



U.S. CONSUMER PRODUCT SAFETY COMMISSION  
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February 6, 2012

Mr. Ralph Vasami  
Executive Director  
Window Covering Manufacturers Association  
355 Lexington Avenue  
New York, NY 10017

Dear Mr. Vasami:

The U.S. Consumer Product Safety Commission (CPSC) staff appreciates the opportunity to comment on the Window Covering Manufacturers Association's (WCMA) ballot on the Proposed ANSI/WCMA A100.1, Revision of 2nd Provisional ANSI/WCMA A100.1-2010, American *National Standard for Safety of Corded Window Covering Products*. In accordance with CPSC policy, CPSC staff is not voting on the ballot but is providing the following comments.<sup>1</sup> A strikethrough indicates wording that CPSC staff recommends deleting from the standard, and a double underline indicates wording CPSC staff recommends adding to the standard.

3.19 Hazardous Loop:

A hazardous loop is described as "a cord loop or combined loop as defined and determined by Appendix D: Hazardous Loop Test Procedure." Appendix D describes test requirements for the accessible *inner* cords only. Operating cords, loop cords, and bead chains can create hazardous loops, as evidenced by a majority of the incidents that are reported to the CPSC associated with such cords. However, there is no section of the standard that explicitly defines and recognizes the hazardous loops that can be created by these cords. Staff suggests that Appendix D be modified to incorporate hazardous loop scenarios that can be created by *any* accessible cord on the window covering product.

4.3 The product shall reduce the hazard posed by an exposed operating cord or bead chain loop by meeting one or more of the following requirements:

Staff recommends replacing the term "bead chain loop" with "cord or bead loop" to include closed loops that are formed by bead chains, as well as fabric or nylon cords. In addition, as discussed above, the hazards posed by exposed operating cords or bead chain loops are not defined.

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<sup>1</sup> This letter was prepared by the CPSC staff; it has not been reviewed or approved by, and may not necessarily reflect the views of, the Commission.

“The product shall reduce the hazard posed by an exposed operating cord or ~~bead chain loop~~ cord or bead loop by meeting one or more of the following requirements:”

4.3.2 The product shall have one or more separate operating cords.

This is historically one of the solutions listed in the standard to reduce the hazard posed by an accessible operating cord. However, this requirement allows one or more operating cords of unspecified length to hang freely on the product. As CPSC incident data show, children wrap the operating cords around their necks<sup>2</sup>. Further, multiple cords can get tangled and create a loop in which a child can insert his/her head<sup>3</sup>. Therefore, this specific requirement, which is a carryover specification from previous versions of the standard, does not reduce the risk associated with operating cords. CPSC staff thinks that a preferable requirement would state that the length of an accessible operating cord should not be longer than the neck circumference of the youngest child at risk regardless of the position of the window covering (*i.e.*, raised or lowered, opened or closed). If this requirement were in place, the risk associated with the wraparound scenario would be avoided. Further, the requirement should state that no accessible multiple cords are allowed if the combined length of the cords, for any position of the window covering product, is longer than the head circumference of the youngest child at risk. Such a requirement would prevent multiple cords from creating a hazardous loop if they become tangled.

4.3.3 The product shall contain a cord release device in the loop or the head rail that meets the requirements in 6.1.

Staff has concerns with cord release devices as a hazard prevention mechanism. The reliance upon a cord release device allows a child to be exposed to the strangulation hazard after possibly wrapping the cord around the neck or inserting the head into an already existing loop. Research shows that any cord may prove quickly fatal if wrapped around the neck.<sup>4</sup> Staff believes that if the suggested changes in 4.3.2 (above) are made in the standard, then cord release devices would not be necessary.

4.3.4 The product shall contain a permanently attached cord retraction device that meets the requirements in 6.2.

Staff suggests that this requirement be modified so that for any position of the window covering, the cord retraction device does not allow an accessible cord longer than the neck circumference of the youngest child at risk when measured from below 12 inches from the head rail. The cord retraction device should come assembled and attached to the window covering product by the manufacturer. The requirement associated with a sequential operation to unlock the cord has been removed in the proposed version. Staff suggests that the requirement of sequential operations be retained so that even when a child can access the cord activator, unlocking the cord will be difficult to accomplish:

- 6.2.1 The retraction device shall passively retract the cord(s). If a cord stop is utilized on the window covering product, the cord stop must retract to within 3 in. (76 mm) of the head rail. Sequential operations shall be required to unlock and unwind the cord for operation.

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<sup>2</sup> *E.g.*, see IDI# 030708CCC3335, 030902CCN0848, 080625CCC3646, 080915HNE3763, 090407CCC3500, 090121CCC2276, 100708CWE2246

<sup>3</sup> *E.g.*, see IDI# 000831CNE5737, 001102CNE5849, 010510CNE6334, 030828CNE8057, 050303CCC1535, 060502CCC3480, 080122HNE3082, 090817CNE4677, 100714HWE2255, 100519CWE2035.

<sup>4</sup> Shepherd, R.T. (1990). Accidental Self-Strangulation in a Young Child – A Case Report and Review. *Med. Sci. Law*, 30:2.

In addition to the operational cycle test, CPSC staff recommends that cord retraction devices should be tested for durability to ensure that the product does not fail (*i.e.*, break) if a pull force that is higher than necessary is exerted on the product.

4.3.5 The product shall contain a cord shear device that meets the requirements in 6.3.

Cord shear devices work similarly to the cord release devices and are being tested with the same procedure. However, the shear device will activate only *after* a child is exposed to the strangulation hazard. Staff believes that if the suggested changes in 4.3.2 (above) are made in the standard, then cord shear devices would not be necessary.

4.3.6 The product shall contain a cord shroud device that meets the requirements in 6.4.

4.3.8 The product shall contain a loop cord or bead chain restraining device that meets the requirements of 6.6.

Staff believes that the cord shroud should be operational during the life cycle of the product and depending on how it is constructed, the cord shroud device may need to go through UV stability and impact testing. The cord shroud device should come assembled and attached to the window covering product by the manufacturer. Finally, a cord shroud should not exhibit cord-like properties. Similar to cord shrouds, cord restraining devices should go through the accessibility test procedure first, followed by hazardous loop determination, if necessary. In fact, staff believes that cord shroud and cord restraining devices have basically the same purpose, and because cord shrouds also can be built with rigid material (see definitions in 3.14 and 3.25 copied below), they could appear and function as cord restraining devices.

*3.14. Cord shroud: A flexible or rigid material that limits accessibility to the inner or operating cord.*

*3.25. Loop cord or bead chain restraining device: A device used cooperatively with a continuous operating loop cord or bead chain, which allows access to the operating loop while preventing the creation of a hazardous loop per section 6.6.*

Therefore, staff believes that both cord shroud and cord restraining devices should be subject to the same procedure: determine whether the cord is accessible; determine whether a hazardous loop can be created; perform operational cycle test; and finally, perform UV stability, impact, and durability tests for applicable devices.

4.3.7 The product shall contain a cord tension device that meets the requirements in 6.5.

As communicated previously in CPSC Deputy Executive Director Jay Howell's letter of May 19, 2011 to Ralph Vasami, staff has concerns about tension devices and their effectiveness in eliminating or reducing significantly the risk of strangulation under certain foreseeable use conditions. Specifically, tension devices may not be installed at all, uninstalled for some reason, or installed incorrectly, which jeopardizes the effectiveness of the overall safety of the system<sup>5</sup>.

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<sup>5</sup> *E.g.*, see IDI# 021016CCC3022, 040319CNE1406, 040729CCC3405, 041117CCC2129, 060202CCC2315, 050414CNE2280, 050804CCC1029, 060118CWE5081, 060811CCC3785, 070213CCC3245, 060602CCC1567, 070308CCC2346, 070703CCC1583, 080310CCC1480, 080424CCC2597, 081106CWE7837, 081002CCC2008, 090827CCC3926, 090414HWE8180, 090629CNE4548, 090728CCC2792, 090921CCC1076, 091102CNE4799, 100322CNE0248, 100920CBB1174, 101018CCC2063, 101103HWE2393, 110516CCC3728.

For a successful installation, the consumer has to notice, read, and comprehend the warning message; be motivated to take action; have the appropriate tools, components, ability, and time to perform the installation; and have the diligence to ensure that the safety device is functioning during the lifetime of the product. Staff believes that the proper installation of tension devices, a critical component for the safe use of the product, should not have to be done by consumers. The loop cord or bead chain restraining devices (3.25) that are an integral part of the window covering products appear to fit into the approach described above, and therefore, sections 4.3.7 and 6.5 become unnecessary.

4.3.9 The product shall, if it requires a cord connector, limit the exposed loop above the cord connector to less than 3 in. (76 mm) below the bottom of the cord lock when only the bottom rail is in the fully lowered position, and shall include a warning on the product that describes the potential hazard when the product is in the raised position.

As the proposed text already recognizes, the risk associated with an existing loop above the cord connector is present when the cord is pulled down to raise the shade. The proposed language does not establish performance requirements to address the issue but only warns the user about the risk. In addition, the free-hanging cord below the cord connector also poses a strangulation hazard. The cord connector is a danger to children and contributes, directly or indirectly, to strangulation incidents<sup>6</sup>.

If the requirements as suggested in 4.3.2 are accepted, then the risk associated with a cord connector would be avoided.

#### Appendix C: Test Procedure for Accessible Cords

Staff believes the test procedure for accessible cords is unnecessarily confusing and inconsistent. A total of three types of cords and two subcategories are defined:

- a) Inner cords with open construction (C2.1.1)  
These cords are categorized further into two types:
  - Exposed cords (C2.1.1.1)
  - Enclosed cords between layers without segmented sections (C2.1.1.2)
- b) Inner cords with closed construction – enclosed and with segmented sections (C2.1.2)
- c) Operating cords (C3.1)

Staff believes that the accessibility of a cord should be determined based on one criterion: can a child access the cord with their finger? Inner cords with open construction are defined as being exposed from the front, rear, bottom, or sides of the window covering. By this definition, inner cords that are open and exposed do not appear to be different from operating cords that are also exposed. Staff suggests using the same accessibility test for both of these cords. Staff believes that Section C3.1, which states: “If the test probe can contact any operating cord, that cord is considered accessible,” is straightforward, and can be applied to open and exposed inner cords in C2.1.1.1 because there is no physical restriction around the hand to access the cord. However, both inner cords and operating cords use the inner cord accessibility test probe (Figure C1 in the proposed standard) that was established for cords that are enclosed between layers; thus, the need for a segmented probe to represent several levels of access using one finger, four fingers, and a hand, as well as allowing room to bend the fingers or hand. The same

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<sup>6</sup> E.g., see IDI# 081112HWE7844, 090710CCC3731, 000714CNE5665.

probe is not applicable for open construction or exposed cords. The cord shroud accessibility probe (Figure C2 in the proposed standard) is more suitable to determine the accessibility of exposed cords. Therefore, staff suggests using the cord shroud accessibility probe for inner cords that are exposed (C2.1.1.1), as well as for operating cords (C3.1).

Section C2.1.1.2 specifies that a cord is accessible if the 2-inch diameter section of the test probe can be inserted into the opening. A cord that is enclosed between layers of window covering, whether or not the access is limited to a particular section or segment, can be pulled out as long as the opening is large enough to accommodate the motion of grasping the cord, which is possible with a 2-inch diameter opening, based on anthropometric dimensions. Therefore, the requirement in C2.1.1.2 should also be applied to C2.1.2 (Closed Construction), which currently allows the diameter of openings to be more than 2 inches and up to 4 inches, even though the child's motion is the same as C2.1.1.2.

Appendix D: Hazardous Loop Test Procedure:

Appendix D describes the test requirements for accessible inner cords only. As previously discussed in section 3.19, any cord that allows a hazardous loop to be created should be recognized and tested appropriately. Staff suggests that Appendix D be expanded to include any type of cord loop, such as a loop above the cord connector or looped chains. For cords with a free end, a length requirement can be put into place, as discussed in section 4.3.2, and any cord that does not meet that requirement would be considered hazardous.

The safety standard should consider all foreseeable strangulation scenarios that can occur with accessible cords and subsequently include the appropriate test procedures and definitions to determine if the window covering has accessible hazardous cords that may cause strangulation. Staff believes that incorporation of the specific changes and recommendations provided in this letter will assist in developing inherently safe window covering products by reducing a child's exposure to the hazard and consequently achieving permanent reductions in strangulations from corded window covering products.

Thank you for the opportunity to comment. If you have any questions, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Rana Balci-Sinha". The signature is stylized and somewhat cursive, with a large initial "R" and "B".

Rana Balci-Sinha, Ph.D.