. Preemption

Section 26(a) of the CPSA, 15 U.S.C. 2075(a), provides that where a "consumer product safety standard under [the CPSA]" is in effect and applies to a product, no state or political subdivision of a state may either establish or continue in effect a requirement dealing with the same risk of injury unless the State requirement is identical to the federal standard. (Section 26(c) of the CPSA also provides that states or political subdivisions of states may apply to the Commission for an exemption from this preemption under certain circumstances.) Section 104(b)(1)(B) of the CPSIA refers to the rules to be issued under that section as "consumer product safety standards," thus implying that the preemptive effect of section 26(a) of the CPSA would apply. Therefore, a rule issued under section 104 of the CPSIA will invoke the preemptive effect of section 26(a) of the CPSA when it becomes effective.

M. Certification

Section 14(a) of the CPSA imposes the requirement that products subject to a consumer product safety rule under the CPSA, or to a similar rule, ban, standard, or regulation under any other act enforced by the Commission, be certified as complying with all applicable CPSC requirements. 15 U.S.C. 2063(a). Such certification must be based on a test of each product, or on a reasonable testing program or, for children's products, on tests on a sufficient number of samples by a third party conformity assessment body accredited by the Commission to test according to the applicable requirements. As noted in the discussion above concerning preemption, section 104(b)(1)(B) of the CPSIA refers to standards issued under that section as "consumer product safety standards." By the same reasoning, such standards also would be subject to section 14 of the CPSA. Therefore, any such standard would be considered a consumer product safety rule, to which products subject to the rule must be certified.

Because toddler beds are children's products, they must be tested by a third party conformity assessment body whose accreditation has been accepted by the Commission. Elsewhere in this issue of the **Federal Register**, we have issued a notice of requirements to explain how laboratories can become accredited as third party conformity assessment bodies to test to the new toddler bed standard. (Toddler beds also must comply with all other applicable CPSC requirements, such as the lead content requirements of section 101 of the CPSIA, the phthalate content requirements in section 108 of the CPSIA, the tracking label requirement in section 14(a)(5) of the CPSA, and the consumer registration form requirements in section 104 of the CPSIA.)

List of Subjects in 16 CFR Part 1217

Consumer protection, Infants and children, Incorporation by reference, Law enforcement, Safety, Toddler beds.

For the reasons stated above, and under the authority of 5 U.S.C. 553, and sections 3 and 104 of Public Law 110-314, 122 Stat. 3016 (August 14, 2008), the Consumer Product Safety Commission amends Title 16 of the Code of Federal Regulations by adding a new part 1217 to read as follows:

PART 1217—SAFETY STANDARD FOR TODDLER BEDS

Sec.

Authority: Sections 3 and 104 of Pub. L. 110-314, 122 Stat. 3016 (August 14, 2008).

§ 1217.1 Scope, application, and effective date.

This part 1217 establishes a consumer product safety standard for toddler beds manufactured or imported on or after [**insert date 6 months after date of publication in the FEDERAL REGISTER**].

§ 1217.2 Requirements for toddler beds.

(a) The Director of the Federal Register approves the incorporations by reference listed in this section in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain a copy of these ASTM standards from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959 USA, phone: 610-832-9585;

http://www.astm.org/. You may inspect copies at the Office of the Secretary, U.S. Consumer Product Safety Commission, Room 820, 4330 East West Highway, Bethesda, MD 20814, telephone 301-504-7923, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal regulations/ibr_locations.html.

(b) Except as provided in paragraph (c) of this section, each toddler bed as defined in ASTM F 1821-09, *Standard Consumer Safety Specification for Toddler Beds*, approved April 1, 2009, shall comply with all applicable provisions of ASTM F 1821 - 09.

(c) Comply with ASTM F 1821 - 09 with the following additions or exclusions.

(1) Do not comply with sections 6.1 through 6.1.2 of ASTM F 1821 - 09.

(2) Instead of complying with section 6.5 of ASTM F 1821 - 09, comply with the following:

(i) 6.5 *Guardrails*:

(ii) 6.5.1 For products with guardrails, there shall be no opening in the guardrail structure below the lowest surface of the uppermost member of the guardrail and above the mattress support structure that will permit complete passage of the wedge block shown in Figure 2 when tested in accordance with 7.4.

(iii) 6.5.2 The upper edge of the guardrails shall be at least 5 in. (130 mm) above the sleeping surface when a mattress of a thickness that is the maximum specified by the manufacturer's instructions is used.

(iv) 6.5.3 When tested in accordance with 7.9, the guardrail shall not break, detach, or create a condition that would present any of the hazards described in Section 5. Guardrails that do not have any free ends, that is, they are attached to both the headboard and the footboard, are exempt from this test. For guardrails with two free ends, perform this test at each free end.

(3) In addition to complying with section 6.7 of ASTM F 1821 - 09 comply with the following:

(i) 6.8 *Spindle/Slat Static Load Strength:*

(A) 6.8.1 Toddler beds that contain wooden or metal spindles/slats shall meet the performance requirements outlined in section 6.8.2 or 6.8.3.

(B) 6.8.2. Except as provided in section 6.8.3, after testing in accordance with the procedure in 7.10, there shall be no complete breakage of a spindle/slat or complete separation of a spindle/slat from the guardrails, side rails, or end structures.

(C) 6.8.3 Toddler beds that convert from a full-size crib, also known as convertible cribs, shall meet the requirements specified in section 6.7 of ASTM F 1169 - 10, incorporated by reference at 16 CFR Part 1219, *Safety Standard for Full-Size Baby Cribs*, instead of the requirements of 6.8.2.

(ii) [Reserved]

(4) Do not comply with sections 7.1.2 through 7.1.6 of ASTM F 1821 - 09,

(5) In addition to complying with section 7.8.5 of ASTM F 1821 - 09, comply with the following:

(i) 7.9 *Test Method for Guardrail Structural Integrity:*

(A) 7.9.1 Firmly secure the toddler bed on a stationary flat surface using clamps. Gradually over a period of 5 s apply a 50 lbf (222.4 N) to the guardrail from the inside of the toddler bed, outward and perpendicular to the place of the rail, and hold for 10 s. The force is to be applied to the geometric center of a 3 x 6 x ½ in. (7.62 x 15.24 x 1.27 cm) piece of plywood with the long end parallel to the floor (see Fig. 11).

(B) 7.9.2 For guardrails with a rectangular shape, the plywood shall be placed with the upper long edge even with the upper long edge of the rail, which is 11 inches (27.94 cm) from the top of the rail to the top of the mattress support in its lowest position, and the short edge even with the free short edge of the rail.

(C) 7.9.3 For contoured guardrails that are not rectangular, the plywood shall be placed with the upper long edge of the plywood even with a line drawn parallel to the rail which is 11 inches (27.94 cm) from the mattress support and the short edge placed so that the downward slope of the free rail edge intersects the corner of the plywood.

(ii) 7.10 *Spindle/Slat Testing for Guardrails, Side Rails, and End Structures:*

(A) 7.10.1 The spindle/slat static force test shall be performed with the spindle/slat assemblies removed from the bed and supported only on the rail corners through a contact area not more than 3 square inches (7.6 cm^2) when measured from the end of the rail in a direction parallel to the longitudinal axis of the rail. Besides the corners, the upper and lower horizontal rails of both linear and contoured rails shall be free to deflect under the applied force. For toddler beds incorporating folding or moveable sides for purposes of easier access to the occupant, storage and/or transport, each side segment (portion of side separated by hinges for folding) shall be tested separately as described above.

(B) 7.10.2 Gradually, over a period of not less than 2 s nor greater than 5 s, apply an 80 lbf (355.8 N) perpendicular to the plane of the side at the midpoint, between the top and bottom of the spindle/slat being tested. This force shall be applied through a force measuring device and contact area 1 ± 1⁄16 in. (25.4 ± 1.6 mm) wide by a length at least equal to the width of the spindle/slat being tested at the point of application. This force shall be maintained for 10 s. The force measuring device must be capable of recording the force at breakage, if breakage occurs during this test. This force measuring device must be capable of a maximum measurement resolution of 0.25 lbf (1.11 N).

(C) 7.10.3 Test, according to 7.10.2, 25 % (rounding up to the nearest percentage, if necessary) of all spindles/slats. Spindles/slats that offer the least resistance to bending based upon their geometry shall be selected to be tested within this grouping of 25% except that adjacent spindles/slats shall not be tested.

(D) 7.10.4 Upon completion of testing as defined in 7.10.2 and 7.10.3, no spindle/slat shall have failed at an applied force less than or equal to 60 lbf. If no more than one spindle/slat fails and that failure occurs only as the result of an applied force greater than 60 lbf, then an additional 25% of spindles/slats shall be tested per 7.10.2 and 7.10.3. During testing of this second 25%, any spindle/slat failure (at or below 80 lbf) shall constitute failure of the test.

(E) 7.10.5 End vertical rails that are joined between the slat assembly top and bottom rails are not considered slats and do not require testing under 7.10.

(6) Instead of complying with sections 8.4.2 through 8.4.4.5 of ASTM F 1821 - 09, comply with the following:

(i) 8.4.2 The safety alert symbol "⚠" and the word "WARNING" or "CAUTION" must be at least 0.2 in. (5 mm) high, and the remainder of the text shall be characters whose upper case shall be at least 0.1 in. (2.5 mm) high, sans serif.

(ii) 8.4.3 Except as provided in 8.4.4 and 8.4.5, the following warnings must appear on all toddler beds, exactly as depicted.

⚠WARNING

INFANTS HAVE DIED IN TODDLER BEDS FROM ENTRAPMENT.
Openings in and between bed parts can entrap head and neck of a small child.
NEVER use bed with children younger than 15 months.
ALWAYS follow assembly instructions.

⚠WARNING

STRANGULATION HAZARD
NEVER place bed near windows where cords from blinds or drapes may strangle a child.
NEVER suspend strings over bed.
NEVER place items with a string, cord, or ribbon, such as hood strings or pacifier cords, around a child's neck. These items may catch on bed parts.

⚠CAUTION

Any mattress used in this bed shall be a full-size crib mattress at least 51 ⅝ in. (1310 mm) in length, 27 ¼ in. (690 mm) in width, and 4 in. (100 mm) in thickness.

(iii) 8.4.4 Toddler beds that convert from a full-size crib, also known as convertible cribs, must meet the warning requirements specified in section 8 of ASTM F 1169 - 10, incorporated by reference at 16 CFR Part 1219, *Safety Standard for Full-Size Baby Cribs*, instead of the requirements of 8.4.3.

(iv) 8.4.5 Any toddler bed that can convert from a full-size crib, and has the warning specified in section 8.1.3 of ASTM F 1169 - 10, incorporated by reference at 16 CFR Part 1219, *Safety Standard for Full-Size Baby Cribs*, must include additional text at the end of that warning that specifies the minimum mattress thickness of 4 inches (100 mm).

(7) In addition to figure 10 of ASTM F 1821 - 09, use the following:

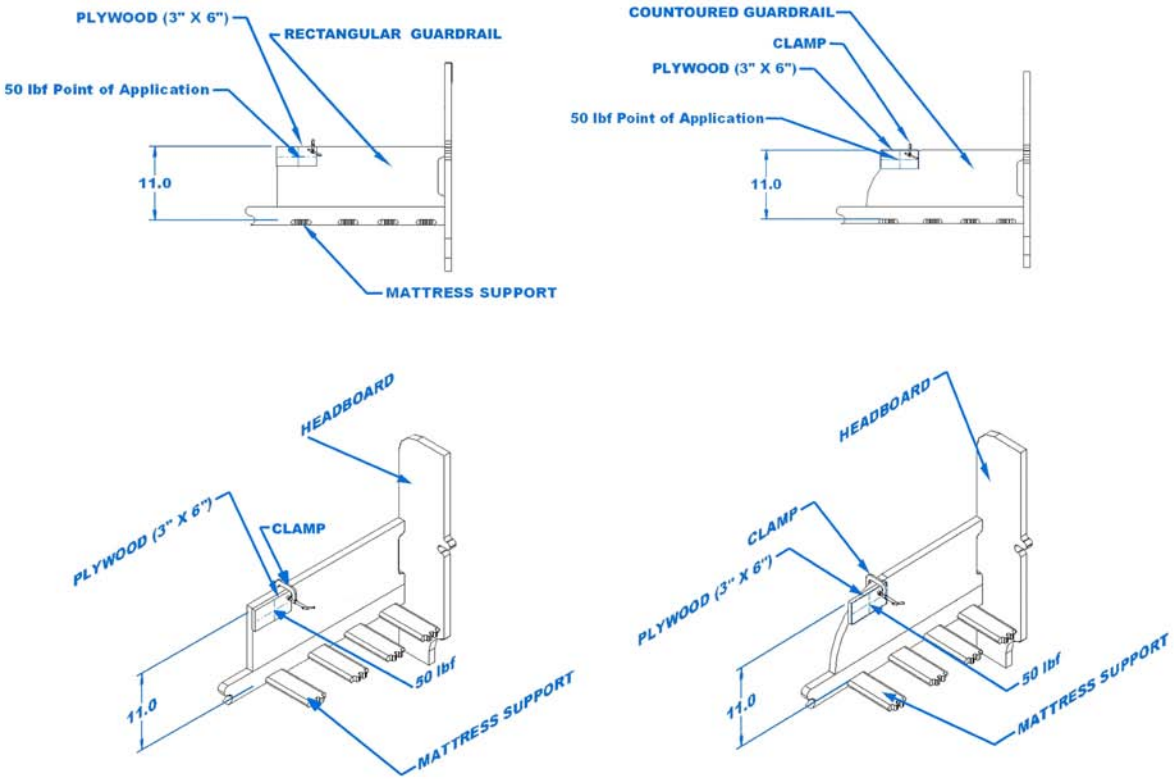

FIGURE 11 -- Guardrail Structural Integrity Test

Dated: _____

_____
Todd A. Stevenson, Secretary
U.S. Consumer Product Safety Commission