



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

Updated 10/29/2021 to correct Figure 13 on page 34 of the draft proposed rule to "Add Window Covering Cords to the Substantial Product Hazard List."

This document has been electronically approved and signed.

THIS MATTER IS NOT SCHEDULED FOR A BALLOT VOTE.

A DECISIONAL MEETING FOR THIS MATTER IS SCHEDULED ON: TBD

DATE: October 6, 2021

TO: The Commission
Alberta E. Mills, Secretary

THROUGH: Pamela J. Stone, Acting General Counsel
Mary T. Boyle, Executive Director

FROM: Daniel R. Vice, Assistant General Counsel, Regulatory Affairs
Mary A. House, Attorney, Regulatory Affairs

SUBJECT: Notices of Proposed Rulemaking to (1) Add Window Covering Cords to the Substantial Product Hazard List, and (2) Establish a Safety Standard for Operating Cords on Custom Window Coverings

Staff is forwarding a briefing package to the Commission, recommending that the Commission publish in the *Federal Register* the attached two draft documents:

- (1) Notice of proposed rulemaking (NPR), under section 15(j) of the Consumer Product Safety Act (CPSA), to deem that stock window coverings that do not comply with the operating and inner cord requirements in ANSI/WCMA A100.1 – 2018, American National Standard for Safety of Corded Window Covering Products (ANSI/WCMA-2018), and custom window coverings that do not comply with the requirements for inner cords in ANSI/WCMA-2018, present a substantial product hazard; and
- (2) NPR under sections 7 and 9 of the CPSA to establish a Safety Standard for Operating Cords on Custom Window Coverings.

Taken together, the draft proposed rules would address the risk of strangulation deaths and injuries to children 8 years old and younger on stock and custom window covering cords, comprised of operating cords and inner cords, on each product type. If both rules are finalized, all window coverings would be required to meet the same requirements for operating cords and inner cords in sections 4.3.1 and 4.3.5, respectively, of ANSI/WCMA-2018.

Please indicate your vote on the following options:

- I. Approve publication of the attached notices in the *Federal Register*, as drafted.

(Signature)

(Date)

- II. Approve publication of the attached notices in the *Federal Register*, with the specified changes.

(Signature)

(Date)

- III. Do not approve publication of the attached notices in the *Federal Register*.

(Signature)

(Date)

- IV. Take other action specified below.

(Signature)

(Date)

Attachments: Draft *Federal Register* notices of proposed rulemaking: (1) Substantial Product Hazard List: Window Covering Cords; (2) Safety Standard for Operating Cords on Custom Window Coverings

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Billing Code 6355-01-P

CONSUMER PRODUCT SAFETY COMMISSION

16 CFR Part 1120

[CPSC Docket No. CPSC-2021-XXXX]

Substantial Product Hazard List: Window Covering Cords

AGENCY: Consumer Product Safety Commission

ACTION: Notice of proposed rulemaking

SUMMARY: To address the risk of strangulation to young children associated with certain window covering cords, the Consumer Product Safety Commission (CPSC) is proposing a rule to deem that one or more of the following readily observable characteristics of window coverings present a substantial product hazard (SPH) under the Consumer Product Safety Act (CPSA): the presence of hazardous operating cords on stock window coverings, the presence of hazardous inner cords on stock and custom window coverings, or the absence of a manufacturer label on stock and custom window coverings. The rule would amend 16 CFR part 1120, which lists products that the Commission has determined present an SPH if the products have or lack specified characteristics that are readily observable, the hazards have been addressed by a voluntary standard, the voluntary standard has been effective in reducing the risk of injury associated with the product, and the products substantially comply with the voluntary standard.

DATES: Written comments must be received by [INSERT DATE THAT IS 75 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may submit comments, identified by Docket No. CPSC-2021-XXXX, by any of the following methods:

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Electronic Submissions: Submit electronic comments to the Federal eRulemaking Portal at: <https://www.regulations.gov>. Follow the instructions for submitting comments. CPSC typically does not accept comments submitted by electronic mail (e-mail), except through <https://www.regulations.gov>. CPSC encourages you to submit electronic comments by using the Federal eRulemaking Portal, as described above.

Mail/hand delivery/courier Written Submissions: Submit comments by mail/hand delivery/courier to: Division of the Secretariat, Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone: (301) 504-7479. Alternatively, as a temporary option during the COVID-19 pandemic, you can email such submissions to: cpsc-os@cpsc.gov.

Instructions: All submissions must include the agency name and docket number for this notice. CPSC may post all comments without change, including any personal identifiers, contact information, or other personal information provided, to: <https://www.regulations.gov>. Do not submit electronically: confidential business information, trade secret information, or other sensitive or protected information that you do not want to be available to the public. If you wish to submit such information, please submit it according to the instructions for mail/hand delivery/courier written submissions.

Docket: For access to the docket to read background documents or comments received, go to: <https://www.regulations.gov>, and insert the docket number, CPSC-2021-XXXX, into the “Search” box, and follow the prompts.

FOR FURTHER INFORMATION CONTACT: Rana Balci-Sinha, Director, Division of Human Factors, Directorate for Engineering Sciences, Office of Hazard Identification and

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Reduction, Consumer Product Safety Commission, National Product Testing and Evaluation Center, 5 Research Place, Rockville, MD 20850; telephone: 301-987-2584; rbalcisinha@cpsc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

A. *Overview of the Proposed Rule*

The purpose of the proposed rule is to address the risk of strangulation to children 8 years old and younger associated with hazardous cords on window coverings. The Commission issues this notice of proposed rulemaking (NPR) under section 15(j) of the CPSA, 15 U.S.C. 2064(j), to amend the substantial product hazard list in 16 CFR part 1120 (part 1120). The NPR proposes to deem the presence of hazardous window covering cords on stock and custom window coverings, which have been adequately addressed by the voluntary standard for window coverings, ANSI/WCMA A100.1 – 2018, American National Standard for Safety of Corded Window Covering Products (ANSI/WCMA-2018), as an SPH, as defined in section 15(a)(2) of the CPSA. This NPR is based on information and analysis contained in CPSC staff's September 29, 2021, Staff Briefing Package: Notice of Proposed Rulemaking for Corded Window Coverings (Staff's NPR Briefing Package), available at: [\[Insert Link\]](#).

The NPR proposes to deem three readily observable characteristics of stock window coverings an SPH:

- (1) presence of hazardous operating cords;
- (2) presence of hazardous inner cords; and
- (3) absence of a required manufacturer label.

Additionally, the NPR would deem two readily observable characteristics of custom window coverings an SPH:

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- (1) presence of hazardous inner cords; and
- (2) absence of a required manufacturer label.

The Commission is addressing the presence of hazardous operating cords on custom window coverings under a separate, concurrent rulemaking pursuant to sections 7 and 9 of the CPSA, because the ANSI/WCMA-2018 standard does not adequately address this hazard. *See* CPSC Docket No. CPSC–2013–0028.

As detailed in this notice, the Commission determines preliminarily that:

- the following are readily observable characteristics of window coverings: (a) the presence of hazardous operating cords on stock window coverings (accessible operating cords longer than 8 inches in any use position); (b) the presence of hazardous inner cords on stock and custom window coverings (accessible inner cords that create a loop large enough to insert a child’s head); and (c) the absence of a required manufacturer label on stock and custom window coverings;
- the identified readily observable characteristics are adequately addressed by a voluntary standard, sections 4.3.1, 4.5, 5.3, 6.3, 6.7, and Appendices C and D of ANSI/WCMA-2018;
- window coverings that conform to sections 4.3.1, 4.5, 5.3, 6.3, 6.7, and Appendices C and D of ANSI/WCMA-2018 regarding the identified characteristics have been effective in reducing the risk of injury from strangulation associated with operating cords on stock window coverings, and inner cords on stock and custom window coverings. Additionally, the required manufacturer label effectively distinguishes between stock and custom window coverings, and expedites timely and effective recalls,

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by requiring identification of the manufacturer name and manufacture date on the product; and

- stock and custom window coverings manufactured or imported for sale in the United States substantially comply with the specified characteristics in sections 4.3.1, 4.5, 5.3, 6.3, 6.7, and Appendices C and D of ANSI/WCMA-2018.

B. Background and Statutory Authority

Section 223 of the Consumer Product Safety Improvement Act of 2008 (CPSIA) amended section 15 of the CPSA, 15 U.S.C. 2064, to add a new subsection (j). Section 15(j) of the CPSA authorizes the Commission to specify, by rule, for any consumer product or class of consumer products, characteristics whose existence or absence are deemed a substantial product hazard under section 15(a)(2) of the CPSA. 15 U.S.C. 2064(j). Section 15(a)(2) of the CPSA defines a “substantial product hazard,” in relevant part, as a product defect which (because of the pattern of defect, the number of defective products distributed in commerce, the severity of the risk, or otherwise) creates a substantial risk of injury to the public. For the Commission to issue a rule under section 15(j) of the CPSA, the characteristics involved must be “readily observable” and have been addressed by a voluntary standard. Moreover, the voluntary standard must be effective in reducing the risk of injury associated with the consumer products; and products subject to the voluntary standard must substantially comply with the voluntary standard. *Id.*

The Commission has issued four previous final rules under section 15(j) of the CPSA, codified in 16 CFR part 1120, involving: (a) drawstrings on children’s upper outerwear (76 FR 42502, July 19, 2011) (drawstring rule), (b) integral immersion protection on handheld hair dryers (76 FR 37636, June 28, 2011) (hair dryer rule), (c) minimum wire size, sufficient strain relief, and overcurrent protection on seasonal and decorative lighting products (holiday lights

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rule) (80 FR 25216, May 4, 2015); and (d) minimum wire size, sufficient strain relief, proper polarity, proper continuity, outlet covers (on 2-wire indoor cords), and jacketed cords (on outdoor cords) (extension cord rule) (80 FR 44262, July 27, 2015).

In each of the four previous rules issued under section 15(j) of the CPSA, the Commission determined the relevant “readily observable” characteristics by considering each of the products on a case-by-case basis. For example, in the proposed drawstring rule (75 FR 27497, 27499, May 17, 2010), the Commission found that the requirements detailed in the relevant voluntary standard could be evaluated with “simple manipulations of the garment, simple measurements of portions of the garments, and unimpeded visual observation.” The Commission stated: “more complicated or difficult actions to determine the presence or absence of defined product characteristics also may be consistent with ‘readily observable.’” The Commission stated its intent to evaluate “readily observable” characteristics on a case-by-case basis. 75 FR at 27499.

As explained in more detail in section II.A of this preamble, the “readily observable” characteristics of window covering cords are consistent with the types of observation and measurement found to be “readily observable” in the Commission’s prior rules under section 15(j). The “readily observable” characteristics of window coverings include visual observation for the presence of operating and inner cords, and a manufacturer label; and when cords are present, simple manipulations and observation of the window covering to assess cord accessibility by children, and to measure the length of accessible cords to determine whether they present a strangulation hazard.

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C. Product Description

Window coverings comprise a wide range of products, including shades, blinds, curtains, and draperies. Generally, the industry considers blinds as “hard” window coverings, composed of slats or vanes, and considers shades as “soft” window coverings, composed of a continuous roll of material. Both blinds and shades may have inner cords that distribute forces to cause a motion, such as raising, lowering, or rotating the window covering to achieve a consumer’s desired level of light control. Manufacturers use inner cords on window coverings to open and close blinds and shades, using a variety of mechanisms, including traditional operating cords, motors, or direct-lift of the bottom rail of the product, to manipulate inner cords. Curtains and draperies do not contain inner cords, but consumers can operate curtains and drapes using a continuous loop operating cord or a wand.

A cord or loop used by consumers to manipulate a window covering is called an “operating cord” and may be in the form of a single cord, multiple cords, or continuous loops. “Cordless” window coverings are products designed to function without an operating cord, but they may contain inner cords. Figures 1 through 6 explain window covering terminology and show examples of different types of window coverings.

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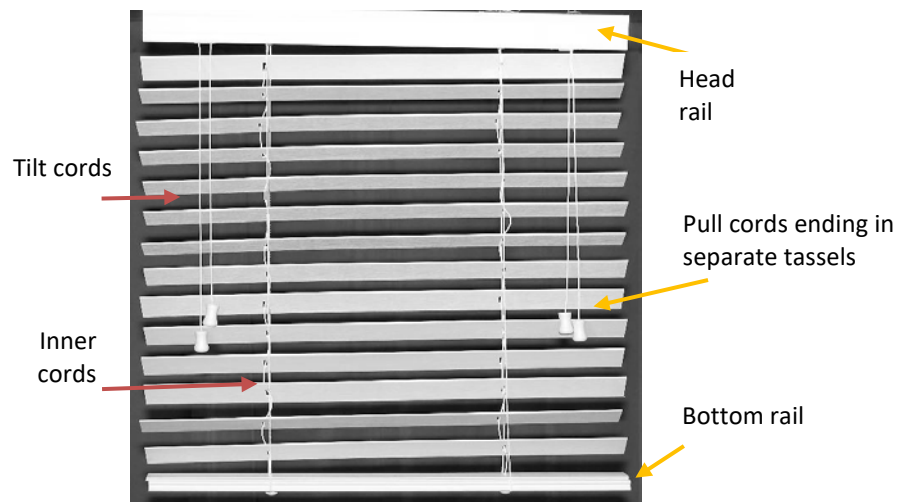


Figure 1. Horizontal blind



Figure 2. Roll-up shade with lifting loops



Figure 3. Cellular shade with looped operating cord

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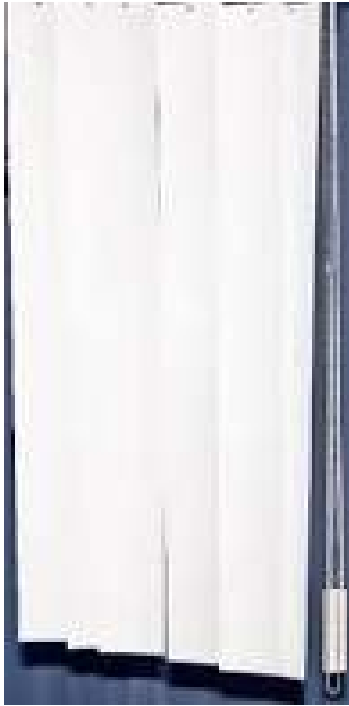


Figure 4. Vertical blind



Figure 5. Roman shade



Figure 6. Cordless horizontal blind

Figure 1 shows a horizontal blind containing inner cords, operating cords, and tilt cords. Figure 2 shows a roll-up shade containing lifting loops and operating cords. Figure 3 shows a cellular shade with inner cords between two layers of fabric and operating cords. Figure 4 shows a vertical blind with a looped operating cord to traverse the blind and a looped bead chain to tilt the vanes. Figure 5 shows a Roman shade with inner cords that run on the back side of the shade and operating cords. Figure 6 is a horizontal blind that is marketed as “cordless” because it has no operating cords, but it still contains inner cords.

This NPR relies on the definitions of window coverings and their features as set forth in the ANSI/WCMA-2018 standard, which requires “stock” and “custom” window coverings to meet different sets of requirements. For the NPR, the definition of a “stock window covering” relies on the definition of “Stock Blinds, Shades, and Shadings” in section 3, definition 5.02 of ANSI/WCMA-2018, describing them as completely or substantially fabricated product prior to being distributed in commerce and as a specific stock-keeping unit (SKU). Even when the seller,

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manufacturer, or distributor modifies a pre-assembled product, by adjusting to size, attaching the top rail or bottom rail, or tying cords to secure the bottom rail, the product is still considered “stock” as defined in the voluntary standard. Moreover, under the voluntary standard, online sales of a window covering, or the size of the order, such as multifamily housing orders, do not make the product a non-stock product. ANSI/WCMA-2018 provides these examples to clarify that, as long as the product is “substantially fabricated,” subsequent changes to the product do not change its categorization from “stock” to “custom.” The NPR defines a “custom window covering” the same as the definition of “Custom Blinds, Shades, and Shadings” in section 3, definition 5.01 of the ANSI/WCMA-2018 standard, which is any window covering that is not classified as a stock window covering.

D. Hazards Associated with Window Covering Cords

Window coverings, depending on the type of accessible cords, including operating cords (meaning pull cords and continuous loop cords), inner cords, and lifting loops, can pose strangulation hazards to children when they are accessible and long enough to wrap around a child’s neck. Figures 7, 8, and 9, below, depict the strangulation hazard for different window covering cord types.

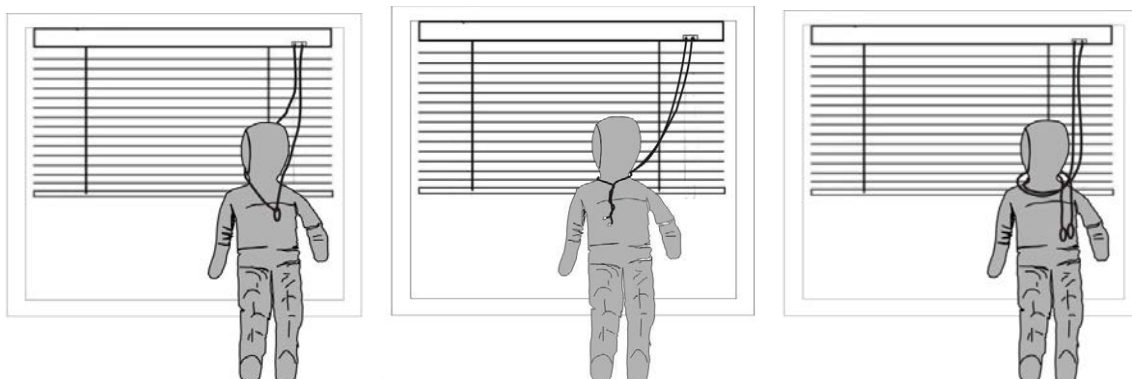


Figure 7. (a) Operating pull cords ending in one tassel (left); (b) operating cords tangled, creating a loop (middle); (c) operating cords wrapped around the neck (right)

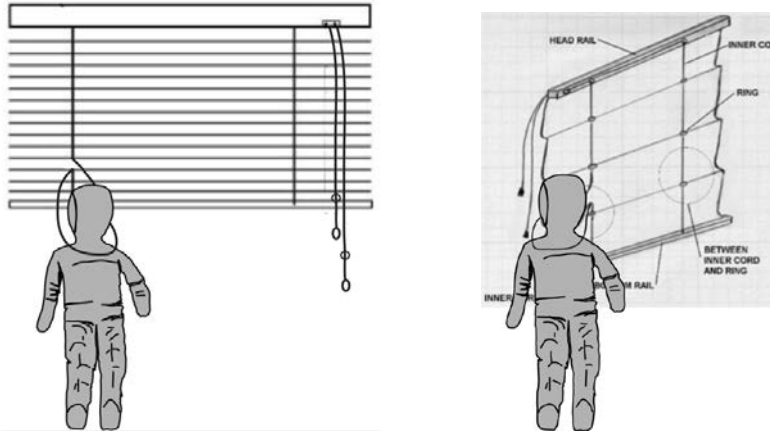


Figure 8. (a) Inner cords creating a loop (left), (b) Inner cords on the back side of Roman shade (right)

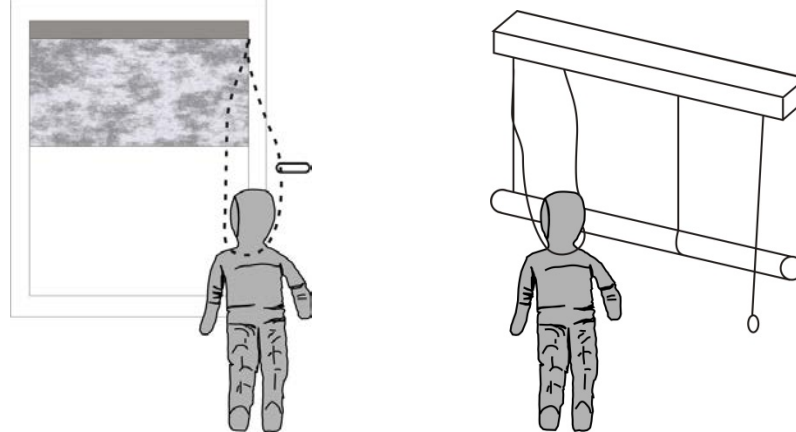


Figure 9. (a) Continuous loop cord (left), (b) Lifting loop on Roll-up Shade (right)

Children can strangle from mechanical compression of the neck when they place a window covering cord around their neck. Strangulation due to mechanical compression of the neck is a complex process resulting from multiple mechanisms and pathways that involve both obstruction of the airway passage and occlusion of blood vessels in the neck. Strangulation can lead to serious injuries with permanent debilitating outcomes or death. If sustained lateral pressure occurs at a level resulting in vascular occlusion, strangulation can occur when a child's head or neck becomes entangled in any position, even in situations where the body is fully or partially supported.

Strangulation is a form of asphyxia that can be partial (hypoxia), when there is an inadequate oxygen supply to the lungs, or total, when there is complete impairment of oxygen

DRAFT

transport to tissues. A reduction in the delivery of oxygen to tissues can result in permanent, irreversible damage. Experimental studies show that only 2 kg (4.4 lbs.) of pressure on the neck may occlude the jugular vein (Brouardel, 1897); and 3-5 kg (7-11 lbs.) may occlude the common carotid arteries (Brouardel, 1897 and Polson, 1973). Minimal compression of any of these vessels can lead to unconsciousness within 15 seconds and death in 2 to 3 minutes, (Digeronimo and Mayes, 1994; Hoff, 1978; Iserson, 1984; Polson, 1973).

The vagus nerve is also located in the neck near the jugular vein and carotid artery. The vagus nerve is responsible for maintaining a constant heart rate. Compression of the vagus nerve can result in cardiac arrest due to mechanical stimulation of the carotid sinus-vagal reflex. In addition, the functioning of the carotid sinuses may be affected by compression of the blood vessels. Stimulation of the sinuses can result in a decrease in heart rate, myocardial contractility, cardiac output, and systemic arterial pressure in the absence of airway blockage.

Strangulation proceeding along one or more of these pathways can progress rapidly to anoxia, associated cardiac arrest, and death. As seen in the CPSC data (Wanna-Nakamura, 2014), and in the published literature, neurological damage may range from amnesia to a long-term vegetative state. Continued deterioration of the nervous system can lead to death (Howell and Gully, 1996; Medalia et al., 1991).

Based on the CPSC staff's review of the incidents in section I.E of this preamble and Tab A of Staff's NPR Briefing Package, 16 of the 194 victims required hospitalization, and six survived a hypoxic-ischemic episode, or were pulseless and in full cardiac arrest when found, suffered severe neurological sequelae, ranging from loss of memory to a long-term or permanent vegetative state requiring tracheotomy and gastrointestinal tube feeding. One victim who remained hospitalized for 72 days was released from the hospital with 75 percent permanent

DRAFT

brain damage and is now confined to a bed.

Because a preexisting loop acts as a noose when a child's neck is inserted, and death can occur within minutes of a child losing footing, CPSC staff concluded that head insertion into a preexisting loop poses a higher risk of injury than when a cord is wrapped around a child's neck; although both scenarios have been demonstrated to be hazardous and have led to fatal outcomes, according to CPSC data.

CPSC staff further advises that reliance on parental supervision and warning labels are inadequate to address the risk of injury associated with window covering cords. A user research study found that caregivers lacked awareness regarding the potential for window covering cord entanglement, lacked awareness of the speed and mechanism of the strangulation injury; stated difficulty using and installing safety devices for window coverings, among the primary reasons for not using them; and caregivers were unable to recognize the purpose of the safety devices provided with window coverings (Levi et al., 2016).¹ According to Godfrey *et al.* (1983), consumers are less likely to look for and read safety information about the products that they frequently use and are familiar with. Consumers are very likely to have high familiarity with window coverings because they almost certainly have window coverings in their homes and probably use them daily. Therefore, even well-designed warning labels will have limited effectiveness in communicating the hazard on this type of product.

Based on the foregoing, the Commission states that warning labels, alone, are unlikely to effectively reduce the strangulation risk from hazardous cords on window coverings, because consumers are not likely to read and follow warning labels on window covering products, and strangulation deaths among children occur quickly and silently, such that parental supervision is

¹ <https://cpsc.gov/s3fs-public/Window%20Coverings%20Safety%20Devices%20Contractor%20Reports.pdf>.

DRAFT

insufficient to address the incidents. Indeed, staff observed that most of the incident window covering units had the permanent warning label required by the ANSI/WCMA standard, applicable at the time of manufacture, affixed to the product. Even well-designed warning labels will have limited effectiveness in communicating the hazard on this type of product, because consumers are less likely to heed warnings for familiar products that they commonly interact with without incident.

In contrast, stock window covering requirements in the ANSI/WCMA standard adequately address the strangulation hazard, by not allowing hazardous cords on the product, by design, and do not rely on consumer action to address the risk. Accordingly, the risk of injury associated with window coverings must be addressed through performance requirements for window covering cords.

As discussed in section II of this preamble, ANSI/WCMA-2018 contains performance requirements which, when products conform, adequately and effectively address the risk of strangulation associated with operating cords on stock products, and inner cords on both stock and custom products.

E. Risk of Injury

The Commission's 2015 advance notice of proposed rulemaking (ANPR) on Window Coverings presented incident data covering the period from 1996 through 2012. 80 FR 2327, 2332 (Jan. 16, 2015). Since then, WCMA published the revised voluntary standard for window coverings, ANSI/WCMA-2018. For products that comply, the standard has removed hazardous operating/pull cords and inner cords for stock window coverings, and removed hazardous inner cords for custom window coverings.

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To study the effectiveness and any lack of compliance with the voluntary standard associated with window covering cords, CPSC staff reviewed the data related to these products from 2009 through 2020.² Some of the data sources relied upon in this analysis do not yet have data for 2020 available; for those sources, staff included data for the latest available year, 2019. The following analysis distinguishes between stock and custom window coverings, whenever feasible. National estimates of deaths and injuries involving window covering strangulations among children under 5 years of age are associated with *all* types of window coverings, because the available information does not allow CPSC staff to distinguish product subtypes.

1. Incident Data from CPSC Databases

Based on newspaper clippings, consumer complaints, death certificates purchased from states, medical examiners' reports, reports from hospital emergency department-treated injuries, and in-depth investigation reports, CPSC staff found a total of 194 reported fatal and near-miss strangulations on window covering cords that occurred among children 8 years old and younger from January 2009 through December 2020. These 194 incidents do not constitute a statistical sample of known probability and do not necessarily include all window covering cord-related strangulation incidents that occurred during that period. However, these 194 incidents do provide at least a minimum number for such incidents during that time frame.

Table 1a provides the breakdown of the incidents by year. Because reporting is ongoing, the number of incidents presented here may change in the future. Given that these reports are

² CPSC's incident search focused on fatal and near-miss strangulations suffered by young children due to window covering cords. Whenever feasible, staff selected the time frame to be 2009 through 2020. CPSC staff searched three databases for identification of window covering cord incidents: the Consumer Product Safety Risk Management System (CPSRMS), the National Electronic Injury Surveillance System (NEISS), and the Multiple Cause of Deaths data file. The first two sources are CPSC-maintained databases. The Multiple Cause of Deaths data file is available from the National Center for Health Statistics (NCHS).

DRAFT

anecdotal, and reporting is incomplete, CPSC strongly discourages drawing any inferences based on the year-to-year increase or decrease shown in the reported data.

Table 1a
Reported Fatal and Near-Miss Strangulation Incidents Involving Window Covering Cords
Among Children Eight Years and Younger 2009 – 2020

Incident Year	Number of Reported Incidents		
	Total	Fatal Strangulations	Near-Miss Strangulations
2009	48	14	34
2010	31	11	20
2011	10	6	4
2012	17	8	9
2013	9	2	7
2014	17	12	5
2015	9	7	2
2016	17	13	4
2017	9	5	4
2018	8	4	4
2019*	11	4	7
2020*	8	3	5
Total	194	89	105

Source: CPSC epidemiological databases CPSRMS and NEISS.

Note: * indicates data collection is ongoing.

Table 1b expands on Table 1a to display the distribution of the annual incidents by severity of incidents and type of window coverings involved. CPSC staff identified 50 of 194 incident window coverings (26 percent) to be stock products, and 35 of the 194 (18 percent) window coverings as custom products. CPSC staff could not identify the window covering type in the remaining 109 of the 194 (56 percent) incidents.

Table 1b
Reported Fatal and Near-Miss Strangulation Incidents Involving Stock/Custom/Unknown Types of Window Covering Cords Among Children Eight Years and Younger 2009 -- 2020

Incident Year	Reported Incidents by Window Covering Type			
	Stock (Fatal/Nonfatal)	Custom (Fatal/Nonfatal)	Unknown (Fatal/Nonfatal)	All
2009	20 (4/16)	7 (2/5)	21 (8/13)	48
2010	10 (3/7)	7 (2/5)	14 (6/8)	31
2011	2 (1/1)	4 (3/1)	4 (2/2)	10
2012	1 (1/0)	5 (1/4)	11 (6/5)	17

DRAFT

2013	2 (1/1)	3 (1/2)	4 (0/4)	9
2014	3 (2/1)	2 (1/1)	12 (9/3)	17
2015	4 (4/0)	1 (1/0)	4 (2/2)	9
2016	5 (3/2)	4 (3/1)	8 (7/1)	17
2017	2 (1/1)	1 (0/1)	6 (4/2)	9
2018	--	1 (0/1)	7 (4/3)	8
2019*	1(0/1)	--	10 (4/6)	11
2020*	--	--	8 (3/5)	8
Total	50 (20/30)	35 (14/21)	109 (55/54)	194

Source: CPSC epidemiological databases CPSRMS and NEISS.

Note: * indicates data collection is ongoing.

Eighty-nine of the 194 incidents (46 percent) reported a fatality. Among the nonfatal incidents, 15 involved hospitalizations (8 percent). The long-term outcomes of these 15 injuries varied from a scar around the neck, to quadriplegia, to permanent brain damage. One additional child was treated and transferred to another hospital; the final outcome of this patient is unknown. In addition, 75 incidents (39 percent) involved less-severe injuries, some requiring medical treatment, but not hospitalization. In the remaining 14 incidents (7 percent), a child became entangled in a window covering cord, but was able to disentangle from the cord and escape injury. Overall, among the incidents with gender information available, 66 percent of the children were males, and 34 percent were females. One incident did not report the child's gender.

(a) Incident Breakdown - Stock and Custom Window Coverings

CPSC staff definitively identified 50 of the 194 incidents that involved stock window coverings in the period 2009 through 2020. Of the 50 incidents, 64 percent involved horizontal blinds, 28 percent involved Roman shades, 4 percent involved roller shades, and 2 percent involved roll-up shades and vertical blinds.

CPSC staff definitively identified 35 of the 194 incidents that involved custom window coverings. Of the 35 incidents, 51 percent involved horizontal blinds, 17 percent involved

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Roman shades, and 9 percent involved roller shades. Other shades, such as cellular and pleated shades, together accounted for 11 percent of the custom window covering incidents. Six percent of the incidents involved vertical blinds. For the remaining 6 percent of the incidents involving custom products, staff did not have sufficient information to determine the type of window covering.

For the majority of the reported incidents (109 out of 194), CPSC staff did not have enough information available to determine if the window covering was stock or custom product. Among these reported incidents, 32 percent involved horizontal blinds; 7 percent involved vertical blinds; 5 percent involved roll-up shades; roller shades and Roman shades were each involved in 4 percent of the incidents; and draperies and other shades (pleated/cellular) were each involved in 3 percent of the incidents. For a large proportion, 43 percent, CPSC staff could not determine the type of window covering based on the available data.

(b) Most Common Cord Types and Associated Hazards Resulting in Fatalities

Whether considering stock, custom, or unknown-if-stock-or-custom products, CPSC staff found that the pull/operating cord system is the single-most hazardous scenario among the reported fatal incidents. Thirty-nine of the 89 (44 percent) fatalities involved a child getting entangled in such pull cords; continuous loops were next, with 23 of the 89 (26 percent) fatalities. Inner cords ranked next, accounting for 7 of the 89 (8 percent) fatalities.

(i) Pull Cords: In 37 of the 39 known pull cord fatalities, the pull cords were components of horizontal blinds. Of these 39 deaths, 38 occurred before the effective date of the 2018 revised ANSI/WCMA standard affecting stock products. Although reporting is ongoing, so far, one fatality has been reported in 2019, but none in 2020. Among the 39 fatalities, CPSC staff identified 7 incidents involving custom products, and 12 identified as stock products; staff

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could not differentiate the remaining 20 incidents' window coverings vis-à-vis their stock-versus-custom status. However, staff assesses that any effects of the 2018 voluntary standard on these products are not yet reflected in the data. A closer look at pull cord-related incidents reveals several ways in which children have strangled.

- *Loops created by knotted or tangled cord:* CPSC staff's incident review revealed that prior to the incidents, the pull cords had been tied together, or had been coiled and tucked away (out of children's reach), but later became accessible. When pull cords were tied together, a loop was created above the knot where the cords were tied, and that is where the child later became entangled. When the cords were coiled, the cords also became tangled and created a loop, which later acted as a noose. Among all 39 pull cord-related fatal incidents, 18 out of 39 (46 percent) occurred on loops created by knotted or tangled cords.

- *One or more long cords that the child wrapped around their neck:* In these scenarios, the child had wrapped the long pull cord(s) around the neck multiple times. When the child fell, or tried to pull away from the window covering, the cord pulled back, causing the child to strangle or nearly strangle. Among all pull cord-related fatal incidents, this category included 11 of the 39 (28 percent) pull cord fatalities.

- *Loop above a single tassel or a stop ball of the cord:* Some pull cords consist of multiple cords that hang from the window covering's head rail and that are joined at a point by a plastic or wooden tassel, or by a stop ball. In such configurations, a loop exists above the tassel. In the cases reviewed, CPSC staff determined that these loops, when accessible to a child, acted as a noose where the child was caught. Four of the 39 (10 percent) pull cord-related fatal incidents involved this scenario.

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- *Pull cord tied to an object:* CPSC staff determined that in one of the 39 (3 percent) pull cord-related fatal incidents, pull cords were tied to a cord cleat, creating a u-shape on the cords where the child strangled.
- *Unknown manner:* Five of the 39 (13 percent) pull cord-related fatal incidents did not report sufficient information to allow CPSC staff to determine the manner in which the child was entangled.

(ii) Continuous Loop Cords: CPSC identified continuous loop cords or beaded-chains that were not mounted with a tension device or that broke loose from a tension device at the time of the incident, to be the next major type of cord in which children become entangled. Vertical blinds and curtains/drapes are the predominant types of window covering associated with strangulations on continuous loops. Some of the incident reports mentioned the child's prior interest in wearing the beaded-chain as a necklace. Among the 89 fatalities, 23 reported this type of operating mechanism.

(iii) Inner Cords: Inner cords on horizontal blinds and/or Roman shades are the third major type of cord in which children become entangled. In these scenarios, the child pulled out the inner cord from between the slats of the horizontal blinds or from behind the Roman shades, which were in the lowered position. Subsequently, the child got caught in the loop created by the pulled-out portion of the inner cord. In some Roman shade incidents, children inserted their heads into the opening between the inner cord and the shade material. Seven of the 89 fatalities involved inner cords.

(iv) Other Cords: The lifting loop of a roll-up blind, among the less prevalent cord types, was involved in four fatalities. Children inserted their heads or arms into the lifting loop that came off the roll-up material, resulting in the strangulation incidents. Tilt cords,

DRAFT

which are used to swivel the slats on a horizontal blind, were involved in two additional fatal incidents.

2. Incident Data from National Estimates

(a) Estimates of Window Covering Cord-Related Strangulation Deaths Using National Center for Health Statistics Data

The National Center for Health Statistics (NCHS) compiles all death certificates filed in the United States into multiple-cause mortality data files. The mortality data files contain demographic information on the deceased, as well as codes to classify the underlying cause of death, and up to 20 contributing conditions. The NCHS compiles the data in accordance with the World Health Organization (WHO) instructions, which request member nations to classify causes of death by the current Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death. Death classifications use the tenth revision of the International Classification of Diseases (ICD), implemented in 1999. The latest year for which mortality data is available is 2019; as such, CPSC derived the strangulation fatality estimates for 2009 through 2019, which is a slightly different time frame than that used for the incident data from the CPSC databases. Based on CPSC staff's review of the death certificates maintained in the CPSRMS database, CPSC staff identified three ICD10 codes that are likely to be used for classification of strangulation fatalities:

- W75 (*accidental suffocation and strangulation in bed*),
- W76 (*Other accidental hanging and strangulation*), and
- W83 (*Other specified threats to breathing*).

Among these three ICD10 codes, W76 appeared to be the most commonly used code to classify strangulation deaths.

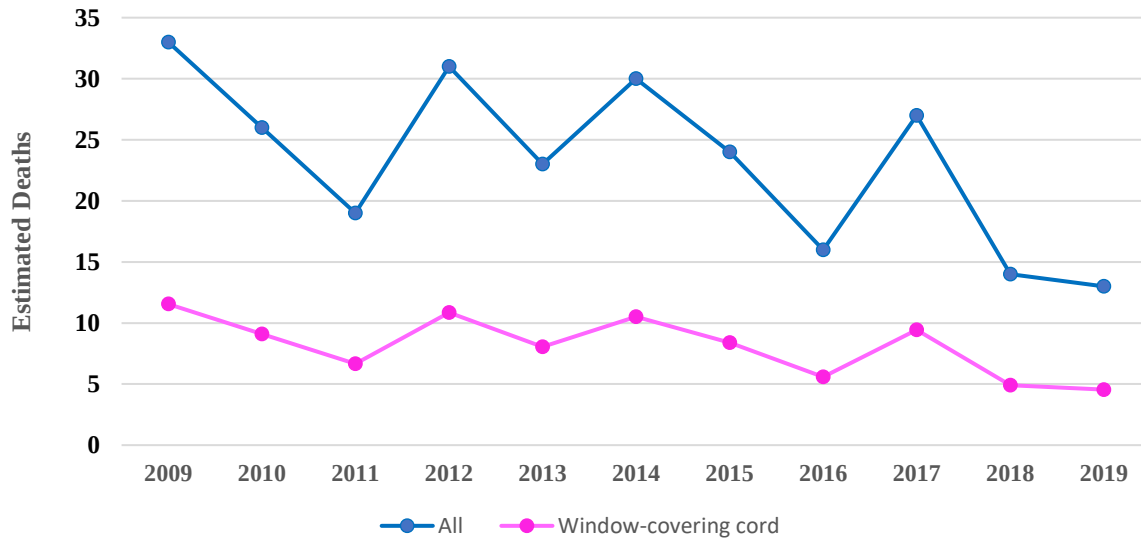
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Using the ICD10 code value of W76, CPSC staff identified a total of 256 strangulation fatalities among children under age 5 in the multiple-cause mortality data from the NCHS from 2009 through 2019, which yields an annual average of 24 deaths (rounded up to the nearest integer). Two hundred and fifty-six strangulation fatalities are most likely an underestimate of all strangulation deaths, because CPSC staff did not use the other two ICD10 codes (W75 and W83) in the search of this data source. An unknown proportion of strangulation deaths are likely coded under ICD10=W75, as well as ICD10=W83. The strangulation deaths in these two codes (W75 and W83) cannot be distinguished from the non-strangulation deaths because of the unavailability of any narrative description, and thus, cannot be added to the total. Hence, staff's annual average estimate of 24 strangulation deaths is a minimum.

A CPSC report by Marcy *et al.*,³ which reviewed CPSC databases in 2002, found that 35 percent of all strangulation fatalities among children less than 5 years old were associated with window covering cords. Assuming that this 35 percent proportion applies to the entire period from 2009 through 2019, CPSC staff estimates that, on average, a minimum of 9 strangulation fatalities (35 percent of the unrounded average annual death estimate of 23.27) occur annually on window covering cords among children under 5 years of age. Again, the estimate is rounded up to an integer. We note that the age range for the strangulation fatality estimate is different from the CPSC incident data analysis. This is because the age information available from the NCHS data were in pre-set groups (*e.g.*, 0 – 4 years, 5 – 9 years), and staff's secondary analysis results³ focused on the 0 – 4 years age group. Accordingly, staff's computed estimates are also limited to ages zero to under 5. Figure 10 presents the yearly details.

³ N. Marcy, G. Rutherford. "Strangulations Involving Children Under 5 Years Old." U.S. Consumer Product Safety Commission, December 2002.

Figure 10: Estimated Annual Minimum for Fatal Strangulations Among Children Under Five Years of Age



Source: Multiple Cause of Death data, NCHS, 2009 – 2019.

Note: The estimates for the window covering cord fatalities are based on the assumptions that 35 percent of all strangulation fatalities are due to window covering cords and that this percentage remained unchanged from 2009 through 2019.

(b) Estimates of Window Covering Cord-Related Strangulation Injuries Treated in Hospital Emergency Departments

Based on the emergency department-treated injury data (NEISS), the aggregated estimated injuries from 2009 through 2020, to children 8 years of age and younger, who were entangled on window covering cords, fall below the NEISS reportable threshold.⁴ The injury estimates for individual years are even smaller, which makes any trend analysis unfeasible. However, the 34 injury reports from NEISS are combined with the incident data for the analysis of anecdotal data in section I.E.1 of this preamble. CPSC set the upper limit for the age selection criterion for NEISS data at 8 years old, whenever feasible, because of multiple incident reports received by CPSC staff that involved children up to that age.

⁴ 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.

DRAFT

F. ANSI/WCMA-2018 History and Description

CPSC staff began working with the Window Covering Manufacturers Association (WCMA) in 1995 on an American National Standards Institute (ANSI) voluntary standard to address the strangulation hazard to young children from accessible cords on window coverings. WCMA published the first version of the ANSI standard in 1996. The 1996 standard sought to prevent strangulation incidents created by looped cords by requiring either: (1) separate operating cords, or (2) a cord-release device on multiple cords ending in one tassel. The standard also required a tension device that would hold the cord or bead loop taut, when installed according to manufacturer's instructions.

In 2001 and in 2002, CPSC staff sent letters to the WCMA asking for revisions to the 1996 standard, including the addition of inner cord stops and the elimination of free-hanging cords or bead chains longer than the neck circumference of a fifth percentile 7- to 9-month-old child. In August 2002, the published ANSI standard required inner cord stops. In 2007, the published ANSI standard required that tension devices partially limit the consumer's ability to control the blind if the tension device is not properly installed. In 2009 and 2010, WCMA published provisional voluntary standards to address hazards associated with Roman shades.

In November 2010, CPSC held a public meeting regarding window coverings, and WCMA announced that it would establish a steering committee to oversee the activities of six task groups, including one intended for operating pull cords and another for continuous loops. On December 20, 2011, WCMA balloted the proposed revisions to the voluntary standard, and on February 6, 2012, staff sent WCMA a letter providing comments on the proposed revision. In these comments, CPSC staff reiterated that the hazardous loop determination should be made for all cords and that the length of an accessible operating cord should not be longer than the neck

DRAFT

circumference of the youngest child at risk. In addition, staff raised concerns about the inability of tension devices to eliminate effectively or reduce significantly the risk of strangulation under certain foreseeable-use conditions.

In November 2012, the WCMA announced the approval of the 2012 version of the ANSI/WCMA standard that included: (1) requirements for durability and performance testing of the tension/hold down devices, including new requirements for anchoring; (2) specific installation instructions and warnings; (3) new requirements for products that rely on “wide lift bands” to raise and lower window coverings; (4) requirements for a warning label and pictograms on the outside of stock packaging and merchandising materials for corded products; and (5) expanded testing requirements for cord accessibility, hazardous loop testing, roll-up style shade performance, and durability testing of all safety devices. A revised ANSI/WCMA A100.1 American National Standard for Safety of Corded Window Covering Products, which included an editorial change, was approved on July 21, 2014.

On July 22, 2014, CPSC staff sent a letter to the WCMA requesting that the WCMA reopen the ANSI standard to address the hazard related to pull cords and continuous loops, which are the predominant hazard types in the incidents reported to CPSC. Staff suggested proposed language for a revision to the voluntary standard and asked that WCMA consider including the language in the standard. On August 29, 2014, WCMA responded that the association would begin the process of opening the ANSI/WCMA window covering standard. On August 2, 2016, CPSC staff hosted a WCMA technical meeting. At the meeting, WCMA committed to revising the voluntary standard to require no operating cords, short cords that cannot form a hazardous loop, or inaccessible cords, stating that there will be exceptions to these requirements. WCMA also committed to submitting a revised draft standard for ANSI to ballot by the end of 2016.

DRAFT

Throughout FY 2017, staff participated in WCMA steering committee meetings, and also participated in the stock/custom window covering definitions and warning labeling task groups. ANSI published a revision to the window coverings standard, ANSI/WCMA A100.1 – 2018, on January 8, 2018. WCMA updated the 2018 version the standard in May 2018, to include missing balloted revisions. The standard went into effect on December 15, 2018.

This NPR is based on ANSI/WCMA-2018, which segments the window covering market between “stock” and “custom” window coverings, as defined in section 3 of the standard, definitions 5.02 and 5.01. Per section 4.3.1 of the standard, stock window coverings are required to have:

- (1) no operating cords (4.3.1.1),
- (2) inaccessible operating cords (4.3.1.3), or
- (3) short operating cords (equal to or less than 8 inches) (4.3.1.2).

As reviewed in section II of this preamble, CPSC staff advises that the requirements for operating cords on stock window coverings in ANSI/WCMA-2018 adequately address the risk of strangulation to children, by removing operating cords, ensuring that they are inaccessible to children, or by making them too short to wrap around a child’s neck. However, as shown in Table 2, ANSI/WCMA-2018 does not adequately address the risk of injury associated with custom window coverings, because custom products can still be sold to consumers with hazardous operating cords.⁵

⁵ Although custom window coverings can choose to meet the operating cord requirements for stock window coverings (sections 4.3.2.1 through 4.3.2.3), consumers can still purchase custom window coverings that contain hazardous operating cords if they custom order the product (sections 4.3.2.4 through 4.3.2.7). Because the ANSI/WCMA-2018 standard does not adequately address the risk of injury from operating cords on custom products, this NPR does not include them in the scope of the rule under section 15(j) of the CPSA. The Commission proposes to address operating cords on custom window coverings in a separate rulemaking under sections 7 and 9 of the CPSA.

DRAFT

Section 4.5 of ANSI/WCMA addresses the strangulation risk associated with inner cords on both stock and custom window coverings. The standard requires that if inner cords are present on the product, the inner cords must be (1) inaccessible, or (2) if cords are accessible, the loop created when pulling the cord (with a maximum force of 5 pounds) cannot allow a head probe to be inserted using a 10-pound force. Section II of this preamble provides CPSC staff's analysis of the inner cord strangulation hazard on stock and custom window coverings. Staff concludes that section 4.5 of the ANSI/WCMA-2018 standard adequately addresses the risk of injury associated with inner cords on stock and custom window coverings because, similar to operating cords on stock products, inner cords must be not present, inaccessible, or, if accessible, too short to create a loop large enough for a child to insert his or her head.

Table 2 shows the operating and inner cord requirements for stock and custom window coverings in ANSI/WCMA-2018.

Table 2 – ANSI/WCMA-2018 Operating and Inner Cord Requirements for Stock and Custom Window Coverings

<i>Performance Requirements</i>	<i>Stock Products</i>	<i>Custom Products</i>
<i>No operating cords OR</i>	Required	Optional
<i>Short operating cord with a length equal to or less than 8 inches in any state (free or under tension) OR</i>		Optional
<i>Inaccessible operating cords</i>		Optional
<i>Inner cords that meet Appendix C and D</i>	Required	Required
<i>Single Retractable Operating Cord Lift System</i>	Prohibited	Allowed
<i>Continuous Loop Operating System</i>	Prohibited	Allowed
<i>Accessible Operating Cords longer than 8 inches</i>	Prohibited	Allowed

G. Commission Efforts to Address Hazardous Window Covering Cords

1. Petition and Rulemaking

Since the mid-1990s, CPSC staff has been engaged with the voluntary standards body urging changes to the ANSI/WCMA standard to reduce the risk of injury associated with

DRAFT

window covering cords. On October 8, 2014, the Commission granted a petition to initiate a rulemaking to develop a mandatory safety standard for window coverings.⁶ The petition sought to prohibit window covering cords when a feasible cordless alternative exists. When a feasible cordless alternative does not exist, the petition requested that all window covering cords be made inaccessible by using passive guarding devices. The Commission granted the petition and directed staff to prepare an ANPR to seek information and comment on regulatory options for a mandatory rule to address the risk of strangulation to young children on window covering cords.

On January 9, 2015, the Commission voted to approve publication in the *Federal Register* of the ANPR for corded window coverings, with changes. The Commission published the ANPR for corded window covering products on January 16, 2015 (80 FR 2327). The ANPR initiated a rulemaking proceeding under the CPSA. CPSC invited comments concerning the risk of injury associated with corded window coverings, the regulatory alternatives discussed in the notice, the costs to achieve each regulatory alternative, the effect of each alternative on the safety, cost, utility, and availability of window coverings, and other possible ways to address the risk of strangulation posed to young children by window covering cords. CPSC also invited interested persons to submit an existing standard or a statement of intent to modify or develop a voluntary standard to address the risk of injury. The ANPR was based on the 2014 version of the ANSI/WCMA standard.

As described in section II.F of this preamble, the revised version of the voluntary standard, ANSI/WCMA-2018, adequately addresses the risk of injury for stock window

⁶ The petition, CP 13-2, was submitted by Parents for Window Blind Safety, Consumer Federation of America, Consumers Union, Kids In Danger, Public Citizen, U.S. PIRG, Independent Safety Consulting, Safety Behavior Analysis, Inc., and Onder, Shelton, O’Leary & Peterson, LLC. Staff’s October 1, 2014 Petition Briefing Package, and a copy of the petition at Tab A, is available on CPSC’s website at: https://cpsc-d8-media-prod.s3.amazonaws.com/s3fs-public/pdfs/foia_PetitionRequestingMandatoryStandardforCordedWindowCoverings.pdf.

DRAFT

coverings, and the risk of inner cord strangulation on custom window coverings. Accordingly, the Commission is issuing two proposed rules: (1) this NPR under section 15(j) of the CPSA, to deem as SPHs, stock window coverings that do not comply with one or more of three readily observable characteristics, and custom window coverings that do not comply with one or more of two readily observable characteristics; and (2) in a separate rulemaking under sections 7 and 9 of the CPSA, an NPR to require that custom window coverings manufactured or imported for sale in the United States not contain hazardous operating cords, by complying with the same operating cord requirements as stock products in section 4.3.1 of ANSI/WCMA-2018.

2. Window Covering Recalls

During the period January 1, 2009 through December 31, 2020, CPSC conducted 42 consumer-level recalls, including two recall reannouncements. Tab C of Staff's NPR Briefing Package provides the details of these 42 recalls, where strangulation was the primary hazard. Manufacturers recalled more than 28 million units,⁷ including: Roman shades and blinds, roll-up blinds, roller shades, cellular shades, horizontal blinds, and vertical blinds. The recalled products also included stock products, which can be purchased by consumers off-the-shelf, and custom products, which are made-to-order window coverings based on a consumer's specifications, such as material, size, and color. Recalled units did not comply with the current voluntary standard, ANSI/WCMA-2018.

⁷ This estimate does not include the recalled units of Recall No. 10-073. This was an industry-wide recall conducted by members of the Window Covering Safety Council (WCSC). The recall announcement did not provide an exact number of recalled products.

DRAFT

II. Preliminary Determination of a Substantial Product Hazard

Sections 4.3.1, 4.5, 5.3, 6.3, 6.7, and Appendices C and D of ANSI/WCMA-2018 set forth the performance requirements for the identified readily observable characteristics of stock and custom window coverings specified in the proposed rule. Table 3 summarizes these requirements. Additionally, Tab D of the Staff's NPR Briefing Package provides more detail on the information presented in Table 3. If finalized, the rule would deem nonconformance to one or more of the identified readily observable characteristics of stock and custom window coverings in ANSI/WCMA-2018 to be an SPH under section 15(a)(2) of the CPSA.

**Table 3 – Readily Observable Characteristics in ANSI/WCMA-2018
for Stock and Custom Window Coverings**

<i>Stock Window Coverings Section of the Standard</i>	<i>Readily Observable Characteristics</i>	<i>Criterion</i>
A. Operating cord		
4.3.1.1 Cordless Operating System <i>“The product shall have no operating cords”</i>	Presence of the operating cord	(a) Not present or
4.3.1.2 Short Static or Access Cords <i>“The product shall have a Short Cord”</i>	If present, measure the length in any position of the window covering	(b) 8 inches or shorter or
4.3.1.3 Inaccessible Operating Cords <i>“The operating cords shall be inaccessible as determined per the test requirements in Appendix C: Test Procedure for Accessible Cords”</i>	If present, observe whether accessible	(c) Inaccessible using cord accessibility probe

DRAFT

<i>Stock and Custom Window Coverings, Section of the Standard</i>	<i>Readily Observable Characteristics</i>	<i>Criterion</i>
B. Inner cord		
4.5 Inner Cords “All products with inner cords must meet the requirements in Appendix C and Appendix D.” Appendix C. Test Procedure for Accessible Cords	If present, determine whether accessible	(a) Inaccessible using cord accessibility probe <i>or</i>
Appendix D. Hazardous Loop Test Procedure	If present, determine whether a child’s head can penetrate the opening	(b) Pull inner cord and measure to determine whether the opening is less than 17 inches. For 15(j) purposes, this is comparable to inserting a head probe with a force of 10 pounds.
C. Manufacturer label		
5.3 Manufacturer Label: There shall be a permanent label(s) or marking on all finished window covering products	Presence of a permanent label or marking within or on the headrail or on the roller tube	Observe whether the label is present and contains the following: (a) The name, city, and state of the manufacturer / importer / fabricator (b) Month and year of manufacture (c) Designation of window covering as “Custom” or “Stock”

A. Defined Characteristics Are Readily Observable

1. Operating Cords on Stock Window Coverings

Section 4.3.1 of ANSI/WCMA-2018 requires the operating cords of stock window coverings to be: (1) not present (cordless) (section 4.3.1.1); (2) inaccessible (section 4.3.1.3); or (3) eight inches long or shorter in any position of the stock window covering (section 4.3.1.2). The Commission preliminarily determines that these characteristics of operating cords on stock window coverings are “readily observable” because they require visual observation and measurement to assess conformance with sections 4.3.1.1 through 4.3.1.4 of ANSI/WCMA-2018.

DRAFT

CPSC staff can quickly visually observe the presence or absence of an operating cord (*i.e.*, the portion of a cord that the user interacts with during operation) on a stock window covering. Figures 11, 11a, and 12 show window coverings, two containing accessible cords on a horizontal blind (Figures 11 and 11a), and one horizontal blind without operating cords, meaning a cordless blind (Figure 12). Figure 11a demonstrates operating cords that are accessible using a cord accessibility probe, although the presence of cords is easily observable with visual confirmation and does not require a probe. For a window covering with accessible operating cords, as shown in Figures 11 and 11a, a CPSC investigator would proceed to determine whether the length of the operating cord is hazardous. A window covering without operating cords (Figure 12) is compliant with the operating cord requirement in section 4.3.1 of ANSI/WCMA-2018, because it conforms with section 4.3.1.1, and no further inspection of the operating cord is necessary.



Figure 11
Horizontal Blind with Accessible
Operating Cord



Figure 11a
Horizontal Blind with
Accessible Operating Cord
Using Cord Accessibility Probe



Figure 12
Horizontal Blind with No
Operating Cord

Another way a stock window covering can conform to section 4.3.1 of ANSI/WCMA is to make an operating cord inaccessible to children, pursuant to section 4.3.1.3. The CPSC investigator would attempt to touch the operating cord using the cord accessibility probe. A cord accessibility probe, shown in figure 11a, is a tool used to determine whether an operating cord,

DRAFT

inner cord, or inner cord shroud is accessible to a child.⁸ If a cord accessibility probe cannot touch the cord, the cord is inaccessible and complies with section 4.3.1 of ANSI/WCMA. No further testing is required. For most products sold in the United States, staff can visually observe whether an operating cord is accessible without using a cord accessibility probe. Although stock window coverings that use a rigid cord shroud to encase an operating cord are sold in other countries, staff is not aware of a stock product containing a rigid cord shroud sold in the United States.⁹

The final way to comply with the operating cord requirement for stock products is to ensure that if an operating cord is accessible, the operating cord does not have a length exceeding 8 inches in any position of the window covering, as set forth in section 4.3.1.2 of ANSI/WCMA-2018. Whether an accessible operating cord is longer than 8 inches in any position of the window covering is readily observable by taking a simple measurement with a tape measure. To observe the operating cord length, the CPSC investigator must first keep the product stationary, by having another person hold it, hanging it up on a fixed surface, or placing the window covering on the floor. The investigator can then measure the length of the operating cord with a tape measure or ruler. Figure 13 demonstrates fully lowered, mid-length, or fully raised positions of the window covering where the CPSC investigator can take a measurement. The presence of an accessible operating cord that is longer than 8 inches in any position does not conform to section 4.3.1.2, and no further inspection is necessary. The Commission proposes to deem the presence of an accessible operating cord longer than 8 inches in any position an SPH,

⁸ The probe is an inexpensive measuring device designed to simulate a child's hands and fingers, by considering children's anthropometric dimensions. Tab I of Staff's NPR Briefing Package contains additional information on cord accessibility probes. Staff estimates that the cost to manufacture the probe ranges from \$50, to 3D print the part from plastic, to \$200, to machine the part from an aluminum rod. Manufacturers of window coverings should already have this cord accessibility probe.

⁹ Tab D of Staff's NPR Briefing Package shows an example of a window covering with a rigid cord shroud.

DRAFT

because a child can wrap a cord or looped cord longer than 8 inches around his or her neck, and the child could strangle on the long cord.



Figure 13. One product showing the length of the operating cord in three positions: fully lowered, middle height, fully raised

2. Inner Cords on Stock and Custom Window Coverings

If a stock window covering conforms to the readily observable operating cord requirements in section 4.3.1 of ANSI/WCMA-2018, the CPSC investigator would then observe whether the window covering has hazardous inner cords, as set forth in section 4.5, 6.3, 6.7, and Appendices C and D, of ANSI/WCMA-2018. Investigators would also assess whether a custom window product contains a hazardous inner cord. ANSI/WCMA-18 requires that inner cords on stock and custom window coverings be: (1) not present (cordless); (2) inaccessible; or (3) short enough not to create a loop large enough for a child to insert their head. The Commission preliminarily determines that these characteristics of inner cords on stock and custom window coverings are “readily observable” because they require visual observation and direct measurements of the product to assess conformance with sections 4.5, 6.3, 6.7, Appendix C, and Appendix D of ANSI/WCMA-2018.

DRAFT

The presence of an inner cord (*i.e.*, the portion of a cord connecting head rail and bottom rail) is readily observable with a visual check. A window covering without inner cords, such as a roller shade, is compliant with the inner cord requirement in section 4.5, and no further inspection is necessary for inner cords.

If a window covering has inner cords, the CPSC investigator must determine whether a child can access the inner cord, and if so, whether the cord is hazardous because it can form a loop large enough for a child to insert their head. Accessibility to an inner cord of an open construction window covering type, such as horizontal, Roman, and pleated shades, is observable by checking whether the cord accessibility probe can touch the cords located 12 inches below the headrail before reaching a 2-inch diameter section, or by inserting a 2-inch diameter section to any opening. Figure 14 shows how staff observes whether an inner cord is accessible on a horizontal blind by touching the inner cord with the probe. Because the inner cord on this sample is accessible, the CPSC investigator would next proceed to determine whether a hazardous opening can be created by the inner cord, by pulling on the inner cord.



Figure 14. Accessibility to inner cord in an open-construction horizontal blind

Figure 15 depicts a Roman shade. Although this example has no operating cords, the backside of the shade contains two inner cords that run through the rear side of the shade. In this case, the inner cords are routed through inner cord shrouds. Because the cord accessibility probe can touch the inner cords on this sample (Figure 15a), the cord is accessible under section 4.5 of

DRAFT

ANSI/WCMA-2018. Accordingly, the CPSC investigator would proceed to the next step to determine whether the inner cord opening is hazardous.

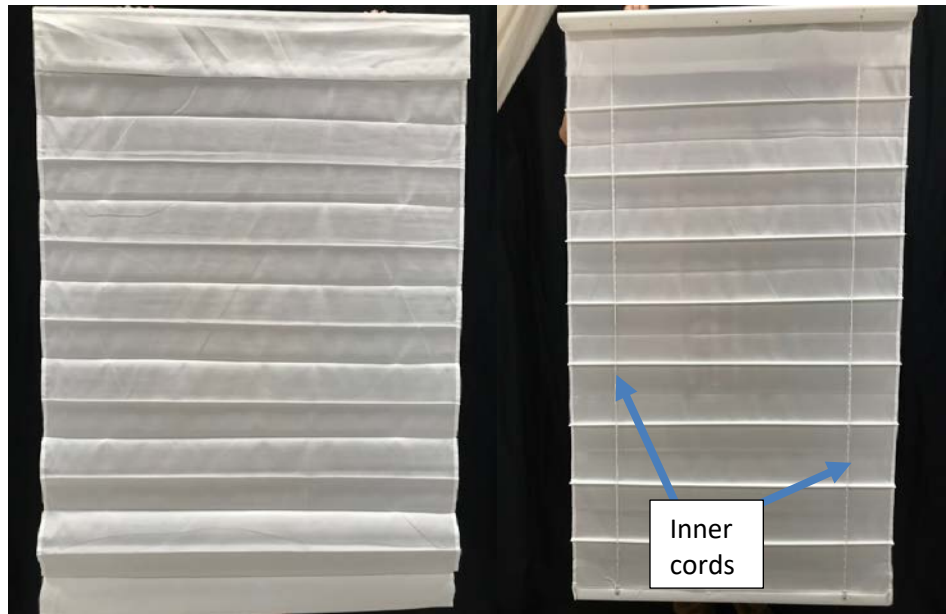


Figure 15. Front and backside of a Roman Shade

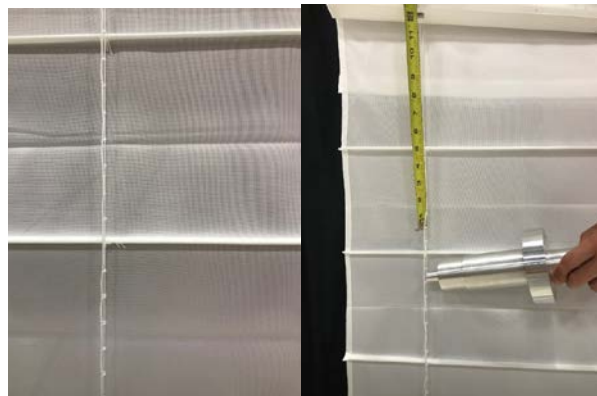


Figure 15a. The cord accessibility probe can touch the inner cord on this Roman shade

Accessibility to an inner cord of a closed-construction window covering type, such as a cellular shade, is readily observable by checking whether the: (1) cord accessibility probe can touch the cords located 12 inches below the head rail before reaching the 4-inch diameter section of the probe, or (2) 4-inch diameter section of the probe can be inserted into any opening.

Figure 16 demonstrates a cellular shade with no operating cord. The two inner cords are run between the two layers of the shade. The cord accessibility probe cannot be inserted through

DRAFT

the opening and touch the cords. Because the inner cord is not accessible, the hazardous loop test cannot be performed. In this example, the cellular shade complies with both operating cord and inner cord requirements in ANSI/WCMA-2018. Accordingly, this shade is compliant with the voluntary standard and would not create an SPH related to inner-cord accessibility.

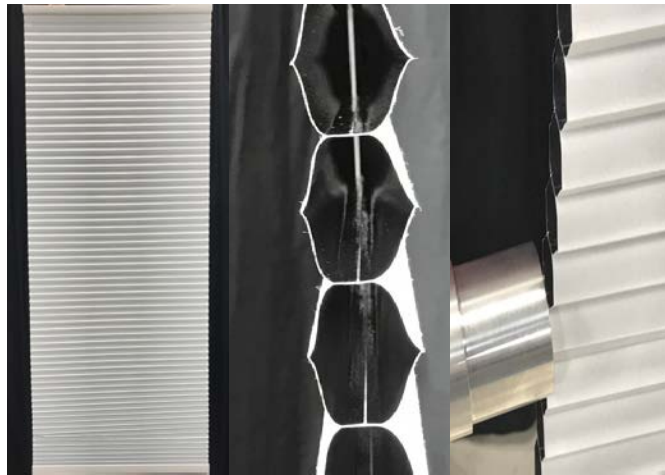


Figure 16. Accessibility to the inner cord in a closed construction (cellular) window covering

If the CPSC investigator observes that an inner cord is accessible with the cord accessibility probe, then the investigator would need to assess the size of a cord loop, created by pulling on the inner cord, to determine whether a child could put their head through the loop.

DRAFT

Observing whether the inner cord opening is hazardous requires first fully lowering the window covering, and pulling on the inner cord with a force gauge, until the gauge reaches 5 pounds in a direction most likely to create the maximum length, or the inner cord has been pulled 25 inches, whichever comes first (see Figure 17). A force gauge is a widely available tool¹⁰ used to pull on the window covering inner cord to determine whether a hazardous loop can be created, by measuring a force intended to simulate a child pulling on the cord.

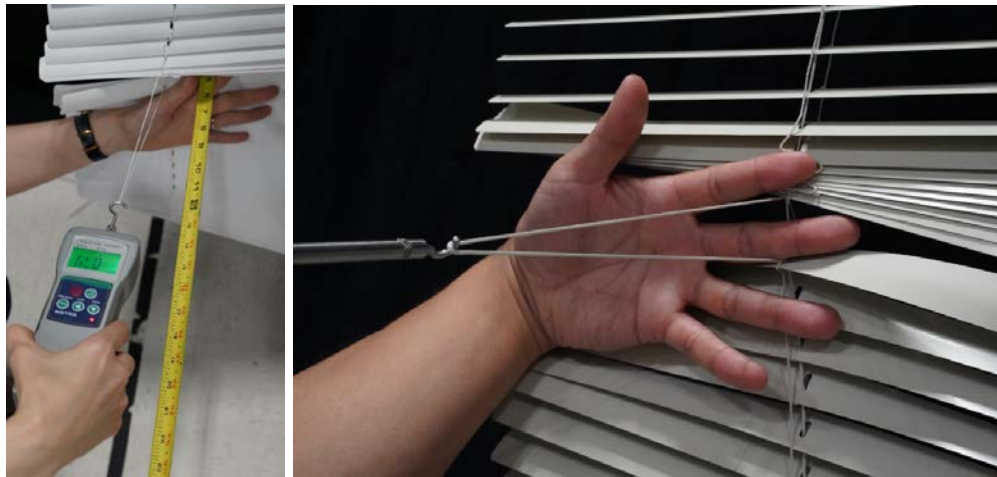


Figure 17. Inner cord opening on a horizontal blind

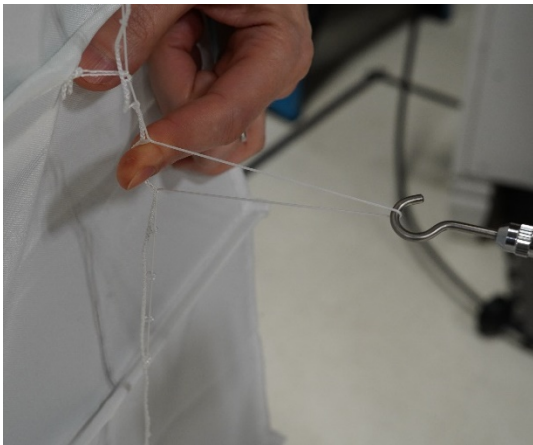


Figure 18. Inner cord opening on a Roman shade



Figure 19. Nonrigid shroud opening on a Roman shade

¹⁰ Staff found this measuring device available at various online retailers for around \$50-\$100, depending on product features. Window covering manufacturers should already have this gauge.

DRAFT

Finally, to determine whether the loop created by the pulled inner cord is hazardous, a CPSC investigator would determine whether a child could insert his or her head into the loop, by attempting to insert a head probe. The head probe is designed to simulate the head size of a fifth percentile 7-month to 9-month-old child, as shown in Figure 20.¹¹ However, a tape measure can also be used to measure the perimeter of the opening, as shown in Figure 21. Manufacturers should already have the probe, or they can use a tape measure to assess an inner cord.



Figure 20. Inserting the head probe into the inner cord loop and nonrigid cord shroud

The Commission proposes that if the head probe can be inserted into the inner cord opening or nonrigid shroud opening, the product would be deemed to have an SPH pursuant to the NPR, because the inner cord is not in conformance with sections 4.5, 6.3, 6.7, and Appendices C and D of ANSI/WCMA-2018. A nonconforming inner cord presents a strangulation hazard, because a child could insert his or her her into the inner cord opening.

Staff found that measuring the perimeter of the inner cord opening with a measuring tape provides a result equivalent to inserting a head probe with a force gauge. Figure 21 shows the perimeter openings on a horizontal blind, Roman shade inner cord, and Roman shade inner cord shroud.

¹¹ The head probe is another inexpensive measuring device that can be made using readily available materials or 3D printed for approximately \$50. Tab I of Staff's NPR Briefing Package describes the head probe in more detail.



Figure 21. Perimeter measurement on a horizontal blind (top), Roman shade inner cord (middle), and Roman shade inner cord shroud (bottom)

The Commission proposes to deem the presence of an accessible inner cord on stock and custom window coverings that creates a loop large enough for a child to insert his or her head when tested per sections 4.5, 6.3, 6.7, and Appendices C and D of ANSI/WCM-2018 to be an SPH, because a child can strangle on a noncompliant inner cord loop.

3. Manufacturer Label on Stock and Custom Window Coverings

Section 5.3 of ANSI/WCMA-2018 requires that stock and custom window coverings display a permanent label on the headrail (or roller tube) of a window covering, with the following information:

- the readily distinguishable name, city, and state of the manufacturer/importer/fabricator;
- the month and year of manufacture;
- the designation of the window covering as “Custom” or “Stock.”

A CPSC investigator can perform a visual observation of the label and its contents quickly, in less than a minute.

DRAFT

The Commission preliminarily determines that the absence of a manufacturer label is readily observable with a visual observation of the window covering. The Commission proposes that the absence of a manufacturer label on a window covering is an SPH, because the window covering would not be in compliance with section 5.3 of ANSI/WCMA-2018. Additionally, the absence of this manufacturer label would make it difficult for staff, manufacturers, and consumers to identify the product and class of products subject to a recall, and to distinguish stock from custom window coverings. Differentiating stock from custom products is important as long as the operating cord requirements for stock and custom products are not identical. For example, the Commission anticipates that a final rule under section 15(j) of the CPSA can issue before a rule under sections 7 and 9 of the CPSA. Once a rule for operating cords on custom products is complete, substantive cord requirements for all window coverings will be the same. Before that time, only inner cords on custom products will be subject to a rule. Therefore, CPSC, manufacturers, and consumers must be able to differentiate stock products from custom products until the operating cord requirements are the same; and product information that aids a recall will always be necessary to effect and expedite a recall.

B. Window Coverings that Conform to ANSI/WCMA-2018 Are Effective at Reducing the Risk of Injury Associated with the Identified Readily Observable Characteristics

Based on CPSC staff's analysis, the Commission preliminarily determines that stock window coverings that comply with section 4.3.1 of the revised 2018 version of the ANSI/WCMA standard effectively eliminate or significantly reduce the risk of strangulation from operating cords, by removing operating cords, making operating cords inaccessible to children, or by ensuring that operating cords are not long enough for a child to wrap around his or her neck. See Tabs G and I of Staff's NPR Briefing Package. Staff's review of the incident data found that if stock window coverings had complied with the requirements in sections 4.3.1

DRAFT

of ANSI/WCMA-2018 at the time of the incident, all operating cord incidents would have been prevented. *Id.* Even though the requirements in the 2018 standard, when followed, should lead to safe stock window coverings, the Commission acknowledges that it will take a long time, approximately 2 decades, for existing window coverings in consumers' homes to be replaced.¹²

Based on staff's assessment, the Commission also preliminarily determines that stock and custom window coverings that comply with the inner cord requirements in sections 4.5, 6.3, 6.7, and Appendices C and D of ANSI/WCMA-2018 effectively eliminate or reduce the strangulation risk to children from hazardous inner cords. *Id.* Like the operating cord requirements for stock window coverings, the inner cord requirements eliminate hazardous cords, by removing them from the product, shrouding inner cords to make them inaccessible to children, or ensuring that if a child pulls on an inner cord, the loop created is not large enough for a child to insert his or her head. Staff's review of the incident data found that if stock and custom window coverings had been in compliance with section 4.5 of ANSI/WCMA-2018, all inner cord incidents would have been prevented. *Id.*

Finally, the Commission preliminarily determines that stock and custom window coverings that comply with section 5.3 of ANSI/WCMA-2018, by displaying the required manufacturer label, are effective at reducing the risk of injury, by identifying whether a product is stock or custom, and by identifying the manufacturer and the manufacture date of the products. This information allows CPSC, manufacturers, and consumers to differentiate stock products from custom products, and it also aids in expediting timely and effective recalls. *See* Tab D of Staff's NPR Briefing Package.

¹² For window coverings manufactured before the effective date of the voluntary standard, the Window Covering Safety Council (WCSC) distributes safety devices through its website, and during October safety month, CPSC and WCSC promote safe window coverings, and offer guidance on what to do to reduce the strangulation hazard.

DRAFT

C. Window Coverings Substantially Comply with the Identified Readily Observable Characteristics of Window Coverings

The Commission has several bases to determine preliminarily that window coverings substantially comply with the requirements for operating cords in ANSI/WCMA-2018.¹³ First, WCMA, the trade association for window coverings and the body that created the voluntary standard, stated in a comment on the ANPR (comment ID: CPSC_2013-0028-1555) that there has been substantial compliance with the voluntary standard since its first publication. WCMA also stated that the association's message to all manufacturers is that, to sell window coverings in the United States, compliance with the standard is mandatory.

Additionally, the Commission instructed the staff to investigate the level of compliance of window coverings with the voluntary standard. CPSC contracted with D+R International, which interviewed window covering manufacturers and component manufacturers to collect anecdotal information on the distribution of stock and custom product sales and the impact of compliance with the voluntary standard (D+R International, 2021). Various manufacturers indicated retail customers would not stock noncompliant products. Manufacturers are also aware of their customers' procedures, and they would not ship to them, if there were concerns about the assembly and installation process. The D+R report indicates that the voluntary standard has caused U.S. window covering manufacturers to design and offer cordless lift operations for most stock window covering categories. All manufacturers interviewed were aware of the standard and had implemented compliance in all stages of their development process, from product design to fabrication.

¹³ CPSC staff observes some decline in pediatric incident data that suggests compliance with the voluntary standard is effective at reducing the number of incidents (see Tab A of Staff's NPR Briefing Package for CPSRMS and NCHS data). We expect a similar trend to continue for stock products given the substantial improvements made to the standard in 2018. However, because window coverings are used for many years, and will be replaced over time with safer products that conform to the voluntary standard, several more years of incident data are required to more definitively demonstrate a reduction in incidents.

DRAFT

CPSC field staff also confirmed compliance of the categorization for “stock” and “custom” window coverings, as defined in the ANSI/WCMA standard. CPSC field staff conducted unannounced in-store visits to 18 firms, comprising wholesalers, manufacturers, and retailers. Window coverings in 13 locations demonstrated compliance with the voluntary standard for operating cords for stock and custom products. However, in four locations, staff observed noncompliance of custom window coverings with the ANSI/WCMA standard, primarily for characteristics that are not subject to this rule, including: length of operating cords 40 percent longer than the window covering length, with no accompanying specific customer request; lack of warning label; lack of manufacturer label; lack of hang tag; and use of a cord tilt, instead of wand tilt, without an accompanying specific customer request. Staff found one location with a noncomplying stock window covering. This stock window covering was being sold with long beaded-cord loops in various sizes. Tab E of Staff’s NPR Briefing Package contains a more detailed description of staff’s assessment of substantial compliance with the voluntary standard.

Finally, CPSC technical staff tested custom product samples, using test parameters defined in ANSI/WCMA-2018, with a cord accessibility probe and force gauge. The samples tested by staff also indicated a high level of conformance in custom products regarding inner cord accessibility.

Based on incident data, WCMA’s statements, contractor report findings, and staff’s examination and testing of window covering products, the Commission preliminarily determines that a substantial majority of window coverings sold in the United States comply with the readily observable safety characteristics identified in ANSI/WCMA-2018.

III. Description of the Proposed Rule

The proposed rule would add several new paragraphs in part 1120. The proposed rule includes two new definitions in sections 1120.2(f) and (g), which would define “stock window covering” and “custom window covering” consistent with the definitions in section 3 of ANSI/WCMA-2018, definitions 5.02 and 5.01, respectively. The proposed rule defines a “stock window covering” as a product that is “completely or substantially fabricated” prior to being distributed in commerce and is a stock-keeping unit (SKU). The definition further explains that even when a seller, manufacturer, or distributor modifies a pre-assembled product by, for example, adjusting the size, attaching a top rail or bottom rail, or tying cords to secure the bottom rail, the product is still considered “stock.” Additionally, the definition clarifies that online sales of the product, or the quantity of an order, such as a large quantity for a multifamily housing unit, do not make the product a non-stock product. The proposed rule defines a “custom window covering” as any window covering that is not classified as a stock window covering.

Proposed section 1120.3 lists substantial product hazards by product, identifying the readily observable characteristics of each product, and the sections of the voluntary standards that address each hazard. The proposed rule would modify § 1120.3 by adding “stock window coverings” and “custom window coverings” as § 1120.3(e) and (f), respectively. Proposed § 1120.3(e) would deem stock window coverings that fail to comply with one or more of three readily observable characteristics in ANSI/WCMA-2018 an SPH:

- (1) Operating cord requirements in sections 4.3.1.1 (cordless operating system), 4.3.1.2 (short static or access cord), or 4.3.1.3 (inaccessible operating cord);
- (2) Inner cord requirements in sections 4.5, 6.3, 6.7, Appendix C, and Appendix D; and
- (3) On-product manufacturer label in section 5.3.

DRAFT

Additionally, proposed § 1120.3(f) would deem custom window coverings that fail to comply with one or more of two readily observable characteristics in ANSI/WCMA-2018 an SPH:

- (1) Inner cord requirements in section 4.5, 6.3, 6.7, Appendix C, and Appendix D; and
- (2) On-product manufacturer label in section 5.3.

These characteristics and the ANSI/WCMA-2018 requirements are explained in more detail in section II, and Tables 2 and 3, of this preamble.

Finally, the proposed rule would add § 1120.4(d), which provides the incorporation by reference details for the ANSI/WCMA standard.

IV. Effect of the Proposed 15(j) Rule

Section 15(j) of the CPSA allows the Commission to issue a rule specifying that a consumer product or class of consumer products has characteristics whose presence or absence creates a substantial product hazard. Such a rule would not be a consumer product safety rule, and thus, would not trigger the statutory requirements of a consumer product safety rule. For example, a rule under section 15(j) of the CPSA does not trigger the testing or certification requirements under section 14(a) of the CPSA.

Although a rule issued under section 15(j) of the CPSA is not a consumer product safety rule, placing a consumer product on the SPH list in 16 CFR part 1120 would have certain ramifications. A product that is or has an SPH is subject to the reporting requirements of section 15(b) of the CPSA, 15 U.S.C. 2064(b). A manufacturer, importer, distributor, or retailer that fails to report an SPH to the Commission is subject to civil penalties under section 20 of the CPSA, 15 U.S.C. 2069, and is possibly subject to criminal penalties under section 21 of the CPSA, 15 U.S.C. 2070.

DRAFT

A product that is or contains an SPH also is subject to corrective action under sections 15(c) and (d) of the CPSA, 15 U.S.C. 2064(c) and (d). Thus, if the Commission issues a final rule under section 15(j) for stock and custom window coverings, the Commission could order the manufacturer, importer, distributor, or retailer of window coverings that do not conform to one or more of the identified readily observable characteristics to offer to repair or replace the product or to refund the purchase price to the consumer.

A product that is offered for import into the United States and is or contains an SPH shall be refused admission into the United States under section 17(a) of the CPSA, 15 U.S.C. 2066(a). Additionally, Customs and Border Protection (CBP) has the authority to seize certain products offered for import under the Tariff Act of 1930 (19 U.S.C. 1595a)(Tariff Act), and to assess civil penalties that CBP, by law, is authorized to impose. Section 1595a(c)(2)(A) of the Tariff Act states that CBP may seize merchandise, and such merchandise may be forfeited if: “its importation or entry is subject to any restriction or prohibition which is imposed by law relating to health, safety, or conservation and the merchandise is not in compliance with the applicable rule, regulation, or statute.” Thus, if the proposed rule is finalized, stock and custom window coverings that violate the rule are subject to CBP seizure and forfeiture.

V. Regulatory Flexibility Act Analysis¹⁴

The Regulatory Flexibility Act (RFA) requires that proposed rules be reviewed for the potential economic impact on small entities, including small businesses. 5 U.S.C. 601-612. Section 603 of the RFA requires agencies to prepare and make available for public comment an Initial Regulatory Flexibility Analysis (IRFA), describing the impact of the proposed rule on small entities and identifying impact-reducing alternatives. The requirement to prepare an IRFA

¹⁴ The RFA analysis is based on Tab F of Staff’s NPR Briefing Package.

DRAFT

does not apply if the agency certifies that the rulemaking will not have a significant economic impact on a substantial number of small entities. *Id.* 605. Because the Commission expects that the economic effect on all entities will be minimal, absent public comment with relevant information and evidence to the contrary, the Commission intends to certify at the final rule stage that the rule will not have a significant economic impact on a substantial number of small entities.

A. *Small Entities to Which the Proposed Rule Would Apply*

The proposed rule would apply to all “window coverings,” as defined in the draft proposed rule, consistent with the definition in ANSI/WCMA A100.1 – 2018. Window coverings include the following product categories: blinds, shades, and curtains and draperies. The shades category includes: cellular shades, pleated shades, roller shades, and Roman shades. The blinds category includes horizontal blinds and vertical blinds of varying material types. The total window covering market size in 2020 was approximately \$6.6 billion.¹⁵ (Euromonitor 2021a). CPSC staff estimates that firms classified as small by U.S. Small Business Administration (SBA) guidelines account for \$4.08 billion annually, and none of these firms accounts for more than 3 percent of total market share by revenue. (Euromonitor 2021b).

The North American Industry Classification System (NAICS) defines product codes for U.S. firms. Firms that manufacture window coverings may list their business under the NAICS product code for blinds and shades manufacturers (337920 Blind and Shade Manufacturing) or retailers (442291 Window Treatment Stores).¹⁶ Importers of window coverings are generally

¹⁵ Stock window coverings most likely account for a minority of the total market size in terms of revenue due to significant average price differences between stock and custom products. (D+R International 2021).

¹⁶ The two product codes 337920 and 442291 encompass most products in the window coverings market. However, some drapery and curtain manufacturers may be listed under 322230, stationary product manufacturing.

DRAFT

listed in Home Furnishing Merchant Wholesalers (423220), which includes other home furnishing items and is nonspecific to window coverings.

Under SBA guidelines, a manufacturer of window coverings is categorized as small if the firm has fewer than 1,000 employees; retailers are considered small if they have sales revenue less than \$8.0 million, and importers if the firm has fewer than 100 employees. Based on 2017 data, 1,898 firms were categorized as blinds and shades manufacturers and retailers (Census Bureau, 2020). Of these, about 1,840 firms (302 manufacturers and 1,538 retailers) are small. As the NAICS code for importers is nonspecific to window coverings, CPSC staff reviewed CBP data, firm financial reports, and Dun & Bradstreet reports to obtain an estimate. CPSC staff estimates that there are approximately 83 importers that meet the SBA guidelines for a small business (Laciak 2020). Nearly all of the 302 small manufacturers identified are far below the 1,000 employee SBA threshold, as a majority are firms with under five employees. CPSC staff believes that the window coverings produced by these firms would meet the voluntary standard definition of a “custom” window covering, because many are hand crafters, and they produce products to a specific customer order.

B. Potential Impact of the Proposed Rule

A proposed rule designating stock and custom window covering products that do not conform to the specified readily observable characteristics of ANSI/WCMA A100.1 – 2018 as an SPH will not likely have a significant impact on a substantial number of small businesses or other small entities. Data collected in person at manufacturers, retailers, and importers by CPSC staff indicate that the level of conformance with the sections of the WCMA standard concerning

DRAFT

stock products is high and most likely greater than 90 percent (Tab E).¹⁷ Samples tested by CPSC staff also indicate a high level of conformance of custom products related to inner cord accessibility.¹⁸

Firms already conforming to the standard would experience no impact by the proposed rule. However, CPSC staff notes that at least one small manufacturer that does not currently conform to the accessible cord provision will experience a significant cost impact by the rule.¹⁹ Staff does not believe that a substantial number of small manufacturers will experience this cost impact. Retailers and importers are not expected to be impacted significantly by the rule, because potential costs to conform will be borne by manufacturers. Should a window covering retailer and/or importer bear a cost related to conformance, staff expects the cost to account only for a small portion of total revenues, because these firms typically sell/import other home furnishing products in addition to window coverings.

Based on the available information, the Commission could certify that a rule to deem nonconforming operating cords and inner cords on stock window coverings, and nonconforming inner cords on custom products, to be SPHs, because such a rule would likely not have a significant impact on a substantial number of small businesses or other small entities. Absent additional information identified through notice and comment, in the final rule, the Commission will certify that the rule will not have a significant impact on a substantial number of small businesses.

¹⁷ CPSC staff conducted in person unannounced visits to window covering retailers, manufacturers, and importers in major metropolitan areas and found only one violation in which a stock product was available with accessible cords. Four violations were found concerning warning/manufacturer labels not related to inner cords on custom products.

¹⁸ Staff tested custom product samples using test parameters defined in ANSI/WCMA A100.1 – 2018, which involved the use of a cord accessibility probe and force gauge.

¹⁹ See Tab K of Staff's NPR Briefing Package.

DRAFT

VI. Environmental Considerations

Generally, the Commission’s regulations are considered to have little or no potential for affecting the human environment, and environmental assessments and impact statements are not usually required. *See* 16 CFR § 1021.5(a). The proposed rule to deem stock and custom window covering cords that do not comply with the identified readily observable characteristics to be an SPH is not expected to have an adverse impact on the environment, and it is considered to fall within the “categorical exclusion” for the purposes of the National Environmental Policy Act. 16 CFR § 1021.5(c).

VII. Paperwork Reduction Act

This proposed rule to amend the substantial product hazard list in 16 C.F.R. part 1120 to include hazardous window covering cords contains information collection requirements that are subject to public comment and review by the Office of Management and Budget (“OMB”) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3521). In this document, pursuant to 44 U.S.C. 3507(a)(1)(D), we set forth:

- a title for the collection of information;
- a summary of the collection of information;
- a brief description of the need for the information and the proposed use of the information;
- a description of the likely respondents and proposed frequency of response to the collection of information;
- an estimate of the burden that shall result from the collection of information; and
- notice that comments may be submitted to the OMB.

Title: Substantial Product Hazard List: Manufacturer Label on Window Coverings

DRAFT

Description: To address the risk of strangulation to children 8 years old and younger from hazardous cords on window coverings, the Consumer Product Safety Commission (CPSC) is proposing a rule to deem that one or more of the following readily observable characteristics of window coverings present a substantial product hazard under the Consumer Product Safety Act (CPSA): the presence of hazardous operating cords on stock window coverings, the presence of hazardous inner cords on stock and custom window coverings, and the absence of a manufacturer label on stock and custom window coverings. All three of these product characteristics are addressed in the voluntary standard for window coverings, ANSI/WCMA-2018. The requirement to place a manufacturer label on the product is set forth in section 5.3 of ANSI/WCMA-2018. The requirement for an on-product label falls within the definition of “collection of information,” as defined in 44 U.S.C. 3502(3).

Description of Respondents: Persons who manufacture or import stock or custom window coverings.

Estimated Burden: We estimate the burden of this collection of information as follows:

Table 8 – Estimated Annual Reporting Burden

16 CFR Section	Number of Respondents	Frequency of Responses	Total Annual Responses	Hours per Response	Total Burden Hours
1120.3(e)(3) & 1120.3(f)(2)	391	11	4,301	1	4,301

Our estimate is based on the following:

The Commission proposes in the NPR to deem the absence of a manufacturer label, required on both stock and custom window coverings, as set forth in section 5.3 of ANSI/WCMA-2018, an SPH. Section 5.3 of the voluntary standard requires: “There shall be a permanent label(s) or marking on all finished window covering products.” The required label

DRAFT

must be on the headrail or on the roller tube of every window covering. The label must contain: the name, city, and state of the manufacturer, importer, or fabricator; the month and year of manufacture; and the designation of the window covering as either “Stock” or “Custom.”

Three hundred ninety-one (391) known entities supply window coverings to the U.S. market. If modifications to existing product labels are required, we estimate that the time required to make these modifications is about 1 hour per model. Based on an evaluation of supplier product lines, each of the 391 entities supplies an average of 11 models of window coverings;²⁰ therefore, the estimated burden associated with labels is 1 hour per model x 391 entities x 11 models per entity = 4,301 hours. We estimate the hourly compensation for the time required to create and update labels is \$33.78 (U.S. Bureau of Labor Statistics, “Employer Costs for Employee Compensation,” March 2021, total compensation for all sales and office workers in goods-producing private industries: <http://www.bls.gov/ncs/>). Therefore, the estimated annual cost to industry associated with the labeling requirements is \$145,288 (\$33.78 per hour x 4301 hours = \$145,288). No operating, maintenance, or capital costs are associated with the collection.

This burden estimate is the largest possible, assuming that every manufacturer had to modify the on-product label. However, based on staff’s review of stock and custom window products, window coverings already substantially comply with the on-product manufacturer label requirement in section 5.3 of ANSI/WCMA-2018. Accordingly, product modification and any associated burden is unlikely. Under the OMB’s regulations (5 CFR 1320.3(b)(2)), the time, effort, and financial resources necessary to comply with a collection of information that would be incurred by persons in the “normal course of their activities” are excluded from a burden

²⁰ This number was derived from a review of manufacturers product offerings listed on the firms/associated retailer websites and market research conducted in support of the preliminary regulatory analysis.

DRAFT

estimate, where an agency demonstrates that the disclosure activities required to comply are “usual and customary.” Staff estimates a high degree of compliance with the voluntary standard, more than 90 percent of stock products and a substantial number of the custom products, such that window coverings already comply with the on-product manufacturer label requirement in the voluntary standard. Therefore, CPSC could estimate that no burden hours are associated with the proposed rule, because any burden associated with the on-product manufacturer label would be “usual and customary” and not within the definition of “burden” under the OMB’s regulations.

We request comments on this potential estimate of no burden. We also request comment on the analysis demonstrating that the largest possible burden estimate for the proposed standard to require the manufacturer label in section 5.3 of ANSI/WCMA-2018 on stock and custom window coverings to be 4,301 hours at a cost of \$145,288 annually.

In compliance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), we have submitted the information collection requirements of this rule to the OMB for review. Interested persons are requested to submit comments regarding information collection by **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, to the Office of Information and Regulatory Affairs, OMB (see the ADDRESSES section at the beginning of this notice).

Pursuant to 44 U.S.C. 3506(c)(2)(A), we invite comments on:

- whether the collection of information is necessary for the proper performance of the CPSC’s functions, including whether the information will have practical utility;

DRAFT

- the accuracy of the CPSC’s estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
- ways to enhance the quality, utility, and clarity of the information to be collected;
- ways to reduce the burden of the collection of information on respondents, including the use of automated collection techniques, when appropriate, and other forms of information technology; and
- the estimated burden hours associated with label modification, including any alternative estimates.

VIII. Preemption

The proposed rule under section 15(j) of the CPSA would not establish a consumer product safety rule. Accordingly, the preemption provisions in section 26(a) of the CPSA, 15 U.S.C. 2075(a), would not apply to this rule.

IX. Effective Date

The Administrative Procedure Act (APA) generally requires that the effective date of a rule be at least 30 days after publication of a final rule. 5 U.S.C. 553(d). The Commission proposes that any stock or custom window coverings that do not conform to the specified sections of ANSI/WCMA A100.1 – 2018, be deemed an SPH effective 30 days after publication of a final rule in the *Federal Register*. After that date, all stock and custom window coverings that are subject to, but do not comply with, ANSI/WCMA A100.1 – 2018 regarding the identified readily observable characteristics, will be deemed to be an SPH.

The Commission believes that a 30-day effective date is appropriate because stock and custom window coverings substantially comply with the identified readily observable safety characteristics in ANSI/WCMA A100.1 – 2018, and because there is widespread knowledge of

DRAFT

these requirements among importers and manufacturers. Accordingly, relevant stakeholders are on notice of the requirements in ANSI/WCMA A100.1 – 2018. Moreover, importers likely will have ample time and opportunity to acquire conforming products, if necessary, from suppliers within normal business cycles before a final rule is promulgated. Based on the available information, the Commission concludes that a 30-day effective date would not likely result in significant impacts on industry, nor disrupt the supply of conforming products.

X. Incorporation by Reference

The Commission proposes to incorporate by reference certain provisions of ANSI/WCMA A100.1 – 2018, American National Standard for Safety of Corded Window Covering Products. The Office of the Federal Register (OFR) has regulations concerning incorporation by reference. 1 CFR part 51. The OFR revised these regulations to require that, for a proposed rule, agencies must discuss in the preamble of the NPR ways that the materials the agency proposes to incorporate by reference are reasonably available to interested persons or how the agency worked to make the materials reasonably available. In addition, the preamble of the proposed rule must summarize the material. 1 CFR 51.5(a).

In accordance with the OFR's requirements, sections I.B.2.(d), II.A, and Table 3 of this preamble summarize the provisions of ANSI/WCMA A100.1 – 2018 that the Commission proposes to incorporate by reference. ANSI/WCMA A100.1 – 2018 is copyrighted. You can view a read-only copy of ANSI/WCMA A100.1 – 2018 at: https://wcmamet.com/wp-content/uploads/2021/07/WCMA-A100-2018_v2_websitePDF.pdf. To download or print the standard, interested persons can purchase a copy of ANSI/WCMA A100.1 – 2018 from WCMA, through its website (<http://wcmamet.com>), or by mail from the Window Covering Manufacturers Association, Inc. 355 Lexington Avenue, New York, NY, 10017; telephone: 212.297.2122.

DRAFT

Alternatively, interested parties may inspect a copy of the standard free of charge by contacting Alberta E. Mills, Division of the Secretariat, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone: 301-504-7479; e-mail: cpsc-os@cpsc.gov.

XI. Request for Comments

The Commission invites interested persons to submit their comments to the Commission on any aspect of the proposed rule. Comments should be submitted as provided in the instructions in the ADDRESSES section at the beginning of this notice.

List of Subjects in 16 CFR Part 1120

Administrative practice and procedure, Clothing, Consumer protection, Cord sets, Extension cords, Household appliances, Lighting, Window Coverings, Cords, Infants and children, Imports, Incorporation by reference.

For the reasons stated above, and under the authority of 15 U.S.C. 2064(j), 5 U.S.C. 553, and section 3 of Public Law No. 110-314, 122 Stat. 3016 (August 14, 2008), the Consumer Product Safety Commission proposes to amend 16 CFR part 1120 as follows:

PART 1120 – SUBSTANTIAL PRODUCT HAZARD LIST

1. The authority citation for part 1120 continues to read as follows:

Authority: 15 U.S.C. 2064(j).

2. In § 1120.2, add paragraphs (f) and (g) to read as follows:

§ 1120.2 Definitions.

* * * * *

(f) *Stock window covering* (also known as a *stock blind, shade, or shading*) defined in section 3, definition 5.02, of ANSI/WCMA A100.1 – 2018, is a window covering that is completely or substantially fabricated prior to being distributed in commerce and is a specific stock-keeping unit (SKU). Even when the seller, manufacturer, or distributor modifies a pre-assembled product by adjusting to size, attaching the top rail or bottom rail, or tying cords to secure the bottom rail, the product is still considered stock. Online sales of the product or the size of the order such as multi-family housing do not make the product a non-stock product. These examples are provided in ANSI/WCMA A100.1 – 2018 to clarify that as long as the product is “substantially fabricated,” subsequent changes to the product do not change its categorization.

(g) *Custom window covering* (also known as a *custom blind, shade, or shading*) defined in section 3, definition 5.01, of ANSI/WCMA A100.1 – 2018, is a window covering that does not meet the definition of a stock window covering.

3. In § 1120.3, add paragraphs (e) and (f) to read as follows:

§ 1120.3 Products deemed to be substantial product hazards.

* * * * *

(e) *Stock window coverings* that fail to comply with one or more of the following requirements of ANSI/WCMA A100.1 – 2018:

- (1) Operating cord requirements in section 4.3.1: section 4.3.1.1 (cordless operating system), 4.3.1.2 (short static or access cord), or 4.3.1.3 (inaccessible operating cord);
- (2) Inner cord requirements in sections 4.5, 6.3, 6.7, and Appendices C and D; and

DRAFT

(3) On-product manufacturer label requirement in section 5.3.

(f) *Custom window coverings* that fail to comply with one or more of the following requirements of ANSI/WCMA A100.1 – 2018:

(1) Inner cord requirements in sections 4.5, 6.3, 6.7, and Appendices C and D; and

(2) On-product manufacturer label in section 5.3.

4. In § 1120.4, add paragraph (d) to read as follows:

§ 1120.4 Standards incorporated by reference.

* * * * *

(d) Window Covering Manufacturers Association, Inc. 355 Lexington Avenue, New York, New York, 10017. telephone: 212.297.2122. <http://wcmanet.com>.

(1) ANSI/WCMA A100.1 – 2018. *American National Standard For Safety Of Corded Window Covering Products*, IBR approved for §§ 1102.2(f) and (g), and §§ 1120.3 (e) and (f).

Dated: _____

Alberta E. Mills, Secretary
Consumer Product Safety Commission.

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Billing Code 6355-01-P

CONSUMER PRODUCT SAFETY COMMISSION

16 CFR Part 1260

[CPSC Docket No. CPSC–2013–0028]

Safety Standard for Operating Cords on Custom Window Coverings

AGENCY: Consumer Product Safety Commission

ACTION: Notice of proposed rulemaking

SUMMARY: The U.S. Consumer Product Safety Commission (CPSC) has determined preliminarily that custom window coverings with accessible operating cords that are longer than 8 inches pose an unreasonable risk of strangulation to children 8 years old and younger. To address this risk of strangulation, the Commission proposes a rule under the Consumer Product Safety Act (CPSA) to require that operating cords on custom window coverings meet the same requirements as operating cords on stock window coverings, as set forth in the applicable voluntary standard. Thus, the rule proposes that operating cords on custom window coverings must be cordless, inaccessible, or 8 inches or shorter in length in any use position. If finalized, operating cords on custom window coverings would require testing and certification to the rule under section 14 of the CPSA. Moreover, operating cords on custom window coverings that meet the definition of a “children’s product” would require third party testing by a CPSC-accredited third party conformity assessment body. Accordingly, the rule also proposes to amend the Commission’s regulation at 16 CFR part 1112 to add “Safety Standard for Operating Cords on Custom Window Coverings” to the list of rules that require third party testing.

DATES: Written comments must be received by [INSERT DATE THAT IS 75 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

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ADDRESSES: Direct comments related to the Paperwork Reduction Act aspects of the proposed rule to the Office of Information and Regulatory Affairs, the Office of Management and Budget, Attn: CPSC Desk Officer, fax to: 202-395-6974, or e-mail oir_submission@omb.eop.gov. Submit all other comments on the proposed rule, identified by Docket No. CPSC–2013–0028, by any of the following methods:

Electronic Submissions: Submit electronic comments to the Federal eRulemaking Portal at: <https://www.regulations.gov>. Follow the instructions for submitting comments. CPSC typically does not accept comments submitted by electronic mail (e-mail), except through <https://www.regulations.gov>. CPSC encourages you to submit electronic comments by using the Federal eRulemaking Portal, as described above.

Mail/hand delivery/courier Written Submissions: Submit comments by mail/hand delivery/courier to: Division of the Secretariat, Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone: (301) 504-7479. Alternatively, as a temporary option during the COVID-19 pandemic, you can email such submissions to: cpsc-os@cpsc.gov.

Instructions: All submissions must include the agency name and docket number for this notice. CPSC may post all comments without change, including any personal identifiers, contact information, or other personal information provided, to: <https://www.regulations.gov>. Do not submit electronically: confidential business information, trade secret information, or other sensitive or protected information that you do not want to be available to the public. If you wish to submit such information, please submit it according to the instructions for mail/hand delivery/courier written submissions.

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Docket: For access to the docket to read background documents or comments received, go to: <https://www.regulations.gov>, and insert the docket number, CPSC–2013–0028, into the “Search” box, and follow the prompts.

FOR FURTHER INFORMATION CONTACT: Rana Balci-Sinha, Director, Division of Human Factors, Directorate for Engineering Sciences, Office of Hazard Identification and Reduction, Consumer Product Safety Commission, National Product Testing and Evaluation Center, 5 Research Place, Rockville, MD 20850; telephone: 301-987-2584; rbalcisinha@cpsc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

A. Overview of the Proposed Rule

The purpose of the proposed rule is to address the risk of strangulation to children 8 years old and younger associated with hazardous operating cords on custom window coverings. The Commission issues this notice of proposed rulemaking (NPR) using its authorities in sections 7 and 9 of the CPSA, 15 U.S.C. 2056 and 2058, to create a new mandatory standard for operating cords on custom window coverings. Due to the ongoing fatal and nonfatal incidents associated with window covering cords, high severity of the outcomes (death and disability to children), proven technical feasibility of cordless products, the implementation of stronger operating cord requirements for stock window coverings already on the market, and the ineffectiveness of warnings and safety devices for this class of products, the Commission proposes to regulate operating cords on custom window coverings. The proposed rule would require operating cords on custom window coverings to meet identical requirements for operating cords on stock window coverings, as set forth in section 4.3.1 of ANSI/WCMA

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A100.1 – 2018, American National Standard for Safety of Corded Window Covering Products (ANSI/WCMA-2018). The ANSI standard requires stock window coverings to have:

- (1) no operating cords (cordless) (section 4.3.1.1);
- (2) inaccessible operating cords (section 4.3.1.3); or
- (3) operating cords shorter than 8 inches in any use position (section 4.3.1.2).

In a separate, concurrent rulemaking under section 15(j) of the CPSA, the Commission is proposing to deem a “substantial product hazard” (SPH), as defined in section 15(a)(2) of the CPSA: (1) the presence of hazardous operating cords on stock window coverings; (2) the presence of hazardous inner cords on stock and custom window coverings; or (3) the absence of a required manufacturer label. Both NPRs are based on information and analysis contained in CPSC staff’s September 29, 2021, Staff Briefing Package: Notice of Proposed Rulemaking for Corded Window Coverings (Staff’s NPR Briefing Package), available at: [\[Insert Link\]](#).

B. Background and Statutory Authority

Window coverings are “consumer products” within the jurisdiction of the CPSC, and subject to regulation under the authority of the CPSA, because consumers use and enjoy window coverings in or around a permanent or temporary household or residence, and in schools. *See* 15 U.S.C. 2052(a)(5). Section 7(a) of the CPSA authorizes the Commission to promulgate a mandatory consumer product safety standard that sets forth performance or labeling requirements for a consumer product if such requirements are reasonably necessary to prevent or reduce an unreasonable risk of injury. 15 U.S.C. 2056(a). The proposed rule sets forth performance requirements for operating cords on custom window coverings. The proposed performance requirements would make operating cords on custom products meet the same

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requirements for stock window coverings in section 4.3.1 of ANSI/WCMA-2018, to prevent an unreasonable risk of injury, strangulation and death, to children 8 years old and younger.

Section 7(b)(1) of the CPSA requires the Commission to rely on a voluntary standard, rather than promulgate a mandatory standard, when compliance with the voluntary standard would eliminate or adequately reduce the risk of injury associated with a product, and it is likely that products are in substantial compliance with the voluntary standard. 15 U.S.C. 2056(b)(1). As described in section II.E of this preamble, custom window coverings likely substantially comply with the voluntary standard, ANSI/WCMA-2018. However, section 4.3.2 of ANSI/WCMA-2018, which applies to custom window coverings, does not adequately address the risk of injury associated with operating cords on custom window coverings, because the ANSI standard allows operating cords on custom window coverings to be accessible to children, and to be longer than 8 inches, which presents an unreasonable risk of strangulation to children 8 years old and younger. CPSC staff advises that the operating cord requirements proposed in the NPR would address 100 percent of the operating cord incidents associated with custom window coverings.

Section 9 of the CPSA specifies the procedure that the Commission must follow to issue a consumer product safety standard under section 7 of the CPSA. In accordance with section 9, the Commission may commence rulemaking by issuing an advance notice of proposed rulemaking (ANPR) or a notice of proposed rulemaking (NPR). The Commission issued an ANPR for corded window coverings, including stock and custom products, in January 2015 (80 FR 2327 (January 16, 2015)). The Commission is moving forward with two NPRs because the voluntary standard now addresses the risk of injury for operating cords on stock window coverings, and inner cords on stock and custom window coverings. For the hazards addressed by

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the voluntary standard, the Commission is issuing a separate rule under section 15(j) of the CPSA, leaving for this NPR to address, under sections 7 and 9 of the CPSA, operating cords on custom window coverings.

Section 9 authorizes the Commission to issue an NPR, including the proposed rule and a preliminary regulatory analysis, in accordance with section 9(c) of the CPSA. We request comments regarding the risk of injury identified by the Commission, the regulatory alternatives being considered, and other possible alternatives for addressing the risk of injury. 15 U.S.C. 2058(c). The preliminary regulatory analysis must include:

- a preliminary description of the potential benefits and costs of the rule, including benefits and costs that cannot be quantified, and the analysis must identify who is likely to receive the benefits and bear the costs;
- a discussion of the reasons any standard or portion of a standard submitted to the Commission in response to the ANPR was not published by the Commission as the proposed rule or part of the proposed rule;
- a discussion of the reasons for the Commission's preliminary determination that efforts submitted to the Commission in response to the ANPR to develop or modify a voluntary standard would not be likely, within a reasonable period of time, to result in a voluntary standard that would eliminate or adequately reduce the risk of injury addressed by the proposed rule; and
- a description of alternatives to the proposed rule that the Commission considered and a brief explanation of the reason the alternatives were not chosen.

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Id. Tab K of Staff’s NPR Briefing Package, and section V of this preamble, provide the required preliminary regulatory analysis for a mandatory standard on operating cords for custom window coverings.

After issuing an NPR, the Commission will consider the comments received in response to the proposed rule and decide whether to issue a final rule, along with a final regulatory analysis. *Id.* 2058(c)–(f). The Commission also will provide an opportunity for interested persons to make oral presentations of the data, views, or arguments, in accordance with section 9(d)(2) of the CPSA. *Id.* 2058(d)(2).

According to section 9(f)(1) of the CPSA, before promulgating a consumer product safety rule, the Commission must consider, and make appropriate findings to be included in the rule, on the following issues:

- The degree and nature of the risk of injury that the rule is designed to eliminate or reduce;
- The approximate number of consumer products subject to the rule;
- The need of the public for the products subject to the rule and the probable effect the rule will have on utility, cost, or availability of such products; and
- The means to achieve the objective of the rule while minimizing adverse effects on competition, manufacturing, and commercial practices.

Id. 2058(f)(1). At the NPR stage, the Commission is making these findings preliminarily, to allow the public to comment on the findings. Section XIII of the preamble contains the Commission’s preliminary findings.

Under section 9(f)(3) of the CPSA, to issue a final rule, the Commission must find that the rule is “reasonably necessary to eliminate or reduce an unreasonable risk of injury associated with such product” and that issuing the rule is in the public interest. *Id.* 2058(f)(3)(A)&(B).

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Additionally, if a voluntary standard addressing the risk of injury has been adopted and implemented, the Commission must find that:

- The voluntary standard is not likely to eliminate or adequately reduce the risk of injury,
or
- Substantial compliance with the voluntary standard is unlikely.

Id. 2058(f)(3)(D). The Commission also must find that the expected benefits of the rule bear a reasonable relationship to its costs, and that the rule imposes the least burdensome requirements that would adequately reduce the risk of injury. *Id.* 2058(f)(3)(E)&(F). Section XIII of the preamble contains the Commission’s preliminary findings on these additional requirements, so that the Commission can collect public comment.

C. Product Description

1. Overview of Window Covering Products

Window coverings comprise a wide range of products, including shades, blinds, curtains, and draperies. Generally, the industry considers blinds to be “hard” window coverings, composed of slats or vanes, and considers shades to be “soft” window coverings, composed of a continuous roll of material. Both blinds and shades may have inner cords that distribute forces to cause a motion, such as raising, lowering, or rotating the window covering to achieve a consumer’s desired level of light control. Manufacturers use inner cords on window coverings to open and close blinds and shades, using a variety of inputs, including traditional operating cords, motors, or direct-lift of the bottom rail of the product, to manipulate inner cords. Curtains and

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draperies do not contain inner cords, but consumers can operate curtains and drapes using a continuous loop operating cord or a wand.

A cord or loop used by consumers to manipulate a window covering is called an “operating cord” and may be in the form of a single cord, multiple cords, or continuous loops. “Cordless” window coverings are products designed to function without an operating cord, but they may contain inner cords. Figures 1 through 6 explain window covering terminology and show examples of different types of window coverings.

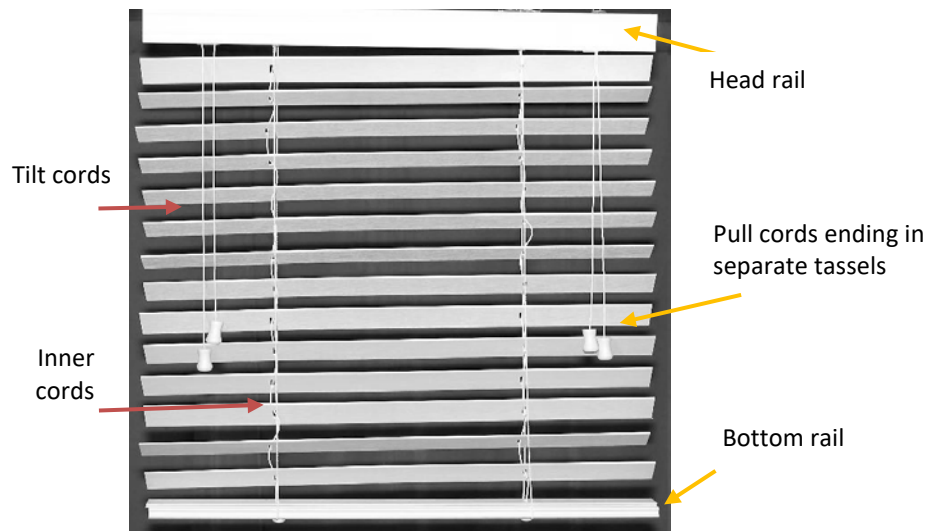


Figure 1. Horizontal blind



Figure 2. Roll-up shade with lifting



Figure 3. Cellular shade with looped operating

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Figure 4. Vertical blind



Figure 5. Roman shade



Figure 6. Cordless horizontal blind

Figure 1 shows a horizontal blind containing inner cords, operating cords, and tilt cords. Figure 2 shows a roll-up shade containing lifting loops and operating cords. Figure 3 shows a cellular shade with inner cords between two layers of fabric and operating cords. Figure 4 shows a vertical blind with a looped operating cord to traverse the blind and a looped bead chain to tilt the vanes. Figure 5 shows a Roman shade with inner cords that run on the back side of the shade and operating cords. Figure 6 is a horizontal blind that is marketed as “cordless” because it has no operating cords, but it still contains inner cords.

Materials used to make shades and blinds include fabric, wood or faux wood, polymers, such as vinyl, and woven materials, such as bamboo. Window covering products are mounted either inside or outside the window frame and can be customized to fit non-standard-sized windows, or for operation when the window frame is inaccessible, using tools or mobility devices, such as ladders, stools, and lifts. Some window covering types, such as curtains/drapes,

DRAFT

shades, and horizontal blinds, can also be customized to fit unusual window shapes, like circles, ovals, trapezoids, and diamonds, but operation may be limited.

Window covering operating systems can vary slightly by window covering type, but all operating systems fit into one of two general categories: corded or cordless.

2. Corded Window Coverings

“Traditional” or “corded” shades and blinds generally have cords located inside the product (inner cord), to the side of the product (operating cord or outer cord), or both. The inner cords between the head rail and bottom rail lift the horizontal slats to adjust light coming through, as in the case of horizontal blinds, or lift fabric and similar materials, as in the case of Roman or pleated shades. The inner cords may be exposed from the front, rear, or bottom of the window covering, or they can be rendered inaccessible, depending upon how the product is constructed. Horizontal blinds and pleated shades generally have two inner cords, one on each side of the blind; but products manufactured for wider windows may require more than two inner cords to be operational.

The outer cord or operating cord allows the user to raise, lower, open and close, rotate, or tilt the window covering. Operating cord systems generally fall into one of three categories: (1) standard; (2) single cord; and (3) continuous loop. The operating cord in a standard operating system consists of two or more cords and often includes a cord locking device to allow the user to set the height of the window covering. In a single cord operating system, the user can manipulate the window covering with a pull cord. The operating cord in a continuous loop operating system uses a single piece of cord or a beaded metal or plastic chain that is secured to a wall and operates like a pulley. For example, pulling the rear half of the loop will raise the shade, while pulling the front half of the loop will lower the shade.

DRAFT

Although operating systems can vary, some products are more commonly coupled with specific systems. Cellular and pleated shades can have any of the three operating cord systems; in contrast, roller and Roman shades mostly use a standard or continuous loop system.

Horizontal blinds are generally coupled with a standard operating system, while vertical blinds operate by continuous loop. Some curtains and drapes operate by continuous loop along with a traverse rod, which are also within the scope of the rule. However, many curtains and drapes are stationary and do not have operating systems; these products are not within the scope of the rule.

3. Cordless Window Products

Virtually every window covering type is available with a “cordless” operating system, which means it has been designed to function without an operating cord.¹ Cordless window coverings may require inner cords, but these can be, and typically are, made inaccessible through a variety of approaches. In lieu of an operating cord, cordless operating systems can be manual or motorized. A manual operating system allows users to lift or lower the window covering with a plastic handle or directly by hand.

A motorized operating system uses a motor and control system to manipulate the window covering, such as a remote control or wall switch. Installation of cordless window coverings that are motorized is more complicated than manual systems because motorized systems require a power source. The power sources for motorized systems, in order of installation complexity are battery-powered, DC plug, solar-powered, and what is commonly called “hardwired.”

The simplest power source for a motorized cordless product is a battery system, which is typically installed near the head rail in a circular tube called a battery wand. Replacement of the

¹The availability of alternatives to corded window coverings may sometimes be constrained due to size and weight limitations. See Lee, 2014. Through market research, staff found several examples of cordless blinds that are made with a maximum height of 84” and a maximum width of 144” (Tab G of Staff’s NPR Briefing Package).

DRAFT

batteries can require additional tools, like a screwdriver, step ladder, or stool. Most manufacturers recommend lithium-ion batteries for use in their systems, due to the increased temperature level around window coverings.² A DC plug adapter can also be used as a power source and is easy to install. A window covering with a DC plug adapter can be plugged into any standard electrical outlet. Electrical outlets aren't typically installed near the top of a window. Accordingly, DC plugs may require consumers to use extension cords near the window covering to reach an available outlet, which some consumers may find unsightly.

Solar-powered, motorized window coverings use a rechargeable battery wand combined with a solar panel to charge the batteries. Installation is about as complex as a typical battery system, but placement of the solar panel is critical to the operation of the window covering. Newer, more advanced versions of solar-powered window coverings can power themselves, while also providing renewable energy. These products are less mature than others and are generally much more expensive.

The most complex to install power source for motorized systems is to wire the window covering directly into the home, commonly called "hardwiring." The industry does not regard hardwiring window coverings to be a task that consumers can complete. Typically, electricians are required to install these products, which creates higher installation costs for consumers.

4. Other Types of Safety Devices

Rather than eliminate the operating cord entirely, some manufacturers offer other devices to isolate the operating cord on custom window coverings. These alternatives include, among others: retractable cord devices, cord cleats, cord shrouds, cord condensers, and wands. Tab I in Staff's NPR Briefing Package contains a more detailed description of these devices and how to

² Window coverings receive direct sunlight for large portions of the day, resulting in higher surface temperatures that can cause the failure of non-lithium-type batteries.

DRAFT

operate each. As described in section I.C.3 of this preamble, and Tab I of Staff's NPR Briefing Package, these devices are inadequate to address the risk of injury associated with operating cords on custom window products.

All of these safety devices are currently available for purchase by consumers, or provided by manufacturers, on custom window coverings, but offerings vary by manufacturer. A retractable cord device uses a spring-loaded spool to adjust the length of the pull cord. After the consumer adjusts the pull cord to raise or lower the window covering, the retractable cord device automatically retracts the pull cord back to the bottom of the headrail in an attempt to keep the pull cord out of reach of small children.

Cord cleats are generally composed of transparent or white plastic material in a long, rectangular shape. To be effective, two cord cleats must be installed or anchored to the wall near the window covering at a height out of reach of children. Cord cleats are used in conjunction with operating cords that dangle below the bottom of the window covering. The consumer must wrap the operating cord(s) in an S-shape around the cord cleats each time the window covering is raised or lowered.

A cord shroud encloses the pull cord or continuous cord loops for various types of blinds and shades with a rigid material, usually plastic. Although the pull cord or continuous loop cords are rendered inaccessible, the consumer can use the cord shroud to raise and lower the window covering. Cord condensers are a small plastic device that the consumer feeds the multiple cords into to condense the pull cord to a single pull cord below where the device is installed. Wands are simple pieces of plastic that the consumer rotates or pulls to operate the window covering in place of a cord.

DRAFT

5. “Stock” and “Custom” Window Coverings Defined in the NPR

This NPR relies on the definitions of window coverings and their features as set forth in the ANSI/WCMA-2018 standard, which currently requires “stock” and “custom” window coverings to meet different sets of operating cord requirements. For the NPR, the definition of a “stock window covering” is based on the definition of “Stock Blinds, Shades, and Shadings” in section 3, definition 5.02 of ANSI/WCMA-2018. A “stock window covering” is a completely or substantially fabricated product prior to being distributed in commerce and as a specific stock-keeping unit (SKU). Even when the seller, manufacturer, or distributor modifies a pre-assembled product, by adjusting to size, attaching the top rail or bottom rail, or tying cords to secure the bottom rail, the product is still considered “stock,” as defined in ANSI/WCMA-2018. Moreover, under the ANSI standard, online sales of a window covering, or the size of the order, such as multifamily housing orders, do not make the product a non-stock product. ANSI/WCMA-2018 provides these examples to clarify that, as long as the product is “substantially fabricated,” subsequent changes to the product do not change its categorization from “stock” to “custom.”

The NPR defines a “custom window covering” using the same definition of “Custom Blinds, Shades, and Shadings” found in section 3, definition 5.01 of ANSI/WCMA-2018, which is “any window covering that is not classified as a stock window covering.” We explain additional definitions in the NPR, including “operating cord,” “cord shroud,” and “rigid cord shroud,” in section IV.A of this preamble.

6. The Window Covering Industry

Based on 2017 data, 1,898 firms were categorized as blinds and shades manufacturers and retailers (Census Bureau, 2020). Of these, about 1,840 firms (302 manufacturers and 1,538

DRAFT

retailers) are small. In 2020, three manufacturers accounted for almost 38 percent of dollar sales in the U.S. window coverings market (Euromonitor 2021a). Only one of these manufacturers is a publicly held firm. In 2020, the largest global manufacturer and distributor of window coverings reported worldwide net sales of \$3,543 million, with North American window covering sales reported as \$1,703 million. The second largest firm is privately held, and annual reports are not publicly available. Estimates of this firm's revenue indicate annual U.S. window covering revenue in 2020 of approximately \$728 million (Euromonitor 2021a). The third firm is also privately held, and estimates indicate U.S. window covering revenues in 2020 of approximately \$88 million (Euromonitor 2021a). The remainder of the total market size of \$6.6 billion is attributed to firms that each account for less than 3 percent market share (Euromonitor 2021b).

A recent study conducted for CPSC (D+R, 2021) estimated that in 2019, approximately 139 million residential window coverings were shipped in the United States. Most of these shipments, 59.2 percent, were blinds, while 25.4 percent were shades. When comparing unit sales data to revenue data, CPSC staff found that while custom products account for approximately 44 percent of unit sales, a disproportionate amount of revenue is attributable to custom window covering products. For example, Roman shades, which are sold almost always as custom window covering products, account for 1.9 percent of annual sales in 2019, but generated revenues equal to 2.3 percent of the total.

6. Retail Prices

Retail prices for window coverings vary, depending on the type of the product and retailer. Stock products for common-size window coverings can be purchased at a variety of retailers, such as big box and home furnishing stores, and e-commerce retailers, such as Amazon

DRAFT

and Wayfair. The type of material and brand affect the price. According to a study conducted for CPSC by D+R International (2021),³ weighted average prices for window coverings range from about \$54 to \$94 for shades and from about \$25 to \$250 for blinds.⁴ Prices for vertical blinds are generally lower than the prices of horizontal blinds; prices for roller shades are slightly lower than the prices of Roman and cellular shades (D+R International, 2021).⁵

Consumers can purchase custom-sized and custom-designed window coverings from mass merchants, specialty retailers, e-commerce retailers, and in-home consultation firms. Custom coverings include uncommon window covering sizes, such as extremely small (*e.g.*, 9 inches wide x 13 inches high), extremely large (*e.g.*, 96 inches wide x 96 inches high), and other unusual sizes. Retail prices for custom-made window coverings range from \$25 to \$900, but prices can be as high as \$5,000.⁶ Typically, retail prices for custom products exceed the price of stock products of similar size and type. Retailers often suggest in-home measuring and evaluation to estimate the price for custom-designed products, because non-standard sizes or non-standard window shapes, or motorized lift systems can require professional installation. Prices for customized window coverings, on average, are higher than similar stock products sold by mass retailers.

7. Window Coverings in Use

CPSC staff created an estimate of custom window coverings in use using multiple data sources. Estimates for the year 2019, are developed from (1) estimates of U.S. residential

³ CPSC contracted with D+R International, which interviewed window covering manufacturers and component manufacturers to collect anecdotal information on the distribution of stock and custom product sales and the impact of compliance with the voluntary standard (D+R International, 2021).

⁴ The range for shades is based on average prices for cellular shades, roller shades, Roman shades, and pleated shades. The range for blinds is based on average prices for vinyl blinds, metal blinds, faux-wood blinds, wood blinds, and vertical blinds.

⁵ The D+R review of prices and product availability found that stock product prices are generally lower than custom products and that cordless lift systems resulted in an increase in price, except in the case of vertical blinds.

⁶ Based on firms' websites, retail prices for custom-made Roman shades can range from \$300 to \$5,000.

DRAFT

housing units; (2) estimates of the number of window coverings per housing unit; (3) estimates of the proportion of window coverings in use, by type; (4) estimates of the expected product life of window coverings; and (5) estimates of the proportion of corded custom window coverings sold by type. Based on U.S. Census estimates, approximately 124.1 million residential housing units existed in the United States during the year 2019 (Census Bureau, 2019). Additionally, the D+R (2020) study estimated an average of about 8.17 window coverings per housing unit.⁷ The product of the number of housing units and the average number of window coverings per housing unit suggests that about 1,014 million window coverings may have been in use in the United States (124.1 million housing units × 8.17 window coverings per housing unit) during 2019.

The distribution of the estimated 1,014 million window coverings in use is created using the 2019 share of custom product sales to total for each aggregate category.⁸ Application of the share of custom product sales to the window coverings in use estimate, amounts to approximately 111 million custom horizontal blinds, 213 million custom shades, 10 million custom vertical blinds, and 179 million custom curtains or drapery.⁹ Applying an estimate of 65 percent of custom window covering products in use having operating and/or accessible cords equates to an approximate total of 332.6 million corded custom window coverings in use. As shown in Figure 7 below, staff estimates that approximately 72 million corded custom horizontal

⁷ The D+R estimate uses a 2013 market characterization study completed for the U.S. Department of Energy. The study included a survey of 2,100 households in 13 cities across the United States to collect a representative sample of data on household characteristics, including number of windows, location of windows, the types of window coverings installed, and operation.

⁸ Installed base data for window covering products does not differentiate between custom or stock products. A point estimate created from one year of sales data may distort product in use estimates if there are large fluctuations in sales due to consumer preferences from year to year or if the expected product life of custom products is substantially different than stock products.

⁹ Interior shutters are included in the total 1,014 million window covering in use estimate, but because these products are out of scope for the rule, they are not included in the regulatory analysis later in this report.

DRAFT

blinds, 138.2 million corded custom shades, 6.4 million corded custom vertical blinds, and 116.1 million corded custom curtains or drapery are in use as of 2019.¹⁰

Figure 7. Custom Window Coverings in Use (2019)

Product Category [1]	Total Product In Use [2]	Custom Product Share of Sales (2019) [3]	Custom Product In Use [4] [col. 2 x col. 3]	Corded Custom Product In Use [5] [col. 4 x 0.65]
Horizontal Blinds, All Types	340.4	32.52%	110.7	72.0
Shades, All Types	300.9	70.66%	212.6	138.2
Vertical Blinds	168.2	5.82%	9.8	6.4
Curtains & Drapes	178.6	100.00%	178.6	116.1
Total	1014		511.7	332.6

D. Hazards Associated with Window Covering Cords

Window coverings, depending on the type of accessible cords, including operating cords (meaning pull cords and continuous loop cords), inner cords, and lifting loops, can pose strangulation hazards to children when they are accessible and long enough to wrap around a child's neck. Figures 8, 9, and 10 below depict the strangulation hazard for different window covering cord types.

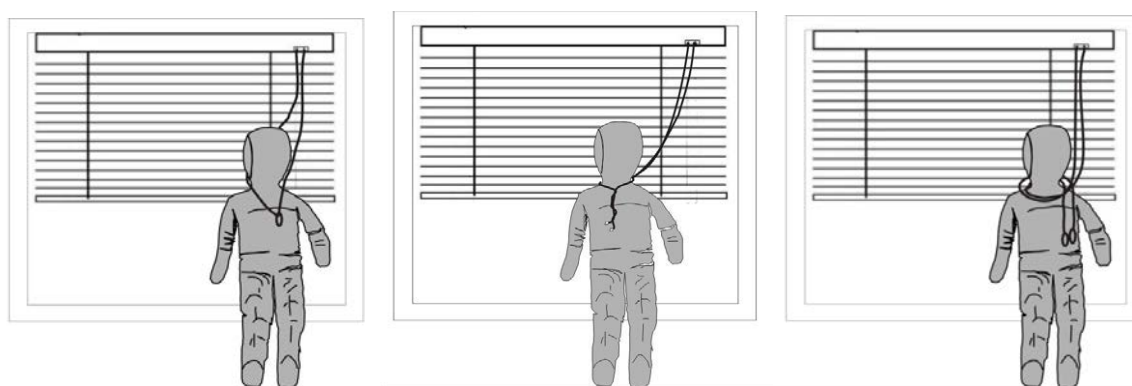


Figure 8. (a) Operating pull cords ending in one tassel (left); (b) operating cords tangled, creating a loop (middle); (c) operating cords wrapped around the neck (right)

¹⁰ This estimate has an implicit assumption that the share of annual sales will equate to a similar share of product in use. Changes in consumer preferences over time, and differences in the expected product life between custom and stock products, could result in significant deviations in this estimate.

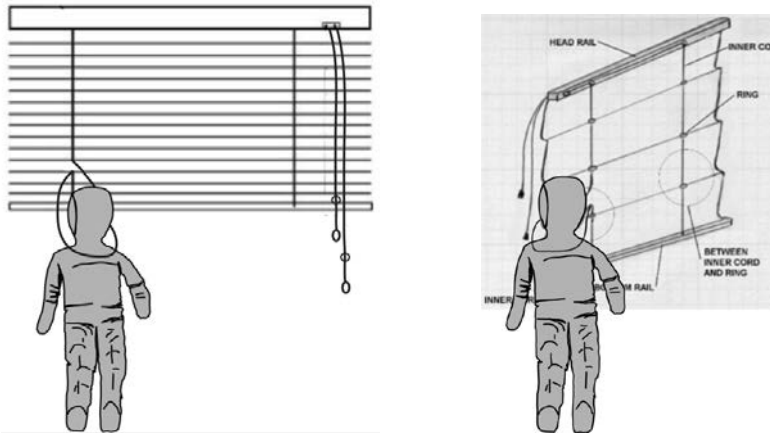


Figure 9. (a) Inner cords creating a loop (left), (b) Inner cords on the back side of Roman shade (right)

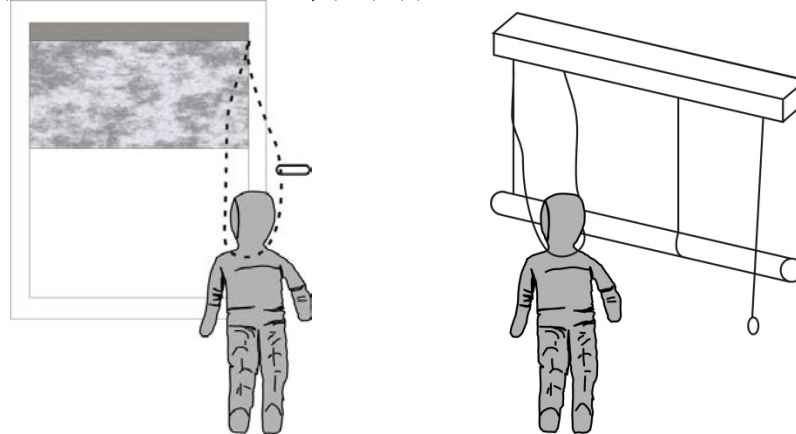


Figure 10. (a) Continuous loop cord (left), (b) Lifting loop on roll-up shade (right)

Children can strangle from mechanical compression of the neck when they place a window covering cord around their neck. Strangulation due to mechanical compression of the neck is a complex process resulting from multiple mechanisms and pathways that involve both obstruction of the airway passage and occlusion of blood vessels in the neck. Strangulation can lead to serious injuries with permanent debilitating outcomes or death. If sustained lateral pressure occurs at a level resulting in vascular occlusion, strangulation can occur when a child's head or neck becomes entangled in any position, even in situations where the body is fully or partially supported.

Strangulation is a form of asphyxia that can be partial (hypoxia), when there is an inadequate oxygen supply to the lungs, or total, when there is complete impairment of oxygen

DRAFT

transport to tissues. A reduction in the delivery of oxygen to tissues can result in permanent, irreversible damage. Experimental studies show that only 2 kg (4.4 lbs.) of pressure on the neck may occlude the jugular vein (Brouardel, 1897); and 3kg to 5 kg (7-11 lbs.) may occlude the common carotid arteries (Brouardel, 1897 and Polson, 1973). Minimal compression of any of these vessels can lead to unconsciousness within 15 seconds and death in 2 to 3 minutes, (Digeronimo and Mayes, 1994; Hoff, 1978; Iserson, 1984; Polson, 1973).

The vagus nerve is also located in the neck near the jugular vein and carotid artery. The vagus nerve is responsible for maintaining a constant heart rate. Compression of the vagus nerve can result in cardiac arrest due to mechanical stimulation of the carotid sinus-vagal reflex. In addition, the functioning of the carotid sinuses may be affected by compression of the blood vessels. Stimulation of the sinuses can result in a decrease in heart rate, myocardial contractility, cardiac output, and systemic arterial pressure in the absence of airway blockage.

Strangulation proceeding along one or more of these pathways can progress rapidly to anoxia, associated cardiac arrest, and death. As seen in the CPSC data (Wanna-Nakamura, 2014), and in the published literature, neurological damage may range from amnesia to a long-term vegetative state. Continued deterioration of the nervous system can lead to death (Howell and Gully, 1996; Medalia et al., 1991).

Based on CPSC staff's review of the incidents in section I.E of this preamble, and Tab A of Staff's NPR Briefing Package, 16 of the 194 victims required hospitalization; six survived a hypoxic-ischemic episode or were pulseless and in full cardiac arrest when found, suffered severe neurological sequelae, ranging from loss of memory to a long-term or permanent vegetative state, requiring tracheotomy and gastrointestinal tube feeding. One victim, who remained hospitalized for 72 days, was released from the hospital with 75 percent permanent

DRAFT

brain damage and is now confined to a bed.

Because a preexisting loop acts as a noose when a child's neck is inserted, and death can occur within minutes of a child losing footing, CPSC staff concluded that head insertion into a preexisting loop poses a higher risk of injury than when a child wraps a cord around his or her neck. However, both scenarios have been demonstrated to be hazardous and have led to fatal outcomes, according to CPSC data.

E. Risk of Injury

The Commission's 2015 ANPR on Window Coverings presented incident data covering the period 1996 through 2012. 80 FR 2327, 2332 (Jan. 16, 2015). Since then, WCMA published the revised voluntary standard for window coverings, ANSI/WCMA-2018. For products that comply, ANSI/WCMA-2018 has removed hazardous operating cords and inner cords from stock window coverings and removed hazardous inner cords for custom window coverings. The incident data demonstrate that regardless of whether a product is categorized as stock or custom, children are exposed to the same risk of injury from accessible window covering cords.

CPSC staff reviewed the data related to window coverings from 2009 through 2020.¹¹ Some of the data sources relied upon in this analysis do not have data for 2020 available yet; for those sources, staff included data for the latest available year, 2019. The following analysis distinguishes between stock and custom window coverings, whenever feasible. National estimates of deaths and injuries involving window covering strangulations among children under

¹¹ CPSC's incident search focused on fatal and near-miss strangulations suffered by young children due to window covering cords. Whenever feasible, staff selected the time frame to be 2009 through 2020. CPSC staff searched three databases for identification of window covering cord incidents: the Consumer Product Safety Risk Management System (CPSRMS), the National Electronic Injury Surveillance System (NEISS), and the Multiple Cause of Deaths data file. The first two sources are CPSC-maintained databases. The Multiple Cause of Deaths data file is available from the National Center for Health Statistics (NCHS). The appendix at the end of this memorandum details information about the CPSC data sources and the selection criteria used for this data search.

DRAFT

5 years of age are associated with *all* types of window coverings, because the available information does not allow the CPSC to distinguish product subtypes.

1. Incident Data from CPSC Databases

Based on newspaper clippings, consumer complaints, death certificates purchased from states, medical examiners' reports, hospital emergency department-treated injury reports, and in-depth investigation reports, CPSC found a total of 194 reported fatal and near-miss strangulations on window covering cords that occurred among children 8 years old and younger from January 2009 through December 2020. These 194 incidents do not constitute a statistical sample of known probability and do not necessarily include all window covering cord-related strangulation incidents that occurred during that period. However, these 194 incidents do provide at least a minimum number for such incidents during that time frame.

Table 1a provides the breakdown of the incidents by year. Because reporting is ongoing, the number of incidents presented here may change in the future. Given that these reports are anecdotal, and reporting is incomplete, CPSC strongly discourages drawing any inferences based on the year-to-year increase or decrease shown in the reported data.

Table 1a
Reported Fatal and Near-Miss Strangulation Incidents Involving Window Covering Cords
Among Children Eight Years and Younger 2009 – 2020

Incident Year	Number of Reported Incidents		
	<i>Total</i>	<i>Fatal Strangulations</i>	<i>Near-Miss Strangulations</i>
2009	48	14	34
2010	31	11	20
2011	10	6	4
2012	17	8	9
2013	9	2	7
2014	17	12	5
2015	9	7	2
2016	17	13	4
2017	9	5	4
2018	8	4	4

DRAFT

2019*	11	4	7
2020*	8	3	5
Total	194	89	105

Source: CPSC epidemiological databases CPSRMS and NEISS.

Note: * indicates data collection is ongoing.

Table 1b expands on Table 1a to display the distribution of the annual incidents by severity of incidents and type of window coverings involved. CPSC staff identified 50 of 194 incident window coverings (26 percent) to be stock products, and 35 of the 194 (18 percent) were identified as custom products; CPSC staff could not identify the window covering type in the remaining 109 of the 194 (56 percent) incidents.

Table 1b
Reported Fatal and Near-Miss Strangulation Incidents Involving Stock/Custom/Unknown Types of Window Covering Cords Among Children Eight Years and Younger 2009 -- 2020

Incident Year	Reported Incidents by Window Covering Type			
	<i>Stock (Fatal/Nonfatal)</i>	<i>Custom (Fatal/Nonfatal)</i>	<i>Unknown (Fatal/Nonfatal)</i>	<i>All</i>
2009	20 (4/16)	7 (2/5)	21 (8/13)	48
2010	10 (3/7)	7 (2/5)	14 (6/8)	31
2011	2 (1/1)	4 (3/1)	4 (2/2)	10
2012	1 (1/0)	5 (1/4)	11 (6/5)	17
2013	2 (1/1)	3 (1/2)	4 (0/4)	9
2014	3 (2/1)	2 (1/1)	12 (9/3)	17
2015	4 (4/0)	1 (1/0)	4 (2/2)	9
2016	5 (3/2)	4 (3/1)	8 (7/1)	17
2017	2 (1/1)	1 (0/1)	6 (4/2)	9
2018	--	1 (0/1)	7 (4/3)	8
2019*	1(0/1)	--	10 (4/6)	11
2020*	--	--	8 (3/5)	8
Total	50 (20/30)	35 (14/21)	109 (55/54)	194

Source: CPSC epidemiological databases CPSRMS and NEISS.

Note: * indicates data collection is ongoing

Eighty-nine of the 194 incidents (46 percent) reported a fatality. Among the nonfatal incidents, 15 involved hospitalizations (8 percent). The long-term outcomes of these 15 injuries varied from a scar around the neck, to quadriplegia, to permanent brain damage. One additional child was treated and transferred to another hospital; the final outcome of this patient is

DRAFT

unknown. In addition, 75 incidents (39 percent) involved less-severe injuries, some requiring medical treatment, but not hospitalization. In the remaining 14 incidents (7 percent), a child became entangled in a window covering cord, but was able to disentangle from the cord and escape injury. Overall, among the incidents with gender information available, 66 percent of the children involved were males, while 34 percent were females. One incident did not report the gender of the child.

(a) Distribution of Reported Incidents by Window Covering and Associated Cord Types

Based on CPSC staff's review of the incident data, listed below are the most common types of window coverings among the 194 reported incidents, along with the types of cords associated with each:

- Horizontal Blinds (includes Venetian and mini blinds)
Associated cords: continuous loop cord/beaded chain (free-standing, *i.e.*, not mounted on a tension device), inner cord, pull cord (with loops or long cords), and tilt cord;
- Vertical Blinds
Associated cords: continuous loop cord/beaded chain (free-standing);
- Roman Shades
Associated cords: continuous loop cord/beaded chain (free-standing), inner cord, and pull cord (with loops or long cords);
- Roller Shades
Associated cords: continuous loop cord/beaded chain (free-standing);
- Roll-Up Shades
Associated cords: pull cord (with loops or long cords) and lifting loop;
- Other Shades (includes pleated, cellular-honeycomb)
Associated cords: continuous loop cord/beaded chain (free-standing) and pull cord (with loops or long cords);
- Curtains/Draperies
Associated cords: continuous loop cord/beaded chain (free-standing).

DRAFT

(b) Incident Breakdown - Stock and Custom Window Coverings

CPSC staff definitively identified 50 of the 194 incidents that involved stock window coverings in the period from 2009 through 2020. Of the 50 incidents, 64 percent involved horizontal blinds; 28 percent involved Roman shades; 4 percent involved roller shades; and 2 percent involved roll-up shades and vertical blinds.

CPSC staff definitively identified 35 of the 194 incidents that involved custom window coverings. Of the 35 incidents, 51 percent involved horizontal blinds; 17 percent involved Roman shades; and 9 percent involved roller shades. Other shades, such as cellular and pleated shades, together accounted for 11 percent of the incidents. Six percent involved vertical blinds. For the remaining 6 percent of the incidents involving custom products, staff did not have sufficient information to determine the type of window covering. Table 2 provides cross-tabulation of the incidents by window covering type and the associated cord type involved in these 35 incidents.

Table 2: Distribution of Reported Incidents by Types of Window Coverings and Associated Cords Among Custom Products: 2009 – 2020

	Pull cord	Continuous loop cord/ beaded chain	Inner cord	Lifting loop	Tilt cord	Unknown	Total (%)
Horizontal	16	2	--	--	--	--	18 (51%)
Roman	1	2	3	--	--	--	6 (17%)
Roller	--	3	--	--	--	--	3 (9%)
Other Shades	1	3	--	--	--	--	4 (11%)
Vertical	--	2	--	--	--	--	2 (6%)
Unknown	--	--	--	--	--	2	2 (6%)
Total	18	12	3	--	--	2	35 (100%)

Source: CPSC databases CPSRMS and NEISS. Percentages may not add to 100 due to rounding.

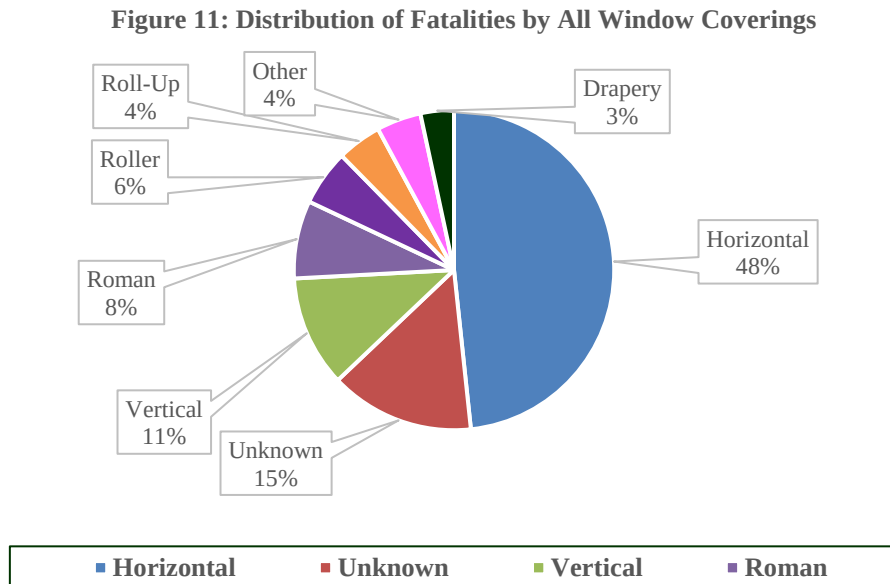
For most of the reported incidents (109 out of 194), CPSC staff did not have enough information available to determine if the window covering was a stock or custom product.

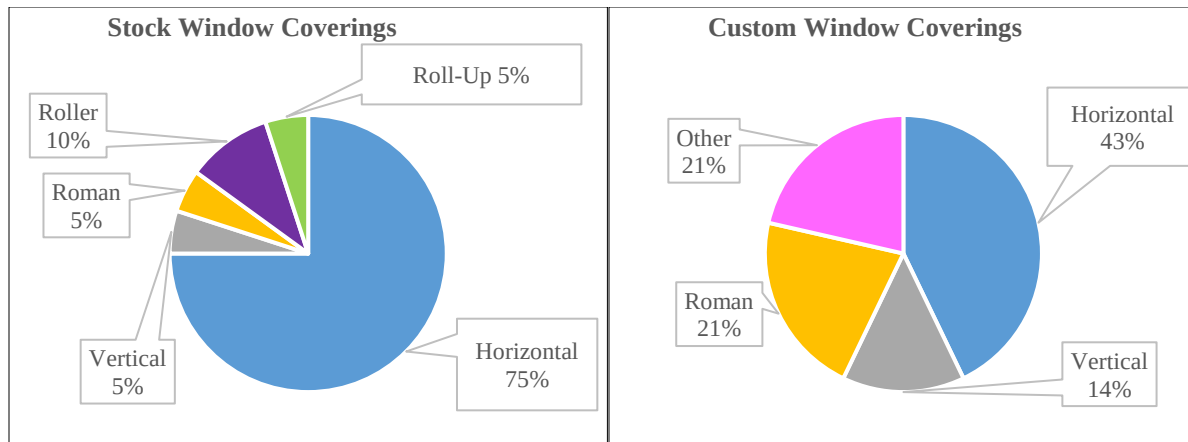
DRAFT

Among these reported incidents, 32 percent involved horizontal blinds; 7 percent involved vertical blinds; 5 percent involved roll-up shades; roller shades and Roman shades were each involved in 4 percent of the incidents; and draperies and other shades (pleated/cellular) were each involved in 3 percent of the incidents. For a large proportion, 43 percent, CPSC staff could not determine the type of window covering based on the available data.

(c) Distribution of Fatal Incidents by Window Covering and Associated Cord Types

Of the 194 reported incidents, 89 involved a fatality. Of the 89 deaths, 43 involved horizontal window coverings; 10 involved vertical window coverings; and 7 involved Roman shades. For 13 fatalities, staff does not know the window covering type. When separated by the known stock versus custom products, horizontal blinds were involved in the most fatalities. Figure 11 shows the breakouts by window covering types for all 89 reported fatalities, as well as among the known stock and custom products separately. Figure 11 also illustrates the distribution of these fatal incidents by types of window coverings.





Source: CPSC epidemiological databases CPSRMS and NEISS

(d) Most Common Cord Types and Associated Hazards Resulting in Fatalities

Whether considering stock, custom, or unknown-if-stock-or-custom products, CPSC found that the pull/operating cord system is the single most hazardous scenario among the reported fatal incidents. Thirty-nine of the 89 (44 percent) fatalities involved a child getting entangled in such pull cords; continuous loops were next, with 23 of the 89 (26 percent) fatalities. Inner cords ranked next, accounting for 7 of the 89 (8 percent) fatalities.

(i) Pull Cords: In 37 of the 39 known pull cord fatalities, the pull cords were components of horizontal blinds. Of these 39 deaths, 38 occurred before implementation of the 2018 voluntary standard affecting stock products. Although reporting is ongoing, so far, one fatality has been reported in 2019, but none in 2020. Among the 39 fatalities, CPSC identified 7 incidents involving custom products, and 12 involving stock products; staff could not differentiate the remaining 20 incidents' window coverings in terms of being stock or custom products. Hence, the effects, if any, of the 2018 voluntary standard on these products have yet to be reflected in the data.

A closer look at pull cord-related incidents revealed several ways in which children have strangled. Figure 12 presents the distribution of the pull cord-related fatalities by the common modes of entanglement.

DRAFT

- *Loops created by knotted or tangled cord:* CPSC's review revealed that before the incidents, the pull cords had been tied together, or had been coiled and tucked away (out of children's reach), but later became accessible. When pull cords were tied together, a loop was created above the knot where the cords were tied, and that is where the child later became entangled. When the cords were coiled, the cords also became tangled and created a loop, which later acted as a noose. Among all 39 pull-cord-related fatal incidents, 18 out of 39 (46 percent) occurred on loops created by knotted or tangled cords.

- *One or more long cords that the child wrapped around their neck:* In these scenarios, the child had wrapped the long pull cord(s) multiple times around the neck. When the child fell, or tried to pull away from the window covering, the cord pulled back, causing the child to strangle or nearly strangle. Among all pull cord-related fatal incidents, this category included 11 of the 39 (28 percent) pull cord fatalities.

- *Loop above a single tassel or a stop ball of the cord:* Some pull cords consist of multiple cords that hang from the window covering's head rail and are joined at a point, by a plastic or wooden tassel, or by a stop ball. In such configurations, a loop exists above the tassel. In the cases reviewed, CPSC determined that these loops, when accessible to a child, acted as a noose where the child was caught. Four of the 39 (10 percent) pull cord-related fatal incidents involved this scenario.

- *Pull cord tied to an object:* CPSC determined that in one of the 39 (3 percent) pull cord-related fatal incidents, pull cords were tied to a cord cleat, creating a u-shape on the cords where the child was strangled.

DRAFT

- *Unknown manner*: Five of the 39 (13 percent) pull cord-related fatal incidents did not report sufficient information to allow CPSC staff to determine the manner in which the child was entangled.

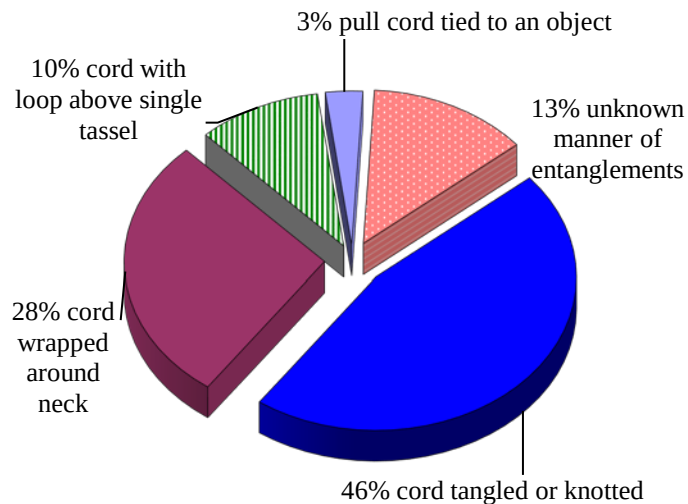


Figure 12: Distribution of Pull Cord-Related Fatal Incidents by Mode of Entanglement 2009-2020
Source: CPSC databases CPSRMS and NEISS

(ii) Continuous Loop Cords: CPSC identified continuous loop cords or beaded chains that were not mounted with a tension device or that broke loose from a tension device at the time of the incident, to be the next major type of cord in which children become entangled. Vertical blinds and curtains/drapes are the predominant types of window covering associated with strangulations on continuous loops. Some of the incident reports mentioned the child's prior interest in wearing the beaded chain as a necklace. Among the 89 fatalities, 23 reported this type of operating mechanism.

(iii) Inner Cords: Inner cords on horizontal blinds and/or Roman shades are the third major type of cord in which children become entangled. In these scenarios, the child pulled out the inner cord from between the slats of the horizontal blinds or from behind the Roman shades, which were in the lowered position. Subsequently, the child got caught in the loop created by the pulled-out portion of the inner cord. In some Roman shade incidents,

DRAFT

children inserted their heads into the opening between the inner cord and the shade material. Seven of the 89 fatalities involved inner cords.

(iv) **Other Cords**: Among the less-prevalent cord types, the lifting loop of a roll-up blind was involved in four fatalities. Children inserted their heads or arms into the lifting loop that came off the roll-up material, resulting in the strangulation incidents. Tilt cords that are used to swivel the slats on a horizontal blind were involved in an additional two fatal incidents.

2. Incident Data from National Estimates

(a) Estimates of Window Covering Cord-Related Strangulation Deaths Using National Center for Health Statistics Data

The National Center for Health Statistics (NCHS) compiles all death certificates filed in the United States into multiple-cause mortality data files. The mortality data files contain demographic information on the deceased, as well as codes to classify the underlying cause of death and up to 20 contributing conditions. The NCHS compiles the data in accordance with the World Health Organization's (WHO) instructions, which request member nations to classify causes of death by the current Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death. Death classifications use the tenth revision of the International Classification of Diseases (ICD), implemented in 1999. The latest year for which mortality data are available is 2019; as such, CPSC derived the strangulation fatality estimates for 2009 through 2019, which is a slightly different time frame than that used for the incident data from the CPSC databases.

Based on CPSC staff's review of the death certificates maintained in the CPSRMS database, staff identified three ICD10 codes that are likely to be used for classification of strangulation fatalities:

- W75 (*accidental suffocation and strangulation in bed*),

DRAFT

- W76 (*Other accidental hanging and strangulation*), and
- W83 (*Other specified threats to breathing*).

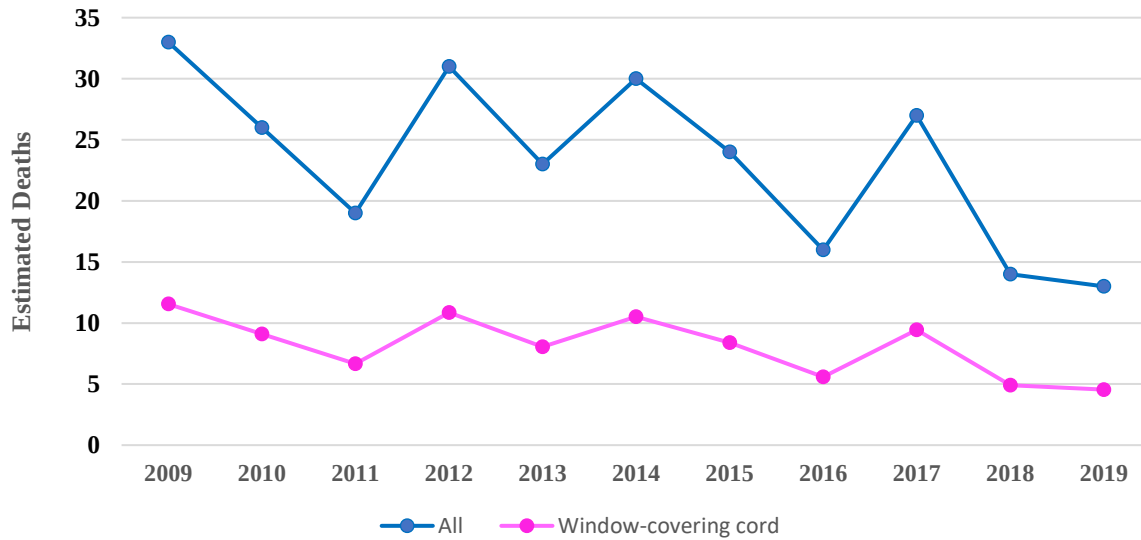
Among these three ICD10 codes, W76 appeared to be the most commonly used to classify strangulation deaths.

Using the ICD10 code value of W76, CPSC staff identified a total of 256 strangulation fatalities among children under age 5 in the multiple-cause mortality data from the NCHS from 2009 through 2019, which yields an annual average of 24 deaths (rounded up to the nearest integer). Two hundred and fifty-six strangulation fatalities are most likely an underestimate of all strangulation deaths, because CPSC staff did not use the other two ICD10 codes (W75 and W83) in the search of this data source. An unknown proportion of strangulation deaths are likely coded under ICD10=W75, as well as ICD10=W83, which cannot be distinguished from the non-strangulation deaths—because of the unavailability of any narrative description—in this data and added to the total. Hence, staff’s annual average estimate of 24 strangulation deaths is a minimum.

A CPSC report by Marcy *et al.*,¹² which reviewed CPSC databases in 2002, found that 35 percent of all strangulation fatalities among children less than 5 years old were associated with window covering cords. Assuming that this 35 percent proportion applies to the entire period 2009 through 2019, CPSC staff estimates that, on average, a minimum of 9 strangulation fatalities (35 percent of the unrounded average annual death estimate of 23.27) occur annually on window covering cords among children under 5 years of age. Again, the estimate is rounded up to an integer. Figure 13 presents the yearly details. The Commission seeks comments on the estimated strangulations by window coverings.

¹² N. Marcy, G. Rutherford. “Strangulations Involving Children Under 5 Years Old.” U.S. Consumer Product Safety Commission, December 2002.

Figure 13: Estimated Annual Minimum for Fatal Strangulations Among Children Under Five Years of Age



Source: Multiple Cause of Death data, NCHS, 2009 – 2019.

Note: The estimates for the window covering cord fatalities are based on the assumptions that 35 percent of all strangulation fatalities are due to window covering cords and that this percentage remained unchanged over 2009-2019.

(b) Estimates of Window Covering Cord-Related Strangulation Injuries Treated in Hospital Emergency Departments

Based on the emergency department-treated injury data (NEISS), the aggregated estimated injuries to children 8 years of age and younger, who were entangled on window covering cords in the period 2009 through 2020, fell below the NEISS reportable threshold.¹³ The injury estimates for individual years are even smaller, which makes any trend analysis unfeasible. However, we combined the 34 injury reports from NEISS with the incident data for the analysis of anecdotal data in section I.E.1 of this preamble. CPSC staff set the upper limit for the age selection criterion for NEISS data at 8 years old, whenever feasible, because of multiple incident reports received by CPSC staff that involved children up to that age.

¹³ 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.

DRAFT

F. ANSI/WCMA-2018 History and Description

CPSC staff began working with the Window Covering Manufacturers Association (WCMA) in 1995 on an American National Standards Institute (ANSI) voluntary standard to address the strangulation hazard to young children from accessible cords on window coverings. WCMA published the first version of the ANSI standard in 1996. The 1996 standard sought to prevent strangulation incidents created by looped cords by requiring either: (1) separate operating cords, or (2) a cord release device on multiple cords ending in one tassel. The standard also required a tension device that would hold the cord or bead loop taut, when installed according to manufacturer's instructions.

In 2001 and in 2002, CPSC staff sent letters to the WCMA asking for revisions to the 1996 standard, including the addition of inner cord stops and the elimination of free-hanging cords or bead chains longer than the neck circumference of a fifth percentile 7- month to 9-month-old child.¹⁴ In August 2002, the published ANSI standard required inner cord stops. In 2007, the published ANSI standard required that tension devices partially limit the consumer's ability to control the blind if the tension device is not properly installed. In 2009 and 2010, WCMA published provisional voluntary standards to address hazards associated with Roman shades.

In November 2010, CPSC held a public meeting regarding window coverings, and WCMA announced that it would establish a steering committee to oversee the activities of six task groups, including one intended for operating pull cords and another for continuous loops. On December 20, 2011, WCMA balloted the proposed revisions to the voluntary standard, and on February 6, 2012, staff sent WCMA a letter providing comments on the proposed revision.¹⁵

¹⁴ See <https://www.cpsc.gov/Regulations-Laws--Standards/Voluntary-Standards/Window-Blind-Cords>

¹⁵ Letter can be found at: https://www.cpsc.gov/s3fs-public/pdfs/blk_media_wcma02_07_12.pdf.

DRAFT

In these comments, CPSC staff reiterated that the hazardous loop determination should be made for all cords and that the length of an accessible operating cord should not be longer than the neck circumference of the youngest child at risk. In addition, staff raised concerns about the inability of tension devices to eliminate effectively or reduce significantly the risk of strangulation under certain foreseeable-use conditions.

In November 2012, the WCMA announced the approval of the 2012 version of the ANSI/WCMA standard, which included: (1) requirements for durability and performance testing of the tension/hold down devices, including new requirements for anchoring; (2) specific installation instructions and warnings; (3) new requirements for products that rely on “wide lift bands” to raise and lower window coverings; (4) requirements for a warning label and pictograms on the outside of stock packaging and merchandising materials for corded products; and (5) expanded testing requirements for cord accessibility, hazardous loop testing, roll-up style shade performance, and durability testing of all safety devices. A revised ANSI/WCMA A100.1 American National Standard for Safety of Corded Window Covering Products was approved on July 21, 2014, which included an editorial change.

On July 22, 2014, CPSC staff sent a letter to the WCMA, requesting that the WCMA reopen the ANSI standard to address the hazard related to pull cords and continuous loops, which are the predominant hazard types in the incidents reported to CPSC.¹⁶ Staff suggested proposed language for a revision to the voluntary standard and asked that WCMA consider including the language in the standard. On August 29, 2014, WCMA responded that the association would begin the process of opening the ANSI/WCMA window covering standard. On August 2, 2016, CPSC staff hosted a WCMA technical meeting. At the meeting, WCMA committed to revising

¹⁶ Letter can be found at:
https://www.cpsc.gov/s3fs-public/pdfs/blk_media_WCMALtr22July2014.pdf.

DRAFT

the voluntary standard to require no operating cords, short cords that cannot form a hazardous loop, or inaccessible cords, recognizing that there will be exceptions to these requirements. WCMA said that they would be exploring segmentation approaches, such as product categories, operating systems, applications and uses, distribution channels (*e.g.*, stock versus custom), location in home; and size, weight, and geometry of the product and ability of the products to be readily adaptable to new technologies. WCMA also committed to submitting a revised draft standard for ANSI to ballot by the end of 2016.

Throughout FY 2017, staff participated in WCMA steering committee meetings, and also participated in the stock/custom definitions and warning labeling task groups. ANSI published a revision to the window coverings standard, ANSI/WCMA A100.1 – 2018, on January 8, 2018. WCMA updated the 2018 version the standard in May 2018, to include missing balloted revisions. The standard went into effect on December 15, 2018.

This NPR is based on the most recent version of the voluntary standard, ANSI/WCMA-2018, which segments the window covering market between “stock” and “custom” window coverings, as defined in section 3 of the standard, definitions 5.02 and 5.01. Per section 4.3.1 of the standard, stock window coverings are required to have:

- (1) no operating cords (4.3.1.1),
- (2) inaccessible operating cords (4.3.1.3), or
- (3) short operating cords (equal to or less than 8 inches) (4.3.1.2).

Although manufacturers of custom window coverings can opt to meet the operating cord requirements for stock window coverings (sections 4.3.2.1 through 4.3.2.3 for custom window coverings are identical to 4.3.1.1 through 4.3.1.3), consumers can still purchase corded window coverings if they custom order the product (sections 4.3.2.4 through 4.3.2.6). Table 3

DRAFT

demonstrates the operating cord systems allowed on custom window coverings that are not allowed on stock window coverings in ANSI/WCMA-2018.

Table 3 – ANSI/WCMA-2018 Operating and Inner Cord Requirements for Stock and Custom Window Coverings

<i>Performance Requirements</i>	<i>Stock Products</i>	<i>Custom Products</i>
<i>No operating cords OR</i>	Required	Optional
<i>Short operating cord with a length equal to or less than 8 inches in any state (free or under tension) OR</i>		Optional
<i>Inaccessible operating cords</i>		Optional
<i>Inner cords that meet Appendix C and D</i>	Required	Required
<i>Single Retractable Operating Cord Lift System</i>	Prohibited	Allowed
<i>Continuous-Loop Operating System</i>	Prohibited	Allowed
<i>Accessible Operating Cords longer than 8 inches</i>	Prohibited	Allowed

Section 4.3.2 of ANSI/WCMA-2018 contains additional revised default requirements for custom products, including:

- (1) operating cords must have a default length of 40 percent of the blind height (previously unlimited) (4.4);
- (2) a wand is the default option for tilting slats (instead of a cord) (4.4.1.1); and
- (3) warning labels must depict more graphically the strangulation hazard associated with cords (5.1).

In 2018, staff participated in various task group meetings to develop requirements for rigid cord shrouds. Section 3, definition 2.09 of ANSI/WCMA-2018 defines a “cord shroud” as “a device or material added to limit the accessibility of a cord or formation of a Hazardous Loop.” A “rigid cord shroud” is not defined in the voluntary standard, but it is a hard material that encases an operating cord to prevent a child from accessing the cord inside the device. The requirements developed by the ANSI task group would clarify “rigid” by confirming that a cord shroud is rigid enough to ensure that the shroud cannot be wrapped around a child’s neck or

DRAFT

won't form a u-shape because of attaching the free end of the shroud to the wall (similar hazards to a single cord). CPSC staff is not aware of incidents related to current products with rigid cord shrouds and advises that cord shrouds that meet the proposed modifications to the ANSI/WCMA standard will address the strangulation hazard posed by accessible cords.

The task group, including CPSC staff, worked from March through December 2018, to develop draft language to test rigid cord shrouds, but WCMA has not balloted the requirements. The tests developed for rigid cord shrouds ensure the stiffness and integrity of the shroud. CPSC staff advises that the allowed deflection (1 inch for every 19-inch length of rigid cord shroud) for a rigid cord shroud under the test is reasonable. The axial torque test method simulates a child twisting the rigid cord shroud to determine if a cord becomes accessible. The torque is based on the mean wrist twisting strength of 2- to 5-year-old males, using a vertically positioned 20 mm-diameter knob, which is 4.4 inch-pound (DTI, 2002). If the cord is accessible, then the device is not considered a rigid cord shroud. Accordingly, the Commission proposes a "rigid cord shroud" definition and test method in this NPR. Tab H of Staff's NPR Briefing Package, and section IV.C of this preamble, contain the proposed language related to cord shrouds, which is based on the work of the ANSI task group.

On March 12, 2019, staff participated in a WCMA steering committee meeting. The purpose of the meeting was to gather feedback on the new requirements that went into effect in December 2018, and to discuss potential proposals for the standard, which WCMA committed to open in mid-June 2019. During the meeting, the attendees agreed on the need for more education for online sellers regarding distinguishing stock and custom products, such as a guidance document for online sellers. Additionally, CPSC staff provided ideas for the next revision of the standard for the committee to consider, including: (1) segmenting custom

DRAFT

products by size and/or type to meet stock product requirements; (2) considering cord retractors for custom products as an option (which is not allowed for stock products); (3) investigating complete inoperability of the product if a tension device is not installed (current requirement is partial inoperability); and (4) considering cordless systems as default operating system for custom orders.

On May 16, 2019, staff sent a letter to WCMA, requesting segmentation of custom window coverings by size and/or type, and applying the requirements for stock products to these segments of custom products; presenting the cordless/short cords/inaccessible cords as the default operating system for custom products as an interim measure, as well as interrupting the ordering process with an alert on hazardous cords if a consumer wants to switch to a corded system; balloting the rigid cord shroud requirement that was finalized by the task group; reaching out to online sellers and developing a guidance document for online sellers; and clarifying whether the standard applies to curtain and drapery products.¹⁷

WCMA responded to CPSC staff on August 12, 2019 and stated that they have put on hold the planned revision of ANSI/WCMA standard because the Government of Canada published a new regulation on corded window coverings. WCMA explained that stock products that do not have operating cords but have inner cords that cannot form a hazardous loop, would not comply with the Canadian regulation because of the new regulated pull force applied to the inner cord. WCMA also stated that the force applied to the inner cord under the Canadian regulation is not applied to test for a hazardous loop; rather, it is applied to determine the force required to raise the product, which is completely contrary to the hazard scenario and is causing considerable confusion within the U.S. and Canadian manufacturing sectors. WCMA reassured

¹⁷ See <https://www.cpsc.gov/Regulations-Laws--Standards/Voluntary-Standards/Window-Blind-Cords>

DRAFT

CPSC staff that they were still moving forward with balloting the rigid shroud language for the standard.

In November 2019, WCMA sent a letter to CPSC staff about the amendment in the fiscal year 2020 Operating Plan, asking staff to assess what further revisions are needed to the American National Standard for Safety of Corded Window Covering Products (ANSI/WCMA-2018), specifically for custom products. WCMA requested that CPSC staff use input from the technical experts at the WCMA's member companies during the upcoming study and in drafting the report to provide the Commission with a comprehensive and balanced review. The letter stated that WCMA will also proceed with balloting the rigid shroud language for the standard that was developed and agreed upon by the technical working group.

On February 3, 2020, staff sent a letter to WCMA, outlining staff's recommendations for future improvements to the standard, and included a request to reopen the standard and discuss staff's recommendations.¹⁸ Staff reiterated their belief that substantial improvements have been made to the latest version of the standard, particularly on stock window coverings; however, staff asserted, expanding the requirements to custom corded window coverings would improve window covering safety. In September 2021, staff sent another letter to WCMA, urging WCMA to apply the stock product requirements in ANSI/WCMA-2018 to custom window coverings, as well as to ballot the rigid cord shroud language developed and agreed upon by the technical working group.

Section II of this preamble assesses the adequacy of requirements for operating cords on stock and custom window coverings in ANSI/WCMA-2018 to address the hazards associated with corded window coverings. Based on staff's assessment, the Commission finds that

¹⁸ Letter can be found at the following link: <https://www.cpsc.gov/s3fs-public/CPSC-Staff-Letter-to-WCMA-Feb-2020.pdf?TZtarOeedGSVnaPzS5dHOEKpKz7f3N24>.

DRAFT

ANSI/WCMA-2018 adequately addresses the risk of strangulation on operating cords for stock window coverings, by removing operating cords, ensuring that they are inaccessible to children, or by making them too short for a child to wrap around his or her neck. However, as shown in Table 3, the Commission finds ANSI/WCMA-2018 does not adequately address the risk of injury associated with operating cords on custom window coverings, because custom products can still be sold to consumers with hazardous operating cords.

G. Commission Efforts to Address Hazardous Window Covering Cords

1. Petition and Rulemaking

Since the mid-1990s, CPSC staff has been engaged with the voluntary standards body urging changes to the ANSI/WCMA standard to reduce the risk of injury associated with window covering cords. On October 8, 2014, the Commission granted a petition to initiate a rulemaking to develop a mandatory safety standard for window coverings.¹⁹ The petition sought to prohibit window covering cords when a feasible cordless alternative exists. When a feasible cordless alternative does not exist, the petition requested that all window covering cords be made inaccessible by using passive guarding devices. The Commission granted the petition and directed staff to prepare an ANPR to seek information and comment on regulatory options for a mandatory rule to address the risk of strangulation to young children on window covering cords.

On January 9, 2015, the Commission voted to approve publication in the *Federal Register* of the ANPR for corded window coverings. The Commission published the ANPR for corded window covering products on January 16, 2015 (80 FR 2327). The ANPR initiated a

¹⁹ The petition, CP 13-2, was submitted by Parents for Window Blind Safety, Consumer Federation of America, Consumers Union, Kids in Danger, Public Citizen, U.S. PIRG, Independent Safety Consulting, Safety Behavior Analysis, Inc., and Onder, Shelton, O’Leary & Peterson, LLC. Staff’s October 1, 2014 Petition Briefing Package, and a copy of the petition at Tab A, is available on CPSC’s website at: <https://www.cpsc.gov/Global/Newsroom/FOIA/CommissionBriefingPackages/2015/PetitionRequestingMandatoryStandardforCordedWindowCoverings.pdf> on (cpsc.gov).

DRAFT

rulemaking proceeding under the CPSA. CPSC invited comments concerning the risk of injury associated with corded window coverings, the regulatory alternatives discussed in the notice, the costs to achieve each regulatory alternative, the effect of each alternative on the safety, cost, utility, and availability of window coverings, and other possible ways to address the risk of strangulation posed to young children by window covering cords. The Commission also invited interested persons to submit an existing standard or a statement of intent to modify or develop a voluntary standard to address the risk of injury. The ANPR was based on the 2014 version of the ANSI/WCMA standard.

As described in section II.A of this preamble, the revised version of the voluntary standard, ANSI/WCMA-2018, adequately addresses the risk of injury from operating and inner cords on stock window coverings, and the risk of inner cord strangulation on custom window coverings. Accordingly, the Commission is issuing two proposed rules: (1) this NPR under sections 7 and 9 of the CPSA, to require that custom window coverings sold in the United States not contain hazardous operating cords, by complying with the same operating cord requirements as stock products in section 4.3.1 of ANSI/WCMA-2018; and (2) in a separate, concurrent rulemaking under section 15(j) of the CPSA, the Commission is proposing to deem an SPH, as defined in section 15(a)(2) of the CPSA: (a) the presence of hazardous operating cords on stock window coverings, (b) the presence of hazardous inner cords on stock and custom window coverings, or (c) the absence of a required manufacturer label.

2. Window Covering Recalls

During the period from January 1, 2009 to December 31, 2020, CPSC conducted 42 consumer-level recalls, including two recall reannouncements. Tab C of Staff's NPR Briefing Package provides the details of these 42 recalls, where strangulation was the primary hazard.

DRAFT

Manufacturers recalled more than 28 million units,²⁰ including: Roman shades and blinds, roll-up blinds, roller shades, cellular shades, horizontal blinds, and vertical blinds. The recalled products also included stock products, which can be purchased by consumers off the shelf, and custom products, which are made-to-order window coverings based on a consumer's specifications, such as material, size, and color.

II. Assessment of Operating Cord Requirements for Stock and Custom Window Coverings

Based on CPSC staff's engineering and human factors assessments of the voluntary standard, set forth in Tabs G and I of Staff's NPR Briefing Package, the NPR requires that operating cords on custom window coverings meet the same requirements for operating cords on stock window coverings, as provided in section 4.3.1 of ANSI/WCMA-2018. In this section of the preamble, we provide an overview of the operating cord requirements for stock and custom window coverings in ANSI/WCMA-2018 and in other international standards; assess the adequacy of these requirements to address the risk of strangulation to young children; and explain why the Commission proposes to require that custom window coverings meet the same operating cord requirements as stock window coverings.

A. Engineering Assessment of Operating Cord Requirements in ANSI/WCMA-2018

1. Stock Window Coverings

Requirements for operating cords on stock window coverings in ANSI/WCMA-2018 are adequate to address the risk of injury associated with window coverings. Staff analyzed the incident data, which indicated that the largest proportion of deaths, irrespective of window covering type, involved operating cords (most frequently tangled or knotted cords, followed by

²⁰ This estimate does not include the recalled units of Recall No. 10-073. This was an industry-wide recall conducted by members of the Window Covering Safety Council (WCSC). An exact number of recalled products was not stated in the recall announcements.

DRAFT

cord(s) wrapped around the child's neck). The voluntary standard recognizes that long and accessible cords can pose a strangulation hazard. ANSI/WCMA-2018 defines the "operating cord" as the portion of a cord that the user interacts with and manipulates to move the window covering in a certain direction (*e.g.*, lifting or lowering, traversing, rotating). If a child wraps a long operating cord around their neck or inserts their neck into a cord loop created by the design of the window covering or by tangled cords, the child can strangle to death within minutes. ANSI/WCMA-2018 provides three ways that a stock window covering can comply with the standard to reduce or eliminate the risk of children strangulating on operating cords:

a. No Operating Cords (section 4.3.1.1). Having no operating cords effectively eliminates the strangulation hazard associated with operating cords because there is no cord to cause strangulation. Consumers use a mechanism, other than an operating cord, to accomplish the desired movement action on the product (*i.e.*, lifting, lowering, traversing). For example, a spring mechanism on a horizontal blind allows the user to lift and lower the blind via bottom rail of the window covering.

b. Short Cord with a Length Equal to or Less Than 8 Inches in Any State (section 4.3.1.2). Based on the anthropometric dimensions of the youngest child involved in an incident, a static cord length of 8 inches or shorter is insufficient to strangle a child, because the neck circumference of a fifth percentile 6- to 9-month-old child is 8 inches (BSI, 1990, as cited in Norris and Wilson, 1995). Because a child would need some extra length of cord to hold the cord out and wrap it around their neck, staff calculated that a cord must be longer than 8 inches to cause strangulation.

c. Inaccessible Operating Cords Determined Per the Test Requirement in Appendix C of the ANSI/WCMA-2018 (section 4.3.1.3). If a window covering has an operating

DRAFT

cord that is longer than 8 inches, ANSI/WCMA-2018 requires that the cord must be inaccessible to children. Having inaccessible cords effectively eliminates the strangulation hazard associated with operating cords, because the child is unable to access a cord to cause strangulation.

Accordingly, this requirement is tested using a probe that is intended to simulate the finger size of a young child; the diameter of the probe is 0.25 inches, based on fifth percentile 2- to 3.5-year-old's index finger diameter (Snyder et al., 1977) at 0.33 inches and the off-the-shelf availability of a 0.25-inch diameter dowel pin. If the probe cannot touch the operating cord, the cord is then deemed inaccessible, pursuant to ANSI/WCMA-2018.

Staff is unaware of a stock window covering for sale in the United States that has an inaccessible operating cord, as described in section 4.3.1.3 of ANSI/WCMA-2018. For products sold in other countries that meet the inaccessibility requirement, the test in the voluntary standard is met by using a rigid cord shroud that encapsulates the operating cord. Figure 14 displays an example of a rigid cord shroud. In Figure 14, the accessibility probe cannot touch the operating cord because it is surrounded by the cord shroud. Therefore, the window covering in Figure 14 meets section 4.3.1.3 of ANSI/WCMA-2018, because the operating cord is inaccessible.



Figure 14. Rigid cord shroud

DRAFT

CPSC concludes that ANSI/WCMA–2018 adequately addresses the strangulation hazard posed by accessible operating cords on stock window covering products, because the standard either eliminates accessible operating cords, or limits the length of the cord so that it is too short for a child to strangle.

2. Custom Window Coverings

Requirements for operating cords on custom window products in section 4.3.2 of ANSI/WCMA-2018 do not adequately address the risk of strangulation to children 8 years old and younger, because ANSI/WCMA-2018 allows hazardous operating cords if window coverings are custom ordered. Of the 35 custom window covering incidents reviewed by staff, 30 of the 35 (86%) incidents were related to operating cords (including pull cords and continuous loops). CPSC staff advises that had the requirements in section 4.3.1 of the ANSI/WCMA standard for operating cords on stock products been in effect for custom window coverings, the requirements would have prevented 100 percent of the incidents involving operating cords on custom window coverings. However, the requirements in section 4.3.2 of ANSI/WCMA-2018 do not address the custom window covering incidents associated with accessible operating cords.

The 2018 version of the voluntary standard added two new requirements for custom window coverings to mitigate the hazard: (1) default maximum operating cord length of 40 percent of the blind height when the product is fully lowered, and (2) default tilt wand option for tilting slats instead of a cord. However, ANSI/WCMA-2018 still allows hazardous operating cords to be part of the window covering design for custom products, which can comply with ANSI/WCMA-2018 using one of the following methods, all of which pose strangulation risks:

(a) *Accessible Operating Cords longer than 8 inches (section 4.3.2.6).* By allowing operating cords on custom window coverings to exceed 8 inches in length,

DRAFT

ANSI/WCMA-2018 creates a continuing unreasonable risk of injury to children 8 years old and younger. Section 4.3.2.6 of ANSI/WCMA-2018 allows hazardous operating cords, meaning operating cords that are long enough to be wrapped around a child's neck, or multiple cords that can become tangled and create a loop large enough for a child to insert their head. Even though ANSI/WCMA-2018 attempts to reduce the strangulation risk by shortening the default length of the cord to 40 percent of the window covering's length (section 4.4) and specifying the tilt wand as the default option versus tilt cords (section 4.4.1.1), as explained in Tab I of Staff's NPR Briefing Package, and in section II.C of this preamble, the risk associated with operating cords remains.

(b) *Continuous Loop Operating System (section 4.3.2.5)*. This operating system requires that the operating loop be kept taut with a tension device. However, as observed in the incident data, a child can still insert his/her head into the continuous loop if it is not taut enough; in addition, as explained in Tab I of Staff's NPR Briefing Package, and in section II.C of this preamble, tension devices may not be attached to the wall, which results in a free loop on the product. CPSC staff identified 23 fatal strangulations involving a continuous corded loop on a product without a functional tension device. CPSC is aware of cord or bead-chain restraining devices intended to be integrated into the window covering, and that do not need to be attached on the wall to keep the loop taut. According to the standard, these devices are required to meet durability, UV stability, and impact testing, and the devices must pass the hazardous loop testing procedure to confirm that they do not create a hazardous loop from an accessible continuous operating cord. CPSC requests comments on the adequacy of these devices to reduce or eliminate the strangulation hazard associated with custom window coverings.

DRAFT

(c) *Single Retractable Cord Lift System (section 4.3.2.4)*. This method of complying with ANSI/WCMA-2018 allows an operating cord on a custom window covering to be pulled at any length to operate the window covering, and then retracts to a shorter length when the user releases the cord. Staff advises that retractable cord lift systems with an extended cord greater than 8 inches, and a low-retraction force to sustain that length, could allow a child to manipulate the cord and wrap the cord around his/her neck. Accordingly, the retractable cord requirement, as written, in ANSI/WCMA-2018 for operating cords on custom window coverings is not adequate to address the risk of injury, because the maximum cord length and a minimum pull force required to operate the system is not specified in the standard. CPSC requests comments on whether additional requirements for retractable cords, such as a maximum exposed cord length and a minimum pull force for a single retractable cord lift system, can address the strangulation hazard.

Based on staff's analysis, the Commission concludes that ANSI/WCMA-2018 does not adequately address the strangulation hazard posed by accessible operating cords on custom window coverings, because the standard allows these products to have one or more operating cords that is longer than 8 inches, and the standard allows custom products to have continuous-loop operating systems.

3. Window Covering Technologies

Stock window coverings currently on the market, as well as a substantial portion of custom window coverings, implement safer technologies to address the hazards identified in the incident analysis review. These products include, but are not limited to, cordless window coverings, window coverings with rigid cord shrouds, and cordless motorized window coverings.

Operating cords can be made inaccessible with passive guarding devices. Passive

DRAFT

guarding devices allow the user to operate the window covering without the direct interaction of a hazardous cord. These types of window coverings use rigid cord shrouds, integrated cord/chain tensioners, or crank mechanisms.

Cordless blinds can be raised and lowered by pushing the bottom rail up or pulling the rail down. This same motion may also be used to adjust the position of the horizontal slats for light control. Through market research, CPSC staff found several examples of cordless blinds that are made with a maximum height of 84 inches and a maximum width of 144 inches.

Rigid cord shrouds can be retrofitted over various types of window coverings to enclose pull cords and continuous-cord loops. A rigid cord shroud allows the user to use the pull cords while eliminating access to the hazardous cords. CPSC staff worked with WCMA and other members from March through December 2018, to develop draft requirements to test the stiffness of “rigid cord shrouds,” by measuring the deflection and deformation.²¹ In December 2018, WCMA sent the agreed-upon language for rigid cord shrouds to the members; however, the language was never balloted. This NPR includes requirements for rigid cord shrouds, based on the previously developed test, so that custom window coverings can use a rigid cord shroud to comply with the proposed rule through inaccessibility of the operating cord.

The proposed rigid cord shroud requirements in the NPR include two tests: the “Center Load” test and the “Axial Torque” test, to ensure the stiffness and the integrity of the shroud so that the enclosed operating cord does not become accessible when the shroud is twisted. The Center Load test verifies the stiffness of the cord shroud, by measuring the amount of deflection in the shroud when both ends are mounted, and a 5-pound force is applied at the mid-point. This

²¹ The 2018 standard tests rigid cord shrouds for UV stability and impact.

DRAFT

test ensures that the shroud is not flexible enough to wrap around a child's neck. The Axial Torque test verifies that the cord shroud's opening does not enlarge to create an accessible cord opening when the shroud is twisted. Tab H of Staff's NPR Briefing Package contains additional detail on the requirement. The Commission solicits comments on the proposed test methods set forth in the proposed regulatory text.

Crank mechanisms (Figure 15) can replace the continuous-loop mechanism with a crank/wand. Because the operating cord is replaced with a wand, the strangulation hazard is completely removed.

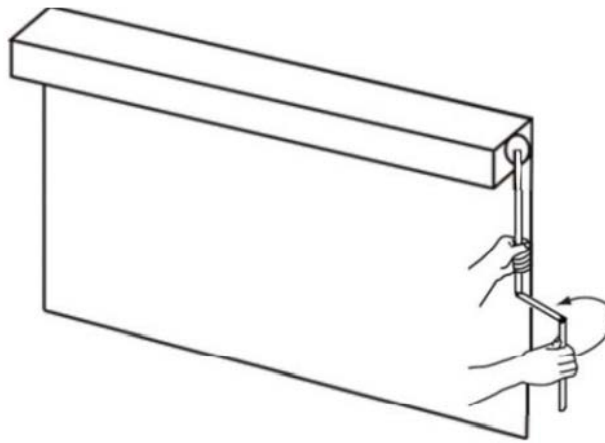


Figure 15. Crank Mechanism

Finally, cordless motorized blinds can be raised and lowered using an electric motor with a supplied controller. These window coverings function similarly to the motorized projector screens. Because these window coverings use a motor instead of a pull cord, they do not contain exposed hazardous operating cords.

B. Assessment of International Standards for Window Covering Operating Cords

The 2015 ANPR identified three jurisdictions that specify requirements for the safety of window coverings: (1) Australia, (2) Canada, and (3) Europe. Australia has a Trade Practices (Consumer Product Safety Standard- Corded internal Window coverings) Regulation 2010

DRAFT

F2010C00801. Europe has the EN: 13120 Internal Blinds-Performance requirements, including safety, EN 16433 Internal Blinds-Protection from strangulation hazards- test methods, and EN 16434 Internal Blinds- Protection from strangulation hazards- Requirements and Test methods for safety devices. Canada previously had the Corded Window Covering Products Regulation SOR/2006-112. Since the ANPR, the Canadian standard was revised to SOR/2019-97.

ANSI/WCMA-2018 is more stringent than Australia Regulation, 2010 F2010C00801, or EN 13120, EN 16433, or EN 16434. However, ANSI/WCMA-2018 is not as stringent as the new Canadian regulation, SOR/2019-97. Canada's window covering regulation states that any window covering cord that can be reached must be too short to wrap around a 1-year-old child's neck (*i.e.*, not more than 22cm (8.66 inches) in length) or form a loop that can be pulled over a 1-year-old child's head (*i.e.*, not more than 44cm (17.32 inches) in circumference). Canada's regulation also requires that all window coverings meet one of the following conditions:

- Section 4: The cord shall be unreachable/inaccessible.
- Section 5 and 6: Reachable/accessible cords shall be 22 cm (8.66 inches) or less when pulled with 35N (7.87 lbf).
- Section 7: Reachable/accessible looped cords shall be 44 cm (17.32 inches) or less in perimeter when pulled with 35N (7.87 lbf).

Both the Canadian standard and the ANSI/WCMA stock window covering requirements do not permit a long accessible operating cord. The Canadian standard is more stringent, however, because the Canadian standard applies to both stock and custom products, while the ANSI/WCMA standard contains separate requirements for stock and custom products, which allows long, accessible operating cords on custom products.

Although the Canadian standard is similar to the ANSI/WCMA's stock window covering

DRAFT

requirement, there are some differences. For example, ANSI/WCMA-2018 and the Canadian standard take a different approach to the definition of “Accessible Cord.” Section 3, definition 2.01 of ANSI/WCMA-2018 defines an “accessible cord” as a cord that can touch a cord accessibility probe and a cord shroud accessibility probe. Section 1 of the Canadian regulation states that a “reachable/accessible cord” is:

the part of the cord that any person can touch when the corded window covering has been installed whether the window covering is fully opened, fully closed or in any position in between.

This definition of “accessible cord” in the Canadian standard is subjective because the definition applies to a person with unspecified measurements who shall be able to reach a cord. The definition of “accessible cord” in ANSI/WCMA-2018 uses a performance requirement with accessibility probes based on the dimension of a child’s fingers. The approach in ANSI/WCMA-2018 is more stringent than the Canadian standard because it requires a test that is not subjective and that provides consistent results when tested.

C. Human Factors Assessment of Operating Cord Requirements in ANSI/WCMA-2018

Operating cord requirements for stock window coverings in section 4.3.1 of ANSI/WCMA-2018 effectively eliminate the strangulation hazard associated with operating cords. However, operating cord requirements for custom window coverings in section 4.3.2 of ANSI/WCMA-2018 allow operating cords to meet one of the three requirements for operating cords on stock window coverings in section 4.3.1 of the standard (cordless, inaccessible, or 8 inches or shorter) to comply, but the standard also allows operating cords that have accessible cords that are longer than 8 inches, such as single retractable cord lift systems, continuous loop operating systems, and standard operating systems. Thus, the ANSI standard allows free-

hanging and accessible cords on custom window coverings that do not eliminate the strangulation hazard associated with operating cords.

1. Default Requirements for Custom Operating Cords Allow Accessible Cords

In the earlier versions of the ANSI/WCMA standard, the standard contained no specified length for operating cords. However, ANSI/WCMA-2018 provides the following two new requirements for custom window coverings, which are intended to reduce the hazard associated with free-hanging and accessible operating cords:

- Section 4.4 of ANSI/WCMA-2018 requires that the default cord length should be no more than 40 percent of the product height when the window covering is fully lowered. The exception is when a custom length is required to ensure user accessibility. Figure 16 shows the length of operating cords that are longer than 40 percent of product height and shorter cords that comply with this new requirement.
- Section 4.4.1 requires that a wand tilt be the default operating system, and cord tilt be an allowable customer option (Figure 16). The length requirement in section 4.4 still applies to tilt cords.



Figure 16. Window blind with operating cords longer than 40 percent of the length of the product and tilt cords to tilt the slats (left). Window blind with operating cords equal to 40 percent of the product length and wand tilt replacing tilt cords (right)

DRAFT

CPSC has concerns with operating cords that comply with the requirements in sections 4.4 and 4.4.1 because:

- The length of operating cords can still be hazardous when the window covering is fully lowered. First, a child can wrap the cord around their neck; only about 8 inches of cord is enough to encircle the child's neck.²² Additionally, multiple cords can tangle and create a loop in which a child can insert his/her head; a loop with a circumference of about 17 inches is sufficient for child's head to enter.²³ Figure 17 shows these two scenarios.



Figure 17. Demonstration of wrapped cords around (doll) child's neck (left), (doll) child's head is through the loop created by entangled multiple cords (right)

- Operating cord(s) will get longer as the window covering is raised, making it easier for a child to access and manipulate the hazardous operating cord.
- If the cord tilt option is chosen, the cord tilt can also be long enough to be wrapped around a child's neck or be tangled and create a loop in which a child's head can enter.
- Consumers can easily change the default options during the custom order process, thus maintaining the ability to choose an accessible operating cord that exceeds 8 inches long, posing a strangulation hazard.

²² Neck circumference of fifth percentile 6-9-month-old children is 8 inches (BSI, 1990 as cited in Norris and Wilson, 1995.)

²³ Head circumference of fifth percentile 6-9-month-old children is 16.5 inches (Snyder et al., 1977)

DRAFT

Incident data show that children have strangled on operating cords in various ways. As reported in the incident data in section I.E of this preamble, and Tab A of Staff's NPR Briefing Package, custom window coverings were involved in at least 35 incidents. Table 4 shows how children accessed window covering cords. In 14 incidents, the child climbed on an item including couch, chair, toy chest or dog kennel and accessed the cord. In four cases, a child was on a sleeping surface, including a bed (2), playpen, and a crib. In six incidents, a child was able to get to the cord from the floor.

Table 4. Child's interaction scenario in incidents associated with custom products

Scenario	Number of Incidents
Climbed on an item to reach the cords	14
On floor	6
On bed, in playpen or crib	4
Unknown	11
<i>Total</i>	35

The incident data demonstrate that accessible cords that are longer than 8 inches are hazardous. For example, the data show that even if operating cords are kept close to the window covering head rail with some means, children climb and access the cords. Additionally, a significant number of operating pull cord incidents occurred in fully or partially raised window coverings, which essentially reduces the benefit of having a default length of 40 percent of the window covering height in fully lowered position of the window covering, because the cords will get longer as the product is raised.²⁴ Based on these data, CPSC concludes that even though the requirements in sections 4.4 and 4.4.1 of the ANSI standard attempt to reduce the strangulation hazard associated with accessible and hazardous operating cords, these requirements are still

²⁴ A total of 36 out of 46 pull cord incidents when position of the window covering was known have occurred with partially or fully raised window covering (1996 to 2016 incidents.)

DRAFT

inadequate, because they continue to allow accessible and long cords to be part of the window covering.

2. Warning Labels in ANSI/WCMA-2018, Alone, Are Inadequate to Address the Strangulation Hazard Associated with Operating Cords

The ANSI/WCMA-2018 standard requires that corded custom window covering products have warning labels regarding the strangulation hazard to children, as summarized below:

- A generic warning label must be permanently attached to the bottom rail, including a pictogram depicting the hazard of a cord wrapped around a child's neck. The content explains the strangulation hazard and what consumers need to do to avoid the hazard (keeping cords out of children's reach, shortening cords to prevent reach, moving crib and furniture away.)
- A similar warning label must be placed on product merchandising materials which includes, but is not limited to, the sample book and the website (if the website is relied upon for promoting, merchandising, or selling on-line).
- A warning tag containing a pictogram and similar text as above must be placed on accessible cords, including operating cords, tension devices that are intended to keep continuous loops taut, and on inner cords of a roll up shade.

Formatting of warning labels in the ANSI standard is required to follow ANSI Z535 standards, which are the preeminent set of standards to develop safety labels.²⁵ This includes a signal word ("Warning") in all uppercase letters measuring not less than 5/16 in (8 mm) in height and preceded by an ANSI safety alert symbol (an equilateral triangle surrounding an exclamation point) of at least the same size, the rest of the warning message text be in both uppercase and

²⁵ The ANSI Z535 Series provides the specifications and requirements to establish uniformity of safety color coding, environmental / facility safety signs and communicating safety symbols. It also enables the design, application, use and placement of product safety signs, labels, safety tags and barricade tape.

lowercase letters, with capital letters measuring not less than 1/8 in (3 mm). A Spanish version of the label is also required.

Among the 35 incidents involving custom products, at least 19 included a permanent label. Table 5 shows the presence of the labels on the incident units.²⁶ The presence of the label was unknown in 10 incidents, and no label was reported in 6 incidents. In some cases, parents reported that they were aware of the cord hazard, but never thought their child would interact with them; in a few cases, parents were aware of the operating cord hazard but not the inner cord hazard. In some cases involving bead chains, parents thought that the connector clip on the bead chain loop was supposed to break away. None of the incident units had a hang tag. One unit had the hang tags tucked into the head rail, which was discovered when the unit was removed.

Table 5. Presence of permanent warning labels in incident units

Permanent Label Present	Number of Incidents
Yes	18
Mostly peeled off	1
No	6
Unknown	10
<i>Total</i>	35

Research demonstrates that consumers are less likely to look for and read safety information about the products that they use frequently and are familiar with (Godfrey et al., 1983). Given that many of the window covering incidents occurred on products with at least the permanent label attached on the bottom rail, and the high likelihood that consumers have window coverings in their homes and almost certainly use them daily, and thus have high familiarity, even well-designed warning labels will have limited effectiveness in communicating the hazard on this type of product.

²⁶ In two cases, staff examined exemplar units.

DRAFT

Based the forgoing research and the incident data, warning labels are unlikely to effectively reduce the strangulation risk due to hazardous cords on window coverings, because consumers are not likely to read and follow warning labels on window covering products, and strangulation deaths among children occur quickly and silently, such that parental supervision is insufficient to address the incidents.

3. Safety Devices Are Inadequate to Address the Risk of Strangulation

ANSI/WCMA-2018 requires that custom products with accessible operating cords include cord cleats with instructions for use and mounting. The standard also requires that custom products with a continuous loop operating system contain a cord tension device. Figure 18 shows examples of cord cleats and tension devices.

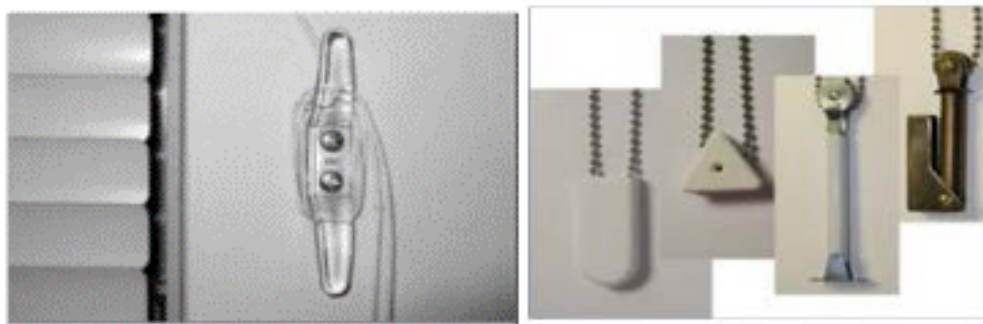


Figure 18. Examples of cord cleat (left), cord tension device (right)

(a) Tension Devices

ANSI/WCMA-2018 requires that a tension device be attached to the cord or bead chain loop by the manufacturer and also requires a sequential process or tools to be removed, which essentially means that consumers would have to go through multiple steps or need to use a tool such as a screwdriver to remove the tension device. Unless installed or altered from the shipped condition, the voluntary standard also requires window coverings to be designed so that they are prevented from operating, at least partially, unless the tension device is properly installed. The

DRAFT

standard also requires that the tension device be supplied with fasteners and instructions and meet the durability test requirements.

CPSC has concerns with using safety devices to reduce the risk of strangulation for several reasons. Securing safety devices goes beyond the installation of the window covering itself, which increases the “cost of compliance” that is the time and effort to use the product. Also, safety devices, such as tension devices, usually require drilling holes on the wall or windowsill that may not be permissible for renters and may not be desirable by homeowners.

Among the 35 incidents involving custom products, 12 had continuous loop cords or bead chains. In one incident, the child was able to insert his head through the loop even though the tension device was attached to the wall, originally installed by a professional. In 2 incidents, a tension device was attached to the cord but not to the wall. In one incident, a tension device broke prior to the incident. In 4 incidents, staff confirmed that a tension device was not installed. The remaining 4 incidents contained no mention of tension device.

(b) Cord Cleats

While the tension device is intended to prevent the window covering at least “partially” from operating, cord cleats have no impact on the operation of the window covering. Even when a cord cleat is installed, the consumer must wrap the cord around the cleat every time the product is raised or lowered to mitigate the strangulation hazard, which means that the user’s active involvement is necessary every time. Further, cord cleats can be accessed by a child if he/she climbs up. In one incident, although caregivers normally wrapped the cord around the cleat, on the day of the incident, cords were not wrapped, and the child accessed the cords after climbing on a couch.

DRAFT

(c) Consumer Perception of Safety Devices

Some consumers may believe that because they either do not have young children living with them or visiting them, installation of the safety devices is unnecessary. However, window coverings last a long time, and when homes are sold or new renters move in, the existing window coverings, if they are functional, usually remain installed and could be hazardous to new occupants with young children.

CPSC issued a contract to investigate the effectiveness of safety devices in reducing the risk of a child's access to hazardous cords and loops on window coverings. Westat conducted research under Contract CPSC-Q-15-0064.²⁷ The research objective was to provide CPSC with systematic and objective data on the factors that impact installation, use, and maintenance of window covering safety devices; assess how these factors impact the likelihood of correct installation, use, and maintenance; and identify how the factors relate to the goal of reducing children's access to hazardous cords and loops on window coverings. Westat reviewed the window coverings and safety devices available in brick-and-mortar and online stores; performed task analysis to identify key issues and specific questions to be addressed in the focus groups; developed materials and procedures for the focus groups; and conducted the focus groups. Major findings from the study point to:

- (i) A general awareness about cord entanglement among caregivers, which does not translate to precautionary action, due partly to the insufficient information provided at the point of sale;

²⁷ <https://cpsc.gov/s3fs-public/Window%20Coverings%20Safety%20Devices%20Contractor%20Reports.pdf>

DRAFT

(ii) Lack of awareness of the speed and mechanism of the injury that may lead to caregivers' underestimating the importance of providing an adequate level of supervision;

(iii) Difficulty using and installing safety devices as primary reasons for not using them; and

(iv) Inability to recognize the purpose of the safety devices provided with window coverings.

In general, participants in the Westat study preferred a cordless window covering or a passive mechanism, which does not require intentional action by the user. Westat concluded that there could be benefits from enhancing the public's awareness and understanding of the unique nature of incidents (*e.g.*, speed, mechanism) and explaining a child's vulnerability in all rooms in the home, and that providing specific information at the point of sale, could be partially helpful. However, Westat stated that these improvements would be incremental, and that increasing the use of cordless window coverings would be needed to achieve significant benefits.

4. Relying on Parental Supervision is Inadequate to Address the Risk of Strangulation

CPSC has recognized cords on window coverings as a hidden hazard for many years. Strangulation with cords requires only a few minutes. Because even young children are left unsupervised for a few minutes or more in a room that is considered safe, such as a bedroom or family room, parental supervision is unlikely to be effective to eliminate or reduce the hazard. Children can wrap the cord around their necks, insert their heads into a cord loop and get injured, or die silently in a few minutes in any room, with or without supervision.

Even when supervision is present, the level of supervision varies and distractions and other limitations to supervision exist. For example, CPSC has incident reports involving five

DRAFT

near-fatal strangulations, in which the parent was either nearby or in the same room and was able to rescue the child before the child lost consciousness.²⁸ Among the 35 incidents involving custom products, incident location was known in 33 incidents. In 18 incidents, a child was in a room shared by the family members such as a family room, living room, and sunroom. Eleven of 18 incidents were not witnessed, whereas 5 were witnessed by an adult, 2 incidents occurred in the company of other children. Almost all the incidents (14/15) that occurred in a bedroom were unwitnessed, including one victim's father sleeping in the same room; only one was witnessed by another child, a 5-year-old (Table 6.) Out of the 14 fatalities, 13 were not witnessed, whereas, out of the 21 nonfatal incidents, 12 were not witnessed.

Research supports these observations. People cannot be perfectly attentive, particularly over long periods of time, regardless of their desire to do so (Wickens & Hollands, 2000). Caregivers are likely to be distracted, at least occasionally, because they must perform other tasks, are exposed to more salient stimuli, or are subject to other stressors, such as being responsible for supervising more than one child. In fact, research by Morrongiello and colleagues (2006) indicates that older toddlers and preschool children (2 through 5 years old) are regularly out of view of a supervising caregiver for about 20 percent of their awake time at home, and are completely unsupervised (*i.e.*, the parent was not listening to or watching what the child was doing at all) for about 4 percent of awake time in the home. The most common rooms in which children were left alone and unsupervised were the living or family room and the bedroom.

²⁸ Video capturing a child's entanglement in the cords at <https://www.youtube.com/watch?v=2s6nBgy3MJA>, accessed on 8/13/2021

DRAFT

Table 6. Location of incidents and whether the incidents were witnessed

Location	Fatal	Nonfatal
Bedroom		
Witnessed by children	1	
Not witnessed	8	6
Family/Living/Dining room		
Witnessed by Adult		5
Witnessed by children		2
Not witnessed	5	6
Unknown		2
<i>Grand Total</i>	<i>14</i>	<i>21</i>

5. Assessment of Operating Cord Requirements for Window Coverings

CPSC staff evaluated the requirements that apply to operating cords on stock window coverings in section 4.3.1 of ANSI/WCMA-2018 (no operating cords, short operating cords 8 inches or shorter, or inaccessible operating cords determined per the test requirement in Appendix C of ANSI/WCMA-2018). Having no operating cords effectively eliminates the strangulation hazard associated with operating cords because there is no cord to cause strangulation; therefore, this is an adequate requirement. Having a short cord that does not exceed 8 inches of length in any position of the window covering also effectively eliminates the strangulation hazard associated with operating cords; the neck circumference of fifth percentile 6-9-month-old children is 8 inches (BSI, 1990 as cited in Norris and Wilson, 1995), therefore this is an adequate requirement. Ensuring that the operating cords are inaccessible is another adequate requirement. This requirement is tested in ANSI/WCMA-2018 using a probe that is intended to simulate the finger size of a young child. The diameter of the probe is 0.25 inches, based on fifth percentile 2-3.5-year old's middle index finger diameter (Snyder et al., 1977.) at 0.33 inches and the off-the-shelf availability of a 0.25-inch diameter dowel pin. If the probe cannot touch the cords, the cord is then deemed inaccessible. Staff assessed that child

DRAFT

anthropometry and strength related inputs to develop these requirements are adequate to address the strangulation risk associated with hazardous cords.

Staff assessed the operating cord requirements on custom window coverings, which are different than those required on stock window coverings in section II.A of this preamble and Tab G of Staff's NPR Briefing Package. Based on the staff's assessment, the Commission proposes to require the same requirements for operating cords on stock and custom window coverings to effectively eliminate the unreasonable risk of strangulation associated with operating cords on custom window coverings.

6. Addressability of Incidents with the Proposed Rule

CPSC received reports of 194 incidents that reportedly occurred from January 2009 through December 2020. Staff identified 35 of these incidents as having occurred with a custom window covering; 50 with stock window covering, and in 109 cases, there was not enough information to identify whether the incident unit was stock or custom window covering. Out of the 35 custom window covering incidents, a continuous loop was involved in 12 incidents; operating cords, including tilt cords, were involved in 19 incidents; 3 incidents involved inner cords; and 2 incidents involved an unknown cord type.

The stock window covering requirements in ANSI/WCMA-2018 adequately address both the continuous loops and operating cords by removing cords entirely, making them inaccessible, or by requiring them to be no longer than 8 inches. All three of the inner cord incidents have reportedly occurred on custom Roman shades that did not comply with the requirements in the standard; if the products had complied with the voluntary standard, staff concludes that those incidents would have been prevented. Moreover, as reviewed in section II.E of this preamble

DRAFT

and Tab E of Staff's NPR Briefing Package, new window coverings substantially comply with the inner cord voluntary standards.

All 30 incidents associated with operating cords and continuous loops (out of 35 total incidents involving custom products, with the others including 3 that involved inner cords and 2 unknown) would have been prevented if the custom window covering complied with the requirements for stock window coverings in the ANSI/WCMA standard. The three inner cord related incidents would have been prevented if the incident units complied with the existing standard. Therefore, if the custom window covering complied with the recommended requirements, 86 percent (30/35) of the custom product incidents would have been addressed in addition to the 8.6 (3/35) percent of the inner cord incidents that would be addressed by complying with the voluntary standard. Given that all accessible and hazardous cords are effectively addressed with the recommended requirements, the remaining 5.4 percent of the incidents (which represented 2/35 incidents for which the involved cord type was unknown) would also be addressed.

Even though a large portion of the reported incidents did not have sufficient information to categorize the incident product as stock or custom, all of the hazard patterns involving unknown stock or custom product incidents (109) would also be addressed for future products if the Commission issues a final rule for operating cords on custom window coverings. If the unknown products are stock products, such products would be part of the market we now find to be substantially compliant with ANSI/WCMA-2018. If the unknown products are custom products, they would comply with the rule for operating cords on custom products. The hazard associated with inner cords is addressed by compliance with the ANSI standard; the Commission finds that all stock and custom products substantially comply with ANSI/WCMA-2018.

7. Accessibility Concerns

Some manufacturers, including WCMA, have expressed concern about users with a disability, who may not be able to reach cordless window coverings to successfully operate the product, and urge that these consumers still need a corded product. However, CPSC staff advises that various tools exist on the market designed to make the operation of the window coverings easier and accessible to consumers in a variety of use locations. For example, extension poles are already available for window coverings that are out of reach, such as poles for skylights and cordless products (Figure 19). Wands are also available to make it easier for users to operate it with a power grip instead of a pinch grip (Figure 20).



Figure 19. Examples of extension poles currently available on the market
(Source: Extension poles for out of reach shades | CellularWindowShades.com)²⁹

²⁹ Mention of trade names or products does not constitute endorsement or recommendation for use, nor does it imply that alternative products are unavailable or unable to be substituted after appropriate evaluation. The products are identified here to describe the concept of accessibility tools. Such identification is not intended to imply recommendation or endorsement by the U.S. Consumer Product Safety Commission nor is it intended to imply that the products identified are necessarily the best available for this purpose.



Figure 20. Wand with a hand grip shown in the middle.
Photo provided by Parents for Window Blind Safety

8. Information and Education

Since the first safety alert was issued in 1985, CPSC has been warning parents of the danger of child strangulation due to corded window coverings. Every October, CPSC participates jointly with Window Covering Safety Council (WCSC) in National Window Covering Safety Month to urge parents and caregivers to check their window coverings for exposed and dangling cords and to take precautions. Both CPSC and WCSC recommend cordless window coverings at homes where young children live or visit.

In addition to traditional communication methods, CPSC reaches out to consumers using social media, such as safety blogs and online chats, to create awareness of the hazards associated with corded window coverings. Staff has not assessed the effectiveness of these public education campaigns, but given the long history on window covering safety campaigns, the campaigns have had limited impact.

D. Performance Requirements for Operating Cords on Custom Window Coverings

ANSI/WCMA-2018 contains strong requirements for operating cords on stock window coverings. Stock window coverings on the market demonstrate the feasibility of safer

DRAFT

technologies to meet these requirements. Due to the ongoing window covering cord incidents, high severity of the outcomes, proven technical feasibility, and the ineffectiveness of warnings and safety devices for this class of products, CPSC proposes in this NPR to require that operating cords on custom window coverings be identical to the requirements for operating cords on stock window coverings, as set forth in section 4.3.1 of ANSI/WCMA-2018. Section 4.3.1 of ANSI/WCMA-2018 requires that operating cords be cordless, inaccessible, or 8 inches or shorter.

Additionally, this NPR includes a rigid cord shroud requirement based on the WCMA Rigid Cord Shroud Task Group's work that was never balloted.³⁰ Implementing the rigid cord shroud requirements would allow custom window coverings to meet the mandatory rule by using a rigid cord shroud to make an operating cord inaccessible.

E. Window Coverings Substantially Comply with the Voluntary Standard

The Commission has several bases to determine preliminarily that window coverings substantially comply with the requirements for operating cords in ANSI/WCMA-2018.³¹ First, WCMA, the trade association for window coverings and the body that created the voluntary standard, stated in a comment on the ANPR (comment ID: CPSC_2013-0028-1555) that there has been substantial compliance with the voluntary standard since its first publication. WCMA also stated that the association's message to all manufacturers is that, to sell window coverings in the United States, compliance with the standard is mandatory.

³⁰ Although staff has never seen a stock product with a rigid cord shroud, staff encourages WCMA to revise the voluntary standard to include this requirement for stock and custom products.

³¹ CPSC staff observes some decline in pediatric incident data that suggests compliance with the voluntary standard is effective at reducing the number of incidents (see Tab A of Staff's NPR Briefing Package for CPSRMS and NCHS data). We expect a similar trend to continue for stock products given the substantial improvements made to the standard in 2018. However, because window coverings are used for many years, and will be replaced over time with safer products that conform to the voluntary standard, several more years of incident data are required to more definitively demonstrate a reduction in incidents.

DRAFT

Additionally, the Commission instructed the staff to investigate the level of compliance of window coverings with the voluntary standard. CPSC contracted with D+R International, which interviewed window covering manufacturers and component manufacturers to collect anecdotal information on the distribution of stock and custom product sales and the impact of compliance with the voluntary standard (D+R International, 2021). Various manufacturers indicated retail customers would not stock noncompliant products. Manufacturers are also aware of their customers' procedures, and stated that they would not ship to them, if there were concerns about the assembly and installation process. The D+R report indicates that the voluntary standard has caused U.S. window covering manufacturers to design and offer cordless lift operations for most stock window covering categories. All manufacturers interviewed were aware of the standard and had implemented compliance in all stages of their development process, from product design to fabrication.

CPSC field staff also confirmed compliance of the categorization for "stock" and "custom" window coverings, as defined in the ANSI/WCMA standard. CPSC field staff conducted unannounced in-store visits to 18 firms, comprising wholesalers, manufacturers, and retailers. Window coverings in 13 locations demonstrated compliance with the voluntary standard for operating cords for stock and custom products. However, in four locations, staff observed noncompliance of custom window coverings with the ANSI/WCMA standard, including: length of operating cords 40 percent longer than the window covering length, with no accompanying specific customer request; lack of warning label; lack of manufacturer label; lack of hang tag; and use of a cord tilt, instead of wand tilt, without an accompanying specific customer request. Staff found one location with a noncomplying stock window covering. This stock window covering was being sold with long beaded-cord loops in various sizes. Tab E of

DRAFT

Staff's NPR Briefing Package contains a more detailed description of staff's assessment of substantial compliance with the voluntary standard.

Finally, CPSC technical staff tested custom product samples, using test parameters defined in ANSI/WCMA-2018, with a cord accessibility probe and force gauge. The samples tested by staff also indicated a high level of conformance in custom products regarding inner cord accessibility.

Based on incident data, WCMA's statements, contractor report findings, and staff's examination and testing of window covering products, the Commission preliminarily determines that a substantial majority of window coverings sold in the United States comply with the readily observable safety characteristics identified in ANSI/WCMA-2018.

III. Response to Comments on the ANPR

On January 16, 2015, the Commission published an ANPR to initiate rulemaking and seek information and comment on regulatory options for a mandatory rule to address the risk of strangulation to young children on window covering cords. The comment period on the ANPR was scheduled to end on March 17, 2015. However, in a letter dated February 2, 2015, WCMA requested a 75-day extension of the comment period to complete multiple studies that WCMA commissioned. The Commission granted WCMA's request to extend the comment period for the ANPR until June 1, 2015. CPSC received 1,010 comments during the comment period: 748 were in favor of a mandatory rule, 254 were against a mandatory rule, and eight had no clear opinion.

As reviewed in this preamble, since the public comment period on the ANPR closed in 2015, the ANSI/WCMA standard has substantially improved to effectively address the strangulation risk associated with stock window coverings. Accordingly, many of the comments

DRAFT

on the ANPR have been obviated by updates to the ANSI/WCMA standard, and specifically by the requirements for operating cords on stock window coverings and requirements for inner cords on stock and custom window coverings. Below we summarize the comments received on the ANPR and provide responses to the issues raised in the comments.

A. General Support or Opposition for a Mandatory Standard

Comment 1: Seven hundred and forty-eight (748) commenters expressed general support for the rulemaking effort, some stating that given the hidden nature and severity of the risk, a mandatory standard is necessary. Two hundred and fifty-four (254) commenters submitted comments disagreeing with the proposed rulemaking, with most suggesting that a regulation will have a negative impact on the window covering industry.

Response 1: Although the Commission supports the changes to the ANSI/WCMA standard, as evidenced by the proposed rule under section 15(j) of the CPSA; an unreasonable risk of injury remains with operating cords on custom window coverings. Accordingly, we support a mandatory rulemaking to address this unreasonable risk of injury. Window coverings should be inherently safe and should not require consumer intervention due to the silent, quick, and hidden nature of the strangulation hazard. Since the ANPR was published in 2014, 37 children have died by strangulation on a window covering cord.

B. Voluntary Standard

Comment 2: Several commenters expressed support for the voluntary standard and felt that working through the voluntary standards process to develop requirements for window coverings would create a more robust standard. Other commenters stated that a mandatory standard is necessary to address the strangulation hazard because decades have gone by and the number of deaths and permanent injuries associated with window covering cords remain

DRAFT

consistent. These commenters noted that voluntary standards have failed to effectively address the strangulation hazard for nearly 20 years.

Response 2: CPSC staff worked closely with WCMA since 1995 to develop and revise the ANSI/WCMA A100.1 standard. Since the public comment period on the ANPR closed in 2015, the WCMA steering committee developed and published improvements to the voluntary standard, with substantial improvements in the 2018 revision to effectively address the strangulation risk associated with stock window coverings. For stock window coverings, the ANSI/WCMA standard requires: no operating cords, inaccessible cords, or short static cords that do not exceed eight inches in length. As detailed in this NPR briefing package, CPSC staff assesses that the requirements for operating cords on stock window coverings, and the requirements for inner cords on stock and custom window coverings, in ANSI/WCMA are adequate to address the risk of strangulation. However, ANSI/WCMA-2018 does not adequately address the hazard associated with operating cords on custom window coverings.

Given the availability of technologies applicable to both stock and custom window coverings, and the identical hazard patterns associated with cords on stock and custom window coverings, custom window coverings can be made as safe as stock window coverings to address the strangulation risk to children, by complying with the same operating cord requirements as stock window coverings. We agree with commenters regarding the timing concern, given that it took 22 years to get to an effective voluntary standard for cords on stock window coverings. Based on this experience, CPSC staff does not recommend delaying a rule to address operating cords on custom window coverings, to wait for the ANSI/WCMA standard to address these operating cords, and we concur.

DRAFT

C. Hazard Communication: Warnings, Public Awareness, and Education

Comment 3: At least twelve commenters suggested that the Commission should rely on warning labels and educational campaigns to address the strangulation hazard. At least seven commenters stated that warning labels and educational efforts were tried, did not work, and are insufficient to address the strangulation risk.

Response 3: Section II.C of this preamble and Tab I of Staff's NPR Briefing Package discuss the reasons that warnings are unlikely to adequately address the strangulation hazard associated with window covering cords. Briefly, warning labels are not likely to be effective on products that consumers use frequently and are familiar with, because consumers are less likely to look for and read safety information. Most of the incident window coverings that CPSC reviewed had a permanent warning label on the product. Even well-designed warning labels will have limited effectiveness in communicating the hazard on this type of product.

However, public awareness is a crucial component in making safe purchasing decisions and safely using window coverings at home. Public information campaigns are on-going. For example, CPSC and the Window Covering Safety Council (WCSC) have joined forces to raise awareness regarding the strangulation risks presented by window covering cords. Since 2003, October has been designated "Window Covering Safety Month" by CPSC and the Window Covering Safety Council (WCSC). Currently, CPSC does not have information to evaluate the effectiveness of public information campaigns on reducing the risk of injury associated with corded window coverings. However, CPSC has conducted information and education campaigns for several decades on the hazards associated with corded window coverings; these efforts have had limited effectiveness in reducing injuries and deaths. Accordingly, the Commission will not

DRAFT

rely solely on education campaigns to address the risk of injury and will move forward with rulemaking.

D. Off-the-Shelf Products

Comment 4: At least two commenters suggested that off-the-shelf window coverings carry higher risks, because consumers install many window coverings incorrectly. One of these commenters suggested that consumers typically do not read the installation instructions and are not familiar with safety devices, such as cord cleats. Another commenter suggested that stock window coverings are more dangerous than custom window coverings because stock window coverings can have longer lengths of accessible pull cords than custom window coverings, stock window covering customers are less likely to get safety information, and stock window coverings are likely to be installed by consumers who may be unfamiliar with the hazard.

Response 4: Based on CPSC staff's assessment, the Commission has determined that the requirements for stock window coverings in the 2018 version of the ANSI/WCMA standard adequately and effectively address the operating and inner cord strangulation hazards associated with stock products. The standard requires that stock window coverings have: no operating cords, cords shorter than 8 inches, or inaccessible cords. The standard similarly requires that if inner cords are present, they either be inaccessible, or too short to create a loop large enough to insert a child's head.

The Commission agrees that consumer installation issues should not make window coverings less safe. For example, ANSI/WCMA-2018 requirements for corded stock window coverings are not dependent on installation, and the requirements do not rely on safety devices. However, ANSI/WCMA-2018 still relies on safety devices, such as cord cleats and tension devices, to address the strangulation hazard on custom window coverings. Because consumers

DRAFT

can choose corded options that rely on the installation of external safety devices, and diligent monitoring and use of safety devices required of consumers, custom window coverings are now less safe than stock window coverings under the ANSI/WCMA standard.

Although the Commission agrees that consumers may not be as knowledgeable about safety devices as professional installers, most of the custom products involved in incidents were installed by professionals, and yet still lacked safety devices. Educating consumers is important to reduce the risk associated with the corded window coverings already installed in consumers' homes. However, manufacturing inherently safe custom window coverings that are on par with the stock window coverings that are compliant with ANSI/WCMA-2018 will have a more substantial impact on safety, as stock window coverings now do not have to rely on additional, consumer behavior-related measures to make the window covering safe.

E. Impact on Elderly and Disabled Consumers

Comment 5: At least eight commenters suggested that cordless products will be difficult to use for those consumers who cannot reach window coverings to operate the product.

Response 5: Although some users have challenges reaching products at a height, CPSC staff advises that various tools are currently marketed for hard-to reach locations, such as skylights. Section II.C of this preamble and Tab I of Staff's NPR Briefing Package provide examples of these tools. Currently available tools and devices can be used to reach custom window coverings, and for stock window coverings such tools are already being used for this purpose. Some consumers are likely to choose window coverings operated via remote control.

F. Parental Responsibility

Comment 6: At least 27 commenters suggested that parents are responsible for supervising their children around corded window coverings to prevent injuries.

DRAFT

Response 6: Strangulation by window covering cords requires only a few minutes to occur, and it happens silently. As explained in section II.C of this preamble and in Tab I of Staff's NPR Briefing Package, parental supervision is unlikely to be effective at eliminating or reducing the strangulation hazard, because even young children are left unsupervised for a few minutes or more in a room that is considered safe, such as bedroom or family room. A more effective solution to the window covering cord hazard is to ensure that window coverings do not have hazardous cords.

G. Rental Leases and Real Estate Documents

Comment 7: At least 30 commenters suggested some means of informing or addressing the corded window covering hazard in rental units. Some commenters suggested disclosing the hazards associated with corded window coverings to inform renters. Other commenters suggested that rental units should replace existing corded window coverings with newer and safer window coverings. Some commenters were concerned that tenants may not have the option to replace corded window coverings. At least 34 commenters suggested requiring the disclosure of the presence of corded window coverings in real estate documents.

Response 7: The Commission shares the commenters' concerns regarding window coverings included in rental units where tenants with young children may not have the option of choosing safer window coverings. Moreover, the real estate sales process is an obvious opportunity to inform buyers about the dangers associated with corded window coverings, or to remove and replace the hazardous corded window coverings. However, CPSC does not have jurisdiction to regulate rental homes or real estate sales. Rather, the Commission regulates consumer products, wherever consumers may use such products (homes, schools, in recreation, or otherwise). State and local authorities likely have the authority to regulate what types of

DRAFT

defects must be disclosed in real estate documents and in rental home transactions, and some states already have regulations in place to address window covering cords in certain settings, such as daycare centers.

H. Cost of Safer Products

Comment 8: At least 35 commenters stated that safer window coverings might be too expensive for some consumers, because regulations will increase the cost of window coverings, and motorized window coverings cost much more than corded products. At least 108 commenters suggested that safe alternatives to corded window coverings currently exist but are unaffordable. At least 71 commenters stated that the price of cordless window coverings will drop due to regulation and competition.

Response 8: Safer stock window coverings that comply with ANSI/WCMA-2018 are currently widely available for sale in the United States. Based on a review of currently available window covering products completed by D+R International, nearly all available stock window coverings in 2021 are cordless. Based on the D+R International (2020) study, sales of stock window coverings have remained consistent.

Corded products are now only available for custom window coverings. Custom window coverings have typically been more expensive than stock window covering counterparts because consumers can special order sizes, colors, and shapes. As described in the preliminary regulatory analysis, section V and in Staff's NPR Briefing Package, if this rule is finalized, retail prices for custom products are expected to increase by an average of at least 4 percent, price increase will vary based on product type. Any custom window covering that cannot meet the requirement in the rule for an inaccessible or short operating cord must stop offering the product, incorporate a cordless lift system, or use a motorized lift system.

DRAFT

Based on a review of currently available custom products, motorized lift systems may be prohibitively expensive for many consumers and can exceed the cost of the window covering in some circumstances. If a motorized custom window covering is prohibitively expensive, consumers will likely substitute the window covering for another type (*i.e.*, using curtains instead of Roman shades), purchase a less expensive stock window covering (which already complies with ANSI/WCMA-2018), or purchase a cordless custom window covering with manual operation. If operating cords on custom window coverings must comply with the proposed rule, consumers will still have affordable window covering options.

I. Incentives for Manufacturers

Comment 9: One commenter suggested that CPSC incentivize manufactures to design safer, durable, solutions for window coverings through grants and awards. Another commenter suggested that individuals and small companies need to be incentivized to create new products and systems without the need for high-cost research.

Response 9: CPSC does not currently have the resources to offer grants, subsidies, or awards to firms for development of safer window covering products.

J. Detailed Cost-Benefit Analysis

Comment 10: At least three commenters suggested that CPSC must prepare a detailed cost and benefit analysis.

Response 10: CPSC staff developed a preliminary regulatory analysis, as required by the CPSA, with a preliminary description of the potential benefits and potential costs of the proposed rule, including any benefits or costs that cannot be quantified in monetary terms, and an identification of those likely to receive the benefits and bear the costs. Section V of this

DRAFT

preamble and Tab K of Staff’s NPR Briefing Package contain this preliminary regulatory analysis.

K. Small versus Large Businesses

Comment 11: One commenter stated that larger corporations that manufacturer “hard” window coverings would have an unfair advantage over smaller manufacturers of “soft” window coverings if the CPSC issues a mandatory regulation for window coverings, because hard window coverings could more easily comply with a mandatory rule.

Response 11: Stock window coverings that comply with ANSI/WCMA-2018 are available in both soft and hard types, and implementation of safer window covering technologies has been proven for both types of window coverings. As stated in the Initial Regulatory Flexibility Analysis for custom window coverings, section VI of this preamble and Tab J of Staff’s NPR Briefing Package, CPSC expects significant cost impacts on small manufacturers of custom products, but these costs are not limited to small manufacturers of certain window covering types. The cost impacts of a rule on operating cords for custom window coverings vary by product type. However, CPSC expects that small manufacturers of all custom window covering product types will have significant cost impacts (*i.e.*, those that exceed 1 percent of annual revenue) associated with the mandatory rule.

L. Product Options

Comment 12: At least 40 commenters suggested that consumers may want to have different options to serve their different window covering needs, and that reducing options that are available to consumers is not preferable.

Response 12: Stock products currently on the market that comply with ANSI/WCMA-2018 are available in a variety of materials, sizes, and types to meet consumer needs. Based on

DRAFT

the currently available window covering operating systems, the only product type that is unlikely to keep the traditional design and still meet the proposed rule would be roll-up style shades, as they are lifted and lowered using lifting loops that are accessible and hazardous. The window covering industry is innovative; roll-up shades could be replaced with a window covering option that meets the same purpose and is safe.

M. Product Reliability

Comment 13: One commenter suggested that motors are not as reliable as cords on window coverings, because motors are more complex and require electricity. Two commenters suggested that cordless window coverings do not last long compared to corded versions.

Response 13: Cordless or motorized cordless window coverings are not the only option for a safer window covering that complies with the operating cord requirements in section 4.3.1 of ANSI/WCMA-2018. Corded window covering options are available and comply with section 4.3.1 of the ANSI standard if accessible cords are 8 inches or shorter or if the cords are made inaccessible using a rigid cord shroud. WCMA stated in their response to the ANPR that the expected product life for a window covering is 10 years for a custom-made window covering and 3-5 years for a stock window covering. CPSC does not have information on product life averages for each safer window covering technology.

N. Incidents/Risk

Comment 14: Several commenters suggested that children die from interacting with household products other than window covering cords, and some commenters suggested that the risk of strangulation on window covering cords is low.

Response 14: The Commission is well-aware that children are injured and die from interacting with other household products. CPSC reviews injury and death reports daily, has a

DRAFT

database of these incidents, studies the incidents, and responds to the identified hazards, because our statutory mission is to protect consumers from the risk of injury associated with consumer products. The fact that other products also are associated with injuries and death does not diminish the seriousness of each hazard, and CPSC tries to use our authorities to address injuries on all hazards associated with consumer products. The strangulation hazard to young children on window covering cords is serious, with most incidents resulting in death. The strangulation hazard is a “hidden hazard,” because many people do not understand or appreciate the hazard, and do not take appropriate steps to prevent death and injury. As reviewed in section II.C and Tab I of Staff’s NPR Briefing Package, other means of addressing deaths and injuries, such as warning labels, parental supervision, and education campaigns, have not been effective at reducing deaths and injuries, and are unlikely to be effective in the future. However, performance requirements for window covering cords will effectively reduce the risk of death and injury to young children on window covering cords.

O. Stories of Loss

Comment 15: Over 500 commenters either were personally affected by a window covering cord injury or death or knew someone who was affected by a death.

Response 15: The Commission appreciates the courage of these consumers in sharing their stories. To each of these parents, family members, and loved ones, we thank you for sharing these stories and we are deeply sorry for your loss. The Commission has taken the information about the interactions and conditions involved in the incidents into consideration in developing proposed rules for stock and custom window coverings.

DRAFT

IV. Description of the Proposed Rule

Section 4.3.1 of ANSI/WCMA-2018 sets forth the performance requirements for operating cords on stock window coverings (see Table 7). The Commission has determined that these operating cord performance requirements are adequate and effective to reduce or eliminate the unreasonable risk of strangulation to children 8 years old or younger on window covering cords (see section II.A of this preamble). The Commission has further determined that the requirements for operating cords on custom window coverings in section 4.3.2 of ANSI/WCMA-2018 are inadequate to address the risk of strangulation. Accordingly, the Commission proposes to require that operating cords on custom window coverings comply with the same performance requirements for operating cords on stock window coverings in section 4.3.1, instead of the requirements in section 4.3.2, of ANSI/WCMA-2018.

Table 7 – Requirements for Operating Cords on Stock Window Coverings in ANSI/WCMA-2018

<i>Stock Window Coverings</i> <i>Section of the Standard</i>	<i>Explanation</i>
A. Operating cord	
4.3.1.1 Cordless Operating System <i>“The product shall have no operating cords”</i>	(a) Operating cord not present <i>or</i>
4.3.1.2 Short Static or Access Cords <i>“The product shall have a Short Cord”</i>	(b) Operating cord is 8 inches or shorter in any use position <i>or</i>
4.3.1.3 Inaccessible Operating Cords <i>“The operating cords shall be inaccessible as determined per the test requirements in Appendix C: Test Procedure for Accessible Cords”</i>	(c) Operating cord is inaccessible when tested using cord shroud accessibility probe.

A. Description of Proposed Section 1260.1 – Scope and Definitions

Proposed section 1260.1, scope and definitions, describes the scope of the proposed rule and provides relevant definitions. The Commission’s intent is to remain consistent with the ANSI standard for window coverings with regard to definitions, and the requirements for operating cords in section 4.3.1 of ANSI/WCMA-2018. Section 1260.1(a) limits the scope of the

DRAFT

proposed rule to operating cords on custom window coverings. The risk of injury associated with inner cords on custom window coverings, and operating and inner cords on stock window coverings, are addressed in a separate proposed rule under section 15(j) of the CPSA. Section 1260.1(b) incorporates by reference several definitions in section 3 of ANSI/WCMA-2018.

Below we set forth the terms and explain how these terms are defined in the ANSI standard.

- “custom window covering,” definition 5.01 of ANSI/WCMA-2018, is a window covering that is not a stock window covering.
- “stock window covering” definition 5.02 of ANSI/WCMA-2018, is a product that is a completely or substantially fabricated product prior to being distributed in commerce and is a stock-keeping unit (SKU). For example, even when the seller, manufacturer, or distributor modifies a pre-assembled product by adjusting to size, attaching the top rail or bottom rail, or tying cords to secure the bottom rail, the product is still considered stock under the ANSI standard. Online sales of the product or the size of the order, such as multi-family housing, do not make the product a non-stock product. These examples are provided in ANSI/WCMA A100.1 – 2018 to clarify that as long as the product is “substantially fabricated,” subsequent changes to the product do not change its categorization.
- “operating cord,” definition 2.19 of ANSI/WCMA-2018, is a cord that the user manipulates to use the window covering, such as lifting, lowering, tilting, rotating, and traversing. An example operating cord is pictured in Figure 8 of this preamble.
- “cord shroud,” definition 2.09 of ANSI/WCMA-2018, is material that is added around a cord to prevent a child from accessing the cord and to prevent the cord

DRAFT

from creating a loop. Defining a cord shroud in the proposed rule is necessary because the Commission is proposing to include a test for a “rigid cord shroud” in 1260.2(b), to meet the inaccessibility requirement in section 4.3.1.3.

The Commission is adding a definition for “rigid cord shroud” in proposed 1260.1(c) based on work by the voluntary standards task group in 2018. A “rigid cord shroud” is not currently defined in the standard but is a hard material that encases an operating cord to prevent a child from accessing an operating cord.

B. Explanation of Proposed 1260.2 – Requirements for Operating Cords on Custom Window Coverings

Proposed section 1260.2 sets forth the requirements for operating cords on custom window coverings. Section 1260.2(a) would require that each operating cord on a custom window covering comply with section 4.3.1 of ANSI/WCMA-2018 (operating cord not present (section 4.3.1.1)); operating cord is inaccessible (section 4.3.1.3); or operating cord is eight inches long or shorter in any position of the window covering (section 4.3.1.2), instead of the current requirements for operating cords on custom products in section 4.3.2 of ANSI/WCMA-2018.

Section 1260.2(b) contains the information required by the Office of the Federal Register (OFR) to incorporate by reference the requirements in section 4.3.1, and the relevant definitions in section 3, of ANSI/WCMA-2018. As set forth in section XII of this preamble, the Commission has met the OFR’s procedural requirements to incorporate by reference the relevant parts of ANSI/WCMA-2018.

Section 1260.2(c) contains a proposed requirement for rigid cord shrouds, when they are used to comply with section 1260.2(a), to make an operating cord inaccessible. Proposed sections 1260.2(d) and (e) contain the test methods to confirm whether a cord shroud is “rigid.”

DRAFT

The requirements for rigid cord shrouds are not currently in the ANSI/WCMA standard. An ANSI/WCMA task group worked on a test method in 2018 to clarify “rigid” by confirming that a cord shroud is rigid enough to ensure that the shroud cannot be wrapped around a child’s neck or won’t form a u-shape as a result of attaching the free end of the shroud to the wall (similar to hazards associated with a single cord). ANSI/WCMA has never balloted these provisions.

For this proposed rule, CPSC staff developed a similar test method based on the ANSI task group work. The proposed rigid cord shroud requirements include two tests, the “Center Load” test and the “Axial Torque” test. The Center Load test verifies the stiffness of the cord shroud, by measuring the amount of deflection in the shroud when both ends are mounted and a 5-pound force is applied at the mid-point. This test ensures the shroud is not flexible enough to wrap around a child’s neck. The Axial Torque test verifies the cord shroud’s opening does not enlarge to create an accessible cord opening when the shroud is twisted.

CPSC is not aware of incidents related to current products with rigid cord shrouds and concludes that shrouds that meet the proposed modifications to the ANSI/WCMA standard will address the strangulation hazard posed by accessible cords. Section II.A of this preamble and Tabs G and H of Staff’s NPR Briefing Package contain further explanation and the proposed language related to cord shrouds.

C. Explanation of Proposed 1260.3 – Prohibited Stockpiling

The purpose of proposed 1260.3 is to prohibit manufacturers and importers from stockpiling products that will be subject to a mandatory rule, in an attempt to circumvent the final rule. The Commission’s authority to issue an anti-stockpiling provision is in section 9(g)(2) of the CPSA. 15 U.S.C. 2058(g)(2). Proposed 1260.3(a) prohibits manufacturers and importers of custom window coverings from manufacturing or importing custom window coverings that do not comply with the requirements of the proposed rule in any 12-month period between the date

DRAFT

of the final rule publishing the in the *Federal Register* and the effective date of the rule, at a rate that is greater than 120 percent of the rate at which they manufactured or imported custom window coverings during the *base period* for the manufacturer.

The *base period* is set forth in proposed 1260.3(b) and is described as any period of 365 consecutive days, chosen by the manufacturer or importer, in the 5-year period immediately preceding promulgation of the final rule. “Promulgation” means the date the final rule is published in the *Federal Register*.

The proposed stockpiling limit is intended to allow manufacturers and importers sufficient flexibility to meet normal levels and fluctuations in demand for custom window coverings, while limiting the ability to stockpile large quantities that do not comply with the rule for sale after the effective date. Thus, the stockpiling limit would allow manufacturers and the industry to meet any foreseeable increase in the demand for custom window coverings, without allowing large quantities of custom window coverings to be stockpiled.

Custom products are typically made to order, so it is unlikely that a firm would manufacture large quantities in advance of demand. Therefore, this anti-stockpiling provision should not adversely impact manufacturers. However, firms will need to modify their window coverings to comply with the proposed requirements, and the modifications may be costly. Accordingly, CPSC believes it is appropriate to prevent stockpiling of noncompliant custom window coverings.

D. Explanation of Proposed 1260.4 – Findings

The findings required by section 9 of the CPSA are discussed in section XIII of this preamble.

V. Preliminary Regulatory Analysis

A proposed consumer product safety rule published in the *Federal Register* in accordance with the requirements of section 9 of the CPSA must include a preliminary regulatory analysis that contains: a preliminary description of the potential benefits and potential costs of the proposed rule; a discussion of the reasons any standard or portion of a standard submitted to the Commission under subsection (a)(5) was not published by the Commission as the proposed rule or part of the proposed rule; a discussion of the reasons for the Commission's preliminary determination that efforts proposed under subsection (a)(6) and assisted by the Commission as required by section 5(a)(3) [15 U.S.C. § 2054 (a)(3)] would not, within a reasonable period of time, be likely to result in the development of a voluntary consumer product safety standard that would eliminate or adequately reduce the risk of injury addressed by the proposed rule; and a description of any reasonable alternatives to the proposed rule, together with a summary description of their potential costs and benefits, and a brief explanation of why such alternatives should not be published as a proposed rule. The information and analysis in this section is based on Tab K of Staff's NPR Briefing Package.

A. Preliminary Discussion of Potential Benefits and Costs of the Rule

Based on the estimated 9 fatal injuries involving corded window coverings per year, the societal costs of these fatal injuries are about \$82.8 million annually. Based on the estimate of about 185 nonfatal window covering injuries annually from CPSC's Injury Cost Model (ICM), staff estimates that the societal costs of nonfatal window covering injuries are approximately \$9.3 million annually. Overall, staff estimates the societal costs of fatal and nonfatal injuries to be about \$92.1 million annually. Because staff assesses that the voluntary standard adequately addresses the risk of injury associated with stock window coverings, and because operating and inner cord hazards on stock window coverings, and inner cord hazards on custom window

DRAFT

coverings, are the subject of a separate proposed rule under section 15(j) of the CPSA, this proposed rule under sections 7 and 9 of the CPSA would only address the injuries attributable to operating cords on custom window coverings. Staff estimates the proportion of injuries attributable to operating cords on custom products to be approximately \$53.9 million annually, based on a CPSC review of reported incidents.

The present value of societal cost per window covering unit ranged from \$0.92 for cellular, pleated, and roller shades, \$1.57 for Roman shades, \$3.61 for wood and faux wood horizontal blinds, \$1.34 for metal/vinyl horizontal blinds, \$7.56 for vertical blinds, and \$0.14 for curtains/drapes. Combining these estimates with one year of corded custom window covering sales (2019) amounts to a gross annual benefit of \$52.3 million. Adjusting this estimate for the expected effectiveness of the proposed rule, because not all incidents associated with custom window coverings involved operating cords, equates to a total annual benefit of approximately \$49.5 million.

Based on component cost estimates, assembly/manufacturing costs, and proportions of domestic manufacturing, the increased cost per corded custom window covering produced would range from \$2.15 to \$34.57, an average of at least 4 percent of the retail price, and is highly dependent on product type. The proposed rule is not expected to result in any cost increases for cordless custom window coverings, and as such, aggregate costs are calculated on only corded custom products. Aggregate cost estimates range between \$156.5 million to \$309 million based on 2019 custom sales estimate of \$61.58 million with a per unit cost increase, and the percentage of corded custom sales, which are estimated as 65 percent of custom window covering unit sales.

Many sources of uncertainty are inherent in a complex cost-benefit analysis because of using estimated parameters, inputs from several models, assumptions based on expert judgement,

DRAFT

and public/private data. This analysis includes uncertainty related to cost estimate calculations, the value of statistical life, the number of corded window coverings in use, and the expected product life for certain blind types. The cost studies from which staff derived all of the cost estimates could be outdated, given the first study was completed in 2016, about 2 years before WCMA revised the voluntary standard for stock products. Economies of scale could have reduced costs related to cordless components since the completion of the first cost study in 2016.³² For example, prices for custom window coverings are, on average, higher than those for stock products, which are already required to comply with section 4.3.1 of ANSI/WCMA-2018. Although prices of stock window coverings have increased since the revised voluntary standard went into effect in 2018, sales of stock products remain consistent.³³ For custom products that already have higher prices, consumers may be willing to pay more for a safer window covering without affecting sales, similar to stock window coverings.

Another example of uncertainty in the analysis is related to the value of statistical life (VSL). Staff valued the benefit of reducing fatal incidents at \$9.2 million each, which, as discussed in Tab K of Staff's NPR Briefing Package, is in-line with most reasonable estimates of the value of a statistical life. Staff noted though that there has been some discussion in the literature suggesting that people might be willing to spend more for a small reduction in the risk

³² Staff notes, though, that the low-end cost could also be an underestimate for a rule involving custom products, because the cost study, from which the estimate is derived, mostly analyzed stock products with an assumed high-volume production in China, which is less applicable for custom than for stock.

³³ Staff does not have information on detailed sales data to determine the impact of the ANSI/WCMA-2018 on stock products. CPSC contractor (D+R) aimed to identify the share of custom versus stock sales over time to understand how the window covering market has changed in response to the ANSI/WCMA-2018 as the standard primarily impacts stock products. Researchers considered that metal/vinyl blinds, roller shades, vertical blinds, and wood/faux wood blinds are the categories that should be most affected by the standard, given their large share in stock product sales. They assumed that if these categories had an increase in custom sales after 2018, it would indicate that the cordless operation could be one of the factors driving consumers towards purchasing custom products with corded operation, despite the higher price points. However, researchers' projections indicate that there is not a consistent trend towards greater custom sales, and in the case of metal/vinyl blinds, there is an increasing share of stock sales over time.

DRAFT

to children than they are for the same reduction in their own risk. A review of the literature conducted for the CPSC suggested that the VSL for children could exceed that of adults by a factor of 1.2 to 3, with a midpoint of around 2 (IEC, 2018). If we increase the VSL by a factor of 3, the estimated VSL would equate to \$27.6 million per life, increasing the total benefits of the rule to an estimated \$136.9 million annually. See Table 11 in Tab K of Staff's NPR Briefing Package.

Additionally, the assumption used to create the estimate of corded products in the market is based on interviews with manufacturers and retailers, some of whom gave conflicting accounts. The estimate is not based on exposure surveys, and thus, the actual number of corded custom products could be higher or lower than the estimate used in the base analysis; and, we have no basis for stating whether we think we have over or underestimated the number.

Lastly, the estimated product life used in the analysis for vinyl and metal horizontal blinds was significantly shorter than for the other products. This estimate was based on work completed by D+R for the Department of Energy (2013). However, it is possible that this estimate is skewed because of the dominance of stock in this category. Custom window coverings have a longer product life. For example, WCMA stated in their response to the ANPR that the expected product life for a custom window covering is 10 years and is 3-5 years for a stock window covering. CPSC staff expects a higher per-unit benefit for custom products because of the longer expected product life.

B. Reasons for Not Relying on a Voluntary Standard

Given improvements in the voluntary standard for operating and inner cords on stock window coverings, and inner cords on custom window coverings, the Commission considered whether the agency could rely on the current voluntary standard, ANSI/WCMA-2018, instead of

DRAFT

issuing a mandatory rule for operating cords on custom window coverings. However, as reviewed in section II of this preamble, staff assessed that operating cord requirements for custom products in ANSI/WCMA-2018 are inadequate to effectively address an unreasonable risk of strangulation to children 8 years old and younger associated with custom window coverings. Requirements in the voluntary standard still allow operating cords on custom window coverings to be accessible and to be longer than 8 inches.

Moreover, the Commission finds it unlikely that the ANSI/WCMA standard will be modified to address the risk of injury associated with operating cords on custom window coverings in the near term, or in the long term. CPSC's previous efforts to work with ANSI/WCMA for an effective standard for stock window coverings required more than two decades of development by WCMA. In addition, WCMA did not agree with recommendations from other stakeholders, including consumer advocates and CPSC staff, to require the stock product requirements for custom window coverings. WCMA resists safer custom window coverings, even though cord requirements to remove the strangulation hazard (cordless, inaccessible cords, or short cords) are well known by CPSC and the industry and the technologies to achieve this have been developed and are being used to manufacture both stock and custom window coverings. Therefore, based on WCMA's position on operating cords on custom products, and on past experience, the Commission finds it unlikely that an effective voluntary standard addressing the operating cord hazards on custom window coverings will be developed within a reasonable period.

C. Alternatives to the Proposed Rule

The Commission considered several alternatives to issuing a mandatory standard for operating cords on custom window coverings. These alternatives included: (1) not issuing a mandatory rule, but instead relying upon voluntary standards; (2) improving the voluntary

DRAFT

standard ANSI/WCMA-2018; (3) using a later effective date; (4) narrowing the scope of the rule to address only vertical blinds and curtains and drapes; and (5) continuing and improving information and education campaigns.

1. No Mandatory Standard; Rely on Voluntary Standard

If CPSC did not issue a mandatory standard, the Commission believes that most manufacturers would comply with ANSI/WCMA-2018, because manufacturers already substantially comply with the voluntary standard. However, ANSI/WCMA-2018 allows custom window coverings to be produced with hazardous operating cords, and CPSC concludes that the requirements for operating cords associated with custom window coverings in ANSI/WCMA-2018 are inadequate to protect children from the risk of strangulation. Not mandating a standard would not impose any additional costs on manufacturers; neither would it result in any additional benefits in terms of reduced deaths and injuries to children. CPSC staff does not recommend that the Commission pursue this option.

2. Improve Voluntary Standard for Window Coverings

The Commission also considered directing CPSC staff to continue participating in voluntary standards development and encouraging safety improvements to the voluntary standard for window coverings, ANSI/WCMA-2018. This option would be similar to the “no action alternative,” with the key difference being that the Commission could direct staff to pursue safety improvements in the voluntary standard, including applying the requirements for operating cords on stock window coverings to custom window coverings, as a conditional alternative to a

DRAFT

mandatory standard. The Commission could then reconsider a mandatory standard if efforts to improve the voluntary standard for custom products remain unsatisfactory.

Although CPSC staff supports recent changes in the voluntary standard creating requirements for cordless/short cords/inaccessible cords on stock products, more descriptive warning labels, and materials describing the strangulation hazard, staff does not recommend that the Commission pursue this option. In the past, WCMA rejected initiatives for operating cords on custom products to be cordless, or to not have accessible cords longer than 8 inches in length. Based on staff's previous experience with WCMA, and the length of time it took for WCMA to update the voluntary standard to require cordless stock products (22 years), the Commission does not believe that WCMA is likely to improve the voluntary standard for custom products in a timely manner.

3. Later Effective Date

The proposed rule includes an effective date that is 2 years after the final rule is published in the *Federal Register*, which is twelve months longer than the statutory provision in section 9(c) of the CPSA. 15 U.S.C. § 2058(c). Because some manufacturers may need to redesign certain custom window coverings of unusual sizes to accommodate a cordless operation, a later effective date would allow manufacturers more time to redesign and spread the research and development costs or eliminate product variants that cannot be switched to cordless operation. Based on staff's analysis, the Commission believes it is unlikely that any manufacturer (large or small) would leave the window covering market as a result of the proposed rule. Nevertheless,

DRAFT

elimination of some product sizes is possible because conversion to cordless operation may not be feasible for some large or unusual sizes.

Providing a later effective date for the custom window covering rule would mitigate some of the costs related to redesign/research and development for manufacturers. However, if cordless operation is not feasible, a reduction in sales would occur if a consumer could not find a suitable alternative. Given the potential for large costs for some products to conform per unit to the proposed rule, delaying the effective date would be expected to reduce costs.

4. Narrow Proposed Rule to Vertical Blinds, Curtains, and Drapes

The Commission could narrow the proposed rule to address only the hazards associated with operating cords on custom vertical blinds, curtains, and drapes, on the grounds that cords are not critical to the operation of these products. These custom products typically offer cordless options at no additional cost because, for most applications, a plastic rod can be used for operation. Narrowing the proposed rule to these three product types would lessen the cost impact and make it unlikely that any particular product type and/or size would be eliminated. Under this alternative, the costs are expected to be near \$0 because using plastic rods for operation is very similar to cords in cost.

However, only 2 of the 35 custom product incidents (both are fatalities) were associated with vertical blinds, and there were no curtain or drape incidents where the stock/custom classification could be determined. Because of the limited presence of vertical blinds in custom product incidents (5.7 percent), this option is unlikely to be effective in reducing injuries and deaths.

DRAFT

5. Continue and Improve Information and Education Campaign

The Commission could work to improve the current information and education campaign concerning the strangulation hazard associated with custom corded window covering products. Information and education campaigns on corded window coverings that have been continuing for decades have had limited effectiveness in the reduction of injuries and deaths. Accordingly, the Commission will not rely solely on education campaigns to address the risk of injury.

VI Initial Regulatory Flexibility Act Analysis³⁴

Whenever an agency publishes a proposed rule, the Regulatory Flexibility Act (5 USC 601 – 612) requires that the agency prepare an initial regulatory flexibility analysis (IRFA) that describes the impact that the rule would have on small businesses and other entities, unless the agency has a factual basis for certifying that the proposed rule “will not have a significant economic impact on a substantial number of small entities.”³⁵ The IRFA must contain –

- (1) a description of why action by the agency is being considered;
- (2) a succinct statement of the objectives of, and legal basis for, the proposed rule;
- (3) a description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;
- (4) a description of the projected reporting, recordkeeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record; and

³⁴ The RFA analysis is based on Tab F of Staff’s NPR Briefing Package.

³⁵ 5 USC § 605 (b) of The Regulatory Flexibility Act of 1980, as amended. Available at <https://www.sba.gov/advocacy/regulatory-flexibility-act>.

DRAFT

(5) an identification to the extent practicable, of all relevant Federal rules which may duplicate, overlap or conflict with the proposed rule.

An IRFA must also contain a description of any significant alternatives that would accomplish the stated objectives of the applicable statutes and which would minimize any significant economic impact of the proposed rule on small entities.

A. *Reason for Agency Action*

The proposed rule is intended to address the strangulation hazard to children 8 years and younger associated with operating cords on custom window coverings. Based on an analysis of the relevant data, as set forth in section I.E of this preamble and Tab A of Staff's NPR Briefing Package, staff reports an average of 9 fatal injuries annually to children less than 5 years old. Staff estimates the societal costs of these fatal injuries to be about \$82.8 million annually. Based on the estimate of about 185 nonfatal window covering injuries annually from CPSC's Injury Cost Model (ICM), staff estimates the societal costs of nonfatal window covering injuries are approximately \$9.3 million. Combining these estimates amounts to annual societal costs associated with corded window coverings of approximately \$92.1 million. The proposed rule only addresses injuries attributable to custom window coverings. Based on a CPSC review of 194 reported incidents, the proportion of injuries attributable to custom window coverings is approximately \$53.9 million annually.

The NPR proposes that operating cords on custom window coverings be subject to the same requirements in section 4.3.1 ANSI/WCMA-2018 that currently apply to operating cords on stock window coverings. Based on staff's expertise and analysis of window covering cord incidents, the Commission has determined that these requirements are effective at preventing strangulations for operating cords on stock window coverings and would be equally effective when applied to operating cords on custom window coverings.

DRAFT

B. Objectives of and Legal Basis for the Rule

The objective of the rule is to reduce or eliminate an unreasonable risk of injury or death to children 8 years old or younger associated with operating cords on custom window coverings. The Commission issues this proposed rule under the authority in sections 7 and 9 of the CPSA.

C. Small Entities to Which the Rule Will Apply

Under SBA guidelines, a manufacturer of window coverings is categorized as small if the firm has fewer than 1,000 employees, retailers are considered small if they have sales revenue less than \$8.0 million, and importers if the firm has fewer than 100 employees. Based on 2017 data, 1,898 firms were categorized as blinds and shades manufacturers and retailers (Census Bureau, 2020).³⁶ Of these, about 1,840 firms (302 manufacturers and 1,538 retailers) are small. As the NAICS code for importers is non-specific to window coverings, CPSC staff reviewed Customs and Border Patrol (CBP) data, firm financial reports, and Dun & Bradstreet reports to obtain a more precise estimate of importers. Based on this research, CPSC staff estimates that there are approximately 83 importers that meet the SBA guidelines for a small business (Laciak 2020).

Nearly all of the 302 staff-identified small manufacturers are far below the 1,000 employee SBA threshold. Two hundred thirty-eight (238) of the manufacturers have fewer than 20 employees, and 151 have fewer than 5 employees. CPSC staff estimates that the annual revenue for the firms with fewer than 20 employees to be under \$250,000. Most of the firms with fewer than 5 employees manufacture custom window coverings on a per order basis. The

³⁶ The North American Industry Classification System (NAICS) defines product codes for United States firms. Firms that manufacture window coverings may list their business under the NAICS product code for blinds and shades manufacturers (337920 Blind and Shade Manufacturing) or retailers (442291 Window Treatment Stores). The two product codes 337920 and 442291 encompass most products in the window coverings market. However, some drapery and curtain manufacturers may be listed under 322230, stationary product manufacturing. Importers of window coverings are generally listed in Home Furnishing Merchant Wholesalers (423220), which includes other home furnishing items and is non-specific to window coverings.

DRAFT

annual revenue for these manufacturers is most likely below \$25,000, based on estimates from the Nonemployer Statistics from the U.S. Bureau of the Census. Staff estimates that the annual revenues for the remaining small manufacturers, those with more than 20 employees, are between \$300,000 to \$2,000,000.

D. Compliance Requirements of the Proposed Rule, Including Reporting and Recordkeeping Requirements

The proposed rule would establish a performance standard for operating cords on custom window coverings, requiring that they meet the same requirements as operating cords on stock window coverings under section 4.3.1 of ANSI/WCMA-2018. To comply with the performance requirements, all accessible operating cords would need to be removed, made inaccessible, or shortened to 8 inches or less in any use position.

Under section 14 of the CPSA, as codified in 16 CFR part 1110, manufacturers and importers of custom window coverings will be required to certify (General Certificate of Conformity, or GCC), based on a test of each product or upon a reasonable testing program, that their window coverings comply with the requirements in the rule. If the custom window covering is a children's product, the window covering must be third party tested and certified (Children's Product Certificate, or CPC) for compliance with the rule. Each certificate of compliance must identify the manufacturer or importer issuing the certificate and any manufacturer, firm, or third party conformity assessment body on whose testing the certificate depends. The certificate must be legible and in English and include the date and place of manufacture, the date and place where the product was tested, including the full mailing address and telephone number for each party, and the contact information for the person responsible for maintaining records of the test results. The certificates may be in electronic format and must be

DRAFT

provided to each distributor or retailer of the product. Upon request, the certificates must also be provided to the CPSC and Customs and Border Protection (CBP).³⁷

E. Costs of Proposed Rule That Would Be Incurred by Small Manufacturers

Custom window covering manufacturers would most likely adopt cordless lift operation systems to comply with the proposed rule. As discussed in section V of this preamble, and in Tab K of Staff's NPR Briefing Package, the preliminary regulatory analysis estimates the cost to modify window covering lift systems with the proposed rule ranges from \$2.95 to \$9.65 per horizontal blind, \$2.15 to \$34.57 per shade, and no expected cost increase for vertical blinds and curtains/drapes. CPSC staff does not have estimates of redesign costs but expects that these costs will be small given the already wide availability of product designs with inaccessible cords.³⁸ CPSC staff expects component costs to be significant, as inaccessible cord operation is expensive.

Estimates of the costs to modify three types of window coverings in Panchal (2016) indicate that, at a minimum, the costs to modify will range from 2 to 11 percent of retail prices. Panchal (2016) used a product archeology approach, supplemented by standard models for calculating only manufacturing and assembly costs, to estimate the incremental cost of implementing standard manual uncorded technology for entry-level stock window coverings – the type of window coverings that are available for purchase off-the-shelf from home improvement stores. Hence his estimates are most applicable to the more basic and inexpensive uncorded products at the low end of the window coverings market. Panchal's analysis does not

³⁷ The regulations governing the content, form, and availability of the certificates of compliance are codified at 16 CFR part 1110. Additional requirements for testing and certification of children's products are codified at 16 CFR part 1107.

³⁸ Based on interviews with window covering manufacturers there may be some size and placement limitations related in-accessible cord designs. These limitations can be addressed with motorization of the product but it is prohibitively expensive as many motorized systems can cost more than the window covering product itself.

DRAFT

account for any costs associated with product development and design innovations, testing, licensing of technology, manufacturing restrictions due to existing patents, and training of personnel, which would add further costs to implementing uncorded technologies. Panchal's analysis was also conducted two years before the ANSI standard was revised to require safer operating cords on stock window coverings in December 2018.

Manufacturers would likely incur some additional costs to certify that their window coverings meet the requirements of the proposed rule as required by Section 14 of the CPSA. The certification must be based on a test of each product or a reasonable testing program. WCMA developed a certification program for window covering products, titled "Best for Kids," which includes third party testing of products for accessible cords. CPSC staff believes this testing and certification program would meet the requirements in Section 14 of the CPSA, as long as the test laboratories are CPSC-accepted. Based on quotes from testing laboratory services for consumer products, the cost of the certification testing will range from \$290 to \$540 per window covering model.³⁹ Note that the requirement to certify compliance with all product safety rules, based on a reasonable testing program, is a requirement of the CPSA and not of the proposed rule.

Based on discussion in the Commission's proposed rule on stock window covering cords (Proposed rule to Amend 16 CFR part 1120, CPSC Docket No. [insert]), which evaluates the requirements in section 4.3.1 of ANSI/WCMA-2018 to be "readily observable," a reasonable testing program for nonchildren's custom window coverings could entail a simple visual inspection of products by the manufacturer, and simple measurements of the length of any accessible cord. Therefore, the cost of a reasonable testing program for compliance with the

³⁹ Based on quotes from firms to conduct certification tests to the current WCMA voluntary standard on window covering products currently available at retailers.

DRAFT

proposed rule is likely much lower than the cost of conducting a third party certification testing for children's products.

F. Impact on Small Manufacturers

To comply with the proposed rule, staff expects small manufacturers to incur redesign and incremental component costs, described above, for some product lines which currently are not available with inaccessible cords. Staff does not expect small manufacturers to suffer a disproportionate cost effect from the proposed rule, because the cost calculations and research were completed on a per unit basis; staff expects little if any redesign costs. Staff expects small manufacturers of window coverings to incur, at a bare minimum, a two percent impact to their custom window covering revenue from the proposed rule. This implies that if custom products account for all of a firm's revenue, then the minimum impact of the proposed rule is two percent of revenue.

Generally, staff considers an impact to be potentially significant if it exceeds 1 percent of a firm's revenue. Because even the smallest estimate of cost is 2 percent of retail price, staff believes that the proposed rule could have a significant impact on manufacturers that receive a significant portion of their revenue from the sale of custom window coverings. Staff expects small importers to bear similar costs as small manufacturers, but staff is unclear whether the impact will be significant. The cost effect as a percent of revenue is dependent on the firm's custom window covering imports as a percent of total revenue. Any small importer with revenues of at least 50 percent related to custom window coverings affected by the proposed rule could be significantly impacted. Due to these potential impacts, CPSC staff expects the proposed rule to have a significant effect on a substantial number of small firms.

DRAFT

G. Federal Rules which may Duplicate, Overlap, or Conflict with the Proposed Rule

CPSC staff has not identified any other Federal rules that duplicate, overlap, or conflict with the proposed rule.

H. Alternatives for Reducing the Adverse Impact on Small Entities

Under section 603(c) of the Regulatory Flexibility Act, an initial regulatory flexibility analysis should “contain a description of any significant alternatives to the proposed rule which accomplish the stated objectives of the applicable statutes and which minimize any significant impact of the proposed rule on small entities.” CPSC staff examined several alternatives to the proposed rule which could reduce the impact on small entities, as discussed in section V.C of this preamble.

VII. Environmental Considerations

Generally, the Commission’s regulations are considered to have little or no potential for affecting the human environment, and environmental assessments and impact statements are not usually required. See 16 CFR 1021.5(a). The proposed rule to require operating cords on custom window coverings to comply with the same requirements for operating cords on stock window coverings, as set forth in section 4.3.1 of ANSI/WCMA-2018, is not expected to have an adverse impact on the environment and is considered to fall within the “categorical exclusion” for the purposes of the National Environmental Policy Act. 16 CFR 1021.5(c).

VIII. Paperwork Reduction Act

This proposed rule contains information collection requirements that are subject to public comment and review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (PRA; 44 U.S.C. 3501–3521). Under the PRA, an agency must publish the following information:

- a title for the collection of information;

DRAFT

- a summary of the collection of information;
- a brief description of the need for the information and the proposed use of the information;
- a description of the likely respondents and proposed frequency of response to the collection of information;
- an estimate of the burden that will result from the collection of information; and
- notice that comments may be submitted to OMB.

44 U.S.C. 3507(a)(1)(D). In accordance with this requirement, the Commission provides the following information:

Title: Amendment to Third Party Testing of Children’s Products, approved previously under OMB Control No. 3041-0159.

Summary, Need, and Use of Information: The proposed consumer product safety standard prescribes the safety requirements for operating cords on custom window coverings, and requires that these cords meet the same requirements for operating cords on stock window coverings, as set forth in the voluntary standard, section 4.3.1 of ANSI/WCMA-2018. These requirements are intended to reduce or eliminate an unreasonable risk of death or injury to children 8 years old and younger from strangulation.

Some custom window coverings are considered children’s products. A “children’s product” is a consumer product that is “designed or intended primarily for children 12 years of age or younger.” 15 U.S.C. 2052(a)(2). The Commission’s regulation at 16 C.F.R. part 1200 further interprets the term. Section 14 of the CPSA requires that children’s products be tested by a third party conformity assessment body, and that the manufacturer of the product, including an importer, must issue a children’s product certificate (CPC). Based on such third party testing, a

DRAFT

manufacturer or importer must attest to compliance with the applicable consumer product safety rule by issuing the CPC. The requirement to test and certify children's products fall within the definition of "collection of information," as defined in 44 U.S.C. 3502(3).

The requirements for the CPCs are stated in Section 14 of the CPSA, and in the Commission's regulation at 16 C.F.R. parts 1107 and 1110. Among other requirements, each certificate must identify the manufacturer or private labeler issuing the certificate and any third-party conformity assessment body, on whose testing the certificate depends, the date and place of manufacture, the date and place where the product was tested, each party's name, full mailing address, telephone number, and contact information for the individual responsible for maintaining records of test results. The certificates must be in English. The certificates must be furnished to each distributor or retailer of the product and to the CPSC, if requested.

The Commission already has an OMB control number, 3041-0159, for children's product testing and certification. This rule would amend this collection of information to add window coverings that are children's products.

Respondents and Frequency: Respondents include manufacturers and importers of custom window coverings that are children's products. Manufacturers and importers must comply with the information collection requirements when custom window coverings that are children's products are manufactured or imported.

Estimated Burden: CPSC has estimated the respondent burden in hours, and the estimated labor costs to the respondent.

Estimate of Respondent Burden: The hourly reporting burden imposed on firms that manufacture or import children's product custom window coverings includes the time and cost to maintain records related to third party testing, and to issue a CPC.

DRAFT

Table 8: Estimated Annual Reporting Burden.

Burden Type	Total Annual Responses	Length of Response	Annual Burden (hours)
Third-party recordkeeping, certification	60,800	1.0 hours	60,800

Three types of third-party testing of children's products are required: certification testing, material change testing, and periodic testing. Requirements state that manufacturers conduct sufficient testing to ensure that they have a high degree of assurance that their children's products comply with all applicable children's product safety rules before such products are introduced into commerce. If a manufacturer conducts periodic testing, they are required to keep records that describe how the samples of periodic testing are selected.

CPSC estimates that 0.1 percent of all custom window coverings sold annually, 60,800 window coverings, are children's products and would be subject to third-party testing, for which 1.0 hours of recordkeeping and record maintenance will be required. Thus, the total hourly burden of the recordkeeping associated with certification is 60,800 hours ($1.0 \times 60,800$).

Labor Cost of Respondent Burden. According to the U.S. Bureau of Labor Statistics (BLS), Employer Costs for Employee Compensation, the total compensation cost per hour worked for all private industry workers was \$36.64 (March 2021, <https://www.bls.gov/ncs/ect/>). Based on this analysis, CPSC staff estimates that labor cost of respondent burden would impose a cost to industry of approximately \$2,227,712 annually ($60,800 \text{ hours} \times \36.64 per hour).

Cost to the Federal Government. The estimated annual cost of the information collection requirements to the federal government is approximately \$4,172, which includes 60 staff hours to examine and evaluate the information as needed for Compliance activities. This is based on a GS-12, step 5 level salaried employee. The average hourly wage rate for a mid-level salaried GS-12 employee in the Washington, DC metropolitan area (effective as of January 2021) is

DRAFT

\$47.35 (GS-12, step 5). This represents 68.1 percent of total compensation (U.S. Bureau of Labor Statistics, “Employer Costs for Employee Compensation,” March 2021, percentage of wages and salaries for all civilian management, professional, and related employees: <https://www.bls.gov/ncs/ect/>. Adding an additional 31.9 percent for benefits brings average annual compensation for a mid-level salaried GS-12 employee to \$69.53 per hour. Assuming that approximately 60 hours will be required annually, this results in an annual cost of \$4,172 (\$69.53 per hour × 60 hours = \$ 4,171.80).

Comments. CPSC has submitted the information collection requirements of this rule to OMB for review in accordance with PRA requirements. 44 U.S.C. 3507(d). CPSC requests that interested parties submit comments regarding information collection to the Office of Information and Regulatory Affairs, OMB (see the ADDRESSES section at the beginning of this NPR).

Pursuant to 44 U.S.C. 3506(c)(2)(A), the Commission invites comments on:

- whether the proposed collection of information is necessary for the proper performance of CPSC’s functions, including whether the information will have practical utility;
- the accuracy of CPSC’s estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
- ways to enhance the quality, utility, and clarity of the information the Commission proposes to collect;
- ways to reduce the burden of the collection of information on respondents, including the use of automated collection techniques, when appropriate, and other forms of information technology;
- the estimated burden hours associated with labels and hang tags, including any alternative estimates; and

DRAFT

- the estimated respondent cost other than burden hour cost.

IX. Preemption

Executive Order (EO) 12988, *Civil Justice Reform* (Feb. 5, 1996), directs agencies to specify the preemptive effect of a rule in the regulation. 61 FR 4729 (Feb. 7, 1996). The proposed regulation for operating cords on custom window coverings is issued under authority of the CPSA. 15 U.S.C. 2051-2089. Section 26 of the CPSA provides that “whenever a consumer product safety standard under this Act is in effect and applies to a risk of injury associated with a consumer product, no State or political subdivision of a State shall have any authority either to establish or to continue in effect any provision of a safety standard or regulation which prescribes any requirements as to the performance, composition, contents, design, finish, construction, packaging or labeling of such product which are designed to deal with the same risk of injury associated with such consumer product, unless such requirements are identical to the requirements of the Federal Standard.” 15 U.S.C. 2075(a).

The federal government, or a state or local government, may establish or continue in effect a non-identical requirement for its own use that is designed to protect against the same risk of injury as the CPSC standard if the federal, state, or local requirement provides a higher degree of protection than the CPSA requirement. *Id.* 2075(b). In addition, states or political subdivisions of a state may apply for an exemption from preemption regarding a consumer product safety standard, and the Commission may issue a rule granting the exemption if it finds that the state or local standard: (1) provides a significantly higher degree of protection from the risk of injury or illness than the CPSA standard, and (2) does not unduly burden interstate commerce. *Id.* 2075(c).

DRAFT

Thus, the proposed rule for operating cords on custom window coverings would, if finalized, preempt non-identical state or local requirements for operating cords on custom window coverings designed to protect against the same risk of injury and prescribing requirements regarding the performance of operating cords on custom window coverings.

X. Testing, Certification, and Notice of Requirements

Section 14(a) of the CPSA includes requirements for certifying that children's products and non-children's products comply with applicable mandatory standards. 15 U.S.C. 2063(a). Section 14(a)(1) addresses required certifications for non-children's products, and sections 14(a)(2) and (a)(3) address certification requirements specific to children's products.

A "children's product" is a consumer product that is "designed or intended primarily for children 12 years of age or younger." *Id.* 2052(a)(2). The following factors are relevant when determining whether a product is a children's product:

- manufacturer statements about the intended use of the product, including a label on the product if such statement is reasonable;
- whether the product is represented in its packaging, display, promotion, or advertising as appropriate for use by children 12 years of age or younger;
- whether the product is commonly recognized by consumers as being intended for use by a child 12 years of age or younger; and
- the Age Determination Guidelines issued by CPSC staff in September 2002, and any successor to such guidelines.

Id. "For use" by children 12 years and younger generally means that children will interact physically with the product based on reasonably foreseeable use. 16 CFR § 1200.2(a)(2).

DRAFT

Children's products may be decorated or embellished with a childish theme, be sized for children, or be marketed to appeal primarily to children. *Id.* § 1200.2(d)(1).

CPSC is aware that some window coverings are specifically designed for children, and based on the factors listed above, fall within the definition of a "children's product." If the Commission issues a final rule for operating cords on custom window coverings, such a rule would require custom window coverings that are children's products to meet the third-party testing and certification requirements in section 14(a) of the CPSA. The Commission's requirements for certificates of compliance are codified at 16 CFR part 1110.

Non-Children's Products. Section 14(a)(1) of the CPSA requires every manufacturer (which includes importers⁴⁰) of a non-children's product that is subject to a consumer product safety rule under the CPSA or a similar rule, ban, standard, or regulation under any other law enforced by the Commission to certify that the product complies with all applicable CPSC-enforced requirements. 15 U.S.C. 2063(a)(1).

Children's Products. Section 14(a)(2) of the CPSA requires the manufacturer or private labeler of a children's product that is subject to a children's product safety rule to certify that, based on a third-party conformity assessment body's testing, the product complies with the applicable children's product safety rule. *Id.* 2063(a)(2). Section 14(a) also requires the Commission to publish a notice of requirements (NOR) for a third-party conformity assessment body (*i.e.*, testing laboratory) to obtain accreditation to assess conformity with a children's product safety rule. *Id.* 2063(a)(3)(A). Because some custom window coverings are children's products, the proposed rule is a children's product safety rule, as applied to those products. Accordingly, if the Commission issues a final rule, it must also issue an NOR.

⁴⁰ The CPSA defines a "manufacturer" as "any person who manufactures or imports a consumer product." 15 U.S.C. 2052(a)(11).

DRAFT

The Commission published a final rule, codified at 16 CFR part 1112, entitled *Requirements Pertaining to Third Party Conformity Assessment Bodies*, which established requirements and criteria concerning testing laboratories. 78 FR 15836 (Mar. 12, 2013). Part 1112 includes procedures for CPSC to accept a testing laboratory's accreditation and lists the children's product safety rules for which CPSC has published NORs. When CPSC issues a new NOR, it must amend part 1112 to include that NOR. Accordingly, as part of this NPR for operating cords on custom window coverings, the Commission proposes to amend part 1112 to add the "Safety Standard for Operating Cords on Custom Window Coverings" to the list of children's product safety rules for which CPSC has issued an NOR.

Testing laboratories that apply for CPSC acceptance to test custom window coverings that are children's products for compliance with the new rule would have to meet the requirements in part 1112. When a laboratory meets the requirements of a CPSC-accepted third party conformity assessment body, the laboratory can apply to CPSC to include 16 CFR part 1260, *Safety Standard for Operating Cords on Custom Window Coverings*, in the laboratory's scope of accreditation of CPSC safety rules listed on the CPSC website at:

www.cpsc.gov/labsearch.

XI. Effective Date

The Administrative Procedure Act (APA) generally requires that the effective date of a rule be at least 30 days after publication of a final rule. 5 U.S.C. 553(d). Section 9(g)(1) of the CPSA states that a consumer product safety rule shall specify the date such rule is to take effect, and that the effective date must be at least 30 days after promulgation, but cannot exceed 180 days from the date a rule is promulgated, unless the Commission finds, for good cause shown, that a later effective date is in the public interest and publishes its reasons for such finding.

DRAFT

If finalized, the Commission proposes an effective date of two years after publication of the final rule in the *Federal Register*. Given that the window coverings sold in the United States already substantially comply with the requirements for operating cords in ANSI/WCMA-2018, and that a substantial portion of the custom market already offers safer products that would meet the proposed requirements, a 2-year period should be sufficient for the custom market to transition to new product offerings, where needed. Although the resulting net costs may be distributed among manufacturers, importers, retailers and consumers of window coverings, the initial impact of the regulations will be lessened by a 2-year effectiveness period. A 2-year effective date is also consistent with the effective date of Health Canada's window covering regulation, which modified the coming-into-force period to 24 months, based on net costs, and in response to industry's concerns expressed during the public consultation period. Based on the foregoing, the Commission could find good cause to extend the effective date of the rule beyond the statutory 180 days.

XII. Incorporation by Reference

The Commission proposes to incorporate by reference certain provisions of ANSI/WCMA A100.1 – 2018, American National Standard for Safety of Corded Window Covering Products. The Office of the Federal Register (OFR) has regulations concerning incorporation by reference. 1 CFR part 51. The OFR revised these regulations to require that, for a proposed rule, agencies must discuss in the preamble of the NPR ways that the materials the agency proposes to incorporate by reference are reasonably available to interested persons or how the agency worked to make the materials reasonably available. In addition, the preamble of the proposed rule must summarize the material. 1 CFR 51.5(a).

DRAFT

In accordance with the OFR's requirements, sections I.B.2.(d), II, IV and Table 3 of this preamble summarize the provisions of ANSI/WCMA A100.1 – 2018 that the Commission proposes to incorporate by reference. ANSI/WCMA A100.1 – 2018 is copyrighted. You may view a read-only copy of ANSI/WCMA A100.1 – 2018 free of charge at:

https://wcmanet.com/wp-content/uploads/2021/07/WCMA-A100-2018_v2_websitePDF.pdf.

Alternatively, interested parties may inspect a copy of the standard free of charge by contacting Alberta E. Mills, Division of the Secretariat, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone: 301-504-7479; e-mail: cpsc-os@cpsc.gov.

To download or print the standard, interested persons may purchase a copy of ANSI/WCMA A100.1 – 2018 from WCMA, through its website (<http://wcmanet.com>), or contacting the Window Covering Manufacturers Association, Inc., 355 Lexington Avenue, New York, New York, 10017; telephone: 212.297.2122.

XIII. Proposed Findings

The CPSA requires the Commission to make certain findings when issuing a consumer product safety standard. Specifically, the CPSA requires the Commission to consider and make findings about the following:

- the degree and nature of the risk of injury the rule is designed to eliminate or reduce;
- the approximate number of consumer products subject to the rule;
- the need of the public for the products subject to the rule and the probable effect the rule will have on the cost, availability, and utility of such products;
- any means to achieve the objective of the rule while minimizing adverse effects on competition, manufacturing, and commercial practices;

DRAFT

- that the rule, including the effective date, is reasonably necessary to eliminate or reduce an unreasonable risk of injury associated with the product;
- that issuing the rule is in the public interest;
- if a voluntary standard addressing the risk of injury has been adopted and implemented, that either compliance with the voluntary standard is not likely to result in the elimination or adequate reduction of the risk or injury, or it is unlikely to be substantial compliance with the voluntary standard;
- that the benefits expected from the rule bear a reasonable relationship to its costs; and
- that the rule imposes the least burdensome requirement that prevents or adequately reduces the risk of injury.

15 U.S.C. 2058(f)(1), (f)(3). At the NPR stage, the Commission is making these findings on a preliminary basis to allow the public to comment on the findings.

A. Degree and Nature of the Risk of Injury

Operating cords on custom window coverings present a strangulation hazard, including death and serious injury, to children 8 years old and younger. If children can access a window covering cord, children can wrap the cord around their neck, or insert their head into a loop formed by the cord and strangle. Strangulation can lead to serious injuries with permanent debilitating outcomes or death. If sustained lateral pressure occurs at a level resulting in vascular occlusion, strangulation can occur when a child's head or neck becomes entangled in any position, even in situations where the child's body is fully or partially supported.

Strangulation deaths and injuries on window covering cords are a "hidden hazard" because consumers do not understand or appreciate the hazard, or how quickly and silently strangulation occurs. Because even young children are left unsupervised for a few minutes or

DRAFT

more in a room that is considered safe, such as a bedroom or family room, adult supervision is unlikely to be effective to eliminate or reduce the hazard. Children can wrap the cord around their necks, insert their heads into a cord loop and get injured, or die silently in a few minutes in any room, with or without supervision.

Additionally, safety devices such as cord cleats and tension devices are unlikely to be effective because cord cleats need to be attached on the wall and caregivers must wrap the cord around the cleat each and every time the window covering is raised or lowered. As incident data show, children can still access and become entangled in cords by climbing on furniture. Tension devices also need to be attached on the wall or windowsill, which may not occur due to increased “cost” of compliance and unwillingness to create holes on the wall (which may not be permitted in rental homes); depending on how taut the cord loop is, it can still allow a child’s head to enter the opening as observed in the incident data.

A user research study found a lack of awareness on cord entanglement among caregivers, lack of awareness of the speed and mechanism of the injury; difficulty using and installing safety devices as primary reasons for not using them; and inability to recognize the purpose of the safety devices provided with window coverings. Warning labels are not likely to be effective because research demonstrates that consumers are less likely to look for and read safety information about the products that they use frequently and are familiar with. Most of the incident units had the permanent warning label on the product. Even well-designed warning labels will have limited effectiveness in communicating the hazard on this type of product.

Custom window covering cords have a long product life, and it may take consumers several decades to replace these products. Accordingly, every custom product sold with accessible operating cord presents a “hidden hazard” to young children and can remain a hazard

DRAFT

in the household for 20 years. Some consumers may believe that because they either do not have young children living with them or visiting them, inaccessible operating cords on window coverings are not a safety hazard. However, window coverings last a long time, and when homes are sold or new renters move in, the existing window coverings, if they are functional, usually remain installed and could be hazardous to new occupants with young children.

On the other hand, window coverings that comply with the operating cord requirements for stock window covering requirements in section 4.3.1 of ANSI/WCMA-2018 adequately address the strangulation hazard, by not allowing hazardous cords on the product by design, and therefore do not rely on consumer action. One hundred percent of the operating cord incidents involving custom window coverings would have been prevented if the requirements in section 4.3.1 of ANSI/WCMA-2018 were in effect and covered the incident products.

Based on reviews of CPSC databases, we found that a total of 194 reported fatal and nonfatal strangulations on window coverings occurred among children eight years and younger, from January 2009 through December 2020. Nearly 46 percent were fatal incident reports (89 of 194), while the remaining were near-miss nonfatal incidents. Sixteen of the 194 victims required hospitalization, and six survived a hypoxic-ischemic episode or were pulseless and in full cardiac arrest when found, suffered severe neurological sequelae, ranging from loss of memory to a long-term or permanent vegetative state requiring tracheotomy and gastrointestinal tube feeding. One victim who remained hospitalized for 72 days was released from the hospital with 75 percent permanent brain damage and is confined to a bed.

Based on CPSC's Injury Cost Model, we estimated that approximately 185 medically treated nonfatal injuries have occurred annually from 2009 through 2020 involving children eight years and younger. We also estimated that based on a review of National Center for Health

DRAFT

Statistics (NCHS) and a separate study of child strangulations, a minimum of nine fatal strangulations related to window covering cords occurred per year in the United States among children under five years old from 2009 – 2019.

B. Number of Consumer Products Subject to the Proposed Rule

We estimate that approximately 512 million custom window coverings are in use in the United States. Only corded custom window coverings would be subject to the rule, which we estimate to be around 65 percent of custom window coverings. This brings the total number of window coverings that are subject to the rule to approximately 39 million units sold per year.

C. The Public Need for Custom Window Coverings and the Effects of the Proposed Rule on Their Utility, Cost, and Availability

Consumers commonly use window coverings in their homes to control light coming in through windows and for decoration. ANSI/WCMA-2018 segments the market between stock and custom window coverings. Stock and custom window coverings serve the same purpose, and window covering cords on stock and custom products present the same hazards to children. However, custom window coverings allow consumers to choose a wider variety of specific material, color, operating systems, or sizes, than stock products. Because ANSI/WCMA-2018 effectively addresses operating cords on stock window coverings, and the hazards on custom products are the same, the proposed rule requires custom window coverings to meet the same performance requirements for operating cords as the current operating cord requirements for stock window coverings in ANSI/WCMA-2018.

The Commission does not expect the proposed rule to have a substantial effect on the utility or availability of custom window coverings, and the impact on cost depends on the product type. Custom window coverings that already meet the voluntary standard would continue to serve the purpose of covering windows in consumers' homes. A possible negative

DRAFT

effect could occur with regard to the utility of custom window coverings for those consumers with accessibility issues, or window coverings in hard-to-reach locations, because consumers may need to use a tool to operate the window covering. However, this loss of utility would be mitigated by the availability of existing tools that are already available on the market, and by the ubiquity of remote-controlled operating systems.

Retail prices of custom window coverings vary substantially. The least expensive units for an average size window retail for less than \$40, while some more expensive units may retail for several thousand dollars. The lowest cost to comply with the proposed rule determined by CPSC staff was about \$2.15 per unit. This per unit cost was for potential modifications to comply with the proposed rule, in cases where CPSC staff was able to estimate the potential cost. Custom window covering prices may increase to reflect the added cost of modifying or redesigning products to comply with the proposed rule. If the costs associated with redesigning or modifying a custom window covering to comply with the standard results in the manufacturer discontinuing that model, there would be some loss in availability of that type.

Prices for custom window coverings are, on average, higher than those for stock products, which are already required to comply with section 4.3.1 of ANSI/WCMA-2018. Although prices of stock window coverings have increased since the revised voluntary standard went into effect in 2018, sales of stock products remain consistent.⁴¹ For custom products that

⁴¹ Staff does not have information on detailed sales data to determine the impact of the ANSI/WCMA-2018 on stock products. CPSC contractor (D+R) aimed to identify the share of custom versus stock sales over time to understand how the window covering market has changed in response to the ANSI/WCMA-2018 as the standard primarily impacts stock products. Researchers considered that metal/vinyl blinds, roller shades, vertical blinds, and wood/faux wood blinds are the categories that should be most affected by the standard, given their large share in stock product sales. They assumed that if these categories had an increase in custom sales after 2018, it would indicate that the cordless operation could be one of the factors driving consumers towards purchasing custom products with corded operation, despite the higher price points. However, researchers' projections indicate that there is not a consistent trend towards greater custom sales, and in the case of metal/vinyl blinds, there is an increasing share of stock sales over time.

DRAFT

already have higher prices, consumers may be willing to pay more for a safer window covering without affecting sales, similar to stock window coverings.

D. Other Means to Achieve the Objective of the Proposed Rule, While Minimizing Adverse Effects on Competition and Manufacturing

The Commission considered alternatives to achieving the objective of the rule of reducing unreasonable risks of injury and death associated with operating cords on custom window coverings. For example, the Commission considered relying on compliance with the voluntary standard, and education campaigns, rather than issuing a mandatory rule for operating cords on custom window coverings. Because this is the approach CPSC has relied on, to date, this alternative would have minimal costs; however, it is unlikely to further reduce the risk of injury from operating cords on custom window coverings.

Similarly, the Commission also considered narrowing the scope of the rule to address only the hazards associated with operating cords on custom vertical blinds, curtains, and drapes, because cords are not critical to the operation of these products. Narrowing the proposed rule to these three product types would lessen the cost impact and make it unlikely that any particular product type and/or size would be eliminated, and costs would be near \$0 because using plastic rods for operation is very similar to cords in cost. However, only 2 of the 35 custom product incidents (both are fatalities) were associated with vertical blinds, and there were no curtain or drape incidents where the stock/custom classification could be determined. This option would not result in an effective reduction in injuries and deaths.

Another alternative the Commission considered was providing a longer effective date. This may reduce the costs of the rule by spreading costs over a longer period, but it would also delay the benefits of the rule, in the form of reduced deaths and injuries.

DRAFT

E. Unreasonable Risk

Based on CPSC's Injury Cost Model, about 185 medically treated nonfatal injuries have occurred annually from 2009 through 2020, involving children eight years and younger. Based on a review of National Center for Health Statistics (NCHS) and a separate study of child strangulations, a minimum of nine fatal strangulations related to window covering cords occurred per year in the United States among children under five years old from 2009 – 2019. Based on reviews of CPSC databases, we found that a total of 194 reported fatal and nonfatal strangulations on window coverings occurred among children eight years and younger, from January 2009 through December 2020. Nearly 46 percent were fatal incident reports (89 of 194), while the remaining were near-miss nonfatal incidents.

The Commission estimates that the rule would result in aggregate benefits of about \$49.5 million annually. Of the potential modifications for which staff was able to estimate the potential cost, the lowest costs were about \$2.15 per unit. Effective performance requirements for operating cords on window coverings are well known and already utilized for lower-priced stock window coverings. Technologies to address hazardous window covering cords are also known and utilized on stock products. Moreover, the proposed rule is unlikely to have a large impact on the utility and availability of custom window coverings, but may have an impact on cost, depending on the design of the window covering.

The determination of whether a consumer product safety rule is reasonably necessary to reduce an unreasonable risk of injury involves balancing the degree and nature of the risk of injury addressed by the rule against the probable effect of the rule on the utility, cost, or availability of the product. The Commission does not expect the proposed rule to have a substantial effect on the utility or availability of custom window coverings. The rule may impact

DRAFT

the cost of custom window coverings, but consumers already pay more for custom window coverings, and are likely willing to pay more for safer products.

Weighing the possibility of increased costs for custom window coverings with the continuing deaths and injuries to young children, the Commission concludes preliminarily that custom window coverings with hazardous operating cords pose an unreasonable risk of injury and death and finds that the proposed rule is reasonably necessary to reduce that unreasonable risk of injury and death.

The proposed rule would apply the same requirements to custom window coverings that already apply to stock products. The requirements to address the hazard and the available technologies are widely known and already utilized on the least expensive products. Despite this fact, custom products remain corded, and deaths and injuries to young children on window covering cords continues. As reviewed in XIII.A, consumers do not appreciate the risk of strangulation, or how quickly deaths and injuries occur, even when children are supervised, and custom products can remain in consumer's homes for decades. Due to the ongoing fatal and nonfatal incidents associated with window covering cords, high severity of the outcomes (death and disability to children), proven technical feasibility of cordless products, the implementation of stronger operating cord requirements for stock window coverings already on the market, and the ineffectiveness of warnings and safety devices for this class of products, the Commission proposes to regulate operating cords on custom window coverings.

F. Public Interest

This proposed rule is intended to address an unreasonable risk of injury and death posed by hazardous operating cords on custom window coverings. The Commission believes that adherence to the requirements of the proposed rule will significantly reduce or eliminate a hidden

DRAFT

hazard, strangulation deaths and injuries to children 8 years old and younger, in the future; thus, the rule is in the public interest.

G. Voluntary Standards

The Commission is aware of one national voluntary standard, ANSI/WCMA-2018, and European, Australian, and Canadian standards. Among these, the Commission considers the Canadian standard to be the most stringent because it applies to all window coverings. ANSI/WCMA-2018 contains adequate performance requirements to address the risk of strangulation on for inner cords for both stock and custom window coverings and contains adequate requirements to address the risk of injury on operating cords for stock products. The Commission also believes that custom window coverings substantially comply with the voluntary standard. However, the Commission does not consider the operating cord requirements for custom window coverings in the standard adequate to address the risk of injury, because the voluntary standard still allows accessible and hazardous operating cords to be present on custom products.

H. Relationship of Benefits to Costs

The aggregate benefits of the rule are estimated to be about \$49.5 million annually; and the lowest cost of the rule is estimated to be about \$156.5 million annually. Some recent studies have suggested that the VSL for children could be higher than that for adults. In other words, consumers might be willing to pay more to reduce the risk of premature death of children than to reduce the risk of premature death of adults. A review of the literature conducted for the CPSC suggested that the VSL for children could exceed that of adults by a factor of 1.2 to 3, with a midpoint of around 2 (IEC, 2018). This analysis included other uncertainties, such as cost estimate calculations, the number of corded window coverings in use, and the expected product life for certain blind types. The cost studies from which staff derived all of the cost estimates

DRAFT

could be outdated, given the first study was completed in 2016, about 2 years before WCMA revised the voluntary standard for stock products. Economies of scale could have reduced costs related to cordless components since the completion of the first cost study in 2016. Additionally, the assumption used to create the estimate of corded products in the market is based on interviews with manufacturers and retailers, some of whom gave conflicting accounts.⁴² Finally, the estimated product life used in the analysis for vinyl and metal horizontal blinds was significantly shorter than for the other products. This analysis was based on work completed by D+R for the Department of Energy (2013). However, this estimate may be skewed because of the dominance of stock window coverings in this category. Custom window coverings have a longer product life. For example, WCMA stated in their response to the ANPR that the expected product life for a custom window covering is 10 years and is 3-5 years for a stock window covering. CPSC staff expects a higher per-unit benefit for custom products because of the longer expected product life.

In this case, the cost of certain custom window coverings may increase if redesigned to meet the requirements in the proposed rule. However, effective performance requirements for operating cords on window coverings are well known and already utilized for lower-priced stock window coverings. Moreover, technologies to address hazardous window covering cords are also known and utilized on stock products. Finally, consumers are likely willing to pay more for a custom window covering that eliminates the strangulation risk to children.

Based on this analysis, the Commission preliminarily finds that the benefits expected from the rule bear a reasonable relationship to the anticipated costs of the rule.

⁴² For example, one small retailer CPSC staff contacted provided an account that stated demand and sales of corded products have increased in the past two years, which is in conflict with multiple accounts from manufacturers and other larger retailers.

DRAFT

I. Least Burdensome Requirement That Would Adequately Reduce the Risk of Injury

The Commission considered less-burdensome alternatives to the proposed rule, detailed in section V.C of this preamble, but preliminarily concludes that none of these alternatives would adequately reduce the risk of injury.

The Commission considered relying on voluntary recalls, compliance with the voluntary standard, and education campaigns, rather than issuing a mandatory standard. These alternatives would have minimal costs but would be unlikely to reduce the risk of injury from custom window coverings that contain hazardous cords.

The Commission considered issuing a standard that applies only to a certain type of window covering such as vertical blinds. This would impose lower costs on manufacturers but is unlikely to adequately reduce the risk of injury because it would only address incidents associated with those types. Based on the custom product incident data, only 5.7 percent of the incidents involved vertical blinds and 22.7 percent involved faux wood/wood blinds.

The Commission considered providing a longer effective date for the final rule. This option may reduce the costs of the rule by spreading costs over a longer period, but it would also delay the benefits of the rule, in the form of reducing the effectiveness of the final rule during the period of delay.

XIV. Request for Comments

The Commission invites interested persons to submit their comments to the Commission on any aspect of the proposed rule. Additionally, the Commission seeks comment on the following topics:

- A. The scope of the standard for custom window coverings, whether certain products should be included or excluded;

DRAFT

- B. Whether the ANSI/WCMA–2018 standard is adequate to address the strangulation risk associated with custom window coverings;
- C. Whether the rigid cord shroud requirements are adequate;
- D. Whether cord or bead chain restraining devices should be allowed for custom products that contains continuous loop operating system;
- E. Whether single retractable cord lift systems should be allowed for custom products and whether maximum exposed cord length and a minimum pull force for a single retractable cord lift system can address the strangulation hazard;
- F. The effect on component costs for custom products based on the requirement for stock products to comply with the voluntary standard since 2018;
- G. Whether button or coin cell battery enclosures in a remote control to operate a custom window covering should be included in the rulemaking, related to the hazards of swallowing small batteries;
- H. Whether to include a warning label that alerts consumers that if a hazardous cord becomes present due to broken window covering, they should remove the product from use.

Submit comments as provided in the instructions in the ADDRESSES section at the beginning of this notice.

XV. Promulgation of a Final Rule

Section 9(d)(1) of the CPSA requires the Commission to promulgate a final consumer product safety rule within 60 days of publishing a proposed rule. 15 U.S.C. 2058(d)(1).

Otherwise, the Commission must withdraw the proposed rule if it determines that the rule is not reasonably necessary to eliminate or reduce an unreasonable risk of injury associated with the

DRAFT

product or is not in the public interest. *Id.* However, the Commission can extend the 60-day period, for good cause shown, if it publishes the reasons for doing so in the *Federal Register*. *Id.*

The Commission finds that there is good cause to extend the 60-day period for this rulemaking. Under both the Administrative Procedure Act and the CPSA, the Commission must provide an opportunity for interested parties to submit written comments on a proposed rule. 5 U.S.C. 553; 15 U.S.C. 2058(d)(2). The Commission typically provides 75 days for interested parties to submit written comments. In this case, a shorter comment period may limit the quality and utility of information CPSC receives in comments, particularly for areas where it seeks data and other detailed information that may take time for commenters to compile. Additionally, the CPSA requires the Commission to provide interested parties with an opportunity to make oral presentations of data, views, or arguments. 15 U.S.C. 2058. This requires time for the Commission to arrange a public meeting for this purpose and provide notice to interested parties in advance of that meeting. After receiving written and oral comments, CPSC staff must have time to review and evaluate those comments.

These factors make it impractical for the Commission to issue a final rule within 60 days of this proposed rule. Moreover, issuing a final rule within 60 days of the NPR may limit commenters' ability to provide useful input on the rule, and CPSC's ability to evaluate and take that information into consideration in developing a final rule. Accordingly, the Commission finds that there is good cause to extend the 60-day period.

DRAFT

List of Subjects

16 CFR Part 1112

Administrative practice and procedure, Audit, Consumer protection, Reporting and recordkeeping requirements, Third-party conformity assessment body.

16 CFR Part 1260

Consumer protection, Imports, Incorporation by reference, Administrative practice and procedure, Window Coverings, Cords, Infants and children.

For the reasons discussed in the preamble, the Commission proposes to amend Title 16 of the Code of Federal Regulations as follows:

PART 1112—REQUIREMENTS PERTAINING TO THIRD PARTY CONFORMITY ASSESSMENT BODIES

1. The authority citation for part 1112 continues to read as follows:

Authority: Pub. L. 110-314, section 3, 122 Stat. 3016, 3017 (2008); 15 U.S.C. 2063.

2. Amend § 1112.15 by adding paragraph (b)(53) to read as follows:

§ 1112.15 When can a third party conformity assessment body apply for CPSC acceptance for a particular CPSC rule or test method?

* * * * *

(b) * * *

(53) 16 CFR part 1260, Safety Standard for Operating Cords on Custom Window Coverings.

* * * * *

3. Add part 1260 to read as follows:

**PART 1260 – SAFETY STANDARD FOR OPERATING CORDS ON CUSTOM
WINDOW COVERINGS**

Sec.

1260.1 Scope and definitions.

1260.2 Requirements.

1260.3 Prohibited stockpiling.

1260.4 Findings.

Authority: 15 U.S.C. 2056, 15 U.S.C. 2058, and 5 U.S.C. 553.

§ 1260.1 Scope and definitions.

(a) This part establishes a consumer product safety standard for operating cords on custom window coverings.

(b) This consumer product safety standard relies on the following definitions in section 3 of ANSI/WCMA A100.1 – 2018, American National Standard for Safety of Corded Window Covering Products (approved on January 8, 2018) (ANSI/WCMA A100.1 – 2018):

(1) *Custom window covering* (Custom blinds, shades, and shadings) as defined in section 3, definition 5.01, of ANSI/WCMA A100.1 – 2018.

(2) *Stock window covering* (Stock blinds, shades, and shadings) as defined in section 3, definition 5.02, of ANSI/WCMA A100.1 – 2018.

(3) *Operating cord* as defined in section 3, definition 2.19, of ANSI/WCMA A100.1 – 2018.

(4) *Cord shroud* as defined in section 3, definition 2.09, of ANSI/WCMA A100.1 – 2018.

(c) *Rigid Cord Shroud* is a cord shroud that is constructed of inflexible material to prevent a child from accessing a window covering cord.

DRAFT

§ 1260.2 Requirements.

(a) *Requirements for operating cords.* Each operating cord on a custom window covering shall comply with section 4.3.1, instead of section 4.3.2, of ANSI/WCMA A100.1 – 2018.

(b) *Incorporation by reference.* The Director of the Federal Register approves the incorporation by reference in sections 1260.1(b) and 1260.2(a), in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. A free, read-only copy of ANSI/WCMA A100.1 – 2018 is available for viewing on the Window Covering Manufacturers Association website at http://www.wcmanet.com/pdf/WCMA-A100.1-2018_view-only_v2.pdf. You may inspect a copy at the Division of the Secretariat, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814, telephone (301) 504-7479, email: cpsc-os@cpsc.gov, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fr.inspection@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>. You may also obtain a copy from Window Covering Manufacturers Association, Inc., 355 Lexington Avenue, New York, New York, 10017, telephone: 212.297.2122, <http://wcmanet.com> or purchase the standard for download at: <https://webstore.ansi.org/Standards/WCMA/ANSIWCMMA1002018>.

(c) *Requirements for rigid cord shrouds.* If a custom window covering complies with paragraph (a) by using a rigid cord shroud to make an operating cord inaccessible, the rigid cord shroud shall not have an accessible cord when tested for cord accessibility using the test methods defined in paragraphs (d) and (e).

(d) *Test methods for rigid cord shrouds: Center load test.* (1) Support each end of the rigid cord shroud, but do not restrict the rotation along the axial direction. Supports must be within 0.25 inches from the ends of the shroud as shown in Figure 1.

DRAFT

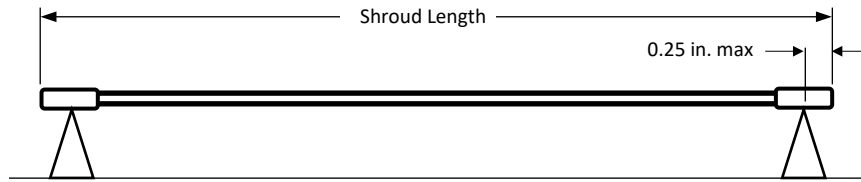


Figure 1. Rigid Cord Shroud Test Set-up.

(2) Apply a 5-pound force at the center of the rigid cord shroud for at least 5 seconds as shown in Figure 2.

(3) Measure the maximum deflection of the shroud, while the 5-pound force is applied.

(4) For rigid cord shrouds that are ≤ 19 inches, the deflection shall not exceed 1 inch. For every additional 19 inches in shroud length, the shroud can deflect an additional inch. See Figure 2.

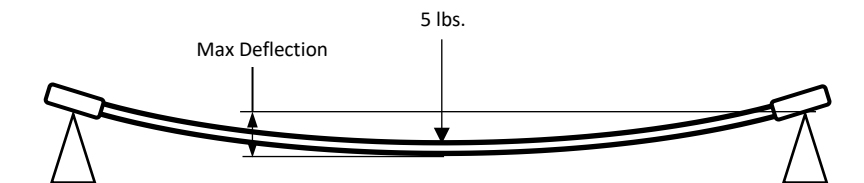


Figure 2. Rigid Cord Shroud Center Load Test and Deflection Measurement.

(5) While continuing to apply the 5-pound force, determine if the cord(s) can be contacted by the cord shroud accessibility test probe shown in Figure 3. If the cord shroud accessibility test probe can touch any cord, the cord(s) are considered accessible.

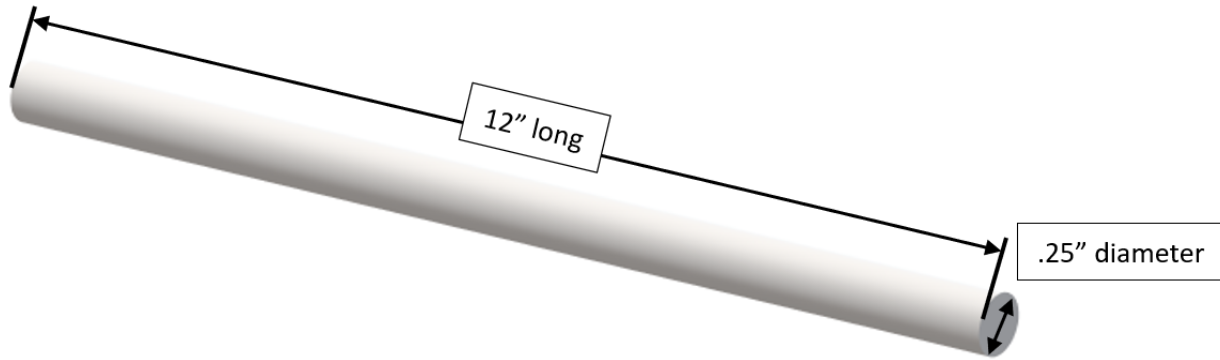


Figure 3. Cord Shroud Accessibility Test Probe

(e) *Test methods for rigid cord shrouds: Axial torque test.* (1) Mount one end of the rigid cord shroud and restrict the rotation along the axial direction.

(2) Apply a 4.4 in-lb. (0.5Nm) torque along the other end of the rigid cord shroud for 5 seconds.

(3) While continuing to apply the torque, determine if the cord(s) can be contacted by the cord shroud accessibility test probe shown in figure 3. If the cord shroud accessibility test probe can touch any cord, the cord(s) are considered accessible.

1260.3 Prohibited stockpiling.

(a) *Prohibited acts.* Manufacturers and importers of custom window coverings shall not manufacture or import custom window coverings that do not comply with the requirements of this part in any 12-month period between [date of promulgation of the rule] and [effective date of the rule] at a rate that is greater than 120 percent of the rate at which they manufactured or imported custom window coverings during the *base period* for the manufacturer.

(b) *Base period.* The base period for custom window coverings is any period of 365 consecutive dates, chosen by the manufacturer or importer, in the 5-year period immediately preceding the promulgation of the final rule.

1260.4 Findings.

(a) *General.* Section 9(f) of the Consumer Product Safety Act (15 U.S.C. 2058(f)) requires the Commission to make findings concerning the following topics and to include the findings in the rule. Because the findings are required to be published in the rule, they reflect the information that was available to the Consumer Product Safety Commission (Commission, CPSC) when the standard was issued on [insert final rule publication date].

(b) *Degree and Nature of the Risk of Injury.* (1) Operating cords on custom window coverings present a strangulation hazard, including death and serious injury, to children 8 years old and younger. If children can access a window covering cord, children can wrap the cord around their neck, or insert their head into a loop formed by the cord and strangle. Strangulation can lead to serious injuries with permanent debilitating outcomes or death. If sustained lateral pressure occurs at a level resulting in vascular occlusion, strangulation can occur when a child's head or neck becomes entangled in any position, even in situations where the child's body is fully or partially supported.

(2) Strangulation deaths and injuries on window covering cords are a "hidden hazard" because consumers do not understand or appreciate the hazard, or how quickly and silently strangulation occurs. Because even young children are left unsupervised for a few minutes or more in a room that is considered safe, such as a bedroom or family room, parental supervision is unlikely to be effective to eliminate or reduce the hazard. Children can wrap the cord around their necks, insert their heads into a cord loop and get injured, or die silently in a few minutes in any room, with or without supervision.

(3) Additionally, safety devices, such as cord cleats and tension devices, are unlikely to be effective because cord cleats need to be attached on the wall and caregivers must wrap the cord

DRAFT

around the cleat each and every time the window covering is raised or lowered. As incident data show, children can still access and become entangled in cords by climbing on furniture. Tension devices also need to be attached on the wall or windowsill, which may not occur due to increased “cost” of compliance and unwillingness to create holes on the wall (or may not be permitted in rental homes); depending on how taut the cord loop is, it can still allow a child’s head to enter the opening as observed in the incident data.

(4) A user research study found a lack of awareness on cord entanglement among caregivers, lack of awareness of the speed and mechanism of the injury; difficulty using and installing safety devices as primary reasons for not using them; and inability to recognize the purpose of the safety devices provided with window coverings. Warning labels are not likely to be effective because research demonstrates that consumers are less likely to look for and read safety information about the products that they use frequently and are familiar with. Most of the incident units had the permanent warning label on the product. Even well-designed warning labels will have limited effectiveness in communicating the hazard on this type of product.

(5) Custom window covering cords have a long product life, and it may take consumers several decades to replace these products. Accordingly, every custom product sold with accessible operating cord presents a “hidden hazard” to young children and can remain a hazard in the household for 20 years. Some consumers may believe that because they either do not have young children living with them or visiting them, inaccessible operating cords on window coverings is not a safety hazard. However, window coverings last a long time, and when homes are sold or new renters move in, the existing window coverings, if they are functional, usually remain installed and could be hazardous to new occupants with young children.

DRAFT

(6) On the other hand, window coverings that comply with the operating cord requirements for stock window covering requirements in section 4.3.1 of ANSI/WCMA-2018 adequately address the strangulation hazard, by not allowing hazardous cords on the product by design, and therefore do not rely on consumer action. One hundred percent of the operating cord incidents involving custom window coverings would have been prevented if the requirements in section 4.3.1 of ANSI/WCMA-2018 were in effect and covered the incident products.

(7) Based on reviews of CPSC databases, we found that a total of 194 reported fatal and nonfatal strangulations on window coverings occurred among children eight years and younger, from January 2009 through December 2020. Nearly 46 percent were fatal incident reports (89 of 194), while the remaining were near-miss nonfatal incidents. Sixteen of the 194 victims required hospitalization, and six survived a hypoxic-ischemic episode or were pulseless and in full cardiac arrest when found, suffered severe neurological sequelae, ranging from loss of memory to a long-term or permanent vegetative state requiring tracheotomy and gastrointestinal tube feeding. One victim who remained hospitalized for 72 days was released from the hospital with 75 percent permanent brain damage and is confined to a bed.

(8) Based on CPSC's Injury Cost Model, we estimated that approximately 185 medically treated nonfatal injuries have occurred annually from 2009 through 2020 involving children eight years and younger. We also estimated that based on a review of National Center for Health Statistics (NCHS) and a separate study of child strangulations, a minimum of nine fatal strangulations related to window covering cords occurred per year in the United States among children under five years old from 2009 – 2019.

(c) *Number of Consumer Products Subject to the Proposed Rule.* We estimate that approximately 512 million custom window coverings are in use in the United States. Only

DRAFT

corded custom window coverings would be subject to the rule, which we estimate to be around 65 percent of custom window coverings. This brings the total number of window coverings that are subject to the rule to approximately 39 million units per year.

(d) *The Public Need for Custom Window Coverings and the Effects of the Proposed Rule on Their Utility, Cost, and Availability.* (1) Consumers commonly use window coverings in their homes to control light coming in through windows and for decoration. ANSI/WCMA-2018 segments the market between stock and custom window coverings. Stock and custom window coverings serve the same purpose, and window covering cords on stock and custom products present the same hazards to children. However, custom window coverings allow consumers to choose a wider variety of specific material, color, operating systems, or sizes, than stock products. Because ANSI/WCMA-2018 effectively addresses operating cords on stock window coverings, and the hazards on custom products are the same, the proposed rule requires custom window coverings to meet the same performance requirements for operating cords as the current operating cord requirements for stock window coverings in ANSI/WCMA-2018.

(2) The Commission does not expect the proposed rule to have a substantial effect on the utility or availability of custom window coverings, and the impact on cost depends on the product type. Custom window coverings that already meet the voluntary standard would continue to serve the purpose of covering windows in consumers' homes. A possible negative effect could occur regarding the utility of custom window coverings for those consumers with accessibility issues, or window coverings in hard-to-reach locations, because consumers may need to use a tool to operate the window covering. However, this loss of utility would be mitigated by the availability of existing tools that are already available on the market, and by the ubiquity of remote-controlled operating systems.

DRAFT

(3) Retail prices of custom window coverings vary substantially. The least expensive units for an average size window retail for less than \$40, while some more expensive units may retail for several thousand dollars. The lowest cost to comply with the proposed rule determined by CPSC staff was about \$2.15 per unit. This per unit cost was for potential modifications to comply with the proposed rule, in cases where CPSC staff was able to estimate the potential cost. Custom window covering prices may increase to reflect the added cost of modifying or redesigning products to comply with the proposed rule. If the costs associated with redesigning or modifying a custom window covering to comply with the standard results in the manufacturer discontinuing that model, there would be some loss in availability of that type.

(4) Prices for custom window coverings are, on average, higher than those for stock products, which are already required to comply with section 4.3.1 of ANSI/WCMA-2018. Although prices of stock window coverings have increased since the revised voluntary standard went into effect in 2018, sales of stock products remain consistent.⁴³ For custom products that already have higher prices, consumers may be willing to pay more for a safer window covering without affecting sales, similar to stock window coverings.

(e) *Other Means to Achieve the Objective of the Proposed Rule, While Minimizing Adverse Effects on Competition and Manufacturing.* (1) The Commission considered alternatives to achieving the objective of the rule of reducing unreasonable risks of injury and death associated

⁴³ Staff does not have information on detailed sales data to determine the impact of the ANSI/WCMA-2018 on stock products. CPSC contractor (D+R) aimed to identify the share of custom versus stock sales over time to understand how the window covering market has changed in response to the ANSI/WCMA-2018 as the standard primarily impacts stock products. Researchers considered that metal/vinyl blinds, roller shades, vertical blinds, and wood/faux wood blinds are the categories that should be most affected by the standard, given their large share in stock product sales. They assumed that if these categories had an increase in custom sales after 2018, it would indicate that the cordless operation could be one of the factors driving consumers towards purchasing custom products with corded operation, despite the higher price points. However, researchers' projections indicate that there is not a consistent trend towards greater custom sales, and in the case of metal/vinyl blinds, there is an increasing share of stock sales over time.

DRAFT

with operating cords on custom window coverings. For example, the Commission considered relying on compliance with the voluntary standard, and education campaigns, rather than issuing a mandatory rule for operating cords on custom window coverings. Because this is the approach CPSC has relied on, to date, this alternative would have minimal costs; however, it is unlikely to further reduce the risk of injury from operating cords on custom window coverings.

(2) Similarly, the Commission also considered narrowing the scope of the rule to address only the hazards associated with operating cords on custom vertical blinds, curtains, and drapes, because cords are not critical to the operation of these products. Narrowing the proposed rule to these three product types would lessen the cost impact and make it unlikely that any particular product type and/or size would be eliminated, and costs would be near \$0 because using plastic rods for operation is very similar to cords in cost. However, only 2 of the 35 custom product incidents (both are fatalities) were associated with vertical blinds, and there were no curtain or drape incidents where the stock/custom classification could be determined. This option would not result in an effective reduction in injuries and deaths.

(3) Another alternative the Commission considered was providing a longer effective date. This may reduce the costs of the rule by spreading costs over a longer period, but it would also delay the benefits of the rule, in the form of reduced deaths and injuries.

(f) *Unreasonable Risk.* (1) Based on CPSC's Injury Cost Model, about 185 medically treated nonfatal injuries have occurred annually from 2009 through 2020, involving children eight years and younger. Based on a review of National Center for Health Statistics (NCHS) and a separate study of child strangulations, a minimum of nine fatal strangulations related to window covering cords occurred per year in the United States among children under five years old from 2009 – 2019. Based on reviews of CPSC databases, we found that a total of 194

DRAFT

reported fatal and nonfatal strangulations on window coverings occurred among children eight years and younger, from January 2009 through December 2020. Nearly 46 percent were fatal incident reports (89 of 194), while the remaining were near-miss nonfatal incidents.

(2) The Commission estimates that the rule would result in aggregate benefits of about \$49.5 million annually. Of the potential modifications for which staff was able to estimate the potential cost, the lowest costs were about \$2.15 per unit. Effective performance requirements for operating cords on window coverings are well known and already utilized for lower-priced stock window coverings. Technologies to address hazardous window covering cords are also known and utilized on stock products. Moreover, the proposed rule is unlikely to have a large impact on the utility and availability of custom window coverings, but may have an impact on cost, depending on the design of the window covering.

(3) The determination of whether a consumer product safety rule is reasonably necessary to reduce an unreasonable risk of injury involves balancing the degree and nature of the risk of injury addressed by the rule against the probable effect of the rule on the utility, cost, or availability of the product. The Commission does not expect the proposed rule to have a substantial effect on the utility or availability of custom window coverings. The rule may impact the cost of custom window coverings, but consumers already pay more for custom window coverings, and are likely willing to pay more for safer products.

(4) Weighing the possibility of increased costs for custom window coverings with the continuing deaths and injuries to young children, the Commission concludes that custom window coverings with hazardous operating cords pose an unreasonable risk of injury and death and finds that the proposed rule is reasonably necessary to reduce that unreasonable risk of injury and death.

DRAFT

(5) The proposed rule would apply the same requirements to custom window coverings that already apply to stock products. The requirements to address the hazard and the available technologies are widely known and already utilized on the least expensive products. Despite this fact, custom products remain corded, and deaths and injuries to young children on window covering cords continues. As reviewed in XIII.A, consumers do not appreciate the risk of strangulation, or how quickly deaths and injuries occur, even when children are supervised, and custom products can remain in consumer's homes for decades. Due to the ongoing fatal and nonfatal incidents associated with window covering cords, high severity of the outcomes (death and disability to children), proven technical feasibility of cordless products, the implementation of stronger operating cord requirements for stock window coverings already on the market, and the ineffectiveness of warnings and safety devices for this class of products, the Commission proposes to regulate operating cords on custom window coverings.

(f) *Public Interest.* This proposed rule is intended to address an unreasonable risk of injury and death posed by hazardous operating cords on custom window coverings. The Commission believes that adherence to the requirements of the proposed rule will significantly reduce or eliminate a hidden hazard, strangulation deaths and injuries to children 8 years old and younger, in the future; thus, the rule is in the public interest.

(g) *Voluntary Standards.* The Commission is aware of one national voluntary standard, ANSI/WCMA-2018, and European, Australian, and Canadian standards. Among these, the Commission considers the Canadian standard to be the most stringent because it applies to all window coverings. ANSI/WCMA-2018 contains adequate performance requirements to address the risk of strangulation on for inner cords for both stock and custom window coverings and contains adequate requirements to address the risk of injury on operating cords for stock

DRAFT

products. The Commission also believes that custom window coverings substantially comply with the voluntary standard. However, the Commission does not consider the operating cord requirements for custom window coverings in the standard adequate to address the risk of injury, because the voluntary standard still allows accessible and hazardous operating cords to be present on custom products.

(h) *Relationship of Benefits to Costs.* (1) The aggregate benefits of the rule are estimated to be about \$49.5 million annually; and the lowest cost of the rule is estimated to be about \$156.5 million annually. Some recent studies have suggested that the VSL for children could be higher than that for adults. In other words, consumers might be willing to pay more to reduce the risk of premature death of children than to reduce the risk of premature death of adults. A review of the literature conducted for the CPSC suggested that the VSL for children could exceed that of adults by a factor of 1.2 to 3, with a midpoint of around 2 (IEc, 2018). This analysis included other uncertainties, such as cost estimate calculations, the number of corded window coverings in use, and the expected product life for certain blind types.

(2) The cost studies from which staff derived all of the cost estimates could be outdated, given the first study was completed in 2016, about 2 years before WCMA revised the voluntary standard for stock products. Economies of scale could have reduced costs related to cordless components since the completion of the first cost study in 2016. Additionally, the assumption used to create the estimate of corded products in the market is based on interviews with manufacturers and retailers, some of whom gave conflicting accounts.⁴⁴

⁴⁴ For example, one small retailer CPSC staff contacted provided an account that stated demand and sales of corded products have increased in the past two years, which is in conflict with multiple accounts from manufacturers and other larger retailers.

DRAFT

(3) Finally, the estimated product life used in the analysis for vinyl and metal horizontal blinds was significantly shorter than for the other products. This analysis was based on work completed by D+R for the Department of Energy (2013). However, this estimate may be skewed because of the dominance of stock window coverings in this category. Custom window coverings have a longer product life. For example, WCMA stated in their response to the ANPR that the expected product life for a custom window covering is 10 years and is 3-5 years for a stock window covering. CPSC staff expects a higher per-unit benefit for custom products because of the longer expected product life.

(4) In this case, the cost of certain custom window coverings may increase if redesigned to meet the requirements in the proposed rule. However, effective performance requirements for operating cords on window coverings are well known and already utilized for lower-priced stock window coverings. Moreover, technologies to address hazardous window covering cords are also known and utilized on stock products. Finally, consumers are likely willing to pay more for a custom window covering that eliminates the strangulation risk to children.

(5) Based on this analysis, the Commission finds that the benefits expected from the rule bear a reasonable relationship to the anticipated costs of the rule.

(i) *Least Burdensome Requirement that Would Adequately Reduce the Risk of Injury.* (1)

The Commission considered less-burdensome alternatives to the proposed rule but concludes that none of the considered alternatives would adequately reduce the risk of injury.

(2) The Commission considered relying on voluntary recalls, compliance with the voluntary standard, and education campaigns, rather than issuing a mandatory standard. These alternatives would have minimal costs but would be unlikely to reduce the risk of injury from custom window coverings that contain hazardous cords.

DRAFT

(3) The Commission considered issuing a standard that applies only to a certain type of window covering such as vertical blinds. This would impose lower costs on manufacturers but is unlikely to adequately reduce the risk of injury because it would only address incidents associated with those types. Based on the custom product incident data, only 5.7 percent of the incidents involved vertical blinds and 22.7 percent involved faux wood/wood blinds.

(4) The Commission considered providing a longer effective date for the final rule. This option may reduce the costs of the rule by spreading costs over a longer period, but it would also delay the benefits of the rule, in the form of reducing the effectiveness of the final rule during the period of delay.

Dated: _____

Alberta E. Mills, Secretary
Consumer Product Safety Commission.



Staff Briefing Package

Draft Notices of Proposed Rulemaking for
Corded Window Coverings

October 6, 2021

TABLE OF CONTENTS

TABLE OF CONTENTS.....	ii
BRIEFING MEMORANDUM.....	iii
I. INTRODUCTION	4
II. OPERATING CORDS AND INNER CORDS ON STOCK WINDOW COVERINGS AND INNER CORDS ON CUSTOM WINDOW COVERINGS UNDER SECTION 15(J) OF THE CPSA	18
III. CUSTOM WINDOW COVERINGS UNDER SECTIONS 7 AND 9 OF THE CPSA ..	25
IV. STAFF RECOMMENDATIONS.....	35
TAB A: Fatal and Near-Miss Strangulations Associated with Window Covering Cords.....	38
TAB B: Health Sciences Assessment of Fatal and Nonfatal Incidents Associated with Window Coverings NPR	56
TAB C: Summary of Recalls – January 2009 through December 2020.....	65
TAB D: Readily Observable Safety Characteristics of Stock And Custom Window Coverings..	73
TAB E: History of ANSI/WCMA Standard, CPSC Involvement, and Compliance with the Standard	89
TAB F: Draft Proposed Rule Under Section 15(J) of The CPSA: Operating and Inner Cords on Stock Window Coverings and Inner Cords on Custom Window Coverings Small Business Considerations	96
TAB G: Mechanical Engineering Assessment for Custom Window Coverings containing Operating Cords	101
TAB H: Draft Regulatory Language.....	119
TAB I: Human Factors Considerations for the Proposed Rule on Custom Window Coverings	127
TAB J: Mandatory Safety Standard for Custom Window Coverings: Initial Regulatory Flexibility Analysis.....	147
TAB K: Preliminary Regulatory Analysis of the Draft Proposed Rule for Custom Window Coverings	156
TAB L: ANPR Comments and Staff Response	193

BRIEFING MEMORANDUM



UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MARYLAND 20814

MEMORANDUM

Date: October 6, 2021

TO: The Commission
Alberta E. Mills, Secretary

THROUGH: Pamela Stone, Acting General Counsel
Mary T. Boyle, Executive Director
DeWane Ray, Deputy Executive Director for Safety Operations

FROM: Duane E. Boniface, Assistant Executive Director
Office of Hazard Identification and Reduction

Rana Balci-Sinha, Ph.D., Project Manager
Division of Human Factors, Directorate for Engineering Sciences

SUBJECT: Draft Notice of Proposed Rulemaking for Stock Window Coverings Involving
Operating and Inner Cords and Custom Window Coverings Involving Inner Cords
under Section 15(j) of the Consumer Product Safety Act and Draft Notice of
Proposed Rulemaking for Operating Cords on Custom Window Coverings under
Sections 7 and 9 of the Consumer Product Safety Act

I. INTRODUCTION

In January 2015, the Commission published an advance notice of proposed rulemaking (ANPR) for corded window covering products to address the associated strangulation hazard. 80 *Fed. Reg.* 2,327 (Jan. 16, 2015). Subsequently, in 2018, the Window Covering Manufacturers Association (WCMA) published a revised version of the voluntary standard for window covering safety, the ANSI/WCMA A100.1 – 2018, American National Standard for Safety of Corded Window Covering Products. The 2018 update, originally published in 1996, went into effect on December 15, 2018. The revised safety standard segments the market for window coverings between “stock” and “custom” products, and includes requirements for each market segment.

U.S. Consumer Product Safety Commission (CPSC) staff recommends two draft proposed rules to address strangulation hazards associated with corded window coverings:

- For operating cords and inner cords on “stock” window coverings, and for inner cords on “custom” window coverings, a draft notice of proposed rulemaking under Section 15(j) of the Consumer Product Safety Act (CPSA), and
- For operating cords on “custom” window coverings, a draft notice of proposed rulemaking, pursuant to sections 7 and 9 of the CPSA.

This briefing package includes:

- a review of the incident data, hazard patterns, injury type, and severity for window covering cords; and
- an examination of recalls associated with corded window coverings.

For the Section 15(j) rule:

- “readily observable” safety characteristics and how the voluntary standard addresses them;
- effectiveness of, and compliance with, the voluntary standard; and
- small business considerations.

For the Sections 7 and 9 rule:

- adequacy of the current voluntary standard;
- recommended requirements;
- an initial regulatory flexibility analysis that discusses the potential impact of the draft proposed rule on small businesses;
- a preliminary regulatory analysis that discusses the potential benefits and costs of the draft proposed rule requirements, an assessment of relevant voluntary standards and an analysis of alternatives considered;
- responses to public comments on the ANPR.

A. Description of Window Coverings

Window coverings comprise a wide range of products, including shades, blinds, curtains, and draperies. In general terms, “hard” window coverings, composed of slats or vanes, are considered blinds; and “soft” window coverings that contain a continuous roll of material are considered shades.

Both blinds and shades may have inner cords that distribute forces to cause a motion, such as raising, lowering, or rotating the window covering to achieve the desired level of light control. These inner cords may be operated (opened and closed) by a variety of inputs, including traditional operating cords, motors, or direct-lift of the bottom rail of the product. Curtains and draperies do not contain inner cords, but they may be operated by a continuous loop cord. The cord or loop that is manipulated by the consumer to operate the window covering is called an “operating cord” and may be in the form of a single cord, multiple cords, or continuous loops.

“Cordless” window coverings are products designed to function without an operating cord, but they may contain inner cords.

Examples of window coverings are shown in Figures 1-6. Figure 1 shows a horizontal blind containing inner cords, operating cords, and tilt cords. Figure 2 shows a roll-up shade containing lifting loops and operating cords. Figure 3 shows a cellular shade with inner cords between two layers of fabric and operating cords. Figure 4 shows a vertical blind with a looped operating cord to traverse the blind and a looped bead chain to tilt the vanes. Figure 5 shows a Roman shade with inner cords that run on the back side of the shade and operating cords. Figure 6 is a horizontal blind that is marketed as “cordless” because it has no operating cords; it still has inner cords.

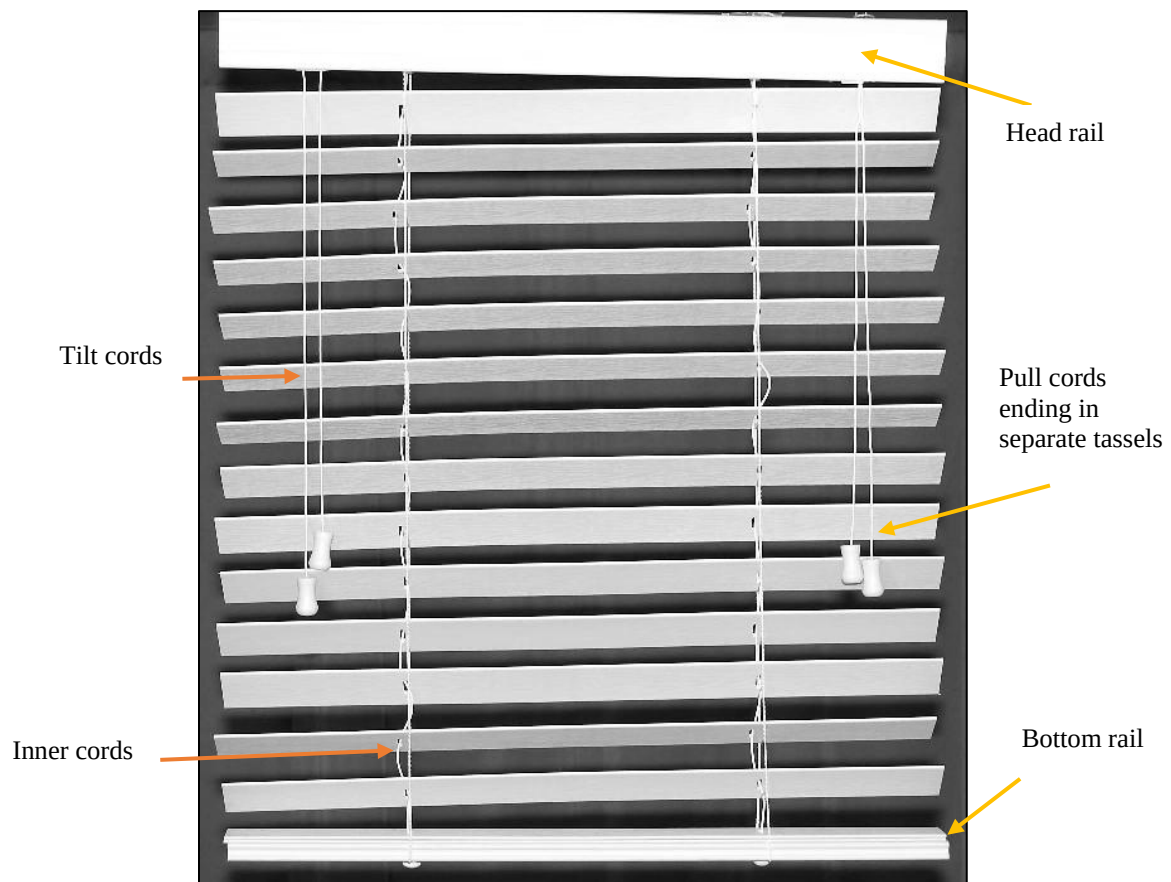


Figure 1. Horizontal blind



Figure 2. Roll-up shade with lifting loops



Figure 3. Cellular shade with looped operating cord

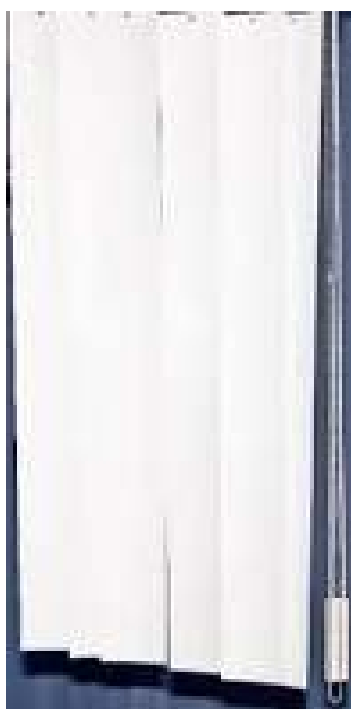


Figure 4. Vertical blind



Figure 5. Roman shade



Figure 6. Cordless horizontal blind

B. Hazards Associated with Corded Window Coverings

Window coverings, depending on the type of accessible cords, including operating cords (meaning pull cords and continuous loop cords), inner cords, and lifting loops, can pose strangulation hazards to children. Figures 7, 8, and 9 depict the strangulation hazard for different window covering cord types.

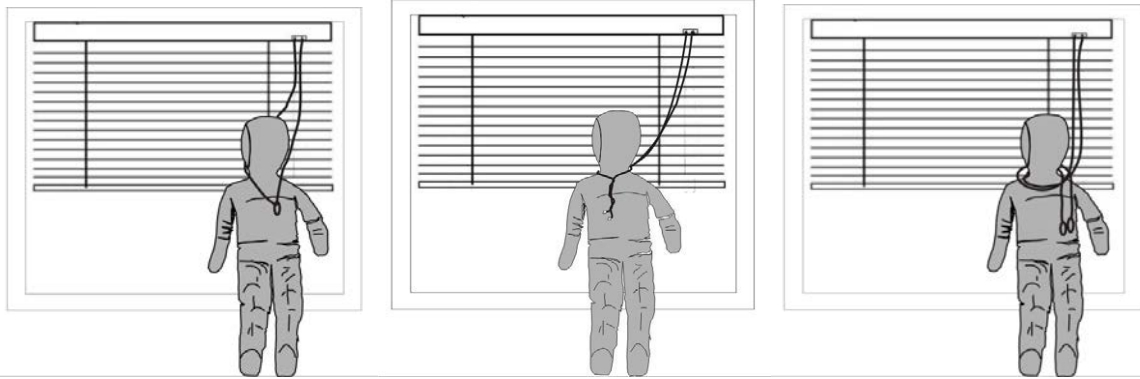


Figure 7. (a) Operating pull cords ending in one tassel (left); (b) operating cords tangled, creating a loop (middle); (c) operating cords wrapped around the neck (right)

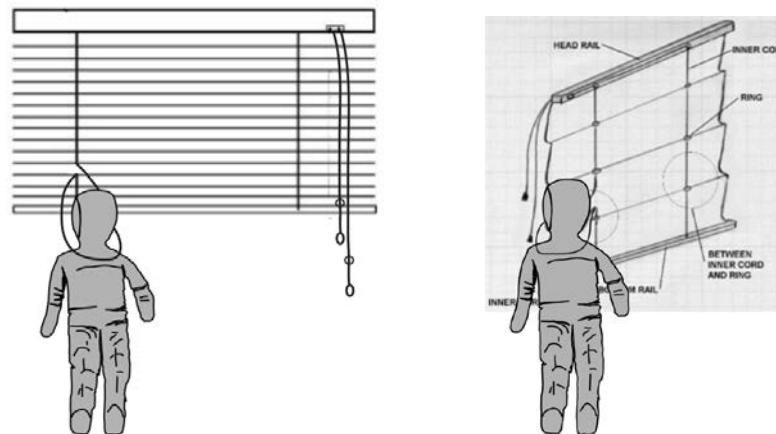


Figure 8. (a) Inner cords creating a loop (left), (b) Inner cords on the back side of Roman shade (right)

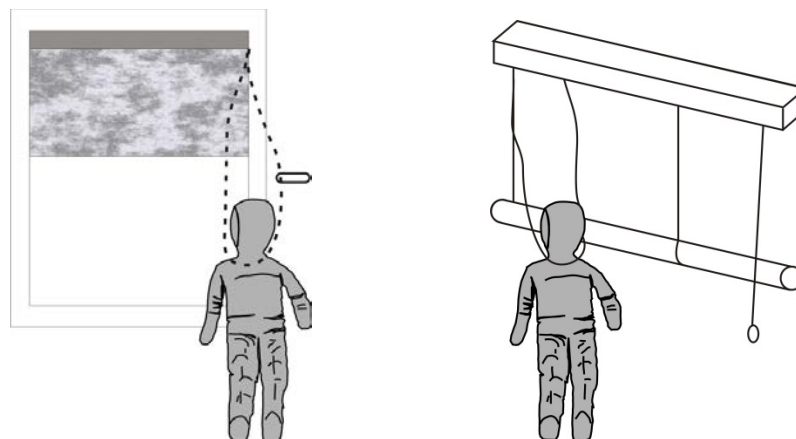


Figure 9. (a) Continuous loop cord (left), (b) Lifting loop on Roll-up Shade (right)

C. Incident Data

Estimated Fatalities and Injuries. Based on a review of National Center for Health Statistics (NCHS) and a separate study of child strangulations, staff of CPSC's Directorate for Epidemiology, Division of Hazard Analysis (EPHA) estimates that a minimum of 9 fatal strangulations related to window covering cords occurred per year in the United States among children under 5 years old from 2009 through 2019 (Tab A).¹

Staff also estimates, based on CPSC's Injury Cost Model, that approximately 185 medically treated nonfatal injuries have occurred annually from 2009 through 2020 involving children 8 years and younger (Tab K).²

Reported Fatalities and Injuries. Based on reviews of CPSC databases, staff found that a total of 194 reported fatal and nonfatal strangulations on window coverings have occurred among children 8 years and younger, from January 2009 through December 2020.³ Nearly 46 percent were fatal incident reports (89 of 194), while the remaining were near-miss nonfatal incidents. Some of the reported nonfatal incidents involved severe injuries with long-term consequences, such as quadriplegia or permanent brain damage. Where known, stock window coverings accounted for 59 percent of all incidents and 58 percent of the fatal incidents. Similarly, where known, custom window coverings accounted for 41 percent of all incidents and 42 percent of the fatal incidents. However, for 56 percent of the 194 incidents, staff was unable to distinguish whether the incidents involved a stock or custom product. Although the ANSI/WCMA A100.1 – 2018 standard divides the window covering market into stock and custom products, incident scenarios are not based on WCMA's product distinction. Fatal and nonfatal injuries associated with window covering cords do not distinguish between stock and custom products because both types of products essentially have the same hazard patterns.

A review of the 194 incidents reveals that nearly 44 percent involved horizontal blinds; 25 percent of the incidents did not report the window covering type. Roman shades (12 percent), followed by vertical blinds (6 percent), ranked next. Among the fatal incidents, horizontal blinds accounted for 48 percent of deaths, and unknown type of window coverings accounted for 15 percent of the deaths. Vertical blinds (11 percent) and Roman shades (8 percent) ranked next.

Based on the reported scenarios, horizontal blind incidents predominantly involved pull cords. Vertical blind incidents predominantly involved continuous loop cord/beaded-chains, while Roman shade incidents mostly involved the inner cord.

Irrespective of product classification (stock or custom), and product type (e.g., horizontal blind, cellular shade), among the 89 fatal incidents reported from 2009 through 2020, derived from CPSC databases, CPSC staff found that the largest proportion (39 of the 89) of the deaths involved pull cord(s), most frequently with tangled or knotted cord(s), followed by one or more

¹ Based on National Center for Health Statistics (NCHS) data and a CPSC study (Marcy et al., 2002)

² The ICM uses empirical relationships between the characteristics of injuries (diagnosis and body part) and victims (age and sex) initially treated in hospital EDs and the characteristics of those initially treated in other settings to project the number of medically treated injuries treated outside of hospital Emergency Departments.

³ We note that the age range for the strangulation fatality estimate is different from the CPSC incident data analysis. This is because the age information available from the NCHS data were in pre-set groups (e.g., 0 – 4 years, 5 – 9 years, etc.), and staff's secondary analysis results³ focused on the 0 – 4 years age group. Accordingly, staff's computed estimates are also limited to ages zero to under five.

long cords wrapped around the child's neck. Children getting caught in continuous looped cords or beaded-chains without a functional tension device also figured as a major fatal hazard, accounting for 23 of the 89 fatal strangulations.

D. Injury Severity and Type

Strangulation due to mechanical compression of the neck is a complex process resulting from multiple mechanisms and pathways that involve both obstruction of the airway passage and occlusion of blood vessels in the neck. Strangulation can lead to serious injuries with permanent debilitating outcomes or death. If sustained lateral pressure occurs at a level resulting in vascular occlusion, strangulation can occur when a child's head or neck becomes entangled in any position, even in situations where the body is fully or partially supported.

Strangulation is a form of asphyxia that can be partial (hypoxia) when there is an inadequate oxygen supply to the lungs, or total, when there is complete impairment of oxygen transport to tissues. A reduction in the delivery of oxygen to tissues can result in permanent, irreversible damage. Experimental studies show that only 2 kg (4.4 lbs.) of pressure on the neck may occlude the jugular vein (Brouardel, 1897); and 3-5 kg (7-11 lbs.) may occlude the common carotid arteries (Brouardel, 1897 and Polson, 1973). Minimal compression of any of these vessels can lead to unconsciousness within 15 seconds and death in 2 to 3 minutes, (Digeronimo and Mayes, 1994; Hoff, 1978; Iserson, 1984; Polson, 1973). The vagus nerve is also located in the neck near the jugular vein and carotid artery. The vagus nerve is responsible for maintaining a constant heart rate. Compression of the vagus nerve can result in cardiac arrest due to mechanical stimulation of the carotid sinus-vagal reflex. In addition, the functioning of the carotid sinuses may be affected by compression of the blood vessels. Stimulation of the sinuses can result in a decrease in heart rate, myocardial contractility, cardiac output, and systemic arterial pressure in the absence of airway blockage.

Strangulation proceeding along one or more of these pathways can progress rapidly to anoxia, associated cardiac arrest, and death. As seen in the CPSC data (Wanna-Nakamura, 2014), and in the published literature, neurological damage may range from amnesia to a long-term vegetative state. Continued deterioration of the nervous system can lead to death (Howell and Gully, 1996; Medalia et al., 1991).

Based on the Division of Physiology and Pharmacology (HSPP) staff's review of the incidents (Tab B), 16 of the 194 victims required hospitalization, and six survived a hypoxic-ischemic episode, or were pulseless and in full cardiac arrest when found, suffered severe neurological sequelae, ranging from loss of memory to a long-term or permanent vegetative state requiring tracheotomy and gastrointestinal tube feeding. One victim who remained hospitalized for 72 days was released from the hospital with 75 percent permanent brain damage and is now confined to a bed. Because a preexisting loop acts as noose when a child's neck is inserted, and death can occur within minutes of a child losing footing, HSPP staff concluded that head insertion into a preexisting loop poses a higher risk of injury than when a cord is wrapped around a child's neck; although both scenarios have been demonstrated to be hazardous and have led to fatal outcomes, according to CPSC data.

E. ANSI/WCMA Standard and Rulemaking History

Since the mid-1990s, CPSC staff has been working with the Window Covering Manufacturers Association (WCMA), the standard developing organization accredited by the American National Standards Institute (ANSI). The ANSI standard for Safety of Corded Window Covering Products was first published in 1996 and sought to address strangulation incidents created by looped cords (Figure 7a). In August 2002, the published ANSI standard required inner cord stops to reduce the risk associated with inner cord (Figure 8a). The standard was revised in 2007, 2009, 2010, 2012, and 2014 to include requirements associated with tension devices to partially limit the consumer's ability to control the blind if the tension device is not properly installed; Roman shade inner cords (Figure 8b); durability and performance testing of tension devices; warning label and pictograms on the outside of stock packaging and merchandising materials; expanded testing for cord accessibility, hazardous loop testing, roll-up style shade performance, and durability of all safety devices.

The Commission granted a petition on October 8, 2014, and instructed staff to begin rulemaking to address the strangulation hazard associated with window covering cords.⁴ The petitioners requested a rule to: (a) prohibit any window covering cords, where a feasible cordless alternative exists; and (b) for those instances where a feasible cordless alternative does not exist, require that all cords be made inaccessible through the use of passive guarding devices. On January 9, 2015, the Commission voted to approve publication in the *Federal Register* of the ANPR for corded window coverings, with changes. The Commission published the ANPR for corded window covering products on January 16, 2015 (80 *Fed. Reg.* 2,327). The ANPR initiated a rulemaking proceeding under the Consumer Product Safety Act (CPSA). CPSC invited comments concerning the risk of injury associated with corded window coverings, the regulatory alternatives discussed in the notice, the costs to achieve each regulatory alternative, the effect of each alternative on the safety, cost, utility, and availability of window coverings, and other possible ways to address the risk of strangulation posed to young children by window covering cords. We also invited interested persons to submit an existing standard or a statement of intent to modify or develop a voluntary standard to address the risk of injury.

ANSI published a revision to the window coverings standard, ANSI/WCMA A100.1-2018, on January 8, 2018. WCMA updated the 2018 version in May 2018 to include various definitions that were balloted and approved but were omitted by mistake in the January version. The standard went into effect on December 15, 2018. The revised safety standard segments the window covering market between stock and custom-made products. Per the standard, stock products are required to have:

- (1) no operating cords, or
- (2) inaccessible cords, or
- (3) short cords (equal to or less than 8 inches).

For custom-ordered window covering products, the products can follow the requirements for stock products, or consumers can purchase corded window coverings. The ANSI/WCMA

⁴ The petition, CP 13-2, was submitted by Parents for Window Blind Safety, Consumer Federation of America, Consumers Union, Kids in Danger, Public Citizen, U.S. PIRG, Independent Safety Consulting, Safety Behavior Analysis, Inc., and Onder, Shelton, O'Leary & Peterson, LLC.

A100.1 – 2018 standard also contains revised requirements for custom-ordered products, including:

- (1) operating cords to have a default length of 40 percent of the blind height (previously unlimited);
- (2) a wand to be the default option for tilting slats (instead of a cord); and
- (3) warning labels to depict more graphically the strangulation hazard associated with cords.

The ANSI/WCMA A100.1 – 2018 standard allows consumers to deviate from the default options set forth in (1) and (2). WCMA established a task group to develop requirements for a “rigid cord shroud” that would make operating cords inaccessible for both stock and custom products. The requirement would confirm that a cord shroud makes the cord inaccessible while remaining rigid enough not to pose a strangulation hazard. The task group, including CPSC staff, worked from March through December 2018 to develop draft language for this requirement, but ANSI/WCMA has not balloted the draft requirement yet.

On February 3, 2020, staff sent a letter to WCMA, outlining staff’s recommendations for future improvements to the standard, and included a request to reopen the standard and discuss staff’s recommendations. Staff reiterated their belief that substantial improvements have been made to the latest version of the standard, particularly in “stock” products; however, expanding the requirements to custom corded window coverings would improve window covering safety. WCMA has not reopened the standard since the 2018 update.

In September 2021, staff sent another letter to WCMA, urging the WCMA to apply stock product requirements in the ANSI/WCMA A100.1 – 2018 standard to custom window coverings as well as balloting the rigid cord shroud language developed and agreed upon by the technical working group.

F. Definition of “Stock Window Coverings” and “Custom Window Coverings”

The ANSI/WCMA A100.1 – 2018 standard requires “stock” and “custom” window coverings to meet different sets of requirements. Staff’s draft proposed rules will use the phrases “stock window coverings” and “custom window coverings,” as defined in the ANSI/WCMA A100.1 – 2018 Standard under the definition of “Stock Blinds, Shades, and Shadings,” to distinguish the two product types.

A “stock window covering,” as defined by ANSI/WCMA, is a completely or substantially fabricated product prior to being distributed in commerce and is a stock-keeping unit (SKU). Even when the seller, manufacturer, or distributor modifies a pre-assembled product, by adjusting to size, attaching the top rail or bottom rail, or tying cords to secure the bottom rail, the product is still considered stock. Online sales of the product, or the size of the order, such as multifamily housing orders, do not make the product a non-stock product. The standard provides these examples to clarify that, as long as the product is “substantially fabricated,” subsequent changes to the product do not change its categorization.

Staff uses the term “custom window covering” in the draft proposed rule, as described in the ANSI/WCMA A100.1 – 2018 standard for “Custom Blinds, Shades, and Shadings,” which are defined as any window covering that is not classified as a stock window covering.

G. Requirements in the ANSI/WCMA Standard

Per the ANSI/WCMA A100.1 – 2018 standard, stock and custom window coverings have the following general requirements for cords:

<i>Performance Requirements</i>	<i>Stock Products</i>	<i>Custom Products</i>
<i>No operating cords OR</i>	Required	Optional
<i>Short cord with a length equal to or less than 8 inches in any state (free or under tension) OR</i>		Optional
<i>Inaccessible operating cords</i>		Optional
<i>Inner cords that meet Appendix C and D</i>	Required	Required
<i>Single Retractable Cord Lift System</i>	Prohibited	Allowed
<i>Continuous Loop Operating System</i>	Prohibited	Allowed
<i>Accessible Operating Cords longer than 8 inches</i>	Prohibited	Allowed

H. International Standards

In Tab G, staff of CPSC’s Directorate for Engineering Sciences, Division of Mechanical and Combustion Engineering (ESMC) compared the ANSI/WCMA A100.1 – 2018 standard with international standards consisting of Australia Trade Practices (Consumer Product Safety Standard- Corded internal Window coverings) Regulations 2010 F2010C00801, EN: 13120 Internal blinds- Performance requirements including safety, EN 16433 Internal blinds- Protection from strangulation hazards- test methods, EN 16434 Internal blinds- Protection from strangulation hazards- Requirements and Test methods for safety devices, and Canada Corded Window Coverings Regulations: SOR/2019-97.

Staff concludes that the Canadian regulations are similar to the ANSI/WCMA A100.1 – 2018 standard’s stock product requirements; however, the Canadian regulations apply to stock and custom products. Because the requirements apply to all window coverings in the Canadian regulations, CPSC staff concludes that the Canadian standard is more stringent than the ANSI/WCMA A100.1 – 2018 standard.

I. Adequacy of ANSI/WCMA Standard

Staff of CPSC’s Directorate for Engineering Sciences determined that the *stock* product requirements in the ANSI/WCMA A100.1 – 2018 standard are adequate to address the risk of strangulation associated with stock products, as explained below (Tabs G and I):

- a) *Operating cords*: The voluntary standard recognizes that long and accessible cords on stock products can pose a strangulation hazard. The standard defines the “operating cord” as the portion of a cord that the user interacts and manipulates to move the window covering in a certain direction (*e.g.*, lifting or lowering, traversing, rotating). If a child wraps a long operating cord around his/her neck, or inserts his/her neck into a loop that can be present by design or occur due to tangled up cords, a child can strangle to death within minutes.

Stock window coverings may comply with the voluntary standard in three ways to address operating cord hazards:

- *No operating cords*: Having no operating cords effectively eliminates the strangulation hazard associated with operating cords because there is no cord to cause strangulation. Consumers use a mechanism other than an operating cord to accomplish the desired movement action on the product (*i.e.*, lifting, lowering, traversing). For example, a spring mechanism on a horizontal blind allows the user to lift and lower the blind via the bottom rail of the window covering.
- *Short cord with a length equal to or less than 8 inches in any state (free or under tension)*: Based on the anthropometric dimensions of youngest children involved in incidents, a static cord length of 8 inches or shorter is not sufficient to strangle a child as the neck circumference of fifth percentile 6-9 month-old children is 8 inches (BSI, 1990 as cited in Norris and Wilson, 1995); a child would need some extra length of cord to hold the cord; thus, the cord would have to be longer than 8 inches to cause strangulation.
- *Inaccessible operating cords determined per the test requirement in Appendix C of the ANSI/WCMA A100.1*: This requirement is tested using a probe that is intended to simulate the finger size of a young child, the diameter of the probe is 0.25 inches, based on fifth percentile 2-3.5-year old's index finger diameter (Snyder et al., 1977) at 0.33 inches and the off-the-shelf availability of a 0.25-inch diameter dowel pin. If the probe cannot touch the cords, the cord is then deemed inaccessible. Having "inaccessible operating cords," by definition, addresses the strangulation hazard by adequately preventing accessibility to the cord, and thus, eliminating the ability for a cord to cause strangulation.

b) *Inner cords*: Inner cords run through the window covering, as shown in Figure 1. The inner cord pulls the bottom rail up when the window covering is raised. Inner cords can pose a strangulation hazard if the child pulls on the inner cord and then places their head in the loop, as shown in Figure 8. The ANSI/WCMA A100.1 – 2018 standard has two testing requirements to confirm the safety of inner cords these apply to both stock and custom window coverings. First, the inner cords are tested for accessibility using a cord accessibility probe. If cords are accessible, then the cord is pulled with a maximum force of 5 pounds, followed by an attempt to insert a head probe into the opening with a force of 10 pounds. If inner cords are inaccessible, or do not allow the head probe to go through the opening, then the inner cord is compliant with the standard. Inner cords that are inaccessible, or inner cord loops that are not large enough to accommodate a child's head, address the strangulation hazard associated with inner cords.

Staff determined that the ANSI/WCMA A100.1 – 2018 standard is inadequate to address the risk of strangulation associated with operating cords on custom window coverings because the standard allows hazardous cords. Custom products can comply with the standard using one of the following methods, all posing strangulation risks:

- *Continuous Loop Operating System*: This operating system requires the operating loop to be kept taut with a tension device. However, as observed in the incident data, a child can

still insert his/her head into the continuous loop if the loop is not taut enough; in addition, as explained in Tab I, tension devices may not be attached to the wall, leaving a dangling loop on the product. Staff is aware of Cord or Bead Chain Restraining Devices intended to be integrated into the window covering and do not need to be attached on the wall to keep the loop taut. According to the standard, these devices are required to meet durability, UV stability, and impact testing and must pass the hazardous loop testing procedure to confirm that device prevents the creation of a hazardous loop from an accessible continuous operating cord. Staff is requesting comments on the adequacy of these devices for custom products.

- *Accessible Operating Cords longer than 8 inches:* This requirement allows the cord to be long enough to be wrapped around the neck or multiple cords to be tangled, creating a loop. Even though the latest version of the standard attempts to reduce the risk by shortening the default length of the cord to 40 percent of the window covering length, and by making the tilt wand as the default instead of tilt cords, the risk associated with operating cords remains.
- *Single Retractable Cord Lift System:* This allows a cord to be pulled at any length to operate the window covering and then retracts to a shorter length when the user releases the cord. It is foreseeable that a child can wrap the cord around his/her neck because retractable cord lift systems with the extended cord would be long enough (greater than 8 inches), and a retraction force to sustain that length could be low enough for a child to manipulate and wrap the cord around his/her neck. Staff considers this requirement not adequate as written, because the maximum cord length and a minimum pull force required to operate the system is not specified in the standard. Staff is requesting comments to determine if additional requirements, such as a maximum exposed cord length, and a minimum pull force for a single retractable cord lift system, can address the strangulation hazard.

The ANSI/WCMA A100.1 – 2018 standard contains the same inner cord requirements for stock and custom window covering products; staff determined that the inner cord requirements are adequate to mitigate the strangulation hazard.

J. Human Factors Concerns

Staff of CPSC's Directorate for Engineering Sciences, Division of Human Factors (ESHF) assessed that, based on incident data review, user study, and human factors literature, the requirements for custom product operating cords in the ANSI/WCMA A100.1 – 2018 standard are inadequate to address the strangulation hazard associated with these cords (Tab I). Operating cord requirements for custom window coverings in the ANSI/WCMA A100.1 – 2018 still allow hazardous operating cords to be part of the window covering. Operating cords can be long enough to fit around the child's neck, or loops can be large enough to allow child's head to enter.

Safety devices, such as cord cleats and tension devices, are unlikely to be effective to address the risk of injury, because cord cleats need to be attached to the wall, and caregivers must wrap the cord around the cleat every time the window covering is raised or lowered. As incident data show, children can still access and entangle in the cords. Tension devices also need to be

attached to the wall or window sill, which may not occur due to increased “cost” of compliance (*e.g.*, time and effort) and unwillingness to create holes in the wall (and may not be permissible in rental homes); depending on how taut the cord loop is, the cord loop can still allow a child’s head to enter the opening, as observed in the incident data.

A user research study found that caregivers lacked awareness regarding the potential for cord entanglement, lacked awareness of the speed and mechanism of the strangulation injury; stated difficulty using and installing safety devices, among the primary reasons for not using them; and they were unable to recognize the purpose of the safety devices provided with window coverings (Levi et al., 2016).⁵

According to Godfrey et al. (1983), consumers are less likely to look for and read safety information about the products that they frequently use and are familiar with. Consumers are very likely to have high familiarity with window coverings because they almost certainly have window coverings in their homes and probably use them daily. Therefore, even well-designed warning labels will have limited effectiveness in communicating the hazard on this type of product.

CPSC staff concludes that warning labels are unlikely to effectively reduce the strangulation risk from hazardous cords on window coverings, because consumers are not likely to read and follow warning labels on window covering products, and strangulation deaths among children occur quickly and silently, such that parental supervision is insufficient to address the incidents. Indeed, staff observed that most of the incident window covering units had the permanent warning label required by the ANSI/WCMA standard, applicable at the time of manufacture, affixed to the product. Even well-designed warning labels will have limited effectiveness in communicating the hazard on this type of product, because consumers are less likely to heed warnings for familiar products that they commonly interact with without incident. In contrast, stock window covering requirements in the ANSI/WCMA A100.1 – 2018 standard adequately address the strangulation hazard, by not allowing hazardous cords on the product, by design, and do not rely on consumer action to address the risk.

K. Canadian Regulation and Current Issues

On May 1, 2019, Health Canada published a new Corded Window Coverings Regulations (CWCRC) SOR/2019-97 to restrict the length of cords and the size of loops allowed on window coverings sold in Canada.⁶ The regulations, made under the Canada Consumer Product Safety Act (CCPSA), limit the length of reachable cords (*i.e.*, the part of the cord that any person can touch when the corded window covering has been installed, whether the window covering is fully opened, fully closed or in any position in between), and the size of loops that can be created by a cord, to help eliminate the risk of strangulation.⁷ The regulations require that any cord that can be reached must be too short to wrap around the neck (22 cm or 8.66 inches or shorter) or

⁵ <https://cpsc.gov/s3fs-public/Window%20Coverings%20Safety%20Devices%20Contractor%20Reports.pdf>

⁶ <https://canadagazette.gc.ca/rp-pr/p2/2019/2019-05-01/html/sor-dors97-eng.html>

⁷ Both the CWCRC and ANSIWCMA restrict small parts and lead content.

too short to form a hazardous loop that can accommodate a child's head (44 cm or 17.32 inches or smaller in perimeter) when subjected to a 35 Newton (7.87 pounds) pull force.

Canadian regulations require that a cord that cannot be reached would have to remain unreachable throughout the useful life of the product, and require a warning on the product, packaging, instructions, and on associated advertisements with instructions to remove the product immediately if those hazards appear. Canadian regulations also require on-product information containing model name or model number, date of manufacture, name and location of manufacturer (and importer where applicable).

On May 1, 2021, the Canadian regulations came into force. Due to the unprecedented circumstances associated with the COVID-19 pandemic, Health Canada issued a notice describing several timelines to comply with the regulation.⁸ From May 1, 2021 to April 30, 2022, Health Canada intends to promote awareness of, and compliance with, the CWCR. Health Canada will also be monitoring progress towards compliance. As of May 1, 2022, Health Canada intends to increase its compliance monitoring activities and enforcement action, where necessary, to address identified instances of noncompliance with the CWCR. Health Canada adds that it will enforce the CWCR anytime on or after May 1, 2021, if warranted, for example, based on incidents, complaints, or the level of risk.

Staff is aware that window covering industry members, including U.S.-based firms, have raised concerns about the regulations. In particular, industry has raised concerns about the amount of pull force that is applied to inner cords in the CWCR.⁹ Staff notes that the ANSI/WCMA A100.1 – 2018 standard requires a 5-pound pull force to be applied to inner cords; whereas, CWCR requires a 7.87-pound pull force. Industry members are requesting that the CWCR replace the 7.87-pound requirement with the 5-pound requirement to be consistent with the ANSI/WCMA A100.1 – 2018 standard. As explained in Tab I, due to the lack of inner cord incidents that demonstrate the inadequacy of the 5-pound requirement, and the complex action to pull inner cords on cordless window coverings, staff concludes that the pull force of 5-pound appears to be adequate to address the risk of injury. CPSC staff's recommendation for custom products aligns with the current stock product requirements in the ANSI/WCMA A100.1 – 2018 standard.

L. Recalls

Staff of CPSC's Office of Compliance (EXC) reviewed recalls involving window coverings (Tab C). From January 1, 2009 to December 31, 2020, CPSC conducted 42 consumer-level window covering product recalls, including two re-announcements (Tab C). More than 28 million units¹⁰ were recalled and include: Roman shades, roll-up blinds, roller shades, cellular shades, horizontal blinds, and vertical blinds. The recalled products include stock products, as well as custom products. Recalled products were associated with 14 deaths and 31 near-strangulations.

⁸ <https://www.canada.ca/en/health-canada/services/consumer-product-safety/legislation-guidelines/guidelines-policies/notice-stakeholders-corded-window-coverings.html>

⁹ <https://nationalpost.com/news/canada/health-canadas-confusing-and-unworkable-regulations-spur-bitter-fight-with-window-blind-industry>

¹⁰ This estimate does not include the recalled units of Recall No. 10-073. This was an industry-wide recall conducted by members of the Window Covering Safety Council (WCSC). An exact number of recalled products was not stated in the recall announcement.

II. OPERATING CORDS AND INNER CORDS ON STOCK WINDOW COVERINGS AND INNER CORDS ON CUSTOM WINDOW COVERINGS UNDER SECTION 15(J) OF THE CPSA

Staff recommends that the Commission publish staff's draft proposed rule. The rule would deem the presence of one or more of the readily observable characteristics demonstrating hazardous operating cords on stock window coverings, and hazardous inner cords on stock and custom window coverings, both of which are adequately addressed in the ANSI/WCMA A100.1 – 2018 standard, to be a "substantial product hazard" (SPH), as authorized under section 15(j) of the CPSA.

The readily observable operating cord and inner cord characteristics of stock window coverings and inner cord characteristics of custom window coverings are embodied in the existing voluntary standard, ANSI/WCMA A100.1 – 2018, Standard for Safety of Window Covering Products, approved on January 8, 2018.

The Consumer Product Safety Improvement Act (CPSIA) expanded section 15 of the CPSA, by creating a new subsection (j) that allows the Commission to specify by rule for a consumer product, or class of consumer products, characteristics whose existence or absence the Commission deems present a substantial product hazard, as defined in section 15(a)(2) of the CPSA. To deem the presence or absence of characteristics an SPH:

- the characteristics must be "readily observable";
- the characteristics must be addressed by a voluntary standard;
- the voluntary standard must be effective at reducing the risk of injury; and
- there must be substantial compliance with the voluntary standard.

The latest version of the ANSI/WCMA standard significantly improved the safety of stock window coverings by practically eliminating hazardous operating cords. The standard also improved the safety of stock and custom products by adequately reducing the inner cord hazard. Staff's market study demonstrated a high level of product compliance with the voluntary standard. Accordingly, CPSC staff concludes that all of the criteria required for including stock window coverings that contain the readily observable hazardous operating and inner cords, which have been adequately addressed by ANSI/WCMA, have been met and therefore, should be included on the SPH list under section 15(j) of the CPSA. In addition, CPSC staff concludes that the criteria required to include hazardous inner cords on custom window coverings on the 15(j) list of SPHs, because hazardous inner cords are readily observable and have been adequately addressed in the ANSI/WCMA standard.

A. Proposed Definition of Stock and Custom Window Covering Products

Staff proposes that the definition of "stock window covering products," for purposes of the draft proposed 15(j) rule, be consistent with the description of "Stock Blinds, Shades, and Shadings" defined in section 3 of the ANSI/WCMA A100.1 – 2018 standard. As explained above in section I.F., the standard defines "Custom Blinds, Shades, and Shadings" as any window covering that is not classified as a stock window covering as stated in Section 3, Definition 5.01 of the ANSI/WCMA A100.1 – 2018 standard. For the draft proposed rule for custom window covering

products, staff will reference the same definition used in the ANSI/WCMA A100.1 – 2018 standard.

B. Substantial Product Hazards Associated with Window Covering Products

Section 15(a)(2) of the CPSA defines an SPH, in relevant part, as a product defect, which (because of the pattern of defect, the number of defective products distributed in commerce, the severity of the risk, or otherwise) creates a substantial risk of injury to the public. To address effectively the risk of injury from strangulation, CPSC staff has identified the following safety characteristics embodied in the ANSI/WCMA A100.1 – 2018 standard.

(a) The presence of any one of these characteristics presents an SPH for stock window coverings:

1. Operating cords that are:
 - o Present, and
 - o Longer than 8 inches in any state (free or under tension), or
 - o Accessible determined per the test requirement in Appendix C of the ANSI/WCMA A100.1.
2. Inner cords that do not meet Appendix C and D of the ANSI/WCMA A100.1 – 2018.

(b) In addition, CPSC staff has identified one readily observable safety characteristic of custom window coverings embodied in the ANSI/WCMA standard. The presence of this characteristic presents an SPH:

1. Inner cords that do not meet Appendix C and D of the ANSI/WCMA A100.1 – 2018.

(c) Staff has identified one readily observable characteristic, the absence of which constitutes an SPH for both stock and custom products. The ANSI/WCMA A100.1 – 2018 standard requires that window coverings include an on-product manufacturer label identifying the manufacturer or importer of record or fabricator, date of manufacture, and the designation of the product as “Custom” or “Stock.” The absence of this manufacturer label constitutes an SPH because the lack of the label makes it difficult for staff, manufacturers, and consumers to identify the product and class of products subject to a recall, and to distinguish stock from custom products. Differentiating stock from custom products is important as long as the operating cord requirements for these products are not identical. For example, staff anticipates that the Commission can issue a final rule under section 15(j) before completing a rule under sections 7 and 9. Once a rule for operating cords on custom products is complete, substantive cord requirements for all window coverings will be the same. Before that time, only inner cords on custom products will be subject to a rule. Therefore, CPSC staff will need to be able to differentiate stock products from custom products until the operating cord requirements are the same, and product information that aids a recall will always be necessary to effect and expedite a recall.

C. Hazardous Cords Are Readily Observable Safety Characteristics

The ANSI/WCMA A100.1 – 2018 standard requires the operating cords of stock window coverings to be either not present, inaccessible, or eight inches long or shorter in any position of the stock window covering. The standard also requires that for both stock and custom products, inner cords either be not accessible, or if accessible, the inner cords do not allow an opening larger than a child’s head size. CPSC staff assesses that all of these characteristics are readily observable by observing whether the window covering has cords and, if it does, assessing cord accessibility and then measuring the length of the cord or loop. The readily observable characteristics associated with stock window coverings are:

- a. Presence, length, and accessibility of operating cords in stock window coverings, and
- b. Presence and accessibility of inner cords and size of inner cord loops in both stock and custom window coverings.
- c. Presence of manufacturer label on both stock and custom window coverings.

Staff lists below the readily observable safety characteristics and applicable criteria.

<i>Stock Window Coverings Section of the Standard</i>	<i>Readily Observable Characteristics</i>	<i>Criterion</i>
A. Operating cord		
4.3.1.1 Cordless Operating System <i>“The product shall have no operating cords”</i>	Presence of the operating cord	(a) Not present <i>or</i>
4.3.1.2 Short Static or Access Cords <i>“The product shall have a Short Cord”</i>	If present, measure the length in any position of the window covering	(b) 8 inches or shorter <i>or</i>
4.3.1.3 Inaccessible Operating Cords <i>“The operating cords shall be inaccessible as determined per the test requirements in Appendix C: Test Procedure for Accessible Cords”</i>	If present, observe whether accessible	(c) Inaccessible using cord accessibility probe
<i>Stock and Custom Window Coverings, Section of the Standard</i>	<i>Readily Observable Characteristics</i>	<i>Criterion</i>
B. Inner cord		

4.5 Inner Cords <i>“All products with inner cords must meet the requirements in Appendix C and Appendix D.”</i> <i>Appendix C. Test Procedure for Accessible Cords</i>	If present, determine whether accessible	(a) Inaccessible using cord accessibility probe or
<i>Appendix D. Hazardous Loop Test Procedure</i>	If present, determine whether a child’s head can penetrate the opening	(b) Pull inner cord and measure to determine whether the opening is less than 17 inches. For 15(j) purposes, this is comparable to inserting a head probe with a force of 10 pounds.
C. Manufacturer label		
<i>5.3 Manufacturer Label: There shall be a permanent label(s) or marking on all finished window covering products</i>	Presence of a permanent label or marking within or on the headrail or on the roller tube	Observe whether the label is present and contains the following: (a) The name, city, and state of the manufacturer / importer / fabricator (b) Month and year of manufacture (c) Designation of window covering as “Custom” or “Stock”

D. Hazardous Operating Cords for Stock Window Coverings and Hazardous Inner Cords for Both Stock and Custom Window Coverings Are Addressed by the Voluntary Standard

As discussed above and in this briefing package, staff concludes that the requirements in the ANSI/WCMA A100.1 – 2018 adequately address the strangulation risk involving operating cords for stock products and involving inner cords for both stock and custom products.

E. ANSI/WCMA A100.1 Standard Is Effective in Reducing the Risk of Injury or Death Associated with Operating Cords on Stock Window Coverings and Inner Cords on Stock Window Coverings and Custom Window Coverings

The revised 2018 version of the ANSI/WCMA standard effectively eliminates or significantly reduces the risk of strangulation from operating cords associated with stock window coverings. Staff is assured that for products sold after the effective date and going forward, compliance with the requirements in the ANSI/WCMA A100.1 – 2018 standard for stock window coverings are

adequate to address the strangulation risk for those products.¹¹ In addition, staff concludes that compliance with the inner cord requirements in the ANSI/WCMA A100.1 – 2018 standard for custom window coverings are adequate to address the strangulation risk from these inner cords as those requirements are identical to stock window coverings.

F. Substantial Compliance with ANSI/WCMA A100.1

WCMA stated in its comment to the ANPR (comment ID: CPSC_2013-0028-1555) that there has been substantial compliance with the standard since its first publication. WCMA also stated that the association's message to all manufacturers is that compliance with the standard is mandatory to sell window coverings in the United States.

To investigate the level of compliance, CPSC contracted with D+R International, who interviewed window covering manufacturers and component manufacturers to collect anecdotal information on the distribution of stock and custom product sales and the impact of compliance with the voluntary standard (D+R International, 2021). Various manufacturers indicated retail customers would not stock noncompliant products. Manufacturers are also aware of their customers' procedures and would not ship to them if there were concerns about the assembly and installation process. The D+R report indicates that the voluntary standard has caused U.S. window covering manufacturers to design and offer cordless lift operations for most stock window covering categories. All manufacturers interviewed were aware of the standard and had implemented compliance in all stages of their development process, from product design to fabrication. In addition, CPSC Field staff confirmed compliance of the product categorization for stock and custom as defined in the ANSI/WCMA A100.1 – 2018 standard. CPSC field staff conducted unannounced in-store visits to 18 firms comprising wholesalers, manufacturers, and retailers. Thirteen locations demonstrated compliance with the voluntary standard in terms of operating cords for both stock and custom products. However, in four locations, staff observed non-compliance of custom products with the ANSI/WCMA A100.1 – 2018 standard. The primary violations were: the length of operating cords was longer than 40 percent of the window covering length when window covering was fully lowered, with no accompanying specific customer request; lack of warning label; lack of manufacturer label; lack of hang tag; and use of a cord tilt instead of wand tilt, without an accompanying specific customer request. Staff found one location with a non-complying stock product. This product was being sold with long beaded cord loops in various sizes. Based on CPSC staff's review of market information and contractor report findings, and WCMA's statements, staff concludes that a substantial majority of stock window coverings sold in the United States conform to ANSI/WCMA A100.1 – 2018 standard. Samples tested by CPSC staff also indicate a high level of conformance in custom products related to inner cord accessibility.¹²

¹¹ Even though the requirements in the 2018 standard, when followed, should lead to safe stock window coverings, staff concludes that it will take a long time for the existing window coverings in consumers' homes to be replaced. This standard does not apply to existing products. Staff notes that the Window Covering Safety Council (WCSC) distributes safety devices through their website, CPSC and WCSC promote safe window coverings and what to do to reduce the hazard during October safety month.

¹² Staff tested custom product samples using test parameters defined in WCMA A100-1.2018 which involved the use of a cord accessibility probe and force gauge.

G. Small Business Considerations

Staff from Directorate for Economic Analysis (EC) investigated the potential effects of a proposed rule on small entities, see Tab F, Draft Proposed Rule under Section 15(j) of the CPSA, Operating and Inner Cords on Stock Window Coverings and Inner Cords on Custom Window Coverings Small Business Considerations. Based on staff's review, a proposed rule designating stock window covering products that do not conform to the ANSI/WCMA A100.1 – 2018 standard and custom window covering products not conforming to the inner cord provisions in the ANSI/WCMA A100.1 – 2018 standard as SPHs will not likely have a significant impact on a substantial number of small businesses or other small entities. Data collected in person at manufacturers, retailers, and importers by CPSC staff indicates that the level of conformance with the sections of the WCMA standard concerning stock products is high and most likely greater than 90 percent.¹³ Samples tested by CPSC staff also indicate a high level of conformance in custom products related to inner cord accessibility.¹⁴ Firms already conforming to the standard would experience no impact by the proposed rule. At least one small manufacturer that does not currently conform to the accessible cord provision will experience a significant cost impact by the rule (Tab K). Staff does not believe that a substantial number of small manufacturers will experience this cost impact. The rule is not likely to significantly impact retailers and importers of window covering products because manufacturers will bear the potential costs. Should a window covering retailer and/or importer bear a cost related to conformance, staff expects this cost to only account for a small portion of total revenues, as these firms typically sell/import other home furnishing products in addition to window coverings.

Based on the available information, the Commission could certify that the draft proposed rule to deem nonconforming operating cords and inner cords on stock products and inner cords on custom products to be SPHs would likely not have a significant impact on a substantial number of small businesses or other small entities.

H. Effect of Finalizing a 15(j) Rule for Operating Cords and Inner Cords on Stock Window Coverings and on Inner Cords on Custom Window Coverings

Section 15(j) of the CPSA allows the Commission to issue a rule specifying that a consumer product or class of consumer products has characteristics whose presence or absence creates a substantial product hazard. If a final rule is issued under section 15(j) of the CPSA, such a rule would not be a consumer product safety rule, and thus, would not create a mandatory standard that triggers testing or certification requirements under section 14(a) of the CPSA.

Although a rule issued under section 15(j) of the CPSA is not a consumer product safety rule, placing a consumer product on the substantial product hazard list in 16 CFR part 1120 would have certain ramifications. A product that is or has a substantial product hazard is subject to the reporting requirements of section 15(b) of the CPSA, 15 U.S.C. 2064(b). A manufacturer, importer, distributor, or retailer that fails to report a substantial product hazard to the

¹³ Based on CPSC staff's in person unannounced visits to window covering retailers, manufacturers, and importers in major metropolitan areas, one violation was identified in which a stock product was available with accessible cords.

¹⁴ Staff tested custom product samples using test parameters defined in WCMA A100-1.2018 which involved the use of a cord accessibility probe and force gauge.

Commission may be subject to civil penalties under section 20 of the CPSA, 15 U.S.C. 2069, and possibly to criminal penalties under section 21 of the CPSA, 15 U.S.C. 2070.

A product that is or contains a substantial product hazard may be subject to a voluntary corrective action or a corrective action under sections 15(c) and (d) of the CPSA, 15 U.S.C. 2064(c) and (d). Thus, if a final rule is issued under section 15(j) for operating and inner cords on stock window coverings and inner cords on custom window coverings, the Commission could order the manufacturer, importer, distributor, or retailer of stock and custom window coverings that do not contain any applicable readily observable characteristics to offer to repair or replace the product, or to refund the purchase price to the consumer.

A product that is offered for import into the United States and is or contains a substantial product hazard shall be refused admission into the United States under section 17(a) of the CPSA, 15 U.S.C. 2066(a). Additionally, U.S. CBP has the authority to seize certain products offered for import under the Tariff Act of 1930 (19 U.S.C. 1595a) (Tariff Act), and to assess civil penalties that CBP, by law, is authorized to impose. Section 1595a(c)(2)(A) of the Tariff Act states that CBP may seize merchandise, and such merchandise may be forfeited if: “its importation or entry is subject to any restriction or prohibition which is imposed by law relating to health, safety, or conservation and the merchandise is not in compliance with the applicable rule, regulation, or statute.”

I. Effective Date

Staff recommends that a final rule listing stock window coverings that contain one or more readily observable characteristic (hazardous operating cords and hazardous inner cords) and custom window coverings that contain an observable characteristic (hazardous inner cords) as SPHs become effective 30 days after publication of a final rule in the *Federal Register*. A substantial majority of window coverings already meet the requirements of ANSI/WCMA A100.1 – 2018, and the observable characteristics from ANSI/WCMA A100.1 – 2018 in the draft proposed rule have long been in effect and are well known. Staff concludes that a 30-day effective date would not likely result in significant impacts on small firms or disrupt the supply of products that would meet the rule’s requirements.

J. Commission Options for Section 15(j) Rule for Operating Cords and Inner Cords on Stock Window Coverings and for Inner Cords on Custom Window Coverings

The following options are available for Commission consideration:

1. Publish a notice of proposed rulemaking (NPR), as drafted by the OGC.
2. Publish an NPR, with changes, as directed by the Commission.
3. Other options, as directed by the Commission.

K. Request for Comments on Section 15(j) Rule for Operating Cords and Inner Cords on Stock Window Coverings and for Inner Cords on Custom Window Coverings

CPSC staff invites interested persons to submit their comments to the Commission on any aspect of the proposed rule.

III. CUSTOM WINDOW COVERINGS UNDER SECTIONS 7 AND 9 OF THE CPSA

Although the ANSI/WCMA A100.1 – 2018 standard adequately addresses the strangulation risk associated with operating cords and inner cords on stock window coverings, and the inner cords on custom window coverings, the requirements for custom window coverings still allow hazardous operating cords to be present on the product. Due to the ongoing fatal and nonfatal incidents, high severity of the outcomes, proven technical feasibility of cordless products, the existing implementation of stronger requirements for stock window coverings already on the market, and the ineffectiveness of warnings and safety devices for this class of products, staff recommends that the requirements for operating cords on custom window coverings be identical to the requirements for operating cords on stock window coverings outlined in the ANSI/WCMA A100.1 – 2018 standard.

Staff recommends that the Commission publish an NPR to address strangulation hazard associated with operating cords on custom window covering products.

A. Staff Recommendations for Proposed Rule

Although the ANSI/WCMA standard divides the window covering market into stock and custom products, incident scenarios are not divided based on WCMA's product distinction. Fatal and nonfatal injuries associated with window covering cords do not differ between stock and custom products because both types of products essentially have the same hazard patterns. Therefore, staff recommends that operating cords for custom window coverings meet the same requirements as operating cords for stock window coverings as outlined in the ANSI/WCMA A100.1 – 2018 standard.

In addition, staff recommends that the rigid cord shroud requirements based on the language developed by WCMA Rigid Cord Shroud Task Group, but not yet balloted, be part of the rule. Therefore, if the custom window covering uses a rigid cord shroud device to comply with the rule, to clarify the meaning of rigid, the device will be tested to confirm that it is not hazardous.¹⁵

B. Certification and Notice of Requirements

As explained below, if finalized, a rule for custom window coverings under sections 7 and 9 of the CPSA would be a consumer product safety rule that requires testing and certification under section 14(a) of the CPSA. Additionally, as applied to children's custom window coverings, the rule would be a children's product safety rule that requires third party testing by a CPSC-accepted laboratory, and certification of compliance to the standard. See 16 CFR parts 1110 and 1107.

The CPSA defines "children's products" as products designed or intended primarily for children 12 years or younger. Section 14(a) of the CPSA includes requirements for certifying that children's products and non-children's products comply with applicable mandatory standards.

¹⁵ WCMA states that they intend to ballot this requirement. If the requirement is balloted and approved, Section 15(j) can include this requirement as part of an observable safety characteristic for both stock and custom products.

Section 14(a)(1) addresses required certifications for non-children's products, and sections 14(a)(2) and (a)(3) address certification requirements specific to "children's products."

The CPSA defines a "children's product" as "a consumer product designed or intended primarily for children 12 years of age or younger" and states that, when determining whether a product is primarily intended for children 12 years and younger, to consider the following factors: (1) manufacturer statements about the intended use of the product, including a label on the product if such statement is reasonable; (2) whether the product is represented in its packaging, display, promotion, or advertising as appropriate for use by children 12 years of age or younger; (3) whether the product is commonly recognized by consumers as being intended for use by a child 12 years of age or younger; and (4) the Age Determination Guidelines issued by CPSC staff in September 2002, and any successor to such guidelines.

The Commission interpreted this statute for children's products in its regulation at 16 CFR part 1200, and set forth specific examples involving home furnishings in § 1200.2(d)(1). General home furnishings and fixtures (including, but not limited to: rocking chairs, shelving units, televisions, digital music players, ceiling fans, humidifiers, air purifiers, window curtains, tissue boxes, rugs, carpets, lamps, clothing hooks and racks) that often are found in children's rooms or schools would not be considered children's products, unless they are decorated or embellished with a childish theme and invite use by a child 12 years of age or younger, are sized for a child, or are marketed to appeal primarily to children. Staff is aware of some window coverings that are marketed, packaged, displayed, promoted, and/or advertised as intended for children 12 years old and younger; incident data and some recalls include these children's products. However, cord strangulation incidents mainly involve window coverings that are not primarily intended for children; staff is aware that children interact with window coverings, regardless of whether they are children's products.

If the Commission issues a final rule for custom window coverings, manufacturers or importers of non-children's custom window coverings must test products to the rule and issue a General Certificate of Conformity (GCC) demonstrating compliance; and manufacturers of custom window coverings that are children's products must have products third party tested by a CPSC-accepted laboratory and issue a Children's Product Certificate (CPC) demonstrating compliance with the rule.

The Commission's regulation on requirements for certificates of compliance is codified at 16 CFR part 1110. Section 14(a)(1) of the CPSA requires every manufacturer of a non-children's product, which includes the importer, that is subject to a consumer product safety rule under the CPSA or a similar rule, ban, standard, or regulation under any other law enforced by the Commission and which is imported for consumption or warehousing or distributed in commerce, to issue a certificate. The manufacturer must certify, based on a test of each product or upon a reasonable testing program, that the product complies with all rules, bans, standards, or regulations applicable to the product under the CPSA or any other law enforced by the Commission. The certificate must specify each such rule, ban, standard, or regulation that applies to the product.

For children's products, section 14(a)(2) of the CPSA states that, before importing for consumption or warehousing or distributing in commerce any children's product that is subject to a children's product safety rule, the manufacturer (including the importer) must submit sufficient samples of the children's product, or samples that are identical in all material respects

to the product, to a CPSC-recognized third party conformity assessment body accredited under section 14(a)(3) of the CPSA (“recognized third party test laboratory”). The recognized third party test laboratory must test the children’s product for compliance with such children’s product safety rule. Based on the testing, the manufacturer or importer must issue a certificate that certifies that the children’s product complies with the children’s product safety rule based on the assessment of a recognized third party laboratory accredited to conduct such tests. The Commission’s requirements for testing and labeling children’s products is codified at 16 CFR part 1107. Additionally, part 1109 sets forth requirements for using the testing of component parts to meet the testing and certification requirements for both children’s and non-children’s products.

Section 14(a)(3)(A) of the CPSA states that the third party testing requirement applies to any children’s product manufactured more than 90 days after the Commission has established and published an NOR for the accreditation of third party conformity assessment bodies to assess conformity with a children’s product safety rule. The Commission published a final rule regarding Requirements Pertaining to Third Party Conformity Assessment Bodies, codified in 16 CFR part 1112. 78 *Fed. Reg.* 15,836 (Mar. 12, 2013). Part 1112 establishes the requirements for accreditation of third party testing laboratories to test for compliance with a children’s product safety rule. The final rule also codifies all of the NORs that CPSC has published, to date, for children’s product safety rules. All new children’s product safety rules require an amendment to part 1112 to create an NOR. For custom window coverings that are children’s products, staff recommends that the Commission propose to amend part 1112 to include custom window coverings that are children’s products in the list of children’s product safety rules for which CPSC has issued NORs. Commission approval of accreditation requirements for the testing of CSUs that are children’s products will make effective the third party testing and certification requirement for custom window coverings that are children’s products manufactured more than 90 days after the Commission has established and published an NOR for the accreditation of third party conformity assessment bodies to assess conformity with the children’s product safety rule.

C. Preliminary Regulatory Analysis

A proposed consumer product safety rule published in the *Federal Register* in accordance with the requirements of section 9 of the CPSA must include a preliminary regulatory analysis that contains: a preliminary description of the potential benefits and potential costs of the proposed rule; a discussion of the reasons any standard or portion of a standard submitted to the Commission under subsection (a)(5) was not published by the Commission as the proposed rule or part of the proposed rule; a discussion of the reasons for the Commission’s preliminary determination that efforts proposed under subsection (a)(6) and assisted by the Commission as required by section 5(a)(3) [15 U.S.C. § 2054 (a)(3)] would not, within a reasonable period of time, be likely to result in the development of a voluntary consumer product safety standard that would eliminate or adequately reduce the risk of injury addressed by the proposed rule; and a description of any reasonable alternatives to the proposed rule, together with a summary description of their potential costs and benefits, and a brief explanation of why such alternatives should not be published as a proposed rule.

Staff from Directorate for Economic Analysis (EC) developed a preliminary regulatory analysis (Tab K).

a) Preliminary Discussion of Potential Benefits and Costs of the Rule

Based on the estimated 9 fatal injuries involving corded window coverings per year, the societal costs of these fatal injuries are about \$82.8 million annually. Based on the estimate of about 185 nonfatal window covering injuries annually from CPSC's Injury Cost Model (ICM), staff estimates that the societal costs of nonfatal window covering injuries are approximately \$9.3 million annually. Overall, staff estimates the societal costs of fatal and nonfatal injuries to be about \$92.1 million annually. Because staff assesses that the voluntary standard adequately addresses the risk of injury associated with stock window coverings, and because stock window coverings are the subject of a separate draft proposed rule under section 15(j) of the CPSA, the draft proposed rule under sections 7 and 9 of the CPSA would only address the proportion of these injuries attributable to custom window covering products. Staff estimates the proportion of injuries attributable to custom products to be approximately \$53.9 million annually, based on a CPSC review of reported incidents.

Staff calculated the present value of the societal cost of injuries for each detailed window covering type based on the expected product life. The present value of societal cost ranged from \$0.92 for cellular, pleated, and roller shades, \$1.57 for roman shades, \$3.61 for wood and faux wood horizontal blinds, \$1.34 for metal/vinyl horizontal blinds, \$7.56 for vertical blinds, and \$0.14 for curtains/drapes. Combining these estimates with one year of corded custom window covering sales (2019) amounts to a gross annual benefit of \$52.3 million. Adjusting this estimate for the expected effectiveness of the proposed rule equates to a total annual benefit of approximately \$49.5 million.

Based on component cost estimates, assembly/manufacturing costs, and proportions of domestic manufacturing, the increased cost per corded custom window covering produced would range from \$2.15 to \$34.57 and is highly dependent on product type. Staff expects that manufacturers would pass much of this cost on to consumers in the form of higher prices. Interviews conducted with retailers and manufacturers indicate that about 65 percent of custom window covering unit sales are currently corded products. The proposed rule is not expected to result in any cost increases for cordless custom window coverings, and as such, aggregate costs are calculated on only corded custom products. Combining the 2019 custom sales estimate of \$61.58 million with a per unit cost increase, and the percentage of corded custom sales, results in an aggregate cost range of \$156.5 million and \$309 million.

Staff notes that there are many sources of uncertainty inherent in a complex cost-benefit analysis because of using estimated parameters, inputs from several models, assumptions based on expert judgement, and public/private data. This analysis includes uncertainty related to cost estimate calculations, the value of statistical life, the number of corded window coverings in use, and the expected product life for certain blind types. For example, the cost studies from which staff derived all of the cost estimates could be outdated, given the first study was completed in 2016, about 2 years before WCMA revised the voluntary standard for stock products. Economies of scale could have reduced costs related to cordless components since the completion of the first cost study in 2016. Staff notes, though, that the low-end cost could also be an underestimate for a rule involving custom products, because the cost study, from which the estimate is derived,

mostly analyzed stock products with an assumed high-volume production in China, which is less applicable for custom than for stock.

Another example of uncertainty in the analysis is related to the value of statistical life. Staff valued the benefit of reducing fatal incidents at \$9.2 million each, which, as discussed in Tab K is in-line with most reasonable estimates of the value of a statistical life. Staff notes though that there has been some discussion in the literature suggesting that people might be willing to spend more for a small reduction in the risk to children than they are for the same reduction in their own risk. A review of the literature conducted for the CPSC suggested that the VSL for children could exceed that of adults by a factor of 1.2 to 3, with a midpoint of around 2 (IEC, 2018).

Additionally, the assumption used to create the estimate of corded products in the market is based on interviews with manufacturers and retailers, some of whom gave conflicting accounts. The estimate is not based on exposure surveys, and thus, the actual number of corded custom products could be higher or lower than the estimate used in the base analysis; and, we have no basis for stating whether we think we have over or underestimated the number.

Lastly, the estimated product life used in the analysis for vinyl and metal horizontal blinds was significantly shorter than for the other products. It was based on work completed by D+R for the Department of Energy (2013). However, it is possible that this estimate is skewed because of the dominance of stock in this category. A longer expected product life for this category would result in a higher per-unit benefit.

b) Voluntary Standard

In developing the draft proposed rule, CPSC staff considered whether the Commission could rely on the current voluntary standard, ANSI/WCMA A100.1– 2018, in lieu of a rule. Staff assessed that operating cord requirements for custom products in the ANSI/WCMA A100.1 – 2018 standard are inadequate to effectively address the strangulation hazard associated with custom window coverings. Requirements in the voluntary standard still allow hazardous operating cords to be part of the custom products. Staff notes that previous efforts for an effective stock product voluntary standard required more than two decades of development by WCMA. In addition, staff notes that WCMA did not agree with recommendations from other stakeholders, including consumer advocates and CPSC, to require the stock product requirements for custom window coverings. Therefore, it is unlikely that an effective voluntary standard addressing the operating cord hazards on custom window coverings will be developed within a reasonable period.

c) Alternatives Considered

CPSC staff considered several alternatives to the requirements in the draft proposed rule for custom window coverings. These alternatives included: (1) not issuing a mandatory rule, but instead relying upon voluntary standards; (2) improving the voluntary standard ANSI/WCMA A100.1 – 2018; (3) using a later effective date; (4) narrowing the scope of the rule to address only vertical blinds and curtains and drapes; and (5) continuing and improving information and education campaigns. Staff discusses each of these alternatives below. The discussion includes the reasons why staff did not include the alternative in the draft proposed rule, as well as qualitative discussion of costs and benefits, where possible.

No Mandatory Standard/Rely on Voluntary Standard

If CPSC did not issue a mandatory standard, most manufacturers would comply with ANSI/WCMA A100.1 – 2018, which allows custom window coverings to be produced with hazardous operating cords. CPSC staff concludes that the requirements for operating cords associated with custom window coverings in ANSI/WCMA A100.1 – 2018 are inadequate to protect children from the risk of strangulation. Not mandating a standard would not impose any additional costs on manufacturers; neither would it result in any additional benefits in terms of reduced deaths and injuries to children. Therefore, staff does not recommend this option.

Improve Voluntary Standard for Window Coverings

Another alternative might be for Commission staff to continue participating and encouraging safety improvements to the voluntary standard for window coverings, ANSI/WCMA A100.1 – 2018. This option would be similar to the “no action alternative,” with the key difference being that the Commission could direct staff to pursue safety improvements in the voluntary standard, including applying the requirements for operating cords on stock window coverings to custom window coverings, as a conditional alternative to a mandatory standard. The Commission could then reconsider a mandatory standard if efforts to improve the voluntary standard for custom products remain unsatisfactory.

Staff supports recent changes in the voluntary standard creating requirements for cordless/short cords/inaccessible cords on stock products, more descriptive warning labels, and materials describing the strangulation hazard. However, WCMA, in the past, has rejected initiatives to require no operating cords or no accessible cords exceeding 8 inches in length on custom products. Based on staff’s previous experience with WCMA, and the length of time it took for WCMA to update the voluntary standard to require cordless stock products (22 years), staff does not believe that WCMA is likely to improve the voluntary standard for custom products in a timely manner. Consequently, staff does not recommend waiting for improvements to the voluntary standard, because the voluntary standards process is unlikely to lead to adequate requirements for custom window coverings. In addition, it is unknown if, or when, these would include adequate requirements that apply for all custom window coverings.

Later Effective Date

The draft proposed rule includes an effective date that is 2 years after the final rule is published in the *Federal Register*, which is twelve months longer than the statutory provision in section 9(c) of the CPSA.¹⁶ 15 U.S.C. § 2058(c). Given that there are some issues in redesigning certain window coverings of unusual sizes to accommodate a cordless operation, a later effective date would allow manufacturers more time to redesign and spread the research and development costs, or eliminate product variants that cannot be switched to cordless operation. Staff believes it is unlikely that any manufacturer (large or small) would leave the window covering market as a result of the draft proposed rule. Nevertheless, elimination of some product sizes is possible because conversion to cordless operation may not be feasible for some large or unusual sizes.

¹⁶ Section 9(c) of the CPSA provides that rules must be issued within twelve months after the date of publication of a proposed rule unless the Commission extends this period for good cause.

Later effective dates, beyond the proposed two-year effective date, would mitigate some of the costs related to redesign/research and development for manufacturers. However, if cordless operation is not feasible a reduction in sales would occur if a consumer could not find a suitable alternative. Delaying the effective date would be expected to decrease costs, but not by a consequential amount as further cost reductions would be mostly attributable to inventory reductions of products in which cordless operation isn't feasible.

Narrow Proposed Rule to Vertical Blinds, Curtains, and Drapes

The Commission could narrow the draft proposed rule to address only the hazards associated with operating cords on vertical blinds, curtains, and drapes on the grounds that cords are not critical to the operation of these products. These products typically offer cordless options at no additional cost because, for most applications, a plastic rod can be used for operation. Narrowing the proposed rule to these three product types would lessen the cost impact and make it unlikely that any particular product type and/or size would be eliminated. Under this alternative, the costs are expected to be near \$0 because using plastic rods for operation is very similar to cords in cost. However, only 2 of the 35 custom product incidents (both are fatalities) were associated with vertical blinds, and there were no curtain or drape incidents where the stock/custom classification could be determined. Given the limited presence of vertical blinds in custom product incidents (5.7 percent), staff cannot recommend this option, because an effective reduction in injuries and deaths is unlikely with this approach.

Continue and Improve Information and Education Campaign

The Commission could work to improve the current information and education campaign concerning the strangulation hazard associated with custom corded window covering products. However, staff notes that information and education campaigns on corded window coverings that have been continuing for decades have had limited effectiveness in the reduction of injuries and deaths. Accordingly, staff does not recommend relying solely on education campaigns to address the risk of injury.

D. Initial Regulatory Flexibility Analysis

Whenever an agency publishes a proposed rule, the Regulatory Flexibility Act (5 USC 601 – 612) requires that the agency prepare an initial regulatory flexibility analysis that describes the impact that the rule would have on small businesses and other entities, unless the agency has a factual basis for certifying that the proposed rule “will not have a significant economic impact on a substantial number of small entities.” Staff of CPSC’s Directorate for Economic Analysis (EC) prepared this analysis as summarized below in Tab J.

Based on 2017 data, 1,898 firms were categorized as blinds and shades manufacturers and retailers (Census Bureau, 2020). Of these, about 1,840 firms (302 manufacturers and 1,538 retailers) are considered small. Because the NAICS code for importers is non-specific to window coverings, CPSC staff reviewed CBP data, firm financial reports, and Dun & Bradstreet reports to obtain an estimate. CPSC staff estimates that there are approximately 83 importers that meet the SBA guidelines for a small business (Laciak 2020).

Nearly all of the 302 small manufacturers identified are far below the 1,000-employee SBA threshold. Two hundred thirty-eight (238) of the manufacturers have fewer than 20 employees,

and 151 have fewer than 5 employees. CPSC staff estimates that the annual revenue for the firms with fewer than 20 employees to be under \$250,000. Most of the firms with fewer than 5 employees manufacture custom window coverings on a per-order basis. The annual revenue for these manufacturers is most likely below \$25,000, based on estimates from the Non-employer Statistics from the U.S. Bureau of the Census. Staff estimates that the annual revenues for the remaining small manufacturers, those with more than 20 employees, are between \$300,000 to \$2,000,000.

The draft proposed rule would establish a performance standard for operating cords on custom window coverings by adopting the requirements in ANSI/WCMA A100-1.2018, the voluntary standard for operating cords on stock products and extending the requirements to custom products. To comply with the performance requirements, all accessible operating cords would need to be removed, made inaccessible, or shortened to 8 inches or less. Under section 14 of the CPSA, as codified in 16 CFR part 1110, manufacturers or importers of custom window coverings will be required to certify, based on a test of each product or upon a reasonable testing program, that their window coverings comply with the requirements of the draft proposed rule. Each certificate of compliance must identify the manufacturer or importer issuing the certificate and any manufacturer, firm, or third party conformity assessment body on whose testing the certificate depends. The certificate must be legible and in English and also include the date and place of manufacture, the date and place where the product was tested, including the full mailing address and telephone number for each party, and the contact information for the person responsible for maintaining records of the test results. The certificates may be in electronic format and must be provided to each distributor or retailer of the product. Upon request, the certificates must also be provided to the CPSC and/or CBP.

Custom window covering manufacturers would most likely adopt cordless lift operation systems to comply with the draft proposed rule. As discussed in the preliminary regulatory analysis of the proposed rule (Tab K, Bailey, 2021), the cost to modify window covering lift systems with the draft proposed rule ranges from \$2.95 to \$9.65 per horizontal blind, \$2.15 to \$34.57 per shade, and no expected cost increase for vertical blinds and curtains/drapes. CPSC staff does not have estimates of redesign costs but expects that these costs will be small, given the already wide availability of product designs with inaccessible cords. However, CPSC staff expects component costs to be significant, because inaccessible cord operation is expensive, as shown in the preliminary regulatory analysis (Tab K, Bailey, 2021.) Staff does not know the effect on component costs for custom products based on the requirement for stock products to comply with the voluntary standard since 2018, but economies of scale could decrease component costs for custom products, as well. Staff seeks comment on this issue.

Estimates of the costs to modify three types of window coverings in Panchal (2016) indicate that, at a minimum, the costs to modify will range from 2 to 11 percent of retail prices. However, there are uncertainties related to these cost estimates, as explained in Tab K, because this analysis preceded revisions to the voluntary standard for stock products in 2018.

Manufacturers would likely incur some additional costs to certify that their window coverings meet the requirements of the draft proposed rule, as required by Section 14 of the CPSA. The certification must be based on a test of each product or a reasonable testing program. Manufacturers may use any testing method that they believe is reasonable, and they are not required to use the same test method that would be used by CPSC to test for compliance. The

Window Covering Manufacturers Association (WCMA) developed a certification program for window covering products titled, "Best for Kids," which includes third party testing of products for accessible cords. CPSC staff believes that this certification would meet the requirements, as outlined in Section 14 of the CPSA, for children's and non-children's products. Moreover, because the tests are simple, meaning they require observation and simple measurements, and they meet the definition of "readily observable characteristics" in Section 15 of the CPSA, costs to test per model are expected to be low. Staff also notes that the Commission has a policy that required product labels do not need to be third party tested (but must be certified as compliant). Based on quotes from testing laboratory services for consumer products, the cost of the certification testing will range from \$290 to \$540 per window covering model. Note that the requirement to certify compliance with all product safety rules is a requirement of the CPSA, but not of the draft proposed rule.

CPSC staff notes that a reasonable testing program could entail a simple visual inspection of products by the manufacturer and would still likely meet the requirements. Therefore, the cost of a reasonable testing program for compliance with the draft proposed rule could be much lower than the cost of conducting a third party certification test of each product.

To comply with the draft proposed rule, small manufacturers are expected to incur redesign and incremental component costs, described above, for some product lines that currently are not available in inaccessible cord variants. Staff does not expect small manufacturers to suffer a disproportionate cost effect from the draft proposed rule, because the cost calculations and research were completed on a per-unit basis, and little, if any, redesign costs are expected. Small manufacturers of window coverings are expected to incur, at a bare minimum, a 2 percent impact to their corded custom window covering revenue from the draft proposed rule. This implies that if corded custom products account for all of a firm's revenue, then the minimum impact of the draft proposed rule is 2 percent of revenue.

Generally, staff considers an impact to be potentially significant if it exceeds 1 percent of a firm's revenue. Because even the smallest estimate of cost is 2 percent of retail price, staff believes that the draft proposed rule could have a significant impact on manufacturers that receive a significant portion of their revenue from the sale of corded custom window coverings. Staff notes that small importers are expected to bear similar costs as small manufacturers, but staff is unclear whether the impact will be significant. The cost effect as a percent of revenue depends on the firm's corded custom window covering imports as a percent of total revenue. Any small importer with revenues of at least 50 percent related to corded custom window covering products affected by the draft proposed rule could be significantly impacted. Due to these potential impacts, CPSC staff expects the draft proposed rule to have a significant effect on a substantial number of small firms.

As discussed in preliminary regulatory analysis, CPSC staff examined several alternatives to the draft proposed rule that could reduce the impact on small entities. However, with the exception of a later effective date, staff does not recommend these options, because they do not effectively address hazardous operating cords on custom window coverings.

E. Comments to ANPR

Following the publication of the ANPR, the Commission received comments from a total of 1,013 people or entities. Tab L consolidates staff responses to comments. In general, comments fell into one or more different topic areas, including: general support or opposition to a rule, economic impact to the industry, consumers having window covering choices, communicating about the hazard through real estate disclosure documents, rental lease issues, personal stories associated with window covering cords, personal stories about someone who will be negatively impacted by the proposed rule, suggestions on warnings and launching educational campaigns, impacts on elderly/disabled populations, unfair advantage to corporations, cost (increase cost for cordless or drop in cordless prices due to regulations), parental responsibility, incentives for good designs, subsidizing companies so they can comply with new standards, and problems associated with installation performed by non-professionals. Staff reminds the Commission that since the public comment period on the ANPR closed in 2015, the voluntary standard has made substantial improvements to effectively address the strangulation risk associated with stock window coverings. Many of the comments are obviated by the new voluntary standard and changes to stock products.

F. Anti-Stockpiling

The draft proposed rule would also prohibit (under Section 9 of CPSA) any person from manufacturing or importing noncomplying custom window coverings in any period of 12 consecutive months between the date of promulgation of the final rule and the effective date, at a rate that is greater than 120 percent of the rate at which they manufactured or imported custom window coverings during the base period for the manufacturer. The base period is any period of 365 consecutive days, chosen by the manufacturer or importer, in the 5-year period immediately preceding promulgation of the rule. Thus, the stockpiling limit would allow manufacturers and the industry to meet any foreseeable increase in the demand for custom window coverings, without allowing large quantities of custom window coverings to be stockpiled.

Custom products are typically made to order, so it is unlikely that a firm would manufacture large quantities in advance of demand. Therefore, this anti-stockpiling provision should not adversely impact manufacturers. CPSC staff welcomes comment from any manufacturer or importer who believes that they could be adversely impacted by this provision.

G. Effective Date

CPSC staff recommends that the Commission propose an effective date of 720 days after publication of the final rule for manufacturers to comply with the requirements. Given that the current market for window coverings already complies with the same requirements, and that a substantial portion of the custom market already offers safer products that would meet the proposed requirements, a 2-year (720 days) period should be sufficient for the custom market to transition to new product offerings, where needed. Although the resulting net costs may be distributed among manufacturers, importers, retailers and consumers of window coverings, the initial impact of the regulations will be lessened by a 2-year effectiveness period. Staff notes that this period is the same as Health Canada's regulations, after they modified their coming-

into-force period to 24 months, based on net costs, and in response to industry's concerns expressed during the public consultation period.

H. Commission Options for Sections 7 and 9 Rule for Custom Window Coverings

The following options are available for Commission consideration:

1. Publish an NPR for custom window coverings, as drafted by the OGC. The draft NPR proposes to extend the requirements for stock window coverings in the ANSI/WCMA standard to custom window coverings, and to include a provision mandating a test procedure for rigid cord shrouds;
2. Publish an NPR, with changes, as directed by the Commission.
3. Other options, as directed by the Commission.

I. Request for Comments on NPR for Custom Window Coverings

Staff recommends requesting comments on the following items:

- a. The scope of the standard for custom window coverings, whether certain products should be included or excluded;
- b. Whether the ANSI/WCMA A100.1 – 2018 standard is adequate to address the strangulation risk associated with custom window coverings;
- c. Whether the rigid cord shroud requirements are adequate;
- d. Whether cord or bead chain restraining devices should be allowed for custom products that contains continuous loop operating system;
- e. Whether single retractable cord lift systems should be allowed for custom products and whether maximum exposed cord length and a minimum pull force for a single retractable cord lift system can address the strangulation hazard;
- f. The effect on component costs for custom products based on the requirement for stock products to comply with the voluntary standard since 2018;
- g. Whether button or coin cell battery enclosures in a remote control to operate a custom window covering should be included in the rulemaking, related to the hazards of swallowing small batteries;
- h. Whether to include a warning label that alerts consumers that if a hazardous cord becomes present due to broken window covering, they should remove the product from use.

IV. STAFF RECOMMENDATIONS

- (1) CPSC staff recommends that the Commission publish an NPR, as prepared by the OGC, under Section 15(j) of the CPSA, to deem that stock window coverings that do not comply with the requirements in the ANSI/WCMA A100.1 – 2018 standard for operating cords and inner cords, and custom window coverings that do not comply with the requirements for inner cords, present a substantial product hazard.
- (2) CPSC staff also recommends that the Commission publish a notice of proposed rulemaking, as prepared by the OGC, under Sections 7 and 9 of the CPSA to address the risk of injury associated with operating cords on custom window coverings.

Section 15(j) of the CPSA on Stock Products Involving Operating Cords and Inner Cords and on Custom Products Involving Inner Cords

CPSC staff identified readily observable safety characteristics on stock and custom window coverings (presence of hazardous operating cords and inner cords for stock window coverings, presence of hazardous inner cords for custom window coverings). The presence of hazardous cords on these products, as well as the absence of an on-product manufacturer label, constitute a substantial product hazard. Hazardous operating cords and inner cords on stock window coverings and hazardous inner cords on custom window coverings are adequately addressed in the voluntary standard, ANSI/WCMA A100.1 – 2018. Based on a study and staff's additional assessment of the market, CPSC staff advises that stock and custom window coverings likely substantially comply with the voluntary standard.

Staff recommends that the Commission publish a proposed rule to list as substantial product hazards, stock window covering products that contain one or more readily observable characteristics (hazardous operating cords and hazardous inner cords), and custom window covering products that contain one readily observable characteristic (hazardous inner cords) and absence of manufacturer label on both stock and custom window coverings. Staff further recommends that the Commission propose that a final rule become effective 30 days after publication in the *Federal Register*.

Sections 7 and 9 of the CPSA for Operating Cords on Custom Products

CPSC staff is aware of 194 strangulation incidents associated with window covering cords from 2009 through 2020. Staff identified 35 incidents resulting from custom window coverings, 80 incidents from stock window coverings, while 109 incidents did not have sufficient information for categorization. Out of the 35 custom window covering incidents, the ANSI/WCMA standard adequately addressed the 3 inner cord incidents; however, the standard did not adequately address 30 incidents associated with operating cords, because the standard allows hazardous operating cords in custom products but not stock products. This means that at least 86 percent of the custom product incidents may still occur with the current requirements. Therefore, CPSC staff recommends that stock product requirements in the voluntary standard be applied to custom products to effectively reduce deaths and injuries associated with custom corded window coverings. Recommended requirements are technologically feasible and have been implemented in all stock window coverings that are compliant with the ANSI/WCMA A100.1 – 2018 standard.

In the United States, based on staff's preliminary regulatory analysis, requiring custom window coverings to have the same requirements as the stock products, in the best-case scenario, results in costs and benefits that may be justified by the qualitative benefit of preventing the deaths of young children.

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**TAB A: FATAL AND NEAR-MISS STRANGULATIONS ASSOCIATED WITH
WINDOW COVERING CORDS**



UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MARYLAND 20814

MEMORANDUM

Date: October 6, 2021

TO : Rana Balci-Sinha
Project Manager, Window Coverings Rulemaking
Director, Division of Human Factors, Directorate for Engineering Sciences

THROUGH: Stephen Hanway
Associate Executive Director
Directorate for Epidemiology

FROM : Risana Chowdhury
Director, Division of Hazard Analysis
Directorate for Epidemiology

SUBJECT : Fatal and Near-Miss Strangulations Associated with Window Covering Cords

Introduction

In 2015, CPSC published an advance notice of proposed rulemaking (ANPR) on Window Coverings (WC); the data presented for that package covered the period from 1996 through 2012. Since then, in 2018, the Window Covering Manufacturers Association (WCMA) published a revised voluntary standard (ANSI/WCMA A100.1 – 2018, American National Standard for Safety of Corded Window Covering Products) for window coverings. For products that comply, staff believes that the standard has essentially removed the hazardous operating/pull cords for stock window coverings. To study the effectiveness and any lack of compliance with the voluntary standard associated with window covering cords, CPSC staff reviewed the data related to these products from 2009 through 2020 to capture the before- and after-standard time frame. Some of the data sources staff used in this analysis do not have data for 2020 available yet; for those sources, staff included data for the latest available year, 2019.

This memorandum summarizes CPSC staff's incident analysis for window covering cords. In the first section, staff presents results from analysis of incidents reported to CPSC. For these incidents, staff distinguishes between stock versus custom window coverings, whenever feasible. In the next section, staff presents national estimates of deaths and injuries involving WC strangulations among children under 5 years of age. Due to lack of information in the data about the specificity of the product type, staff could not differentiate between the various types (such as stock versus custom) of window coverings involved. As such, the estimates are associated with *all* types of window coverings.

Methodology

CPSC staff's search focused on fatal and near-miss strangulations suffered by young children due to window covering cords. Whenever feasible, staff selected the time frame to be 2009 through 2020. CPSC staff searched three databases for identification of window covering cord incidents: the Consumer Product Safety Risk Management System (CPSRMS),¹⁷ the National Electronic Injury Surveillance System (NEISS), and the Multiple Cause of Deaths data file. The first two sources are CPSC-maintained databases. The Multiple Cause of Deaths data file is available from the National Center for Health Statistics (NCHS). The appendix at the end of this memorandum details information about the CPSC data sources and the selection criteria used for this data search.

Below, staff first presents analysis of the incident data from the CPSC data sources, which is followed by national estimates based on the NCHS data.

I. Incidents from CPSC Databases

Based on newspaper clippings, consumer complaints, death certificates purchased from states, medical examiners' reports, hospital emergency department-treated injury reports, and in-depth investigation reports, CPSC staff found a total of 194 reported fatal and near-miss strangulations on window covering cords that occurred among children 8 years old and younger from January 2009 through December 2020. These 194 incidents do not constitute a statistical sample of known probability and do not necessarily include all window covering cord-related strangulation incidents that occurred during that period. However, these 194 incidents do provide at least a minimum number for such incidents during that time frame.

Table 1a provides the breakdown of the incidents by year. Because reporting is ongoing, the number of incidents presented here may change in the future. Given that these reports are anecdotal and reporting is incomplete, CPSC staff strongly discourages drawing any inferences based on the year-to-year increase or decrease shown in the reported data.

Table 1b expands on Table 1a to display the distribution of the annual incidents by severity of incidents and type of window coverings involved. Staff identified 50 of 194 incident window coverings (26 percent) to be stock products, and 35 of the 194 (18 percent) were identified as custom products; Staff could not identify the window covering type in the remaining 109 of the 194 (56 percent) incidents.

¹⁷ Prior to 2011, the reports contained in CPSRMS resided in three separate databases: Injury or Potential Injury Incident file (IPII), the Death Certificates file (DTHS), the In-Depth Investigation file (INDP) and any data extraction required a search for each of the three databases, separately.

Table 1a
Reported Fatal and Near-Miss Strangulation Incidents Involving Window Covering Cords
Among Children Eight Years and Younger
2009 – 2020

Incident Year	Number of Reported Incidents		
	Total	Fatal Strangulations	Near-Miss Strangulations
2009	48	14	34
2010	31	11	20
2011	10	6	4
2012	17	8	9
2013	9	2	7
2014	17	12	5
2015	9	7	2
2016	17	13	4
2017	9	5	4
2018	8	4	4
2019*	11	4	7
2020*	8	3	5
Total	194	89	105

Source: CPSC epidemiological databases CPRMS and NEISS.

Note: * indicates data collection is ongoing

Table 1b
Reported Fatal and Near-Miss Strangulation Incidents Involving Stock/Custom/Unknown
Types of Window Covering Cords Among Children Eight Years and Younger
2009 -- 2020

Incident Year	Reported Incidents by Window Covering Type			
	Stock (Fatal/Nonfatal)	Custom (Fatal/Nonfatal)	Unknown (Fatal/Nonfatal)	All
2009	20 (4/16)	7 (2/5)	21 (8/13)	48
2010	10 (3/7)	7 (2/5)	14 (6/8)	31
2011	2 (1/1)	4 (3/1)	4 (2/2)	10
2012	1 (1/0)	5 (1/4)	11 (6/5)	17
2013	2 (1/1)	3 (1/2)	4 (0/4)	9
2014	3 (2/1)	2 (1/1)	12 (9/3)	17
2015	4 (4/0)	1 (1/0)	4 (2/2)	9
2016	5 (3/2)	4 (3/1)	8 (7/1)	17
2017	2 (1/1)	1 (0/1)	6 (4/2)	9
2018	--	1 (0/1)	7 (4/3)	8
2019*	1(0/1)	--	10 (4/6)	11
2020*	--	--	8 (3/5)	8
Total	50 (20/30)	35 (14/21)	109 (55/54)	194

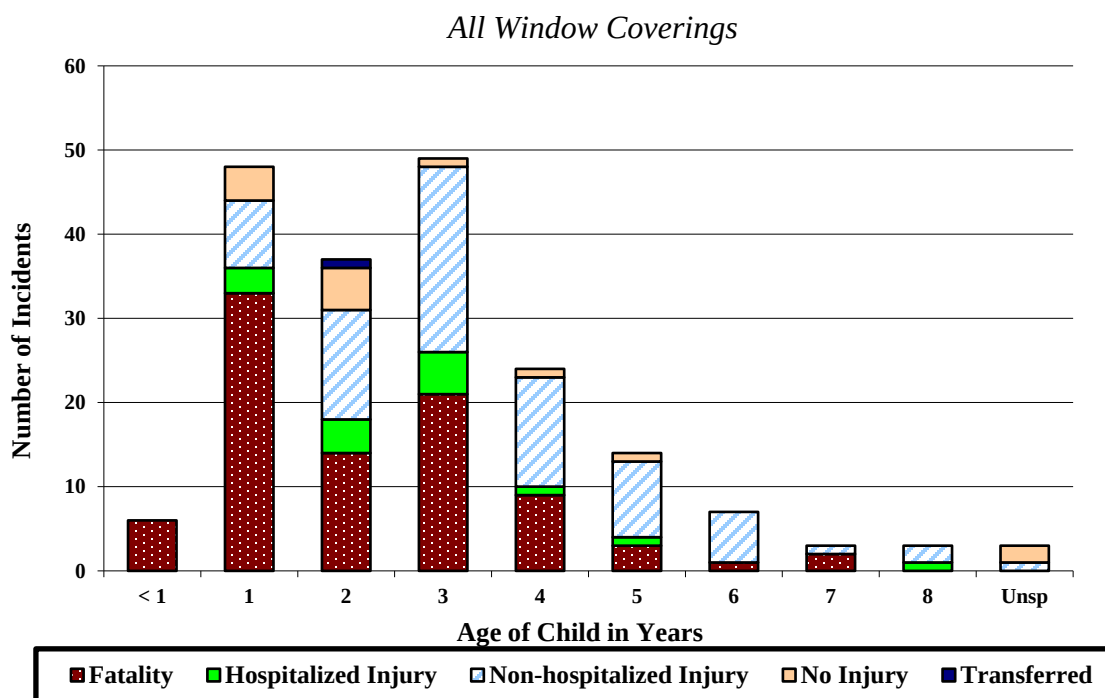
Source: CPSC epidemiological databases CPRMS and NEISS.

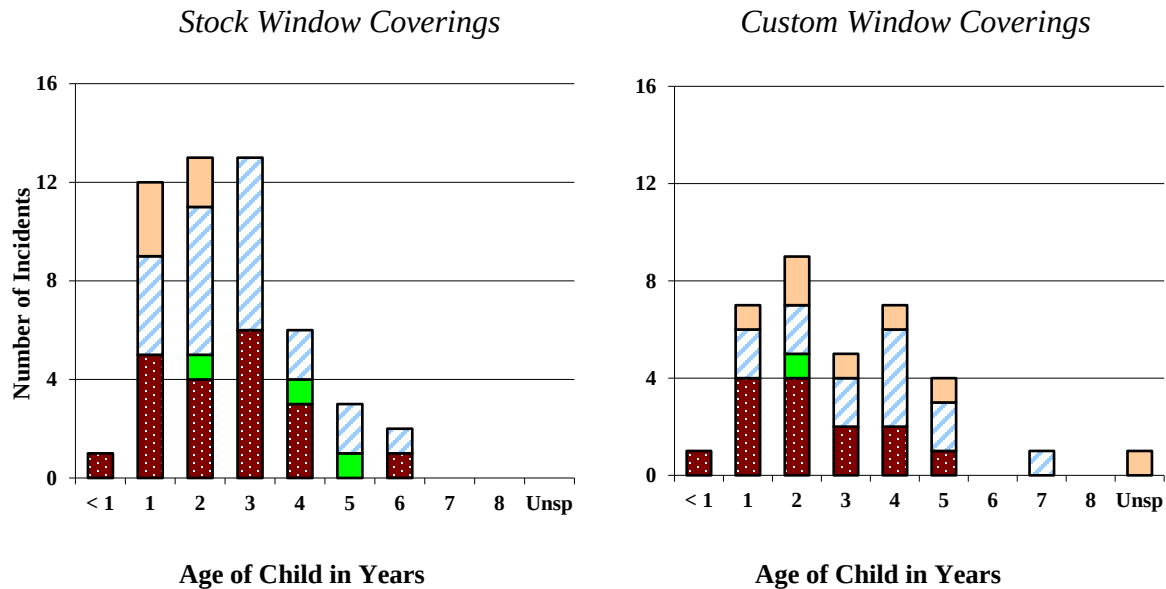
Note: * indicates data collection is ongoing

Overall, among the incidents with gender information available, 66 percent of the children involved were males, while 34 percent were females. One incident did not report the gender of the child.

Eighty-nine of the 194 incidents (46 percent) reported a fatality. Among the nonfatal incidents, 15 involved hospitalizations (8 percent). The long-term outcomes of these 15 injuries varied from a scar around the neck, to quadriplegia, to permanent brain damage. One additional child was treated and transferred to another hospital; the final outcome of this patient is unknown. In addition, 75 incidents (39 percent) involved less-severe injuries, some requiring medical treatment but not hospitalization. In the remaining 14 incidents (7 percent), a child became entangled in a window covering cord, but was able to disentangle from the cord and escape injury. The top chart in Figure 1 shows the number and disposition of the incidents by the child's age for all types of window coverings. The bottom two charts show the same distributions, separated by stock versus custom types of window coverings. Staff notes that the fewer reported incidents for custom products represents the lack of specificity in this data set and does not necessarily mean that there are actually fewer incidents involving custom products.

Figure 1: Reported Fatal and Near-Miss Strangulation Incidents Among Children Age Eight Years and Younger; 2009 --2020





Source: CPSC epidemiological databases CPSRMS and NEISS

Distribution of Reported Incidents by Window Covering and Associated Cord Types

Based on staff's review, the most common types of window coverings among the 194 reported incidents, along with the types of cords associated with each, are listed below.

- Horizontal Blinds (includes Venetian and mini-blinds)
Associated cords: continuous loop cord/beaded-chain (free-standing, *i.e.*, not mounted on a tension device), inner cord, pull cord (with loops or long cords), and tilt cord;
- Vertical Blinds
Associated cords: continuous loop cord/beaded-chain (free-standing);
- Roman Shades
Associated cords: continuous loop cord/beaded-chain (free-standing), inner cord, and pull cord (with loops or long cords);
- Roller Shades
Associated cords: continuous loop cord/beaded-chain (free-standing);
- Roll-up Shades
Associated cords: pull cord (with loops or long cords) and lifting loop;
- Other Shades (includes pleated, cellular-honeycomb)
Associated cords: continuous loop cord/beaded-chain (free-standing) and pull cord (with loops or long cords);
- Curtains/Draperies
Associated cords: continuous loop cord/beaded-chain (free-standing).

1. Stock Window Coverings

CPSC staff was able to identify definitively 50 incidents that involved stock products in the period 2009 through 2020. Of the 50 incidents, 64 percent involved horizontal blinds, 28 percent involved Roman shades, 4 percent roller shades, and 2 percent involved roll-up shades and vertical blinds. Table 2 below provides the cross-tabulation of the incidents by the window covering type and the associated cord type involved in these incidents.

Table 2: Distribution of Reported Incidents By Types of Window Coverings and Associated Cords Among Stock Products: 2009 – 2020

	Pull cord	Continuous loop cord/beaded- chain	Inner cord	Lifting loop	Tilt cord	Unknown	Total (Percentage)
Horizontal	24	--	1	--	2	5	32 (64%)
Roman	--	--	13	--	--	1	14 (28%)
Roller	--	2	--	--	--	--	2 (4%)
Roll-up	--	--	--	1	--	--	1 (2%)
Vertical	--	1	--	--	--	--	1 (2%)
Total	24	3	14	1	2	6	50 (100%)

Source: CPSC databases CPSRMS and NEISS. Percentages may not add to 100 due to rounding.

2. Custom Window Coverings

CPSC staff identified definitively 35 incidents that involved custom window covering products. Of the 35 incidents, 51 percent involved horizontal blinds, 17 percent involved Roman shades, and 9 percent roller shades. Other shades, such as cellular and pleated shades, together accounted for 11 percent of the incidents. Six percent involved vertical blinds. For the remaining 6 percent of the incidents involving custom products, staff did not have sufficient information to determine the type of covering. Table 3 below provides the cross-tabulation of the incidents by the window covering type and the associated cord type involved in these 35 incidents.

Table 3: Distribution of Reported Incidents By Types of Window Coverings and Associated Cords Among Custom Products: 2009 – 2020

	Pull cord	Continuous loop cord/beaded -chain	Inner cord	Lifting loop	Tilt cord	Unknown	Total (Percentage)
Horizontal	16	2	--	--	--	--	18 (51%)
Roman	1	2	3	--	--	--	6 (17%)
Roller	--	3	--	--	--	--	3 (9%)
Other Shades	1	3	--	--	--	--	4 (11%)
Vertical	--	2	--	--	--	--	2 (6%)
Unknown	--	--	--	--	--	2	2 (6%)
Total	18	12	3	--	--	2	35 (100%)

Source: CPSC databases CPSRMS and NEISS. Percentages may not add to 100 due to rounding.

3. Undetermined/Unknown Window Coverings

For the majority of the reported incidents (109 out of 194), staff did not have enough information available to determine if the window covering product was stock or custom. Among these reported incidents, 32 percent were horizontal blinds; 7 percent were vertical blinds; 5 percent were roll-up shades; roller shades and Roman shades were 4 percent each; and draperies and other shades (pleated/cellular) were 3 percent each. For a large proportion, 43 percent, staff could not determine the type of window covering based on the available data. Table 4 below provides the cross-tabulation of the incidents by the window covering type and the associated cord type involved in 109 these incidents.

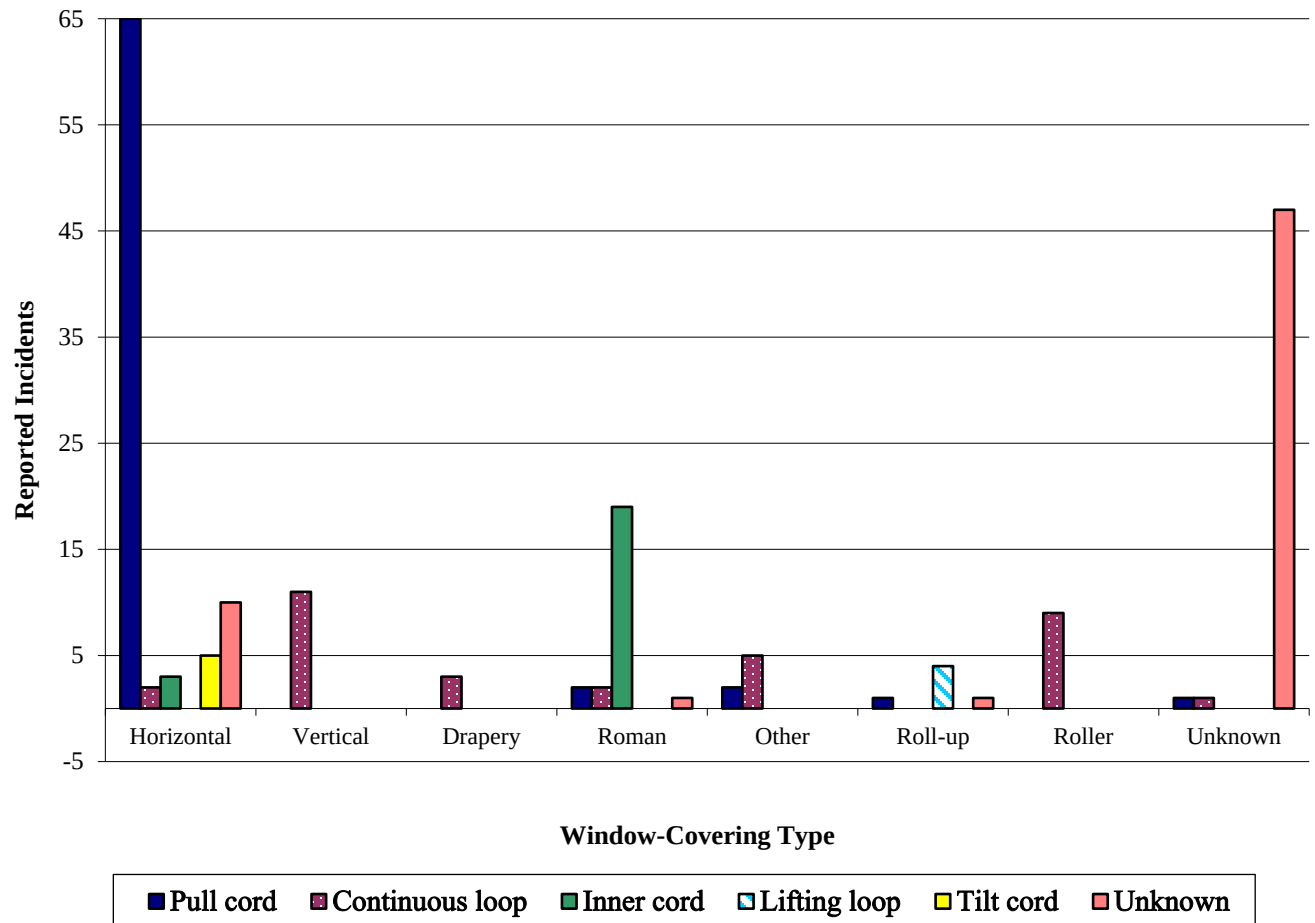
**Table 4: Distribution of Reported Incidents
By Types of Window Coverings and Associated Cords: 2009 – 2020
Unknown (if Stock or Custom) Products**

	Pull cord	Continuous loop cord/beaded -chain	Inner cord	Lifting loop	Tilt cord	Unknown	Total (Percentage)
Horizontal	25	--	2	--	3	5	35 (32%)
Vertical	--	8	--	--	--	--	8 (7%)
Roll-Up Shades	1	--	--	3	--	1	5 (5%)
Roman	1	--	3	--	--	--	4 (4%)
Roller	--	4	--	--	--	--	4 (4%)
Other Shades	1	2	--	--	--	--	3 (3%)
Draperies	--	3	--	--	--	--	3 (3%)
Unknown	1	1	--	--	--	45	47 (43%)
Total	29	18	5	3	3	51	109 (100%)

Source: CPSC databases CPSRMS and NEISS. Percentages may not add to 100 due to rounding.

Figure 2 presents a visual presentation of all 194 reported incidents, regardless of the stock/custom status of the product, by window covering and associated cord types.

**Figure 2: Distribution of Reported Incidents by Types of Window Coverings and Associated Cords
2009 – 2020**



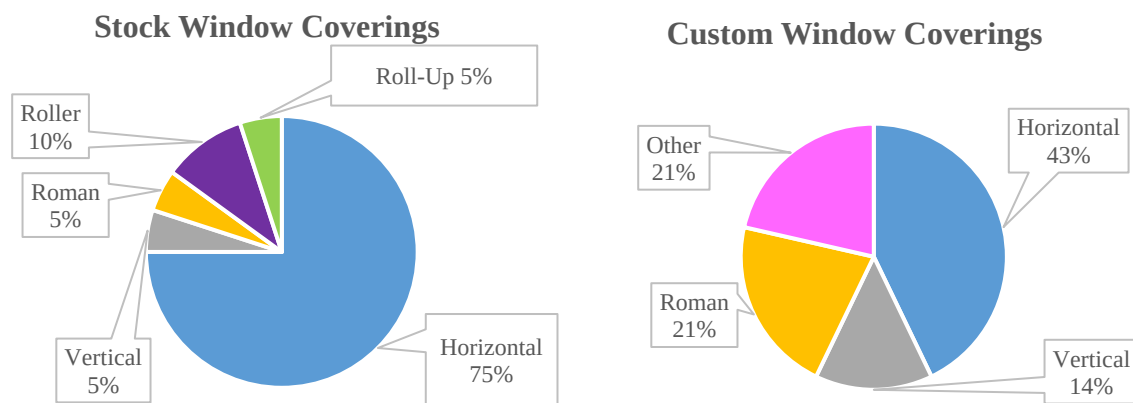
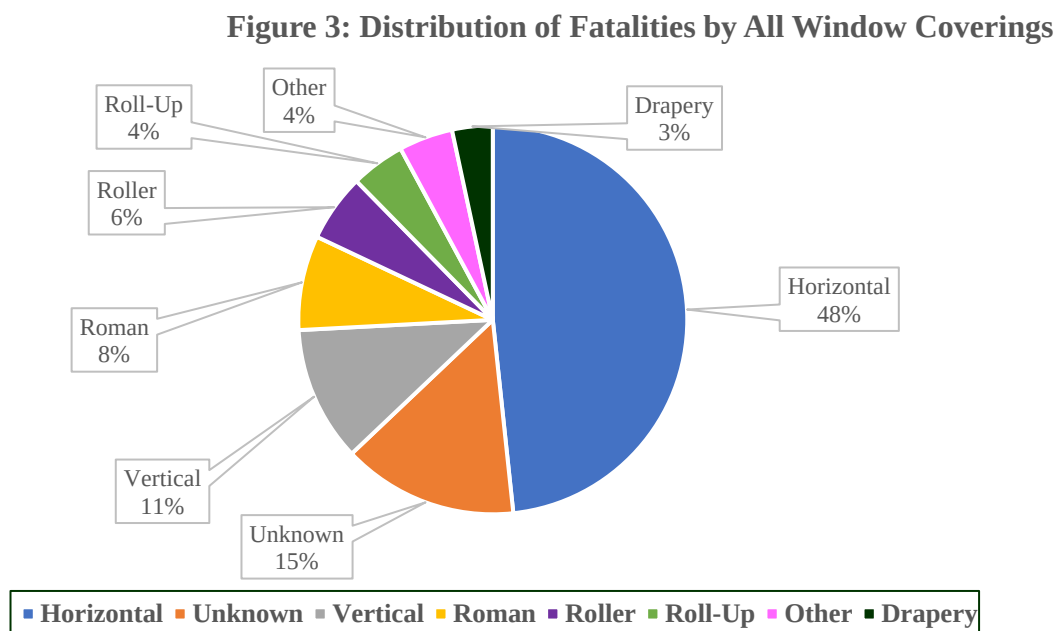
Source: CPSC databases CPSRMS and NEISS

The 194 incident reports rarely contained information on safety device usage. The information was unknown or unreported 92 percent of the time for the 50 stock product incidents; 66 percent of the time for the 35 custom product incidents; and 91 percent of the time for the remaining 109 incidents with stock/custom product status unknown.

Distribution of Fatal Incidents by Window Covering and Associated Cord Types

Of the 194 reported incidents, 89 involved a fatality. Of the 89 deaths, 43 involved horizontal window coverings, 10 involved vertical window coverings, and 7 involved Roman shades. For 13 fatalities, staff does not know the window covering type. When separated by the known stock versus custom products, horizontal blinds were involved in the most fatalities. Figure 3 shows the breakouts by window covering types for all 89 reported fatalities, as well as among the known stock and custom products separately.

Figure 3 illustrates the distribution of these fatal incidents by types of window coverings.



Source: CPSC epidemiological databases CPSRMS and NEISS

Most Common Cord Types and Associated Hazards Resulting in Fatalities

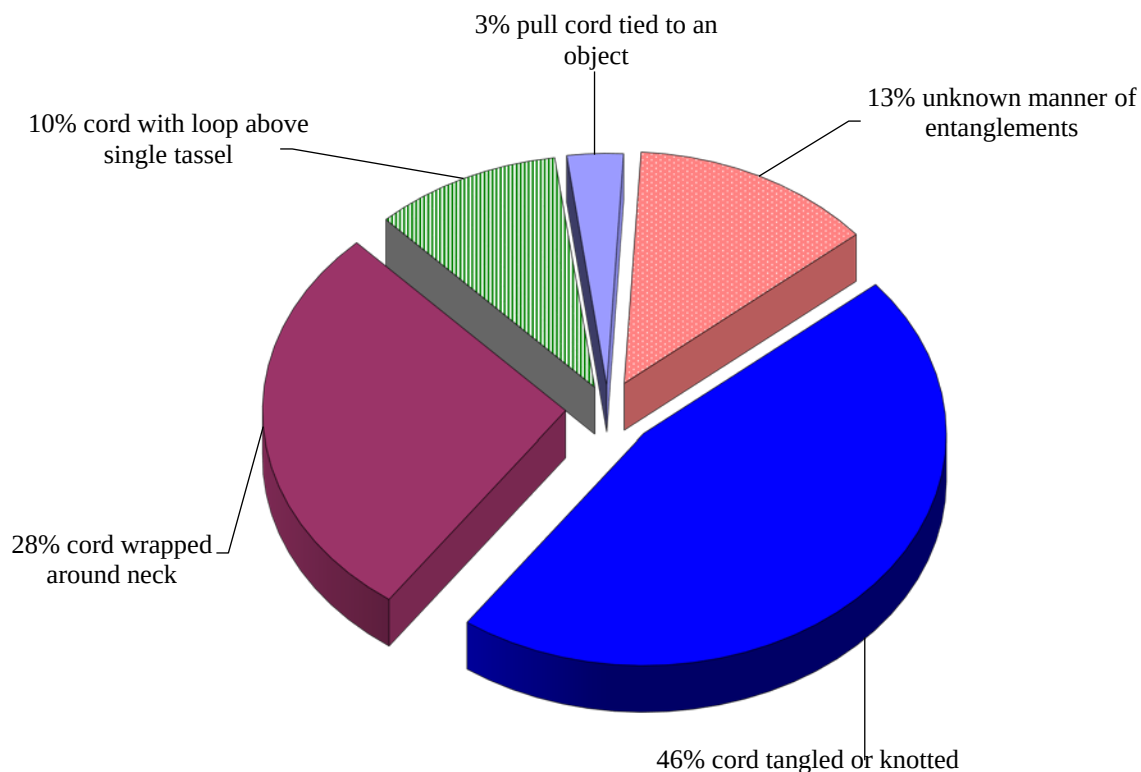
Whether considering stock, custom, or unknown-if-stock-or-custom products, staff found that the pull/operating cord system is the single most hazardous scenario among the reported fatal incidents. Thirty-nine of the 89 (44 percent) fatalities involved a child getting entangled in such pull cords; continuous loops were next, with 23 of the 89 (26 percent) fatalities. Inner cords ranked next, accounting for seven of the 89 (8 percent) fatalities.

Pull Cords: In 37 of the 39 known pull cord fatalities, the pull cords were components of horizontal blinds. Of these 39 deaths, 38 occurred prior to the implementation of the 2018 voluntary standard affecting stock products. Although reporting is ongoing, so far, one fatality has been reported in 2019, but none in 2020. Among the 39 fatalities, staff identified 7 incidents as involving custom products, and 12 as stock products; staff could not differentiate the remaining 20 incidents' window coverings vis-à-vis their stock versus custom status. Hence, any effects of the 2018 voluntary standard on these products are not yet reflected in the data. A closer look at pull cord-related incidents revealed several ways in which children have strangled.

- A. *Loops created by knotted or tangled cord:* Staff's review revealed that prior to the incidents, the pull cords had been tied together or had been coiled and tucked away (out of children's reach), but had later become accessible. When pull cords were tied together, a loop was created above the knot where the cords were tied and that is where the child later became entangled. When the cords were coiled, the cords also became tangled and created a loop, which later acted as a noose. Among all 39 pull cord-related fatal incidents, 18 out of 39 (46 percent) occurred on loops created by knotted or tangled cords.
- B. *One or more long cords that the child wrapped around their neck:* In these scenarios, the child had wrapped the long pull cord(s) multiple times around the neck. When the child fell, or tried to pull away from the window covering, the cord pulled back, causing the child to strangle or nearly strangle. Among all pull cord-related fatal incidents, this category included 11 of the 39 (28 percent) pull cord fatalities.
- C. *Loop above a single tassel or a stop ball of the cord:* Some pull cords consist of multiple cords that hang from the window covering's head rail and are joined at a point, by a plastic or wooden tassel, or by a stop ball. In such configurations, a loop exists above the tassel. In the cases reviewed, staff determined that these loops, when accessible to a child, acted as a noose where the child was caught. Four of the 39 (10 percent) pull cord-related fatal incidents involved this scenario.
- D. *Pull cord tied to an object:* Staff determined that in one of the 39 (3 percent) pull cord-related fatal incidents, pull cords were tied to a cord cleat, creating a u-shape on the cords where the child was strangled.
- E. *Unknown manner:* Five of the 39 (13 percent) pull cord-related fatal incidents did not report sufficient information to allow CPSC staff to determine the manner in which the child was entangled.

Figure 4 presents the distribution of the pull cord-related fatalities by the common modes of entanglement.

**Figure 4: Distribution of Pull Cord-Related Fatal Incidents
by Mode of Entanglement
2009-2020**



Source: CPSC databases CPSRMS and NEISS

Continuous Loop Cords: Staff identified continuous loop cords or beaded-chains that were not mounted with a tension device or that broke loose from a tension device at the time of the incident, to be the next major type of cord in which children become entangled. Vertical blinds and curtains/drapes are the predominant types of window covering associated with strangulations on continuous loops. Some of the incident reports mentioned the child's prior interest in wearing the beaded-chain as a necklace. Among the 89 fatalities, 23 reported this type of operating mechanism.

Inner Cords: Inner cords on horizontal blinds and/or Roman shades are the third major type of cord in which children become entangled. In these scenarios, the child pulled out the inner cord from between the slats of the horizontal blinds or from behind the Roman shades, which were in the lowered position. Subsequently, the child got caught in the loop created by the pulled-out portion of the inner cord. In some Roman shade incidents, children inserted their heads into the opening between the inner cord and the shade material. Seven of the 89 fatalities involved inner cords.

Other Cords: Among the less prevalent cord types, the lifting loop of a roll-up blind was involved in four fatalities. Children inserted their heads or arms into the lifting loop that came off the roll-up material resulting in the strangulation incidents. Tilt cords that are used to swivel the slats on a horizontal blind were involved in an additional two fatal incidents.

II. National Estimates

Estimates of Window Covering Cord-Related Strangulation Deaths Using NCHS Data

NCHS compiles all death certificates filed in the United States into multiple cause mortality data files. The mortality data files contain demographic information on the deceased, as well as codes to classify the underlying cause of death and up to 20 contributing conditions. NCHS compiles the data in accordance with the World Health Organization's instructions, which request member nations to classify causes of death by the current Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death. Death classifications use the tenth revision of the International Classification of Diseases (ICD), implemented in 1999. The latest year for which mortality data is available is 2019; as such, CPSC staff derived the strangulation fatality estimates for 2009-2019, which is a slightly different time frame than that used for the other databases.

Based on CPSC staff's review of the death certificates maintained in the CPSC database, staff identified three ICD10 codes that are likely to be used for classification of strangulation fatalities:

- W75 (*accidental suffocation and strangulation in bed*),
- W76 (*Other accidental hanging and strangulation*), and
- W83 (*Other specified threats to breathing*).

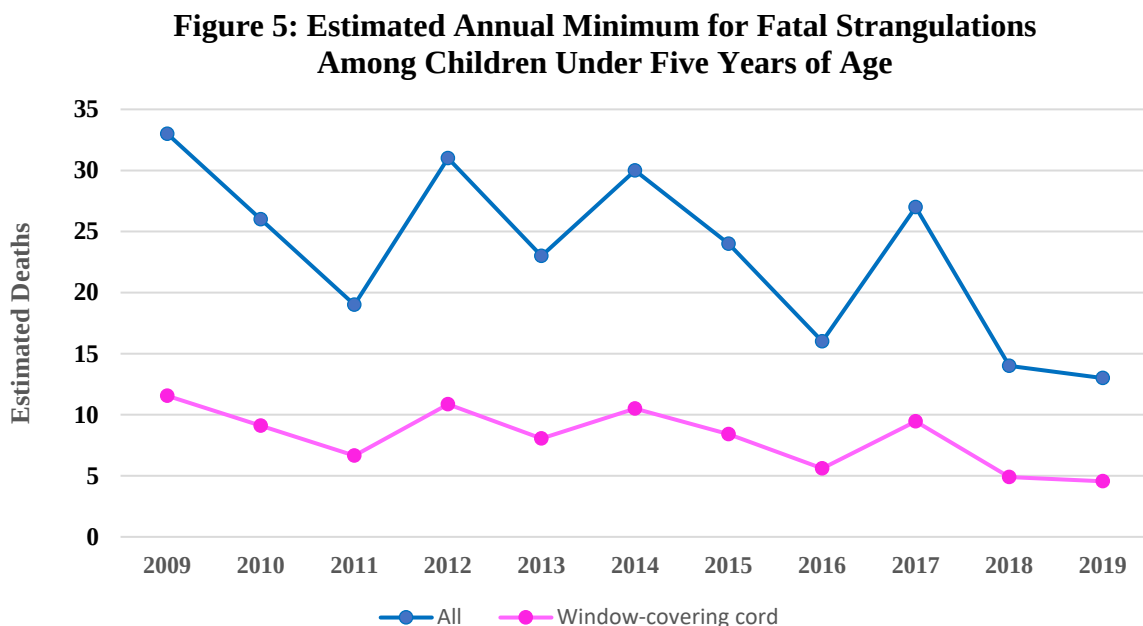
Among these three ICD10 codes, W76 appeared to be the most commonly used to classify strangulation deaths.

Using the ICD10 code value of W76, staff identified a total of 256 strangulation fatalities among children under age 5 in the multiple cause mortality data from NCHS from 2009 through 2019, which yields an annual average of 24 deaths (rounded up to the nearest integer). Two hundred and fifty-six strangulation fatalities are most likely an underestimate of all strangulation deaths, because CPSC staff did not use the other two ICD10 codes (W75 and W83) in the search of this data source. An unknown proportion of strangulation deaths are likely coded under ICD10=W75, as well as ICD10=W83, which cannot be distinguished from the non-strangulation deaths—because of the unavailability of any narrative description—in this data and added to the total. Hence, staff's annual average estimate of 24 strangulation deaths is a minimum.

A CPSC report by Marcy *et al.*,¹⁸ which reviewed CPSC databases in 2002, found that 35 percent of all strangulation fatalities among children less than 5 years old were associated with window covering cords. Assuming that this 35 percent proportion applies to the entire 2009

¹⁸ N. Marcy, G. Rutherford. "Strangulations Involving Children Under 5 Years Old." U.S. Consumer Product Safety Commission, December 2002.

through 2019 period, CPSC staff estimates that, on average, a minimum of 9 strangulation fatalities (35 percent of the unrounded average annual death estimate of 23.27) occur annually on window covering cords among children under 5 years of age. Again, the estimate is rounded up to an integer. Figure 5 presents the yearly details. Staff seeks comments on the estimated strangulations by window coverings.



Source: Multiple Cause of Death data, NCHS, 2009 – 2019.

Note: The estimates for the window covering cord fatalities are based on the assumptions that 35 percent of all strangulation fatalities are due to window covering cords and that this percentage remained unchanged over 2009-2019.

Estimates of Window Covering Cord-Related Strangulation Injuries Treated in Hospital Emergency Departments

Based on the emergency department-treated injury data (NEISS), the aggregated estimated injuries from 2009 through 2020, to children 8 years of age and younger, who were entangled on window covering cords, fall below the NEISS reportable threshold.¹⁹ The injury estimates for individual years are even smaller, which makes any trend analysis unfeasible. However, the 34 injury reports from NEISS are combined with the incident data for the analysis that follows. It is worth noting here that the upper limit for the age selection criterion was set at 8 years, whenever feasible, because of multiple incident reports received by CPSC staff that involved children up to that age.

¹⁹ 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% or smaller.

III. Summary

CPSC staff was unable to derive reportable estimates for strangulation or near-strangulation injuries involving window covering cords during the 2009 through 2020 time frame for the 8 years and younger age group. The estimates do not meet the NEISS reporting threshold. These injury reports were, instead, combined with the anecdotal reports received by CPSC in the incident analysis.

Based on CPSC's CPSRMS data (prior to 2011 the databases were DTHS, IPIL, and INDP), staff found that a total of 194 strangulation and near-strangulation incidents, involving children 8 years old and younger, were reported from 2009 through 2020. Nearly 46 percent were fatal incident reports, while the remaining were near-miss nonfatal incidents. Some of the reported nonfatal incidents involved severe injuries with long-term consequences, such as quadriplegia or permanent brain damage.

Stock window coverings accounted for 26 percent of all incidents and 22 percent of the fatal incidents. Custom window coverings accounted for 18 percent of all incidents and 16 percent of the fatal incidents. However, for the majority of the 194 incidents, staff was unable to distinguish whether the incidents involved a stock or custom product.

A review of the 194 incidents reveals that nearly 44 percent involved horizontal blinds; 25 percent of the incidents did not report the window covering type. Roman shades (12 percent), followed by vertical blinds (6 percent), ranked next. Among the fatal incidents, horizontal blinds accounted for 48 percent of deaths; and unknown types of window coverings accounted for 15 percent of the deaths. Vertical blinds (11 percent) and Roman shades (8 percent) ranked next.

Based on the reported scenarios, horizontal blinds predominantly involved pull cords. Vertical blinds predominantly involved continuous loop cord/beaded-chains, while Roman shades mostly involved the inner cord.

Among the 89 fatal incidents, irrespective of the window covering type, CPSC staff found that the largest proportion (at least 39 of the 89) of the deaths involved pull cord(s) as the operating mechanism, most frequently with tangled or knotted cord(s), followed by one or more long cords wrapped around the child's neck. Children getting caught in continuous looped cords or beaded-chains without a functional tension device also figured as a major fatal hazard, accounting for 23 of the 89 fatal strangulations.

Based on NCHS data and a CPSC study, staff estimates that a *minimum* average of nine fatal strangulations related to window covering cords occurred per year in the United States among children under 5 years old spanning the period from 2009 through 2019.

Appendix

CPSC Data Sources

NEISS: The National Electronic Injury Surveillance System. The injury data are collected from a stratified probability sample of about 100 hospitals nationwide, which are equipped with 24-hour emergency departments with more than six beds. The sample is stratified by the hospital size. Each record in the database includes the date of treatment of the injury, age of the injured, diagnosis for the injury, disposition of the injury, codes to identify the product involved, the sample incident weight, and a narrative describing the incident, among other information. NEISS data is used for calculating national estimates of injuries treated in emergency departments and can be used for trend determination, when feasible.

CPSRMS: Since 2011, the Consumer Product Safety Risk Management System serves as a database, which also integrates several workflow processes required for the collection, maintenance, exploration, and review of CPSC's epidemiological data. Its public-facing component is known as the SaferProducts.gov, through which consumers and business entities can submit or search consumer product-related complaints. It houses the data from the legacy databases DTHS, IPII, and INDP, as well as all fatality reports from NEISS.

DTHS: The Death Certificates file. This database contains death certificates that are bought by CPSC from all 50 states, as well as Washington D.C., New York City, and some territories. Following the system of International Classification of Diseases (ICD), the external cause of death is coded on each death certificate; the CPSC criteria for selecting the external codes to purchase depend on projects of interest. Moreover, there is usually a lag in time—a couple of years, on average—between the death occurrence and the receipt of the death certificate by CPSC. This database is neither a statistical sample, nor a complete census of all product-related deaths. Each record in the database includes the date of death, state/city of death, age of the decedent, ICD code for the death, codes to identify the product, a narrative describing the incident, as well as other information.

IPII: The Injury or Potential Injury Incident file. This database contains information from newspaper clippings, consumer complaints, medical examiners and coroners' reports, letters from law firms, manufacturer and retailer reports, and similar sources. Beside information such as the date of incident, age of person involved, state/city and disposition of incident, records in this database often include scenario-specific details, product-related details, such as manufacturer/model name, and date of purchase.

INDP: The In-Depth Investigation file. The reports in this database are follow-up in-depth investigations of incidents contained in the other three CPSC databases. In other words, IPII, DTHS, and NEISS reports are the source documents for INDP reports. These are mostly on-site or occasionally telephone investigations completed by CPSC Field investigators. These investigators often visit next-of-kin to obtain first-hand information, collect the product involved in the incident, and collect all official documents (from state, county, and/or local authorities) as supporting documents. This database contains, by far, the most complete information about incidents reported to CPSC. Each record in this database contains basic information on the incident, person, product, as well as a detailed report usually containing photographs of the incident scene and the product(s), and other official supporting documents.

Data Selection Criteria

- Date of occurrence: January 1, 2009 – December 31, 2020.
- Product codes involved: 0638 (*Window shades, venetian blinds or window shutters*), and 0617 (*Draperies, curtains or shower curtains (fabric or plastic)*).
- Age of child: 0-8 years. The upper limit for the age selection criterion was set at 8 years for the CPSC databases because of multiple incident reports received by staff that indicate involvement of children up to that age.
- Hazard: Strangulation or near-strangulation incidents.
- Excluded: Unless incidents occurred in a U.S. military base, all incidents that occurred outside the United States. Also, any reports of safety issues but no occurrence of strangulation or near-strangulation.
- In the analysis involving data from CPSC databases, multiple reports were often identified that pertained to the same incident. All of these reports were associated to prevent any double-counting.
- Any report of window covering cord involvement in a source document that was contradicted by follow-up investigation findings was excluded. Conversely, any investigation that reported involvement of a window covering cord, even though the source document did not, was included.

**TAB B: HEALTH SCIENCES ASSESSMENT OF FATAL AND NONFATAL
INCIDENTS ASSOCIATED WITH WINDOW COVERINGS NPR**



UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MARYLAND 20814

MEMORANDUM

Date: October 6, 2021

TO : Rana Balci-Sinha, Ph.D., CPE
Project Manager, Window Coverings Rulemaking
Director, Division of Human Factors
Directorate for Engineering Sciences

THROUGH: Mary Kelleher, Associate Executive Director
Directorate for Health Sciences

Stefanie Marques, Ph.D., Director
Division of Pharmacology and Physiology Assessment

FROM : Suad Wanna-Nakamura, Ph.D., Physiologist
Division of Pharmacology and Physiology Assessment

SUBJECT : Health Sciences Assessment of Fatal and Nonfatal Incidents Associated
with Window Coverings NPR

1. Introduction

On January 16, 2015, the U.S. Consumer Product Safety Commission published an advance notice of proposed rulemaking (ANPR), *80 Fed. Reg. 2,327*.²⁰ In support of two NPRs to address stock and custom window covering products and associated hazards, this memorandum provides information on deaths and injuries associated with window covering cords from 2009 through 2020 (EPHA Tab), and the risk and injury potential associated with a child becoming suspended or entangled in window covering cords.

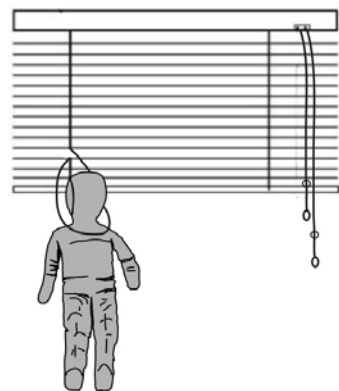
2. Background

Unintentional, self-strangulation of young children can result from entanglement with loose cords, ropes, wires, and other ligatures commonly found around the house, often in close proximity to sleep and play areas (Busuttil and Keeling, 2008, Wanna-Nakamura, 2014). A strangulation hazard exists whenever a window covering cord has a loop configuration. This can be either by design with a preexisting continuous loop, as in cords or chains of a vertical blind (Figure 1 D), lift cords (Figure 1 C), loops formed by a single tassel (Figure 2 A), or by deliberately tying loose ends of a cord (Figure 2 B, 2 C). Loops can also be created by entanglement of multiple cords with tassels fastened to the end of each single cord (Figure 2 D),

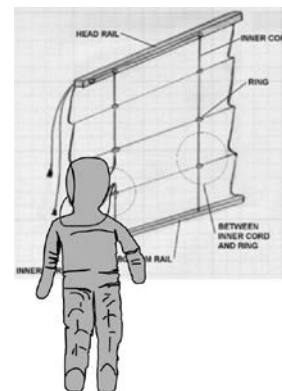
²⁰ https://www.cpsc.gov/s3fs-public/pdfs/blk_pdf_PetitionRequestingMandatoryStandardforCordedWindowCoverings.pdf

or with a breakaway device that fails to release when downward pressure force is applied. Strangulation can also happen when an individual, free-hanging operating cord, shown in (Figure 1 A, B, and C), becomes wrapped around the victim's neck.

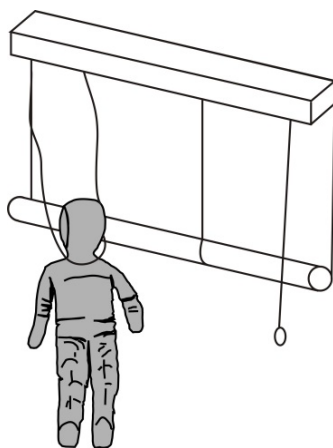
Children have strangled by inserting their heads into preexisting loops, or by wrapping a cord around their neck. Strangulation can occur when children are able to access window cords for example, by climbing on furniture or other items placed below or near a window, or by standing on the floor or standing, kneeling, or sitting in a crib next to a long, dangling operating cord. Fourteen reported incidents involved a child climbing onto furniture, such as a couch, chair, or other product placed close to the window, and four incidents involving access from an elevated surface, such as a crib or bed situated in close proximity to a window. The risk of strangulation is greatly increased when the child becomes entangled, trips, or loses their footing, or while swinging or jumping. It is not necessary for the ligature to encircle the neck completely for hanging to occur (Polson, 1973).



(A)



(B)



(C)



(D)

Figure 1. Examples of window covering types showing free standing-operating pull-cord types (A, B, and C). Loop formation, made by pulling on the inner pull cord of a horizontal blind window covering type (A), or a Roman shade type (B), and by design in vertical blinds with continuous-loop, operating system-type window covering (D).

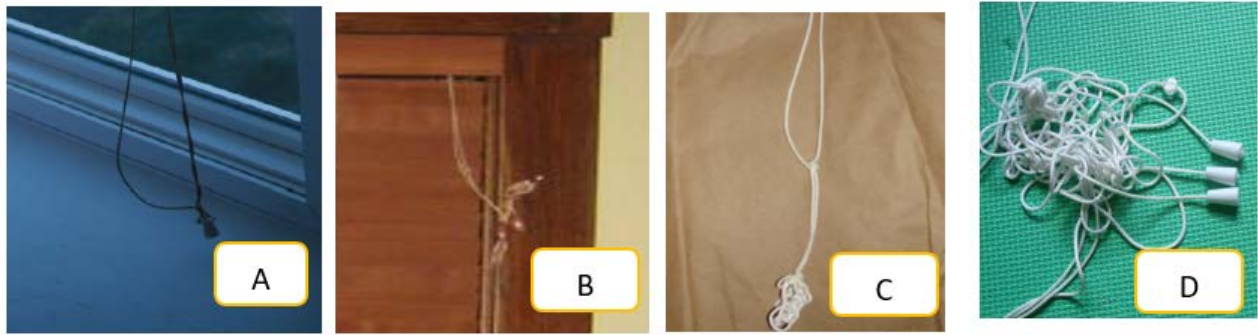


Figure 2. Images from actual CPSC incident data showing loops formed by a single tassel in an operating pull cord (A), intentional knotting (B and C), and cord entanglement (D)

3. Pathophysiology of Strangulation

Strangulation can occur when a child's head or neck becomes entangled in any position, even in situations where the body is fully or partially supported. Strangulation due to mechanical compression of the neck is a complex process resulting from multiple mechanisms and pathways that can involve obstruction of the airway passage and occlusion of blood vessels in the neck. Strangulation can lead to serious injuries with permanent debilitating outcomes or death. Strangulation is a form of asphyxia that can be partial (hypoxia), when there is an inadequate oxygen supply to the lungs, or total (anoxia), when there is total impairment of oxygen transport to tissues. The latter can be accompanied by carbon dioxide retention. A reduction in the delivery of oxygen to tissues can result in permanent irreversible damage. Brain tissue is particularly sensitive, and often, it is the most affected organ in strangulation incidents. (Feldman and Simms, 1980; DiMaio and DiMaio, 2001; Spitz, 2006; Oehmichen et al., 2005; Saukko and Knight, 2004; Gordon and, Shapiro, 1982; McNie, 1980; and Adams et al., 2006). Two blood vessels transport blood to and from the brain. The carotid artery carries oxygenated blood to the brain, and the jugular vein returns the deoxygenated blood back to the lungs via the heart. Both blood vessels pass through the soft tissue on each side of the neck and are vulnerable to compression. Experimental studies have shown that blood flow can be occluded in the jugular vein with only 2 kg (4.4 lbs.) of pressure on the neck (Brouardel, 1897) and with 3-5 kg (7-11 lbs.) in the carotid artery (Brouardel, 1897 and Polson, 1973). Minimal compression of either vessel can lead to unconsciousness within 15 seconds, and death it can lead to death in 2 to 3 minutes, (Digeronimo and Mayes, 1994; Hoff, 1978; Iserson, 1984; Polson, 1973). A pressure of 15kg (33 lbs.) is required to occlude the trachea, leading to airway obstruction. (Brouardel, 1897).

Sustained pressure on the neck can proceed along one or more of these pathways leading to strangulation, which can rapidly progress to anoxia, associated cardiac and respiratory arrest, and death. The prognosis for hypoxic victims due to strangulation is dependent primarily on the extent of oxygen deprivation, the duration of unconsciousness, and the speed of resuscitation. Rapid reversal of the hypoxic state is essential to prevent or limit the development of pulmonary and cerebral edema that can lead to death. Thus, victims who are oxygen deprived for a short duration or quickly receive cardiopulmonary resuscitation to reestablish cerebral blood flow have

the most favorable prognosis and recovery.

In addition to the above pathways, the vagus nerve is located in the neck in close proximity to the jugular vein and carotid artery and is responsible for maintaining a constant heart rate. Compression of the vagus nerve can result in cardiac arrest due to mechanical stimulation of the carotid sinus-vagal reflex. Furthermore, the functioning of the carotid sinuses can be affected by compression of the blood vessels. The carotid sinuses are involved in the control and maintenance of various physiological homeostatic mechanisms in the body. They are baroreceptors that monitor heart activity and can adjust blood pressure and heart rate. While they respond primarily to intravascular pressure acting on vessel walls due to normal physiological conditions, they can also be activated by longitudinal forces, such as compression that may stretch and deform the blood vessel walls (Feldman and Simms, 1980; Hoff, 1978; Gresham, 1993; Iserson 1984; Shepherd, 1990). Thus, stimulation of the sinuses can result in a decrease in heart rate, myocardial contractility, cardiac output, and systemic arterial pressure, even in the absence of airway blockage.

In cases of near-hanging, children found alive and resuscitated immediately before the full onset of anoxia have a good chance of full recovery (Digeronimo and Mayes, 1994; Feldman and Simms, 1980; Iserson 1984). The sooner the compression forces are removed and resuscitation initiated, the greater the likelihood that the child will regain consciousness and recover from their injuries. However, even victims who are revived after oxygen deprivation for periods of less than 4 minutes can still suffer a wide range of serious consequences. Brain hypoxia can cause unconsciousness in less than 3 minutes and result in permanent brain damage or death. Victims who are not resuscitated within a few minutes, or who respond poorly to such efforts rarely have a favorable outcome (Digeronimo and Mayes, 1994; Feldman and Simms, 1980; Hoff, 1978). The length of oxygen deprivation ultimately governs the victim's chance for survival or the severity of neurological damage. As seen in the CPSC data (Wanna-Nakamura, 2014) and in the published literature, neurological damage may range from amnesia to long-term vegetative state. Continued deterioration of the nervous system can lead to death (Howell and Gully, 1996; Medalia et al., 1991). Preexisting health conditions at the time of the incident can also be a factor (Robert, et al., 1996).

4. Health Sciences (HS) Review of Fatalities and Injuries and Discussion of Hazard Patterns

HS staff reviewed the incident reports for the 194 cases identified by EPHA staff (Tab A) as fatal strangulations and near-hanging²¹ in children aged eight years and under. The search covered an 11-year period from January 1, 2009 through December 31, 2020 of cases reported to CPSC from newspaper clippings, consumer complaints, death certificates purchased from states, medical examiners' reports, hospital emergency department-treated injury reports, and in-depth investigation reports. The victims ranged in age from 11 months to 7 years old.

Of the 194 reported incidents, 89 had fatal outcome (46 percent). In 35 of the 89 fatal incidents

²¹ Refers to patients who survive a hanging injury long enough to reach a hospital.

the victims were transferred to a hospital where lifesaving efforts to save the child continued. Twenty-four were pronounced dead on arrival or within a day after admission. Continued effort to save the life of the remaining 11 failed, even after hospitalization that spanned a period of up to 17 days.

Among the nonfatal incidents, 75 victims required medical treatment but no hospitalization. Red or purple ligature marks were often visible around the neck (Figure 2 A and B), and at times extending behind the ears. In some instances, the ligature marks were consistent with the type and size of cord or a tassel at point of contact (Figure 3 C). Fourteen victims survived without injury because an adult heard a sound and intervened, or another sibling, who was present in the same room with the victim at the time of the incident, alerted the caretaker, or the victim was able to free themselves and walk away from the entanglement. All these nonfatal incidents could have had a more serious, and even fatal outcome, if the child had not been released from the cord.



Figure 3. Illustrated in these images are ligature marks on victim's neck (A, B, and C). Orange arrow pointing to a deep furrow at point of contact with tassel (C).

Sixteen incidents involved hospitalizations, and six of the hospitalized victims who survived a severe hypoxic-ischemic episode or were pulseless and in full cardiac arrest when found, suffered severe neurological sequelae, ranging from loss of memory to a long-term or permanent vegetative state requiring tracheotomy and gastrointestinal tube feeding. Other outcomes include: coma; paralysis or problems controlling movement; sensory disturbances including pain; problems using or understanding language; seizures; cognitive and memory deficits; neuropsychological problems; and emotional disturbances. One child required 10-day treatment in the pediatric intensive care unit.

One victim who remained hospitalized for 72 days was released from the hospital with permanent 75 percent brain damage and is confined to a bed. She has limited frontal lobe and brain stem function. She has a tracheotomy and a gastrointestinal tube, which are both permanent. She requires tube feeding and cannot voluntarily move or speak. Her physical movements are mainly involuntary muscle reflexes. She is under constant medical care with an on-site nurse for 16 hours a day. Staff does not have data on the current health condition of this child, or other injured children.

4.2 Hazard

Two types of head/neck entanglement are associated with window coverings operational systems that may lead to strangulation:

- 1) head insertion into preexisting loop, whether by design, or via a loop formed by a tangled or knotted cord, Figure 2; and
- 2) a free-standing cord, which can be wrapped around the neck.

Regardless of product type, where reported, the operating pull cord contributed to 39 of the 89 fatal incidents, (44 percent), including the pull cord wrapped around the neck in 11 fatalities. The second most common type of hazard was head insertion into continuous loops (commonly found by design in vertical blinds and shade), resulting in 23 fatalities or loops formed by knotted or entangled operating pull cords resulting in another 23 of the 89 (26 percent) fatalities (Figure 1 D); followed by inner cords, accounting for 7 of the 89 fatalities (8 percent) typically found in Roman shades (Figure 2 A).

Because a preexisting loop acts as a noose when a child's neck is inserted, and because death can occur within minutes of a child losing footing, while a child who wraps the window cord around their neck may be able to disentangle from the cord and escape injury or may be exposed to forces/pressure insufficient to lead to asphyxiation, Health Sciences staff concludes head insertion into a preexisting loop poses a higher risk of injury than when a cord is wrapped around a child's neck. Nevertheless, both have been demonstrated to be extremely hazardous. Staff's conclusion is consistent with CPSC injury and death data, which show that almost half of the deaths that have occurred on window cords were associated with horizontal blinds (43 of 89) that have these loops (Wanna-Nakamura, 2014)

5. Conclusion

Based on HS staff review and analysis of available records of the incident data, HS staff concludes that window coverings products with free-hanging operating cords or loops present a potential strangulation hazard to infants and toddlers if they insert their head and become caught in the loop opening or become ensnared around the neck by the cord. As seen in the incident data reported to CPSC and from the medical literature, external compression of the neck by ligature can lead to severe anoxia/ischemic brain injuries that can result in severe neurological disorders, as well as death.

Victims who survive prolonged anoxic episodes generally require a multidisciplinary rehabilitation that may include one or all of the following: speech therapy, physical therapy, and adaptive equipment training, and victims may also require help with their daily activities. Caregivers, who are often family members, require special training programs designed to help the patient return a certain level of function. Parents work with nurses and physical therapists to develop learning skills essential for the day-to-day management of their child. Some children may need prolonged specialized care outside the home, in assisted living settings with the level of care dependent on the severity of injury. In addition to the physical demands, families of victims are also affected financially and emotionally.

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TAB C: SUMMARY OF RECALLS – JANUARY 2009 THROUGH DECEMBER 2020



UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MARYLAND 20814

MEMORANDUM

DATE: October 6, 2021

TO : Rana Balci-Sinha
Project Manager, Window Coverings Rulemaking
Director, Division of Human Factors, Directorate for Engineering Sciences

THROUGH: Robert Kaye, Director, Office of Compliance and Field Operations
Mary B. Murphy, Director, Division of Enforcement and Litigation
Howard Tarnoff, Deputy Director, Division of Enforcement and Litigation

FROM : Christopher Nguyen, Compliance Officer, Division of Enforcement and Litigation

SUBJECT : Window Covering Cords: Summary of Recalls – January 2009 through December 2020

This memorandum provides a summary of recalls involving window covering cords and cord devices from a review conducted by the Office of Compliance and Field Operations.

Summary of Recalls Involving Window Covering Cords and Cord Devices

Compliance staff reviewed recalls associated with window covering cords and cord devices from January 1, 2009 to December 31, 2020. During that period, CPSC conducted 42 consumer-level recalls, including two reannouncements. Manufacturers recalled more than 28 million units,²² including: Roman shades and blinds, roll-up blinds, roller shades, cellular shades, horizontal blinds, and vertical blinds. The recalled products also included stock products, which can be purchased by consumers off-the-shelf, and custom products, which are made-to-order window coverings based on a consumer's specifications, such as material, size, and color.

Strangulation is the primary hazard in each of these recalls. The way in which the strangulation risk can manifest depends on the types of cords used on the recalled window coverings. Strangulations can occur when a child places his or her neck between an exposed inner cord and the fabric on the backside of the window covering, or when a child pulls the cord out and wraps it around their neck. Lifting loops can slide off the side of a window covering and a child's neck can become entangled on the free-standing loop that is created. For products with continuous looped cords and bead chains, a child can become entangled in the free-standing loop if it is not attached to the wall or floor with a tension device.

Table 1 presents the 42 recalls conducted between January 1, 2009 and December 31, 2020, and notes: the recall date, the firm involved, the product types, the types of cords/cord

²² This estimate does not include the recalled units of Recall No. 10-073. This was an industry-wide recall conducted by members of the Window Covering Safety Council (WCSC). An exact number of recalled products was not stated in the recall announcement.

devices that create the strangulation hazard, the approximate number of recalled units, the number of reported incidents and deaths, and the recall number.

TABLE 1 – Recalls Involving Window Covering Cords and Cord Devices
From January 1, 2009 to December 31, 2020

Recall Date	Firm	Product	Types of Cords/ Cord Devices	Number of Recalled Units	Number of Reported Incidents	Number of Reported Deaths	Recall Number
1/13/2009	Cost Plus, Inc.	Roll-up Blinds and Roman Shades	Inner cords Lifting cord loops Looped pull cords	692,400	0	0	09-090
8/26/2009	IKEA Home Furnishings	Roman Blinds	Continuous looped bead chains Inner cords	120,000	1 - near-strangulation	0	09-325
8/26/2009	Lewis Hyman Inc.	Roll-up Blinds and Roman Shades	Inner cords Lifting cord loops	4.2 mill (Roll-up Blinds) 600,000 (Roman Shades)	0	2	09-324
8/26/2009	Lutron Electronics Co. Inc.	Roller Shades	Continuous looped bead chain	245,000	0	0	09-328
8/26/2009	Vertical Land Inc.	Horizontal and Vertical Blinds Cellular Shades	Continuous looped bead chain Inner cords Looped pull cords	15,400 (Horizontal) 16,400 (Vertical) 800 (Cellular)	0	1	09-329

Recall Date	Firm	Product	Types of Cords/ Cord Devices	Number of Recalled Units	Number of Reported Incidents	Number of Reported Deaths	Recall Number
8/26/2009	Victoria Classics	Roman Shades	Inner cords Operating pull cords	163,000	0	0	09-327
10/27/2009	Hanover Direct Inc.	Roman Shades	Inner cords	90,000	1 - near strangulation	0	10-023
10/27/2009	IKEA Home Furnishings	Roller Blinds	Continuous looped bead chain	533,000	0	0	10-022
10/27/2009	Louis Hornick & Co., Inc.	Roman Shades	Inner cords	364,000	2 - near strangulations	0	10-025
12/15/2009	Airtex Design Group Inc.	Roman Shades	Inner cords	2,000	0	0	10-710
12/15/2009	All Strong Industry (USA) Inc.	Roman Shades	Inner cords	290,000	0	1	10-068
12/15/2009	Draper Inc.	Roman Shades	Continuous looped bead chain Inner cords Operating pull cords	1,800	0	0	10-074
12/15/2009	International Merchandise	Roll-up Shades	Lifting cord loops Looped pull cords	355,000	0	0	10-070
12/15/2009	J.C. Penney Purchasing Corp.	Roll-up Blinds and Roman Shades	Inner cords Lifting cord loops	2.2 million	2 - near-strangulations	0	10-066

Recall Date	Firm	Product	Types of Cords/ Cord Devices	Number of Recalled Units	Number of Reported Incidents	Number of Reported Deaths	Recall Number
12/15/2009	Lotus & Windowware Inc.	Roll-up Blinds	Lifting cord loops	250,000	0	0	10-069
12/15/2009	Louis Hornick & Co. Inc.	Roman Shades	Inner cords	6,300	2 – near-strangulations	0	10-075 ²³
12/15/2009	Pottery Barn, Pottery Barn Kids, and PBteen	Roman Shades and Roller Shades	Inner cords Looped pull cords	305,000 (Roman Shades) 45,000 (Roller Shades)	1 - near-strangulation	0	10-071
12/15/2009	West Elm	Roman Shades	Inner cords	42,000	0	0	10-072
12/15/2009	Window Covering Safety Council (WCSC)	Roll-up Blinds and Roman Shades	Inner cords Lifting cord loops	All Roman Shades and Roll-up Blinds ²⁴	16 - near-strangulations with Roman Shades	5 - Roman Shades 3 - Roll-up Blinds	10-073
12/15/2009	Walmart Stores Inc.	Roll-up Blinds and Roman Shades	Inner cords Lifting cord loops	1.1 million	0	0	10-067
12/17/2009	American Vintage Group LLC	Horizontal Blinds	Operating pull cords	1,100	0	0	10-711
12/17/2009	Airtex Design Group Inc.	Roman Shades	Inner cords	4,600	0	0	10-712
3/2/2010	Lutron Electronics Co. Inc.	Roman Shades	Continuous looped bead chain Inner cords	5,000	0	0	10-149

²³ This recall was a reannouncement of Recall No. 10-025, which was originally announced on October 27, 2009.

²⁴ This recall was an industry-wide recall conducted by members of the Window Covering Safety Council (WCSC). An exact number of recalled products was not stated in the recall announcement.

Recall Date	Firm	Product	Types of Cords/ Cord Devices	Number of Recalled Units	Number of Reported Incidents	Number of Reported Deaths	Recall Number
3/2/2010	Meijer	Roll-up Blinds and Roman Shades	Inner cords Lifting cord loops	240,000	0	0	10-150
3/4/2010	Ethan Allen Global Inc.	Roman Shades	Inner cords	163,000	0	0	10-156
5/4/2010	Blair LLC	Roman Shades	Inner cords	5,600	0	0	10-217
6/10/2010	IKEA Home Furnishings	Roll-up Blinds, Roller Blinds, and Roman Blinds	Continuous looped bead chain Inner cords Lifting cord loops	3,360,000	2 - near-strangulations	1	10-261
6/15/2010	Chicology	Roll-up Blinds	Lifting cord loops	6,200	0	0	10-263
7/22/2010	Smith+Noble	Roller Shades and Roman Shades	Continuous looped bead chain/cords Inner cords	1.3 million	1 - near-strangulation	0	10-307
9/9/2010	Jo-Ann Fabric and Craft Stores	Roll-up Blinds	Lifting cord loops	1,800	0	0	10-340
10/7/2010	Green Mountain Vista, Inc.	Roman Shades	Inner cords	200,000	0	0	11-007

Recall Date	Firm	Product	Types of Cords/ Cord Devices	Number of Recalled Units	Number of Reported Incidents	Number of Reported Deaths	Recall Number
11/10/2010	Hanover Direct Inc.	Roll-up Blinds, Roller Blinds, and Roman Shades	Continuous looped bead chain/cords Inner cords Lifting cord loops	28,500 (Roll-up and Roller Blinds) 495,000 (Roman Shades)	1 - near-strangulation	1	11-036
12/1/2010	Lowe's Home Centers, Inc.	Roll-up Blinds and Roman Shades	Inner cords Lifting cord loops	5 million (Roll-up Blinds) 6 million (Roman Shades)	2 - near-strangulations	0	11-054
6/30/2011	The Shade Store	Roman Shades	Inner cords	45,000	0	0	11-747
6/30/2011	Wm. Wright Co.	Roman Shade Kits	Inner cords	48,000	0	0	11-264
10/19/2011	Meijer	Roll-up Blinds and Roman Shades	Inner cords Lifting cord loops	3,200	0	0	12-012 ²⁵
11/21/2012	Hunter Douglas	Top-Down Bottom-Up Honeycomb Shades and Pleated Shades	Breakaway cords	4,400	0	0	13-707

²⁵ This recall was a reannouncement of Recall No. 10-150, which was originally announced on March 2, 2010.

Recall Date	Firm	Product	Types of Cords/ Cord Devices	Number of Recalled Units	Number of Reported Incidents	Number of Reported Deaths	Recall Number
3/31/2015	Blinds To Go	Cellular Shades, Pleated Shades, and Roller Shades	Continuous looped bead chain/cords	200,000	0	0	15-106
11/3/2015	Carra Imports LLC	Cellular Shades, Soft Horizontal Shades, Roller Shades, and Roman Shades	Continuous looped bead chain/cords Inner cords	55,000	0	0	16-705
11/24/2015	Lutron Electronics Co. Inc.	Roman Shades	Hobble tape	240	0	0	16-042
2/1/2018	Hunter Douglas	Sheer Blinds	Cord restraints	550	11 - reports of broken or cracked cord restraints	0	18-720
7/11/2019	Levolor Inc.	Cellular Shades	Operating pull cords with non-breakaway cord connector	30,000	0	0	19-761

**TAB D: READILY OBSERVABLE SAFETY CHARACTERISTICS OF STOCK AND
CUSTOM WINDOW COVERINGS**



**UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MARYLAND 20814**

Memorandum

Date: October 6, 2021

TO: Rana Balci-Sinha, Project Manager
Division of Human Factors, Directorate for Engineering Sciences

THROUGH: Mark Kumagai, P.E., Associate Executive Director,
Directorate for Engineering Sciences

Caroleene Paul, Director,
Division of Mechanical Engineering

FROM: Kevin Lee, Mechanical Engineer
Division of Mechanical Engineering, Directorate for Engineering Sciences

SUBJECT: Readily Observable Safety Characteristics of Stock and Custom Window Coverings

I. Introduction

The current voluntary standard for window coverings, which is intended to prevent children from strangulation on window covering cords, is ANSI/WCMA A100.1 – 2018, Standard for Safety of Window Covering Products (ANSI/WCMA). As discussed in Tabs G and I, the operating cord requirements that apply to stock products in the ANSI/WCMA standard are adequate to address the risk of death and injury associated with strangulation. Also, the inner cord requirements that apply to both stock and custom products in the ANSI/WCMA standard are adequate to address the risk of death and injury associated with strangulation. Accordingly, the ANSI/WCMA voluntary standard currently provides guidance when CPSC staff evaluates operating cords on stock window coverings and inner cords on stock and custom window coverings for safety defects that might present risks of strangulation. In this memorandum, staff describes the two readily observable safety characteristics of stock window coverings and one readily observable safety characteristic of custom window coverings, identifies the pertinent sections of the ANSI/WCMA standard that define these requirements, and recommends that the Commission find that stock and custom window coverings that do not meet the identified readily observable characteristics in the voluntary standard present a substantial product hazard (SPH).

Staff's draft notice of proposed rulemaking under section 15(j) of the Consumer Product Safety Act (CPSA) (15(j) NPR) uses the phrases "stock window coverings" and "custom window coverings" to specify the window covering products that are within the scope of the draft 15(j) NPR. Staff recommends defining "stock window coverings" and "custom window coverings," for the purposes of the draft 15(j) NPR, consistent with the definitions of these products falling within the scope of ANSI/WCMA standard under the definition of "Stock Blinds, Shades, and Shadings."

A “stock window covering,” as defined by ANSI/WCMA, is a completely or substantially fabricated product prior to being distributed in commerce and is a stock-keeping unit (SKU). Even when the seller, manufacturer, or distributor modifies a pre-assembled product by adjusting to size, attaching the top rail or bottom rail, or tying cords to secure the bottom rail, the product is still considered stock. Online sales of the product, or the size of the order, such as multifamily housing, does not make the product a non-stock product. These examples are provided in the standard to clarify that as long as the product is “substantially fabricated,” subsequent changes to the product do not change its categorization. The standard defines “custom window coverings” as any window covering that is not identified as a stock window covering.

Operating cords on custom window coverings that are not within the scope of the rule (custom blinds, shades, and shadings) are the subject of a different, concurrent, draft notice of proposed rulemaking under sections 7 and 9 of the CPSA (7/9 NPR).

II. Readily Observable Safety Characteristics of Stock and Custom Window Coverings

Cords on both stock and custom window covering products present a strangulation risk to young children, as discussed in Tabs G and I. To prevent child strangulation, the ANSI/WCMA A100.1 standard requires one of the following for operating and tilt cords on stock window coverings: (1) not present, (2) inaccessible, or (3) a length of eight inches or shorter in any position. The standard also requires that accessible inner cords and non-rigid inner cord shrouds not allow an opening larger than a child’s head size for both stock and custom products. As described in more detail below, staff should be able to quickly and easily observe whether a window covering product is stock or custom based on a required product label. Staff can also quickly and easily observe whether a stock product complies with the operating cord requirements, by visually inspecting whether product has an operating cord. If a stock product does not have an operating cord, the product complies with the standard. If the stock product has an accessible operating cord, it must be eight inches or shorter in any position to comply, which staff can easily observe with a tape measure. Finally, staff can easily visually observe whether a stock or custom product has inner cords. If a product has inner cords, staff will assess compliance with the voluntary standard. CPSC staff states that observing inner cord characteristics on stock and custom window coverings are readily observable by taking simple measurements using the following tools:

- a. *Cord Accessibility Probe* (Figure 1) – Used to determining whether an operating cord, inner cord, or inner cord shroud is accessible to a child. The probe is an inexpensive measuring device designed to simulate a child’s hands and fingers, by considering children’s anthropometric dimensions, for details and references, see ESHF memo (Tab I). Staff estimates that the cost to manufacture the probe ranges from \$50 to 3D print the part from plastic to \$200 to machine the part from aluminum rod. Manufacturers of window coverings should already have this device.
- b. *Shroud Accessibility Probe* (Figure 2) – Used to determine whether inner cords in a cord shroud with openings smaller than ¼” are accessible to a child. This probe is designed to simulate the finger size of a young child, see ESHF memo (Tab I) for references. Like the

cord accessibility probe, the shroud accessibility probe is inexpensive measuring device that can be purchased for less than \$5.



Figure 1. Cord Accessibility Probe

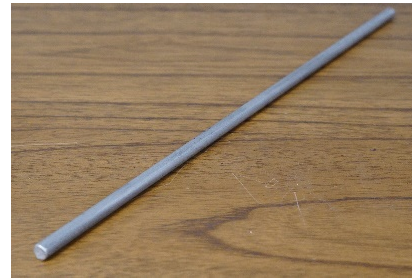


Figure 2. Cord Shroud Accessibility Probe

- c. *Head Probe* (Figure 3a) – Used to determine whether a child’s head could pass through the loop created by inner cords and non-rigid cord shrouds. The head probe simulates the head size of a fifth percentile 7-9-month-old child, see ESHF memo (Tab I) for more details. However, as described in this memo, a tape measure can also be used to measure the perimeter of the opening (Figure 3b.) The head probe is another inexpensive measuring device that can be made using readily available materials or 3D printed for approximately \$50). Manufacturers should already have the probe, or they can use a tape measure to assess an inner cord.



Figure 3. (a) Head Probe, (b) Tape measure

- d. *Force gauge* (Figure 4) – Used to pull on the subject cord to determine whether a hazardous loop can be created. A force gauge measures the force at which a cord is pulled to simulate the force a child could exert on the cord. This measuring device is widely available at various online retailers around \$50-100, depending on product features.



Figure 4. Force gauge

Staff lists below the readily observable safety characteristics of window covering cords. Port inspectors and field investigators can observe the presence, length, or accessibility of operating cords and the accessibility of inner cords within a couple of minutes. When required, staff can observe whether an inner cord opening is large enough to accommodate a child’s head size within a few minutes. Finally, staff can observe whether the manufacturer label is on the product in less than a minute.

<i>Stock Window Coverings</i>	<i>Readily Observable Characteristics</i>	<i>Criterion</i>
A. Operating cord		
4.3.1.1 Cordless Operating System “The product shall have no operating cords”	Presence of the operating cord	(d) Not present or
4.3.1.2 Short Static or Access Cords “The product shall have a Short Cord”	If present, measure the length in any position of the window covering	(e) 8 inches or shorter or
4.3.1.3 Inaccessible Operating Cords	If present, observe whether accessible	(f) Inaccessible using cord accessibility probe

<i>“The operating cords shall be inaccessible as determined per the test requirements in Appendix C: Test Procedure for Accessible Cords”</i>		
Stock and Custom Window Coverings	Readily Observable Characteristics	Criterion
B. Inner cord		
4.5 Inner Cords <i>“All products with inner cords must meet the requirements in Appendix C and Appendix D.”</i> <i>Appendix C. Test Procedure for Accessible Cords</i>	If present, determine whether accessible	(c) Inaccessible using cord accessibility probe or
<i>Appendix D. Hazardous Loop Test Procedure</i>	If present, determine whether a child’s head can penetrate the opening	(d) Pull inner cord and measure to determine whether the opening is less than 17 inches. For 15(j) purposes, this is comparable to inserting a head probe with a force of 10 pounds.
C. Manufacturer label		
5.3 Manufacturer Label: There shall be a permanent label(s) or marking on all finished window covering products	Presence of a permanent label or marking within or on the headrail or on the roller tube	Observe whether the label is present and contains the following: (d) The name, city, and state of the manufacturer / importer / fabricator (e) Month and year of manufacture (f) Designation of window covering as “Custom” or “Stock”

A. Readily Observable Characteristics of an Operating Cord

1) Is there an operating cord?

The presence of an operating cord (i.e., the portion of a cord that the user interacts with during operation) is observable with a visual check. See Figures 5 and 6 comparing two window coverings, one containing cords, the other without operating cords. Figure 5 demonstrates the operating cords that are accessible using a cord accessibility probe, although the presence of cords is easily observable with visual confirmation. For a window covering with accessible operating cords as shown in Figure 5, a CPSC investigator would proceed to the next step to determine whether the length of the operating cord is hazardous. The blind without operating cords (Figure 6) is compliant with the operating cord requirement, and staff would now proceed to assess compliance of the inner cord accessibility.



Figure 5. Corded Horizontal Blinds



Figure 6. Cordless Horizontal Blind

2) Is the cord longer than 8 inches in any position of the window covering?

An operating cord with a length exceeding eight inches is observable by measuring the length of the operating cord in any position of the window covering. To observe the operating cord length, the investigator must first keep the product stationary by having another person to hold it, hanging it up on a fixed surface, or placing the window covering on the floor. The investigator can then measure the length of the operating cord with a tape measure or ruler. Figure 7 demonstrates fully lowered, mid-length, or fully raised positions of the window covering where the investigator can take a measurement. If the operating cord is longer than 8 inches in any position, the blind does not meet the cord length requirement in ANSI/WCMA A100.1. Pursuant to the draft 15(j) NPR, the product would be deemed to have a substantial product hazard (SPH). No further inspection is necessary.

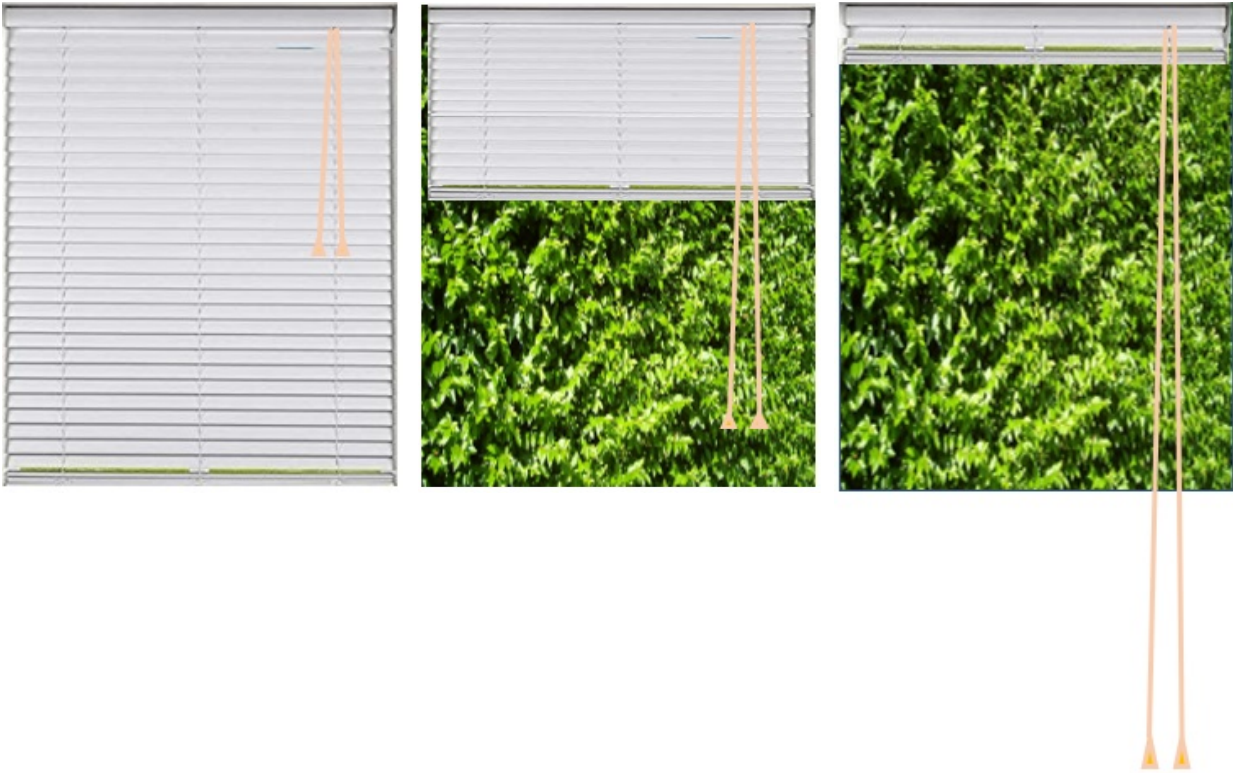


Figure 7. One product showing the length of the operating cord in three positions: fully lowered, middle height, fully raised

3) Is the enclosed cord accessible?

Whether a child has access to an operating cord that is enclosed within a rigid shroud is observable by checking whether the cord accessibility probe can touch the operating cord. The investigator would attempt to contact the operating cord using the cord accessibility probe (Figure 8). In the example, the cord shroud accessibility probe cannot touch the cord. The investigator would proceed to the next step to observe accessibility of the inner cord to a child. Staff is not aware of a stock product containing a rigid cord shroud, so this step is unlikely for stock window coverings. The example shown in Figure 8 is a custom product sold overseas.



Figure 8. Product with a rigid cord shroud that encapsulates the cord. The cord shroud accessibility probe cannot touch the shrouded cord.

B. Readily Observable Characteristics of an Inner Cord

If the window covering passes the operating cord requirements in ANSI/WCMA A100.1 by complying with one of the paths identified above, the investigator would then observe accessibility of the inner cords, if present on the product.

1) Is there an inner cord?

The presence of an inner cord (i.e., the portion of a cord connect head rail and bottom rail) is observable with a visual check. A window covering without inner cords such as a roller shade is compliant with the inner cord requirement, and no further inspection is necessary on the cords.

2) Is the inner cord accessible?

Accessibility to an inner cord of an open construction window covering type, such as horizontal, Roman, and pleated shades, is observable by checking whether the cord accessibility probe can touch the cords located 12" below the headrail before reaching a 2" diameter section or by inserting a 2" diameter section to any opening. Figure 9 shows how to observe whether an inner cord is accessible on a horizontal blind. Because the inner cord on this sample is accessible, the investigator would next to proceed determine whether a hazardous opening can be created by the inner cord, by pulling on the inner cords.



Figure 9. Accessibility to inner cord in an open construction (horizontal)

Figure 10 depicts an example of a Roman shade. Although this shade has no operating cords, the backside of the shade contains two inner cords that run through the rear side of the shade. The inner cords are routed through inner cord shrouds.

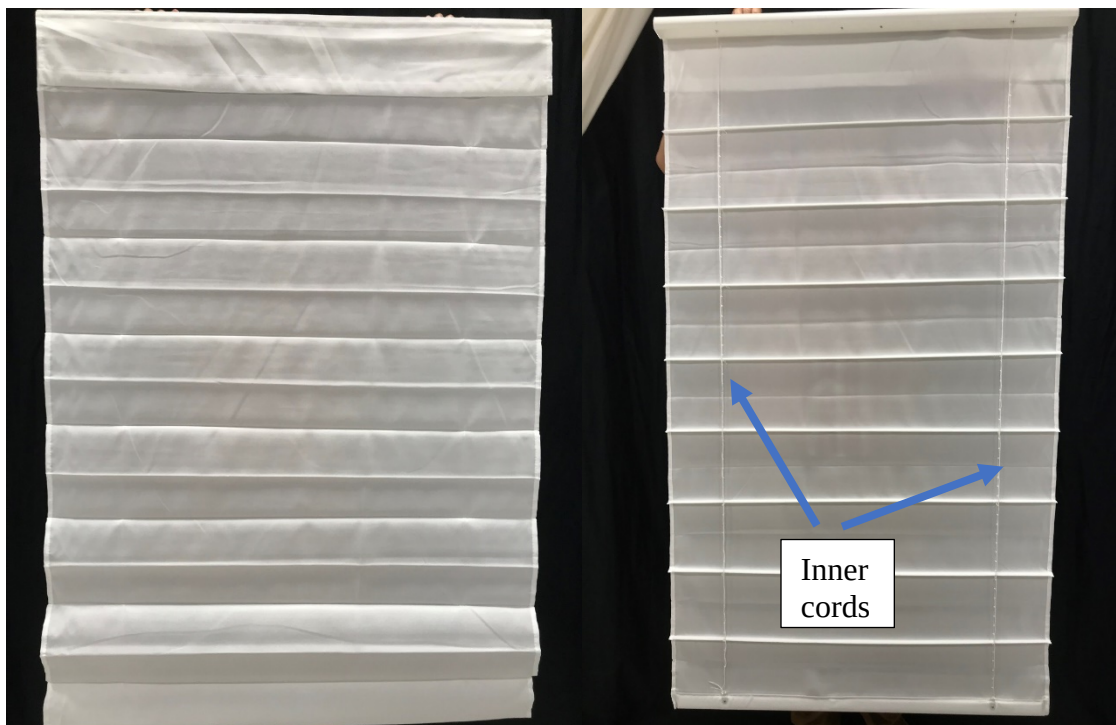


Figure 10. Front and backside of a Roman Shade

The cord accessibility probe can touch the inner cords on this sample, which means that the cord

is accessible under the ANSI/WCMA A100.1 standard (Figure 11). The investigator would proceed to the next step to determine whether the inner cord opening is hazardous.

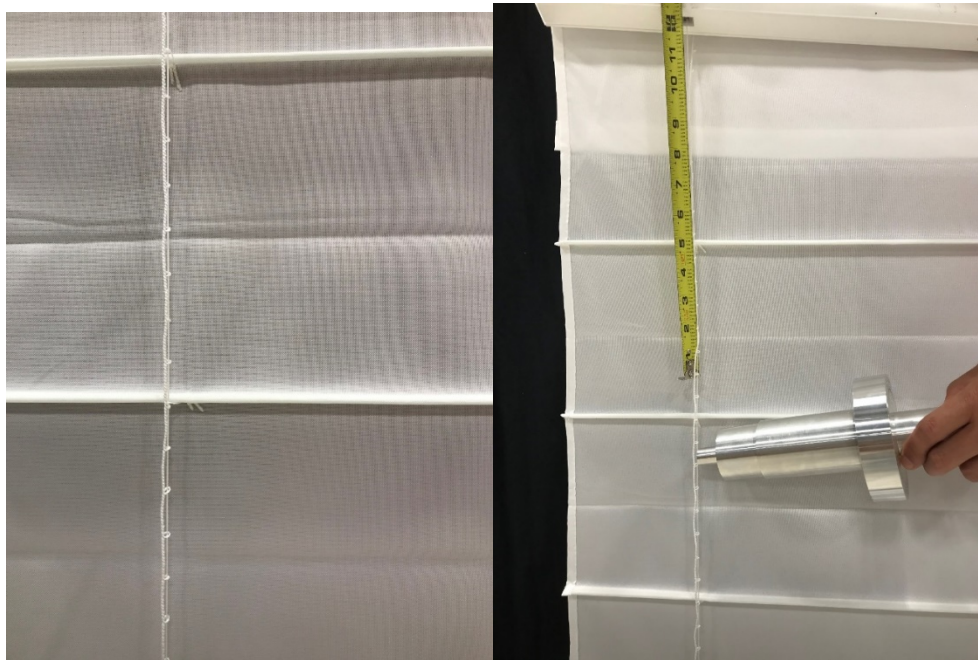


Figure 11. The cord accessibility probe can touch the inner cord in an open construction shade (Roman shade)

Accessibility to an inner cord of a closed construction window covering type, such as a cellular shade, is observable by checking whether the: (1) cord accessibility probe can touch the cords located 12" below the head rail before reaching the 4-inch diameter section of the probe, or (2) 4-inch diameter section of the probe can be inserted into any opening. Figure 12 demonstrates a cellular shade with no operating cord. The two inner cords are run between the two layers of the shade. The cord accessibility probe cannot be inserted through the opening and touch the cords. Because the inner cord is not accessible, the hazardous loop test cannot be performed. In this example, the shade complies with both operating cord and inner cord requirements. Therefore, this shade is compliant with this portion of the ANSI/WCMA A100.1 standard, and would not create an SPH related to the inner-cord accessibility under the 15(j) NPR.



Figure 12. Accessibility to the inner cord in a closed construction (cellular)

3) Is the inner cord opening large enough for child's head to go through?

- a. If the investigator observes that the inner cord is accessible with the cord accessibility probe, then the investigator would assess the size of the accessible inner cord opening, to determine whether a child could put their head through the loop created by the inner cord. Observing whether the inner cord opening is hazardous requires first fully lowering the window covering.
- b. Pull the inner cord:
 - i. For horizontal blinds:

While using one hand to hold the window covering surface in place, pull the inner cord with a force gauge until it reads 5 pounds of force in a direction most likely to create the maximum length or the inner cord has been pulled 25 inches, whichever comes first (Figure 13.)

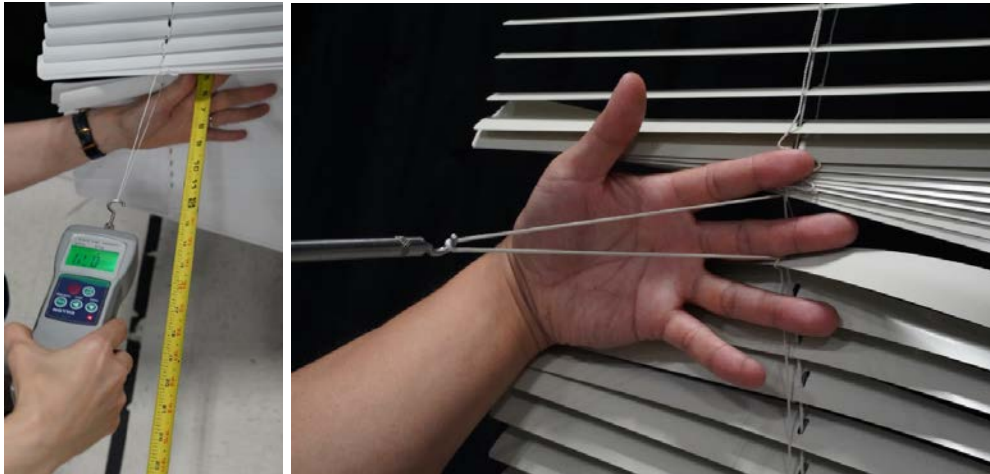


Figure 13. Inner cord opening on a horizontal blind

ii. For Roman shades' non-rigid shroud:

1. Restraining the cord shroud while pulling the inner cord with a force gauge until it reads 5 pounds of force in a direction most likely to create the maximum length or the inner cord has been pulled 25 inches, whichever comes first. See Figure 14.

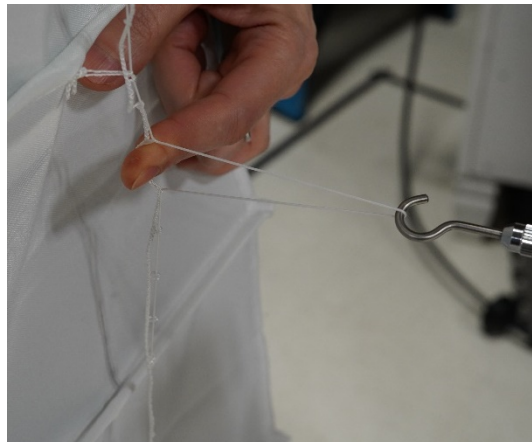


Figure 14. Inner cord opening on a Roman shade

2. Restraining the covering fabric with one hand and pulling the Roman shade non-rigid shroud with a force gauge until it reads 5 pounds force in a direction most likely to create the maximum length or the inner cord shroud has been pulled 25 inches, whichever comes first. See Figure 15.



Figure 15. Non-rigid shroud opening on a Roman Shade

- c. Attach the head probe to another force gauge.
- d. While continuing to hold the inner cord or non-rigid shroud to form the opening in step 'b', insert the head probe into the inner cord opening or non-rigid shroud opening with an insertion force up to 10 pounds. See Figure 16.



Figure 16. Inserting of the head probe into the inner cord loop and non-rigid cord shroud

- e. If the head probe can be inserted into the inner cord opening or non-rigid shroud opening, then pursuant to the draft 15(j) NPR, the product would be deemed to have a substantial product hazard (SPH). No further inspection is necessary.
- f. Staff found that measuring the perimeter of the inner cord opening with a measuring tape provides an equivalent result to inserting a head probe with a force gauge. Figure 17 shows the perimeter openings on a horizontal blind, Roman shade inner cord and Roman shade inner cord shroud.

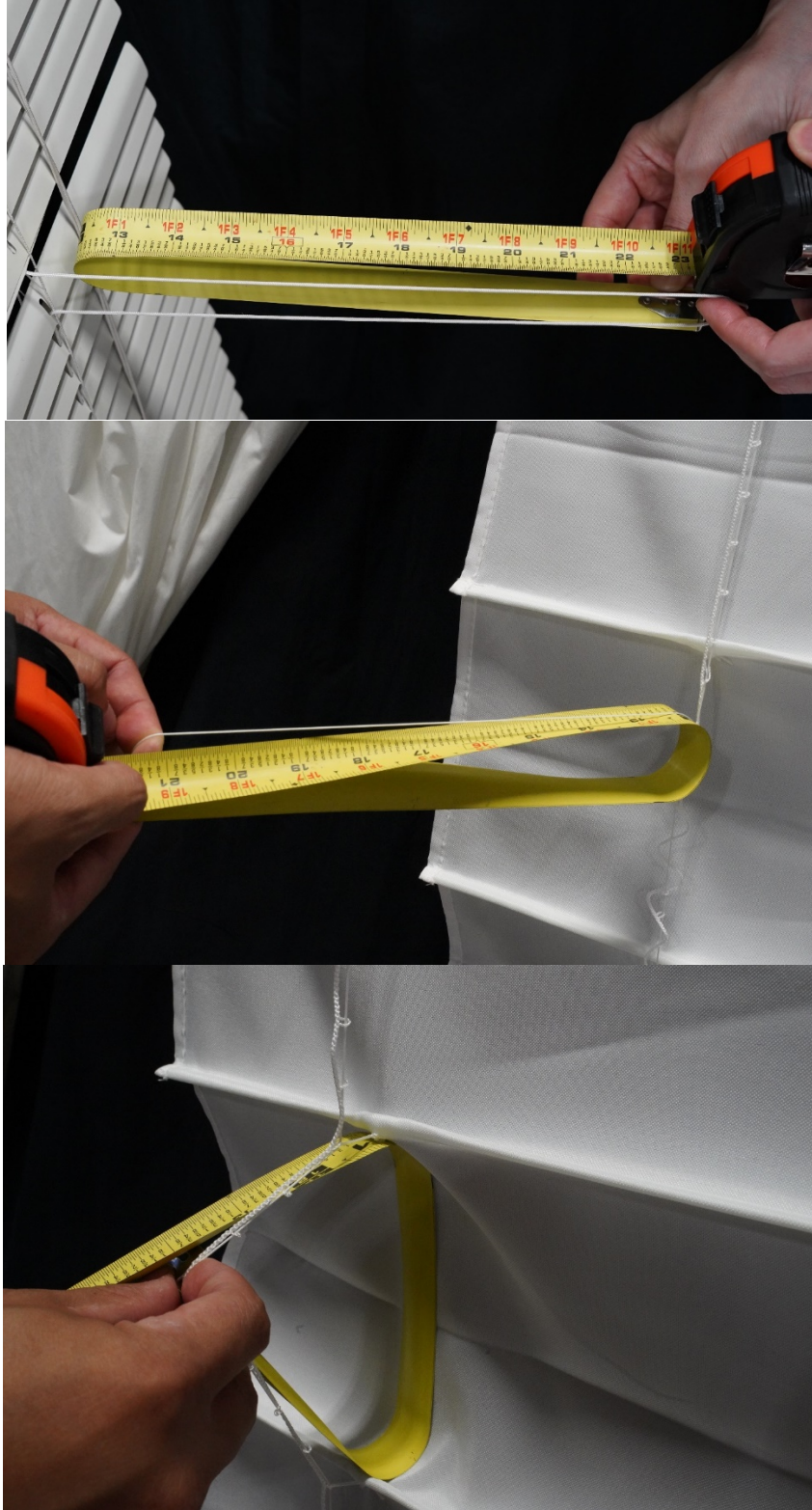


Figure 17. Perimeter measurement on a horizontal blind (top), Roman shade inner cord (middle), and Roman shade inner cord shroud (bottom)

C. Readily Observable Characteristics of a Manufacturer Label

If the investigator observes a permanent label on the headrail (or roller tube) with the following information, the product complies with the requirements identified in Section 5.3 of the standard. The investigator can perform this visual check in less than a minute.

- The readily distinguishable name, city, and state of the manufacturer / importer / fabricator
- The month and year of manufacture.
- The designation of the window coverings as “Custom” or “Stock”.

III. Conclusion

As described in this memorandum, the presence of hazardous operating cords or hazardous inner cords creates the potential for strangulation. CPSC staff can readily observe whether stock window coverings contain such hazardous operating and inner cords and whether custom window coverings contain hazardous inner cords quickly by observing the products and, when necessary, using simple tools to measure cord length. Accordingly, CPSC staff recommends that the Commission publish the draft proposed rule under section 15(j) to deem the presence of one or more of the described readily observable safety characteristics to be a “substantial product hazard,” as defined in section 15(a)(2) of the CPSA.

TAB E: HISTORY OF ANSI/WCMA STANDARD, CPSC INVOLVEMENT, AND COMPLIANCE WITH THE STANDARD



**UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MARYLAND 20814**

Memorandum

October 6, 2021

TO: Window Coverings Rulemaking File

THROUGH: Mark Kumagai, Associate Executive Director,
Directorate for Engineering Sciences

FROM: Rana Balci-Sinha, Project Manager, Window Coverings Rulemaking
Division of Human Factors, Directorate for Engineering Sciences

SUBJECT: History of ANSI/WCMA Standard, CPC Involvement, and Compliance with the
Standard

ANSI/WCMA Standard

In 1995, CPSC staff began working with the Window Covering Manufacturers Association (WCMA) on an American National Standards Institute (ANSI) voluntary standard to address the strangulation hazard to young children from accessible cords on window coverings. Consequently, WCMA published the first version of the ANSI standard in 1996. The 1996 standard sought to prevent strangulation incidents created by looped cords by requiring either: (a) separate operating cords, or (b) a cord release device on multiple cords ending in one tassel. The standard also required a tension device that would hold the cord or bead loop taut, when installed according to manufacturer's instructions. In 2001 and in 2002, CPSC staff sent letters to the WCMA asking for revisions to the 1996 standard, including the addition of inner cord stops and the elimination of free-hanging cords or bead chains longer than the neck circumference of a fifth percentile 7–9-month-old child. In August 2002, the published ANSI standard required inner cord stops. In 2007, the published ANSI standard required that tension devices partially limit the consumer's ability to control the blind if the tension device is not properly installed.

In 2009, WCMA published a provisional voluntary standard specifying descriptive requirements for Roman shades. In September 2010, WCMA published a stronger performance-based standard addressing Roman shade inner cords as another provisional standard.

In November 2010, CPSC held a public meeting and WCMA announced that it would establish a steering committee to oversee the activities of six task groups, including one intended for pull cords and another for continuous loops. On December 20, 2011, the WCMA balloted the proposed revisions to the voluntary standard. On February 6, 2012, staff sent WCMA a letter providing comments on the proposed revision.

²⁶ In these comments, CPSC staff reiterated that the hazardous loop determination should be made for all cords and that the length of an accessible operating cord should not be longer than the neck circumference of the youngest child at risk. In addition, staff raised concerns about the

²⁶ Letters can be found in the Voluntary Standards section of the cpsc.gov at: <https://www.cpsc.gov/Regulations-Laws--Standards/Voluntary-Standards/Window-Blind-Cords>

inability of tension devices to eliminate effectively or reduce significantly the risk of strangulation under certain foreseeable-use conditions.

In November 2012, the WCMA announced the approval of the 2012 version of the ANSI/WCMA standard which includes: (1) requirements for durability and performance testing of the tension/hold down devices, including new requirements for anchoring; (2) specific installation instructions and warnings; (3) new requirements for products that rely on “wide lift bands” to raise and lower window coverings; (4) requirements for a warning label and pictograms on the outside of stock packaging and merchandising materials for corded products; and (5) expanded testing requirements for cord accessibility, hazardous loop testing, roll-up style shade performance, and durability testing of all safety devices. A revised ANSI/WCMA A100.1 American National Standard for Safety of Corded Window Covering Products was approved on July 21, 2014, which included an editorial change.

On July 22, 2014, CPSC staff sent a letter to the WCMA requesting that the WCMA reopen the ANSI standard to address the hazard related to pull cords and continuous loops, which are the predominant hazard types in the incidents reported to CPSC. Staff suggested proposed language for a revision to the voluntary standard and asked that WCMA consider including the language in the standard. On August 29, 2014, WCMA responded that the association would begin the process of opening the ANSI/WCMA window covering standard.

In 2014, staff prepared a briefing package in response to a petition that CPSC received. The petition sought to prohibit window covering cords, where a feasible cordless alternative exists. In addition, for those instances in which a feasible cordless alternative did not exist, the petition requested that all window covering cords be made inaccessible through the use of passive guarding devices. On October 8, 2014, the Commission voted to grant the petition and directed staff to prepare an Advance Notice of Proposed Rulemaking (ANPR) to address the strangulation hazard associated with window coverings. On January 9, 2015, the Commission voted to approve publication in the *Federal Register* of the ANPR for corded window coverings, with changes. The ANPR began a rulemaking proceeding under the Consumer Product Safety Act (CPSA) to address the risk of strangulation to young children that is associated with corded window covering products. Staff hosted a WCMA technical meeting on August 2, 2016. WCMA committed to revising the standard to require either having no operating cords or short cords that cannot form a hazardous loop or having inaccessible cords, stating that there will be exceptions as WCMA would be exploring segmentation approaches such as product categories, operating systems, applications and uses, distribution channels (e.g., stock versus custom), location in home; and size, weight, and geometry of the product and ability of the products to be readily adaptable to new technologies, and eventually submitting draft standard for ANSI ballot by the end of 2016.

In 2016, CPSC staff managed two contracts and a task order associated with the open rulemaking: (1) a technical feasibility and cost improvement analysis of currently available safer technologies for window coverings, (2) a focus group study regarding installation, use, and maintenance of safety devices, primarily cord cleats and tension devices, and (3) cost analysis of cordless window covering options.

Throughout FY2017, staff participated in WCMA steering committee meetings, and also participated on stock/custom definition and warning labeling task groups. ANSI published a revision to the window coverings standard, ANSI/WCMA A100.1 – 2018, on January 8, 2018.

WCMA updated the 2018 version in May 2018, to include the missing balloted revisions. The standard went into effect on December 15, 2018. The revised safety standard segments the window covering market between stock and custom-made products. Per the standard, stock products are required to have:

- (1) no operating cords, or
- (2) inaccessible cords, or
- (3) short cords (equal to or less than 8 inches).

Although custom window coverings can meet the requirements for stock window coverings, consumers can still purchase corded window coverings if they custom order the product. The 2018 standard contains revised requirements for custom products, requiring:

- (1) the operating cords to have a default length of 40 percent of the blind height (previously unlimited);
- (2) the wand to be the default option for tilting slats (instead of a cord); and
- (3) the warning labels to depict more graphically the strangulation hazard associated with cords.

In 2018, staff participated in various task group meetings to develop requirements for rigid cord shrouds. The rigid cord shroud activity was considered to be the beginning of the work for a future revision of the standard. On March 12, 2019 staff participated in a WCMA steering committee meeting. The purpose of the meeting was to gather feedback on the new requirements that went into effect and to discuss potential proposals for the standard, which WCMA committed to open in mid-June 2019. During the meeting, the attendees agreed on the need for more education for online sellers on the difference between stock and custom products, such as a guidance document for online sellers. Additionally, staff provided ideas for the next revision and for the committee to consider, including: (1) segmenting custom products by size and/or type to meet stock product requirements, (2) considering cord retractors for custom products as an option (which is not allowed for stock products); (3) investigating complete inoperability of the product if a tension device is not installed (current requirement is partial inoperability), and (4) considering cordless as default operating system for custom orders.

On May 16, 2019 staff sent a letter to WCMA requesting: segmentation of custom window coverings by size and/or type and applying the requirement for stock products to these segments of custom products; presenting the cordless/short cords/inaccessible cords as the default operating system for custom products as an interim measure as well as interrupting the ordering process with an alert on hazardous cords if a consumer wants to switch to a corded system; balloting the rigid cord shroud requirement that was finalized by the task group; reaching out to online sellers and developing a guidance document for online sellers; and providing clarification on whether the standard applies to curtain and drapery products. WCMA responded on August 12, 2019 and stated that they have put on hold the planned revision of ANSI/WCMA standard because the Government of Canada published a new regulation on corded window coverings. WCMA explained that stock products that do not have operating cords, but have inner cords that cannot form a hazardous loop, would not comply with the Canadian regulation because of the new regulated pull force applied to the inner cord. WCMA also stated that the force applied to

the inner cord under the Canadian regulation is not applied to test for a hazardous loop; it is applied to determine the force required to raise the product, which is completely contrary to the hazard scenario and is causing considerable confusion within the U.S. and Canadian manufacturing sectors. WCMA reassured the staff at that time that they were still moving forward with balloting the rigid shroud language for the standard.

In November 2019, WCMA sent a letter to CPSC staff about the amendment in the Fiscal Year 2020 Operating Plan asking staff to assess what further revisions are needed to the American National Standard for Safety of Corded Window Covering Products (ANSI/WCMA A100-2018), specifically for custom products. WCMA requested that CPSC staff utilize input from the technical experts at the WCMA's member companies during the upcoming study and in the drafting of the report in order to provide the Commission with a comprehensive and balanced review. The letter stated that WCMA will also move forward with balloting the rigid shroud language for the standard that was developed and agreed upon by the technical working group.

On February 3, 2020, staff sent a letter to WCMA, outlining staff's recommendations for future improvements to the standard, and included a request to reopen the standard and discuss staff's recommendations. Staff reiterated their belief that substantial improvements have been made to the latest version of the standard, particularly in "stock" products; however, expanding the requirements to custom corded window coverings would improve window covering safety.

In September 2021, staff sent another letter to WCMA, urging the WCMA to apply stock product requirements in ANSI/WCMA A100.1-2018 to custom window coverings as well as balloting the rigid cord shroud language developed and agreed upon by the technical working group.

Custom Order Process and Safety Messaging

Per the 2018 standard, "a warning label is to be placed on product merchandising materials which includes, but is not limited to, the sample book and the website." For online sales, the website must display a label that includes pictograms that represent the hazard of a cord wrapping around a child's neck, placed conspicuously, with a signal word ("Warning" in English, and "Advertencia" in Spanish) in all uppercase letters measuring not less than 5/16 in (8 mm) and preceded by an ANSI safety alert symbol (an equilateral triangle surrounding an exclamation point) of at least the same. The rest of the warning message text must be in both uppercase and lowercase letters (sentence capitalization), with capital letters measuring not less than 1/8 in (3 mm). The generic warning label(s) must include the text "Window blind cord can STRANGLE your child. To prevent strangulation, purchase cordless products or products with inaccessible cords."

Staff reviewed five websites to identify what types of warnings are present for consumers while they are ordering corded custom window coverings.

a) Big Box Retailer #1:

Staff selected a customized width and height, inside/outside mount, a specific color, corded lift and cord tilt, light blocking options, and valance type. More than 900 width and more than 800 height options were available for consumers to select from, along with 20 color choices.

No warnings about the cord hazard were presented during the purchasing process.

Therefore, staff concludes that this retailer failed to meet the 2018 version of the voluntary standard for custom window coverings.

b) Big Box Retailer #2:

Staff selected a customized width and height, inside/outside mount, a specific color, corded lift and cord tilt, specified the cord length, ladder style, and valance type. More than 900 width and more than 800 height options were available for consumers to select from, along with 21 color choices.

For the corded lift option, if the consumer chose to click on the symbol “i,” a pop-up message appears that recommends using cord cleats to keep cords away from children and pets.

Also, the cart summary showed a warning label, not in the ANSI recommended color, but with a safety alert symbol, stating: “Cords present a strangulation hazard to children. For child safety, consider purchasing cordless products or items with inaccessible cords.” The label contains no pictograms. Therefore, staff concludes that this retailer failed to meet the 2018 version of the voluntary standard for custom window coverings.

c) Window Coverings Online Retailer #1:

Staff selected a customized width and height, inside/outside mount, a specific color, corded lift and cord tilt, head rail style, and light block options. More than 800 width and more than 700 height options were available for consumers to select from, along with 6 color choices.

Consumers see a statement while they are selecting the corded option, which states that multiple free-hanging pull cords are not recommended in homes with children and pets. The site did not contain the required pictogram. Staff concludes that this retailer failed to meet the 2018 version of the voluntary standard for custom window coverings.

d) Window Coverings Online Retailer #2:

Staff selected a customized width and height, inside/outside mount, a specific color, corded lift and cord tilt, and valance. More than 800 width and more than 800 height options were available for consumers to select from, along with 16 color choices.

Corded option (Standard Lift) had an orange safety alert symbol, and when pressed, a warning appears stating that corded lift products with accessible cords pose a strangulation hazard to young children and pets, that cordless products are the safest choice, and that cordless products are recommended for homes where kids and pets are present. The site did not contain the required pictogram. Staff concludes that this retailer failed to meet the 2018 version of the voluntary standard for custom window coverings.

e) Window Coverings Online Retailer #3:

Staff selected a customized width and height, inside/outside mount, a specific color, corded lift and cord tilt. More than 800 width and more than 800 height options were available for consumers to select from, along with 9 color choices.

No warnings were present during the ordering process. Staff concludes that this retailer failed to meet the 2018 version of the voluntary standard for custom window coverings.

Conclusion: Staff concludes that none of the reviewed websites that sell custom window coverings displayed the pictogram required for custom window coverings on warning labels per ANSI/WCMA A100.1 – 2018 standard. Some websites mention the strangulation hazard. Websites did not appear to have consistent messaging, and some fail to mention the strangulation hazard associated with cords. All of the reviewed websites fail to meet the required labeling and safety messaging per the standard for custom window coverings.

In-Store Assessments

During fiscal years 2020 and 2021, staff from Field Operations visited 18 stores consisting of wholesalers and retailers. In four locations, staff observed non-compliance of custom products with the ANSI/WCMA standard. Primary violations included: the length of operating cord longer than 40 percent of the window covering length with no accompanying specific customer request; lack of warning label; lack of manufacturer label; lack of hang tag; and cord tilt instead of wand tilt without accompanying specific customer request. In a fifth location, a window covering product was being sold with long beaded cord loops in various sizes, which appeared to be stock products. Based on this review, staff concludes that most of the wholesalers and retailers appear to have a clear distinction between stock and custom window coverings. In some cases, firms failed to meet primarily custom window coverings labeling requirements and documentations with regards to customer orders specifying deviations from default options.

Compliance with the Standard

WCMA stated in their comment to the ANPR (comment ID: CPSC_2013-0028-1555) that there has been substantial compliance with the standard since its first publication. WCMA also stated that the association's message to all manufacturers is that compliance with the standard is mandatory to sell window coverings in the U.S.

D+R interviewed window covering manufacturers and component manufacturers to collect anecdotal information on the distribution of stock and custom product sales and the impact of the compliance with the voluntary standard (D+R International, 2021). Various manufacturers indicated retail customers would not stock noncompliant products. Manufacturers are also aware of their customers' procedures and would not ship to them if there were concerns about the assembly and installation process. D+R report indicates that the voluntary standard has caused U.S. window covering manufacturers to design and offer cordless lift operations for most window covering categories. All manufacturers interviewed were aware of the standard and had implemented compliance in all stages of their development process, from product design to fabrication.

**TAB F: DRAFT PROPOSED RULE UNDER SECTION 15(J) OF THE CPSA:
OPERATING AND INNER CORDS ON STOCK WINDOW COVERINGS AND INNER
CORDS ON CUSTOM WINDOW COVERINGS SMALL BUSINESS
CONSIDERATIONS**



Memorandum

**UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MARYLAND 20814**

Date: October 6, 2021

TO : Rana Balci-Sinha, Window Coverings Rulemaking Project Manager
Division of Human Factors, Directorate for Engineering Sciences

THROUGH: Robert Franklin, Acting Associate Executive Director,
Directorate for Economic Analysis

FROM: Mark Bailey, Directorate for Economic Analysis

SUBJECT: Draft Proposed Rule Under Section 15(j) of the CPSA:
Operating and Inner Cords on Stock Window Coverings and Inner Cords
on Custom Window Coverings Small Business Considerations

Background

Section 223 of the Consumer Product Safety Improvement Act of 2008 (CPSIA) amended section 15 of the CPSA with the addition of section 15(j), 15 U.S.C. § 2064(j). The amendment states that the Commission may specify, by rule, characteristics of products that present an SPH if: (a) the characteristics are readily observable; (b) the characteristics have been addressed by a voluntary standard; (c) such voluntary standard has effectively reduced the risk of injury; and (c) there is substantial compliance with such voluntary standard. The Commission is considering a draft proposed rule designating that “stock” window covering products not conforming to one or more readily observable characteristics in WCMA A100-1.2018 and “custom” window covering products not conforming to the inner cord provisions in WCMA A100-1.2018 section 6 as SPHs. WCMA A100-1.2018 incorporates an updated definition of “stock” products, labeling/warning specifications, and removal of accessible cords/loops in “stock” products and updated specifications for the inner cords of custom products.

CPSC staff considers the standard to be effective in reducing the risk of injury associated with “stock” products and with inner cords on “custom” window coverings. The standard that explicitly removes accessible or hazardous cords in stock products and updates inner cord specifications has been in effect since December 2018. Staff notes that many manufacturers began offering cordless stock products before the standard went into full effect. More recent National Electronic Injury Surveillance System (NEISS) information suggests that the number of pediatric strangulations have declined as more cordless stock products become available.²⁷ (Tab A, Chowdhury 2021)

²⁷ A CPSC staff review of reported incidents from 2009 to 2020 show a slightly declining trend for both fatal and non-fatal pediatric injuries but given that many of the reported injuries are anecdotal and reporting is incomplete,

The draft proposed rule would make the presence of one or more of the following readily observable characteristics required in WCMA A100-1.2018 a reason for deeming stock window coverings an SPH.

- An accessible and hazardous operating cord is present
- An accessible and hazardous inner cord is present
- Manufacturers label is missing or no stock designation on label

The draft proposed rule would make the presence of the following readily observable characteristic required in WCMA A100-1.2018 a reason for deeming custom window coverings an SPH.

- An accessible and hazardous inner cord is present
- Manufacturers label is missing or no custom designation on label

Window coverings that fall within the scope of ANSI/WCMA A100.1 – 2018 and the draft proposed rule that do not conform to the provisions above would present an SPH and be subject to appropriate enforcement action, such as a product recall, fines, or seizure and forfeiture upon importation.

Market Information

The proposed rule would apply to all window covering products as defined in the draft proposed rule, consistent with the definition in ANSI/WCMA A100.1 – 2018. Window coverings include the following product categories: blinds, shades, and curtains and draperies. The shades category includes: cellular shades, pleated shades, roller shades, and Roman shades. The blinds category includes horizontal blinds and vertical blinds of varying material types. The total window covering market size in 2020 was approximately \$6.6 billion.²⁸ (Euromonitor 2021a). CPSC staff estimates that firms classified as small by Small Business Administration (SBA) guidelines account for \$4.08 billion annually, and that none of these firms account for more than three percent of total market share by revenue. (Euromonitor 2021b)

Industry Information

The North American Industry Classification System (NAICS) defines product codes for U.S. firms. Firms that manufacture window coverings may list their business under the NAICS product code for blinds and shades manufacturers (337920 Blind and Shade Manufacturing) or retailers (442291 Window Treatment Stores).²⁹ Importers of window coverings are generally

CPSC staff strongly discourages drawing any inferences based on the year-to-year increase or decrease shown in the reported data. Also note, that the cases involving stock products account for a small majority of the injuries in which the product classification (stock/custom) could be determined.

²⁸ Stock window coverings most likely account for a minority of the total market size in terms of revenue due to significant average price differences between stock and custom products. (D+R International 2021)

²⁹ The two product codes 337920 and 442291 encompass most products in the window coverings market. However, some drapery and curtain manufacturers may be listed under 322230, stationary product manufacturing.

listed in Home Furnishing Merchant Wholesalers (423220) which includes other home furnishing items and is non-specific to window coverings.

Under SBA guidelines, a manufacturer of window coverings is categorized as small if the firm has less than 1,000 employees, retailers are considered small if they have sales revenue less than \$8.0 million, and importers if the firm has less than 100 employees. Based on 2017 data, 1,898 firms were categorized as blinds and shades manufacturers and retailers (Census Bureau, 2020). Of these, about 1,840 firms (302 manufacturers and 1,538 retailers) are small. As the NAICS code for importers is non-specific to window coverings, CPSC staff reviewed Customs and Border Patrol data, firm financial reports, and Dun & Bradstreet reports to obtain an estimate. CPSC staff estimates that there are approximately 83 importers that meet the SBA guidelines for a small business (Laciak 2020). Nearly all of the 302 small manufacturers identified are far below the 1,000 employee SBA threshold as a majority are firms with under 5 employees. CPSC staff believes that the window coverings produced by these firms would meet the voluntary standard definition of a custom product, because many are hand crafters and produce products to a specific customer order.

Small Business Impacts

A proposed rule designating window covering products that do not conform to ANSI/WCMA A100.1 – 2018 provisions concerning stock products and custom product inner cord accessibility or hazardousness as an SPH will not likely have a significant impact on a substantial number of small businesses or other small entities. Data collected in person at manufacturers, retailers, and importers by CPSC staff indicate that the level of conformance with the sections of the WCMA standard concerning stock products is high and most likely greater than 90 percent (Tab E).³⁰ Samples tested by CPSC staff also indicate a high level of conformance in custom products related to inner cord accessibility.³¹

Firms already conforming to the standard would experience no impact by the proposed rule. CPSC staff does note though that at least one small manufacturer that does not currently conform to the accessible cord provision will experience a significant cost impact by the rule (Tab K). Staff does not believe a substantial number of small manufacturers will experience this cost impact. Retailers and importers are not expected to be significantly impacted by the rule as potential costs to conform (no accessible cords, and labeling) will be borne by manufacturers. Should a window covering retailer and/or importer bear a cost related to conformance staff expects the cost to only account for a small portion of total revenues as these firms typically sell/import other home furnishing products in addition to window coverings.

Based on the available information, the Commission could certify that the draft proposed rule to deem nonconforming operating cords and inner cords on stock products and inner cords

³⁰ CPSC staff conducted in person unannounced visits to window covering retailers, manufacturers, and importers in major metropolitan areas and only found one violation in which a stock product was available with accessible cords. Four violations were found concerning warning/manufacturer labels not related to inner cords on custom products.

³¹ Staff tested custom product samples using test parameters defined in ANSI/WCMA A100.1 – 2018 which involved the use of a cord accessibility probe and force gauge.

on custom products to be SPHs would likely not have a significant impact on a substantial number of small businesses or other small entities.

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TAB G: MECHANICAL ENGINEERING ASSESSMENT FOR CUSTOM WINDOW COVERINGS CONTAINING OPERATING CORDS



**UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MARYLAND 20814**

Memorandum

Date: October 6, 2021

To: Rana Balci-Sinha, Ph.D., CPE, Project Manager, Window Coverings
Rulemaking, Division of Human Factors, Directorate for Engineering
Sciences

Through: Mark Kumagai P.E.
Associate Executive Director, Directorate for Engineering Sciences

Caroleene Paul, Director,
Division of Mechanical Engineering, Directorate for Engineering Sciences

From: Kevin Lee, Mechanical Engineer,
Division of Mechanical Engineering, Directorate for Engineering Sciences

Subject: Mechanical Engineering Assessment for Custom Window Coverings containing
Operating Cords

I. Introduction

In this memorandum, CPSC staff discusses:

- Product Description
- Hazard
- ANSI/WCMA A100.1 – 2018, *American National Standard for Safety of Corded Window Covering Products* (ANSI/WCMA standard or voluntary standard),
- Adequacy of the ANSI/WCMA standard to addresses the risk of injury associated with custom window covering cords,
- Existing international standards for window coverings, and
- Staff's proposed performance requirements for custom window coverings.

II. Product

Window coverings comprise a wide range of products, including shades, blinds, curtains, and draperies. In general terms, the industry considers “hard” window coverings, such as those composed of slats or vanes, as blinds; and “soft” window coverings that contain a continuous roll of material as shades. Both blinds and shades may have inner cords that cause a motion, such as raising, lowering, traversing, or rotating the window covering to achieve the desired level of light control. Curtains and draperies do not contain inner cords but may be operated by a continuous loop. The cord or loop that is manipulated by the consumer to operate the window covering is called an “operating cord” and maybe in the form of a single cord, multiple cords, or continuous loops. Cordless window coverings are products designed to function without an operating cord

but may contain inner cords. Examples of window coverings are shown in Figures 1-6. Figure 1 shows a horizontal blind containing inner cords, operating cords, and tilt cords. Figure 2 shows a roll up shade containing lifting loops and operating cords. Figure 3 shows a cellular shade with inner cords between two layers of fabric and operating cords. Figure 4 shows a vertical blind with a looped operating cord to traverse the blind and a looped bead chain to tilt the vanes. Figure 5 shows a Roman shade with inner cords that run on the back side of the shade and operating cords. Figure 6 is a horizontal blind that is marketed as “cordless” because it has no operating cords, it still has inner cords.

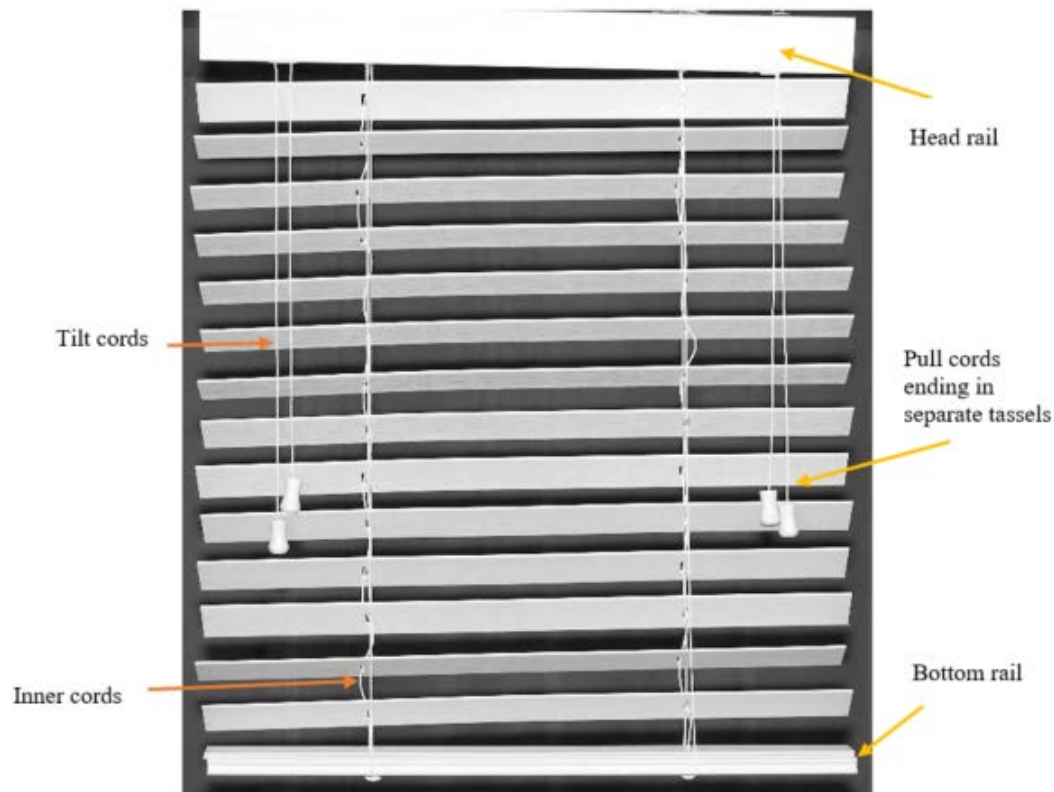


Figure 1. Horizontal blind



Figure 2. Roll-up shade with lifting loops.



Figure 3. Cellular shade with looped operating cord.

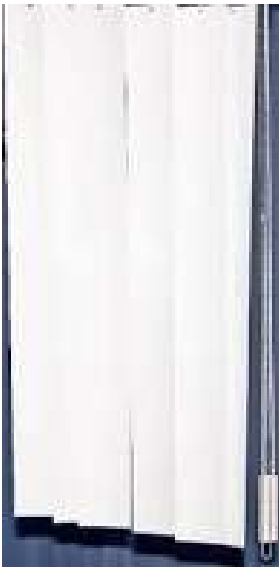


Figure 4. Vertical Blind.



Figure 5. Roman Shade.



Figure 6. Cordless horizontal blind.

III. Hazards

Depending on the window covering type, hazard scenarios identified in the ANPR involved strangulation to children in: 1) Accessible operating cords, or 2) Accessible inner cords. Figures 7, 8, and 9 depict the strangulation hazard for different cord types.

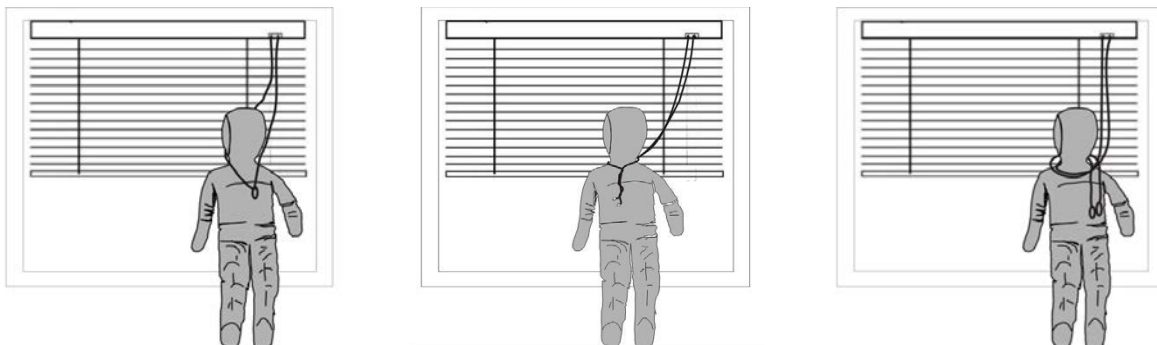


Figure 7. (a) Operating pull cords ending in one tassel (left), (b) operating cords tangled creating a loop (middle), (c) operating cords wrapped around the neck (right)

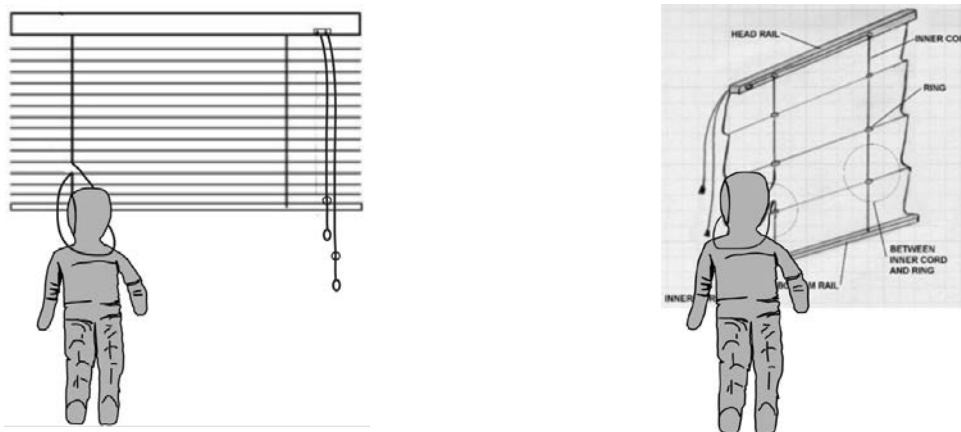


Figure 8. (a) Inner cords creating a loop (left), (b) Inner cords on the back side of Roman shade (right)

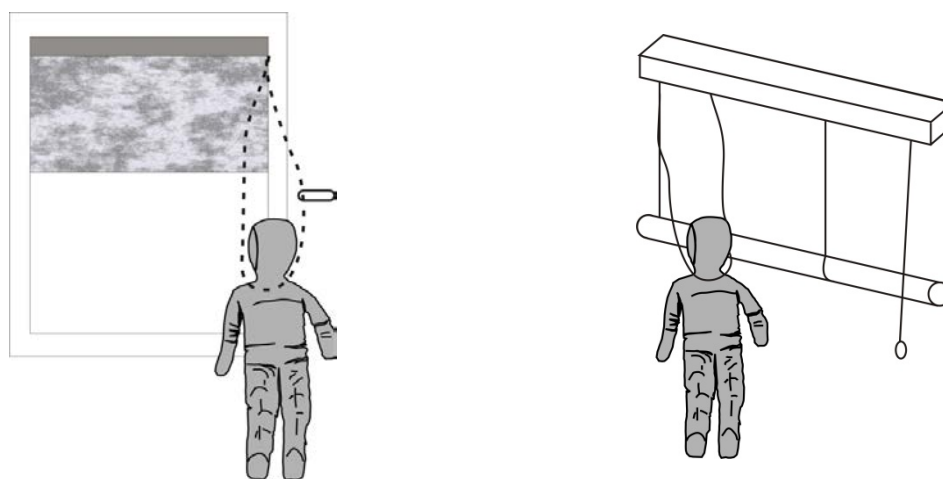


Figure 9. (a) Continuous loop cord (left), (b) Lifting loop (right)

IV. Incident Data

Staff of CPSC's Directorate for Epidemiology, Division of Hazard Analysis (EPHA) estimates that a minimum of nine fatal strangulations related to window covering cords occurred per year in the United States among children under five years old from 2009 – 2019.³²

CPSC staff found a total of 194 reported fatal and near-miss strangulations on window covering cords that occurred among children 8 years old and younger from January 2009 through December 2020 (see Tab A).³³ Nearly 46 percent (89 of 194) of incidents were fatal incident reports, while the remaining were near-miss nonfatal incidents. Some of the reported non-fatal incidents involved severe injuries with long-term consequences, such as quadriplegia or permanent brain damage. Stock window coverings accounted for at least 26 percent of all incidents and at least 22 percent of fatal incidents, and custom window coverings accounted for at least 18 percent of all incidents and at least 16 percent of fatal incidents. However, staff was unable to distinguish whether the incidents involved a stock or custom product for the majority of the 194 incidents.

Among the 89 fatal incidents, irrespective of the window covering type, CPSC staff found that the largest proportion (39 of the 89) of the deaths involved pull cord(s) as the operating mechanism, most frequently with tangled or knotted cord(s), followed by one or more long cords wrapped around the child's neck. Children getting caught in continuous looped cords or beaded chains without a functional tension device also figured as a major fatal hazard accounting for 23 of the 89 fatal strangulations.

CPSC staff definitively identified 35 incidents that involved custom window covering products (See Tab A). Of the 35 custom window covering incidents reviewed by staff, three incidents were related to inner cords, and 30 of the 35 (86%) incidents were related to operating cords (including pull cords and continuous loops).

V. Voluntary Standards

ANSI/WCMA A100.1 American National Standard for Safety of Corded Window Covering Products

In 1994, the Window Covering Manufacturers Association (WCMA) agreed to work with CPSC staff to develop a voluntary standard for window covering safety under the American National Standard Institute (ANSI) standards process. This standard was published in 1996 and was designated as ANSI/WCMA A100.1 – 1996 *American National Standard for Safety of Corded Window Covering Products*. The 1996 ANSI/WCMA standard included:

- requirements to minimize cord loops by requiring horizontal blinds to have separate tassels or a cord release device,
- requirements to provide a tension device for continuous loops and chains,
- requirements for Labeling and Operational Tags.

³² Based on National Center for Health Statistics (NCHS) data and a CPSC study (Marcy et al., 2002)

³³ Based on CPSC's CPSRMS data (prior to 2011 the databases were DTHS, IPII, and INDP)

The standard has been revised eight times since 1996. In August 2002, the published ANSI standard required inner cord stops to reduce the risk associated with inner cords (Figure 3a). The standard was revised in 2007, 2009, 2010, 2012, and 2014 to include requirements associated with tension devices to partially limit the consumer's ability to control the blind if the tension device is not properly installed; Roman shade inner cords (Figure 3b); durability and performance testing of tension devices; warning label and pictograms on the outside of stock packaging and merchandising materials; expanded testing for cord accessibility, hazardous loop testing, roll-up style shade performance; and durability of all safety devices. The 2014 version of the standard included some editorial changes.

a. Current ANSI/WCMA A100.1 – 2018 standard requirements

Since the publication of the ANPR in 2015, ANSI published a revision to the window coverings standard, ANSI/WCMA A100.1 – 2018, on January 8, 2018. WCMA subsequently updated the 2018 version in May 2018, to include some missing balloted revisions. The standard went into effect on December 15, 2018. The revised voluntary safety standard segments the window covering market between stock and custom-made products and specifies different cord requirements for stock and custom-made products.

Section 3, Definition 5.02 of the ANSI/WCMA A100.1 – 2018 standard, defines “Stock Blinds, Shades, and Shadings” as products completely or substantially fabricated before being sold to the consumer. Stock window coverings include products that require preassembly or can be modified by the seller to adjust the window covering's length/width, attachment of the top or bottom rail, or attachment of cords. The method of distribution or size of the purchase order does not classify a window covering as stock or custom.

Section 3, Definition 5.01 of the ANSI/WCMA A100.1 – 2018 standard, defines “Custom Blinds, Shades, and Shadings” as any window covering that is not classified as a stock window covering. For the draft proposed rule for custom window covering products, staff will reference the same definition that is in the ANSI/WCMA standard. See Appendix for the exact definition of stock and custom products.

Per the standard, stock products are required to have:

- (1) no operating cords, or
- (2) inaccessible cords, or
- (3) short cords (equal to or less than 8 inches).

For custom-ordered window covering products, the products can follow the requirements for stock products to be “cordless” or the products can have accessible cords. The ANSI/WCMA standard also contains revised requirements for custom products with accessible operating cords to require:

- (1) the operating cords to have a default length of 40 percent of the blind height (previously unlimited);
- (2) the wand to be the default option for tilting slats (instead of a cord); and
- (3) the warning labels to depict more graphically the strangulation hazard associated with cords.

Table 1 lists the performance requirements that are applicable to stock and custom window coverings.

Table 1. Performance Requirements in the ANSI/WCMA A100.1 – 2018

Performance Requirements	Stock Products	Custom Products
<i>No operating cords OR</i>	Required	Optional
<i>Short cord with a length equal to or less than 8 inches in any state (free or under tension) OR</i>		Optional
<i>Inaccessible operating cords</i>		Optional
<i>Inner cords that meet Appendix C and D</i>	Required	Required
<i>Single Retractable Cord Lift System</i>	Prohibited	Allowed
<i>Continuous Loop Operating System</i>	Prohibited	Allowed
<i>Accessible Operating Cords longer than 8 inches</i>	Prohibited	Allowed

In 2018, WCMA established a task group to develop performance requirements for a “rigid cord shroud” that is designed to make operating cords inaccessible on window coverings. The requirement would clarify “rigid” by confirming that a cord shroud is rigid enough to ensure that the shroud cannot be wrapped around a child’s neck or won’t form a u-shape as a result of attaching the free end of the shroud to the wall (similar hazards to a single cord). CPSC staff is not aware of incidents related to current products with rigid cord shrouds and concludes that shrouds that meet the proposed ANSI/WCMA standard will address the strangulation hazard posed by accessible cords. The task group, including CPSC staff, worked from March through December 2018 to develop draft language, but WCMA has not balloted the requirements. See Tab H for the proposed language.

On February 3, 2020, staff sent a letter to WCMA, outlining staff’s recommendations for future improvements to the voluntary standard, and included a request to reopen the standard and discuss staff’s recommendations. Staff reiterated their belief that substantial improvements have been made to the latest version of the standard, particularly in “stock” products; however, expanding the requirements to custom corded window coverings would improve window covering safety.

In September 2021, staff sent another letter to WCMA, urging the WCMA to apply stock product requirements in ANSI/WCMA A100.1-2018 to custom window coverings as well as balloting the rigid cord shroud language developed and agreed upon by the technical working group.

A. Adequacy of ANSI/WCMA’s Stock and Custom Window Covering Requirements

As discussed earlier, hazard scenarios identified in the ANPR involved strangulation to children in: 1) Accessible operating cords, or 2) Accessible inner cords.

1. Stock Products

CPSC staff determined that the stock product requirements in the ANSI/WCMA standard are adequate to address the risk of injury associated with window coverings, as explained below:

- a) **Operating cords:** Staff analysis of incident data indicates the largest proportion of deaths, irrespective of window covering type, involved operating cords (most frequently tangled or knotted cords, followed by cord(s) wrapped around the child's neck). The voluntary standard recognizes that long and accessible cords can pose a strangulation hazard. The standard defines the operating cord as the portion of a cord that the user interacts with and manipulates to move the window covering in a certain direction (e.g., lifting or lowering, traversing, rotating). If a child wraps a long operating cord around their neck or inserts their neck into a loop that can be present by design or occur due to tangled up cords, the child can strangle to death within minutes. The ANSI/WCMA standard provides three ways that a stock window covering can comply with the standard to address operating cord hazards:
- **No operating cords:** Having no operating cords effectively eliminates the strangulation hazard associated with operating cords because there is no cord to cause strangulation. Consumers use a mechanism other than an operating cord to accomplish the desired movement action on the product (*i.e.*, lifting, lowering, traversing). For example, a spring mechanism on a horizontal blind allows the user to lift and lower the blind via bottom rail of the window covering.
 - **Short cord with a length equal to or less than 8 inches in any state (free or under tension):** Based on the anthropometric dimensions of youngest children involved in incidents, a static cord length of 8 inches or shorter is not sufficient to strangle a child as the neck circumference of fifth percentile 6-9 month-old children is 8 inches (BSI, 1990 as cited in Norris and Wilson, 1995); a child would need some extra length of cord to hold the cord, thus the cord must be longer than 8 inches to cause strangulation.
 - **Inaccessible operating cords determined per the test requirement in Appendix C of the ANSI/WCMA A100.1:** If a window covering has an operating cord that is longer than 8 inches, the ANSI/WCMA standard requires that the cord must be inaccessible to children. Having inaccessible cords effectively eliminates the strangulation hazard associated with operating cords because the child is unable to access a cord to cause strangulation. Accordingly, this requirement is tested using a probe that is intended to simulate the finger size of a young child; the diameter of the probe is 0.25 inches, based on the fifth percentile 2-3.5-year old's index finger diameter (Snyder et al., 1977) at 0.33 inches and off-the-shelf availability of a 0.25-inch diameter dowel pin. If the probe cannot touch the operating cord, the cord is then deemed inaccessible. Staff is unaware of a stock window covering for sale in the U.S. that uses this method to meet the voluntary standard. For products sold in other countries that use this method, the test is obviated by the use of a rigid cord shroud that encapsulates the operating cord. See Figure 10 for an example.



Figure 10. Rigid cord shroud

CPSC staff concludes that ANSI/WCMA A100.1 – 2018 adequately addresses the strangulation hazard posed by accessible operating cords in stock window covering products because the standard either eliminates accessible operating cords or limits the length of the cord to a length that is too short in which to strangle.

- b) Inner cords:** Inner cords run through the window covering as shown in Figure 1. The inner cord pulls the bottom rail up when the window covering is raised. Inner cords can pose a strangulation hazard if a child pulls on the inner cord and inserts their head in loop as shown in Figure 8. Section 4.5 *Inner Cords* of ANSI/WCMA A100.1 requires all products to meet two testing requirements to: 1) determine accessibility of the inner cord, and 2) If accessible, determine if a hazardous loop can form.

Inner cords are tested for accessibility to children using a cord accessibility probe (Figure 11) that is modeled after a fifth percentile 2-3.5-year old's finger dimensions. If the inner cord is exposed from the front, rear, bottom, or sides of the window covering (typically found in Roman or horizontal window coverings), then the cord is deemed accessible if any part of the cord can touch the accessibility probe before reaching the 2-inch diameter section of the probe. If the inner cord is enclosed within a segmented layer of a product (typically found in cellular window coverings), then the cord is deemed accessible if any part of the cord can touch the accessibility probe before reaching the 4-inch diameter section of the probe.

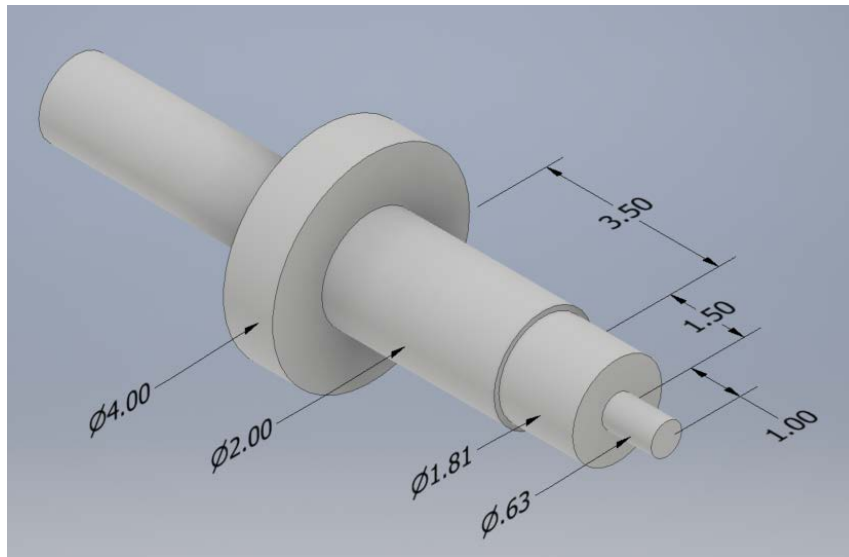


Figure 11. Accessibility Probe (dimensions - inches)

If the inner cords are deemed accessible, another test determines if a hazardous loop can form. The test consists of pulling the accessible inner cord over a time period of 5 seconds until either 5 pounds of force is achieved or the cord has pulled out 25 inches, whichever comes first. If a head probe, with insertion force of 10 pounds, can pass through the loop formed, the loop is considered a hazardous loop. The 10-pound insertion force was referenced from the ASTM F963 *Standard Consumer Safety Specification for Toy Safety*, with rationale stating “The 10 lbf is a reasonable force to simulate a child’s pulling a loop over the head.”

CPSC staff concludes that ANSI/WCMA A100.1 – 2018 adequately addresses the strangulation hazard posed by accessible inner cords in stock window covering products because the standard either eliminates accessible inner cords or limits the size of the loop that can be formed if an accessible inner cord is pulled to prevent a child from inserting their head in a hazardous inner cord loop.

2. Custom Window Coverings

Staff determined that the ANSI/WCMA standard does not adequately address the risk of strangulation associated with operating cords in custom window covering products because the standards allow hazardous cords. Although the 2018 version of the standard added two new requirements for custom window coverings to mitigate the hazard (default maximum operating cord length of 40 percent of the blind height when the product is fully lowered and default tilt wand option for tilting slats instead of a cord), the standard still allows hazardous operating cords to be part of the window covering design. Custom products can comply with the standard using one of the following methods, all of which pose strangulation risks:

- **Accessible Operating Cords longer than 8 inches:** This requirement allows an operating cord to be long enough to be wrapped around the neck or multiple cords to be tangled creating a loop. Even though the latest version of the standard attempts to reduce the risk by shortening the default length of the cord to 40 percent of the

window covering's length, and specifying the tilt wand as the default option versus tilt cords, as explained in Tab I, the risk associated with operating cords remains.

- **Continuous Loop Operating System:** This operating system requires that the operating loop be kept taut with a tension device. However, as observed in the incident data, a child can still insert his/her head into the continuous loop if it is not taut enough; in addition, as explained in Tab I, tension devices may not be attached to the wall which results in a free loop on the product. Staff identified 23 fatal strangulations involving a continuous corded loop on a product without a functional tension device. Staff is aware of Cord or Bead Chain Restraining Devices intended to be integrated into the window covering and do not need to be attached on the wall to keep the loop taut. According to the standard, these devices are required to meet durability, UV stability, and impact testing and must pass the hazardous loop testing procedure to confirm that device prevents the creation of a hazardous loop from an accessible continuous operating cord. Staff is requesting comments on the adequacy of these devices for custom products.
- **Single Retractable Cord Lift System:** This allows a cord to be pulled at any length to operate the window covering and then retracts to a shorter length when the user releases the cord. Retractable cord lift systems with the extended cord greater than 8 inches and a low retraction force to sustain that length could allow a child to manipulate and wrap the cord around his/her neck. Staff considers this requirement not adequate as written because the maximum cord length and a minimum pull force required to operate the system is not specified in the standard. Staff is requesting comments to determine if additional requirements such as a maximum exposed cord length and a minimum pull force for a single retractable cord lift system can address the strangulation hazard.

The ANSI/WCMA standard has the same requirements for inner cords that apply to stock and custom products.

CPSC staff concludes that ANSI/WCMA A100.1 – 2018 does not adequately address the strangulation hazard posed by accessible operating cords in custom window covering products because the standard allows these products to have one or more operating cords that is longer than 8 inches and the standard allows custom products to have continuous loop operating systems. The standard requires both stock and custom products to meet the same inner cords requirements (which limit accessibility of inner cords or limit the size of loop that can be formed when accessible inner cords are pulled to prevent a child from inserting their head in a hazardous inner cord loop); therefore, staff concludes ANSI/WCMA A100.1 adequately addresses the strangulation hazard posed by accessible inner cords in custom window covering products.

Of the 35 custom window covering incidents reviewed by staff, three incidents were related to inner cords, and 30 of the 35 (86%) incidents were related to operating cords (including pull cords and continuous loops). The requirements in ANSI/WCMA A100.1 address the custom window covering incidents associated with inner cords but do not address the incidents associated with accessible operating cords.

3. Assessment of International Standards

The ANPR identified three jurisdictions which specify requirements for the safety of window coverings: (1) Australia, (2) Canada, and (3) Europe.

Australia has a Trade Practices (Consumer Product Safety Standard- Corded internal Window coverings) Regulation 2010 F2010C00801.

Europe has the EN: 13120 Internal blinds- Performance requirements including safety, EN 16433 Internal blinds- Protection from strangulation hazards- test methods, and EN 16434 Internal blinds- Protection from strangulation hazards- Requirements and Test methods for safety devices.

Staff compared the current ANSI/WCMA standard with the international standards and determined that the ANSI/WCMA standard was more stringent than the Australia Regulation 2010 F2010C00801 or EN 13120, EN 16433, and EN 16434.

Canada previously had the Corded Window Covering Products Regulation SOR/2006-112. Since the ANPR, the Canadian standard was revised to SOR/2019-97. The Canadian regulation states that any cord that can be reached must be too short to wrap around a one-year-old child's neck (i.e. not more than 22cm (8.66 inches) in length) or form a loop that can be pulled over a one-year-old child's head (i.e. not more than 44cm (17.32 inches) in circumference). Canada's regulation requires all window coverings, which effectively cover both stock and custom products, to meet one of the following conditions:

- Section 4: The cord shall be unreachable/inaccessible
- Section 5 and 6: Reachable/accessible cords shall be 22 cm (8.66 inches) or less when pulled with 35N (7.87 lbf).
- Section 7: Reachable/accessible looped cords shall be 44 cm (17.32 inches) or less in perimeter when pulled with 35N (7.87 lbf).

Both the Canadian standard and the ANSI/WCMA stock window covering requirements do not permit a long accessible operating cord. The Canadian standard is more stringent because while the Canadian standard applies to both stock and custom products, the ANSI/WCMA standard contains separate requirements to permit long accessible operating cords in custom products. Although the Canadian standard is similar to the ANSI/WCMA's stock window covering requirement, there are some differences discussed below.

Definition of accessible cord

Section 3, Definition 2.01 of the ANSI/WCMA standard defines an accessible cord as a cord that can touch a cord accessibility probe and a cord shroud accessibility probe, while section 1 of the Canadian regulation states a reachable/accessible cord is:

the part of the cord that any person can touch when the corded window covering has been installed whether the window covering is fully opened, fully closed or in any position in between.

Staff concludes that the Canadian standard's definition of an accessible cord is subjective

because it defines an accessible cord by stating a person with unspecified measurements shall be able to reach it, while the ANSI/WCMA standard defines an accessible cord through a performance requirement.

Inner cord requirements

The Canadian regulation addresses the inner cord hazard by requiring that all accessible looped cords be too short to form a loop that can be pulled over a one-year-old child's head (not more than 44 cm (17.32 inches) in circumference) when pulled with 35 N (7.87 pounds) of force. This pull force is based on the 97th percentile pinch-pull strength of 2 to 5-year-old males.

The ANSI/WCMA standard addresses the inner cord hazard by requiring all accessible inner cords to pass the Hazardous loop test. In the Hazardous loop test, the accessible inner cord is pulled with a force gage until it measures 5 pounds (22.2 N) or 25 inches of slack is pulled, whichever comes first. The 22.2 Newton force is based on Section 4.14.1 *Cords, Straps, and Elastics* in ASTM F963 *Standard Consumer Safety Specification for Toy Safety*. The head probe has dimensions of Width 148 mm by Length 110 mm by Height 150 mm, and shall not be able to be inserted in the loop with a force of 44.5 Newton (10 pounds). The head probe is representative of a 5th percentile 7-9-month-old and the 10 pounds was based on section 8.22 *Test for Loops and Cords* in ASTM F963 whose rationale states "The 10 lbf is a reasonable force to simulate a child's pulling a loop over the head."

Although the ANSI/WCMA standard's 5-pound pull force is somewhat less than the pull force in the Canadian regulation (7.87 pounds), due to the complexity and variances involved in pulling an inner cord, staff concludes the ANSI/WCMA requirement adequately assesses the ability of a child to access the inner cord based on the lack of incidents involving inner cords in the time that requirements have been established in the ANSI/WCMA standard in 2002.

As set forth above, the ANSI/WCMA standard is substantially equivalent to the Canadian standard with respect to stock window coverings because they both require window coverings to practically contain either: (1) no operating cords, (2) short operating cords, or (3) inaccessible operating cords. Both standards follow similar test procedures to test the accessibility of inner cords and if accessible, to determine if the loop formed is hazardous. Overall, because the Canadian standard's requirements apply to stock and custom products and the ANSI/WCMA standard allows less stringent requirements for operating cords on custom products, CPSC staff concludes the Canadian standard is more stringent than the ANSI/WCMA standard for custom products.

VI. Available Technologies:

Currently, consumers can purchase products on the market that address all of the hazards identified in the incident hazard review. The products that address the hazards include, but are not limited to window coverings that: are cordless, use rigid cord shrouds, or are cordless and motorized.

Operating cords can be made inaccessible with passive guarding devices. Passive guarding devices allow the user to operate the window covering without the direct interaction of a hazardous cord. These types of window coverings use rigid cord shrouds, integrated

cord/chain tensioners, or crank mechanisms.

Cordless blinds can be raised and lowered by pushing the bottom rail up or pulling the rail down. This same motion may also be used to adjust the position of the horizontal slats for light control. Through market research, staff found several examples of cordless blinds that are made with a maximum height of 84" and a maximum width of 144".

Rigid cord shrouds as shown in Figure 10 can be retrofitted over various types of window coverings to enclose pull cords and continuous cord loops. The cord shroud allows the user to utilize the pull cords while eliminating access to the hazardous cords.

Crank mechanisms (Figure 12) replace the continuous loop mechanism with a crank/wand mechanism. Because the operating cord is replaced with a wand, the strangulation hazard is completely removed.

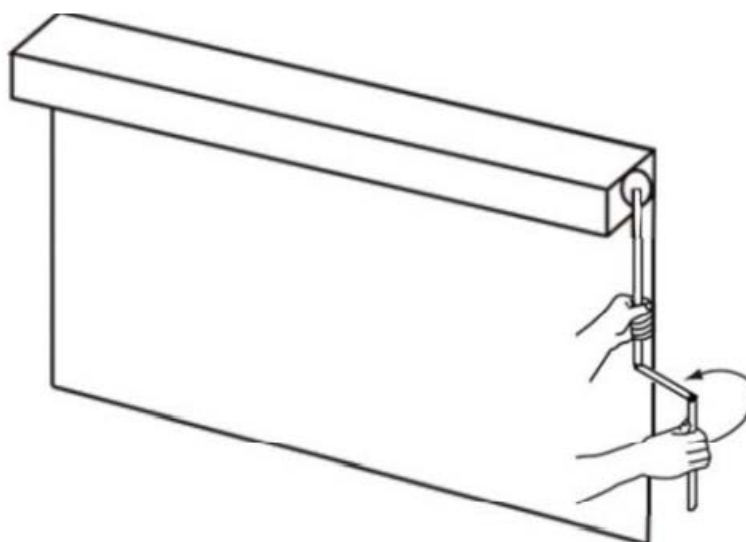


Figure 12. Crank Mechanism

Cordless motorized blinds can be raised and lowered using an electric motor with a supplied controller. These products function similarly to the motorized projector screens. Because these products use a motor instead of a pull cord, they do not contain exposed hazardous operating cords.

VII. Recommended Performance Requirements

Due to the ongoing window covering cord incidents, high severity of the outcomes, proven technical feasibility, an existing implementation in the voluntary standard of stronger requirements for stock window coverings already on the market, and ineffectiveness of warnings and safety devices for this class of products, CPSC staff recommends that the requirements for custom products be identical to stock window coverings outlined in the ANSI/WCMA A100.1 – 2018 standard.

In addition, staff recommends that the rigid cord shroud requirements based on the language developed by the WCMA Rigid Cord Shroud Task Group, but have not yet been balloted, be part of the mandatory standard for custom window coverings.³⁴

Rigid cord shroud:

CPSC staff worked with WCMA and other members from March - December 2018 to develop draft requirements to test the stiffness of “rigid cord shrouds” by measuring the deflection and deformation.³⁵ In December 2018, WCMA sent the agreed-upon language for rigid cord shrouds to the members, however, the language was never balloted. Staff recommends that the custom window coverings meet this requirement if they contain a rigid cord shroud to comply with the rule through inaccessibility of the operating cords. The language is shown in Tab H (regulatory language) and explained below:

The proposed rigid cord shroud requirements include two tests, the “Center Load Test” and the “Axial Torque” test to ensure the stiffness and the integrity of the shroud so that the enclosed operating cord does not become accessible when shroud is twisted. The Center load test verifies the stiffness of the cord shroud, by measuring the amount of deflection in the shroud when both ends are mounted and a 5-pound force is applied at the mid-point. This test ensures the shroud is not flexible enough to wrap around a child’s neck. The axial torque test verifies the cord shroud’s opening does not enlarge to create an accessible cord opening when the shroud is twisted. Staff solicits comments on the proposed test methods set forth in Tab H for rigid cord shrouds.

VIII. Conclusion

Based on staff’s review of 35 incidents identified as involving custom window covering products (of which 86 percent involved operating cords) and on staff analysis of the ANSI/WCMA A100.1 – 2018 standard, staff concludes the standard does not adequately address the hazard with operating cords for custom window coverings.

Staff also concludes that stock window covering requirements in the voluntary standard are adequate and would address the custom window covering incidents involving operating cords; therefore, staff recommends the requirements for custom products be identical to stock window coverings outlined in the ANSI/WCMA A100.1 – 2018 standard.

Staff also recommends a draft language for rigid cord shrouds based on the language developed by the WCMA Rigid Cord Shroud Task Group in 2018 to be part of the proposed requirements. The purpose of this addition is to clarify the meaning of rigid to ensure that rigid cord shrouds

³⁴ Although staff has never seen a stock product with a rigid cord shroud, staff encourages WCMA to revise the voluntary standard to include this requirement for stock and custom products.

³⁵ The 2018 standard tests rigid cord shrouds for UV stability and impact.

are not flexible to completely or partially wrap around the child's neck or do not allow hazardous cords to become accessible to children.

Staff notes that stock window coverings currently on the market, as well as a substantial portion of custom window coverings, already implement safer technologies to address the hazards identified in the incident analysis review. These products include, but are not limited to cordless window coverings, window coverings with rigid cord shrouds, and cordless motorized window coverings.

Appendix

Section 3, Definition 5.02 of ANSI/WCMA A100.1 – 2018 defines Stock Blinds, Shades, and Shadings as:

“A specific stock keeping unit or SKU, which is completely or substantially fabricated (as defined below) in advance of being distributed in commerce (as that term is defined in 15 U.S.C. Sect. 2052(a)(7) and in advance of any specific consumer request for that product. The SKU can either be sold “as is” or modified or adjusted by the seller, manufacturer, or distributor before or after being distributed in commerce and it would still be considered a Stock Blind, Shade and Shading.

“Substantially fabricated” would include products pre-assembled in advance of a consumer order or purchase. Pre-assembled products that are modified or adjusted by the seller, manufacturer or distributor before or after being distributed in commerce will still be considered as “substantially fabricated” if they require, but is not limited to, any of the following: adjustments to size, attachment of the top rail and/or bottom rail, and/or tying of Cords to secure the Bottom Rail to finish the assembly of the product.

Stock Blinds, Shades, and Shadings shall not be considered Custom Blinds, Shades, and Shadings solely because of the method of distribution (e.g., Internet sales) or the size of the purchasing order (e.g., for multi-family housing developments).”

Section 3, Definition 5.01 of ANSI/WCMA A100.1 – 2018 defines Custom Blinds, Shades, and Shadings as:

“Any window covering that is not classified as a stock window covering.”

TAB H: DRAFT REGULATORY LANGUAGE

AMENDMENT TO PART 1120—SUBSTANTIAL PRODUCT HAZARD LIST

To address the risk of injury associated with operating cords on stock window coverings, and inner cords on stock and custom window coverings staff recommends adding three paragraphs to 16 C.F.R. part 1120 to: define “stock window covering” and “custom window covering,” describe the readily observable characteristics of stock and custom window coverings in ANSI/WCMA A100.1 – 2018, and incorporate by reference relevant portions of ANSI/WCMA A100.1 – 2018, as follows:

1120.2 Definitions.

(f) *Stock window covering* (also known as a *stock blind, shade, or shading*) is defined in section 3, definition 5.02, of ANSI/WCMA A100.1 – 2018, as a product that is a completely or substantially fabricated product prior to being distributed in commerce and is a stock-keeping unit (SKU). Even when the seller, manufacturer, or distributor modify a pre-assembled product by adjusting to size, attaching the top rail or bottom rail, or tying cords to secure the bottom rail, the product is still considered stock. Online sales of the product, or the size of the order, such as multi-family housing, does not make the product a non-stock product. These examples are provided in the standard to clarify that as long as the product is “substantially fabricated,” subsequent changes to the product do not change its categorization.

(g) *Custom window covering* (also known as a *custom blind, shade, or shading*) is defined in section 3, definition 5.01, of ANSI/WCMA A100.1 – 2018, as any window covering that is not classified as a stock window covering.

1120.3 Products deemed to be substantial product hazards.

(e) *Stock window coverings* that fail to comply with one or more of the following requirements of ANSI/WCMA A100.1 – 2018:

(1) Operating cord requirements in sections 4.3.1.1 (cordless operating system), 4.3.1.2 (short static or access cord), or 4.3.1.3 (inaccessible operating cord); and

(2) Inner cord requirements in section 4.5.

(f) *Custom window coverings* that fail to comply with inner cord requirements in section 4.5 of ANSI/WCMA A100.1 – 2018.

(g) *Stock and custom window coverings* that fail to comply with the requirement for an on-product manufacturer label in section 5.3 of ANSI/WCMA A100.1 – 2018.

1120.4 Standards incorporated by reference.

(d) Window Covering Manufacturers Association, Inc. 355 Lexington Avenue, New York, New York, 10017. telephone: 212.297.2122. <http://wcmanet.com>

(1) ANSI/WCMA A100.1 – 2018. *American National Standard For Safety Of Corded Window Covering Products*, IBR approved for §1120.3 (e), (f), and (g).

To address the risk of injury associated with operating cords on custom window coverings, staff recommends that the requirements for operating cords on stock products in the ANSI/WCMA standard be extended to custom window coverings. Accordingly, staff recommends adding a new part to title 16, chapter II of the Code of Federal Regulations, as follows:

PART XXX-SAFETY STANDARD FOR CUSTOM WINDOW COVERING PRODUCTS

Sec.

XXXX.1 Scope and definitions.

XXXX.2 Requirements for custom window covering products.

XXXX.3 Prohibited stockpiling

XXXX.4 Findings.

Authority: 15 U.S.C. 2051(b), 2056, 2058, 2063(c), 2076(e)

§ XXXX.1 Scope and definitions.

(a) This part establishes a consumer product safety standard for operating cords on custom window coverings.

(b) *Custom window coverings* (blinds, shades, and shadings) are defined in section 3, definition 5.01 of ANSI/WCMA A100.1 – 2018, American National Standard For Safety of Corded Window Covering Products, as window coverings that are not stock. .

(c) *Stock window coverings* (blinds, shades, and shadings) are defined in section 3, definition 5.02 of ANSI/WCMA A100.1 – 2018 as: “A specific stock keeping unit or SKU, which is completely or substantially fabricated (as defined below) in advance of being distributed in commerce (as that term is defined in 15 U.S.C. § 2052(a)(7) and in advance of any specific consumer request for that product. The SKU can either be sold “as is” or modified or adjusted by the seller, manufacturer, or distributor before or after being distributed in commerce and it would still be considered a Stock Blind, Shade and Shading. “Substantially fabricated” would include

products pre-assembled in advance of a consumer order or purchase. Pre-assembled products that are modified or adjusted by the seller, manufacturer or distributor before or after being distributed in commerce will still be considered as “substantially fabricated” if they require, but is not limited to, any of the following: adjustments to size, attachment of the top rail and/or bottom rail, and/or tying of Cords to secure the Bottom Rail to finish the assembly of the product. Stock Blinds, Shades, and Shadings shall not be considered Custom Blinds, Shades, and Shadings solely because of the method of distribution (e.g., Internet sales) or the size of the purchasing order (e.g., for multi-family housing developments).”

(d) *Operating cord* is defined in section 3, definition 2.19, of ANSI/WCMA A100.1 – 2018, as “the portion of the cord that the user manipulates directly during operation. Operation includes, but is not limited to, lifting, lowering, tilting, rotating, and traversing.”

(e) *Cord shroud* is defined in section 3, definition 2.09, of ANSI/WCMA A100.1 – 2018 as “a device or material added to limit the accessibility of a cord or formation of a Hazardous Loop.”

(f) *Rigid Cord Shroud* is a cord shroud that is constructed of inflexible material to prevent children from accessing a window covering cord.

§ XXXX.2 Requirements for operating cords on custom window coverings.

(a) *Requirements for operating cords.* Each operating cord on a custom window covering shall comply with section 4.3.1, instead of section 4.3.2, of ANSI/WCMA A100.1 – 2018, American National Standard For Safety of Corded Window Covering Products (approved on January 8, 2018).

(b) *Incorporation by reference.* The Director of the Federal Register approves the incorporation by reference in sections 1260.1 and 1260.2, in accordance with 5 U.S.C. 552(a)

and 1 CFR part 51. You may obtain a copy from Window Covering Manufacturers Association, Inc., 355 Lexington Avenue, New York, New York, 10017, telephone: 212.297.2122, <http://wcmanet.com> or <https://webstore.ansi.org/Standards/WCMA/ANSIWCMAA1002018>. A read-only copy of the standard is available for viewing on the WCMA website at http://www.wcmanet.com/pdf/WCMA-A100.1-2018_view-only_v2.pdf. You may inspect a copy at the Division of the Secretariat, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814, telephone (301) 504-7479, email: cpsc-os@cpsc.gov, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fedreg.legal@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

(c) *Requirements for rigid cord shrouds.* If a custom window covering complies with paragraph (a) using a rigid cord shroud, the rigid cord shroud shall not have an accessible cord when tested for cord accessibility using the test methods defined in paragraphs (d) and (e).

(d) *Test methods for rigid cord shrouds: Center load test.*

1. Support each end of the rigid cord shroud, but do not restrict the rotation along the axial direction. Supports must be within 0.25 inches from the ends of the shroud as shown in figure 1.

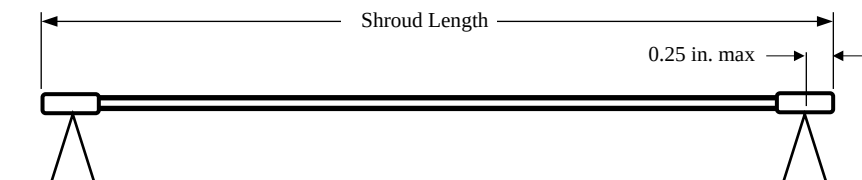


Figure 1. Rigid Cord Shroud Test Set-up.

2. Apply a 5-pound force at the center of the rigid cord shroud for at least 5 seconds as shown in figure 2.
3. Measure the maximum deflection of the shroud, while the 5-pound force is applied.
4. For rigid cord shrouds that are ≤ 19 inches, the deflection shall not exceed 1 inch. For every additional 19 inches in shroud length, the shroud can deflect an additional inch. See Figure 2.

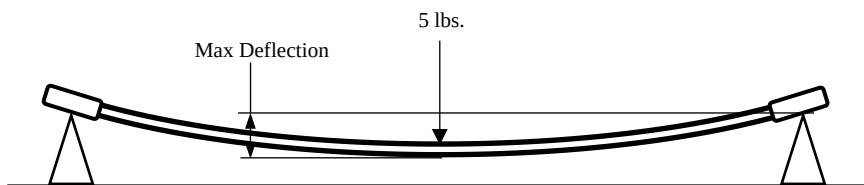


Figure 2. Rigid Cord Shroud Center Load Test and Deflection Measurement.

5. While continuing to apply the 5-pound force, determine if the cord(s) can be contacted by the cord shroud accessibility test probe shown in figure 3. If the cord shroud accessibility test probe can touch any cord, the cord(s) are considered accessible.

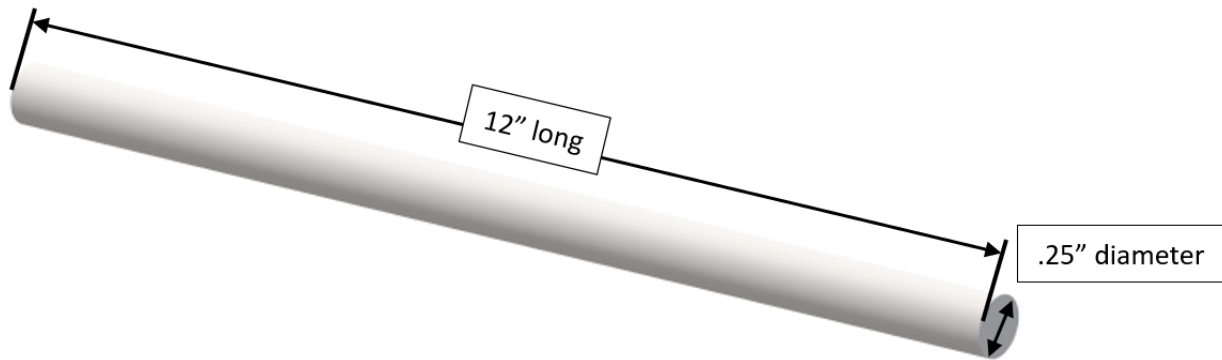


Figure 3. Cord Shroud Accessibility Test Probe

(e) *Test methods for rigid cord shrouds: Axial torque test.*

1. Mount one end of the rigid cord shroud and restrict the rotation along the axial direction.
2. Apply a 4.4 in-lb. (0.5Nm) torque along the other end of the rigid cord shroud for 5 seconds.
3. While continuing to apply the torque, determine if the cord(s) can be contacted by the cord shroud accessibility test probe shown in figure 3. If the cord shroud accessibility test probe can touch any cord, the cord(s) are considered accessible.

XXXX.3 Prohibited stockpiling.

(a) *Prohibited acts.* Manufacturers and importers of custom window coverings shall not manufacture or import custom window coverings that do not comply with the requirements of this part in any 12-month period between [date of promulgation of the rule] and [effective date of the rule] at a rate that is greater than 120 percent of the rate at which they manufactured or imported custom window coverings during the *base period* for the manufacturer.

(b) *Base period.* The base period for custom window coverings is any period of 365 consecutive dates, chosen by the manufacturer or importer, in the 5-year period immediately preceding the promulgation of the final rule.

XXXX.4 Findings.

[Will be blank for Staff Package 6b Review. Findings will be reviewed as part of the draft rule.]

**TAB I: HUMAN FACTORS CONSIDERATIONS FOR THE PROPOSED RULE ON
CUSTOM WINDOW COVERINGS**



UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MARYLAND 20814

Memorandum

October 6, 2021

TO: Window Coverings Rulemaking File

THROUGH: Mark Kumagai, Associate Executive Director,
Directorate for Engineering Sciences

FROM: Rana Balci-Sinha, Director, Division of Human Factors,
Directorate for Engineering Sciences

SUBJECT: Human Factors Considerations for the Proposed Rule on Custom Window Coverings

1. Introduction

In January 2015, the U.S. Consumer Product Safety Commission (CPSC) published an advance notice of proposed rulemaking (ANPR) to address the strangulation hazard associated with corded window covering products. 80 *Fed. Reg.* 2,327 (Jan. 16, 2015). In this memorandum, staff of CPSC's Directorate for Engineering Sciences, Division of Human Factors (ESHF), discusses the human factors related concerns associated with custom window covering requirements in the ANSI/WCMA A100.1 – 2018 standard (ANSI/WCMA), and describes human factors considerations for the draft proposed rule (NPR).

2. Assessment of Custom Product Requirements in the Voluntary Standard

a) *Operating Cord Requirements that apply to Stock and Custom Products*

Operating cords on stock products are required to meet one of the following to comply with the ANSI/WCMA standard:

- (1) No operating cords;
- (2) Short cord with a length equal to or less than 8 inches in any state (free or under tension),
- (3) Inaccessible operating cords determined per the test requirement in Appendix C of the ANSI/WCMA A100.1.

These requirements effectively eliminate the strangulation hazard associated with operating cords as explained in this memorandum.

According to the standard, custom products are allowed to meet one of the three requirements listed above but also are allowed to have operating systems that do not eliminate the strangulation hazard because they result in free-hanging and accessible cords; these systems include single retractable cord lift system, continuous loop operating system, and standard operating system.

b) New Operating Cord Length Requirements that apply to Custom Products

In the earlier versions of the standard, there was no specified length for the operating cords. Per the 2018 standard, custom window coverings have two new requirements intended to reduce the hazard associated with free-hanging and accessible operating cords as described below:

- (1) The default cord length should be no more than 40 percent of the product height when the window covering is fully lowered. The exception is when a custom length is required to ensure user accessibility. Figure 1 shows the length of operating cords that are longer than 40 percent of product height and shorter cords that comply with this new requirement.
- (2) Wand tilt becomes the default operating system and cord tilt becomes an allowable customer option (Figure 1). The length requirement about the 40 percent explained above still applies to tilt cords.



Figure 1. Window blind with operating cords longer than 40 percent of the length of the product and tilt cords to tilt the slats (left). Window blind with operating cords equal to 40 percent of the product length and wand tilt replacing tilt cords (right)

Staff has several concerns with these requirements:

- The length of the operating cord(s) can still be hazardous when the product is fully lowered because (1) a child can still wrap the cord around their neck; only about 8 inches of cord is enough to encircle the child's neck,³⁶ and/or (2) multiple cords can tangle and create a loop in which a child can insert his/her head; a loop with a

³⁶ Neck circumference of fifth percentile 6-9-month-old children is 8 inches (BSI, 1990 as cited in Norris and Wilson, 1995.)

circumference of about 17 inches is sufficient for child's head to enter.³⁷ Figure 2 shows these two scenarios.



Figure 2. Demonstration of wrapped cords around (doll) child's neck (left), (doll) child's head is through the loop created by entangled multiple cords (right)

- The operating cord(s) will get longer as the window covering is raised, making it easier for a child to access and manipulate,
- If the cord tilt option is chosen, the cord tilt can also be long enough to be wrapped around a child's neck or be tangled and create a loop in which a child's head can enter.
- The default options can easily be changed during the custom order process, thus maintaining the consumer's ability to choose and utility, but also allowing long, accessible cords which pose a strangulation hazard.

Child's Access to Cords

Incident data show that children can access the cord in various ways. As reported in the Division of Hazard Analysis, Directorate for Epidemiology (EPHA) memorandum (Chowdhury, 2021), staff determined that custom products were involved in 35 incidents. Table 1 shows how children accessed the cords. In 14 incidents, the child climbed on an item including couch, chair, toy chest or dog kennel and accessed the cord. In four cases, a child was on a sleeping surface including bed (2), playpen, and a crib. In six incidents, a child was able to get to the cord from the floor.

Table 1. Child's interaction scenario in incidents associated with custom products

Scenario	Number of Incidents
Climbed on an item to reach the cords	14
On floor	6
On bed, in playpen or crib	4
Unknown	11
<i>Total</i>	<i>35</i>

³⁷ Head circumference of fifth percentile 6-9-month-old children is 16.5 inches (Snyder et al., 1977)

The incident data demonstrate that accessible cords that are longer than 8 inches are hazardous. For example, the data show that even if operating cords are kept close to the head rail with some means, children climb and access the cords. In addition, there are a significant number of operating pull cord incidents that occurred in fully or partially raised window coverings, which essentially reduce the benefit of having a default length of 40 percent of the window covering height in fully lowered position of the window covering because the cords will get longer as the product is raised.³⁸ Based on these data, staff concludes that even though both requirements attempt to reduce the strangulation hazard associated with accessible and hazardous operating cords, requirements still fall short as they allow accessible and long cords to be part of the window covering.

c) Warning Labels in the Voluntary Standard

The ANSI/WCMA A100.1 – 2018 standard requires that corded custom window covering products have warning labels regarding the strangulation hazard to children, as summarized below:

- A generic warning label that is permanently attached to the bottom rail, including a pictogram depicting the hazard of a cord wrapped around a child's neck. The content explains the strangulation hazard and what consumers need to do to avoid the hazard (keeping cords out of children's reach, shortening cords to prevent reach, moving crib and furniture away.)
- A similar warning label must be placed on product merchandising materials which includes, but is not limited to, the sample book and the website (if the website is relied upon for promoting, merchandising, or selling on-line.)
- A warning tag containing a pictogram and similar text as above on accessible cords including operating cords, tension devices that are intended to keep continuous loops taut, and on inner cords of a roll up shade.

Staff notes that the formatting of warning labels is required to follow ANSI Z535 standards, which are the preeminent set of standards to develop safety labels.³⁹ This includes a signal word ("Warning") in all uppercase letters measuring not less than 5/16 in (8 mm) in height and preceded by an ANSI safety alert symbol (an equilateral triangle surrounding an exclamation point) of at least the same size, the rest of the warning message text be in both uppercase and lowercase letters, with capital letters measuring not less than 1/8 in (3 mm). A Spanish version of the label is also required.

Among the 35 incidents involving custom products, at least 19 included a permanent label. Table 2 shows the presence of the labels on the incident units.⁴⁰ The presence of the label was unknown in 10 incidents, and no label was reported in 6 incidents. In some cases, parents reported that they were aware of the cord hazard, but never thought their child would interact

³⁸ A total of 36 out of 46 pull cord incidents when position of the window covering was known have occurred with partially or fully raised window covering (1996 to 2016 incidents.)

³⁹ The ANSI Z535 Series provides the specifications and requirements to establish uniformity of safety color coding, environmental / facility safety signs and communicating safety symbols. It also enables the design, application, use and placement of product safety signs, labels, safety tags and barricade tape.

⁴⁰ In two cases, staff examined exemplar units.

with them; in a few cases, parents were aware of the operating cord hazard but not the inner cord hazard. In some cases that involved bead chains, parents thought that the connector clip on the bead chain loop was supposed to break away. Staff notes that none of the incident units had a hang tag. One unit had the hang tags tucked into the head rail, which was discovered when the unit was removed.

Table 2. Presence of permanent warning labels in incident units

Permanent Label Present	Number of Incidents
Yes	18
Mostly peeled off	1
No	6
Unknown	10
<i>Total</i>	35

Research demonstrates that consumers are less likely to look for and read safety information about the products that they use frequently and are familiar with (Godfrey et al., 1983). Given that many of the window covering incidents occurred on products with at least the permanent label attached on the bottom rail, and the high likelihood that consumers have window coverings in their homes and almost certainly use them daily, and thus have high familiarity, even well-designed warning labels will have limited effectiveness in communicating the hazard on this type of product.

CPSC staff concludes that warning labels are unlikely to effectively reduce the strangulation risk due to hazardous cords on window coverings because consumers are not likely to read and follow warning labels on window covering products, and strangulation deaths among children occur quickly and silently, such that parental supervision is insufficient to address the incidents.

d) Safety Devices

The voluntary standard requires that custom products with accessible operating cords include cord cleats with instructions for use and mounting. The standard also requires that custom products with a continuous loop operating system contain a cord tension device. Figure 3 shows examples of cord cleats and tension devices.

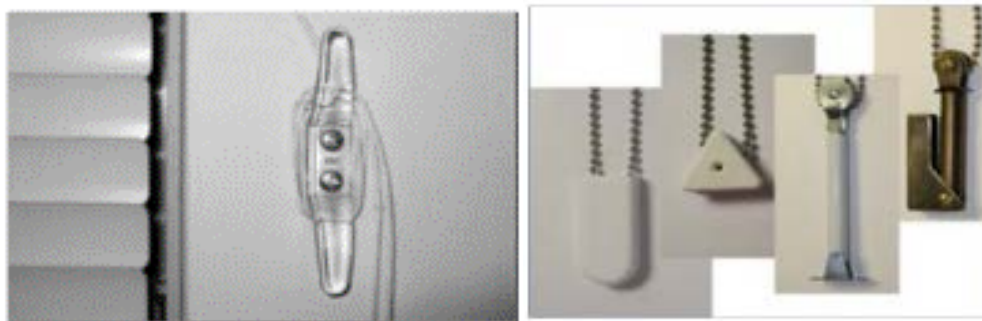


Figure 3. Examples of cord cleat (left), cord tension device (right)

Tension Devices

ANSI/WCMA requires that a tension device be attached to the cord or bead chain loop by the manufacturer and also requires a sequential process or tools to be removed, which essentially means that consumers would have to go through multiple steps or need to use a tool such as a screw driver to remove the tension device. Unless installed or altered from the shipped condition, the voluntary standard also requires window coverings to be designed so that they are prevented from operating, at least partially, unless the tension device is properly installed. The standard also requires that the tension device be supplied with fasteners and instructions and meet the durability test requirements.

Staff has been concerned with safety devices over the years for several reasons: securing safety devices goes beyond the installation of the window covering itself, which increases the “cost of compliance” that is the time and effort to use the product. Furthermore, tension devices, for example, usually require drilling holes on the wall or window sill that may not be permissible for renters and may not be desirable by home owners.

Among the 35 incidents involving custom products, 12 had continuous loop cords or bead chains. In one incident, the child was able to insert his head through the loop even though the tension device was attached to the wall, originally installed by a professional. In 2 incidents, a tension device was attached to the cord but not to the wall. In one incident, a tension device broke prior to the incident. In 4 incidents, staff confirmed that a tension device was not installed. The remaining 4 incidents contained no mention of tension device.

Cord Cleats

While the tension device is intended to at least “partially” prevent the window covering from operating, cord cleats have no impact on the operation of the window covering. Even when a cord cleat is installed, the consumer must wrap the cord around the cleat every time the product is raised or lowered to mitigate the strangulation hazard, which means that the user’s active involvement is necessary every time. Further, cord cleats can be accessed by a child if he/she climbs up. In one incident, although caregivers normally wrapped the cord around the cleat, on the day of the incident, cords were not wrapped, and the child accessed the cords after climbing on a couch.

Consumer Perception of Safety Devices

Some consumers may believe that because they either do not have young children living with them or visiting them, installation of the safety devices is unnecessary. However, window coverings last a long time, and when homes are sold or new renters move in, the existing window coverings, if they are functional, usually remain installed and could be hazardous to new occupants with young children.

CPSC issued a contract to investigate the effectiveness of safety devices in reducing the risk of a child’s access to hazardous cords and loops on window coverings. The research was conducted

by Westat, under Contract CPSC-Q-15-0064.⁴¹ The objective of the research was to provide CPSC with systematic and objective data on the factors that impact installation, use, and maintenance of safety devices; assess how these factors impact the likelihood of correct installation, use, and maintenance; and identify how the factors relate to the goal of reducing children's access to hazardous cords and loops. Westat reviewed the window coverings and safety devices available in brick-and-mortar and online stores; performed task analysis to identify key issues and specific questions to be addressed in the focus groups; developed materials and procedures for the focus groups; and conducted the focus groups. Major findings from the study point to:

- (1) A general awareness about cord entanglement among caregivers, which does not translate to precautionary action, due partly to the insufficient information provided at the point of sale;
- (2) Lack of awareness of the speed and mechanism of the injury that may lead to caregivers' underestimating the importance of providing an adequate level of supervision;
- (3) Difficulty using and installing safety devices as primary reasons for not using them; and
- (4) Inability to recognize the purpose of the safety devices provided with window coverings.

In general, participants in the Westat study preferred a cordless window covering or a passive mechanism, which does not require intentional action by the user. Westat concluded that there could be benefits from enhancing the public's awareness and understanding of the unique nature of incidents (e.g., speed, mechanism) and explaining a child's vulnerability in all rooms in the home, and that providing specific information at the point of sale, could be partially helpful. However, Westat stated that these improvements would be incremental, and that increasing the use of cordless window coverings would be needed to achieve significant benefits.

3. Parental Supervision

CPSC has recognized cords on window coverings as a hidden hazard for many years. Strangulation with cords requires only a few minutes. Because even young children are left unsupervised for a few minutes or more in a room that is considered safe, such as a bedroom or family room, staff conclude that parental supervision is unlikely to be effective to eliminate or reduce the hazard. Children can wrap the cord around their necks or insert their heads into a cord loop and get injured or die silently in a few minutes in any room, with or without supervision, because even when supervision is present, the level of supervision varies and distractions and other limitations to supervision exist. For example, staff received reports of five near-fatal strangulations in which the parent was either nearby or in the same room and was able to rescue the child before the child lost consciousness.⁴² Among the 35 incidents involving custom

⁴¹ <https://cpsc.gov/s3fs-public/Window%20Coverings%20Safety%20Devices%20Contractor%20Reports.pdf>

⁴² Video capturing a child's entanglement in the cords at <https://www.youtube.com/watch?v=2s6nBgy3MJA>, accessed on 8/13/2021

products, incident location was known in 33 incidents. In 18 incidents, a child was in a room shared by the family members such as a family room, living room, and sun room. Eleven of 18 incidents were not witnessed, whereas 5 were witnessed by an adult, 2 incidents occurred in the company of other children. Almost all the incidents (14/15) that occurred in a bedroom were unwitnessed, including one victim's father sleeping in the same room; only one was witnessed by another child, a 5-year-old (Table 3.) Out of the 14 fatalities, 13 were not witnessed whereas out of the 21 nonfatal incidents, 12 were not witnessed. Research supports these observations. People cannot be perfectly attentive, particularly over long periods of time, regardless of their desire to do so (Wickens & Hollands, 2000). Caregivers are likely to be distracted at least occasionally because they must perform other tasks, are exposed to more salient stimuli, or are subject to other stressors, such as being responsible for supervising more than one child. In fact, research by Morrongiello and colleagues (2006) indicates that older toddlers and preschool children (2 through 5 years old) are regularly out of view of a supervising parent for about 20 percent of their awake time at home, and are completely unsupervised (i.e., the parent was not listening to or watching what the child was doing at all) for about 4 percent of awake time in the home. The most common rooms in which children were left alone and unsupervised were the living or family room and the bedroom.

Table 3. Location of incidents and whether the incidents were witnessed

Location	Fatal	Nonfatal
Bedroom		
Witnessed by children	1	
Not witnessed	8	6
Family/Living/Dining room		
Witnessed by Adult		5
Witnessed by children		2
Not witnessed	5	6
Unknown		2
<i>Grand Total</i>	<i>14</i>	<i>21</i>

4. Assessment of Recommended Requirements for Custom Window Coverings

Staff evaluated the requirements that apply to stock window coverings in the ANSI/WCMA standard. Requirements that apply to stock products are as follows:

- Operating cords shall meet one of the following:
 - No operating cords,
 - Short cord with a length equal to or less than 8 inches in any state (free or under tension), or
 - Inaccessible operating cords determined per the test requirement in Appendix C of the ANSI/WCMA A100.1
- Inner cords shall meet Appendix C and D of the ANSI/WCMA A100.1.

Staff assesses that child anthropometry and strength related inputs to develop these requirements are adequate to address the strangulation risk associated with hazardous cords as discussed below:

a) Operating Cord Requirements

- Having no operating cords effectively eliminates the strangulation hazard associated with operating cords because there is no cord to cause strangulation; therefore, this is an adequate requirement.
- Having a short cord that does not exceed 8 inches of length in any position of the window covering also effectively eliminates the strangulation hazard associated with operating cords; the neck circumference of fifth percentile 6-9-month-old children is 8 inches (BSI, 1990 as cited in Norris and Wilson, 1995), therefore this is an adequate requirement.
- Ensuring that the operating cords are inaccessible is another adequate requirement. This requirement is tested in the ANSI/WCMA standard using a probe that is intended to simulate the finger size of a young child, the diameter of the probe is 0.25 inches based on fifth percentile 2-3.5-year old's index finger diameter (Snyder et al., 1977) at 0.33 inches and the off-the-shelf availability of a 0.25-inch dowel pin. If the probe cannot touch the cords, the cord is then deemed inaccessible.

Figure 4 shows examples that comply with the operating cord requirements.



Figure 4. Example window covering with no operating cords (left), with short cord not to exceed 8 inches (middle), inaccessible cord (right, source: Rollease Acmeda [at https://www.rolleaseacmeda.com/au/news/article/childsafety](https://www.rolleaseacmeda.com/au/news/article/childsafety))

Staff concludes that applying the same requirements for stock window covering products listed above to custom products will effectively eliminate the strangulation hazard associated with an operating cord on a window covering that is functional and operational as intended (i.e., not broken).

b) Inner Cord Requirements

ANSI/WCMA requires the inner cords for both stock and custom products to meet the same set of requirements.

1. *Access to inner cord:* Accessibility of the inner cords is tested using the cord accessibility probe (Figure 5.) The probe was developed using the anthropometric dimensions of children’s hands and fingers.

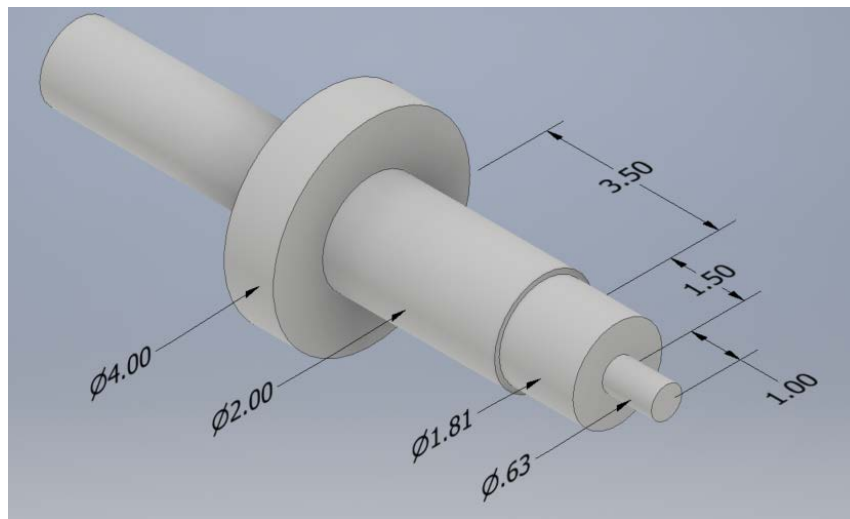


Figure 5. Accessibility probe (dimensions – inches)

The accessibility probe has different requirements for “Open” and “Closed” construction window covering products.

- Open construction means that inner cords are exposed from the front, rear, bottom or sides of the window covering, which are typical of Roman, horizontal, and pleated window coverings. Typically, inner cords for these products are enclosed between layers of the window covering without segmented sections, allowing access to inner cords in the product’s interior from any opening.
- Closed construction means that inner cords are enclosed within segmented layers of the product, which is typical of a cellular shade. Access to inner cords is limited to only that section of the cord in an individual segment.

For “open” construction products, if the inner cord accessibility probe can touch any cords before reaching the 2 in (51 mm) diameter section on the accessibility probe, the cords are considered accessible and must be tested to Appendix D: hazardous loop test procedure. If the 2 in (51 mm) diameter section of the inner cord accessibility probe can be inserted into any opening, then the cords are considered accessible and must be tested to Appendix D: Hazardous Loop Test Procedure.

For “closed” construction products, if the inner cord accessibility probe can touch any cords before reaching the 4 in (102 mm) diameter section, the cords are considered accessible and must be tested to the Appendix D: Hazardous Loop Test Procedure. If the 4 in (102 mm) diameter section of the inner cord accessibility probe can be inserted into any opening, then the cords are considered accessible and must be tested to Appendix D: Hazardous Loop Test Procedure. Table 4 shows scenarios and the calculated dimensions of the probe.

Table 4. Accessibility probe dimensions

Scenario	Dimension	Rationale for Dimension	Anthropometric Reference
Child inserts and curls the finger to grasp the cord	0.625-inch diameter	Opening needed to grasp the cord if a child inserts his/her index finger into the opening and curls it to grasp the cord.	Snyder et al (1977)
	1.0-inch length	Rounded number for the tip of index finger to the middle joint	Owings, et al (1977)
Child inserts the hand to an opening up to the thumb crotch	1.813-inch diameter	Opening needed to grasp the cord if a child inserts his/her hand in a straight position up to the thumb crotch.	Snyder, et al (1977) BSI (1990) as cited in Norris, B., & Wilson, J. R. (1995).
	2.5-inch length	the thumb crotch – middle finger length	Snyder et al (1977)
Child inserts the hand to the opening to reach a cord	2.0-inch diameter	Opening needed to grasp the cord if a child inserts his/her hand to the opening	Owings, et al (1977)

2. *Hazardous Loop Test*: If the inner cord is found accessible, the product must be tested to determine whether a hazardous loop can be created between an inner cord and the window covering material.

Even though ANSI/WCMA test procedures are slightly different between open and closed constructions, a hazardous loop creation first requires pulling the accessible inner cord in the direction that is perpendicular to the window covering surface, and in the direction that would result in the largest loop opening. The test method requires a pull force be exerted over 5 seconds at a maximum of 5 pounds, or a pulled distance of 25 inches, that simulates the arm length of a 95th percentile 8-year-old (PeopleSize 2008), whichever comes first. The pulled cord is then attached to two hooks 2.8 inches apart that simulates the hand breadth of the child.

Once the inner cord is pulled, the opening created by the pulled cord is then tested to determine whether a head probe simulating the head size of a fifth percentile 7-9-month-old child can be inserted with a maximum of 10 pounds insertion force.

Staff agrees with the size of the head probe because it takes into consideration the head breadth (4.33 inches), head length (5.83 inches), and head circumference (16.9 inches) of the youngest child at risk (fifth percentile 7-9-month-old, Snyder 1975 and 1977.) Head height is based on a CT scan of a 6-month-old and measures at 5.9 inches.

The tension force of 5 pounds is based on Section 4.14.1 Cords, Straps, and Elastics in ASTM F963. The insertion force of 10 pounds is based on Section 8.22 Test for Loops and Cords in ASTM F963. Staff could not locate the reference that ASTM F963 used to determine the 5 pounds of pull force for cords or straps. Staff notes that in Canada's Corded Window Covering Regulations, a pull force of 7.87 pounds (35 Newton) is applied to accessible cords, including

inner cords.⁴³ This force is estimated to represent a 97th percentile pinch-pull strength of 2-5-year-old males (DTI 2000) whereas a 5-pound (22 Newton) force represents the 32nd percentile for 2-5-year-old boys.

Based on staff's review of the literature on children's pull strength, we could not locate a pull strength measurement that exactly replicates a child's pulling action of an inner cord on a window covering. Staff notes that the action of pulling an inner cord would not be a straightforward task for a child, it requires both hands and arms working simultaneously because child would need to keep the window covering stationary while pulling a cord at the same time (Figure 6.)



Figure 6. Action of pulling inner cord out

Staff reviewed the inner cord incidents that were reported on custom window coverings. Staff found that all three inner cord incidents were associated with Roman shades with a very accessible and easy to pull inner cord on the backside of the product, with no shroud or slat (Figure 7.)



Figure 7. Accessible and hazardous inner cords from IDIs 090728CCC2792 (left), 110607CCC3794 (middle), 140305CBB1435 (right)

Staff is also aware of three inner cord incidents involving stock horizontal blinds during the reporting period. One product did not have cord stops; another product had cord stops positioned too low, in addition to the blind being too long for the window, creating extra slack; and the third product had broken slats (Figure 8.) Not having a cord stop on a traditional blind can allow inner

⁴³ Government of Canada, Corded Window Coverings Regulations: SOR/2019-97 available at: <https://gazette.gc.ca/rp-pr/p2/2019/2019-05-01/html/sor-dors97-eng.html>

cords to be pulled at excessive lengths. If cord stops are positioned too low, the cords can be pulled until the cord stops reach the head rail, possibly creating a large loop.

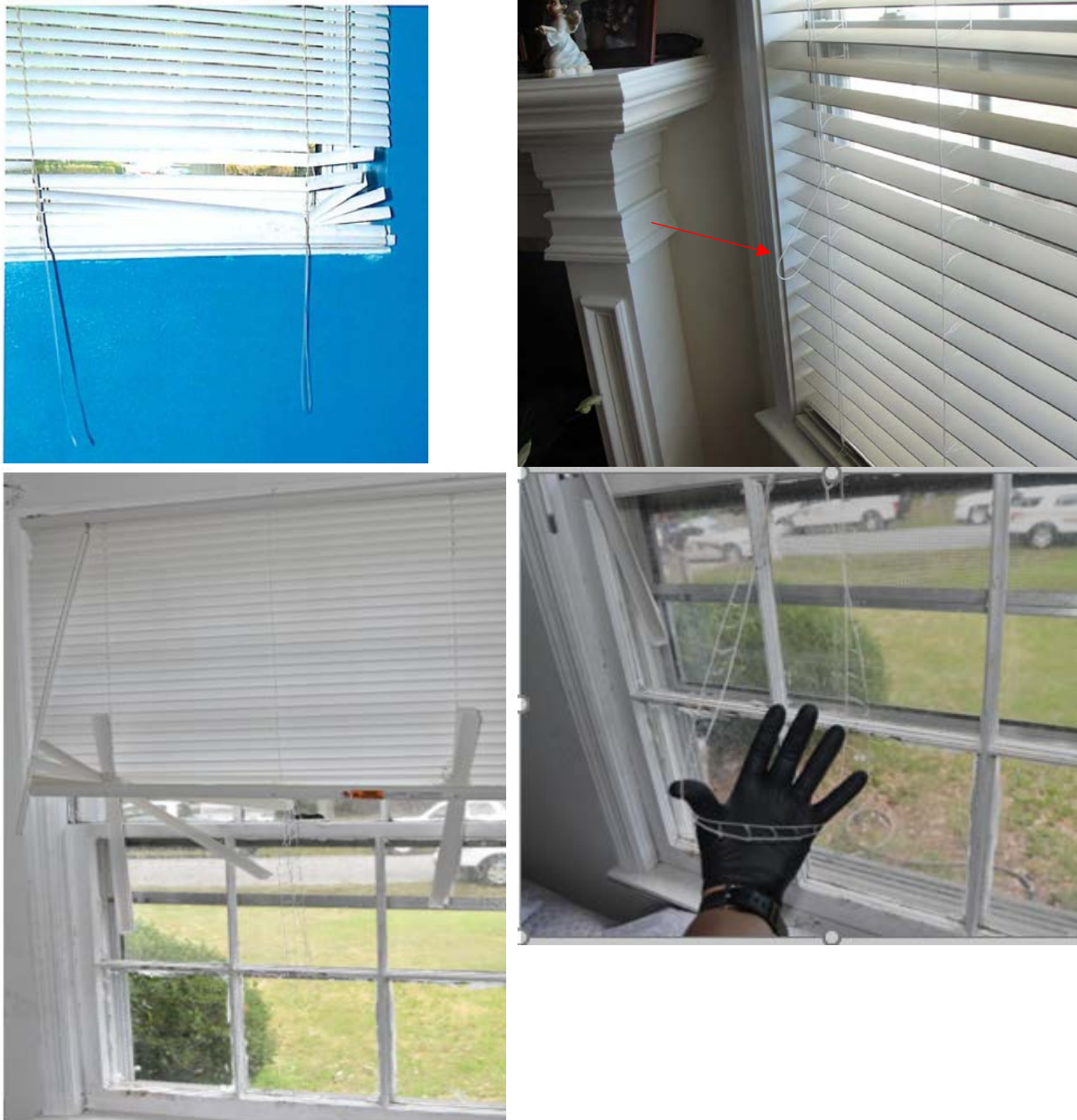


Figure 8. Inner cord incidents associated with horizontal blinds in IDIs 091009CCC2026 (top left), 111018CCC2027 (top right), 190829CCC1712 (bottom two)

Staff also evaluated a cordless stock horizontal blind and a cordless stock Roman shade. Both products included a spring mechanism to raise and lower the product. Staff attempted to simulate how a child would interact with the inner cord. Staff had the most difficulty keeping the window covering material in place while attempting to pull the inner cord on both products, as the more

staff attempted to pull the inner cord the more the window covering itself came with it. This is in contrast with window coverings that have traditional operating cords, which make it easier to pull the inner cord without much resistance from the window covering itself, if there is no inner cord stop or the inner cord stop is positioned too low.

Staff concludes that even though the 5-pound pull force is less than the pull force that Health Canada references, due to the complexity of pulling an inner cord while attempting to stabilize the window covering surface as well as lack of incidents that demonstrate an inadequacy of the pull force, staff continues to recommend 5 pounds as a sufficient pull force. Staff reiterates that in contrast with the Canadian legislation, pull force is applied to only inner cords in the ANSI/WCMA standard, whereas operating cords are required to meet stringent requirements without an applied pull force.

Staff could not locate the reference that ASTM F963 used to determine the 10 pounds of insertion force the ANSI/WCMA standard adopted for the head probe. Given the lack of incidents that staff could directly relate to insertion force of a child's head, staff concludes that this requirement is adequate.

c) Rigid Cord Shroud Requirements

Between March and December of 2018, the WCMA Rigid Cord Shroud Task Group, which includes CPSC staff, has worked to develop draft requirements to test "rigid cord shrouds" for deflection and deformation. Although the 2018 standard has requirements associated with rigid cord shrouds, it does not have a test method to clarify the meaning of "rigid" to ensure that rigid cord shroud is not flexible enough to cause a hazard like a cord and it does not allow the cord inside the shroud to be accessible. In December 2018, WCMA sent the agreed-upon language to the members, however, the language was never balloted. Staff recommends that the custom window coverings meet this requirement if they contain a rigid cord shroud that makes the operating cords inaccessible. The language is shown in Tab H (regulatory language.) The tests ensure the stiffness and integrity of the shroud. Staff finds the allowed deflection (1 inch for every 19-inch length of rigid cord shroud) reasonable. The axial torque test method simulates a child twisting the rigid cord shroud to determine if a cord becomes accessible. The torque is based on the mean wrist twisting strength of 2-5-year-old males using a vertically positioned 20 mm-diameter knob which is 4.4 inch-pound (DTI, 2002.) If the cord is accessible, then the device is not considered a rigid cord shroud.

5. Addressability of Incidents with the proposed rule:

According to the Division of Hazard Analysis, Directorate for Epidemiology memorandum, CPSC received reports of 194 incidents that reportedly occurred from January 2009 through December 2020. Staff identified 35 of these incidents as having occurred with a custom window covering; 50 with stock window covering, and in 109 cases, there was not enough information to identify whether the incident unit was stock or custom window covering.

Out of the 35 custom window covering incidents, a continuous loop was involved in 12 incidents; operating cords, including tilt cords, were involved in 19 incidents; 3 incidents involved inner cords; and 2 incidents involved an unknown cord type (Table 5.)

Table 5. Stock/Custom/Unknown Window Coverings involved in Incidents and Cord Types

Stock/Custom	Continuous loop	Inner cord	Lifting loop	Operating cord	Tilt cord	Unknown	Grand Total
Custom	12	3		18		2	35
Stock	3	14	1	24	2	6	50
Unknown	18	5	3	29	3	51	109
Grand Total	33	22	4	71	5	59	194

The stock product requirements in the voluntary standard adequately address both the continuous loops and operating cords by removing cords entirely, making them inaccessible, or by requiring them to be no longer than 8 inches; therefore, staff concludes that custom window coverings that comply with the same requirements would address the strangulation hazard resulting from continuous loops and operating cords.

All three of the inner cord incidents have reportedly occurred on custom Roman shades that did not comply with the requirements in the standard; if the products had complied with the voluntary standard, staff concludes that those incidents would have been prevented. Staff has concluded that window coverings now sold have substantial compliance to the inner cord voluntary standards (Tab E).

Overall, staff concludes that all 30 incidents associated with operating cords and continuous loops (out of 35 total incidents involving custom products, with the others including 3 that involved inner cords and 2 unknown) would have been prevented if the custom window covering complied with the requirements for stock window coverings in the ANSI/WCMA standard. The three inner cord related incidents would have been prevented if the incident units complied with the existing standard. Therefore, staff concludes that if the custom window coverings complied with the recommended requirements, 86 percent (30/35) of the custom product incidents would have been addressed in addition to the 8.6 (3/35) percent of the inner cord incidents that would be addressed by complying with the voluntary standard. Given that all accessible and hazardous cords are effectively addressed with the recommended requirements, staff assumes that the remaining 5.4 percent of the incidents (which represented 2/35 incidents for which the involved cord type was unknown) would also be addressed.

Staff notes that even though a large portion of the reported incidents did not have sufficient information to categorize the incident product as stock or custom, all of the hazard patterns involving unknown stock or custom product incidents (109) would also be addressed for future products if the draft proposed rule is enacted because if they are stock products, they would be part of the market we now find to be substantially compliant with the ANSI/WCMA A100.1 – 2018, and if they are custom products, they would comply with the draft proposed rule which aim to address operating cords (including tilt cords) and lifting loop incidents same as stock products, in addition to inner cords that would be already compliant with the ANSI/WCMA A100.1 – 2018.

6. Accessibility Concerns

Some manufacturers including WCMA have expressed concern about users with a disability, who may not be able to reach cordless window coverings to successfully operate the product, and urge that these consumers still need a corded product. However, staff found various tools that are designed to make the operation of the window covering easier and accessible to consumers in a variety of use locations. For example, extension poles are already available for window coverings that are out of reach, such as poles for skylights and cordless products (Figure 9.) Wands are also available to make it easier for users to operate it with a power grip instead of a pinch grip (Figure 10.)



Figure 9. Examples of extension poles currently available on the market (Source: Extension poles for out of reach shades | CellularWindowShades.com)⁴⁴

⁴⁴ Mention of trade names or products does not constitute endorsement or recommendation for use, nor does it imply that alternative products are unavailable or unable to be substituted after appropriate evaluation. The products are identified here to describe the concept of accessibility tools. Such identification is not intended to imply recommendation or endorsement by the U.S. Consumer Product Safety Commission nor is it intended to imply that the products identified are necessarily the best available for this purpose.



Figure 10. Wand with a hand grip shown in the middle. Photo provided by Parents for Window Blind Safety

7. Information and Education

Since the first safety alert was issued in 1985, CPSC has been warning parents of the danger of child strangulation due to corded window coverings. Every October, CPSC participates jointly with Window Covering Safety Council (WCSC) in National Window Covering Safety Month to urge parents and caregivers to check their window coverings for exposed and dangling cords and to take precautions. Both CPSC and WCSC recommend cordless window coverings at homes where young children live or visit.

In addition to traditional communication methods, CPSC reaches out to consumers using social media, such as safety blogs and online chats, to create awareness of the hazards associated with corded window coverings. Staff does not have information to assess the effectiveness of public education campaigns but given the long history on window covering safety campaigns, the achieved effectiveness has been limited.

8. Other Considerations

Staff specifically solicits comments on the following two topics in the draft NPR:

- Based on increasing number of incidents involving children associated with button battery ingestions, should a window covering product that comes with a remote control containing button batteries have requirements to restrict access to the battery compartment?⁴⁵ Staff is not

⁴⁵ <https://www.cpsc.gov/s3fs-public/ConsumerProductInjuriesCOVID19pandemic.pdf?StV8YoN146Uhwblv6rclS53mTYuH1b21>

aware of stock products with remote controls but custom products with remote controls are available.

- Should a window covering product with inaccessible cords have a warning label that alerts consumers that if a hazardous cord appears on the product, such as due to damage to the product, they should remove the product from use? Staff notes that there have been reports of inner cord incidents, as discussed above, that involved broken slats. This requirement would ideally be included in the ANSI/WCMA standard to alert consumers about the hazard involving stock products as well.

9. Conclusion

Based on incident data review, user study, and human factors literature, staff assesses that operating cords requirements for custom products in the ANSI/WCMA A100.1 – 2018 standard are inadequate to effectively address the strangulation hazard associated with custom window covering cords. Requirements in the voluntary standard still allow hazardous operating cords to be part of the custom window covering. Operating cords for custom window coverings can be long enough to fit around the child's neck or can create loops large enough to allow a child to insert their head. At least 86 percent of custom product incidents (30 of 35) can still occur if the product complied with the voluntary standard. Safety devices such as cord cleats and tension devices are unlikely to be effective, because cord cleats need to be attached on the wall and caregivers must wrap the cord around the cleat each and every time the window covering is raised or lowered. As incident data show, children can still access and become entangled in cords by climbing on furniture. Tension devices also need to be attached on the wall or window sill, which may not occur due to increased "cost" of compliance and unwillingness to create holes on the wall (or may not be permitted in rental homes); depending on how taut the cord loop is, it can still allow a child's head to enter the opening as observed in the incident data. User research study found a lack of awareness on cord entanglement among caregivers, lack of awareness of the speed and mechanism of the injury; difficulty using and installing safety devices as primary reasons for not using them; and inability to recognize the purpose of the safety devices provided with window coverings. Warning labels are not likely to be effective because research demonstrates that consumers are less likely to look for and read safety information about the products that they use frequently and are familiar with. Most of the incident units had the permanent warning label on the product. Even well-designed warning labels will have limited effectiveness in communicating the hazard on this type of product.

On the other hand, stock window covering requirements in the ANSI/WCMA standard adequately address the strangulation hazard by not allowing hazardous cords on the product by design, and therefore do not rely on consumer action.

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**TAB J: MANDATORY SAFETY STANDARD FOR CUSTOM WINDOW COVERINGS:
INITIAL REGULATORY FLEXIBILITY ANALYSIS**

Mandatory Safety Standard for Custom Window Coverings: Draft Initial Regulatory Flexibility Analysis



Mark Bailey

Directorate for Economic Analysis

October 6, 2021

Mandatory Safety Standard for Custom Window Coverings: Initial Regulatory Flexibility Analysis

The Commission is considering a draft proposed rule that would establish a mandatory safety standard for custom window coverings. The draft proposed rule would require that custom window coverings have no accessible cords or short, static cords no longer than eight inches in length and adhere to requirements established in voluntary standard ANSI/WCMA A100-1.2018. Whenever an agency publishes a proposed rule, the Regulatory Flexibility Act (5 USC 601 – 612) requires that the agency prepare an initial regulatory flexibility analysis that describes the impact that the rule would have on small businesses and other entities, unless the agency has a factual basis for certifying that the proposed rule “will not have a significant economic impact on a substantial number of small entities.”⁴⁶ The initial regulatory flexibility analysis (IRFA) must contain –

- (1) a description of why action by the agency is being considered;
- (2) a succinct statement of the objectives of, and legal basis for, the proposed rule;
- (3) a description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;
- (4) a description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record; and
- (5) an identification to the extent practicable, of all relevant Federal rules which may duplicate, overlap or conflict with the proposed rule.

An IRFA must also contain a description of any significant alternatives that would accomplish the stated objectives of the applicable statutes and which would minimize any significant economic impact of the proposed rule on small entities. Alternatives could include (1) establishing differing compliance or reporting requirements that consider the resources available to small businesses; (2) clarifying, consolidating, or simplifying compliance and reporting requirements for small entities; (3) using performance rather than design standards; and (4) exempting from coverage of the rule, or any part of the rule thereof, for small entities. This report provides an IRFA examining the potential impact of the draft rule on small businesses and other small entities.

Reason for Agency Action

The draft proposed rule is intended to address the strangulation hazard involving corded custom window covering products. The Directorate for Epidemiology, Division of Hazard Analysis (EPHA), reports that there is an average of 9 fatal injuries annually to children less than

⁴⁶ 5 USC § 605 (b) of The Regulatory Flexibility Act of 1980, as amended. Available at <https://www.sba.gov/advocacy/regulatory-flexibility-act>.

5 years old (Tab A, Chowdhury, 2021). The societal costs of these fatal injuries amounted to about \$82.8 million annually (Tab K, Bailey, 2021). Based on the estimate of about 185 nonfatal window covering injuries annually from CPSC's Injury Cost Model (ICM) the Directorate for Economic Analysis estimates the societal costs of nonfatal window covering injuries are approximately \$9.3 million (Bailey, 2021). Combining these estimates amounts to annual societal costs associated with corded window coverings of approximately \$92.1 million. The draft proposed rule would only address the proportion of these injuries attributable to custom products which based on a CPSC review of 194 reported incidents would be approximately \$53.9 million annually.

The draft proposed rule would adopt for custom products the same requirements in ANSI/WCMA A100-1.2018 that currently apply to stock products. Staff assesses that these requirements are effective at preventing strangulations for stock products and would be equally effective when applied to custom window coverings Tab I (Balci-Sinha 2021).

Objectives of and Legal Basis for the Rule

The objective of the rule is to reduce the risk of serious injury or death related to corded custom window coverings to children under age 8. The draft proposed rule would be issued under the authority of Sections 7 and 9 of the Consumer Product Safety Act.

Small Entities to Which the Rule Will Apply

The North American Industry Classification System (NAICS) defines product codes for U.S. firms. Firms that manufacture window coverings may list their business under the NAICS product code for blinds and shades manufacturers (337920 Blind and Shade Manufacturing) or retailers (442291 Window Treatment Stores).⁴⁷ Importers of window coverings are generally listed in Home Furnishing Merchant Wholesalers (423220) which includes other home furnishing items and is non-specific to window coverings.

Under SBA guidelines, a manufacturer of window coverings is categorized as small if the firm has less than 1,000 employees, retailers are considered small if they have sales revenue less than \$8.0 million, and importers if the firm has less than 100 employees. Based on 2017 data, there were 1,898 firms categorized as blinds and shades manufacturers and retailers (Census Bureau, 2020). Of these, about 1,840 firms (302 manufacturers and 1,538 retailers) are small. As the NAICS code for importers is non-specific to window coverings CPSC staff reviewed Customs and Border Patrol data, firm financial reports, and Dun & Bradstreet reports to obtain a more precise estimate of importers. Based on this research, CPSC staff estimates that there are approximately 83 importers that meet the SBA guidelines for a small business (Laciak 2020).

Nearly all of the 302 small manufacturers identified are far below the 1,000 employee SBA threshold. 238 of the manufacturers have fewer than 20 employees and 151 have fewer than 5 employees. CPSC staff estimates that the annual revenue for the firms with fewer than 20 employees to be under \$250,000. Most of the firms with fewer than 5 employees manufacture

⁴⁷ The two product codes 337920 and 442291 encompass most products in the window coverings market. However, some drapery and curtain manufacturers may be listed under 322230, stationary product manufacturing.

custom window coverings on a per order basis. The annual revenue for these manufacturers is most likely below \$25,000, based on estimates from the Nonemployer Statistics from the U.S. Bureau of the Census. Staff estimates that the annual revenues for the remaining small manufacturers, those with more than 20 employees, are between \$300,000 to \$2,000,000.

Compliance Requirements of the Draft Proposed Rule, Including Reporting and Recordkeeping Requirements

The draft proposed rule would establish a performance standard for custom window coverings that would adopt the voluntary standard for stock products in ANSI/WCMA A100-1.2018.⁴⁸ To comply with the performance requirements, all accessible operating cords would need to be removed, made inaccessible, or shortened to less than 8 inches.

Under section 14 of the CPSA, as codified in 16 CFR part 1110, manufacturers and importers of custom window coverings will be required to certify, based on a test of each product or upon a reasonable testing program, that their window coverings comply with the requirements of the draft proposed rule. Each certificate of compliance must identify the manufacturer or importer issuing the certificate and any manufacturer, firm, or third party conformity assessment body on whose testing the certificate depends. The certificate must be legible and in English and also include the date and place of manufacture, the date and place where the product was tested, including the full mailing address and telephone number for each party, and the contact information for the person responsible for maintaining records of the test results. The certificates may be in electronic format and must be provided to each distributor or retailer of the product. Upon request, the certificates must also be provided to the CPSC and Customs and Border Protection (CBP).⁴⁹

Costs of Draft Rule That Would Be Incurred By Small Manufacturers

Custom window covering manufacturers would most likely adopt cordless lift operation systems to comply with the draft proposed rule. As discussed in the preliminary regulatory analysis of the proposed rule (Tab K Bailey, 2021), the cost to modify window covering lift systems with the draft proposed rule ranges from \$2.95 to \$9.65 per horizontal blind, \$2.15 to \$34.57 per shade, and no expected cost increase for vertical blinds and curtains/drapes. CPSC staff does not have estimates of redesign costs but expects that these costs will be small given the already wide availability of product designs with inaccessible cords.⁵⁰ CPSC staff expects component costs to be significant as inaccessible cord operation is expensive as shown in Tab K the preliminary regulatory analysis (Bailey, 2021).

⁴⁸ See section 4.3.1 of the voluntary standard for a description of the operating systems that would be allowed as the draft proposed rule would adapt the stock product requirements for custom products.

⁴⁹ The regulations governing the content, form, and availability of the certificates of compliance are codified at 16 CFR 1110.

⁵⁰ Based on interviews with window covering manufacturers there may be some size and placement limitations related in-accessible cord designs. These limitations can be addressed with motorization of the product but it is prohibitively expensive as many motorized systems can cost more than the window covering product itself.

Estimates of the costs to modify three types of window coverings in Panchal (2016) indicate that at a minimum the costs to modify will range from 2 to 11 percent of retail prices. Panchal (2016) used a product archeology approach, supplemented by standard models for calculating only manufacturing and assembly costs, to estimate the incremental cost of implementing standard manual uncorded technology for entry-level stock window coverings – the type of window coverings that are available for purchase off-the-shelf from home improvement stores. Hence his estimates are most applicable to the more basic and inexpensive uncorded products at the low end of the window coverings market. Panchal’s analysis does not account for any costs associated with product development and design innovations, testing, licensing of technology, manufacturing restrictions due to existing patents, and training of personnel, which would add further costs to implementing uncorded technologies (Panchal, 2016).

Manufacturers would likely incur some additional costs to certify that their window coverings meet the requirements of the draft proposed rule as required by Section 14 of the CPSA. The certification must be based on a test of each product or a reasonable testing program. The Window Covering Manufacturers Association (WCMA) developed a certification program for window covering products titled “Best for Kids” which includes third party testing of products for accessible cords. CPSC staff believes this certification would meet the requirements as outlined in Section 14 of the CPSA. Based on quotes from testing laboratory services for consumer products, the cost of the certification testing will range from \$290 to \$540 per window covering model.⁵¹ Note that the requirement to certify compliance with all product safety rules, based on a reasonable testing program, is a requirement of the CPSA and not of the draft proposed rule.

CPSC staff note that a reasonable testing program could entail a simple visual inspection of products by the manufacturer and would still likely meet the requirements. Therefore, the cost of a reasonable testing program for compliance with the draft proposed rule is likely much lower than the cost of conducting a third party certification test of each product.

Impact on Small Manufacturers

In order to comply with the draft proposed rule, small manufacturers are expected to incur redesign and incremental component costs described above for some product lines which currently are not available in in-accessible cord variants. Staff does not expect small manufacturers to suffer a disproportionate cost effect from the draft proposed rule as the cost calculations and research were completed on a per unit basis and little if any redesign costs are expected. Small manufacturers of window coverings are expected to incur at a bare minimum a two percent impact to their custom window covering revenue from the draft proposed rule. This implies that if custom products account for all of a firm’s revenue then the minimum impact of the draft proposed rule is two percent of revenue.

Generally, staff considers an impact to be potentially significant if it exceeds 1 percent of a firm’s revenue. Because even the smallest estimate of cost is 2 percent of retail price staff

⁵¹ Based on quotes from firms to conduct certification tests to the current WCMA voluntary standard on window covering products currently available at retailers.

believes that the draft proposed rule could have a significant impact on manufacturers that receive a significant portion of their revenue from the sale of custom window coverings. Staff notes that small importers are expected to bear similar costs as small manufacturers, but staff is unclear whether the impact will be significant. The cost effect as a percent of revenue is dependent on the firm's custom window covering imports as a percent of total revenue. Any small importer with revenues of at least 50 percent related to custom window covering products affected by the draft proposed rule could be significantly impacted. Due to these potential impacts, CPSC staff expects the draft proposed rule to have a significant effect on a substantial number of small firms.

Federal Rules which may Duplicate, Overlap, or Conflict with the Proposed Rule

CPSC staff has not identified any other Federal rules that duplicate, overlap, or conflict with the draft proposed rule.

Alternatives for Reducing the Adverse Impact on Small Entities

Under section 603(c) of the Regulatory Flexibility Act, an initial regulatory flexibility analysis should "contain a description of any significant alternatives to the proposed rule which accomplish the stated objectives of the applicable statutes and which minimize any significant impact of the proposed rule on small entities." CPSC staff examined several alternatives to the draft proposed rule which could reduce the impact on small entities. These are discussed below.

No Action Alternative

Under this alternative the status quo would be maintained. This option might be selected on the grounds that the risk associated with custom corded products is small and materials describing the risk associated with corded window covering products are distributed to consumers upon purchase. Additionally, cordless products are widely available for nearly all window covering types for consumers that can afford them. There are no costs associated with this alternative. However, this alternative is unlikely to address the fatal and non-fatal injuries involving corded custom window coverings. Corded custom products would still be available to consumers.

Improve Voluntary Standard for Window Coverings

Another alternative might be for Commission staff to continue participating and encouraging safety improvements to the voluntary standard for window coverings, WCMA A100-1. This option would be similar to the "no action alternative," with the key difference being that the Commission could direct staff to pursue safety improvements in the voluntary standard, including applying relevant conditions on stock products to custom, as a conditional alternative to a mandatory standard. The Commission could then reconsider a mandatory standard if efforts to improve the voluntary standard on custom products remain unsatisfactory.

Staff has supported recent changes in the voluntary standard with requirements for cordless stock products, more descriptive warning labels, and materials describing the strangulation hazard. Additionally, WCMA has in the past rejected initiatives to require no accessible cords on custom products. Consequently, it does not appear that the voluntary standards process is likely to lead to a custom cordless requirement for any product type in the short or long run. Staff note that previous efforts for an effective stock product voluntary standard required over two decades of development by WCMA.

Later Effective Date

The draft proposed rule includes an effective date that is two years after the final rule is published in the *Federal Register*, which is twelve months longer than the statutory provision in section 9(c) of the CPSA.⁵² 15 U.S.C. § 2058(c). Given that there are some issues in redesigning certain window coverings of unusual sizes to accommodate cordless operation, a later effective date would allow manufacturers more time to redesign and spread the research and development costs, or eliminate product variants that cannot be switched to cordless operation. It is unlikely that any manufacturer (large or small) would leave the window covering market as a result of the draft proposed rule but elimination of some product sizes is possible as conversion to cordless operation may not be feasible for large or unusual sizes.⁵³

Later effective dates, beyond the proposed two-year effective date, would mitigate some of the costs related to redesign/research and development for manufacturers. However, if cordless operation is not feasible a reduction in sales would occur if a consumer could not find a suitable alternative. Given the large costs to conform per unit of the draft proposed rule, delaying the effective date would be expected to reduce costs but not by a consequential amount as further cost reductions would be mostly attributable to inventory reductions of products in which cordless operation isn't feasible.

Limit Proposed Rule to Vertical Blinds, Curtains, and Drapes

The Commission could narrow the draft proposed rule to only address hazards associated with operating cords on vertical blinds, curtains, and drapes on the grounds that cords are not critical to the operation of these products. These products typically offer cordless options at no additional cost because, for most applications, a plastic rod can be used for operation. Narrowing the proposed rule to these three product types would lessen the cost impact and make it unlikely that any particular product type and/or size would be eliminated. Under this alternative, the costs are expected to be near \$0 because using plastic rods for operation is very similar to cords in cost. However, only 2 of the 35 custom product incidents (both are fatalities) were associated with vertical blinds and there were no curtain or drape incidents where the stock/custom classification could be determined. Given the small presence of vertical blinds in custom product

⁵² Section 9(c) of the CPSA provides that rules must be issued within twelve months after the date of publication of a proposed rule unless the Commission extends this period for good cause.

⁵³ Motorization is a possibility in these cases but motorization of window coverings is expensive and may exceed the cost of the window covering product.

incidents, staff cannot recommend this option because an effective reduction in injuries and deaths are unlikely with this approach.

Continue and Improve Information and Education Campaign

The Commission could work to improve the current information and education campaign concerning the strangulation hazard associated with corded window covering products. This alternative could be implemented on its own without regard for regulatory action. CPSC staff find the current campaign to be ineffective at communicating the hazard to consumers and by extension ineffective at reducing or preventing injuries associated with window coverings.

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**TAB K: PRELIMINARY REGULATORY ANALYSIS OF THE DRAFT PROPOSED
RULE FOR CUSTOM WINDOW COVERINGS**



**Preliminary Regulatory Analysis of the Draft Proposed Rule
for Custom Window Coverings**

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**Directorate for Economic Analysis
U.S. Consumer Product Safety Commission
October 6, 2021**

WINDOW COVERINGS, PRELIMINARY REGULATORY ANALYSIS

Executive Summary

Window coverings are separated into the following product categories: blinds, shades, and curtains/draperies. The shades category includes cellular shades, pleated shades, roller shades, and Roman shades, while the blinds category includes horizontal blinds and vertical blinds of varying material types. Curtains/draperies are simply a piece of material (normally a fabric) hung at the top of a window to form a covering or screen. These products are further classified by a “stock” and “custom” designation as defined in the voluntary standard for window coverings, ANSI/WCMA A100.1 – 2018. Generally, stock products are less expensive than custom for similar materials and construction. Operating systems for window coverings are classified into two categories: corded and cordless. Corded window covering operating systems generally have cords to raise and lower the product, or move the product from side to side, as well as to open and close slats to allow for light control. Cords are typically located inside the product (inner cord), to the side of the product (operating cord or outer cord), or both. Cordless window coverings are designed to function without an operating cord, generally either through manual operation or motorization, and may have inner cords. Cordless operating systems are typically more expensive than corded products, with motorized operating systems commanding the highest price premium.

The draft proposed rule would address the risk of strangulation in children age 8 and under by eliminating accessible cords for custom window covering products. Since late 2018, the ANSI/WCMA voluntary standard has been in full effect. CPSC staff assesses that compliance with this voluntary standard eliminates accessible cords from stock window covering products. However, staff assesses that the ANSI/WCMA standard does not eliminate the risk of strangulation associated with custom window covering products, because the voluntary standard still allows hazardous accessible cords on custom products. The draft proposed rule would require custom products to meet the same requirements with respect to hazardous cords for stock products in the ANSI/WCMA standard, requiring the removal of hazardous accessible cords in all window covering products without regard for product classification.

CPSC staff estimates that approximately 9 fatal injuries involving corded window coverings occur annually (Tab A, Chowdhury 2021). The Directorate for Epidemiology also explored the nonfatal injuries reported through NEISS. However, the estimate derived from the number of nonfatal strangulation injuries involving corded window coverings does not meet the publication criteria established in NEISS; as such, these injury cases could not be used to generate an annual estimate of nonfatal injuries treated in hospital emergency departments. Staff estimate the societal costs of the fatal injuries to be about \$82.8 million annually and the Directorate for Economic Analysis estimates that the societal costs for the annual amount of nonfatal injuries to be approximately \$9.3 million.⁵⁴ The aggregate societal costs using these estimates amounts to \$92.1 million. Because staff assesses that the voluntary standard adequately addresses the risk of injury associated with stock window coverings, and because stock window coverings are the subject of a separate draft proposed rule under section 15(j) of the Consumer Product Safety Act (CPSC), the draft proposed rule under sections 7 and 9 of the CPSA would only address the proportion of these injuries costs attributable to custom stock products. Staff

⁵⁴ The estimate is based on application of CPSC’s Injury Cost Model to the small sample of NEISS nonfatal injuries involving corded window coverings to obtain an estimate of the number of nonfatal injuries not treated in hospital emergency departments.

estimates the proportion of injury cost attributable to custom products to be approximately \$53.9 million annually, based on a CPSC review of reported incidents. Combined with an estimate of 511.72 million custom window coverings in use and an estimate of custom corded products in use of 65 percent for the year of 2019 results in a societal cost estimate of deaths and injuries associated with corded custom window coverings of approximately \$0.16 per custom window covering in use. (\$53.9 million / [511.72 x 0.65])

Staff calculated the present value of the societal cost of injuries for each detailed blind type based on the expected product life. The present value of societal cost per unit for Metal and Vinyl horizontal blinds, Wood and Faux Wood horizontal blinds amounts to \$1.34 and \$3.61 respectively. For cellular, pleated, roller, and soft sheer shades the present value equates to \$0.92 per unit. Roman shades equate to a per unit present value of \$1.57. Combining these estimates with one year of corded custom window covering sales (2019) amounts to a gross annual benefit of \$52.3 million. Adjusting this estimate for the expected effectiveness of the proposed rule equates to a total benefit of approximately \$49.5 million.

The draft proposed rule would impose significant costs on manufacturers of custom window covering products. Based on component cost estimates, assembly/manufacturing costs, and proportions of domestic manufacturing, the cost per corded custom window covering produced would range from \$2.15 to \$34.57 and is highly dependent on product type. Manufacturers would be expected to pass much of this cost to consumers in the form of higher prices. Interviews conducted with retailers and manufacturers indicate that about 65 percent of custom window covering unit sales are currently corded products. The proposed rule would not be expected to result in any cost increases for cordless custom window coverings, and as such, aggregate costs should be calculated on only corded custom products. Combining the 2019 custom sales estimate of 61.58 million with per unit cost increase, and the percentage of corded custom sales results in an aggregate cost range of \$156.5 million and \$309 million.

Our analysis discussed several alternatives to the draft proposed rule, including:

- 7.1 No Action Alternative
- 7.2 Improve the Voluntary Standard for Window Coverings
- 7.3 Later Effective Date
- 7.4 Limit the Scope of the Proposed Rule to Vertical Blinds, Curtains, and Drapes
- 7.5 Continue and Improve Information and Education Campaign

The expected benefits of the alternatives would be lower than the expected benefits of the draft proposed rule, but the costs would also be lower. In particular, the alternatives could, individually or in combination, reduce the costs of the draft proposed rule on manufacturers (including small manufacturers), and/or allow for greater choice in the types of window coverings that consumers could purchase.

1.0 INTRODUCTION

Parents for Window Blind Safety, Consumer Federation of America, Consumers Union, Kids in Danger, Public Citizen, U.S. PIRG, Independent Safety Consulting, Safety Behavior Analysis, Inc., and

Onder, Shelton, O’Leary & Peterson, LLC petitioned the U.S. Consumer Product Safety Commission (CPSC) to promulgate a mandatory standard that prohibits the use of cords in window coverings where a feasible cordless alternative exists, and, for those instances where a feasible cordless alternative does not exist, require that the cords be less than 8 inches long, or require that cords be made inaccessible through the use of passive guarding devices. On July 15, 2013, the Commission published a *Federal Register* notice (78 *Fed. Reg.* 42,026) requesting public comments on the petition.

The CPSC initiated a regulatory proceeding by published an Advance Notice of Proposed Rulemaking (ANPR) on January 16, 2015 (80 *Fed. Reg.* 566). In 2017, the Window Covering Manufacturers Association (WCMA) updated its voluntary standard that was officially adopted in 2018 (WCMA A100-1.2018). The 2018 version of the ANSI/WCMA voluntary standard segments window covering products into two main categories: stock and custom. The voluntary standard requires that stock window covering products be products without cords or without accessible cords or only with short, static cords (*i.e.*, maximum eight inches in length). The standard requires custom products to meet one of the three requirements: (1) No operating cords; (2) Short cord with a length equal to or less than 8 inches in any state (free or under tension), (3) Inaccessible operating cords determined per the test requirement in Appendix C of the standard **or** have operating systems that result in free-hanging and accessible cords; these systems include single retractable cord lift system, continuous loop operating system, and standard operating system.

1.1 Draft Proposed Rule

The draft proposed rule is intended to address the strangulation hazard involving operating cords on custom window covering products by applying the same requirements for operating cords in ANSI/WCMA A100-1.2018 that currently apply to stock products to custom window coverings. Staff concludes that the requirements for operating cords on stock window covering products are effective at preventing strangulations and would be 94.6 percent effective when applied to custom window coverings (Tab I, Balci-Sinha 2021).

2.0 NEED FOR THE RULE

2.1 Risk of Death or Injury Posed by Window Coverings

The purpose of the regulatory proceeding on window coverings, initiated by the 2015 ANPR, was to address an unreasonable risk of death and injury resulting from pediatric strangulation posed by corded window coverings. As shown below, in recent years there have been about 9 deaths and about 185 medically treated injuries annually that involve the strangulation of young children on corded window coverings (Chowdhury, 2021; Lawrence et al., 2018).⁵⁵ The Commission is now considering whether a mandatory safety standard for window coverings is needed to address an unreasonable risk of

⁵⁵ The estimates of medically treated non-fatal injuries do not meet NEISS reporting requirements but are used in this analysis to assign societal costs even though the values are small.

death or injury that is posed by operating cords on custom window covering products that still contain the traditional cords and pose a strangulation risk.

Window coverings are currently sold as stock or custom products. As noted, in 2018 the industry addressed the hazard by adopting a voluntary product safety standard that required all window coverings sold as stock products to: (1) have no operating cord, (2) have a short cord of less than 8 inches, or (3) have inaccessible operating cords.⁵⁶ Based on recent estimates, about 56 percent of the window coverings sold in 2019 were stock products and 44 percent were custom products (D+R, 2021). The ANSI/WCMA voluntary standard does not require that operating cords on custom window coverings be cordless; custom window coverings can still be purchased with operating cords if a consumer desires. Because the majority of products sold are stock window coverings, a large proportion of window coverings sold in the US today are cordless, thereby eliminating the hazard associated with cord-related strangulation for these products.

3.0 MARKET INFORMATION

3.1 The Product

Window coverings include the following product categories: blinds, shades, and curtains and draperies. The shades category includes cellular shades, pleated shades, roller shades, and Roman shades, while the blinds category includes horizontal blinds and vertical blinds of varying material types. These products are further classified by a “stock” or “custom” designation, as defined in ANSI/WCMA A100.1 – 2018. The standard defines a “stock” window covering product as a specific SKU, which is completely or substantially fabricated in advance of being distributed in commerce (as that term is defined in 15 U.S.C. Sect.2052(a)(7)) and in advance of any specific consumer request for that product. The SKU can either be sold “as is” or modified or adjusted by the seller, manufacturer, or distributor before or after being distributed in commerce, and it would still be considered a stock blind or shade.

Materials used to make shades and blinds include fabric, wood or faux wood, polymers, such as vinyl, and woven materials, such as bamboo. Window covering operating systems can vary slightly by window covering type, but all operating systems fit into one of two general categories: corded or cordless. Window covering products are mounted either inside or outside the window frame, and can be customized to fit non-standard sized windows, or for operation when the window frame is inaccessible, using tools or mobility devices (ladders, stools, lifts etc. etc.). Some window covering types, curtains/drapes, shades, and horizontal blinds, can also be customized to fit unusual window shapes like circles, ovals, trapezoids, diamonds etc. etc. but operation may be limited.

3.1.1 Corded Window Covering Products

“Traditional” or “corded” shades and blinds generally have cords located inside the product (inner cord), to the side of the product (operating cord or outer cord), or both. The inner cords between

⁵⁶ For purposes of this analysis, window coverings that (1) have no operating cord, (2) have a short cord of less than 8 inches, or (3) have inaccessible operating cords, will be described as *uncorded* or *cordless*.

the head rail and bottom rail lift the horizontal slats to adjust light coming through, as in the case of horizontal blinds, or fabric and similar materials, as is the case for Roman or pleated shades. The inner cords may be exposed from the front, rear, or bottom of the window covering, or can be rendered inaccessible depending upon how the product is constructed. Horizontal blinds and pleated shades generally have two inner cords, one on each side of the blind, but products manufactured for wider windows may require more than two inner cords to be operational.

The outer cord or operating cord allows the user to raise, lower, open and close, rotate, or tilt the window covering. Operating cord systems generally fall into one of three categories: (1) standard; (2) single cord; and (3) continuous loop. The operating cord in a standard operating system consists of two or more cords and often includes a cord locking device to allow the user to set the height of the window covering. In a single cord operating system, the user is able to manipulate the window covering with a pull cord. The operating cord in a continuous loop operating system uses a single piece of cord or a beaded metal or plastic chain which is secured to a wall and operates like a pulley. For example, pulling the rear loop will raise the shade while pulling the front half of the loop will lower the shade.

While operating systems can vary, some products are more commonly coupled with specific systems. Cellular and pleated shades can have any of the three systems while roller and Roman shades mostly use a standard or continuous loop. Horizontal blinds are generally coupled with a standard operating system while vertical blinds operate by continuous loop. Some curtains and drapes operate by continuous loop in conjunction with a traverse rod, and are also within the scope of the rule. However, many curtains and drapes are stationary and do not have operating systems; these products are not within the scope of the rule.

3.1.2 Cordless Window Products

Virtually every window covering type is available with a “cordless” operating system, which means it has been designed to function without an operating cord.⁵⁷ Cordless window coverings may require inner cords, but these can be, and typically are, made inaccessible through a variety of approaches. In lieu of an operating cord, cordless operating systems can be manual or motorized. A manual operating system allows users to lift or lower the window covering with a plastic handle or directly by hand.

A motorized operating system uses a motor and control system to manipulate the window covering, such as a remote control or wall switch. Installation of cordless window coverings that are motorized is more complicated than manual systems as these require a power source. The power sources for motorized systems in order of installation complexity are: battery powered, DC plug, solar powered, and what is commonly called “hardwired.”

The simplest power source to install is a battery system typically installed near the head rail in a circular tube called a battery wand. Replacement of the batteries can require additional tools like a

⁵⁷The availability of alternatives to corded window coverings may sometimes be constrained due to size and weight limitations. See Lee, 2014. Through market research, staff found several examples of cordless blinds that are made with a maximum height of 84” and a maximum width of 144” (Tab G).

screwdriver, step ladder, or stool. Most manufacturers recommend lithium ion batteries for use in their systems due to the increased temperature level around window coverings.⁵⁸ A DC plug adapter can also be used as a power source and is easy to install. A window covering with a DC plug adapter can be plugged into any standard electrical outlet. Electrical outlets aren't typically installed near the top of a window. Accordingly, DC plugs may require consumers to use extension cords near the window covering to reach an available outlet, which some consumers may find unsightly.

Solar powered motorized window coverings operate thru the use of a rechargeable battery wand combined with a solar panel which charges the batteries. Installation is about as complex as a typical battery system, but placement of the solar panel is critical to the operation of the window covering. Newer more advanced versions of solar powered window coverings can power themselves while also providing renewable energy. These products are less mature than others and generally much more expensive.

The most complex to install power source for motorized systems is to wire the window covering directly into the home; this is commonly called "hardwiring." The industry does not regard hardwiring window coverings as a task consumers can complete. Typically, electricians are required to install these products, which creates higher installation costs for consumers.

3.1.3 Other Types of Safety Devices

Rather than eliminating the operating cord entirely some manufacturers offer other devices to isolate the operating cord. These alternatives include, among others: retractable cord devices, cord cleats, cord shrouds, cord condensers, and wands. All of these devices are available for purchase by consumers but offerings vary by manufacturer. A retractable cord device uses a spring loaded spool to adjust the length of the pull cord. After the consumer adjusts the pull cord to raise or lower the window covering, the retractable cord device automatically retracts the pull cord back to the bottom of the headrail and ensures the pull cord is out of reach of small children.

Cord cleats are generally composed of transparent or white plastic material in a long, rectangular shape. Two cord cleats must be installed or anchored to the wall near the window covering at a height out of reach of children. Cord cleats are used in conjunction with operating cords that dangle below the bottom of the window covering. The consumer wraps operating cord(s) in an S-shape around the cord cleats. See Tab I for more detailed descriptions of these devices and how each is operated.

A cord shroud encloses the pull cord or continuous cord loops for various types of blinds and shades with a rigid material, usually plastic. Although the pull cord or continuous loop cords are rendered inaccessible, the consumer can use the cord shroud to raise and lower the window covering. Cord condensers are a small plastic device that the consumer feeds the multiple cords into to condense the pull cord to a single pull cord below where the device is installed. Wands are simple pieces of plastic that the consumer rotates or pulls to operate the window covering in place of a cord.

⁵⁸ Window coverings receive direct sunlight for large portions of the day resulting in higher surface temperatures which can cause the failure of non-lithium type batteries.

3.2 The Industry

The North American Industry Classification System (NAICS) defines product codes for U.S. firms. Firms that manufacture window coverings may list their business under the NAICS product code for blinds and shades manufacturers (337920 Blind and Shade Manufacturing) or retailers (442291 Window Treatment Stores).⁵⁹ Under U.S. Small Business Administration (SBA) guidelines, a manufacturer of window coverings is categorized as small if the firm has less than 1000 employees and retailers are considered small if they have sales revenue less than \$8.0 million. Based on 2017 data, 1,898 firms were categorized as blinds and shades manufacturers and retailers (Census Bureau, 2020). Of these, about 1,840 firms (302 manufacturers and 1,538 retailers) are small.

In 2020, three manufacturers accounted for almost 38 percent of dollar sales in the U.S. window coverings market (Euromonitor 2021a). Only one of these manufacturers is a publicly-held firm. In 2020, the largest global manufacturer and distributor of window coverings reported worldwide net sales of \$3,543 million, with North American window covering sales reported as 1,703 million. The second largest firm is privately held and annual reports are not publicly available. Estimates of this firm's revenue indicate annual U.S. window covering revenue in 2020 of approximately \$728 million (Euromonitor 2021a). The third firm is also privately held and estimates indicate U.S. window covering revenues in 2020 of approximately \$88 million (Euromonitor 2021a). The remainder of the total market size of \$6.6 billion is attributed to firms that each account for less than three percent market share (Euromonitor 2021b).

A recent study conducted for CPSC (D+R, 2021) estimated that in 2019, approximately 139 million residential window coverings were shipped in the United States. The majority of these shipments, 59.2 percent, were blinds while 25.4 percent were shades. When comparing unit sales data to revenue data, staff found that while custom products account for approximately 44 percent of unit sales, a disproportionate amount of revenue is attributable to custom window covering products. For example, roman shades which nearly all sold are custom window covering products account for 1.9 percent of annual sales in 2019 but generated revenues equal to 2.3 percent of the total.

3.3 Retail Prices

Retail prices for window coverings vary, depending on the type of the product and retailer. Stock products for common size window coverings can be purchased at a variety of retailers, such as big box and home furnishing stores, and e-commerce retailers, such as Amazon and Wayfair. The type of material and brand affect the price. According to the D+R International (2021) study, weighted average prices for window coverings range from about \$54 to \$94 for shades and from about \$25 to \$250 for blinds.⁶⁰ Prices for vertical blinds are generally lower than the prices of horizontal blinds; prices for

⁵⁹ The two product codes 337920 and 442291 encompass most products in the window coverings market. However, some drapery and curtain manufacturers may be listed under 322230, stationary product manufacturing.

⁶⁰ The range for shades is based on average prices for cellular shades, roller shades, Roman shades, and pleated shades. The range for blinds is based on average prices for vinyl blinds, metal blinds, faux-wood blinds, wood blinds, and vertical blinds.

roller shades are slightly lower than the prices of Roman and cellular shades (D+R International, 2021).⁶¹

Consumers can purchase custom sized and custom designed window coverings from mass merchants, specialty retailers, e-commerce retailers and in-home consultation firms. Custom coverings include uncommon window covering sizes, such as extremely small (e.g., 9 inches wide x 13 inches high), extremely large (e.g., 96 inches wide x 96 inches high), and other unusual sizes. Retail prices for custom made window coverings range from \$25 to \$900 but can be as high as \$5,000.⁶² Typically retail prices for custom products exceed the price for stock products of similar size and type. Retailers often suggest in-home measuring and evaluation to estimate the price for custom designed products, as non-standard sizes or window shapes or motorized lift systems can require professional installation. Prices for customized window coverings are on average higher than similar stock products sold by mass retailers.

3.4 Window Coverings In Use

CPSC staff created an estimate of custom window coverings in use using multiple data sources. Estimates for the year 2019 are developed from (1) estimates of U.S. residential housing units, (2) estimates of the number of window coverings per housing unit, (3) estimates of the proportion of window coverings in use, by type, (4) estimates of the expected product life of window coverings, and (5) estimates of the proportion of corded custom window coverings sold by type. Based on U.S. Census estimates, approximately 124.1 million residential housing units existed in the United States during the year 2019 (Census Bureau, 2019). Additionally, the D+R (2020) study estimated an average of about 8.17 window coverings per housing unit.⁶³ The product of the number of housing units and the average number of window coverings per housing unit suggests about 1,014 million window coverings may have been in use in the U.S. (124.1 million housing units $\times$ 8.17 window coverings per housing unit) during the year 2019.

The distribution of the estimated 1,014 million window coverings in use is created using the 2019 share of custom product sales to total for each aggregate category.⁶⁴ Application of the share of custom product sales to the window covering in use estimate amounts to approximately 111 million custom horizontal blinds, 213 million custom shades, 10 million custom vertical blinds, and 179 million

⁶¹ The D+R review of prices and product availability found that stock product prices are generally lower than custom products and that cordless lift systems resulted in an increase in price except in the case of vertical blinds.

⁶² Based on firms' websites, retail prices for custom-made Roman shades can range from \$300-\$5,000.

⁶³ The D+R estimate utilizes a 2013 market characterization study completed for the United States Department of Energy. The study included a survey of 2,100 households in 13 cities across the United States to collect a representative sample of data on household characteristics including number of windows, location of windows, the types of window coverings installed, and operation.

⁶⁴ Installed base data for window covering products does not differentiate between custom or stock products. A point estimate created from one year of sales data may distort product in use estimates if there are large fluctuations in sales due to consumer preferences from year to year or if the expected product life of custom products is substantially different than stock products.

custom curtains or drapery.⁶⁵ Applying an estimate of 65 percent of custom window covering products in use have operating and/or accessible cords equates to an approximate total of 332.6 million corded custom window coverings in use. As shown in figure 1 below, staff estimates that approximately 72 million corded custom horizontal blinds, 138.2 million corded custom shades, 6.4 million corded custom vertical blinds, and 116.1 million corded custom curtains or drapery are in use as of the year 2019.⁶⁶

Figure 1. Custom Window Coverings in Use (2019)

Product Category [1]	Total Product In Use [2]	Custom Product Share of Sales (2019) [3]	Custom Product In Use [4] [col. 2 x col. 3]	Corded Custom Product In Use [5] [col. 4 x 0.65]
Horizontal Blinds, All Types	340.4	32.52%	110.7	72.0
Shades, All Types	300.9	70.66%	212.6	138.2
Vertical Blinds	168.2	5.82%	9.8	6.4
Curtains & Drapes	178.6	100.00%	178.6	116.1
Total	1014		511.7	332.6

4.0 PRELIMINARY REGULATORY ANALYSIS

Pursuant to section 9(c) of the Consumer Product Safety Act, publication of a proposed rule must include a preliminary regulatory analysis containing the following:

(1) a preliminary description of the potential benefits and costs of the proposed rule, including any benefits or costs that cannot be quantified in monetary terms, and an identification of those likely to receive the benefits and bear the costs (Discussed in sections 4.1-4.9);

(2) a discussion of the reasons why a standard submitted to the Commission was not published as the proposed rule (Discussed in section 6);

(3) a discussion of why a relevant voluntary safety standard would not eliminate or adequately reduce the risk of injury addressed by the proposed rule (Discussed in section 6); and

(4) a description of any reasonable alternatives to the proposed rule, together with a summary description of their potential costs and benefits and why such alternatives should not be published as a proposed rule (Discussed in section 7).

15 U.S.C. § 2058(c).

⁶⁵ Interior shutters are included in the total 1,014 million window covering in use estimate but as these products are out of scope for the rule they are not included in the regulatory analysis later in this report.

⁶⁶ This estimate has an implicit assumption that the share of annual sales will equate to a similar share of product in use. Changes in consumer preferences over time and differences in the expected product life between custom and stock products could result in significant deviations in this estimate.

This analysis discusses the potential benefits and costs of the proposed rule from a societal perspective, considering all of the significant costs and health outcomes (Gold et al., 1996; Haddix, Teutsch, and Corso, 2003; Neumann et al., 2016). Benefits and costs, as well as product-related risks, are calculated on a per-product in use basis, an approach that has been found useful at the CPSC (Zamula, Rogers, Bailey, 2016). The benefits of the draft proposed rule are measured as the estimated reduction in the societal costs of the deaths and injuries involving corded window coverings. Some unquantifiable benefits also exist related to the rule and are discussed later in section 4.9. The costs of the rule are defined as the added costs associated with bringing custom corded window coverings into compliance with the draft proposed rule. The analysis calculates the benefits and costs of the rule on a per product in use basis (Jenkins and Rodgers, 2020), and applies these estimates to annual sales data to determine the expected benefits and costs that would be associated with one year's production and sale of window covering.

4.1 Annual Injury Costs

We begin by developing annual estimates of the injury costs of the deaths and injuries involving corded window coverings. These injury costs represent the pool from which the benefits of the rule will be drawn. Second, we distribute the injury costs over the major window covering categories (e.g., horizontal blinds, shades, vertical blinds, and curtains/draperies) and classification (stock/custom) then calculate annual injury costs, per window covering, during the 2009 through 2020 time period. These estimates are then adjusted to account for safety improvements associated with recent revisions to the voluntary standard and CPSC enforcement actions that have taken place in recent years.

4.2 Fatal and Nonfatal Injuries involving Window Covering Cords

According to the Directorate for Epidemiology, a minimum of about 9 deaths involving window coverings occurred annually during 2009-2020 (Tab A, Chowdhury, 2021). The Directorate for Epidemiology also explored the injuries reported through the National Electronic Injury Surveillance System (NEISS), a national probability sample of U.S. hospital emergency departments (ED). However, the estimate derived from the number of nonfatal strangulation injuries involving corded window coverings does not meet the publication criteria established in NEISS; as such, these injury cases could not be used to generate an annual estimate of nonfatal injuries treated in hospital emergency departments.

In addition to injuries initially treated in hospital EDs, many product-related injuries are treated in other medical settings, such as, among others, physicians' offices, clinics, and ambulatory surgery centers. Some injuries also result in direct hospital admission, bypassing the hospital ED entirely. Staff estimated the number of nonfatal corded window covering injuries treated outside of hospital EDs using the CPSC's Injury Cost Model (ICM) (Lawrence et al., 2018). The ICM uses empirical relationships between the characteristics of injuries (diagnosis and body part) and victims (age and sex) initially treated in hospital EDs and the characteristics of those initially treated in other settings to project the number of medically treated injuries treated *outside* of hospital EDs (Lawrence et al., 2018). Estimates of injuries treated in doctors' offices, clinics, and the like, are based on data from the Medical

Expenditure Panel Survey (MEPS). The ICM uses the MEPS data, in combination with a classification tree analysis technique, to project the number and characteristics of injuries treated outside of hospitals. To project the number of direct hospital admissions which bypass hospital EDs, the ICM uses data from the Nationwide Inpatient Sample of the Healthcare Cost and Utilization Project (HCUP-NIS), also analyzed using a classification tree analysis technique.

Applying the empirical relationships described above to the small sample of nonfatal injuries reported through NEISS amounts to approximately 185 medically treated nonfatal injuries annually involving corded window coverings. Staff then quantified the injury costs of the annual estimate of 185 nonfatal but medically treated injuries using the CPSC's Injury Cost Model (ICM). The ICM is fully integrated with NEISS, and, in addition to providing estimates of the costs of injuries reported through NEISS, also estimates the costs of medically treated injuries that are initially treated outside of hospital emergency departments. The major aggregated injury cost components provided by the ICM include medical costs, work losses, and the intangible costs associated with lost quality of life or pain and suffering.

Medical costs include three categories of expenditures: (1) medical and hospital costs associated with treating the injury victim during the initial recovery period and in the long run, including the costs associated with corrective surgery, the treatment of chronic injuries, and rehabilitation services; (2) ancillary costs, such as costs for prescriptions, medical equipment, and ambulance transport; and (3) costs of health insurance claims processing. Cost estimates for these expenditure categories were derived from a number of national and state databases, including the Medical Expenditure Panel Survey, the Nationwide Inpatient Sample of the Healthcare Cost and Utilization Project (HCUP-NIS), the Nationwide Emergency Department Sample (NEDS), the National Nursing Home Survey (NNHS), MarketScan® claims data, and a variety of other federal, state, and private databases.

Work loss estimates are intended to include: (1) the forgone earnings of the victim, including lost wage work and household work, (2) the forgone earnings of parents and visitors, including lost wage work and household work, (3) imputed long term work losses of the victim that would be associated with permanent impairment, and (4) employer productivity losses, such as the costs incurred when employers spend time juggling schedules or training replacement workers. Estimates are based on information from the, the Nationwide Inpatient Sample of the Healthcare Cost and Utilization Project (HCUP-NIS), the Nationwide Emergency Department Sample (NEDS), Detailed Claims Information (a workers' compensation database), the National Health Interview Survey, U.S. Bureau of Labor Statistics, and other sources.

The intangible, or non-economic, costs of injury reflect the physical and emotional trauma of injury as well as the mental anguish of victims and caregivers. Intangible costs are difficult to quantify because they do not represent products or resources traded in the marketplace. Nevertheless, they typically represent the largest component of injury cost and need to be accounted for in any benefit-cost analysis involving health outcomes (Rice et al., 1989). The ICM develops a monetary estimate of these intangible costs from jury awards for pain and suffering. While these awards can vary widely on a case-by-case basis, studies have shown them to be systematically related to a number of factors, including economic losses, the type and severity of injury, and the age of the victim (Viscusi, 1988; Rodgers, 1993). Estimates for the ICM were derived from regression analysis of jury awards in nonfatal product liability cases involving consumer products compiled by Jury Verdicts Research, Inc.

4.3 Annual Injury Costs, per Window Covering in Use

Based on estimates from the ICM, the injury costs of the approximately 185 nonfatal medically treated injuries involving corded window coverings amounted to about \$9.3 million annually, or an average of about \$50,300 per injury. These injury costs ranged from about \$9,300 per injury treated outside of a hospital ED, to about \$10,300 per injury treated and released from the ED, to about \$357,000 per hospitalized injury.

Additionally, as noted above, the Directorate for Epidemiology estimated a minimum of about 9 deaths involving window coverings occurred annually during 2009-2020 (Tab A, Chowdhury, 2021). If we assign a cost of \$9.2 million for each death, based on current estimates of the value of a statistical life, then the injury costs associated with these deaths would amount to about \$82.8 million annually (9 deaths × \$9.2 million). When combined with the injury costs of nonfatal injuries, the aggregate injury costs involving corded window coverings amounted to about \$92.1 million annually (\$82.8 from deaths + \$9.3 from nonfatal injuries).

The columns of Table 1 distribute the annual deaths and injuries of the investigated cases by major window covering type and excluding cases involving inner cords as these injuries are not addressed by the requirements analyzed in this report. Window covering types include horizontal and vertical blinds, shades, and curtains/drapery. Staff developed this distribution from a review of 194 investigated cases described in Tab A. (Chowdhury 2021) Removal of the 22 cases involving inner cords results in 172 cases involving corded window coverings. After excluding unknowns (i.e., 49 cases in which the window covering type was unknown), horizontal blinds accounted for at least 82 incidents (66.7 percent), shades accounted for at least about 27 incidents (22.0 percent), vertical blinds accounted for at least 11 incidents (8.9 percent), and curtains and drapery accounted for at least 3 incidents (2.4 percent).

Table 1. Annual Window Covering Injuries
by Window Covering Type, excludes
injuries involving inner cords

	(1) Deaths (Investigated Cases)	(2) Injuries (Investigated Cases)
Horizontal Blinds	3.42	3.42
Shades	1.25	1.00
Vertical Blinds	0.83	0.08
Curtains/Drapes	0.25	0.00
Unknown	1.08	3.00
Total	6.83	7.50

To calculate the annual risks and injury costs, per corded custom window covering in use, staff calculated an estimate of the number and distribution of corded custom window coverings in use. As

stated in section 3.4 and shown in figure 1, staff estimates that approximately 72 million corded custom horizontal blinds, 138.2 million corded custom shades, 6.4 million corded custom vertical blinds, and 116.1 million corded custom curtains or drapery are in use as of the year 2019.⁶⁷

To calculate the annual injury cost per custom window covering in use, staff divided the injury cost for each category by the estimated number in use for each category. Estimates of annual injury costs, per custom window covering in use, range from about \$0.01 per curtain or drape to about \$0.50 per vertical blind. Note that this estimate excludes injury costs in which the blind type and/or the stock/custom classification is unknown. Distributing the injury costs of these unknowns proportionally to the known blind type and classification results in an estimate of \$0.34 for horizontal blinds, \$0.15 for shades, \$1.21 for vertical blinds, and \$0.01 for curtains/drapes. These results are summarized in table 2 below.

Below staff estimates the present value of these annual per unit injury cost estimates, over the expected product life of the window coverings, which forms the basis for estimating the expected benefits of the draft proposed rule, assuming the draft proposed rule would eliminate all of the societal costs involving strangulation by window cords on custom products.⁶⁸ Staff's present value estimate for each blind type is created using the per unit injury cost estimate that accounts for the previously discussed unknown blind type and classification along with the expected product lives in the D+R 2021 study and assuming a 3 percent discount rate. The present value of societal costs per unit for Metal and Vinyl horizontal blinds, Wood and Faux Wood horizontal blinds amounts to \$1.34 and \$3.61 respectively. For cellular, pleated, roller, and soft sheer shades the present value equates to \$0.92 per unit as the expected product life for all these shade types is 7 years and the per unit societal cost is \$0.15. Roman shades with an expected product life of 13 years results in a per unit present value of \$1.57. For vertical blinds and drapes the per unit present value is approximately \$7.56 and \$0.14 respectively. Table 2 below displays these results by product type along with the expected product life.

⁶⁷ This estimate has an implicit assumption that the share of annual sales will equate to a similar share of product in use. Changes in consumer preferences over time and differences in the expected product life between custom and stock products could result in significant deviations in this estimate.

⁶⁸ Staff used the expected life for each product type in D+R 2021 to calculate the present value of societal costs. These future costs are discounted using a discount rate of 3 or 7 percent per OMB Circular A-4. Staff used a discount rate of 3 percent in the estimates described in this report. CPSC staff recognizes that these rates may be considered high as real interest rates have persisted below these values for a decade.

Table 2. Estimates of Societal Costs per Product by Window Covering Type

	[1]	[2]	[3]	[4]	[5]
	Annual Injury Cost (Millions)	Number of Corded Custom Products in use (Millions)	Annual Injury Cost per unit	Expected Product Life	PV of Injury Costs per unit*
Horizontal Blinds	\$24.4	72.0	\$0.34		
Vinyl/Metal			\$0.34	4.25	\$1.34
Wood/Faux Wood			\$0.34	13	\$3.61
Shades	\$20.4	138.2	\$0.15		
Cellular			\$0.15	7	\$0.92
Pleated			\$0.15	7	\$0.92
Roman			\$0.15	13	\$1.57
Roller			\$0.15	7	\$0.92
Soft Sheer			\$0.15	7	\$0.92
Vertical Blinds	\$7.7	6.4	\$1.21	7	\$7.56
Curtains/Drapery	\$1.4	116.1	\$0.01	15	\$0.14

*A discount rate of 3% is applied.

4.4 The Expected Costs of the Rule

Staff's cost analysis relies primarily on two window covering reports prepared for the CPSC under the economic support contract CPSC-D-15-0004. The first was a report prepared by Jitesh H. Panchal, Ph.D., an academic engineering expert. Dr. Panchal's study was designed to estimate the incremental manufacturing costs of implementing uncorded designs for window covering products (Panchal, 2016). The second was a comprehensive cost analysis evaluating the possible costs of a rule that would eliminate window covering designs with accessible cords (IEc, 2016b).

Because of the many window covering types and designs, and including stock and custom products, the comprehensive cost analysis conducted by IEC (2016b) developed both lower and upper bound estimates of the costs associated with a possible rule eliminating accessible cords from window coverings. The lower bound was largely based on the Panchal (2016) cost analysis. The upper bound was based on estimates suggested by the WCMA (2016a) in its May 2015 presentation at the CPSC testing laboratories, and reported in IEC (2016b).

4.4.1 Low-End Cost Estimates

Panchal (2016) used a product archeology approach, supplemented by standard models for calculating only manufacturing and assembly costs, to estimate the incremental cost of implementing standard manual uncorded technology for entry-level stock window coverings – the type of window coverings that are available for purchase off-the-shelf from home improvement stores. Hence, his estimates are most applicable to the more basic and inexpensive uncorded products at the low end of the window coverings market. Panchal (2016) estimates do not account for any costs associated with product development and design innovations, testing, licensing of technology, manufacturing restrictions due to existing patents, and training of personnel, which would add further costs to implementing uncorded technologies (Panchal, 2016). Additionally, he notes that higher incremental costs could result from the use of higher-quality uncorded systems than those analyzed in his report and the need to create customized solutions for window coverings of greater size and weight. Thus, the incremental cost increases estimated in the Panchal (2016) report represent a low-end estimate of the impact of a requirement for cord inaccessible window coverings based solely on the costs of components and the assembly of the product.

As shown in Table 3, Dr. Panchal specifically analyzes three low-price stock products: horizontal blinds, cellular shades, and Roman shades. For each product, he provides incremental costs for two window covering sizes. He also provided separate cost estimates for those window coverings produced in (1) a low-cost manufacturing environment, and (2) a high-cost manufacturing environment. According to Dr. Panchal, the low cost environment is reflective of costs when window coverings produced abroad and imported into the U.S., and the high cost environment is reflective of the costs associated with window coverings produced domestically in the U.S. Finally, to make his per unit cost estimates applicable to the large array of window coverings in the marketplace, he estimated increased manufacturing costs as a percent of retail price for each product.

Table 3. Low-End Estimates of Increased Manufacturing Costs for Selected Window Covering Types, as a Percentage of Retail Prices

Window Covering Type	Increased Manufacturing Costs, as a Percent of Retail Price	
	Low Cost Environment	High Cost Environment
Horizontal Blinds		
27" x 64"	6 – 11%	11 – 20%
72" x 64"	5 – 9%	9 – 16%
Cellular Shades		
23" x 72"	3 – 5%	5 – 9%
72" x 72"	2 – 4%	4 – 7%
Roman Shades		
27" x 64"	4 – 8%	8 – 15%
72" x 64"	3 – 6%	7 – 13%
Source: Panchal (2016). Notes:		
a.) The low cost environment assumes manufacturing occurs outside of the United States.		
b.) The high cost environment assumes manufacturing occurs in the United States.		

Note that the percentage range for each window covering type and size accounts for the impact of production volume on the cost estimates. The lower percentage estimate in each range reflects costs when there is a relatively high production volume (about one million units annually); the upper percentage reflects costs when there is a smaller production volume (about 100 thousand unit annually).

Table 4 presents available information on foreign and domestic production (IEc, 2016b), which allows us to consider the proportions of window coverings produced in a high cost environment (U.S. domestic production) or a low-cost environment (foreign production imported into the U.S.).

Table 4: Manufacturing Location

Window Covering Type	Percent Produced Outside the U.S. (Low Cost Environment)	Percent Produced Domestically (High Cost Environment)
Vinyl Blinds	97%	3%
Metal blinds	79%	21%
Faux wood blinds	85%	15%
Wood blinds	75%	25%
Pleated shades ^a	75%	25%
Cellular shades	18%	82%
Roman shades	48%	52%
Source: IEC (2016b)		
a.) Although Panchal (2016) does not analyze pleated shades, we apply the incremental cost estimate for cellular shades to this product.		

Per unit cost estimates are provided in Table 5. In order to apply Dr. Panchal's low-end cost estimates (as a percentage of retail price), we need estimates of retail prices for the various window covering a) price is representative of the potentially affected corded products (column b).⁶⁹ The low-end percentage change in cost, based on Dr. Panchal's work, and the implied cost increase are presented in columns (2) and (3) in Table 5 below. Note that because the mean unit costs were presented in 2012 dollars, they have been adjusted with the Consumer Price Index for all urban consumers (CPI-U) to reflect 2019 dollars (column 1).

⁶⁹ The price information presented in D&R (2013) could include both corded and uncorded products. Thus, because uncorded products are more expensive, applying these prices in our analysis may overstate the economic impact of the potential requirement.

Table 5. Average Incremental Costs Associated with the Draft Proposed Rule (2019 dollars)

Window Covering Type	[1] Mean Unit Price	Low-End Estimates (Based on Panchal, 2016)		High-End Estimates (Based on WCMA, 2015a)	
		[2] Average Cost Increase as a % of Retail Price	[3] Average Unit Cost Increase	[4] Average Cost Increase as a % of Retail Price	[5] Average Unit Cost Increase
Vinyl/Metal Blinds	\$36.90	8%	\$2.95	23%	\$8.49
Wood/Faux Wood Blinds	\$68.94	9%	\$6.20	14%	\$9.65
Pleated Shades	\$53.87	4%	\$2.15	14%	\$7.54
Cellular Shades	\$93.36	6%	\$5.60	14%	\$13.07
Roman Shades	\$68.51	8%	\$5.48	14%	\$9.59
Roller Shades	\$63.26	8%	\$5.06	14%	\$8.86

1. Although Panchal (2016) does not evaluate pleated shades explicitly, we apply the estimate for the incremental increase in price for cellular shades to this product category.

2. Panchal (2016) only evaluated motorized cordless roller shades, we apply the estimate for incremental increase in price for roman shades to this category as it is the most appropriate.

An alternative cost estimate was also developed by Health Canada for various “safer” window covering operating systems in 2019. The Health Canada estimate is an incremental cost estimate for both cordless systems and “safer” corded systems which is strictly focused on component costs. The cost estimates by window covering operating system created by Motiv in 2016 for CPSC were used by Health Canada to create the estimates. Among other things, the Motiv analysis attempted to estimate the lowest cost possible. For example, it assumed, where possible, the use of plastic materials and injection molding even though it states that the use of metal components could “improve the feel and overall operating life” of the product. Although metal components might have resulted in a higher quality and longer-lived product, the Motiv report states that the costs would have been substantially higher. The assumptions used in the Motiv analysis are valid when estimating the incremental cost of cordless low end stock products which are produced at high volumes. They are less valid when estimating the cost of custom and higher quality products.

Nevertheless, Health Canada used these estimates in their analysis and found that compared the costs of a baseline corded operating system the incremental cost of cordless systems ranged from \$0.16 for a pulley activated system to \$9.95 for a motorized system.⁷⁰ The average incremental cost from these calculations equates to \$2.10 per window covering.

4.4.2. High-End Cost Estimates

In an attempt to capture costs potentially omitted from the estimates presented in Panchal (2016), IEc (2016b) also presented a set of alternative high-end estimates. In its May 2015 presentation to CPSC staff, representatives of the WCMA noted that the cost of implementing uncorded technology is within the range of 20 to 40 percent of the overall product cost for custom products and 40 to 60 percent of the overall product cost for stock products.⁷¹ We assume that these estimates include the costs associated with product development, testing, licensing of technology, training of personnel, and customized solutions for larger or heavier products that were excluded from the Panchal (2016) estimates.

To determine the high-end per unit incremental cost of cord inaccessible technology as a proportion of the retail price, staff required information that described the mark-ups associated with window coverings. Supplier Relations US, LLC (2010), reports that the producer price represents 46.4 percent of the total retail price for window coverings.⁷² Consequently, the high-end cost estimates would be equal to the proportion of costs associated with the uncorded technology, multiplied by the proportion of the retail price attributable to the cost of producing the product (46.4 percent). Thus, for stock products, the uncorded technology would increase costs by 18.6 percent to 27.8 percent (*i.e.*, 0.464×0.40 to 0.464×0.60), or an average of 23.2 percent. And, for the custom products, the uncorded technology will increase prices by 9.3 percent to 18.6 percent (0.464×0.20 to $0.464 \times .40$), or an average of 13.9 percent. The IEc (2016b) work was done prior to the voluntary standard that required all stock products to be uncorded. Consequently, we use the 13.9 percent projection for custom products as the average estimate of the high end cost increase (column 4). The high-end cost estimates are presented in column (5) of Table 5.

⁷⁰ Cost estimates calculated by Health Canada are reported in \$CAD. The annual USD to CAD exchange rate in 2019 published by Bank of Canada (\$1.3352) was used to convert these values to \$USD.

⁷¹ Presumably, the higher percentage of costs as a proportion of the overall product costs for the stock products is because the base cost of stock products is substantially lower than for the custom products.

⁷² The remainder of the retail price is comprised of margins for wholesalers (9.6 percent), freight (7.1 percent), and retailers (36.9%).

4.5 Preliminary Description of the Potential Costs and Benefits of the Draft Proposed Rule

This section provides a preliminary description of the potential costs and benefits of the draft proposed rule over the expected product life of one year's sales of uncorded (or cord inaccessible) custom window coverings. First, we estimate annual sales of custom corded window coverings, by window covering type. These are the window covering products that will be affected by the draft proposed rule. Second, we estimate the costs and benefits that would be associated with these sales.

The WCMA (2015b) provided a rough estimate of about 100 million window covering units sold in the United States annually. D+R International (2021) estimated annual sales of about 131 million or more units from 2015 to 2019. For purposes of this analysis, we will use annual sales of about 138.8 million units of window coverings in 2019, which is consistent with estimates of the current population of window coverings in use and their expected product life.

Table 6 provides estimates of annual window covering shipments, by window covering type, based on estimates from IEc (2016b) and D+R International (2021). Basic vinyl and metal horizontal blinds account for about 28 percent of window covering shipments, wood and faux wood horizontal blinds account for 15 percent, the various types of shades account for about 16 percent, vertical blinds account for about 16 percent, and curtains and drapes accounted for about 11 percent, and interior shutters account for about 1 percent.

Table 6. Estimated Window Covering Shipments, Total and Uncorded Annually, by Window Covering Type

Window Covering Type	Estimated Annual Sales (Units Shipped)	Percent Share of Shipments Custom	Custom Shipments	Estimated Corded Custom Shipments 65% of Shipments
Metal/Vinyl Horizontal Blinds	39,241,726	11%	4,328,995	2,813,846
Wood or Faux Wood Horizontal Blinds	21,282,046	50%	10,643,902	6,918,536
Cellular Shades	13,065,992	75%	9,749,855	6,337,405
Pleated Shades	5,478,820	100%	5,478,820	3,561,233
Roman Shades	2,640,170	100%	2,640,170	1,716,111
Roller Shades	10,887,173	27%	2,955,619	1,921,153
Soft Sheer	3,234,787	100%	3,234,787	2,102,612
Vertical Blinds	21,729,928	6%	1,264,170	821,710
Sheer Drapery	4,695,304	100%	4,695,304	3,051,947
Curtains/Drapery	15,807,053	100%	15,807,053	10,274,585
Interior Shutters	778,750	100%	778,750	NA
Total	138,841,749		61,577,425	39,519,138
Source: D&R (2021)				

Based on statements from WCMA members (WCMA, 2015a), IEC (2016a, 2016b) estimated in 2015 that about 99 percent of horizontal blinds and about 50 percent of cellular, roller, pleated, and Roman shades shipped were corded products. A review of currently available products conducted by D+R shows that corded products are estimated to account for less than one percent of stock products and a majority of custom products due to the price differential.⁷³ This indicates a large market shift away from corded to cordless products occurred within the stock classification. This also indicates no such shift occurred for products classified as custom because corded product availability was unchanged and corded variants are still priced significantly lower than cordless. Based on D+R's review and interviews with retailers, we assume that 65 percent of custom window coverings are sold with corded lift operation. Again, we note that because of the uncertainty surrounding the proportions, we conduct an analysis in section 4.7 to determine the sensitivity of our results to changes in these proportions.

4.5.1 Preliminary Description of the Potential Per Unit Costs and Benefits for Custom Window Coverings, by Type, and Aggregate Costs and Benefits Associated with One Year of Product Sales

Table 7 presents preliminary description of the potential cost and benefits of the draft proposed rule. Column 1 contains the estimates of affected corded products, by window covering type, and column 2 contains the low-end expected incremental costs associated with producing uncorded, or cord inaccessible, window coverings. Column 3 shows the low-end aggregated costs of the rule, by window covering type; they equal the product of the affected products (column 1) and the estimated incremental increases in manufacturing costs needed to make them uncorded or cord inaccessible (column 2). Aggregate estimated costs amount to about \$156.5 million. However, this may be an underestimate. We were unable to quantify the costs associated with the roller and soft sheer shades and have therefore applied the cost increase from roman shades to obtain an estimate. Additionally, the uncorded blinds may also result in an unquantified reduction in utility for some consumers due to greater inconvenience during operation. For example, for small uncorded blinds over ovens or kitchen sinks may be especially difficult for some consumers reach.

⁷³ D+R conducted a review of available SKU's at retailers along with the customization options to determine the availability of corded products. While nearly all stock SKU's were cordless a few were found still available for purchase with external cords but equipped with safety devices. D+R also conducted interviews with manufacturers and retailers to determine the prevalence of corded custom products and concluded corded custom still account for a majority of sales due to the significantly lower price when compared to cordless operation. D+R did note that they believe the share of corded custom products to shrink over time.

Table 7. Preliminary Description of the Potential Benefits and Costs of the Draft Proposed Rule, by Detailed Distribution of Window Covering Types

		Low-End Costs		High-End Costs		Benefit Estimate	
	[1] Affected Window Coverings (millions)	[2] Cost per Window Covering	[3] Aggregate Costs (millions \$)	[4] Cost per Window Covering	[5] Aggregate Costs (millions \$)	[6] PV of Injury Costs per unit*	[7] Aggregate Benefits (millions \$)
Horizontal Blinds							
Vinyl/Metal	2.81	\$2.95	\$8.31	\$8.49	\$23.88	\$1.34	\$3.56
Wood/Faux Wood	6.92	\$6.20	\$42.93	\$9.65	\$66.77	\$3.61	\$23.64
Shades							
Cellular	6.34	\$5.60	\$35.50	\$13.07	\$82.83	\$0.92	\$5.51
Pleated	3.56	\$2.15	\$7.67	\$7.54	\$26.86	\$0.92	\$3.09
Roman	1.72	\$5.48	\$9.41	\$9.59	\$16.46	\$1.57	\$2.55
Roller**	1.92	\$5.06	\$9.72	\$8.86	\$17.01	\$0.92	\$1.67
Soft Sheer**	2.10	\$19.76	\$41.54	\$34.57	\$72.69	\$0.92	\$1.83
Vertical Blinds	0.82	\$0.00	\$0.00	\$0.00	\$0.00	\$7.56	\$5.87
Curtains/Draperies	13.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.14	\$1.81
-	-	-	-	-	-	-	-

* The per unit present value of injury costs associated with corded window coverings equals the implied benefits associated with removal of cords.

** The cost increase as a percent of retail price for roman shades is applied to these product types.

*** The aggregate benefit is adjusted for an estimate of the voluntary standards effectiveness (94.6%) in Tab I.

Additionally, the aggregated low-end cost estimates do not include any costs associated with uncorded vertical blinds or curtains/drapery, based on the assumption that wands can generally be substituted for cords, and that the costs of the wands are generally offset by eliminating the cords (Panchal, 2016). This assumption is probably true for most vertical blinds and curtains, but there may be some size limitations to the use of wands: some very large window coverings may require cords or motors to operate effectively. Additionally, substituting the wands for cords may result in some unquantifiable reduction in utility for consumers in the form of inconvenience and or difficulty in adjusting the uncorded products. There will also be costs associated with compliance for roller shades and soft sheer blinds, because both are currently available as corded options. However, these costs are unknown and therefore are estimated using the cost increase of roman shades.

Columns 4 and 5 describe the *high-end* incremental cost increases, per window covering, along with the estimated costs associated with one year's sale of window coverings. The estimated high-end costs would amount to about \$309 million annually. However, as with the low-end estimates, this may

be an underestimate due to the cost increase estimate used for roller and soft sheer products. Additionally, while the costs of many uncorded vertical blinds and curtain/drapery products may not increase (assuming wands can generally replace cords without an increase in net costs), some of these coverings may be so large that some consumers will choose the more convenient motorized system which, according to Panchal (2016), may add about \$100 to the cost of a window covering. Motorized systems can add significantly more than \$100 in some cases as the price is heavily dependent on the choice of power source which as stated earlier in this report may require expert installation.⁷⁴ If, for example, all custom vertical blind customers (almost six percent of all vertical blind purchases) preferred the more convenient motorized systems for vertical blinds, the costs could amount to about \$126 million annually.⁷⁵

4.5.2 Preliminary Discussion of the Potential Aggregate Benefits by Custom Window Covering Type and Aggregate Costs Associated with One Year of Product Sales

Finally, columns 6 and 7 of Table 7 above provide information on the expected benefits. Column 6 provides the expected present value of the societal costs for each window covering type. This present value figure represents the per unit benefits associated with the different types of window coverings, under the assumptions that (1) uncorded window coverings will prevent all cord-related strangulations involving window coverings, and (2) there are no offsetting risks that would be presented by uncorded window coverings. Finally, column 7 provides the estimated aggregate gross benefits that would be associated with one year's production and sale of window coverings adjusted by the 94.6 percent effectiveness estimate in Tab I (Balci-Sinha 2021), and is estimated as the product of the present value figure in column 6, the effectiveness estimate, and the number of window coverings affected in column 1. In aggregate, gross benefits would amount to about \$49.5 million.

Table 8 summarizes the cost and benefit estimates from Table 7, by general window covering type (e.g., horizontal blinds, shades, vertical blinds, and curtains/drapery. Shades account for majority of costs and a small minority of benefits because of their low sales volume combined with higher costs to accommodate cordless operation. In aggregate, the estimated costs ranged from \$156.5 million to \$309 million, while the estimated benefits amounted to about \$49.5 million. The estimated costs of horizontal blinds ranged from an estimated \$51.2 million to \$90.7 million, while benefits amounted to an estimated \$27.2 million.

⁷⁴ Installations of some motorized systems can cost upwards of \$1,000 or more due to placement and wiring the power source directly into a home's wiring. Estimate is based on quotes solicited for varying shaped/sized windows with a motorized window covering hardwired into the home's electrical system. Quotes for a standard sized window range from \$250 to \$325 per motor.

⁷⁵ Based on an estimate of 21.73 million total vertical blind sales in 2019.

Table 8. Estimates of Aggregate Costs, and Benefits of the Draft Proposed Rule, by Type of Window Covering

	[1]	[2]	[3]	[4]
	Affected Window Covering (millions)	Aggregate Costs low end (millions \$)	Aggregate Costs high end (millions \$)	Aggregate Benefits (millions \$)
Horizontal Blinds	9.73	\$51.23	\$90.66	\$27.19
Shades	15.64	\$103.84	\$215.86	\$14.64
Vertical Blinds	0.82	\$0.00	\$0.00	\$5.87
Curtains/Drapery	13.33	\$0.00	\$0.00	\$1.81
Total	39.52	\$155.07	\$306.52	\$49.52

The estimated annual aggregate benefits associated with corded vertical blinds and curtains/drapes amount to about \$5.9 million and \$1.8 million, respectively. The aggregate costs associated with the vertical blinds and curtains are unknown and is most likely near zero. However, a rule making these products uncorded could result in some reduction in utility in terms of inconvenience and reductions in ease of use.

Overall, our analysis suggests on the order of about \$156.5 million to \$309 million in estimated quantifiable costs and about \$49.5 million in benefits. The robustness of these estimates if some of the underlying estimates and assumptions are changed is examined in the next two sections.

4.6 Characterization of Uncertainty in Benefit and Cost Estimates

In a complex cost benefit analysis using estimated parameters, inputs from several models, assumptions based on expert judgement, and public/private data there are likely to be many sources of uncertainty. This section exams several sources of uncertainty in the analysis that could impact the findings. These include, the incremental cost of cordless products, the VSL applicable to analyzing risks to children, the number of corded custom window coverings in use, and perhaps a longer average product life than used for horizontal vinyl/metal custom blinds.

The estimates of the societal cost of injuries are highly dependent on CPSC staff's review of cases from 2009 to 2020 involving window coverings as this review is used to determine how much of the injury costs are attributable to custom window coverings. If the review did not accurately assign incidents to the correct product or classification type it could result in higher or lower benefit estimates by product type.

Incremental Cost of Cordless Technology

As already indicated in the text, there is some uncertainty regarding the incremental cost of the cordless technologies. Therefore, in the analysis a range of costs was used including cost estimates from Panchal (2016) and IEc (2016b). We note that that especially the low estimate from Panchal (2016) were probably more applicable to stock products than to custom products, which are the window coverings to which the rule would apply. The reason that these may be underestimates for a rule involving custom products include the fact that he mostly analyzed stock products and that for the low estimates he assumed a high volume production in China, which is less applicable for custom than for stock. Therefore, the low value from Panchal (2016) is probably the lowest potential cost.

Importantly, cordless custom window coverings are already widely available and the incremental retail price differences between custom window coverings that are alike in every respect except that one is cordless are observable. The observed increment in retail prices between the two typically ranges from \$10 to \$80 and is highly dependent on product type and size. The retail increment likely includes some markup over costs, which strongly suggests the cost estimates used in this analysis are not over estimates.

From this the staff concludes that the actual costs are probably within the ranges of costs used in this analysis, but there is some chance that the cost estimates underestimate the actual cost.

Value of Reducing Fatal Risks

The analysis valued the benefit of reducing fatal incidents at \$9.2 million each, which, as discussed earlier is in-line with most reasonable estimates of the value of a statistical life. The VSL is not a value of a life, but is in fact an estimate of the amount people are willing to pay for a small reduction in a risk of death summed over many people. For example, if 10,000 people were willing to pay \$900 each to reduce their risk of death by 0.0001, then those people would combined be willing to spend \$9 million to reduce the risk of one additional death.

There has been some discussion in the literature suggesting that people might be willing to spend more for a small reduction in the risk to children than they are for the same reduction in their own risk. This could perhaps be because young children might be incapable of understanding the risks and due to that people might be willing to pay more to reduce their risk of premature death. A review of the literature conducted for the CPSC suggested that the VSL for children could exceed that of adults by a factor of 1.2 to 3, with a midpoint of around 2 (IEc, 2018). If we substituted the high end of this range, which suggests that the VSL for children could be 3 times the VSL for adults, the estimated per unit benefit of the draft proposed rule would be higher. The table below compares the base per unit benefit estimate used in the analysis to the per unit benefit estimate assuming a VSL of \$27.6 million.

Table 9. Per Unit Benefits and Costs By Product Category

Category	Base Analysis Benefits after 94.6% effectiveness adjustment	VSL of \$27.6 million	Low End Cost	High End Cost
Horizontal Blinds, All Types	\$2.79	\$7.55	\$3.42	\$6.05
Shades, All Types	\$0.94	\$2.60	\$6.64	\$13.80
Vertical Blinds	\$7.15	\$20.84	\$0.00	\$0.00
Curtains & Drapes	\$0.14	\$0.41	\$0.00	\$0.00

Estimate of Corded Custom Window Coverings in Use

The estimate of corded custom window coverings in use that was used in the base analysis is given in Figure 1. As noted this estimate was based on estimates of the total number of window coverings and interviews with manufacturers and retailers in which some gave conflicting accounts. They were not based on exposure surveys and thus the actual number of corded custom products could be either higher or lower than the estimate used in the base analysis and we have no basis for stating if we think we have over or underestimated the number. If the share of custom cordless products has grown by a greater amount than assumed, then there could be fewer corded products in use meaning that we have underestimated the risk associated with corded products. On the other hand, if we have overestimated the number of corded products in use, then there could be more corded products in use which means we have overestimated the risk and therefore overestimated the per unit benefits of the draft proposed rule. Table 10 below shows how assuming the number of corded custom window coverings in use increased/decreased by 20 percent than estimated would affect the per unit benefit before discounting compared to the baseline estimate.

Table 10. Per Unit Benefit, before discounting, by Category

Category	Cost of Injuries (millions \$)	Base Number in Use (millions)	Base Per Unit Benefit	Per Unit Benefit if Corded Custom Window Covering in Use increased by 20%	Per Unit Benefit if Corded Custom Window Covering in Use decreased by 20%
Horizontal Blinds, All Types	\$24.4	72.0	\$0.34	\$0.28	\$0.42
Shades, All Types	\$20.4	138.2	\$0.15	\$0.12	\$0.18
Vertical Blinds	\$7.7	6.4	\$1.21	\$1.01	\$1.52
Curtains & Drapes	\$1.4	116.1	\$0.01	\$0.01	\$0.02

Longer Product Life for Vinyl/Metal Horizontal Blinds

The estimated product life used in the analysis for vinyl and metal horizontal blinds was significantly shorter than for the other products. It was based on work completed by D+R for the Department of Energy (2013). However, it is possible that this estimate is skewed because of the dominance of stock in this category. If we assumed that the product life of custom vinyl and metal blinds was longer, perhaps approaching the 10 years claimed by WCMA that they strive for with custom products, then the per unit benefit associated with horizontal vinyl and metal blinds would be \$2.74 after adjusting for the effectiveness of the standard.

4.7 Sensitivity Analysis

The previous sections of this report preliminarily described the potential benefits and costs of the draft proposed rule based on our methodology, the results from our reference case analysis, and characterized the uncertainty related to these estimates. This section presents an analysis that will describe the sensitivity of the results to variations in key parameters of the reference case analysis. This analysis considers the impact of a higher VSL for children (i.e., a willingness to pay more for a small reduction in the risk of death for children), difference in the number of window coverings in use, the percentage of custom corded product shipments, and the expected product life.

Relative to the reference case analysis, Table 9 presents the results for an alternative VSL that is multiplied by a factor of 3, window coverings in use varying by 20 percent, the percentage of custom corded product shipments by 25 percent, and the expected product life by 40 percent.⁷⁶ The aggregate benefit and the range of costs for each input variable is presented for a low cost environment and a high cost environment as described earlier in this report.

Table 11 below describes the results of the sensitivity analysis. Only benefits and costs associated with custom window coverings are shown. The methodology to estimate benefits and costs is the same as used in the reference case with only the input variables adjusted.

⁷⁶ A report on valuing reductions in fatal risk to children completed by IEC for CPSC in 2018 found that VSL for children may exceed the VSL for adults by a range of 1.2 to a factor of 3. The report can be found at :

https://www.cpsc.gov/s3fs-public/VSL_Children_Report_FINAL_20180103.pdf?crqdQGttiTalnQbCPf3.7freqXkMrEbu

Table 11. Sensitivity Analysis

Sensitivity Analysis			
<i>Input Values</i>			
<i>Row</i>	<i>Input Values for Sensitivity Analysis</i>	<i>Expected Benefits (millions of 2019 dollars)</i>	<i>Range of Expected Costs (millions of 2019 dollars)</i>
a.	Reference Case Analysis	\$49.5	\$156.5 to \$309.0
Value of Statistical Life (VSL)			
b.	VSL= \$27.6 million	\$136.9	\$156.5 to \$309.0
Percentage of Corded Custom Window Coverings Sales			
c.	40%	\$30.5	\$95.4 to \$188.6
d.	90%	\$68.7	\$214.7 to \$424.4
Estimate of Window Coverings In Use			
e.	Window Coverings In Use 20% lower	\$62.0	\$156.5 to \$309.0
f.	Window Coverings In Use 20% Higher	\$41.3	\$156.5 to \$309.0
Expected Product life			
g.	40% Shorter	\$31.5	\$156.5 to \$309.0
h.	40% Longer	\$65.6	\$156.5 to \$309.0

Row b displays the result of increasing the VSL by a factor of 3 to represent a higher value of risk reductions to children. The analysis shows a significant increase in benefits in this case. Variations in the percentage of corded custom window covering sales had the most significant impacts on benefits and costs as shown in rows c and d.

A variation of 20 percent in the estimates of window coverings in use had a smaller impact on benefits. For example, an estimate of 20 percent lower window covering in use the benefits are approximately \$62 million as shown in row e. Increasing the window covering in use estimate by 20 percent results in approximate benefits of \$41.3 million as shown in row f. The final input variable evaluated is expected product life for window coverings which was adjusted by an increase/decrease of 40 percent. The results are shown in rows g and h.

4.8 Additional discussion

Staff in the Directorate for Economic Analysis note that uncorded window covering options exist for nearly every window covering types. In fact, as noted previously, the existing voluntary safety standard published in 2018 requires that all stock products, which currently account for about 56 percent of the window coverings sold and are generally less expensive than custom window coverings are uncorded. Additionally, uncorded options exist for most types of custom window coverings and some consumers do opt for uncorded custom window coverings (D+R International 2021).

However, there could be some inadequacies in the market that result in less than the optimal amount of safety being provided by the market. The first type of inadequacy or market failure is the potential existence of externalities. Externalities exist when one party's actions impose uncompensated benefits or costs on another party. In the case of rental housing, for example, the choice of window covering may be made by a landlord. In this case, an externality may be created when the purchase decision reflects the risk preferences of the landlord, but the costs of that decision (in terms of risk) would be borne by tenants, some with children. One would generally expect a landlord to choose the lowest cost options, which today would probably be the cordless stock options. However, it is also possible that a landlord could work with a window covering supplier to measure, order, and install the window coverings for their rental units. In these cases, the supplier might in fact be ordering custom products and the corded options would be the lowest cost options. The landlord might not be taking the interests of his or her tenants into account. Similarly, as discussed in Tab I, when residency of a house or apartment changes, the window coverings from the prior occupant commonly transfer to the new occupant, who may thus not have complete choice in window coverings.

Some consumers might have inadequate information concerning the hazard either underestimate, or be generally unaware of the risks posed by corded window blinds. Although corded window blinds include warnings of the strangulation risk. The proposed rule may also provide benefits to consumers who might underestimate the extent to which the risk posed by corded window coverings could apply to their own household. For example, they might not believe that their children would play with window covering cords and disregard the warnings. These consumers in effect could undervalue the risk reduction offered by uncorded window coverings.⁷⁷ Finally, we note that the draft proposed rule is intended to protect young children who probably do not understand the risks of their actions.

4.9 Unquantified Benefits

The monetized benefits in this analysis only reflect the subset of benefits attributable to a reduction in fatal and non-fatal injuries associated with custom window coverings. There may be unquantifiable benefits related to operation or aesthetics of cordless products. Some consumers may derive additional utility from the more streamlined look of cordless products. Staff also note that cordless products may more reliably operate during lift or tilt operation which can be a source of

⁷⁷ The Directorate for Economic Analysis note that it may be perfectly rational for some consumers to choose corded window coverings. Households that do not have young children and seldom receive visits from young children do not face the risk of having a child strangled by a window cord. These households would not benefit from choosing uncorded window coverings solely for reducing the risk of strangulation.

frustration with corded products. However, because uncorded alternatives exist for virtually all types of custom window coverings, the value of these unquantified benefits is less than the price differential between the corded and uncorded options.

5.0 SUMMARY AND CONCLUSION

This analysis suggests that for most shade and horizontal blinds, the monetized benefits of the draft proposed rule would be less than the monetized costs. For curtains/ draperies and for vertical blinds, however, the monetized benefits could be greater than the monetized costs. In the aggregate, that is summed across all products types, the monetized benefits are less than the monetized costs. The estimate of monetized aggregate benefits for one year's worth of sales amounted to approximately \$49.5 million or approximately \$1.26 per unit sold. The estimate of monetized aggregate costs using the low-end/high-end cost environment amounts to \$156.5 million and \$309.0 million respectively. These values equate to a per unit sold cost of \$3.96 for the low-end environment and \$7.82 for the high end environment.

There is some uncertainty regarding the precise level of costs and benefits associated with the rule, in large part because there is uncertainty concerning the distribution of deaths and injuries by the stock and custom categories. The voluntary standard only became effective in 2018. However, because information on deaths lag for about 1 to 3 years, and because the information on the characteristics of window covering types is limited, it is difficult to determine precisely how many of the deaths actually involve custom products. It could be, for example, that custom products tend to be purchased by higher income households with fewer children and therefore present a lower risk than stock products. We have more up-to-date information quantifying the nonfatal injuries involving window coverings, but the characteristics of the window coverings involved in nonfatal injuries are also limited. In an attempt to address some of this uncertainty, a sensitivity analysis was conducted that still suggested that for most types of window coverings, the monetized benefits would probably be less than the monetized costs.

Additionally, the draft proposed rule could potentially result in the elimination of some sizes, and/or types of window coverings from the market, or require more expensive (e.g. motorized) methods for the efficient functioning of window coverings than were contemplated in this analysis. Manufacturers might need to develop alternatives to corded lift systems for unusual size products. Motorized cordless lift may still be used in most cases but would increase the complexity to install as well as dramatically increase the cost as professionally installed window coverings in some cases could potentially exceed \$1,000 for just one unusual size and/or shaped window. The large increase in cost could result in a loss of utility as consumers may have a preference for blinds or shades but would have to substitute for curtains or drapes as the required sized blind or shade is no longer available.

Finally, we note that cordless window coverings are already available: they include all stock products (roughly 56% based on most recent estimates) and some proportion of custom products. Additionally, consumers are provided information about the safety of window coverings and are warned about the hazards of corded products at the point-of-sale, but CPSC staff note that these warnings are inconsistently provided and an ineffective method to communicate the hazard.

6.0 VOLUNTARY STANDARD

As discussed earlier in this report and in the other tabs of the briefing memo the relevant voluntary standard is ANSI/WCMA A100-1.2018. The voluntary standard requires that stock window covering products be products without cords or without accessible cords or only with short, static cords (*i.e.*, maximum eight inches in length). The standard requires custom products to meet one of the three requirements: (1) No operating cords; (2) Short cord with a length equal to or less than 8 inches in any state (free or under tension), (3) Inaccessible operating cords determined per the test requirement in Appendix C of the standard **or** have operating systems that result in free-hanging and accessible cords; these systems include single retractable cord lift system, continuous loop operating system, and standard operating system. Based on incident data review, user study, and human factors literature, staff assesses that operating cords requirements for custom products in the ANSI/WCMA A100.1 – 2018 standard are inadequate to effectively address the strangulation hazard associated with custom window covering cords. See Tab I for more details. Staff also note that voluntary standards committees have in the past rejected initiatives to require no accessible cords on custom products which would address the strangulation hazard. Simply stated, the voluntary standards process is very unlikely to lead to a custom cordless requirement for any product type in the short or long run as the current effective standard for stock products took over two decades to complete.

7.0 REGULATORY ALTERNATIVES

7.1. No Action Alternative

Under this alternative the status quo would be maintained. This option might be selected on the grounds that the risk associated with custom corded products is small and materials describing the risk associated with corded window covering products are distributed to consumers upon purchase. Additionally, cordless products are widely available for nearly all window covering types for consumers that can afford them.

Over the long run changes in consumer preferences could increase the number of custom corded products in use. Note that practically all stock versions of products are less expensive than custom and price sensitive consumers will substitute cordless stock products for the frequently more expensive corded custom variants.

We cannot estimate the benefits and costs due to this alternative due to several factors such as, the uncertainty related to consumer preferences for corded products, and the uncertainty related to size limitations for cordless products. However, we note that costs compared to a mandatory rule would be lower under this alternative.

7.2 Improve Voluntary Standard for Window Coverings

Another alternative might be for Commission staff to continue participating and encouraging safety improvements to the voluntary standard for window coverings, WCMA A100-1. This option

would be similar to the “no action alternative,” with the key difference being that the Commission could direct staff to pursue safety improvements in the voluntary standard, including applying relevant conditions on stock products to custom, as a conditional alternative to a mandatory standard. The Commission could then reconsider a mandatory standard if efforts to improve the voluntary standard on custom products remain unsatisfactory.

Staff has supported recent changes in the voluntary standard with requirements for cordless stock products, more descriptive warning labels, and materials describing the strangulation hazard. Additionally, voluntary standards committees have in the past rejected initiatives to require no accessible cords on custom products. Consequently, it does not appear that the voluntary standards process is likely to lead to a custom cordless requirement for any product type in the short or long run as the current effective standard for stock products took over two decades to complete.

7.3 Later Effective Date

The draft proposed rule includes an effective date that is two years after the final rule is published in the *Federal Register*. Given that there are some issues in redesigning certain window coverings of unusual sizes to accommodate cordless operation, a later effective date would allow manufacturers more time to redesign and spread the research and development costs, or eliminate product variants that cannot be switched to cordless operation. It is unlikely that any manufacturer (large or small) would leave the window covering market as a result of the draft proposed rule but elimination of some product sizes is possible as conversion to cordless operation may not be feasible for large or unusual sizes.⁷⁸

Later effective dates, beyond the proposed two-year effective date, would mitigate some of the costs related to redesign/research and development for manufacturers. However, if cordless operation is not feasible a reduction in sales would occur if a consumer could not find a suitable alternative. Delaying the effective date would be expected to decrease costs, but not by a consequential amount as further cost reductions would be mostly attributable to inventory reductions of products in which cordless operation isn’t feasible.

7.4 Narrow Proposed Rule to Vertical Blinds, Curtains, and Drapes

The Commission could narrow the draft proposed rule to vertical blinds, curtains, and drapes on the grounds that cords are not critical to the operation of these products. These products typically offer cordless options at no additional cost as for most applications because a plastic rod can be used for operation. Narrowing the proposed rule to these three product types would lessen the cost impact and make it unlikely that any particular product type and/or size would be eliminated. Note though that some consumers may require motorization which would dramatically increase the cost but few consumers are expected to require motorization for these products. Consumers may also prefer decorative cords that

⁷⁸ Motorization is a possibility in these cases but as described earlier in this report motorization of window coverings is expensive and may exceed the cost of the window covering product.

exceed the length described in the proposed rule which would result in lower utility for these consumers should those decorative cords be removed.

Under this alternative, the benefits and costs would be limited to vertical blinds, curtains, and drapes which accounted for approximately 35 percent of 2019 window covering product sales. However, the number of injuries and deaths associated with these products represents a small fraction (5.7 percent) of the total. The costs for this would be close to \$0, but the benefits would be substantially smaller than the draft proposed rule because only a few incidents are associated with these products.

7.5 Continue and Improve Information and Education Campaign

The Commission could work to improve the current information and education campaign concerning the strangulation hazard associated with corded window covering products. This alternative could be implemented on its own without regard for regulatory action. Staff finds that the warnings are unlikely to effectively reduce the strangulation risk due to hazardous cords on window coverings because despite the warnings, some consumers are not likely to follow warning labels on window covering products, perhaps because they underestimate the degree of the risk or extent to which it applies to them. Moreover, strangulation deaths among children occur quickly and silently, such that parental supervision is insufficient to address the incidents (Tab I).

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TAB L: ANPR COMMENTS AND STAFF RESPONSE



**UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MARYLAND 20814**

Memorandum

Date: October 6, 2021

To: Window Coverings Rulemaking File

Through: Duane Boniface, Assistant Executive Director,
Office of Hazard Analysis and Reduction (EXHR)

From: Window Coverings EXHR team

Subject: ANPR Comments and Staff Response

Background

On January 16, 2015, the Commission published an advance notice of proposed rulemaking (ANPR) initiating rulemaking and seeking information and comment on regulatory options for a mandatory rule to address the risk of strangulation to young children on window covering cords. The comment period on the ANPR was scheduled to end on March 17, 2015. In a letter dated February 2, 2015, the Window Covering Manufacturers Association (WCMA) requested a 75-day extension of the comment period to complete multiple studies that WCMA commissioned. The Commission granted WCMA's request to extend the comment period for the ANPR until June 1, 2015. CPSC received 1,010 comments during the comment period: 748 were in favor of a mandatory rule, 254 were against the rule, and eight had no clear opinion. This memorandum summarizes the comments and provides technical staff's responses to the issues raised.

Staff notes that since the public comment period on the ANPR closed in 2015, the voluntary standard has made substantial improvements to effectively address the strangulation risk associated with stock window coverings. For stock window coverings, the ANSI/WCMA standard requires either no operating cords or short static cords that are eight inches or shorter or inaccessible operating cords. As detailed in this NPR briefing package, staff assesses that these requirements are adequate to address the risk of strangulation on window covering cords. Many of the comments are obviated by the new voluntary standard and changes to stock products involving operating cords and to both stock and custom products involving inner cords.

Comments and Responses

Comments fell into one or more different topic areas, as grouped below.

General Support or Opposition

Comments

A total of 748 commenters expressed general support for the rulemaking effort, some stating that given the hidden nature and severity of the risk, a mandatory standard is necessary. A total of 254 commenters submitted comments disagreeing with the proposed rulemaking, with most suggesting that a regulation will have a negative impact on the window covering industry.

Staff Response

Staff is generally in agreement with those supporting the rulemaking. CPSC staff agrees that window coverings should be inherently safe and should not require consumer intervention due to the silent, quick, and hidden nature of the hazard. Since the ANPR was published in 2014, 37 children have died by strangulation on a window covering cord.

Voluntary Standard

Comments

Several commenters expressed support for the voluntary standard and felt the voluntary standard process would create a more robust standard. However, other commenters stated that a mandatory standard is necessary to address the hazard because decades have passed with the number of deaths and permanent injuries remaining consistent. They noted that voluntary standards have failed to effectively address this issue for nearly 20 years.

Staff Response

Staff has worked closely with WCMA since 1995 to develop and revise the ANSI/WCMA A100.1 standard. Staff acknowledges that since the public comment period on the ANPR closed in 2015, WCMA steering committee has developed and published improvements to the voluntary standard with substantial improvements to effectively address the strangulation risk associated with stock window coverings. For stock window coverings, the ANSI/WCMA standard requires either no operating cords or inaccessible cords or short static cords that do not exceed eight inches in length. As detailed in this NPR briefing package, staff assesses that these requirements are adequate to address the risk of strangulation on window covering cords.

However, the ANSI/WCMA standard does not adequately address the hazard associated with operating cords on custom window coverings. Given the availability of the technologies applicable to both stock and custom window coverings, and the identical hazard patterns regardless of whether the product is made for stock or custom, staff explains in this briefing package that custom products can be made as safe as stock window coverings to address the risk to children by complying with the same requirements as stock products. Given the 22 years to get to an effective stock product voluntary standard and lack of WCMA progress on the custom product standard over multiple years, staff does not recommend waiting for custom products to be included.

Hazard Communication: Warnings, Public Awareness, and Education

Comments

At least twelve commenters suggested that warning labels and educational campaigns should be relied on to address the strangulation hazard while at least seven others stated that warning labels and educational efforts were tried, did not work, and are insufficient to address the strangulation risk.

Staff Response

In the ESHF memo, staff discusses the reasons that warnings are unlikely to adequately address the strangulation hazard associated with window covering cords. See Tab I. Briefly, warning labels are not likely to be effective on products that consumers use frequently and are familiar with because consumers are less likely to look for and read safety information. Most of the incident units had the permanent warning label on the product. Even well-designed warning labels will have limited effectiveness in communicating the hazard on this type of product.

However, CPSC staff agrees that public awareness is a crucial component in making safe purchasing decisions and safely using window covering products at home. Public information campaigns are on-going. CPSC and the Window Covering Safety Council (WCSC) have joined forces to raise awareness of strangulation risks presented by window covering cords. October has been designated “Window Covering Safety Month” by CPSC and the Window Covering Safety Council (WCSC) since 2003. Currently, staff does not have information to evaluate the effectiveness of public information campaigns on reducing the risk of injury associated with corded window coverings. However, staff notes that information and education campaigns on corded window coverings that have been continuing for decades have had limited effectiveness in the reduction of injuries and deaths. Accordingly, staff does not recommend relying solely on education campaigns to address the risk of injury.

Off-the-Shelf Products

Comments

At least two commenters suggested that off-the-shelf products carry higher risks, many off-the-shelf products are installed incorrectly, one of these commenters suggested that consumers typically do not read the installation instructions and are not familiar with the safety devices such as cord cleats.

One commenter suggested that stock products are more dangerous than custom products because stock products can have longer lengths of accessible pull cords than custom window coverings, stock product customers are less likely to get safety information, and stock products are likely to be installed by consumers who may be unfamiliar with the hazard.

Staff Response

The 2018 version of the ANSI/WCMA standard has effective requirements to address the strangulation hazard on stock window coverings. The standard requires that stock products to have either no operating cords, short cords, or inaccessible cords at all times. The way the product is installed should not make the product less safe as these requirements are not

dependent on installation and the requirements do not rely on safety devices. However, custom products still rely on safety devices such as cord cleats and tension devices to make the corded product safe because the standard still allows the hazardous cords to be present on the product.

Although staff agrees that consumers may not be as knowledgeable as professional installers, staff notes that the majority of the custom products involved in the incidents were installed by professionals and still lacked safety devices. Educating consumers is important to reduce the risk associated with the corded window coverings already installed in consumers' homes. However, manufacturing inherently safe custom window coverings that are on par with the stock products that are compliant with the ANSI/WCMA standard will have a more substantial impact on safety as they do not have to rely on additional measures to make the window covering safe.

Impact on elderly and disabled consumers

Comments

At least eight commenters suggested that cordless products will be difficult to use for those consumers who cannot reach window coverings to operate the product.

Staff Response

Although staff agrees that certain users have challenges with reaching high up, staff found various tools that are currently marketed for hard-to reach locations such as skylights. Tab I provides a few examples. Staff concludes that currently available tools and devices can be, and for stock products are being, utilized for this purpose. Some consumers are likely to choose window coverings operated via remote control as well.

Parental Responsibility

Comments

At least 27 commenters suggested that parents are responsible to supervise their children around window coverings.

Staff Response

Strangulation with cords requires only a few minutes to occur and happens silently. As explained in Tab I, parental supervision is unlikely to be effective to eliminate or reduce the hazard, because even young children are left unsupervised for a few minutes or more in a room that is considered safe, such as bedroom or family room. A more effective solution to the window covering cord hazard is to ensure that window coverings do not have hazardous cords.

Rental Leases and Real Estate Documents

Comments

At least 30 commenters suggested some means of informing or addressing the hazard in rental units. Some suggested disclosing the hazards associated with corded window coverings to inform renters. Others suggested that the rental units should have new and safe window coverings. Some commenters stated that tenants may not have the option to replace window coverings. At least 34 commenters suggested disclosing the presence of corded window coverings in the real estate documents.

Staff Response

CPSC regulates consumer products, wherever consumers may use such products (homes, schools, in recreation, or otherwise). Certain state and local authorities may have regulations in place with regard to rental homes. CPSC staff agrees with the commenters' concerns regarding window coverings included in rental units where tenants with young children may not have the option of choosing safer window coverings. Staff also agrees that the sale process of a residence is an obvious opportunity to inform the buyers about the dangers associated with corded window coverings or to remove and replace the hazardous window coverings. However, CPSC does not have the authority to require landlords to disclose the hazards of window covering cords to prospective renters.

Cost of Safer Products

Comment:

At least 35 commenters stated that safer window coverings might be too expensive for some consumers, regulations will increase the cost of window coverings, and motorized window coverings cost much more. At least 108 commenters suggested that safe alternatives currently exist but are unaffordable. At least 71 commenters stated that cordless prices will drop due to regulation and competition.

Staff Response:

Safer window covering products are currently produced by manufacturers and are widely available in the U.S. Staff note that based on a review of currently available window covering products completed by D+R International nearly all available stock window covering products in 2021 are cordless products. Corded products are only available for custom window coverings and are typically more expensive than stock product counterparts.

As described in the preliminary regulatory analysis, retail prices for custom products are expected to increase as a result of the draft proposed rule. The increase will vary based on product type but staff expects the prices of custom products to increase by at least 4 percent. Any custom window covering product that cannot meet the inaccessible/length provisions related to cords will either have to stop offering the product, incorporate a cordless lift system, or use a motorized lift system. Based on a review of currently available custom products, CPSC staff believes it is likely that motorized lift systems can be prohibitively expensive for many consumers as these systems can exceed the cost of the window covering itself. Staff notes that it is more likely that a consumer will either substitute for another type of window covering (*i.e.*

using curtains instead of roman shades) or purchase a less expensive stock product (which already complies with the draft proposed rule) or purchase a cordless product with manual operation.

Incentives for Manufacturers

Comment:

One commenter suggested that CPSC incentivize manufactures to design safer, durable, solutions for window coverings through grants and awards. Another commenter suggested that individuals and small companies need to be incentivized to create new products and systems without the need for high-cost research.

Staff Response:

CPSC does not currently have the resources to offer grants, subsidies, or awards to firms for development of safer window covering products.

Detailed Cost-Benefit Analysis

Comment:

At least three commenters suggested that a detailed cost and benefit analysis is needed.

Staff Response:

CPSC staff developed a preliminary regulatory analysis, as required by the CPSA, with a preliminary description of the potential benefits and potential costs of the proposed rule, including any benefits or costs that cannot be quantified in monetary terms, and an identification of those likely to receive the benefits and bear the costs. This preliminary regulatory analysis is contained in Tab K.

Small versus Large Businesses

Comment:

One commenter suggested that a regulation will give larger corporations an unfair advantage as the hard window coverings can comply with it but small manufacturers who make soft window coverings cannot.

Staff Response:

Staff notes that stock window coverings on the market that are free from hazardous cords are available in both soft and hard types and implementation of safer technologies has been proven for both types. As stated in the Initial Regulatory Flexibility Analysis for custom window coverings, staff expects significant cost impacts on small manufacturers of custom products but

these costs are not limited to small manufacturers of certain window covering types. The impacts vary by product type but significant cost impacts (i.e. those that exceed 1 percent of annual revenue) on small manufacturers of all custom window covering product types are expected as a result of the draft proposed rule.

Product Options

Comments

At least 40 commenters suggested that consumers may want to have different options to serve their different needs and reducing the options that are available to consumers is not preferable.

Staff Response

Staff observes that stock products currently on the market that are free from hazardous cords are available in a variety of materials, sizes, and types to meet consumer needs. Based on the operating systems of window coverings, the only product type that is unlikely to keep the traditional design and still meet the proposed rule would be roll-up style shades as they are lifted and lowered using lifting loops that are accessible and hazardous. Based on the innovative ability of the window covering industry, staff concludes that these shades could be replaced with ones that can still meet the same purpose and made safe.

Product Reliability

Comments

One commenter suggested that motors are not as reliable as cords because they are more complex and require electricity.

Two commenters suggested that cordless window coverings do not last long compared to corded versions.

Staff Response

Staff notes that cordless window coverings are not the only option and that motorized cordless window coverings are not the only cordless options. Corded window covering options are available if the cords are 8 inches or shorter if accessible or if the cords are inaccessible with a rigid cord shroud. WCMA stated in their response to ANPR that the expected product life is 10 years for custom-made window covering products and 3-5 years for stock window covering products. We do not have information on product life for each technology.

Incidents/Risk

Comments

Several commenters suggested that children die from interacting with other household products and some suggested that the risk is low.

Staff Response

Children die from interacting with other household products; however, that does not diminish the seriousness of strangulation hazard from cords, nor the necessity of setting a performance standard to reduce the risk.

Stories of Loss

Comments

Over 500 commenters either were personally affected by window covering cord injury or death or knew someone who were affected by it.

Staff Response

Staff appreciates the courage of these consumers in sharing their stories. To each of these parents, family members and loved ones, we thank you for sharing these stories and we are deeply sorry for your loss. CPSC staff have taken the information about the interactions and conditions involved in the incidents into consideration in developing a draft NPR for stock and custom window coverings.