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LOG OF MEETING
DIRECTORATE FOR ENGINEERING SCIENCES

SUBJECT: Meeting of ASTM Subcommittee on Portable Bed Rails

DATE OF MEETING: April 12, 2000

PLACE: CPSC, EW Towers, Rm. 714

LOG ENTRY SOURCE: Scott Heh, ESME *SH*

COMMISSION ATTENDEES: Scott Heh-ESME, Joyce McDonald-EPHA, Suad Nakamura-HS, Robert Hundemer-LSE, George Sushinsky-LSE, David Walden-ES, Patty Hackett-ESME, Terry Van Houten-HF, Terry Karels-EC

NON-COMMISSION ATTENDEES: Terry Emerson-Cosco, Mary Ellen Fise-CFA, Rick Locker-JPMA Counsel, Kandi Mell-JPMA, Marsha Merianos-The First Years, Kitty Pilarz-Fisher Price, John Preston-John Preston Consulting, Jon Robinson-Evenflo, Paul Ware-Safety 1st

SUMMARY OF MEETING

The Subcommittee Chairman suggested that the group discuss the draft performance standard for portable bed rails that was proposed by the CPSC staff and an alternative standard that was proposed by another member of the Subcommittee. The alternative standard was the same as the CPSC staff proposed standard except for a few changes in the test parameters. First, a minor change was proposed for the torso probe to increase the width dimension from 2.7 inches to 2.9 inches. The 2.9-inch dimension is based on the buttocks depth of a 3-month-old child. The second proposed change is the addition of another test probe to determine if an opening or gap will allow the passage of the head of a 2-year-old child. This change proposed that if the head probe could pass through an opening or gap after applying a push out force to the bed rail, the bed rail would pass the test. The last recommended change was to base the test force that is applied to the portable bed rail on the strength of a 95th percentile 3 to 4 month-old child. There are no known studies that provide the applicable strength data for this age child. However, a test load based on the strength of a 3 to 4 month-old would be substantially less than the 50-lbf force (based on the strength of a five-year-old child) that was proposed by the CPSC staff.

A few manufacturer representatives expressed concerns regarding the CPSC staff draft standard. One of their primary concerns is that the adoption of the CPSC staff proposed standard could possibly result in bed rail designs that present a risk of entrapment equal to or greater than current bed rails on the market. They stated that new bed rails designed to meet the CPSC staff draft requirements would be more complex than current designs. The increased complexity could increase the possibility that consumers will install them incorrectly or perhaps make modifications to the bed rails. Either action could defeat the safety features on the bed rail, and increase the possibility of entrapment.

The group discussed various bed rail design concepts that could possibly conform to the CPSC staff draft test requirements. One idea included a bed rail that would have an anchor to the opposite side of the bed so as to prevent the unit from sliding out away from the mattress on the "rail side" of the bed. Two anchor designs were mentioned. One anchor was formed from the bed rail tubing that slides between the mattress and box springs. At the opposite side of the bed, the tubing bends 90 degrees downward so that it hooks around the edge of the box spring. A second anchor concept was a large disk that would be positioned at the opposite side of the bed and pulled up snug against portions of the mattress and box spring.

The Subcommittee also discussed a portable-bed-rail concept design that was developed by the CPSC Engineering Laboratory (LSE). The LSE concept places the bed rail on top of the mattress instead of, as is typical, next to the mattress. Placing the rail on top of the mattress eliminates a gap that might exist between the bed rail and the side of the mattress. A triangular shape was selected for the main body of the bed rail. The inclined slope faces toward the inside of the bed. The rail is attached to the mattress by a framework made of 3/4-inch (19-mm) hollow tubing similar to that used in many designs of current model portable bed rails. The tubing extends under the mattress and has three cross members made of the same tubing. Both the bed rail base and the framework have non-slip abrasive tape applied to their surfaces. The bed rail is secured to the framework via U-shaped clamps. To install the bed rail, the user pushes downward on the triangular rail (into the mattress surface) and tightens the "U"-shaped clamps on the vertical tube supports. In this way, the bed rail clamps to the mattress, creating substantial resistance to displacement forces.

Some Subcommittee members stated that there are likely several design concepts for which a hazardous gap will not be created when the bed rail is subjected to specified loading conditions. However, such a requirement will not necessarily eliminate the potential for an entrapment fatality. Since all of the concept designs reviewed thus far are somewhat more complex in their operation and installation than current portable bed rail designs, some manufacturers are concerned that there may be greater potential for the consumer to install the rail incorrectly, either by accident or on purpose so as to avoid time consuming installation steps. For example, a consumer could install a bed rail and not push it snug against the mattress such that there is a hazardous gap between the mattress and rail at the time of use. If the force required to move the bed rail is 50-lbf, then entrapment may be more likely since the bed rail may not shift any further outwards when a child falls into the pre-existing gap.

The meeting concluded with an understanding of the issues involved, but with no agreement on a resolution. The Subcommittee Chairman suggested a working group conference call in the near future to further brainstorm bed rail performance requirements. This conference call is not yet scheduled. The Subcommittee Chairman also announced that a revised draft standard on portable bed rail warnings and labels should be sent out for ballot concurrently at the main and subcommittee levels prior to the next full subcommittee meeting in October 2000.

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