



TO: The Commission
Alberta E. Mills, Secretary

DATE: September 28, 2022

THROUGH: Austin C. Schlick, General Counsel
J. DeWane Ray, Acting Executive Director

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

SUBJECT: Final Rules 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

THIS MATTER IS NOT SCHEDULED FOR A BALLOT VOTE.

A DECISIONAL MEETING FOR THIS MATTER IS SCHEDULED ON: October 19, 2022

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

- (1) under section 15(j) of the Consumer Product Safety Act (CPSA), a rule to deem that stock window coverings that do not comply with the operating and inner cord requirements, or the manufacturer label requirement, 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 or the manufacturer label in ANSI/WCMA-2018, present a substantial product hazard; and
- (2) under sections 7 and 9 of the CPSA, a rule to establish a Safety Standard for Operating Cords on Custom Window Coverings.

If finalized, the draft rules provided in the package together would address the risk of strangulation deaths and injuries to children 8 years old and younger from stock and custom window covering cords.

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 Final Rules: (1) Substantial Product Hazard List: Window Covering Cords; (2) Safety Standard for Operating Cords on Custom Window Coverings

Billing Code 6355-01-P

CONSUMER PRODUCT SAFETY COMMISSION

16 CFR Part 1120

[CPSC Docket No. CPSC-2021-0038]

Substantial Product Hazard List: Window Covering Cords

AGENCY: Consumer Product Safety Commission

ACTION: Final rule.

SUMMARY: To address the risk of strangulation to young children associated with certain window covering cords, the Consumer Product Safety Commission (CPSC) is issuing this final 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 amends 16 CFR part 1120, which lists products that the Commission has determined present an SPH.

DATES: The rule takes effect on [INSERT DATE THAT IS 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

FOR FURTHER INFORMATION CONTACT: Jennifer Colten, Compliance Officer, Office of Compliance and Field Operations, Consumer Product Safety Commission, 4330 East West Highway; telephone: 301-504-8165; jcolten@cpsc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

A. Overview of the Final Rule

The purpose of the final rule is to address the risk of strangulation to children 8 years old and younger associated with hazardous cords on window coverings.¹ On January 7, 2022, CPSC published a proposed rule pursuant to 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) and 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 a “substantial product hazard,” as defined in section 15(a)(2) of the CPSA. 87 FR 891. The Commission received five comments in support of the rule and is now finalizing the rule as proposed.

The final rule is based on information and analysis contained in (1) CPSC staff’s September 29, 2021, Staff Briefing Package: Notice of Proposed Rulemaking for Corded Window Coverings (Staff’s NPR Briefing Package),² and (2) CPSC staff’s September 28, 2022, Staff Briefing Package: Final Rule for Corded Window Coverings (Staff’s Final Rule Briefing Package).³

As proposed, in the final rule the Commission deems three readily observable characteristics of stock window coverings to be an SPH:

¹ **Insert vote summary.**

² Staff’s NPR Briefing Package is available at: <https://www.cpsc.gov/s3fs-public/NPRs-Add-Window-Covering-Cords-to-Substantial-Product-Hazard-List-Establish-Safety-Standard-for-Operating-Cords-on-Custom-Window-Coverings-updated-10-29-2021.pdf?VersionId=HIM05bK3WDLRZrlNGogQLknhFvhtx3PD>.

³ Staff’s Final Rule Briefing Package is available at: **insert URL**.

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

Additionally, the Commission deems two readily observable characteristics of custom window coverings to be an SPH:

- (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 that:

- the following are readily observable characteristics of window coverings:
 - (a) the presence of hazardous operating cords (accessible operating cords longer than 8 inches in any use position) on stock window coverings; (b) the presence of hazardous inner cords (accessible inner cords that create a loop large enough for a child to insert his or her head, as observed by inserting a head probe with a force of 10 lbs.) on stock and custom window coverings; 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, 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 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 must 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 there must be substantial compliance with the voluntary standard. *Id.*

As explained in more detail in section II.A of this preamble, the “readily observable” characteristics of window covering cords include visual observation for the presence of operating and inner cords, and a manufacturer label. When cords are present, simple manipulations and observation of the window covering are made to assess cord accessibility by children, and to measure the length of accessible cords to determine whether they present a strangulation hazard.

C. Product Description

Window coverings include shades, blinds, curtains, and draperies, among other products. 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.

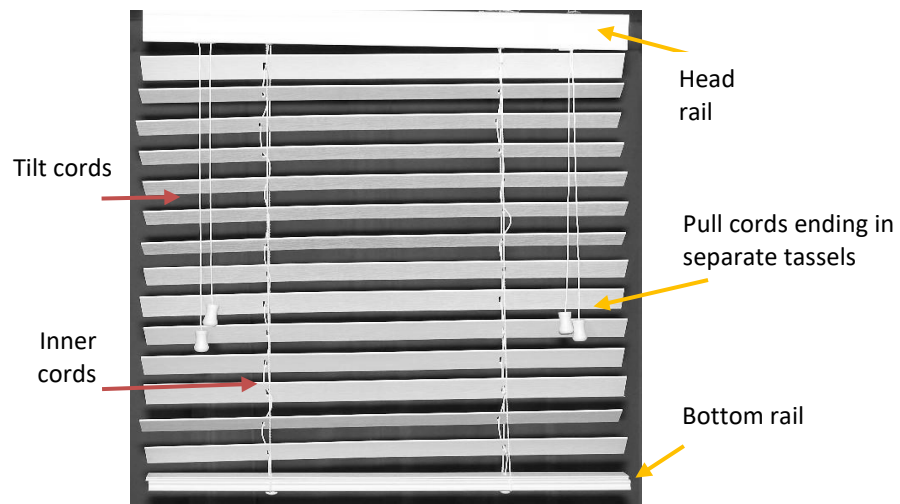


Figure 1. Horizontal blind



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

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 final rule 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. The final rule defines a “stock window covering” using the definition of “Stock Blinds, Shades, and Shadings” in section 3, definition 5.02 of ANSI/WCMA-2018, describing them as a product that is completely or substantially fabricated 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 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 final rule 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 can pose strangulation hazards to children when they have cords that 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.

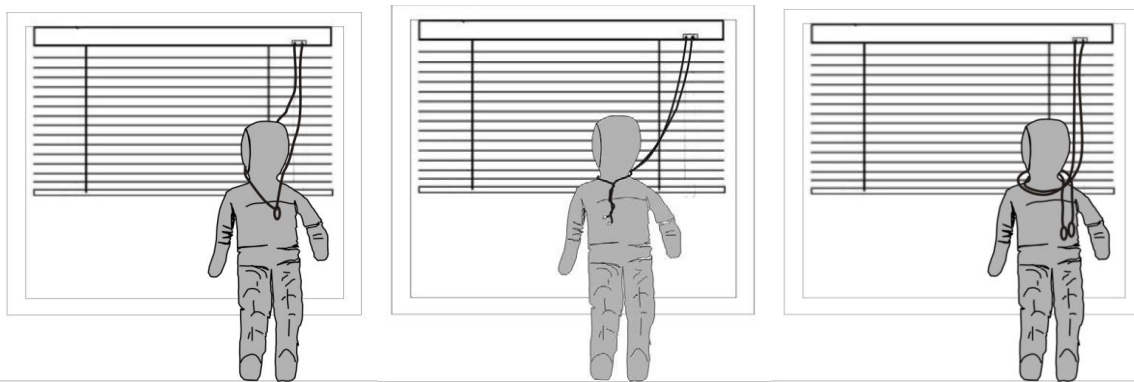


Figure 7. (a) Operating pull cords ending in one tassel (left); (b) operating cords tangled, creating a loop (middle); (c) operating cords wrapped around the neck (right)

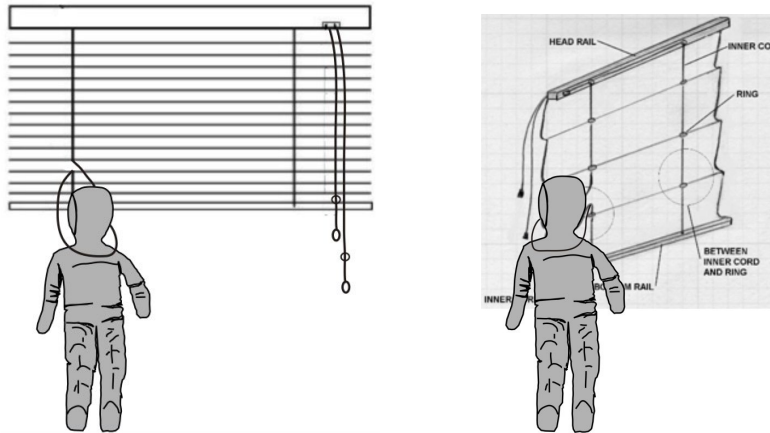


Figure 8. (a) Inner cords creating a loop (left), (b) Inner cords on the back side of Roman shade (right)

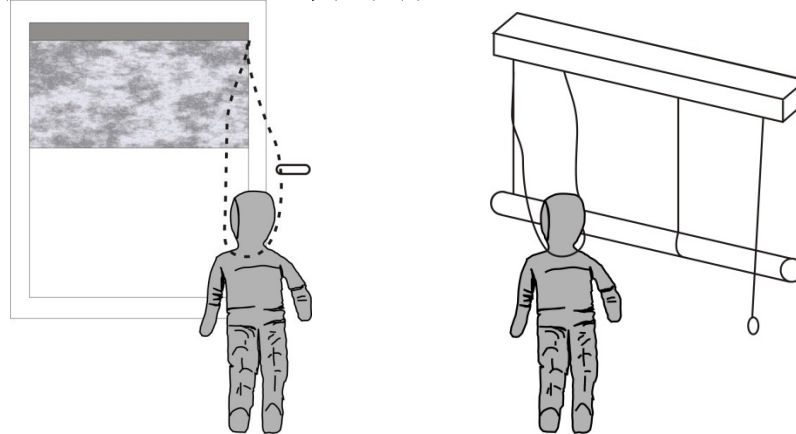


Figure 9. (a) Continuous loop cord (left), (b) Lifting loop on Roll-up Shade (right)

As reviewed in the NPR, children can strangle from mechanical compression of the neck when they place a window covering cord around their neck. 87 FR at 894-96. 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 as little as 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 loss of consciousness 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).

Because a loop acts as a noose when a child's neck is inserted, and death can occur within 2-3 minutes of a child losing footing, CPSC concludes that head insertion into a preexisting loop poses a higher risk of injury than when a cord that does not contain a preexisting loop 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.

Based on the data, the Commission also concludes 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; and cited 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).⁴ 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 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 finds 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 window covering units involved in incidents had the permanent warning label required by the ANSI/WCMA standard 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 because they do not allow hazardous cords on the product, by design, and they do not rely on consumer action to address the risk. Accordingly, the

⁴ <https://cpsc.gov/s3fs-public/Window%20Coverings%20Safety%20Devices%20Contractor%20Reports.pdf>.

Commission concludes that 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 that, 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 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 from the market hazardous operating/pull cords and inner cords for stock window coverings, and removed hazardous inner cords for custom window coverings.

To study the effectiveness and any lack of compliance with the voluntary standard associated with window covering cords, for the NPR, CPSC staff reviewed the data related to these products from 2009 through 2020.⁵ Since extracting data for the NPR, CPSC has received reports of 15 additional incidents. Tab A of Staff's Final Rule Briefing Package details this new incident data. The following analysis is based on incidents received from 2009 through 2021, and distinguishes between stock and custom window coverings whenever feasible.

⁵ 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 2021. 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 (further information can be found at <https://wonder.cdc.gov/mcd-icd10.html>). 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).

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 209 reported fatal and near-miss strangulations on window covering cords that occurred among children 8 years old and younger from January 2009 through December 2021. These 209 incidents do not necessarily include all window covering cord-related strangulation incidents that occurred during that period. However, these 209 incidents do provide a minimum number for such incidents during that time frame.

Table 1a provides the breakdown of the incidents by year. Totals include new incidents received after the NPR data analysis, which are noted in parentheses below. Because reporting is ongoing and the number of incidents may grow, and because these reports are anecdotal and reporting is incomplete, inferences should not be drawn from the year-to-year variations in the reported data.

Table 1a
Reported Fatal and Near-Miss Strangulation Incidents Involving Window Covering Cords
Among Children Eight Years and Younger 2009 – 2021

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	10 (1)	5	5 (1)
2018	8	4	4
2019	11	4	7
2020*	13 (5)	8 (5)	5
2021*	9 (9)	6 (6)	3 (3)
Total	209 (15)	100 (11)	109 (4)

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Source: CPSC epidemiological databases CPSRMS and NEISS. Data in () indicate the number of new incidents received since the NPR data analysis.

Note: * indicates data collection is ongoing.

Among the 15 newly reported incidents, staff identified 11 fatalities (73 percent) and 4 non-hospitalized injuries (27 percent). The non-hospitalized injuries resulted in lacerations and abrasions.

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 209 incident window coverings (24 percent) to be stock products, and 36 of the 209 (17 percent) window coverings as custom products. CPSC staff could not identify the window covering type in the remaining 123 of the 209 incidents (59 percent); 65 of the 123 incidents (53 percent) involving an uncategorized window covering resulted in a fatality.

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 -- 2021

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)	7 (4/3)	10
2018	--	1 (0/1)	7 (4/3)	8
2019	1(0/1)	--	10 (4/6)	11
2020*	--	1 (1/0)	12 (7/5)	13
2021*	--	--	9 (6/3)	9
Total	50 (20/30)	36 (15/21)	123 (65/58)	209

Source: CPSC epidemiological databases CPSRMS and NEISS.

Note: * indicates data collection is ongoing.

One hundred of the 209 incidents (48 percent) reported a fatality. Among the nonfatal incidents, 16 involved hospitalizations (8 percent). The long-term outcomes of these 16 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, 79 incidents (38 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. For the NPR, 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. For the 15 new incidents, staff found a similar pattern regarding gender: 62 percent of the victims were male, and 38 percent were females.

Table 1c provides a breakdown of the incidents by window covering type. Among the 11 newly reported deaths since the NPR data analysis, staff definitively identified the cord type in 6 deaths. Three deaths (27 percent) involved a pull cord, 2 deaths (18 percent) involved a continuous loop, and 1 death (9 percent) involved inner cord(s); staff had insufficient information to determine the cord type involved for the remaining 5 fatal incidents.

**Table 1c: Distribution of Reported Incidents by Types of
Window Coverings and Associated Cords 2009 – 2021**
(Numbers in Parentheses Indicate New Reports Received Since NPR)

	<i>Cord Type</i>						
<i>Window Covering Type</i>	Pull Cord	Continuous Loop	Inner Cord	Lifting Loop	Tilt Cord	Unknown	TOTAL
Horizontal	68 (3)	2	4 (1)	0	5	10	89 (4)
Vertical	0	12 (1)	0	0	0	0	12 (1)
Drapery	0	4 (1)	0	0	0	0	4 (1)
Roman	2	2	19	0	0	1	24
Other*	2	5	0	0	0	0	7
Roll-Up	1	0	0	4	0	1	6
Roller	0	9	0	0	0	0	9
Unknown	1	1	0	0	0	56 (9)	58 (9)
TOTAL	74 (3)	35 (2)	23 (1)	4	5	68 (9)	209 (15)

Source: CPSC epidemiological databases CPSRMS and NEISS.

Other*: This category includes cellular and pleated shades.

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. For the NPR, 2019 was the latest available year for NCHS data; since then, data for 2020 have become available.

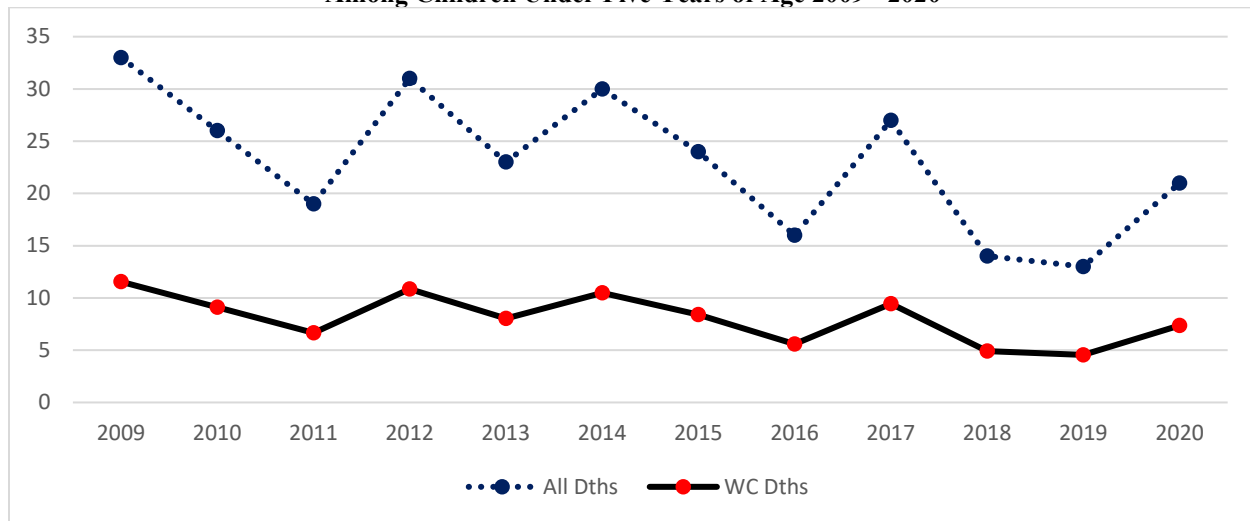
Using the ICD10 code value of W76 (*Other accidental hanging and strangulation*), the code most likely to capture strangulation fatalities among children under 5 (based on empirical

evidence from death certificates maintained in CPSC databases), CPSC staff derived fatality estimates for 2009 through 2020, presented in Figure 10 below. An unknown proportion of strangulation deaths is likely coded under ICD10=W75 (*Accidental suffocation and strangulation in bed*) as well as ICD10=W83 (*Other specified threats to breathing*), which staff cannot separate out from the non-strangulation deaths because of the unavailability of any narrative description in these data. Hence, CPSC's estimates of strangulation deaths are minimums.

A 2002 CPSC report by Marcy *et al.*,⁶ concluded that 35 percent of all strangulation fatalities among children less than 5 years old were associated with window covering cords. Assuming that the same proportion applied for the entire 12-year, period 2009 – 2020, Figure 10 below presents the national estimates for all strangulation fatalities, as well as strangulations involving window covering cords among children under 5.

⁶ 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 2009 - 2020



Source: Multiple Cause of Death data, NCHS, 2009 – 2020.

Note: The estimates for the window covering cord fatalities are based on the assumptions that 35% of all strangulation fatalities are due to window covering cords and that this percentage remained unchanged over 2009-2020.

Based on the 2002 study, staff estimates the annual average number of deaths at 8.1.⁷ We note that this estimate is consistent with CPSC’s actual incident data covering a 12-year period. For example, at the time of this final rule analysis, the incidents over the 12-year period 2009 through 2020 report an average of 7.8 annual deaths involving window covering cords among children under 8 years old.

F. *Applicable Voluntary Standard - ANSI/WCMA-2018*

WCMA updated the 2018 version the standard in May 2018. The standard went into effect on December 15, 2018. After the NPR Staff Briefing Package in October 2021, WCMA held multiple meetings with the intent of revising the ANSI/WCMA voluntary standard, balloting a revised version on July 15, 2022.⁸ The balloted standard is not in effect and does not

⁷ We received a comment critical of CPSC’s use of this 2002 study. At this point in time, we are unaware of other data sources that would provide information regarding a more current national trend in window covering cord-related strangulations and the commenter did not provide an alternate data source.

⁸ CPSC staff participated in all meetings, and meeting logs have been placed on the rulemaking docket for custom window coverings (Docket No. CPSC-2013-0028).

modify the provisions in the 2018 standard relevant to this rulemaking. Accordingly, the final rule to amend part 1120 is based on ANSI/WCMA-2018.

The 2018 voluntary standard 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, the Commission finds 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 for a child to wrap around his or her neck. Staff’s review of the incident data found that if stock window coverings had complied with the requirements in sections 4.3.1 of ANSI/WCMA-2018 at the time of the incident, all operating cord incidents would have been prevented. *See* Tabs G and I of Staff’s NPR Briefing Package; Briefing Memorandum of Staff’s Final Rule Briefing Package (at page 36). 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 longer than 8 inches, if manufacturers give consumers the option to custom order the products (sections 4.3.2.4 through 4.3.2.7 of ANSI/WCMA-2018).⁹ A hazardous operating

⁹ Although custom window coverings manufacturers can choose to meet the operating cord requirements for stock window coverings (sections 4.3.2.1 through 4.3.2.3), the standard does not require them to do so. Instead, the standard allows firms to continue manufacturing and selling custom window coverings that contain hazardous operating cords (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 final rule does not include them in the scope of the rule under section 15(j) of the CPSA. The Commission is addressing operating cords on custom window coverings in a separate rulemaking under sections 7 and 9 of the CPSA; CPSC Docket No. CPSC-2013-0028.

cord is one that a child can access, and that is long enough for a child to either wrap around their neck (longer than 8 inches), or insert their head into a pre-formed loop.

The Commission also finds that section 4.5 of ANSI/WCMA adequately addresses the strangulation risk associated with inner cords on both stock and custom window coverings. ANSI/WCMA-2018 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 analyzes the inner cord strangulation hazard on stock and custom window coverings. 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, like operating cords on stock products, inner cords must be not present, or must be inaccessible; or, if inner cords are accessible, the cords must be too short to create a loop 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, then all inner cord incidents would have been prevented on a window covering that is unbroken and intact. *Id.*

Table 2 explains the requirements in in ANSI/WCMA-2018 for operating cords, inner cords, and the manufacturer label, on stock and custom window coverings. In the final rule, the Commission deems failure to follow the provisions in requirements 1 through 5 an SPH, while the Commission addresses the inadequate provisions in requirements 6 through 8 in the final rule for operating cords on custom window coverings under CPSC Docket No. CPSC-2013-0028.

Table 2. Requirements for Stock and Custom Products in ANSI/WCMA-2018

Performance Requirements in ANSI/WCMA A100.1-2018	Assessment of the Performance Requirement	Stock Products	Custom Products
1. <i>No operating cords OR</i>	Adequate	Required to have one or more of these options	Allowed/ Not Required
2. <i>Short cord with a length equal to or less than 8 inches in any state (free or under tension) OR</i>			
3. <i>Inaccessible operating cords</i>			
4. <i>Inner cords that meet Appendix C and D</i>	Adequate	Required	Required
5. <i>Manufacturer Label that meets section 5.3</i>	Adequate	Required	Required
6. <i>Single Retractable Cord Lift System (no limit on length of exposed cord when operating)</i>	Inadequate	Prohibited	Allowed/ Not Prohibited
7. <i>Continuous Loop Operating System</i>			
8. <i>Accessible Operating Cords longer than 8 inches</i>			

G. Commission Efforts to Address Hazardous Window Covering Cords

1. Petition and Rulemaking

On October 8, 2014, the Commission granted a petition to initiate a rulemaking to develop a mandatory safety standard for window coverings.¹⁰ The petition asked CPSC 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 from window covering cords.

¹⁰ 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.

On January 16, 2015, the Commission published in the *Federal Register* an ANPR for corded window coverings. 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 made specific reference to the 2014 version of the ANSI/WCMA standard.

Subsequently, in 2018, ANSI/WCMA was revised to eliminate hazardous operating cords on stock window coverings, and to address inner cord hazards on stock and custom window coverings. Accordingly, on January 7, 2022, CPSC published a proposed rule pursuant to section 15(j) of the CPSA, 15 U.S.C. 2064(j), to amend the substantial product hazard list in part 1120 to deem the presence of hazardous window covering cords on stock and custom window coverings, as provided in ANSI/WCMA-2018, as an SPH. 87 FR 891. The Commission received five comments in support of the rule and is now finalizing the rule as proposed.

As described in section II.F of this preamble, 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 final rules: (1) this final rule 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, a final rule that requires that custom window coverings manufactured 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, or by making an accessible cord non-hazardous, as described in the final rule.

2. Window Covering Recalls

As reported in the NPR, during the period January 1, 2009 through December 31, 2020, CPSC conducted 42 consumer-level recalls, including two recall reannouncements. 87 FR at 901. 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,¹¹ including Roman shades and blinds, roll-up blinds, roller shades, cellular shades, horizontal blinds, and vertical blinds. The recalled products also included stock products that 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. CPSC has not conducted any window covering recalls since December 31, 2020.

H. Comments on the NPR

CPSC received three comments on the section 15(j) rule during the comment period, and two comments before the comment period began. All comments have been placed on the docket for this rule and all are generally supportive of the 15(j) rule. Commenters include WCMA (two comments),¹² Consumer Federation of America, Consumer Reports, and Parents for Window

¹¹ 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). That recall announcement did not provide the number of recalled products.

¹² WCMA also submitted its comments on the proposed rule for operating cords on custom window coverings (Docket CPSC-2013-0028) on the docket for this final rule under section 15(j) of the CPSA. Those comments are not generally relevant to the determinations required for a section 15(j) final rule (readily observable product

Blind Safety. Based on staff’s assessment of the ANSI/WCMA-2018 standard and all comments in support of the rule, the Commission finalizes this rule, as proposed.

II. Commission 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 final rule. Table 3 summarizes these requirements. The final rule deems 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 <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 and longer than 8 inches, observe whether accessible	(c) Inaccessible using cord accessibility probe

characteristics are adequately addressed in a voluntary standard, and products substantially comply with the voluntary standard), and so the Commission addresses WCMA’s comments in connection with the final rule for custom window coverings.

OS-27
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<i>Stock 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 <i>or</i>
<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		
5.3 Manufacturer Label: <i>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”

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) 8 inches long or shorter in any position of the stock window covering (section 4.3.1.2). The Commission determines that these characteristics of operating cords on stock window coverings are “readily observable” because, as explained in the NPR, they require visual observation and measurement to assess conformance with sections 4.3.1.1 through 4.3.1.4 of ANSI/WCMA-2018. 87 FR at 902-04. Additionally, the Commission deems the presence of an accessible operating cord longer than 8 inches in any position to be an SPH, 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.

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, a 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 determines that these characteristics of inner cords on stock and custom window coverings are “readily observable” because, as detailed in the NPR, visual observation and direct measurements of the product can assess conformance with sections 4.5, 6.3, 6.7, Appendix C, and Appendix D of ANSI/WCMA-2018. 87 FR at 904-08. The Commission deems 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.”

The Commission determines, as proposed in the NPR, that the absence of a manufacturer label is readily observable with a visual observation of the window covering. 87 FR at 908. The Commission deems the absence of a manufacturer label on a window covering to be an SPH, because the window covering would not comply with section 5.3 of ANSI/WCMA-2018. Additionally, the absence of this manufacturer 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 window coverings. More than 28 million window covering units have been subject to a recall. Product information that aids a recall is necessary to effectuate and expedite recalls, especially in cases where a consumer, such as a renter, did not directly purchase the window coverings and relies on the manufacturer label for product information.

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 determines that stock window coverings that comply with section 4.3.1 of the 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 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; Briefing Memorandum of Staff’s Final Rule Briefing Package (at page 36). Staff’s review of the incident data found that if stock window coverings had complied with the requirements in sections 4.3.1 of ANSI/WCMA-2018 at the time of the incident, all operating cord incidents would have been prevented. *Id.*

Based on staff’s assessment, the Commission also 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 and unbroken, then all inner cord incidents would have been prevented. *Id.*

Finally, the Commission 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.

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

The Commission determines that stock window coverings substantially comply with the requirements for operating cords in ANSI/WCMA-2018. 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 manufacturers is that, to sell window coverings in the United States, compliance with the standard is mandatory.

Additionally, 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. Various manufacturers indicated retailer 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 the development process for their stock products, from 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 of 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 deviations from the default options, with no specific customer request that justified the deviation (*e.g.*, length of operating cords 40 percent longer than the window covering length, and use of a cord tilt, instead of a wand tilt,); lack of warning label; lack of manufacturer label; and lack of hang tag. 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 a cord accessibility probe and force gauge, under test parameters defined in ANSI/WCMA-2018. The samples tested by staff indicated a high level of conformance in custom products regarding inner cord accessibility.

Based on incident data, WCMA’s statements, contractor report findings, staff’s examination and testing of window covering products, and lack of negative comment, the Commission 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, as described in Table 3.

III. Description of the Final Rule

The final rule adds several new paragraphs in part 1120. The final rule includes two new definitions in sections 1120.2(f) and (g), to 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 final 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 final rule defines a “custom window covering” as any window covering that is not classified as a stock window covering.

Section 1120.3 of the final rule lists SPHs by product, identifying the readily observable characteristics of each product, and the sections of the voluntary standards that address each hazard. The final rule modifies § 1120.3 by adding “stock window coverings” and “custom window coverings” as § 1120.3(e) and (f), respectively. Section 1120.3(e) of the final rule deems 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.

Additionally, section 1120.3(f) of the final rule deems 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 final rule adds § 1120.4(d), which provides the incorporation by reference details for the ANSI/WCMA standard.

IV. Effect of the Final Rule Under Section 15(j) of the CPSA

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. A rule under section 15(j) of the CPSA is not 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, a product that is or has an SPH listed in 16 CFR part 1120 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 could be subject to criminal penalties under section 21 of the CPSA, 15 U.S.C. 2070.

A product that is or contains an SPH also may also be subject to voluntary corrective action or mandatory corrective action under sections 15(c) and (d) of the CPSA, 15 U.S.C. 2064(c) and (d). Thus, by issuing a final rule under section 15(j) for stock and custom window coverings, the Commission can 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 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, pursuant to the final rule, stock and custom window coverings that violate the rule are subject to CBP seizure and forfeiture.

V. Regulatory Flexibility Act Analysis

The Regulatory Flexibility Act (RFA) requires that proposed and final rules be reviewed for the potential economic impact on small entities, including small businesses. 5 U.S.C. 601-612. In the NPR, the Commission stated that the economic effect of the rule on all entities will be minimal, and that absent public comment with relevant information and evidence to the contrary, the Commission intended to certify at the final rule stage that the rule will not have a significant economic impact on a substantial number of small entities. 87 FR at 910-11. The Commission received no comments on the RFA analysis presented in the NPR, nor any other record information that would alter that analysis. *See* Tab E of Staff’s Final Rule Briefing Package. Accordingly, for the final rule, the Commission certifies that the rule will not have a significant impact on a substantial number of small businesses.

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 final 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 falls within the “categorical exclusion” for the purposes of the National Environmental Policy Act. 16 CFR § 1021.5(c).

VII. Paperwork Reduction Act

Under the Office of Management and Budget’s (OMB) 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 estimate, where an agency demonstrates that the disclosure activities required to comply are “usual and customary.” In the NPR, CPSC explained staff’s assessment that more than 90 percent of the window covering market already complies with the voluntary standard, including the requirement in section 5.3 of ANSI/WCMA-2018 to place a manufacturer label on each window covering. CPSC received no comments on the burden estimate. For the final rule, CPSC will not establish an information collection under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3521), because the cost and burden of the label required in section 5.3 of ANSI/WCMA-2018 is incurred by window covering manufacturers in the “normal course of their activities” and are thus excluded from the burden estimate because compliance is “usual and customary.”

VIII. Preemption

The final rule under section 15(j) of the CPSA does not establish a consumer product safety rule. Accordingly, the preemption provisions in section 26(a) of the CPSA, 15 U.S.C. 2075(a), do 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). In the NPR, the Commission proposed that any stock or custom window coverings that did not conform to the specified sections of ANSI/WCMA A100.1 – 2018 (summarized in Table 3), be deemed an SPH effective 30 days after publication of a final rule in the *Federal Register*. We received no comments on the effective date. Accordingly, the final rule will apply to all stock and custom window coverings that do not comply with the readily observable characteristics of ANSI/WCMA-2018, as specified in Table 3 of this preamble, that are distributed in commerce or imported on or after **[insert date that is 30 days after publication in the *Federal Register*]**.

X. Incorporation by Reference

The Commission incorporates by reference certain provisions of ANSI/WCMA A100.1 – 2018, American National Standard for Safety of Corded Window Covering Products. The OFR has regulations concerning incorporation by reference. 1 CFR part 51. The OFR's regulations require that, for a final rule, agencies must discuss, in the preamble of the rule, ways that the materials the agency incorporates by reference are reasonably available to interested persons and

how interested parties can obtain the materials. In addition, the preamble of the rule must summarize the material. 1 CFR 51.5(b).

In accordance with the OFR's requirements, sections I.F, II.A, and Table 3 of this preamble summarize the provisions of ANSI/WCMA A100.1 – 2018 that the Commission is incorporating by reference. ANSI/WCMA A100.1 – 2018 is copyrighted. You can view a read-only copy of ANSI/WCMA A100.1 – 2018 at: https://wcmanet.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://wcmanet.com>), or by mail from the Window Covering Manufacturers Association, Inc. 355 Lexington Avenue, New York, NY, 10017; telephone: 212.297.2122. Alternatively, interested parties may inspect a copy of the standard free of charge by contacting Alberta E. Mills, Office of the Secretary, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone: 301-504-7479; e-mail: cpsc-os@cpsc.gov.

XI. Congressional Review Act

The Congressional Review Act (CRA; 5 U.S.C. §§ 801-808) states that, before a rule may take effect, the agency issuing the rule must submit the rule, and certain related information, to each House of Congress and the Comptroller General. 5 U.S.C. § 801(a)(1). The submission must indicate whether the rule is a “major rule.” The CRA states that the Office of Information and Regulatory Affairs (“OIRA”) determines whether a rule qualifies as a “major rule.” Pursuant to the CRA, OIRA designated this rule as not a “major rule,” as defined in 5 U.S.C. § 804(2). To comply with the CRA, CPSC will submit the required information to each House of Congress and the Comptroller General.

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 amends 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*) has the same meaning as defined in section 3, definition 5.02, of ANSI/WCMA A100.1 – 2018, as 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” prior to distribution in commerce, subsequent changes to the product do not change its categorization.

(g) *Custom window covering* (also known as a *custom blind, shade, or shading*) has the same meaning as defined in section 3, definition 5.01, of ANSI/WCMA A100.1 – 2018, as 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
- (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>.

OS-41
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(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).

(2) [Reserved.]

Dated: _____

Alberta E. Mills, Secretary
Consumer Product Safety Commission.

Billing Code 6355-01-P

CONSUMER PRODUCT SAFETY COMMISSION

16 CFR Part 1120

[CPSC Docket No. CPSC-2021-0038]

Substantial Product Hazard List: Window Covering Cords

AGENCY: Consumer Product Safety Commission

ACTION: Final rule.

SUMMARY: To address the risk of strangulation to young children associated with certain window covering cords, the Consumer Product Safety Commission (CPSC) is issuing this final 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 amends 16 CFR part 1120, which lists products that the Commission has determined present an SPH.

DATES: The rule takes effect on [INSERT DATE THAT IS 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

FOR FURTHER INFORMATION CONTACT: Jennifer Colten, Compliance Officer, Office of Compliance and Field Operations, Consumer Product Safety Commission, 4330 East West Highway; telephone: 301-504-8165; jcolten@cpsc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

A. Overview of the Final Rule

The purpose of the final rule is to address the risk of strangulation to children 8 years old and younger associated with hazardous cords on window coverings.¹ On January 7, 2022, CPSC published a proposed rule pursuant to 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) and 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 a “substantial product hazard,” as defined in section 15(a)(2) of the CPSA. 87 FR 891. The Commission received five comments in support of the rule and is now finalizing the rule as proposed.

The final rule is based on information and analysis contained in (1) CPSC staff’s September 29, 2021, Staff Briefing Package: Notice of Proposed Rulemaking for Corded Window Coverings (Staff’s NPR Briefing Package),² and (2) CPSC staff’s September 28, 2022, Staff Briefing Package: Final Rule for Corded Window Coverings (Staff’s Final Rule Briefing Package).³

As proposed, in the final rule the Commission deems three readily observable characteristics of stock window coverings to be an SPH:

¹ **Insert vote summary.**

² Staff’s NPR Briefing Package is available at: <https://www.cpsc.gov/s3fs-public/NPRs-Add-Window-Covering-Cords-to-Substantial-Product-Hazard-List-Establish-Safety-Standard-for-Operating-Cords-on-Custom-Window-Coverings-updated-10-29-2021.pdf?VersionId=HIM05bK3WDLRZrlNGogQLknhFvhtx3PD>.

³ Staff’s Final Rule Briefing Package is available at: **insert URL**.

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

Additionally, the Commission deems two readily observable characteristics of custom window coverings to be an SPH:

- (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 that:

- the following are readily observable characteristics of window coverings:
 - (a) the presence of hazardous operating cords (accessible operating cords longer than 8 inches in any use position) on stock window coverings; (b) the presence of hazardous inner cords (accessible inner cords that create a loop large enough for a child to insert his or her head, as observed by inserting a head probe with a force of 10 lbs.) on stock and custom window coverings; 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, 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 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 must 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 there must be substantial compliance with the voluntary standard. *Id.*

As explained in more detail in section II.A of this preamble, the “readily observable” characteristics of window covering cords include visual observation for the presence of operating and inner cords, and a manufacturer label. When cords are present, simple manipulations and observation of the window covering are made to assess cord accessibility by children, and to measure the length of accessible cords to determine whether they present a strangulation hazard.

C. Product Description

Window coverings include shades, blinds, curtains, and draperies, among other products. 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.

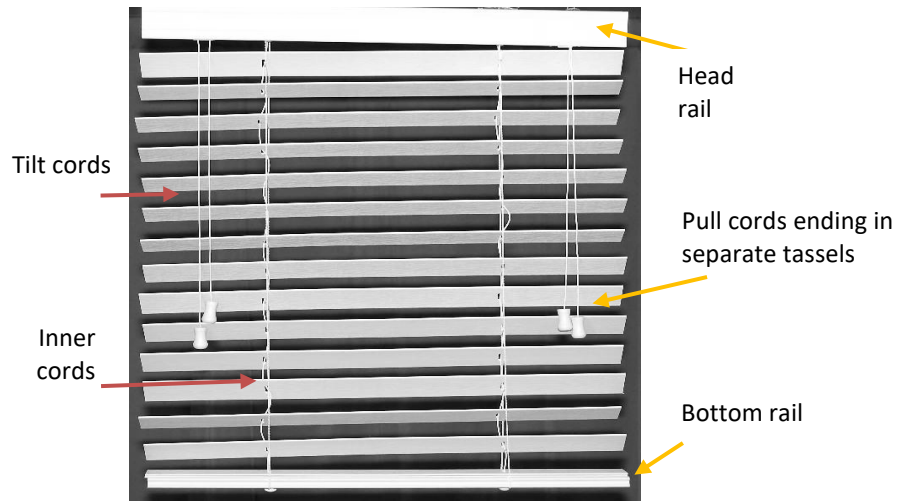


Figure 1. Horizontal blind



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

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 final rule 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. The final rule defines a “stock window covering” using the definition of “Stock Blinds, Shades, and Shadings” in section 3, definition 5.02 of ANSI/WCMA-2018, describing them as a product that is completely or substantially fabricated 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 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 final rule 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 can pose strangulation hazards to children when they have cords that 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.

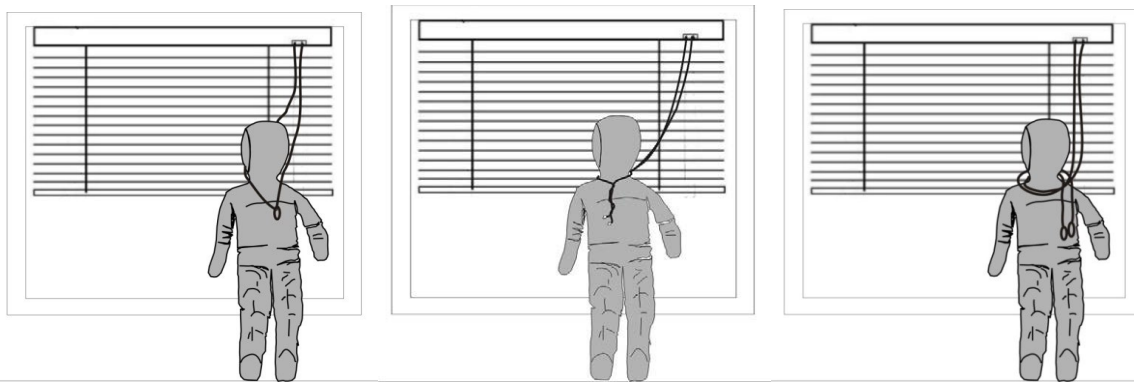


Figure 7. (a) Operating pull cords ending in one tassel (left); (b) operating cords tangled, creating a loop (middle); (c) operating cords wrapped around the neck (right)

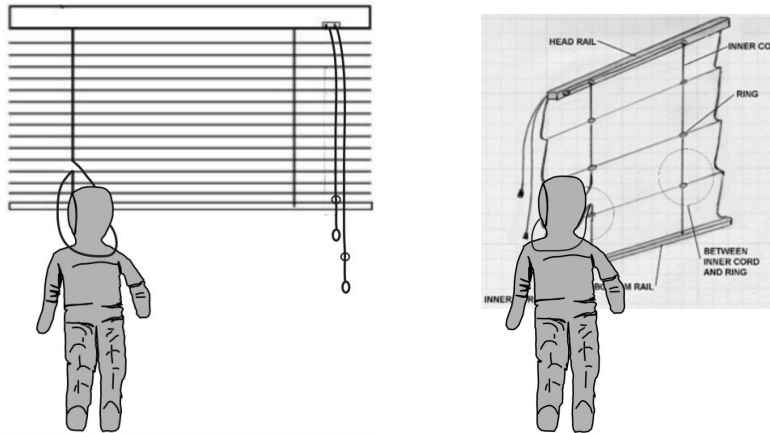


Figure 8. (a) Inner cords creating a loop (left), (b) Inner cords on the back side of Roman shade (right)

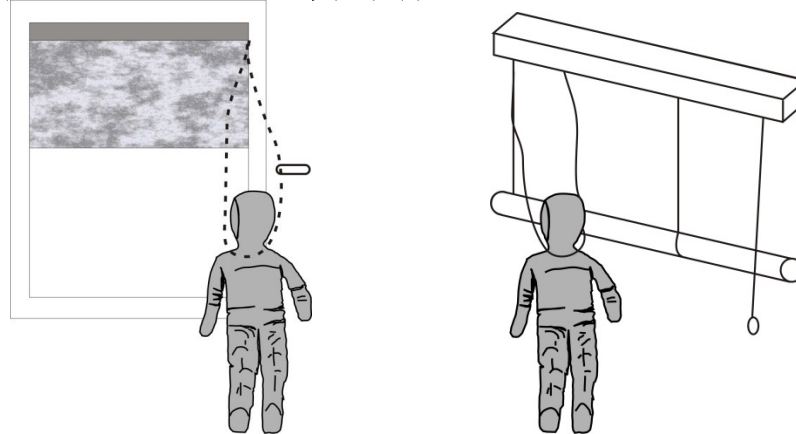


Figure 9. (a) Continuous loop cord (left), (b) Lifting loop on Roll-up Shade (right)

As reviewed in the NPR, children can strangle from mechanical compression of the neck when they place a window covering cord around their neck. 87 FR at 894-96. 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 as little as 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 loss of consciousness 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).

Because a loop acts as a noose when a child's neck is inserted, and death can occur within 2-3 minutes of a child losing footing, CPSC concludes that head insertion into a preexisting loop poses a higher risk of injury than when a cord that does not contain a pre-existing loop 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.

Based on the data, the Commission also concludes 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; and cited 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).⁴ 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 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 finds 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 window covering units involved in incidents had the permanent warning label required by the ANSI/WCMA standard 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 because they do not allow hazardous cords on the product, by design, and they do not rely on consumer action to address the risk. Accordingly, the

⁴ <https://cpsc.gov/s3fs-public/Window%20Coverings%20Safety%20Devices%20Contractor%20Reports.pdf>.

Commission concludes that 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 that, 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 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 from the market hazardous operating/pull cords and inner cords for stock window coverings, and removed hazardous inner cords for custom window coverings.

To study the effectiveness and any lack of compliance with the voluntary standard associated with window covering cords, for the NPR, CPSC staff reviewed the data related to these products from 2009 through 2020.⁵ Since extracting data for the NPR, CPSC has received reports of 15 additional incidents. Tab A of Staff's Final Rule Briefing Package details this new incident data. The following analysis is based on incidents received from 2009 through 2021, and distinguishes between stock and custom window coverings whenever feasible.

⁵ 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 2021. 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 (further information can be found at <https://wonder.cdc.gov/mcd-icd10.html>). 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).

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 209 reported fatal and near-miss strangulations on window covering cords that occurred among children 8 years old and younger from January 2009 through December 2021. These 209 incidents do not necessarily include all window covering cord-related strangulation incidents that occurred during that period. However, these 209 incidents do provide a minimum number for such incidents during that time frame.

Table 1a provides the breakdown of the incidents by year. Totals include new incidents received after the NPR data analysis, which are noted in parentheses below. Because reporting is ongoing and the number of incidents may grow, and because these reports are anecdotal and reporting is incomplete, inferences should not be drawn from the year-to-year variations in the reported data.

Table 1a
Reported Fatal and Near-Miss Strangulation Incidents Involving Window Covering Cords
Among Children Eight Years and Younger 2009 – 2021

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	10 (1)	5	5 (1)
2018	8	4	4
2019	11	4	7
2020*	13 (5)	8 (5)	5
2021*	9 (9)	6 (6)	3 (3)
Total	209 (15)	100 (11)	109 (4)

OS-55
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Source: CPSC epidemiological databases CPSRMS and NEISS. Data in () indicate the number of new incidents received since the NPR data analysis.

Note: * indicates data collection is ongoing.

Among the 15 newly reported incidents, staff identified 11 fatalities (73 percent) and 4 non-hospitalized injuries (27 percent). The non-hospitalized injuries resulted in lacerations and abrasions.

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 209 incident window coverings (24 percent) to be stock products, and 36 of the 209 (17 percent) window coverings as custom products. CPSC staff could not identify the window covering type in the remaining 123 of the 209 incidents (59 percent); 65 of the 123 incidents (53 percent) involving an uncategorized window covering resulted in a fatality.

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 -- 2021

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)	7 (4/3)	10
2018	--	1 (0/1)	7 (4/3)	8
2019	1(0/1)	--	10 (4/6)	11
2020*	--	1 (1/0)	12 (7/5)	13
2021*	--	--	9 (6/3)	9
Total	50 (20/30)	36 (15/21)	123 (65/58)	209

Source: CPSC epidemiological databases CPSRMS and NEISS.

Note: * indicates data collection is ongoing.

One hundred of the 209 incidents (48 percent) reported a fatality. Among the nonfatal incidents, 16 involved hospitalizations (8 percent). The long-term outcomes of these 16 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, 79 incidents (38 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. For the NPR, 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. For the 15 new incidents, staff found a similar pattern regarding gender: 62 percent of the victims were male, and 38 percent were females.

Table 1c provides a breakdown of the incidents by window covering type. Among the 11 newly reported deaths since the NPR data analysis, staff definitively identified the cord type in 6 deaths. Three deaths (27 percent) involved a pull cord, 2 deaths (18 percent) involved a continuous loop, and 1 death (9 percent) involved inner cord(s); staff had insufficient information to determine the cord type involved for the remaining 5 fatal incidents.

**Table 1c: Distribution of Reported Incidents by Types of
Window Coverings and Associated Cords 2009 – 2021**
(Numbers in Parentheses Indicate New Reports Received Since NPR)

	<i>Cord Type</i>						
<i>Window Covering Type</i>	Pull Cord	Continuous Loop	Inner Cord	Lifting Loop	Tilt Cord	Unknown	TOTAL
Horizontal	68 (3)	2	4 (1)	0	5	10	89 (4)
Vertical	0	12 (1)	0	0	0	0	12 (1)
Drapery	0	4 (1)	0	0	0	0	4 (1)
Roman	2	2	19	0	0	1	24
Other*	2	5	0	0	0	0	7
Roll-Up	1	0	0	4	0	1	6
Roller	0	9	0	0	0	0	9
Unknown	1	1	0	0	0	56 (9)	58 (9)
TOTAL	74 (3)	35 (2)	23 (1)	4	5	68 (9)	209 (15)

Source: CPSC epidemiological databases CPSRMS and NEISS.

Other*: This category includes cellular and pleated shades.

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. For the NPR, 2019 was the latest available year for NCHS data; since then, data for 2020 have become available.

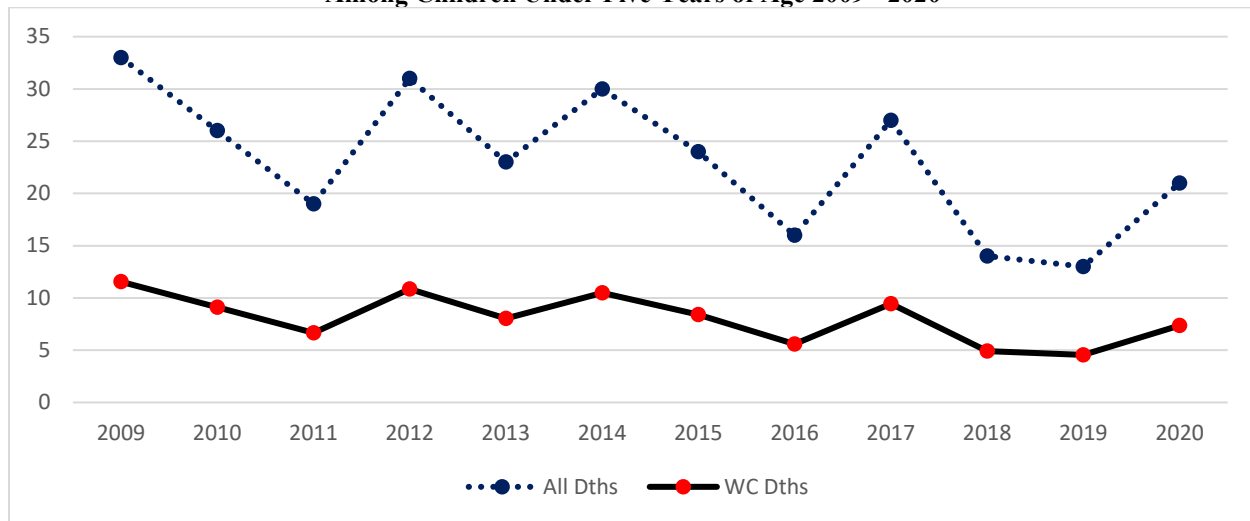
Using the ICD10 code value of W76 (*Other accidental hanging and strangulation*), the code most likely to capture strangulation fatalities among children under 5 (based on empirical

evidence from death certificates maintained in CPSC databases), CPSC staff derived fatality estimates for 2009 through 2020, presented in Figure 10 below. An unknown proportion of strangulation deaths is likely coded under ICD10=W75 (*Accidental suffocation and strangulation in bed*) as well as ICD10=W83 (*Other specified threats to breathing*), which staff cannot separate out from the non-strangulation deaths because of the unavailability of any narrative description in these data. Hence, CPSC's estimates of strangulation deaths are minimums.

A 2002 CPSC report by Marcy *et al.*,⁶ concluded that 35 percent of all strangulation fatalities among children less than 5 years old were associated with window covering cords. Assuming that the same proportion applied for the entire 12-year, period 2009 – 2020, Figure 10 below presents the national estimates for all strangulation fatalities, as well as strangulations involving window covering cords among children under 5.

⁶ 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 2009 - 2020



Source: Multiple Cause of Death data, NCHS, 2009 – 2020.

Note: The estimates for the window covering cord fatalities are based on the assumptions that 35% of all strangulation fatalities are due to window covering cords and that this percentage remained unchanged over 2009-2020.

Based on the 2002 study, staff estimates the annual average number of deaths at 8.1.⁷

We note that this estimate is consistent with CPSC’s actual incident data covering a 12-year period. For example, at the time of this final rule analysis, the incidents over the 12-year period 2009 through 2020 report an average of 7.8 annual deaths involving window covering cords among children under 8 years old.

F. Applicable Voluntary Standard - ANSI/WCMA-2018

WCMA updated the 2018 version the standard in May 2018. The standard went into effect on December 15, 2018. After the NPR Staff Briefing Package in October 2021, WCMA held multiple meetings with the intent of revising the ANSI/WCMA voluntary standard, balloting a revised version on July 15, 2022.⁸ The balloted standard is not in effect and does not

⁷ We received a comment critical of CPSC’s use of this 2002 study. At this point in time, we are unaware of other data sources that would provide information regarding a more current national trend in window covering cord-related strangulations and the commenter did not provide an alternate data source.

⁸ CPSC staff participated in all meetings, and meeting logs have been placed on the rulemaking docket for custom window coverings (Docket No. CPSC-2013-0028).

modify the provisions in the 2018 standard relevant to this rulemaking. Accordingly, the final rule to amend part 1120 is based on ANSI/WCMA-2018.

The 2018 voluntary standard 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, the Commission finds 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 for a child to wrap around his or her neck. Staff’s review of the incident data found that if stock window coverings had complied with the requirements in sections 4.3.1 of ANSI/WCMA-2018 at the time of the incident, all operating cord incidents would have been prevented. *See* Tabs G and I of Staff’s NPR Briefing Package; Briefing Memorandum of Staff’s Final Rule Briefing Package (at page 36). 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 longer than 8 inches, if manufacturers give consumers the option to custom order the products (sections 4.3.2.4 through 4.3.2.7 of ANSI/WCMA-2018).⁹ A hazardous operating

⁹ Although custom window coverings manufacturers can choose to meet the operating cord requirements for stock window coverings (sections 4.3.2.1 through 4.3.2.3), the standard does not require them to do so. Instead, the standard allows firms to continue manufacturing and selling custom window coverings that contain hazardous operating cords (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 final rule does not include them in the scope of the rule under section 15(j) of the CPSA. The Commission is addressing operating cords on custom window coverings in a separate rulemaking under sections 7 and 9 of the CPSA; CPSC Docket No. CPSC-2013-0028.

cord is one that a child can access, and that is long enough for a child to either wrap around their neck (longer than 8 inches), or insert their head into a pre-formed loop.

The Commission also finds that section 4.5 of ANSI/WCMA adequately addresses the strangulation risk associated with inner cords on both stock and custom window coverings. ANSI/WCMA-2018 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 analyzes the inner cord strangulation hazard on stock and custom window coverings. 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, like operating cords on stock products, inner cords must be not present, or must be inaccessible; or, if inner cords are accessible, the cords must be too short to create a loop 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, then all inner cord incidents would have been prevented on a window covering that is unbroken and intact. *Id.*

Table 2 explains the requirements in in ANSI/WCMA-2018 for operating cords, inner cords, and the manufacturer label, on stock and custom window coverings. In the final rule, the Commission deems failure to follow the provisions in requirements 1 through 5 an SPH, while the Commission addresses the inadequate provisions in requirements 6 through 8 in the final rule for operating cords on custom window coverings under CPSC Docket No. CPSC-2013-0028.

Table 2. Requirements for Stock and Custom Products in ANSI/WCMA-2018

Performance Requirements in ANSI/WCMA A100.1-2018	Assessment of the Performance Requirement	Stock Products	Custom Products
1. <i>No operating cords OR</i>	Adequate	Required to have one or more of these options	Allowed/ Not Required
2. <i>Short cord with a length equal to or less than 8 inches in any state (free or under tension) OR</i>			
3. <i>Inaccessible operating cords</i>			
4. <i>Inner cords that meet Appendix C and D</i>	Adequate	Required	Required
5. <i>Manufacturer Label that meets section 5.3</i>	Adequate	Required	Required
6. <i>Single Retractable Cord Lift System (no limit on length of exposed cord when operating)</i>	Inadequate	Prohibited	Allowed/ Not Prohibited
7. <i>Continuous Loop Operating System</i>			
8. <i>Accessible Operating Cords longer than 8 inches</i>			

G. Commission Efforts to Address Hazardous Window Covering Cords

1. Petition and Rulemaking

On October 8, 2014, the Commission granted a petition to initiate a rulemaking to develop a mandatory safety standard for window coverings.¹⁰ The petition asked CPSC 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 from window covering cords.

¹⁰ 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.

On January 16, 2015, the Commission published in the *Federal Register* an ANPR for corded window coverings. 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 made specific reference to the 2014 version of the ANSI/WCMA standard.

Subsequently, in 2018, ANSI/WCMA was revised to eliminate hazardous operating cords on stock window coverings, and to address inner cord hazards on stock and custom window coverings. Accordingly, on January 7, 2022, CPSC published a proposed rule pursuant to section 15(j) of the CPSA, 15 U.S.C. 2064(j), to amend the substantial product hazard list in part 1120 to deem the presence of hazardous window covering cords on stock and custom window coverings, as provided in ANSI/WCMA-2018, as an SPH. 87 FR 891. The Commission received five comments in support of the rule and is now finalizing the rule as proposed.

As described in section II.F of this preamble, 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 final rules: (1) this final rule 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, a final rule that requires that custom window coverings manufactured 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, or by making an accessible cord non-hazardous, as described in the final rule.

2. Window Covering Recalls

As reported in the NPR, during the period January 1, 2009 through December 31, 2020, CPSC conducted 42 consumer-level recalls, including two recall reannouncements. 87 FR at 901. 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,¹¹ including Roman shades and blinds, roll-up blinds, roller shades, cellular shades, horizontal blinds, and vertical blinds. The recalled products also included stock products that 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. CPSC has not conducted any window covering recalls since December 31, 2020.

H. Comments on the NPR

CPSC received three comments on the section 15(j) rule during the comment period, and two comments before the comment period began. All comments have been placed on the docket for this rule and all are generally supportive of the 15(j) rule. Commenters include WCMA (two comments),¹² Consumer Federation of America, Consumer Reports, and Parents for Window

¹¹ 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). That recall announcement did not provide the number of recalled products.

¹² WCMA also submitted its comments on the proposed rule for operating cords on custom window coverings (Docket CPSC-2013-0028) on the docket for this final rule under section 15(j) of the CPSA. Those comments are not generally relevant to the determinations required for a section 15(j) final rule (readily observable product

Blind Safety. Based on staff’s assessment of the ANSI/WCMA-2018 standard and all comments in support of the rule, the Commission finalizes this rule, as proposed.

II. Commission 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 final rule. Table 3 summarizes these requirements. The final rule deems 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 <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 and longer than 8 inches, observe whether accessible	(c) Inaccessible using cord accessibility probe

characteristics are adequately addressed in a voluntary standard, and products substantially comply with the voluntary standard), and so the Commission addresses WCMA’s comments in connection with the final rule for custom window coverings.

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<i>Stock 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 <i>or</i>
<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		
5.3 Manufacturer Label: <i>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”

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) 8 inches long or shorter in any position of the stock window covering (section 4.3.1.2). The Commission determines that these characteristics of operating cords on stock window coverings are “readily observable” because, as explained in the NPR, they require visual observation and measurement to assess conformance with sections 4.3.1.1 through 4.3.1.4 of ANSI/WCMA-2018. 87 FR at 902-04. Additionally, the Commission deems the presence of an accessible operating cord longer than 8 inches in any position to be an SPH, 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.

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, a 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 determines that these characteristics of inner cords on stock and custom window coverings are “readily observable” because, as detailed in the NPR, visual observation and direct measurements of the product can assess conformance with sections 4.5, 6.3, 6.7, Appendix C, and Appendix D of ANSI/WCMA-2018. 87 FR at 904-08. The Commission deems 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.”

The Commission determines, as proposed in the NPR, that the absence of a manufacturer label is readily observable with a visual observation of the window covering. 87 FR at 908. The Commission deems the absence of a manufacturer label on a window covering to be an SPH, because the window covering would not comply with section 5.3 of ANSI/WCMA-2018. Additionally, the absence of this manufacturer 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 window coverings. More than 28 million window covering units have been subject to a recall. Product information that aids a recall is necessary to effectuate and expedite recalls, especially in cases where a consumer, such as a renter, did not directly purchase the window coverings and relies on the manufacturer label for product information.

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 determines that stock window coverings that comply with section 4.3.1 of the 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 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; Briefing Memorandum of Staff’s Final Rule Briefing Package (at page 36). Staff’s review of the incident data found that if stock window coverings had complied with the requirements in sections 4.3.1 of ANSI/WCMA-2018 at the time of the incident, all operating cord incidents would have been prevented. *Id.*

Based on staff’s assessment, the Commission also 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 and unbroken, then all inner cord incidents would have been prevented. *Id.*

Finally, the Commission 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.

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

The Commission determines that stock window coverings substantially comply with the requirements for operating cords in ANSI/WCMA-2018. 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 manufacturers is that, to sell window coverings in the United States, compliance with the standard is mandatory.

Additionally, 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. Various manufacturers indicated retailer 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 the development process for their stock products, from 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 of 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 deviations from the default options, with no specific customer request that justified the deviation (*e.g.*, length of operating cords 40 percent longer than the window covering length, and use of a cord tilt, instead of a wand tilt,); lack of warning label; lack of manufacturer label; and lack of hang tag. 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 a cord accessibility probe and force gauge, under test parameters defined in ANSI/WCMA-2018. The samples tested by staff indicated a high level of conformance in custom products regarding inner cord accessibility.

Based on incident data, WCMA’s statements, contractor report findings, staff’s examination and testing of window covering products, and lack of negative comment, the Commission 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, as described in Table 3.

III. Description of the Final Rule

The final rule adds several new paragraphs in part 1120. The final rule includes two new definitions in sections 1120.2(f) and (g), to 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 final 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 final rule defines a “custom window covering” as any window covering that is not classified as a stock window covering.

Section 1120.3 of the final rule lists SPHs by product, identifying the readily observable characteristics of each product, and the sections of the voluntary standards that address each hazard. The final rule modifies § 1120.3 by adding “stock window coverings” and “custom window coverings” as § 1120.3(e) and (f), respectively. Section 1120.3(e) of the final rule deems 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.

Additionally, section 1120.3(f) of the final rule deems 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 final rule adds § 1120.4(d), which provides the incorporation by reference details for the ANSI/WCMA standard.

IV. Effect of the Final Rule Under Section 15(j) of the CPSA

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. A rule under section 15(j) of the CPSA is not 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, a product that is or has an SPH listed in 16 CFR part 1120 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 could be subject to criminal penalties under section 21 of the CPSA, 15 U.S.C. 2070.

A product that is or contains an SPH also may also be subject to voluntary corrective action or mandatory corrective action under sections 15(c) and (d) of the CPSA, 15 U.S.C. 2064(c) and (d). Thus, by issuing a final rule under section 15(j) for stock and custom window coverings, the Commission can 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 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, pursuant to the final rule, stock and custom window coverings that violate the rule are subject to CBP seizure and forfeiture.

V. Regulatory Flexibility Act Analysis

The Regulatory Flexibility Act (RFA) requires that proposed and final rules be reviewed for the potential economic impact on small entities, including small businesses. 5 U.S.C. 601-612. In the NPR, the Commission stated that the economic effect of the rule on all entities will be minimal, and that absent public comment with relevant information and evidence to the contrary, the Commission intended to certify at the final rule stage that the rule will not have a significant economic impact on a substantial number of small entities. 87 FR at 910-11. The Commission received no comments on the RFA analysis presented in the NPR, nor any other record information that would alter that analysis. *See* Tab E of Staff’s Final Rule Briefing Package. Accordingly, for the final rule, the Commission certifies that the rule will not have a significant impact on a substantial number of small businesses.

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 final 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 falls within the “categorical exclusion” for the purposes of the National Environmental Policy Act. 16 CFR § 1021.5(c).

VII. Paperwork Reduction Act

Under the Office of Management and Budget’s (OMB) 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 estimate, where an agency demonstrates that the disclosure activities required to comply are “usual and customary.” In the NPR, CPSC explained staff’s assessment that more than 90 percent of the window covering market already complies with the voluntary standard, including the requirement in section 5.3 of ANSI/WCMA-2018 to place a manufacturer label on each window covering. CPSC received no comments on the burden estimate. For the final rule, CPSC will not establish an information collection under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3521), because the cost and burden of the label required in section 5.3 of ANSI/WCMA-2018 is incurred by window covering manufacturers in the “normal course of their activities” and are thus excluded from the burden estimate because compliance is “usual and customary.”

VIII. Preemption

The final rule under section 15(j) of the CPSA does not establish a consumer product safety rule. Accordingly, the preemption provisions in section 26(a) of the CPSA, 15 U.S.C. 2075(a), do 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). In the NPR, the Commission proposed that any stock or custom window coverings that did not conform to the specified sections of ANSI/WCMA A100.1 – 2018 (summarized in Table 3), be deemed an SPH effective 30 days after publication of a final rule in the *Federal Register*. We received no comments on the effective date. Accordingly, the final rule will apply to all stock and custom window coverings that do not comply with the readily observable characteristics of ANSI/WCMA-2018, as specified in Table 3 of this preamble, that are distributed in commerce or imported on or after **[insert date that is 30 days after publication in the *Federal Register*]**.

X. Incorporation by Reference

The Commission incorporates by reference certain provisions of ANSI/WCMA A100.1 – 2018, American National Standard for Safety of Corded Window Covering Products. The OFR has regulations concerning incorporation by reference. 1 CFR part 51. The OFR's regulations require that, for a final rule, agencies must discuss, in the preamble of the rule, ways that the materials the agency incorporates by reference are reasonably available to interested persons and

how interested parties can obtain the materials. In addition, the preamble of the rule must summarize the material. 1 CFR 51.5(b).

In accordance with the OFR's requirements, sections I.F, II.A, and Table 3 of this preamble summarize the provisions of ANSI/WCMA A100.1 – 2018 that the Commission is incorporating by reference. ANSI/WCMA A100.1 – 2018 is copyrighted. You can view a read-only copy of ANSI/WCMA A100.1 – 2018 at: https://wcmanet.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://wcmanet.com>), or by mail from the Window Covering Manufacturers Association, Inc. 355 Lexington Avenue, New York, NY, 10017; telephone: 212.297.2122. Alternatively, interested parties may inspect a copy of the standard free of charge by contacting Alberta E. Mills, Office of the Secretary, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone: 301-504-7479; e-mail: cpsc-os@cpsc.gov.

XI. Congressional Review Act

The Congressional Review Act (CRA; 5 U.S.C. §§ 801-808) states that, before a rule may take effect, the agency issuing the rule must submit the rule, and certain related information, to each House of Congress and the Comptroller General. 5 U.S.C. § 801(a)(1). The submission must indicate whether the rule is a “major rule.” The CRA states that the Office of Information and Regulatory Affairs (“OIRA”) determines whether a rule qualifies as a “major rule.” Pursuant to the CRA, OIRA designated this rule as not a “major rule,” as defined in 5 U.S.C. § 804(2). To comply with the CRA, CPSC will submit the required information to each House of Congress and the Comptroller General.

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 amends 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*) has the same meaning as defined in section 3, definition 5.02, of ANSI/WCMA A100.1 – 2018, as 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” prior to distribution in commerce, subsequent changes to the product do not change its categorization.

(g) *Custom window covering* (also known as a *custom blind, shade, or shading*) has the same meaning as defined in section 3, definition 5.01, of ANSI/WCMA A100.1 – 2018, as 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
- (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>.

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DRAFT

(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).

(2) [Reserved.]

Dated: _____

Alberta E. Mills, Secretary
Consumer Product Safety Commission.



United States
Consumer Product Safety Commission

Staff Briefing Package

Draft Final Rules for Corded Window Coverings

September 28, 2022

For additional information, contact:

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*This report was prepared by the CPSC staff.
It has not been reviewed or approved by,
and may not necessarily reflect the views of,
the Commission.*



Table of Contents

Briefing Memorandum	1
I. Introduction	2
II. Discussion	6
A. Overview of NPRs	6
B. ANSI/WCMA Standard and its Adequacy	7
C. Updated Incident Data Analysis	13
D. Operating Cords and Inner Cords on Stock Window Coverings and Inner Cords on Custom Window Coverings under Section 15(j) of the CPSA	14
E. Custom Window Coverings under Sections 7 and 9 of the CPSA	16
III. Conclusion	25
Tab A: Draft Final Rules for Corded Window Coverings: Update on Fatal and Near-Miss Strangulation Incidents Associated with Window Covering Cords	27
Tab B: Draft Final Rules for Corded Window Coverings: Human Factors Assessment	34
Tab C: Draft Final Rule for Operating Cords on Custom Window Coverings: Mechanical Engineering Assessment of Balloted 2022 Revision to the Voluntary Standard ANSI/WCMA A100.1 – 2018 and Final Rule Recommendations	48
Appendix: Development Process and Cost Estimate for Rigid Cord Shroud	63
Tab D: Recommended Regulatory Text for Draft Final Rules	70
Tab E: Draft Final Rule for Window Covering Cords Under Section 15(j) of the CPSA: Window Coverings Small Business Considerations	78
Tab F: Final Regulatory Analysis Report by the Directorate for Economic Analysis	83
Tab G: Final Regulatory Flexibility Analysis Memorandum by the Directorate for Economic Analysis	125
Tab H: Draft Final Rules for Corded Window Coverings: Summary of Comments on the Proposed Rules and Staff's Recommended Responses for the Final Rules	137
Tab I: Draft Final Rule for Operating Cords on Custom Window Coverings: Assessment of Draft ANSI/WCMA 2022 Balloted Standard	158

Briefing Memorandum



Briefing Memorandum

TO: The Commission
Alberta E. Mills, Secretary

DATE: September 28, 2022

THROUGH: Austin C. Schlick, General Counsel
Jason K. Levine, Executive Director
DeWane Ray, Deputy Executive Director for 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: Staff's Draft Final Rules for Corded Window Coverings

I. Introduction

On January 7, 2022, the U.S. Consumer Product Safety Commission (CPSC, Commission) published two notices of proposed rulemaking (NPR) to address strangulation hazards associated with corded window coverings:

- (1) Under section 15(j) of the Consumer Product Safety Act (CPSA; 15 U.S.C. § 2064(j)) (87 *Fed. Reg.* 891), the Commission proposed to deem that stock window coverings that do not comply with the readily observable characteristics of 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 readily observable requirements for inner cords in ANSI/WCMA-2018, present a substantial product hazard (SPH), as defined in section 15(a)(2) of the Consumer Product Safety Act (CPSA); and
- (2) Under sections 7 and 9 of the CPSA (15 U.S.C. §§ 2051-2089), the Commission proposed to establish a safety standard for operating cords on custom window coverings. 87 *Fed. Reg.* 1,014.

Staff recommends that the draft final rule under section 15(j) of the CPSA be finalized, as proposed. The Commission received five comments, all in support of the rule. Accordingly, the draft final rule amends 16 CFR part 1120 to deem as an SPH: (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.

The purpose of the second draft final rule under sections 7 and 9 of the CPSA is to create a new consumer product safety rule to address the risk of strangulation to children 8 years old and younger associated with hazardous 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, implementation of stronger operating cord requirements for stock window coverings already on

the market, and ineffectiveness of warnings and safety devices for this class of products, the Commission proposed to regulate operating cords on custom window coverings. The Commission received more than 2,000 comments on the proposed rule. Since staff submitted its NPR staff briefing package (SBP) on October 7, 2021, staff has reviewed and considered those public comments, and also participated with industry and consumer groups in the ANSI/WCMA voluntary standards process, to revise ANSI/WCMA-2018 to improve the safety of custom window coverings.¹

Based on review and consideration of the comments, staff's participation in the ANSI/WCMA process, including consideration of the recently balloted draft revision to the voluntary standard, ANSI/WCMA A100.1-2022 (draft ANSI/WCMA-2022), staff recommends finalizing the safety standard for operating cords on custom window coverings to require operating cords on custom window coverings to meet requirements identical to those for operating cords on stock window coverings, as set forth in section 4.3.1 of ANSI/WCMA-2018. The ANSI/WCMA 2018 standard requires stock window coverings to have:

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

The NPR for custom window coverings proposed to allow rigid cord shrouds to meet the inaccessibility requirement in section 4.3.1.3, and it set forth proposed durability testing requirements for rigid cord shrouds. After considering comments on the elimination of continuous loop operating cords in the NPR, as well as discussions during the ANSI/WCMA process for the draft final rule, staff recommends adding another method, to meet the inaccessibility requirement for operating cords: retractable cords (provided the length of exposed cord is less than or equal to 12 inches). Staff also recommends allowing the use of loop cord and bead chain restraining devices that prevent formation of accessible hazardous loops. Finally, based on comments received, staff recommends extending the timeline to comply with the rule to 1 year, and allowing 2 years for window coverings that are raised and lowered and 10-feet or more in vertical length. Table 1 summarizes staff's recommended requirements in the draft final rule.

Staff's Briefing Package provides an updated analysis of incidents reported to CPSC since the data were extracted for the NPR; summarizes the ongoing attempt to update ANSI/WCMA-2018; assesses balloted changes to a draft revision of the voluntary standard; summarizes and responds to public comments on the proposed rules; updates the economic implications of the draft final rules; and provides staff's recommendations for the final rules.

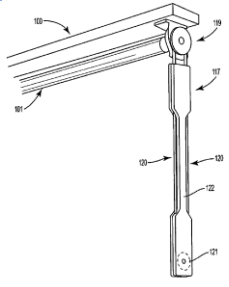
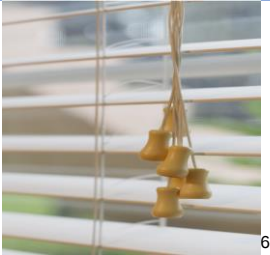
¹ Meeting logs and correspondence documenting staff's participation in the ANSI/WCMA process have been made part of the rulemaking record on Regulations.gov (CPSC Docket No. CPSC-2013-0028).

Table 1. Recommended Requirements in the Draft Final Rule

Section	ANSI/WCMA-2018	Example	Requirements in Custom Products Draft Final Rule
4.3.1.1 and 4.3.2.1	No operating cords (usually marketed as “cordless”)	 2	Allowed
4.3.1.2 and 4.3.2.2	Operating cords =< 8 inches in any use position		Allowed
4.3.1.3 and 4.3.2.3	Inaccessible operating cords		Allowed
4.3.2.4	- Using Single Retractable Cord Lift System	 3	Allowed, if it meets complete retraction at 30 grams, has non-cord retraction device, and has stroke length =< 12 inches below the headrail
4.3.2.5.3	- Using rigid cord shrouds (can be used with Standard Operating System and Continuous Loop System)		Allowed, if rigid cord shroud meets ANSI/WCMA 2018 test requirements + NPR-proposed Deflection Test

² https://cdn.selectblinds.com/images/Img_ProductColors/PID-1017_CID-10104_Solar-Shades_Onyx-3%25_R.webp.

³ https://cdn2.hunterdouglas.com/static/video/ultraglide-video-thumb_3.jpg.

Section	ANSI/WCMA-2018	Example	Requirements in Custom Products Draft Final Rule
4.3.2.5.2	Cord or bead chain restraining device - Using Continuous Loop System		Allowed, if device meets ANSI/WCMA 2018 tests + an additional test for a sample to go through UV followed by cyclic test + meets the Proposed Deflection Test
4.3.2.5.1	Continuous Loop Systems with Tension Devices		Not Allowed
4.3.2.6	Standard Operating System (one or more separate operating cords, aka pull cords)		Not Allowed
4.3.2.7	Cord Loop Lift Systems (traditionally used in roll-up shades)		Not Allowed
Effective Date			Requirements in Custom Products Draft Final Rule
All corded custom window coverings except those 10 feet or greater in vertical length and are raised and lowered			One year
Corded custom window coverings 10 feet or greater in vertical length and are raised and lowered			2 years

⁴ Vestal, W. D. (2014). U.S. Patent No. 8,763,671. Washington, DC: U.S. Patent and Trademark Office.

⁵ https://www.kirsch.com/images/System_Cellular_Clutch_Control.jpg.

⁶ <https://health.choc.org/window-covering-cords-still-can-be-fatal-to-young-ones/>.

II. Discussion

A. Overview of NPRs

Both NPRs used the definitions of “stock” and “custom” 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 NPRs, the definition of a “stock window covering” relied 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, 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 NPRs defined 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.

In the NPR, staff estimated that, on average, 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 2019.⁷ Staff also estimated that, based on CPSC’s Injury Cost Model, approximately 185 medically treated, nonfatal injuries have occurred annually from 2009 through 2020, involving children 8 years and younger.⁸ 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. 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-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 are not separately recorded between stock and custom products because the difference is often unknown to the consumer and both types of products share the same hazard patterns.

⁷ Chowdhury, R. (2021.) Fatal and Near-Miss Strangulations Associated with Window Covering Cords. CPSC Memorandum, Draft Notices of Proposed Rulemaking for Corded Window Coverings. U.S. Consumer Product Safety Commission, Bethesda, MD. Available at <https://www.cpsc.gov/s3fs-public/NPRs-Add-Window-Covering-Cords-to-Substantial-Product-Hazard-List-Establish-Safety-Standard-for-Operating-Cords-on-Custom-Window-Coverings-updated-10-29-2021.pdf?VersionId=HIM05bK3WDLRZrINGogQLknhFvhtx3PD>.

⁸ Bailey, M. (2021.) Preliminary Regulatory Analysis of the Draft Proposed Rule for Custom Window Coverings. CPSC Memorandum, Draft Notices of Proposed Rulemaking for Corded Window Coverings. U.S. Consumer Product Safety Commission, Bethesda, MD. Available at <https://www.cpsc.gov/s3fs-public/NPRs-Add-Window-Covering-Cords-to-Substantial-Product-Hazard-List-Establish-Safety-Standard-for-Operating-Cords-on-Custom-Window-Coverings-updated-10-29-2021.pdf?VersionId=HIM05bK3WDLRZrINGogQLknhFvhtx3PD>.

Hazardous operating cords can be in the form of a single cord, multiple cords, or continuous loops. The incident data indicate two primary ways a child can strangle on a window covering cord: (1) a child can wrap a long cord around their neck, or (2) they can insert their head through a loop.

A review of the 194 incidents in the NPR revealed that nearly 44 percent involved horizontal blinds; whereas 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 incident 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 long cords wrapped around the child's neck. Children getting caught in continuous looped cords or beaded-chains without a functional tension device, or where the tension device was not attached to the wall, also figured as a major fatal hazard, accounting for 23 of the 89 fatal strangulations.

From January 1, 2009, to December 31, 2020, CPSC oversaw 42 consumer-level window covering product recalls. More than 28 million units were recalled and included Roman shades, roll-up blinds, roller shades, cellular shades, horizontal blinds, and vertical blinds. The recalled products included stock products, as well as custom products. Recalled products were associated with 14 deaths and 31 near-strangulations. No new recalls occurred since the NPR was issued.

B. ANSI/WCMA Standard and its Adequacy (Tab C and Tab I)

Per the ANSI/WCMA-2018 standard, stock and custom window coverings have different sets of requirements and options for operating cords and inner cords. For the NPR, staff assessed the adequacy of these requirements, listed in Table 2. Staff determined that any of the options permitted for operating cords on stock window coverings (options 1, 2, and 3) are adequate to address the strangulation hazard. Similarly, the inner cord requirements listed for both stock and custom products (option 4) are also adequate. However, staff assessed that the options permitted by ANSI/WCMA-2018 for custom products (options 5, 6, and 7) still allow hazardous cords or loops to be formed, and therefore, these options are inadequate to address the strangulation hazard.

Table 2. Requirements for Stock and Custom Products in ANSI/WCMA-2018 and staff's assessment of the performance requirements

Performance Requirements in ANSI/WCMA A100.1-2018	Assessment of the Performance Requirement	Stock Products	Custom Products
1. <i>No operating cords OR</i>	Adequate	Required to have one or more of these options	Allowed/ Not required
2. <i>Short cord with a length equal to or less than 8 inches in any state (free or under tension) OR</i>			
3. <i>Inaccessible operating cords</i>			
4. <i>Inner cords that meet Appendix C and D</i>	Adequate	Required	Required
5. <i>Manufacturer Label that meets section 5.3</i>	Adequate	Required	Required
6. <i>Single Retractable Cord Lift System (no limit on length of exposed cord when operating)</i>	Inadequate	Prohibited	Allowed/ Not Prohibited
7. <i>Continuous Loop Operating System</i>			
8. <i>Accessible Operating Cords longer than 8 inches</i>			

After the publication of the NPR on January 7, 2022, WCMA brought forth several proposals to revise requirements for custom window covering cords in ANSI/WCMA-2018. On July 15, 2022, WCMA issued a ballot to revise ANSI/WCMA-2018 (draft ANSI/WCMA-2022) and the ballot closed on August 15, 2022. Revisions in the draft ANSI/WCMA-2022 include the changes listed below. (See Tab I for a detailed analysis.)

1. Elimination of accessible, free-hanging operating and tilt cords. Staff find this revision adequate to address a strangulation hazard as it eliminates accessible free hanging operating cords and tilt cords for custom products.
2. Modified requirements for single-cord retraction devices:
 - a. Elimination of cords attached to the Operating Interface (the part of the cord retractor that the operator pulls on) to prevent the creation of a hazardous loop. Section 6.3.1 of the draft ANSI/WCMA-2022 eliminates cords as the Operating Interface, and requires such interface to be a rigid device, such as a wand or ring that cannot bend on itself. Staff assesses that the elimination of cords for consumers to pull on when using single-cord retraction devices protects safety, because this revision eliminates a corded component that could lead to a potential strangulation.
 - b. A maximum stroke length of 36 inches.⁹ Section 6.1.2 of the draft ANSI/WCMA-2022 sets the maximum stroke length for a cord retraction device at 36 inches. Staff finds this revision inadequate to eliminate the strangulation hazard because a 36-inch extended cord could allow a child to wrap the cord around his/her neck. Staff recommends no more than a 12-inch stroke length to adequately address the strangulation hazard associated with corded window coverings. Staff determined

⁹ When the user pulls the retraction device down, with each stroke, a fixed amount of cord ("stroke length") is exposed to lower or raise the window covering. After each stroke, exposed cord retracts completely into the headrail; the user continues to pull on the retraction device until the desired height is reached.

- that a child is unlikely to pull on the retraction device and simultaneously wrap the exposed 12-inch cord (which extends under tension from the headrail) around their neck. See Tab B for a comparison between 36-inch stroke length and staff-recommended 12-inch stroke length.
- c. Section 6.1.1 of the draft ANSI/WCMA-2022 requires that when a 30 grams mass is applied to the operating interface, the cord retraction device shall maintain full retraction of the retractable cord such that the retractable cord is not accessible per the accessibility test in Appendix C of the standard. Staff assesses that this revision is effective in protecting safety if the maximum stroke length is limited to 12 inches, as recommended in b, because this ensures a minimum pull force to access the exposed cord.
3. Additional requirements for tension devices used with continuous loop operating systems. Requirements include:
- a. Elimination of continuous cord loop systems for horizontal blinds. Section 4.4.2.5.1 of the draft ANSI/WCMA-2022 eliminates continuous cord loops on horizontal blinds. This revision will eliminate corded operating systems and require horizontal blinds to use safer options, such as cordless systems, rigid cord shrouds, or retractable lift systems. Staff assesses that this revision improves safety of horizontal blinds.
 - b. Modification in section 6.3.1, which states that the tension device shall be attached to the cord or bead chain loop by the manufacturer. It shall be designed, placed, and shipped such that, unless properly installed or altered from the shipped condition with Sequential Process or tools, it prevents the window covering from operating. This draft requirement does not ensure that tension devices will be effective for the life of the window covering. For example, if an installer cuts the zip tie that is sometimes used to connect tension devices to the headrail, then the tension device would have been altered from its shipping condition with a tool and operation of the window covering without the tension device would be consistent with section 6.3.1. Therefore, the requirement still allows consumers or the installer to use the window covering in an unsafe manner while either in a fully operable state, by removing the tension device from the loop, or in a partially operable state by leaving the tension device on the loop but not attaching it on the wall.
 - c. Modification in section 6.3.2, which states that the manufacturer shall attach the tension device to the cord or bead chain loop by means of a permanent assembly method. This requirement ensures that if an installer or consumer attempts to remove the tension device, the device or component will break. Staff is aware of an incident involving a tension device that used one way snap features as permitted by the standard. The snap features broke off, exposing the continuous loop cord (Figure 1, from In-Depth Investigation (IDI)). This incident shows that a permanent assembly method requirement does not ensure that the tension device will remain assembled. Staff finds this provision inadequate, because even if the tension device breaks, the looped cord will not necessarily be damaged. Therefore, for hard-to-reach locations, or for people who do not want holes on their walls, removing the tension device may be preferable, and the window covering will remain fully operable.



Figure 1. Broken tension device in IDI.

- d. Modification in section 6.3.3, which states: “the tension device in conjunction with the product shall maintain tension on the operating cords when properly installed. If the tension device is installed in a location that does not maintain tension on the operating cords, the tension device will prevent the window covering from operating as designed for full operation of the product. The window covering may not operate independently of the Cord or Bead Chain Loop.” The draft standard defines “Tension” as “The applicable, consistently applied force required to eliminate or prohibit the creation of a hazardous loop in any operating position.” This requirement is intended to ensure that the location of the tension device on the wall or window jamb is such that the cord moves freely and allows full operation of the window covering while not allowing a hazardous loop. Staff finds this requirement inadequate because staff confirmed that an amount of tension that allowed full operation of the window covering still allowed a head probe to be inserted into the loop (Figure 2).



Figure 2. A head probe can pass through properly installed continuous loop under tension.



Figure 3. Re-enactment of how a 5-year-old child was found by a consumer with his head caught in a continuous cord loop.

Accordingly, a properly installed tension device still allows an accessible hazardous loop, which is also observed in one incident (Figure 3). The draft ANSI/WCMA-2022 requires the tension device to prevent the window covering from operating as designed for full operation of the product. Staff concludes that this requirement is inadequate because the window covering can be operated partially, as shown in Figure 4. Staff notes that an incident that occurred in 2005 had a window covering with a “universal cord tensioner” that limited the operability of the window covering unless the tension device is installed. In this incident, the victim’s mother stated that they did not change the previous owner’s window treatments. The incident product had a continuous loop cord with an attached, plastic universal cord tensioner. However, the plastic universal cord tensioner piece was hanging freely from the cord and not attached to the wall (Figure 5). The victim’s mother also guessed that the window coverings were around 3 years old.



Figure 4. Partially operable window covering when tension device is not attached to a fixed surface.

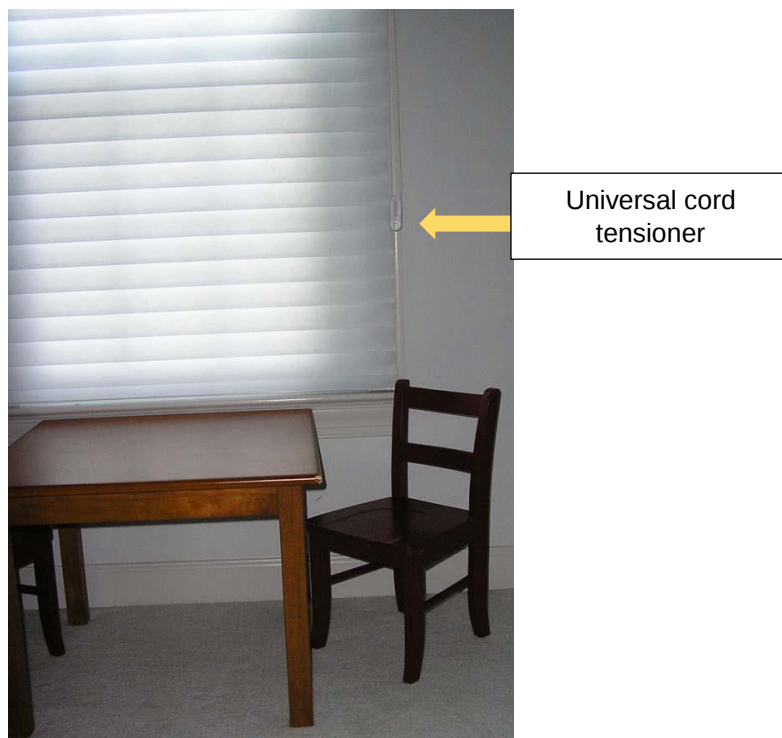


Figure 5. Universal cord tensioner remained unattached to the wall for about 3 years.

4. Elimination of cord loop lift systems. Cord loop lift systems are commonly used in roll-up blinds and present a strangulation hazard if the loop comes off the blind. The draft ANSI/WCMA-2022 eliminates section 4.3.2.7 of the ANSI/WCMA-2018 standard, which

allowed cord loop lift systems. This type of operating system uses accessible cords that pose a strangulation hazard and are associated with incidents. Their elimination addresses that hazard.

5. Additional requirements for remote control battery compartments to align with ANSI/UL 4200A. Section 4.3 of the draft ANSI/WCMA-2022 requires remote control devices to meet the requirements of ANSI/UL 4200A – Standard for Safety for Products Incorporating Button or Coin Cell Batteries of Lithium Technologies. This revision in the standard will minimize ingestion of button cell batteries. Staff notes that Reese's Law was signed into law on August 16, 2022, and it addresses products containing button and coin cell batteries.
6. Additional requirements for rigid cord shrouds to test for deflection and deformation. Section 6.5.2.4 of the draft ANSI/WCMA-2022 require rigid cord shrouds to meet the "Deflection and Deformation" test, which evaluates accessibility of the shrouded cords when the product is bent or twisted. Staff assesses that this revision is adequate for safety because the added requirement prevents the cords from coming out of the shroud due to bending or twisting of the shroud.
7. Exempting curtains and draperies from the scope of the standard. Staff finds this revision inadequate because staff is aware of at least four fatalities involving draperies and curtains; all deaths were a result of continuous loops. There are multiple cordless options for draperies, including wands and motorized controls, as well as simply pulling the draperies on the traverse rod by hand, with no cord or other control.
8. New warning labels for (a) continuous loop tension devices, and (b) retractable cords. Overall, staff supports improved warnings. Warning labels have attention-getting features that should improve their noticeability; however, even well-designed warning labels will have limited effectiveness in communicating the hazard on a product that is familiar to consumers and used frequently.

At this time, staff is not certain when or if the revised standard will be approved by WCMA or ANSI and published. Section 9(b)(2) of the CPSA requires the Commission to end rulemaking, and rely on a voluntary standard, if the voluntary standard is likely to reduce the risk of injury and products within the scope of the standard will likely substantially comply with the voluntary standard. For section 9(b)(2) of the CPSA to apply, such voluntary standard must be "in existence," meaning approved by the voluntary standards organization. ANSI/WCMA has not yet approved the balloted draft voluntary standard. Moreover, staff found that the balloted revisions to the voluntary standard are inadequate to address the risk of injury. For this reason, staff recommends that comments on the NPR, as well as staff's analysis of the current standard, ANSI/WCMA-2018, and discussions and correspondence with stakeholders through the voluntary standards process (that have been placed on the rulemaking record), be the basis for requirements in the draft final rule.

C. Updated Incident Data Analysis (Tab A and Tab B)

Since staff assessed data for the NPR, CPSC has received 15 additional incident reports (including four reports from NEISS hospital emergency departments) involving strangulations or near-miss strangulations among children up to 8 years of age. Nine of the 15 incidents occurred in 2021, five of them in 2020, and the remaining one occurred in 2017. Among the 15 newly reported incidents, 11 involved a fatality. Staff definitively identified the cord type in six of the 11 deaths. Three deaths involved a pull cord (operating or tilt cord) on a horizontal blind; two

deaths involved a continuous loop on a vertical blind and on a drapery; and one death involved inner cord(s) on a horizontal blind; staff has insufficient information to determine the cord type involved for the remaining five fatal scenarios. The absence of incident data for 2022 does not suggest an absence of incidents in 2022. Rather, given the reporting delays and the timing of the data extraction for this package, it made more sense to end the timeframe of the available data with 2021.

For the 15 new incidents, staff has insufficient information to categorize 14 of the incidents as either stock or custom products; however, staff could identify one unit as a custom product.

The age of children involved in the 15 additional incidents ranged from 16 months to 8 years. The two continuous loop deaths involved 2-year-old children. Although the incidents were unwitnessed, it is likely that both children climbed on another object that was close by to reach the cords. In one incident, the child likely climbed on a table, and in the other, likely climbed on a toy box.

The inner cord incident involved an 8-year-old child with Down syndrome. The child was strangled in the inner cords that became accessible due to broken slats. The window covering was above the victim's bed.

One of the operating pull cord fatalities involved a 4-year-old who was found with the loop, formed by a knot in the cord, around her neck. In the second fatality, an 18-month-old child was found with operating cords wrapped tightly around her neck. In the third fatality, a 2-year-old child was found with tilt cords around his neck; police stated that they noticed a small foot print on the table where he climbed on the couch to get to the horizontal window blind. Based on ESHF staff's review of the facts involved in these 15 additional incidents, staff concludes that these incidents follow patterns similar to the previously assessed incidents for the NPR SBP. Staff did not identify any new hazard patterns from this data. Health Sciences staff reviewed the incidents and concluded that the hazard pattern and injuries are consistent with previously reported incidents analyzed for the NPR by staff of the Division of Pharmacology and Physiology (Wanna-Nakamura, 2021).¹⁰

D. Operating Cords and Inner Cords on Stock Window Coverings and Inner Cords on Custom Window Coverings Under Section 15(j) of the CPSA

As explained below, staff recommends finalizing a rule under section 15(j) of the CPSA, as proposed.

1. Public Comments on the Section 15(j) NPR

CPSC received three comments on the section 15(j) rule during the comment period, and two comments before the comment period began. All comments supported the 15(j) rule and have been placed on the docket for this rule. Commenters included WCMA (two comments), Consumer Federation of America, Consumer Reports, and Parents for Window Blind Safety.

2. Small Business Considerations on the Section 15(j) Draft Final Rule (Tab E)

¹⁰ Wanna-Nakamura, S. (2021.) Health Sciences Assessment of Fatal and Nonfatal Incidents Associated with Window Coverings NPR. CPSC Memorandum, Draft Notices of Proposed Rulemaking for Corded Window Coverings. U.S. Consumer Product Safety Commission, Bethesda, MD. Available at <https://www.cpsc.gov/s3fs-public/NPRs-Add-Window-Covering-Cords-to-Substantial-Product-Hazard-List-Establish-Safety-Standard-for-Operating-Cords-on-Custom-Window-Coverings-updated-10-29-2021.pdf?VersionId=HIM05bK3WDLRZrINGogQLknhFvhtx3PD>

The draft final rule would apply to operating cords on all stock window covering products, and inner cords on both “stock” and “custom” window coverings, as defined in the draft final rule, consistent with the definitions in ANSI/WCMA-2018. The total window covering market size in 2021 was approximately \$6.7 billion. CPSC staff estimates that firms classified as small by U.S. Small Business Administration (SBA) guidelines account for \$3.9 billion annually, and none of these firms account for more than 3 percent of total market share by revenue.

The draft final rule, which would designate window covering products that do not conform to ANSI/WCMA-2018 provisions concerning stock products and custom product inner cord accessibility as an SPH, will not likely have a significant impact on a substantial number of small businesses or other small entities. Data collected by CPSC staff, in person at manufacturers, retailers, and importers, indicate that the level of conformance with the sections of the ANSI/WCMA-2018 standard concerning stock products is high and most likely greater than 90 percent. Samples tested by CPSC staff also indicate a high level of conformance in custom products related to inner cord accessibility.

Firms already conforming to the standard would experience no impact by the proposed rule. CPSC staff notes that at least one small manufacturer that currently does not conform to the accessible cord provision, will experience a significant cost impact by the rule. 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, 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 account for only a small portion of total revenues, because these firms typically sell/import other home furnishing products in addition to window coverings.

3. Staff’s Recommendation for the Section 15(j) Draft Final Rule

The draft final rule would deem the presence of one or more of the readily observable characteristics demonstrating hazardous operating cords on stock window coverings, hazardous inner cords on stock and custom window coverings, and the absence of a required manufacturer label, all of which are adequately addressed in the ANSI/WCMA-2018 standard, to be a “substantial product hazard,” as authorized under section 15(j) of the CPSA.

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 ANSI/WCMA-2018 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 strangulation hazard. The readily observable operating cord and inner cord characteristics of stock window coverings and inner cord characteristics of custom window coverings are embodied in ANSI/WCMA-2018, approved on January 8, 2018. The NPR SBP and the 15J NPR explained in detail the readily observable characteristics of stock and custom window coverings, and how these

characteristics were addressed in the voluntary standard. See NPR SBP at Tab D and 15J NPR, 87 FR at 901-09.

Staff's market study demonstrated a high level of product compliance with the voluntary standard.¹¹ Accordingly, CPSC staff concluded that all 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 concluded that the criteria required to include hazardous inner cords on custom window coverings on the 15(j) list of SPHs have been met, because hazardous inner cords are readily observable and have been adequately addressed in the ANSI/WCMA standard.

Based on the assessment performed and conclusions reached for the NPR and stakeholders' agreement with the proposed rule (and lack of comments disagreeing with staff's assessment of effectiveness and compliance), staff does not recommend any changes to the final rule under section 15(j).

4. Effective Date

The NPR proposed that any stock or custom window coverings that do not conform to the specified sections of ANSI/WCMA–2018, be deemed an SPH, effective 30 days after publication of a final rule in the *Federal Register*. At that time, all stock and custom window coverings that are subject to, but do not comply with, ANSI/WCMA 2018 regarding the identified readily observable characteristics, will be deemed to be an SPH. CPSC did not receive any comments suggesting a different date. Therefore, staff recommends that the final rule become effective 30 days after the publication.

E. Custom Window Coverings under Sections 7 and 9 of the CPSA

1. Public Comments on the Sections 7 and 9 NPR for Corded Custom Window Coverings

CPSC received 2,060 comments on the NPR for custom window coverings during the comment period. Additionally, CPSC held an oral hearing on the proposed rule on March 16, 2022, at which time, seven presenters also provided comments. In addition, CPSC received two late comments in July 2022. All comments, meeting logs, and correspondence regarding custom window coverings have been included on Regulations.gov under the CPSC docket number for this rule: CPSC-2013-0028.

More than 900 businesses stated that the proposed rule would cause a significant impact on their businesses. Small custom window coverings retailers commented that the rule would reduce sales and raise costs. Several other commenters requested that commercial buildings where children are not expected to be present should be excluded from the rule's scope.

¹¹ Balci-Sinha, R, (2021.) History of ANSI/WCMA Standard, CPSC Involvement, and Compliance with the Standard (Tab E). CPSC Memorandum to Window Coverings Rulemaking File, Notice of Proposed Rulemaking, U.S. Consumer Product Safety Commission, Rockville, MD. Available: <https://www.cpsc.gov/s3fs-public/NPRs-Add-Window-Covering-Cords-to-Substantial-Product-Hazard-List-Establish-Safety-Standard-for-Operating-Cords-on-Custom-Window-Coverings-updated-10-29-2021.pdf?VersionId=HIM05bK3WDLRZrINGogQLknhFvhtx3PD>

More than 140 commenters requested that retractable cords be allowed on custom window coverings, while more than 420 commenters stated that continuous loops with properly attached tension devices are safe and should not be eliminated.

More than 380 commenters stated that windows located at higher locations, windows behind the kitchen sink, or behind a piece of furniture, cannot be operated with an 8-inch cord; more than 50 commenters stated that, due to the short cord requirement, climbing will be required to operate hard-to-reach window coverings, and climbing on ladders or other furniture is unsafe for consumers, particularly older consumers. At least eight commenters stated that non-motorized cordless lift systems are not feasible for large window coverings. Commenters stated that continuous loop cords with tie-down devices are capable of lifting any size window covering. At least three commenters stated that manual cordless lift systems have limitations, such as size and weight of the window covering, which could limit the application (e.g., for faux wood blinds, a general estimate for the maximum dimensions for cordless is 96 inches wide by 48 inches high and 60 inches wide by 84 inches high.) More than 320 commenters suggested that consumers may want to have different options to serve their different needs, and it is not preferable to reduce the options that are available to consumers.

More than 400 commenters stated that the proposed 6-month-effective date is very short to meet the proposed requirements; more than 90 commenters suggested at least a 1-year effective date.

More than 100 commenters expressed support for the custom product rulemaking effort, some stating that, given the hidden nature of the hazard and severity of the risk, a mandatory standard is necessary. About 42 comments were from families and friends of victims, as well as legal representatives of victims all supportive of the NPR. About 68 comments were from consumers, 31 of which were supportive of the NPR.

In Tab H, staff summarizes the comments and provides responses to the issues raised. Based in part on staff's consideration of comments, staff recommends allowing additional methods to meet the requirements of the rule, including certain retractable cords and loop cord and bead chain restraining devices. In addition, staff recommends an effective date that is 1 year after publication, due to challenges in redesigning certain window coverings of unusual sizes and acquiring components in a short timeframe. A later effective date would allow manufacturers more time to redesign and spread the research and development costs. Furthermore, staff recommends an effective date of 2 years after publication for custom window coverings, which operate up and down and are 10 feet or more in length, because these products are heavier and require additional design to reliably lift with cordless designs or to make the cords inaccessible or loops non-hazardous. A 2-year effective date for these larger products will reduce the burden for small manufacturers by allowing a longer period of time for product development.

2. Economic Analysis on the Sections 7 and 9 NPR

1. Final Regulatory Analysis (Tab F)

Based on estimates from the NEISS and the ICM, CPSC staff estimates that 7.6 nonfatal, medically treated injuries and 6.8 fatalities occur annually among all corded window coverings associated with cord types that are within scope of this rule (Chowdhury 2022). Staff in the Directorate for Economic Analysis (EC) estimates the societal costs of these injuries to be about \$72 million annually. Overall, staff found that fatalities account for an overwhelming majority of

societal costs at \$71.4 million annually, and that nonfatal injuries account for about \$498,000 in societal costs annually.

Staff estimates the societal cost of deaths and injuries attributable to custom window covering products, that would not be addressed by the 15(j) rule's provisions for inner cords, to be \$31.6 million annually (about 44 percent of the total), based on a CPSC staff review of incidents and values, using the ICM and a Value of Statistical Life (VSL) of \$10.5 million. Staff also conducted a sensitivity analysis, described below and in Tab F, which considered alternatives for certain values, including a child VSL of up to \$31.5 million.

Staff calculated the present value of the societal cost¹² of deaths and injuries for each blind type, based on each type's 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 \$1.06 and \$1.61, respectively. For cellular, pleated, Roman, roller, and soft sheer shades, the per-unit present value equates to \$2.04, \$2.12, \$2.43, \$2.04, and \$2.04, respectively. Staff combines these societal unit costs with corded custom window covering sales in 2020, to generate a gross annual societal cost of \$24.35 million. Finally, staff adjusts this estimate for the expected effectiveness of the draft final rule to estimate a total benefit of \$23 million.

The draft final rule would impose costs on manufacturers of custom window covering products. Manufacturers would likely pass much of incremental per-unit manufacturing cost to consumers in the form of higher prices. Based on component cost estimates, assembly/manufacturing costs, consumer surplus loss, and proportions of domestic manufacturing, the incremental cost per corded custom window covering produced would range from \$2.20 to \$35.79 and is highly dependent on product type. The final rule would not result in any cost increases for already cordless custom window coverings. Staff combines the 2020 *corded custom* shipment estimate of 15.85 million with the per-unit cost increase to generate an aggregate cost estimate ranging between \$54.4 million and \$114 million. An additional cost estimate for the research, development, implementation, time, and retooling required for some corded product amounts to approximately \$14.7 million after discounting future expenses by 3 percent. Including this value results in a total aggregate cost estimate range of \$54.4 million to \$129 million.

Staff notes that the cost impact from the draft final rule may be less than estimated, due to the enforcement of Canada's regulations beginning in May 2022.¹³ Companies that sell in both Canada and the United States have already redesigned their custom offerings to be compliant with the Canadian regulations, which are substantively similar to those being finalized here. Those companies may already have stock of compliant product designed and available to sell to the U.S. market through small dealers and interior designers.

Based on staff's estimated benefits and costs, net benefits, (*i.e.*, benefits minus costs) for the market of custom window coverings (*i.e.*, excluding stock window covering products) amounted to between -\$31.3 million to about -\$106 million. Staff also conducted a sensitivity analysis for a few variables, including the value of statistical life (VSL). Potentially higher VSL for children, up to three times the base level ($3 \times \$10.5$ million for a total of \$31.5 million), were discussed in the NPR. CPSC requested comments on this child-focused VSL. CPSC received comments in support of a child-focused VSL with alternative methods suggested. Staff considered a higher

¹² Calculating the annual societal costs per window covering unit, staff divided that total societal cost by an estimate of 145 million *corded custom* window coverings in use for the year of 2020, which resulted in a per-unit societal cost of \$0.22 per *corded custom* window covering in use.

¹³ <https://laws-lois.justice.gc.ca/eng/regulations/SOR-2019-97/FullText.html>.

VSL for children in the sensitivity analysis in Tab F. With a VSL value of \$31.5 million, the rule achieves net benefit, with benefits exceeding costs by approximately \$14.3 million. Staff also highlights that the emotional distress level of caregivers could also be reduced by the draft final rule. This benefit is not directly accounted for in the primary VSL estimate of \$10.5 million.¹⁴ The value of the shock or perceived guilt related to a caregiver's inattentiveness could be significant, as it could result in large reductions to physical wellbeing or income loss.

To provide an accessible framework to perceive how the additional cost of the draft final rule impacts consumers, staff converted costs and benefits of the draft proposed rule into a calculated net cost per household, based on the data point that the average detached, single-family household has 12 window coverings. For example, horizontal blinds composed of metal or vinyl have a low-end, per-unit cost estimate of \$3.03 and a per-unit benefit estimate of \$1.06 (assuming the base VSL). This translates into a net cost of the draft final rule of \$1.97 (assuming the base VSL) for metal/vinyl horizontal blinds. Using the assumption of 12 window coverings per household, this equates to a net cost of the rule (above the benefits provided) of \$23.67 per household every time a household updates their custom window coverings, about once every 10 years. For metal/vinyl horizontal blinds, \$23.67 is slightly more than 5 percent of the total cost of \$448.32 that a household would spend to update their window coverings.

Staff's analysis discusses several alternatives to the draft final rule, including (1) No Action Alternative, (2) Rely upon or Improve the Voluntary Standard for Window Coverings, (3) Later Effective Date, (4) Limit the Scope of the Final Rule to Vertical Blinds, Curtains, and Drapes, (5) Continue and Improve Information and Education Campaign, and (6) Adopt Canadian Standard. The costs of these alternatives would be lower, so would the expected benefits or in the case of Canadian standard, the costs would be higher without increased benefits. The only alternative staff recommends is a longer effective date for the rule. A later effective date would allow manufacturers more time to redesign and spread the research and development costs or allow extra time to eliminate product variants that cannot be switched to cordless/inaccessible/non-hazardous operation. Staff does not recommend any of the other alternatives, as discussed in the NPR and in Tab F of the final rule SBP, because none of these alternatives adequately address the risk of injury.

2. Final Regulatory Flexibility Analysis (Tab G)

Whenever an agency publishes a final rule, the Regulatory Flexibility Act (5 USC 601–612) requires that the agency prepare a final regulatory flexibility analysis (FRFA) that describes the impact the rule would have on small businesses and other entities.

The Office of Advocacy of the SBA (SBAA) submitted several comments on the proposed rule. SBAA stated that CPSC should consider alternatives for the final rule that reduce the burden to small businesses while still meeting the stated objectives of increased child safety. SBAA expressed concerns about the costs to comply, time to comply, and whether an updated voluntary standard would adequately address the risk of injury. One of the comments by SBAA contributed to CPSC staff recommending a change to the draft final rule. To reduce the burden of the final rule, in addition to rigid cord shrouds as a method to make cords inaccessible, CPSC

¹⁴ Some of this potential benefit could be indirectly captured in estimates of pain and suffering related to consumer product injuries. Staff notes that this potential benefit is most likely bounded by the estimate of an increased multiplier (3X) for children's VSL, discussed in section 3.6. The benefit should not be treated as "in addition" to an increased VSL for children and is most likely already accounted for in the estimate. This is because the source of the children's VSL estimate is surveys where respondents reviewed and valued risk/harm reductions to children, and where, presumably, respondents accounted for emotional and physical effects related to the risks/harms.

staff also recommends allowing a retractable cord or a loop cord and bead chain restraining device, as long as such devices meet the requirements in the draft final rule. Staff also recommends a longer effective date, 2 years, for products 10 feet or greater in length. In addition, CPSC staff recommends an effective date of 1 year for all other custom window coverings, to allow firms more time to obtain compliant component parts and retool production lines. CPSC staff notes that many of the firms supplying the U.S. market with custom window coverings also supply the same products to the Canadian market, where all window coverings are required to meet a new Canadian standard that is substantially similar to those in the draft final rule, by restricting the length of cords and the size of loops.

SBAA also stated that CPSC should consider exceptions for situations where corded window coverings are a necessity, such as under the Americans with Disabilities Act (ADA). CPSC staff determined that many cordless or shrouded products that would meet the draft final rule meet the requirements of the ADA because they are operable with one hand and do not require pinching, tight grasping, or twisting of the wrist. Staff concludes that the custom window covering requirements in the draft final rule do not limit accessibility, allow for products that have one-handed operation, and eliminate the strangulation hazard.

Custom window covering manufacturers would most likely adopt cordless lift operation systems to comply with the draft final rule, although less costly options are available. As discussed in the preliminary regulatory analysis of the proposed rule, the cost to modify window covering lift systems to comply with the draft rule ranges from \$2.99 to \$9.77 per horizontal blind, \$2.18 to \$35 per shade, and there would be no expected cost increase for vertical blinds and curtains/drapes. CPSC staff's estimates of redesign costs equate to approximately \$772,500 over a 2-year period, after discounting future expenses at a rate of 3 percent. Only manufacturers with at least 75 employees are anticipated to perform this investment, as this is a significant investment for smaller manufacturers with fewer employees and lower annual revenues. Likely these manufacturers will either purchase the necessary completed hardware, or they will license a patented solution from a larger firm. CPSC staff expects component costs to be significant, as inaccessible cord operation is on the order of \$2 to \$35, as described above, and as shown in Tab F, which contains the final regulatory analysis. However, the impact may be less than originally estimated, due to the enforcement of Canada's regulations beginning in May 2022. Companies that sell in both Canada and the United States have already redesigned their custom offerings to be compliant with the Canadian regulations that are substantively similar to those in the draft final rule. Companies may already have stock of compliant product designed and ready to sell to the U.S. market through small dealers and interior designers.

3. Impact on Small Businesses (Tab G)

To comply with the draft final 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 final rule, as the cost calculations and research were completed on a per-unit basis, and staff expects little, if any, redesign costs. Staff expects small manufacturers of custom window coverings to incur, at a minimum, a 2 percent impact to their custom window covering revenue from the draft final rule. This implies that if custom products account for all of a firm's revenue, then the minimum impact of the draft final 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. As the smallest estimate of incremental compliance cost is 2 percent of retail price,¹⁵ staff concludes that the draft final rule could have a significant impact on manufacturers of custom window coverings. This effect depends on the share of annual revenues attributable to custom products. For example, if a small firm only manufactures custom cellular shades, then staff expects a lowest possible compliance cost of 2 percent of retail price.¹⁶ 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 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 final rule could be significantly impacted. This is due to the lowest possible compliance cost equating to 2 percent of retail price, which at a 50 percent custom product share, would equate to a 1 percent minimum impact on annual revenues. Based on this analysis, CPSC staff expects the draft final rule to have a significant impact on a substantial number of small firms.

3. Staff's Recommendation for the Sections 7 and 9 NPR for Operating Cords on Custom Window Coverings

a. Recommended Changes

The draft final rule addresses the unreasonable risk of injury and death associated with the hazardous cords on custom window coverings. The draft final rule seeks to address this hazard by regulating custom window coverings that contain accessible and hazardous cords. Staff recommends several revisions to the proposed rule, based on the comments received from the public, consideration of discussions and correspondence associated with the ANSI/WCMA voluntary standards activity, staff analysis of the products on the market, and the assessment of foreseeable incident scenarios.

The draft final rule requires custom window coverings to meet the same requirements as stock products in section 4.3.1 of the ANSI/WCMA-2018 standard, meaning products must be cordless, use operating cords that are 8 inches or shorter, or make operating cords inaccessible. The draft final rule contains requirements for two methods to meet the inaccessibility option: rigid cord shrouds and retractable cords. The draft final rule also allows for corded products that use a loop cord and bead chain restraining device that meets the requirements of the rule, to address the strangulation hazard (Table 3).

b. Impact of Recommended Changes

Staff assesses that the recommended changes in the draft final rule for custom window coverings will help improve consumers' ability to reach and operate window coverings with ease, even for hard-to-reach locations, or for consumers who are short in stature or in wheelchairs, while also keeping custom window coverings safe for children.

The recommendations provide flexibility for manufacturers to continue using currently implemented systems, such as continuous loops, provided that the cords are inaccessible (rigid

¹⁵ Panchal Jitesh H., 2016. Manufacturing Cost Analysis: Cordless vs. Corded Window Covering Products. West Lafayette, IN. Purdue University.

¹⁶ Staff presumes that some markup in the retail price of these products occurs, which would translate to a higher cost as a percentage of a manufacturers annual revenues. The lowest possible compliance cost in this estimate has an implicit assumption that a manufacturer can capture the full retail price of the product. This is an unlikely scenario, but helpful for illustrative purposes, as only a manufacturer with a large focus on vertical blinds and curtains/drapes could possibly be below the CPSC 1 percent significant impact criteria.

cord shroud) or loops are accessible, but not hazardous (loop cord and bead chain restraining device). The recommended changes also respond to the comments about not limiting choices for consumers because consumers can keep using the same operating systems with combined safety measures, such as rigid cord shrouds, loop cord and bead chain restraining devices, or retractable cords, in addition to cordless systems.

Table 3. Comparison of Custom Product Requirements in ANSI/WCMA-2018, NPR, and the Draft Final Rule

Performance Requirements	15(j) Draft Final Rule for Stock Products	Custom Products in ANSI/WCMA 2018	Custom Products NPR	Custom Products Draft Final Rule
(1) No operating cords (cordless)	Allowed	Allowed	Allowed	Allowed
(2) Short cord (8 inches or shorter) in any state	Allowed	Allowed	Allowed	Allowed
(3) Inaccessible operating cords	Allowed	Allowed	Allowed	Allowed
Using rigid cord shrouds (can be used with any operating system)	Allowed if Rigid Cord Shroud meets ANSI/WCMA 2018 accessibility test requirements	Allowed if Rigid Cord Shroud meets ANSI/WCMA 2018 test requirements	Allowed if Rigid Cord Shroud meets ANSI/WCMA 2018 test requirements plus NPR-proposed deflection and deformation tests	Same as NPR
Using Single Retractable Cord Lift System	Not Allowed	Allowed, no limit in cord length under tension	Asked for comments	Allowed provided that it meets complete retraction at 30 gram, non-cord retraction device. Stroke length limited to 12 inches below the headrail
(4) Non-hazardous Cord Loops using Cord and Bead Chain Restraining Device	Not Allowed	Allowed if device meets ANSI/WCMA tests	Asked for comments	Allowed if device meets ANSI/WCMA 2018 tests and an additional test for a sample to go through UV followed by cyclic test and deflection Test
(5) Accessible Operating Cords longer than 8 inches	Not Allowed	Allowed	Not Allowed	Not Allowed
(6) Continuous Loops with Tension Devices	Not Allowed	Allowed	Not Allowed	Not Allowed
(7) Cord Loop Lift Systems	Not Allowed	Allowed	Not Allowed	Not Allowed

c. Stakeholder Review and Opportunity to Comment

The staff NPR briefing package was posted online on October 14, 2021, and published in the *Federal Register* on January 7, 2022, after approval by the Commission. The Commission provided a comment period of 75 days for written comments and also provided an opportunity for oral comments. CPSC received 2,060 comments on the NPR for custom window coverings. Additionally, on March 16, 2022, CPSC held an oral hearing on the proposed rule, at which time, seven presenters also provided comments. In addition, we received two late comments in July 2022. All comments, meeting logs, and correspondence regarding custom window coverings have been included on Regulations.gov under the CPSC docket for this rule: Docket No. CPSC-2013-0028. WCMA and other commenters had ample opportunity to assess the proposed rule, and, before, during, and after the comment period, the WCMA Steering Committee, including manufacturers, retailers, test labs, consumer groups, and CPSC staff, met multiple times and worked on revising the 2018 voluntary standard to address additional strangulation scenarios. This effort eventually led to a draft standard that was balloted. CPSC staff evaluated the draft ANSI/WCMA-2022 and provided an assessment of the changes in a letter to WCMA and in this briefing package.¹⁷

d. Assessment

Staff recognizes the efforts made by WCMA to continue revising the voluntary standard to address strangulation hazards; however, staff opposes the draft ANSI/WCMA-2022 that allows continuous loops with tension devices as a compliance method, because it relies on tension devices to keep continuous loops taut. Staff identified various scenarios where a head probe could be inserted into the hazardous loop from an installed continuous loop with an ANSI/WCMA-compliant tension device attached to the wall. Staff also identified mis-installation or failure modes that will leave a hazardous loop on custom products throughout its life cycle, starting from its installation. Staff concludes that a window covering should be inherently safe because a custom window covering product (1) has a long lifecycle, which may allow different residents in the same home, likely exposed to the same window covering, (2) presents a potentially hazardous outcome, even if the tension device is installed; because of its installation location, types of fasteners and installation surface, installer ability, and varying degrees of risk perception of consumers on taking safe actions.

4. Testing Certification and Notice of Requirements

Under section 14 of the CPSA, as codified in 16 CFR part 1110, manufacturers and importers of general use 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 final 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).

¹⁷ CPSC staff letter is available at <https://www.regulations.gov/document/CPSC-2013-0028-3667>

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. As discussed in the NPR, CPSC is aware that some window coverings are specifically designed for children and may fall within the definition of "children's product."¹⁸ 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. The Commission's requirements for testing and labeling children's products are codified at 16 CFR part 1107. Additionally, 16 CFR 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 finalize, as proposed, an amendment to 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.

5. Effective Date

The NPR proposed an effective date of 180 days after the final rule's publication in the Federal Register. During the comment period, many commenters representing manufacturers and retailers stated their concerns about meeting the proposed 180-days effective date due to long lead times for receiving equipment or material, manufacturing compliant window coverings, and delivering the product to consumers. Commenters provided timelines of 9 to 20 months in obtaining and transporting equipment/materials from overseas suppliers. Two commenters, both large manufacturers, specifically stated long lead times of 4 to 12 months related to acquiring necessary equipment and materials. One of the commenters asserted an additional 1 to 4 months would be required upon delivery to assemble component inventory. Another commenter stated an additional delay related to continued COVID-19 disruptions. Additionally, staff has assessed that the redesigning of window coverings for unusually sized-windows to be compliant

¹⁸ Draft Notices of Proposed Rulemaking for Corded Window Coverings is available at <https://www.cpsc.gov/s3fs-public/NPRs-Add-Window-Covering-Cords-to-Substantial-Product-Hazard-List-Establish-Safety-Standard-for-Operating-Cords-on-Custom-Window-Coverings-updated-10-29-2021.pdf?VersionId=HIM05bK3WDLRZrINGogQLknhFvhtx3PD>.

with the final rule would create even more additional effort and time, above typical sized-window modifications, for manufacturers to address.

Staff found these concerns to be credible because of the specific examples provided by commenters and because these comments comport to what staff has determined about the industry's supply chain. Additionally, staff assesses that supply disruption could result in temporary, but significant, shift in consumer behavior. Supply chain disruptions and delayed deliveries could result in a shift in demand from custom products to stock products. Stock products have a lower profit margin than custom products and thus may have a significant cost impact to manufacturers and retailers even if the shift is temporary. Further, most custom window coverings sellers are small businesses, and therefore a temporary shift to stock products could have a significant impact to small businesses. A later effective date would allow manufacturers more time to redesign, distribute costs of compliance along the entire year, or discontinue product variants that cannot meet compliance.

As these examples show, a 180-days effective date has the potential to be very disruptive for producers and consumers. An extended effective date would mitigate costs related to redesign/research and development for manufacturers. Further, postponing the effective date by several months would reduce the benefits of the rule by only a very small amount as most noncompliant window coverings will take years to cycle out of use. Given the totality of these comments and assessments, staff accordingly assesses that there is good cause to extend the effective date beyond 180 days. Staff recommends the effective date in the final rule be extended to one year after publication for most custom window coverings and two-years for window coverings that are 10 feet or greater in vertical length and are raised and lowered.

III. Conclusion

Based on the assessment performed and conclusions reached for the NPR and stakeholders' and commenters' agreement with the proposed rule, staff recommends finalizing the rule proposed under Section 15(j) of the CPSA. This rule will deem that stock window coverings that do not comply with the requirements in the ANSI/WCMA-2018 standard for operating cords and inner cords, custom window coverings that do not comply with the requirements for inner cords, and stock and custom products that lack the required manufacturer label, present a substantial product hazard. Staff recommends that the final rule become effective 30 days after publication.

Staff concludes that the ANSI/WCMA-2018, as well as the balloted draft ANSI/WCMA-2022, do not adequately address the risk of strangulation associated with operating cords on custom window coverings. CPSC staff recommends that the Commission publish a final rule for operating cords on custom window coverings that sets performance requirements to ensure that custom window coverings: (1) do not have cords, (2) have short, static cords that do not pose a strangulation hazard, (3) have cords that are inaccessible through the use of rigid cord shrouds or retractable cords, or (4) have continuous loops used with loop cord and bead chain restraining devices, which make accessible loops non-hazardous.

Additionally, CPSC staff recommends that the final rule contains an effective date of 1 year after publication of the final rule for manufacturers to comply with the operating cord requirements for custom window coverings, except those that are 10 feet or greater in length and are raised and lowered, for which staff recommends allowing 2 years to comply with the rule. Staff also

recommends including an anti-stockpiling provision and publishing an NOR for children's products.

Inherently safe window coverings that do not pose a strangulation hazard to children have the chance to impact people's lives significantly and positively for decades to come. Parents and families will not have to face emotional distress, shock, or perceived guilt of losing a child by strangulation on a window covering cord. Consumers will have easy-to-use, clean-looking window coverings and they will not have to worry about the safety of their children and grandchildren.

Tab A: Draft Final Rules for Corded Window Coverings: Update on Fatal and Near-Miss Strangulation Incidents Associated with Window Covering Cords



Memorandum

TO: Rana Balci-Sinha
Project Manager, Window Covering Cords Petition
Director, Division of Human Factors, Directorate for
Engineering Sciences

DATE: September 28, 2022

THROUGH: Stephen Hanway
Associate Executive Director
Directorate for Epidemiology

FROM: Risana Chowdhury
Director, Division of Hazard Analysis
Directorate for Epidemiology

SUBJECT: Draft Final Rules for Corded Window Coverings: Update on Fatal and Near-Miss
Strangulation Incidents Associated with Window Covering Cords

I. Introduction

On October 6, 2021, CPSC staff submitted for Commission consideration a staff briefing package (SBP) in support of two draft notices of proposed rulemaking (NPRs) to address hazardous cords on Window Coverings Cords (WC) for stock and custom products. The Commission published these NPRs on January 7, 2022. Staff presented data in the NPRs SBP¹ covering 2009–2019 or 2009–2020, depending on the availability of data. In this memorandum staff presents updated data and analysis based on data received by CPSC since the submission of the NPRs SBP. Most of the incidents occurred in 2020 or 2021, while one incident occurred in 2017.

II. Methodology

As was done for the NPRs SBP, 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).

¹ See Tab A: Fatal and Near-Miss Strangulations Associated with Window Covering Cords, available at: <https://www.cpsc.gov/s3fs-public/NPRs-Add-Window-Covering-Cords-to-Substantial-Product-Hazard-List-Establish-Safety-Standard-for-Operating-Cords-on-Custom-Window-Coverings-updated-10-29-2021.pdf?VersionId=HIM05bK3WDLRZrINGogQLknhFvhtx3PD>.

III. Results

A. Incidents from CPSC Databases

In the NPRs SBP, staff presented analysis based on 194 reported fatal and near-miss strangulations on window covering cords that occurred among children up to 8 years old from January 2009 through December 2020. For the emergency department-treated injury data (NEISS), the low number of injury reports yielded aggregated estimated injuries that fell below the NEISS reportable threshold.² Hence, staff combined NEISS reports with other incident reports in the CPSRMS database, which included newspaper clippings, consumer complaints, death certificates purchased from states, medical examiners' reports, as well as in-depth investigation reports. When combining data from different sources, staff routinely checks the various data fields like incident dates, age and sex of victim, city and state of injury, and the accompanying narratives in the reports to ensure that no double-counting has occurred. Since then, staff has received 15 additional incident reports (including 4 reports from NEISS hospital emergency departments) involving strangulations or near-miss strangulations among children up to 8 years of age. Nine of the 15 incidents occurred in 2021, five of them in 2020, and the remaining incident occurred in 2017. Table 1a shows the distribution of the 209 incidents (194 from the NPRs SBP and 15 since the NPRs SBP) by year of occurrence; the newly reported cases, since the NPRs SBP, are shown in parentheses.

Table 1a: Reported Fatal and Near-Miss Strangulation Incidents Involving Window Covering Cords Among Children Eight Years and Younger 2009 – 2021

(Numbers in Parentheses Indicate New Reports Received Since NPR)

Year	Total Strangulation Incidents	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	10 (1)	5	5 (1)
2018	8	4	4
2019	11	4	7
2020*	13 (5)	8 (5)	5
2021*	9 (9)	6 (6)	3 (3)
Total	209 (15)	100 (11)	109 (4)

Source: CPSC epidemiological databases CPSRMS and NEISS.

Note: * indicates data collection is ongoing.

² 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.

Table 1b expands on Table 1a to display the distribution of the annual incidents by severity of incidents and type of window coverings involved. In the combined data (from the NPR and this update), staff identified 50 of the 209 incident window coverings (24 percent) to be stock products and 36 of the 209 (17 percent) to be custom products; staff could not identify the window covering type in the remaining 123 of the 209 (59 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 -- 2021

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)	7 (4/3)	10
2018	--	1 (0/1)	7 (4/3)	8
2019	1(0/1)	--	10 (4/6)	11
2020*	--	1 (1/0)	12 (7/5)	13
2021*	--	--	9 (6/3)	9
Total	50 (20/30)	36 (15/21)	123 (65/58)	209

Source: CPSC epidemiological databases CPSRMS and NEISS.

Note: * indicates data collection is ongoing.

In the NPRs SBP, staff reported that males comprised 66 percent of the victims involved in window covering cord incidents, while females comprised 34 percent of the victims. Staff observes similar gender distribution in the new data, with 62 percent of the victims being male and 38 percent being females.

In the NPRs SBP, staff reported that:

- 89 of the 194 incidents (46 percent) was a fatality.
- 16 incidents involved hospitalizations (8 percent), where the long-term outcomes of the injuries varied from a scar around the neck, to quadriplegia, to permanent brain damage.
- 75 incidents (39 percent) involved less-severe injuries, some of which required medical treatment but not hospitalization, and
- 14 incidents (7 percent) did not involve any injuries. In these incidents, a child became entangled in a window covering cord but was able to disentangle him or herself from the cord and escape injury.

Among the 15 newly reported incidents, staff identified 11 fatalities (73 percent) and 4 non-hospitalized injuries (27 percent). The non-hospitalized injuries resulted in lacerations and abrasions.

1. Distribution of Reported Incidents by Window Covering and Associated Cord Types

In the NPRs SBP, staff identified that 50 of 194 incident window coverings (26 percent) had been sold as stock products and 35 of the 194 (18 percent) as custom products; no such information was available for window coverings involved in the remaining 109 of the 194 (56 percent) incidents. Among the 15 newly reported incidents, only one incident involving a custom product contained enough information for staff to discern the stock-versus-custom designation. The remaining incidents did not have sufficient information to be classified as stock or custom. Table 2 below presents the distribution of all 209 incidents (194 incidents from the NPRs SBP data review and 15 newly reported incidents since the NPRs SBP) by types of window coverings (e.g., horizontal blinds, vertical blinds, etc.) across the types of cords associated with each (e.g., pull cords, continuous loops, etc.), irrespective of the custom-versus-stock sale status of the product.

Table 2: Distribution of Reported Incidents by Types of Window Coverings and Associated Cords
2009 – 2021
(Numbers in Parentheses Indicate New Reports Received Since NPR)

Window Covering Type	Cord Type						TOTAL
	Pull Cord	Continuous Loop	Inner Cord	Lifting Loop	Tilt Cord	Unknown	
Horizontal	68 (3)	2	4 (1)	0	5	10	89 (4)
Vertical	0	12 (1)	0	0	0	0	12 (1)
Drapery	0	4 (1)	0	0	0	0	4 (1)
Roman	2	2	19	0	0	1	24
Other*	2	5	0	0	0	0	7
Roll-Up	1	0	0	4	0	1	6
Roller	0	9	0	0	0	0	9
Unknown	1	1	0	0	0	56 (9)	58 (9)
Subtotal [†]	74 (3)	35 (2)	--	--	5	68 (9)	182 (14)
TOTAL	74 (3)	35 (2)	23 (1)	4	5	68 (9)	209 (15)

Source: CPSC epidemiological databases CPSRMS and NEISS.

Other*: This category includes cellular and pleated shades.

Subtotal[†] : This row shows the incidents that are relevant to the Section 7&9 rule. The 27 incidents (23 inner cords and 4 lifting loops) would be addressed by Section 15(j) of the CPSA. The lifting loop hazard for custom classification products would be addressed by the Section 7&9 draft final rule but no incidents involving custom products with lifting loops could be identified in this analysis.

2. Most Common Cord Types and Associated Hazards Resulting in Fatalities

In the analysis completed for the NPRs SBP, staff definitively identified that:

- 39 fatalities (44 percent) involved a child getting entangled in pull cords, the most common cord type involved in the 89 reported deaths. A majority of these deaths involved loops created by knotted/tangled cords or one or more long cords getting wrapped around a child's neck.
- 23 fatalities (26 percent) involved continuous loop cords or beaded chains which were not mounted with a tension device or that broke loose from a tension device at the time of the incident.
- 7 fatalities (8 percent) involved inner cords on horizontal blinds and/or Roman shades. Children got caught in the loop created by the pulled-out portion of the inner cord or they inserted their heads into the opening between the inner cord and the shade material.

Among the 11 newly reported deaths since the NPRs SBP, staff definitively identified the cord type in 6 deaths. Three (27 percent) deaths involved a pull cord, two deaths (18 percent) involved a continuous loop, and one death (9 percent) involved inner cord(s); staff has insufficient information to determine the cord type involved for the remaining five fatal scenarios.

B. National Estimates of Window Covering Cord-Related Strangulation Deaths Using NCHS Data

The NCHS compiles all death certificates filed in the United States into multiple cause mortality data files. NCHS compiles the data in accordance with the World Health Organization's instructions to classify causes of death by the current (tenth revision) Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death. For the NPRs SBP, 2019 was the latest available year for NCHS data; since then, data for 2020 have become available.

Using the ICD10 code value of W76 (*Other accidental hanging and strangulation*), the code most likely to capture strangulation fatalities among children under 5 (based on empirical evidence from death certificates maintained in CPSC databases), staff derived fatality estimates for 2009 through 2020 which are presented in Figure 1 below. An unknown proportion of strangulation deaths is likely coded under ICD10=W75 (*Accidental suffocation and strangulation in bed*) as well as ICD10=W83 (*Other specified threats to breathing*), which staff cannot separate out from the non-strangulation deaths because of the unavailability of any narrative description in these data. Hence, staff's estimates of strangulation deaths are minimums.

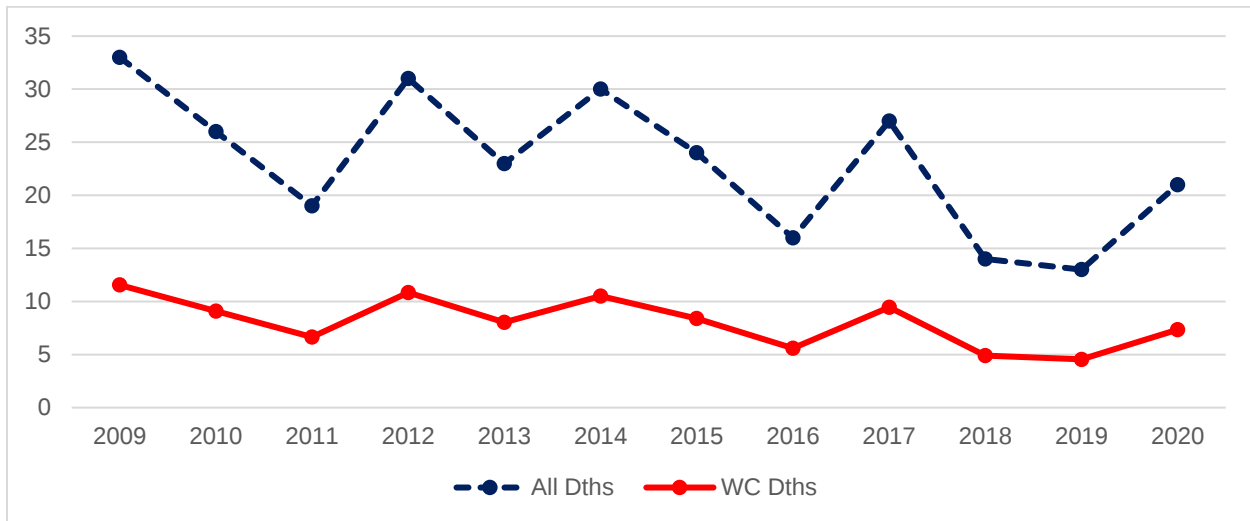
A 2002 CPSC report by Marcy *et al*³ concluded that 35 percent of all strangulation fatalities among children less than 5 years old were associated with window covering cords. Assuming that the same proportion applied for the entire 12-year period 2009 – 2020, Figure 1 below presents the national estimates for all strangulation fatalities as well as strangulations involving window covering cords among children under 5.

CPSC received a comment critical of CPSC's use of this 2002 study. At this point in time, staff is unaware of other data sources that would provide information regarding a more current national trend in window covering cord-related strangulations. Based on the 2002 study, the annual

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

average number of deaths would be estimated at 8.1 (or 9, if rounded up to the nearest integer). This estimate is consistent with CPSC's actual incident data over a 12 year period. For example, at the time of this analysis, the incidents over the 12-year period 2009-2020 report an average of 7.8 (or 8, if rounded up to the nearest integer) annual deaths involving window covering cords among children under 8. As stated before, the incident data represent a minimum because they are anecdotal in nature (not nationally representative) and data collection is ongoing. Nevertheless, the limitations of each data source notwithstanding, the average estimated and the average reported death numbers appear to be in the same range.

**Figure 1: Estimated Fatalities Associated with Strangulations
Among Children Under 5 Years
2009 – 2020**



Source: Multiple Cause of Death data, NCHS, 2009 – 2020.

Note: The estimates for the window covering cord fatalities are based on the assumptions that 35% of all strangulation fatalities are due to window covering cords and that this percentage remained unchanged over 2009-2020.

IV. Conclusion

In this memorandum, staff presents updated data and analysis based on reports received by CPSC since the submission of the NPRs SBP to Commission in October, 2021. Without the availability of nationally representative data on injuries or fatalities, staff relied on the analyses of the anecdotal incident reports received by CPSC. Staff identified 15 new incidents, most of which occurred in 2021. Nearly three-quarters of the new incidents reported a fatality. Based on the information available, staff identified one of the 15 incident products as a custom window covering. Analyses of this data by cord type and covering type reveal no new hazard patterns compared to what was presented in the NPRs SBP.

Tab B: Draft Final Rules for Corded Window Coverings: Human Factors Assessment



Memorandum

TO: The Window Coverings Rulemaking File **DATE:** September 28, 2022

THROUGH: Mark Kumagai, Associate Executive Director,
Directorate for Engineering Sciences

FROM: Rana Balci-Sinha, Director,
Division of Human Factors,
Directorate for Engineering Sciences

SUBJECT: Draft Final Rules for Corded Window Coverings: Human Factors Assessment

I. Background

In the October 6, 2021 Staff Briefing Package (SBP)¹ in support of the Notice of Proposed Rulemaking (NPR) to establish a Safety Standard for Operating Cords on Custom Window Coverings, staff from the Division of Human Factors, Engineering Sciences (ESHF) evaluated the requirements for operating cords on custom window coverings in the ANSI/WCMA-2018. Staff concluded that operating cord requirements for custom products in the ANSI/WCMA-2018 are inadequate to effectively address the strangulation hazard to children 8 years old and younger associated with custom window covering cords. When compliant with the voluntary standard, operating cords for custom window coverings can still be long enough to fit around a child's neck or can create a loop large enough to allow a child to insert their head. Staff identified that at least 86 percent of custom window covering incidents (30 of 35) can still occur if the product complies with the voluntary standard. Staff also concluded that safety devices, such as cord cleats and tension devices, are unlikely to be effective because, for example, to prevent the strangulation hazard, caregivers must use cord cleats properly every time they interact with the operating cord and must first install tension devices properly on the wall or window sill and then check the tension devices regularly to ensure that the cord loop remains taut.

Staff recommended for the custom window covering NPR that the requirements for stock products in section 4.3.1 of ANSI/WCMA-2018 (cordless, inaccessible cords, or short cords equal to or less than 8 inches) also be applied to custom products to address the strangulation hazard. Staff assessed that stock window covering requirements in ANSI/WCMA-2018 adequately address the strangulation hazard by not allowing hazardous cords on the product by design, and therefore does not rely on consumer action to mitigate the hazard. Based on staff's assessment, the Commission published the custom window covering NPR on January 7, 2022 (87 FR 1014), proposing that operating cords on custom window coverings meet the requirements in section 4.3.1 of ANSI/WCMA A100.1 – 2018. The NPR also proposed to allow

¹ See Tab I: Human Factors Considerations for the Proposed Rule on Custom Window Coverings, available at: [<https://www.cpsc.gov/s3fs-public/NPRs-Add-Window-Covering-Cords-to-Substantial-Product-Hazard-List-Establish-Safety-Standard-for-Operating-Cords-on-Custom-Window-Coverings-updated-10-29-2021.pdf?VersionId=HIM05bK3WDLRZrINGogQLknhFvhtx3PD>]

a rigid cord shroud, subject to appropriate durability testing, to meet the inaccessible cord option in section 4.3.1.3 of the ANSI/WCMA standard.

In this memorandum, staff analyzes the new incidents reported to CPSC after staff submitted the NPR SBP to the Commission, evaluates and responds to the public comments associated with human factors issues, and provides updated recommendations for the draft final rule to establish a safety standard for operating cords on custom window coverings.

In addition to the proposed rule on operating cords on custom window coverings, on January 7, 2022, CPSC published a second notice of proposed rulemaking to establish a rule under section 15(j) of the Consumer Product Safety Act (CPSA) (15J NPR). (87 FR 891). The 15J NPR proposed to deem that one or more of the following readily observable characteristics of window coverings, which are adequately addressed in ANSI/WCMA-2018, present a substantial product hazard (SPH) under the 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. CPSC received five comments in support of the rule. As discussed below, staff recommends finalizing the 15J NPR as proposed.

II. Discussion

A. Incident Data

Since submitting the SBP in support of the window covering NPRs, staff received an additional 15 incident reports involving strangulations or near-miss strangulations among children up to 8 years of age. Nine of the 15 incidents occurred in 2021, five incidents occurred in 2020, and the remaining incident occurred in 2017. Among the 15 newly reported incidents, 11 involved a fatality. Staff definitively identified the cord type in 6 of the 11 deaths. Three deaths involved a pull cord (operating or tilt cord) on a horizontal blind, two deaths involved a continuous loop on a vertical blind and on a drapery, and one death involved inner cord(s) on a horizontal blind; staff has insufficient information to determine the cord type involved for the remaining five fatal scenarios.

For the 15 new incidents, staff has insufficient information to categorize 14 of the 15 incidents as either stock or custom products, however staff could identify one unit as a custom product.

The age of children involved in the 15 additional incidents ranged from 16 months to 8 years. The two continuous loop deaths involved 2-year-old children. Although the incidents were unwitnessed, it is likely that both children climbed on another object that was close by to reach the cords. In one incident, the child likely climbed on a table and in the other, likely climbed on a toy box in the bedroom (incident involved a custom product).

The inner cord incident involved an 8-year-old child with Down syndrome. The child was strangled in the inner cords which became accessible due to broken slats. The window covering was above the victim's bed.

One of the operating pull cord fatalities involved a four-year-old who was found with the loop, formed by a knot in the cord, around her neck. In the second fatality, an 18-month-old child was found with operating cords wrapped tightly around her neck. In the third fatality, a 2-year-old child was found with tilt cords around his neck; police stated that they noticed a small foot print on the table where he climbed on the couch to get to the horizontal window blind. Based on

ESHF staff's review of the facts involved in these 15 additional incidents, staff concludes that these incidents follow patterns similar to the previously assessed incidents for the NPR SBP. Staff did not identify any new hazard patterns from these data.

B. Addressability of Incidents with Draft Final Rules

1. Addressability: Draft Final Rule Under Section 15J of the CPSA to Deem Hazardous Operating and Inner Cords on Stock Window Coverings and Hazardous Inner Cords on Custom Window Coverings an SPH

As stated above, the rule under section 15(j) would deem hazardous operating cords on stock products, and hazardous inner cords on both stock and custom products, to be a Commission-determined SPH. The 15(j) rule requires stock products to comply with operating cord requirements in section 4.3.1 of ANSI/WCMA-2018, and stock and custom products to comply with the inner cord requirements in section 4.5 of the ANSI/WCMA standard. Additionally, both stock and custom products must comply with the manufacturer labeling requirement in section 5.3 of ANSI/WCMA-2018. This label is required to be permanently placed on all finished window coverings, and contain: name, city, and state of the manufacturer / importer / fabricator; month and year of manufacture; and designation of window covering as "Custom" or "Stock"

Staff is not aware of any of the 15 new incidents involving products manufactured after ANSI/WCMA-2018 became effective. Among the 15 new incidents, 14 incidents did not have sufficient information to categorize whether the incident product was stock or custom. If all products had been compliant with ANSI/WCMA-2018, staff could have identified the type of each incident product based on the required manufacturer label. Moreover, for all of the incidents involving stock products, staff assesses that all of the incidents would have been addressed by compliance with the section 15(j) rule. Incidents involved a continuous loop in one incident, an inner cord in one incident, and an operating pull cord in three incidents. Per ANSI/WCMA-2018, stock products are only allowed to have (1) no cords, (2) a short static cord that is 8 inches or shorter, or (3) inaccessible cords. Therefore all 3 operating pull cord incidents as well as one continuous loop incident would have been addressed if the incident units complied with section 4.3.1 of ANSI/WCMA-2018. The inner cord incident would also have been addressed because the requirements in the voluntary standard associated with inner cords in section 4.5 adequately address the strangulation hazard for both stock and custom products for a properly functioning, intact window covering.² The nine unknown cord type incidents would also have been addressed if the products were stock, because no hazardous cord is left to address for stock products in ANSI/WCMA A100.1 – 2018.

2. Addressability: Draft Final Rule for Operating Cords on Custom Window Coverings

For the NPR SBP, staff categorized the incidents by product type, as shown in Table 1, and assessed whether the existing voluntary standard, ANSI/WCMA-2018, adequately addressed the hazard patterns in the data. Staff concluded that for the 35 incidents known to involve custom, 30 incidents would not be addressed if the product involved were compliant with the 2018 version of the ANSI/WCMA standard.

For the draft final rule, staff performed a similar assessment for the 15 new incidents (Table 2). Staff could only categorize one of the 15 incidents as a custom product. Staff concludes that this

² Note that inner cords can still present a hazard on window coverings if slats are broken, or fabric is torn to expose inner cords in a hazardous manner.

incident would have been addressed by the draft final rule but not with the custom window covering requirements in ANSI/WCMA-2018, because the continuous loop in the incident unit is not adequately addressed in section 4.3.2 of the standard for custom products. Among the remaining 14 incidents, one inner cord incident would have been addressed by ANSI/WCMA-2018, under the section 15(j) rulemaking; one incident involving an accessible continuous loop with a drapery would have been addressed by the draft final rule, which requires continuous loops be made inaccessible using a rigid cord shroud or loop cord and bead chain restraining device; the three operating cord incidents would also have been addressed by the draft final rule because it prohibits hazardous pull cords, meaning those longer than 8 inches. Even though the cord types are unknown in the remaining nine incidents, those incidents would also have been addressed by the draft final rule, because draft final rule eliminates the possibility of accessible and hazardous cords and loops on all types of window coverings that are unbroken and intact.

Staff then combined all reported incidents to determine an aggregate addressability estimate (Table 3). Based on staff's review of the incident data for custom window coverings, staff concludes that all 31 incidents associated with operating cords and continuous loops (out of 36 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 coverings complied with the requirements for stock window coverings in the ANSI/WCMA standard, as required in the draft final rule. The three inner cord related incidents would have been prevented if the incident units complied with ANSI/WCMA-2018 and also remained intact and unbroken. Requirements for inner cords would be codified by the draft final rule to amend 16 CFR part 1120 to add window covering cords to the substantial product hazard list, CPSC Docket No. CPSC–2021–0038. This draft final rule under section 15(j) of the CPSA addresses inner cord hazards for both stock and custom window coverings by requiring products to meet the inner cord requirements in sections 4.5, 6.3, 6.7, and Appendices C of ANSI/WCMA-2018.

If the custom window coverings involved in the aggregated incident data had complied with the requirements in the draft final rule under sections 7 and 9, meaning complying with the requirements for stock products in section 4.3.1 of ANSI/WCMA A100.1 – 2018, 86.1 percent (31/36) of the custom product incidents would have been prevented. Additionally, 8.3 percent (3/36) of the custom window covering inner cord incidents would have been addressed by complying with the voluntary standard, which, if the Commission adopts staff's recommendation, will be codified as mandatory in the final rule under section 15(j) of the CPSA. Given that all accessible and hazardous custom window covering cords are effectively addressed with the requirements in the draft final rule, the remaining 5.6 percent of the incidents (which represented 2/36 incidents for which the involved cord type was unknown) would also be addressed because there are no remaining cord types left unaddressed by finalizing the consumer product safety rule under sections 7 and 9 of the CPSA and the SPH-based rule under section 15(j) of the CPSA.

Table 1. Stock/Custom/Unknown Window Coverings involved in Incidents and Cord Types (from NPR)

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

Table 2. Stock/Custom/Unknown Window Coverings involved in Incidents and Cord Types (new data)

Stock/Custom	Continuous loop	Inner cord	Lifting loop	Operating cord	Tilt cord	Unknown	Grand Total
Custom	1						1
Stock							0
Unknown	1	1		3		9	14
Grand Total	2	1	0	3	0	9	15

Table 3. Stock/Custom/Unknown Window Coverings involved in Incidents and Cord Types (All reported data combined)

Stock/Custom	Continuous loop	Inner cord	Lifting loop	Operating cord	Tilt cord	Unknown	Grand Total
Custom	13	3	0	18	0	2	36
Stock	3	14	1	24	2	6	50
Unknown	19	6	3	32	3	60	123
Grand Total	35	23	4	74	5	68	209

III. Public Comments and Staff's Recommended Changes to the Draft Final Rule

CPSC received 2,060 comments on the NPR for operating cords on custom window coverings. The main comment areas associated with human factors issues include comments asserting the following:

- if the rule is finalized, falls, in particular elderly falls, are likely to increase because users would need to climb up to operate a cordless window covering or a window covering with an 8-inch long cord;

- existing warning labels on products are sufficient;
- top-down-bottom-up shades are safe;
- the existing voluntary standard is sufficient;
- continuous loop tension devices are safe;
- cord cleats are safe;
- parental responsibility and watching children are the solution, and
- retractable cords are safe.

Tab H contains ESHF staff's response to public comments; however, below we discuss EXHR staff's general response on the main comment topics.

A. Large Window Coverings

At least eight commenters, including WCMA and seven businesses, raised the concern that available technologies to address the strangulation hazard, such as manual cordless systems, are difficult to implement for very large products. Staff reviewed the incident data to determine the largest products that were involved in incidents: the longest product that was involved in a nonfatal incident had a reported length of 112 inches and a width of 124 inches. A reported fatality involved a roller shade; based on other dimensions provided in the associated IDI, staff estimates the length as 119 inches and the width as 54 inches. Staff from the Division of Mechanical and Combustion Engineering (ESMC) assessed the available technologies (Tab C) and determined that rigid cord shrouds do not appear to be applied to operating window coverings over 96" tall but that it is feasible to implement these technologies on larger window coverings.

Various commenters stated that there is an increased presence of taller windows in homes, which will lead to a higher number of taller window coverings installed in homes. Staff notes that regardless of the height, the hazard patterns associated with window coverings are the same. Further, the ANSI/WCMA-2018 does not contain a height limit for in-scope window coverings for either stock or custom. Because the hazard patterns associated with larger window coverings are the same as hazard patterns seen in shorter window coverings, the potentially increased number of installations of taller window coverings in residences, and the feasibility of applying safer technologies on these products, staff does not recommend excluding taller products from the scope of the rule. However, staff recommends that a longer implementation date (*i.e.*, 2 years) is reasonable for manufacturers to implement the technologies for products that are raised and lowered and are at least 10 feet long. Please see Tab C for a more detailed discussion on this issue.

B. Retractable Cords

In the NPR, staff determined that 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 are not specified in the standard. Staff requested 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.

The Commission received at least 149 comments stating that retractable cords are safe based on the lack of incidents, and that because retractable cords have not been involved in incidents, retractable cords should not be eliminated. The June 21, 2022 letter from consumer advocates

to WCMA suggest that retractable cords be allowed with the following text: “All cords must be inaccessible. The maximum allowable cord length is 12 inches from the headrail.”³

Staff is not aware of any incidents involving retractable cords. Based on staff’s review of incidents and confirming that no incident involved a retractable window covering, discussion with industry and consumer advocates during the ANSI/WCMA revision process, public comments associated with providing options for easy access for operability, assessment of available retractable technologies on the market and evaluating their safety and feasibility, staff recommends that for the final rule, the Commission include retractable cords as a compliance path, as long as the exposed cord is limited to a maximum of 12 inches in any state of operation from the bottom of the headrail and the other requirements are met (e.g., full retraction with 30-gram mass to the operating interface, which is not a cord and cannot bend on itself and tested to last 5,000 cycles after UV exposure, see Tab D for the exact language.)

Staff recommends the 12-inch requirement for the exposed cord because this allowance is consistent with a requirement for inner cords, which are exempt if they are within 12 inches of the headrail in the inner cord accessibility test. The 12-inch exemption is in part based on the required steps that a child would need to go through with a retractable cord for it to pose a hazard:

1. Child needs to climb to get close to the headrail.
2. Child holds and pulls the retraction device to expose 12 inches of cord from the bottom of the headrail.
3. Child attempts to wrap the cord around his neck using 12 inches of cord while maintaining tension on the cord.

To arrive at the 12-inch length, staff considered that while the smallest neck circumference of youngest children at risk, 6-9-month-old children, is about 8 inches,⁴ children who can climb to the top of the window covering will be older, and they need to be able to hold the cord and wrap it around the neck at the same time, which requires the breadth of their hands to be added to the neck circumference. Therefore, 12 inches is a safe length for the headrail area of a window covering, whereas the 8 inches of cord length that is used to define the allowed short cord could be anywhere on the window covering. For further discussion on this topic, see Tab I. Based on staff’s review of the incident data, staff concludes that it is very unlikely for a child to perform all of these steps that would pose a hazard with a retractable cord that met the 12-inch requirement. See Tab I for a fuller discussion of this hazard scenario.

On July 15, 2022, WCMA balloted a revised version of the voluntary standard, ANSI/WCMA A100.1-2022 (draft ANSI/WCMA-2022). The draft ANSI/WCMA-2022 allows a 36-inch-long retractable cord (“stroke length”) to be exposed under tension.⁵ Staff assesses that, depending on the height of the window covering, installation location, and the operating interface, a child may be able to wrap a cord around his/her neck if it is 3-feet long. Staff provides an example in Figures 1-4 demonstrating an average 4-year-old’s interaction with the retraction device. As an example, consider that a 5.5 ft long window covering is installed 2 feet from the floor in a room

³ Letter can be found at <https://www.regulations.gov/document/CPSC-2013-0028-3664>

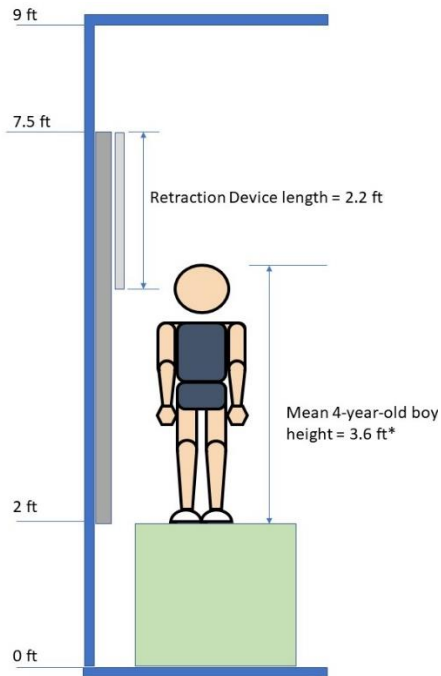
⁴ BSI (1990) as cited in Norris, B., & Wilson, J. R. (1995). *CHILDATA: The handbook of child measurements and capabilities –Data for design safety*. London: Department of Trade and Industry.)

⁵ When the user pulls the retraction device down, with each stroke, a fixed amount of cord (“stroke length”) is exposed to lower or raise the window covering. After each stroke, or pull on the retractor device, exposed cord retracts completely into the headrail and the user continues to stroke until reaching the desired window covering height.

with 9 ft ceiling and the top of the window is 7.5 ft from the floor (Figure 1). The retraction device length is 40 percent of the length of the window covering, which comes out to be 2.2 ft. (Figure 1). The average height of a 4-year-old is 3.6 ft, and that child may climb on a surface to get closer to the retraction device (Figure 1). In this example, the child can easily reach the retraction device and pull on the retraction device because the overhead reach of an average 4-year-old is 4.13 ft (Figure 2). A 36-inch long cord would be exposed per the draft balloted standard, leaving 13.2 inches of cord that is within reach and eye view of the child to manipulate (Figure 3.) The neck circumference of a 3.5-4.5 year old child is 10.8 inches (Figure 3). Thus, Figure 3 demonstrates that a child can access a sufficient length of cord to wrap around their neck and strangle. If only 12 inches of cord were exposed using the requirement in staff's recommended change in the draft final rule, this would limit a child's ability to manipulate a cord to wrap around his/her neck (Figure 4). Staff notes the risk from a 36 inch stroke length allowance illustrated in Figure 3 is higher for older children because an 8-year-old child of average height would have over 20 inches of exposed cord to manipulate while their neck circumference is less than half of that length (10.7 inches), which will provide ample exposed length of cord to wrap around his/her neck.⁶ Staff also notes that a retractable device may appeal to children due to its interactive nature and pull and release function (e.g., play value), and encourage children to play with it; therefore, the length of the cord that can be pulled should not be hazardous.⁷

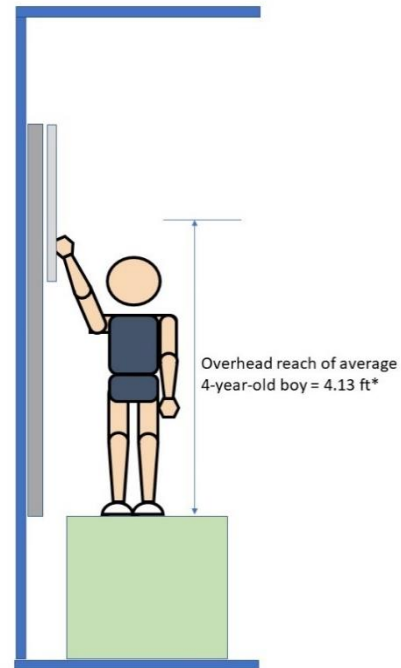
⁶ The average height of an 8-year old is 4.4 ft (Steenbekkers, 1993). The exposed length of pulled cord when the child climbs to 2 ft tall surface would be 22.8 inches based on his combined height plus climbed height (4.4 ft + 2 ft = 6.4 ft) and the exposed cord length (4.5 ft from floor) that the child can view and manipulate. The neck circumference of an average 8-year-old is 10.7 inches. (Snyder, 1977)

⁷ Final Interpretive Rule on Children's Product (16 CFR 1200) defines "play value" as features primarily attractive to children 12 years of age or younger that promote interactive exploration and imagination for fanciful purposes (whimsical activities lacking utility for accomplishing mundane tasks; actions performed for entertainment and amusement).



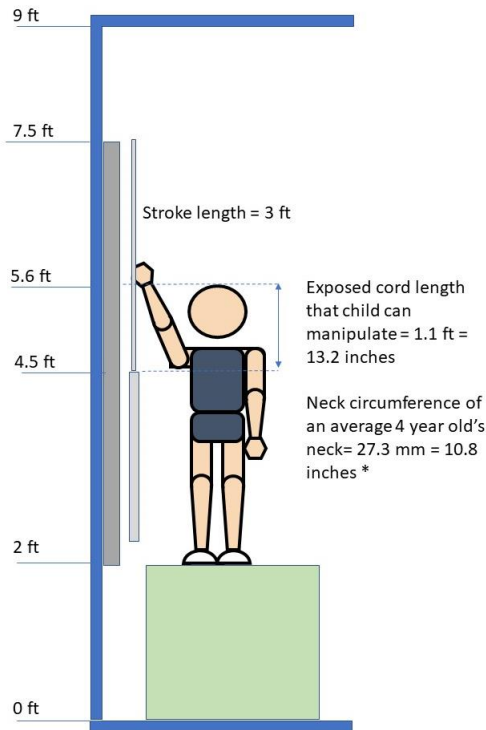
* Steenbekkers, P. A. (1993) Child Development, Design Implications and Accident Prevention. Delft University Press ISBN 90-6275-895-9.

Figure 1. Example set up showing a 5.5-ft tall window covering installed in a room and an average 4-year-old who climbed on a surface.



* Steenbekkers, P. A. (1993) Child Development, Design Implications and Accident Prevention. Delft University Press ISBN 90-6275-895-9.

Figure 2. Overhead reach of a 4-year-old.



* Snyder RG, Schneider LW, Owings CL, Reynolds HM, Golomb DH & Schork MA (1977), Anthropometry of infants, children & youths to age 18 for product safety design. Report no. UM-HSRI-77-17, Consumer Product Safety Commission, Washington DC, USA.

Figure 3. A 13.2 inch long exposed cord that is within reach of a child and can be wrapped around neck using 3-ft stroke length.

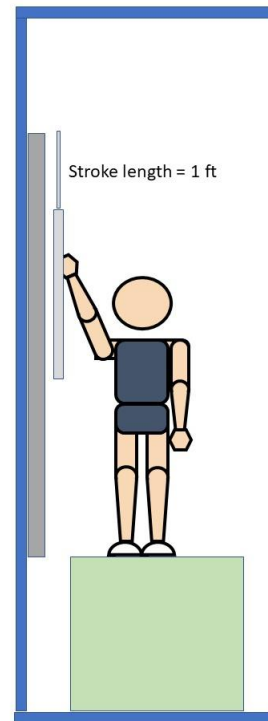


Figure 4. Exposed cord that is not within reach of a child using 1-ft stroke length.

Based on engineering and HF staff's analysis, staff concludes that a 12-inch long exposed cord measured from the bottom of the headrail is a safe length, that also ensures usability of the cord.

C. Accessibility Issues

At least 383 commenters stated that having a short cord introduces accessibility issues for various consumers, including people in wheelchairs or who are otherwise challenged to access cords that are high-up on the window covering.

- Some commenters stated that the proposed rule is not compliant with the Americans with Disabilities Act (ADA).

- The Department of Justice published revised regulations for Titles II and III of the Americans with Disabilities Act of 1990 in the *Federal Register* on September 15, 2010. These regulations adopted revised, enforceable accessibility standards called the 2010 ADA Standards for Accessible Design (2010 ADA Standards). The 2010 ADA Standards set minimum requirements for newly designed and constructed or altered state and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities.
- The portions of the 2010 ADA Standards that are applicable to window coverings are as follows:
 - Sections 308.2 and 308.3 of the 2010 ADA Standards specify forward and side reach distances.⁸ For example, an unobstructed high forward reach and high side reach shall be 48 inches (Figures 5-8).

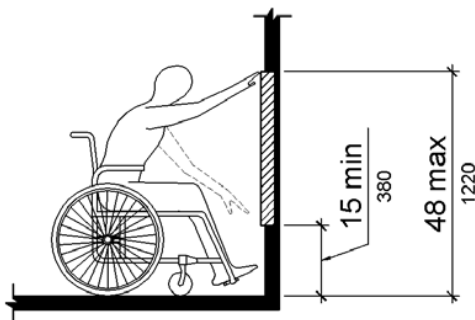


Figure 5. Obstructed Forward Reach.

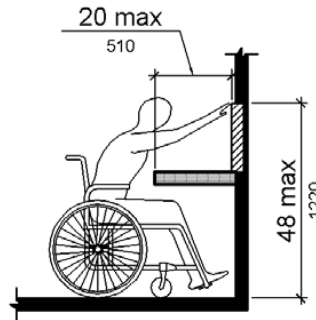


Figure 6. Unobstructed High Forward Reach.

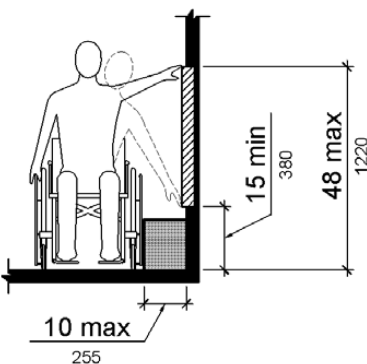
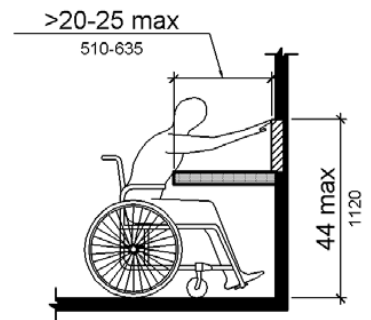


Figure 7. Obstructed Side Reach.

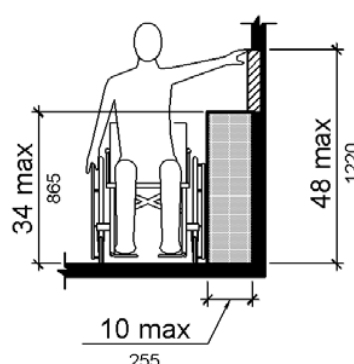


Figure 8. Obstructed High Side Reach.

Note. Figures 5-8 are from 2010 ADA Standards for Accessible Design, accessed at <https://www.ada.gov/regs2010/2010ADASTandards/2010ADASTandards.pdf>

- Staff assesses that alternative solutions can safely replace the existing hazardous cords such as rigid cord shrouds and loop cord and bead chain

⁸ Department of Justice (2010). 2010 ADA Standards for Accessible Design, accessed at <https://www.ada.gov/regs2010/2010ADASTandards/2010ADASTandards.pdf>

restraining devices, which can allow access to a height that is about at the same height as corded products. In addition, retractable cords can be made accessible with a rigid wand or handle to an easy-to-access height. Poles are currently being offered to reach the bottom of cordless products.

- Operable parts need to be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds maximum. Staff questions whether the traditional operating pull cords as well as continuous loop bead chains and cords would be compliant with this requirement as they require tight pinching and grasping to operate. Further, in many cases, the pull force of a corded system can exceed 5 pounds. Staff also determined that window coverings that are compliant with the mandatory rule would likely have interfaces that the consumer needs to grasp with hand such as rigid cord shrouds, which would meet the ADA requirement by avoiding pinch grip and instead use hand grip.
- Staff assesses that rigid cord shrouds or loop cord and bead chain restraining devices or retractable devices can be easier to operate from behind furniture compared to continuous loops that are attached to a wall. Figure 9 contains a comparative assessment. If the continuous loop is not attached to a wall, then it is easier to operate (once leaned to grab it) but it poses a strangulation risk (left); if a tension device is attached to a wall, it is not easy for consumers to access (middle); on the other hand, a rigid cord shroud is not less accessible and is operable behind the furniture while also being safe (right.)

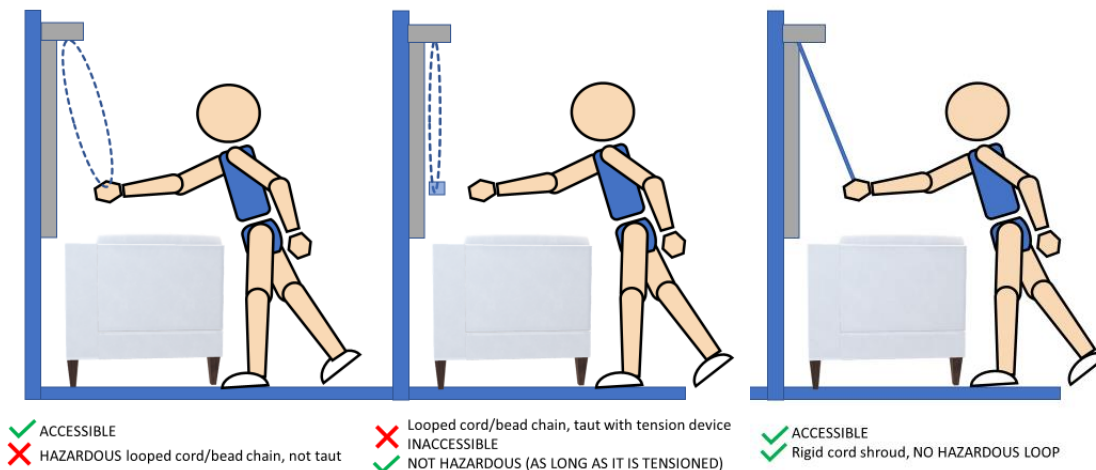


Figure 9. Operability of a window covering behind an obstruction.

Staff concludes that if continuous loops with tension devices remain as an option, in homes where accessing the cord is an issue, continuous loops may not be attached to the wall, particularly in locations where a continuous loop may be difficult to access when the cord is kept taut via a tension device. Staff assesses, based on the incident data, that it is reasonably foreseeable that not only a consumer, but also a professional installer, may follow a consumer's request to not install the tension device and remove it from the cord loop in homes where accessibility is an issue, rather than manufacturing the product with a safer option that will still

be accessible to a disabled user. CPSC received numerous comments regarding wheelchair users who need longer cords. Some businesses stated that they provide extra-long cords for wheelchair users so that they can operate the window covering. Staff again notes that tight grasping or pinching of cords is not an acceptable operation per ADA standards.

IV. Conclusion

ESHF staff assessed the new incidents and evaluated the effectiveness of the draft final rule for custom window coverings, and the balloted draft voluntary standard, to address the custom window covering incidents. ESHF staff also reviewed issues raised by commenters on the custom window covering NPR. Staff did not identify new hazard patterns in the data, assessed that if the incident window coverings complied with the draft final 15J rule, or the draft final rule for operating cords on custom window coverings under sections 7 and 9, as applicable, all of those incidents would have been addressed, while compliance with the balloted draft ANSI/WCMA 2022 standard would allow the risks associated with continuous loops used with tension devices to remain. Staff also concluded that having rigid cord shrouds or loop cord and bead chain restraining devices may allow an easier reach for certain locations compared to a continuous loop that is used with an external tension device.

As a modification to the NPR, staff recommends for the final rule, allowing (1) retractable cords that meet the recommended exposed cord requirements, (2) loop cord and bead chain restraining devices that meet the ANSI/WCMA 2018 test requirements in addition to meeting recommended test requirements (see Tab C, ESMC memo) to adequately address the strangulation risk and facilitate ease of use.

**Tab C: Draft Final Rule for Operating Cords on
Custom Window Coverings: Mechanical
Engineering Assessment of Balloted 2022
Revision to the Voluntary Standard ANSI/WCMA
A100.1 – 2018 and Final Rule Recommendations**



Memorandum

TO: Rana Balci-Sinha, Project Manager,
Division of Human Factors,
Directorate for Engineering Sciences

DATE: September 28, 2022

THROUGH: Caroleene Paul, Director,
Division of Mechanical and Combustion Engineering
Directorate for Engineering Sciences

FROM: Kevin Lee, Mechanical Engineer,
Division of Mechanical and Combustion Engineering,
Directorate for Engineering Sciences

SUBJECT: Draft Final Rule for Operating Cords on Custom Window Coverings: Mechanical Engineering
Assessment of Balloted 2022 Revision to the Voluntary Standard ANSI/WCMA A100.1 –
2018 and Final Rule Recommendations

I. Introduction

On January 7, 2022, the Commission published a proposed rule to establish a Safety Standard for Custom Window Covering Cords. 87 FR 1014. In Tab G of the October 6, 2021, Staff Briefing Package: Draft Notices of Proposed Rulemaking for Corded Window Coverings (NPR SBP) supporting the rule, ESMC staff concluded that the voluntary standard for window coverings, ANSI/WCMA-2018, does not adequately address the risk of strangulation associated with operating cords on custom window covering products. Specifically, ANSI/WCMA-2018 allows custom window covering products to have one or more operating cords that are longer than the 8-inch maximum length proposed in the NPR and to have continuous loop operating systems that, to address the strangulation hazard, rely on a consumer or installer to properly attach and maintain a tension device to the wall, and which may allow passage of a head probe in certain functional installations.

This memorandum provides staff's summary of the recent voluntary standards activities, an assessment of the July 15, 2022 balloted draft ANSI/WCMA A100.1 -2022 voluntary standard (draft ANSI/WCMA-2022), and recommendations for the draft final rule.

II. Discussion

A. Incident Data

Based on the memorandum from staff of Directorate for Epidemiology (Tab A), staff received 15 additional incident reports since the NPR SBP involving strangulations or near-strangulations on window covering cords among children up to 8 years of age. ESHF staff reviewed the incident data and did not identify any new hazard patterns, concluding that the 15 new incidents followed hazard patterns previously identified in the incident data for the NPR (Tab B).

B. Voluntary Standards Activity

After the publication of the NPR on January 7, 2022, WCMA brought forth several proposals to revise requirements for custom window covering cords in ANSI/WCMA-2018, resulting in a final draft revision that went to ballot on July 15, 2022. The ballot closed on August 15, 2022. Staff voted negative because of the inadequate requirements pertaining to tension devices used with continuous loop operating systems and insufficient requirements to address the strangulation hazard associated with retractable cords and tests for rigid cord shrouds and loop cord and bead chain restraining devices.¹ Below is a summary of voluntary standards activity since staff's submission of the NPR SBP:

- 12/2/2021 – WCMA held the first meeting after officially reopening the ANSI/WCMA-2018 using the ANSI procedures. With a stated goal of making custom window coverings safer, WCMA's stated focus areas for discussion included the following:
 - eliminating the standard cord lock system, tilt cords, and cord connectors to remove these free-hanging cords
 - adding the rigid cord shroud requirement to make operating cords inaccessible
 - reviewing retractable cords and continuous loops with tension devices.
- 1/19/2022 – WCMA presented their first revision of the ANSI/WCMA A100.1 – 2018 standard, which:
 - Eliminated free-hanging cords (cord lock system, tilt cords, and cord connectors)
 - Added testing to evaluate the internal cord accessibility of rigid cord shrouds
 - Proposed more stringent requirements for tension devices, such as requiring the tension device to maintain tension on the operating cords when properly installed and added a tension device warning stating the loss of tension in the continuous cord loop can create a strangulation hazard.
- 1/21/2022 – ANSI/WCMA meeting. Stakeholders discussed the proposed changes and inquired about additional requirements for cord retraction devices to make them safer, such as adding a pull force requirement or limiting exposed cord length under tension.
- 2/25/2022 – WCMA sent a draft copy of the second revision which:
 - Added a warning label for the single retractable cord lift systems
 - Proposed an additional requirement for manufacturers to attach the tension devices to the continuous cord loop by a permanent assembly method or the use of a tamper resistant fastener.
- 3/1/2022 – CPSC staff submitted a letter to WCMA providing comments regarding the draft revisions.² The letter stated staff concerns about the proposed custom window covering requirements for:
 - Continuous Cord Loop Operating Systems, which would still be allowed on custom window coverings

¹ CPSC staff letter is available at <https://www.regulations.gov/document/CPSC-2013-0028-3667>

² CPSC staff letter is available at <https://www.regulations.gov/document/CPSC-2013-0028-3652>

- Single Retractable Cord Lift systems, which would still allow an operating cord to be pulled to any length
- 3/2/2022 – ANSI/WCMA meeting. Discussed retractable cords and tension devices. CSPC staff and consumer groups advocated eliminating external tension devices due to the risk associated with continuous cord loops when the tension device is not attached, or attached improperly, comes off the wall, breaks, or is removed from the cord.
- 3/21/2022 – Consumer Federation of America, Independent Safety Consulting and Parents for Window Blind Safety sent a letter to WCMA,³ stating that they:
 - support the elimination of standard operating systems and multi-cord lift systems, because it mirrors the stock window covering requirements in the 2018 WCMA standard,
 - do not support tension devices as they are ineffective in addressing strangulation hazards because:
 - consumers can manually slide the tension device away from the headrail to continue using the window covering with an exposed hazardous continuous cord loop present,
 - consumers or installers can remove the tension device, exposing a hazardous continuous cord loop,
 - repeated use over time can result in the detachment of a tension device
 - CPSC’s data contains incidents involving tension devices that were not installed or improperly installed,
 - the technical committee has not provided any evidence proving that tension devices eliminate the continuous cord loop strangulation hazard,
 - support cord retraction devices with a maximum allowable cord length of 12 inches from the headrail.
- 4/5/2022 – WCMA sent a response to the above letter stating that the points raised in the letter would be discussed at the next meeting.⁴
- 4/27/2022 – WCMA sent a revised copy of the draft standard to steering committee members. The main change was to exclude the use of continuous cord loop operating systems with tension devices on horizontal blinds. Continuous cord loop operating systems remain an option on all other custom window covering types.
- 5/3/2022 – ANSI/WCMA meeting. Discussed the exposed length of a tensioned cord and pull forces for a retractable cord system.
- 7/15/2022 – WCMA issued a ballot, described below, to revise the ANSI/WCMA-2018.
- 8/15/2022 – ballot closed

³ Letter can be found at <https://www.regulations.gov/document/CPSC-2013-0028-3664>

⁴ Letter can be found at <https://www.regulations.gov/document/CPSC-2013-0028-3662>

C. Assessment of the Balloted Draft ANSI/WCMA A100.1-2022 Standard

1. Description and Assessment of Draft ANSI/WCMA A100.1 – 2022

Staff reviewed the balloted draft ANSI/WCMA A100.1 – 2022 standard and determined that requirements for stock window coverings remain unchanged. A detailed assessment of the balloted draft is in Tab I. To summarize, staff (1) finds the requirement to eliminate accessible free hanging operating and tilt cords adequate, (2) finds the requirements for single cord retraction devices adequate but recommends a maximum of 12 inches of stroke length, (3) assesses that the continuous cord loop operating systems used with tension devices are inadequate due to remaining hazardous scenarios, (4) finds the elimination of continuous cord loop operating systems for horizontal blinds adequate, (5) finds the elimination of cord loop lift systems adequate, (6) finds the requirement to test remote control battery compartments adequate, (7) finds the bending and axial torque testing of rigid cord shrouds adequate, (8) assesses that exempting curtains and draperies is inadequate due to incidents associated with those products and availability of safer technologies, and (9) finds the warning label for the retractable cords requirement adequate.

2. Status of Balloted Draft ANSI/WCMA A100.1-2022

On July 15, 2022, ANSI/WCMA opened a ballot to revise the standard under the ANSI process. The ballot closed on August 15, 2022. On August 15, 2022, CPSC staff voted negative on the ballot, and sent a letter explaining staff's negative vote.⁵ CPSC staff's negative vote explained concerns with the use of tension devices to prevent strangulations in continuous cord or bead chain loops and allowing a 36-inch stroke length for retractable cord lift systems. Staff recommended adding deflection tests for loop cord and bead chain restraining devices and reordering the durability testing to conduct UV exposure testing prior to operational cycle testing.

On September 23, 2022, WCMA rejected CPSC staff's negative vote and concerns of reliance of tension devices to prevent strangulations and allowing a 36-inch hazardous cord length for retractable devices.⁶ WCMA indicated that a voluntary standard is not required by law to prevent all hazards:

The CPSC's "oppose" vote appears to be based on the view that a voluntary standard must prevent all hazards. That is not the law.

CPSC staff interprets this statement to mean that WCMA does not believe it is necessary or required for the standard to prevent all deaths and injuries due to strangulation in custom window coverings. This voluntary standard is not required by law to prevent all hazards; however, staff assesses that the proposed revision leaves children exposed to an unreasonable risk for which solutions are readily available.

WCMA also stated that staff's position is flawed:

Rather CPSC's position is flawed in two key respects: (1) CPSC relies on conjecture and speculation about what could happen, without any evidence or data to support such concerns are reasonably likely to happen (or, indeed, that they have ever happened at all) and (2) CPSC tests its theoretical concerns in the context of completely eliminating,

⁵ CPSC staff letter is available at <https://www.regulations.gov/document/CPSC-2013-0028-3667>

⁶ <https://www.regulations.gov/docket/CPSC-2013-0028/document?sortBy=postedDate>

rather than adequately reducing, known or reasonably foreseeable risks of injury. CPSC further puts forth the flawed argument that only window covering designs that do not rely on the consumer or third-party installer can adequately address the hazard. Again, however, CPSC makes this assertion without providing any meaningful analysis or data on why the improvements made in the draft standard over the previous standard do not go far enough to adequately reduce the identified risk of hazard.

Staff disagrees with WCMA's assertion that staff's assessment is "flawed" and based on "conjecture and speculation". Staff assessment of the balloted requirement is provided in Tab I: Draft Final Rule for Operating Cords on Custom Window Coverings: Assessment of Draft ANSI/WCMA 2022 Balloted Standard.

In addition to CPSC staff, Consumer Federation of America, Independent Safety Consulting, LLC, and Parents for Window Blind Safety voted negative because the revised standard allowed the use of tension devices for continuous loop cords and a 36-inch stroke length for retractable cords. Negative votes also recommended safety requirements for remote control devices to contain button batteries and that requirements for warning label to be on the merchant's websites before adding the product to the cart.

On September 23, 2022, WCMA issued a recirculation ballot due to the negative votes cast for the original ballot. In response to CPSC staff's objection regarding the order of testing, WCMA's revised draft standard now reverts to the 2018 ANSI/WCMA standard's order for testing to require the UV test before the operational cycle test. In response to the recommendations to clarify the types of button batteries that are subject to the standard, WCMA's revised draft standard now requires that the applicable battery powered remote control devices meet the requirements of 15 USC 2056e and any subsequent standard developed by CPSC.

At this time, staff is not certain when or if the revised standard will be approved by WCMA and/or ANSI and published. Section 9(b)(2) of the CPSA requires the Commission to end rulemaking, and rely on a voluntary standard, if the voluntary standard is likely to result in the elimination or adequate reduction of the risk of injury and products within the scope of the standard likely substantially comply with the voluntary standard. Staff finds that neither the existing nor the balloted draft ANSI/WCMA standard eliminate or adequately reduce the risk of injury for operating cords on custom products because hazardous loops and hazardous lengths of cords remain accessible. In addition to the lack of adequate reduction of risk, for section 9(b)(2) of the CPSA to apply, such voluntary standard must be "in existence," meaning approved by the voluntary standards organization. ANSI/WCMA has not yet approved the balloted draft voluntary standard. Moreover, staff found that not all revisions to the voluntary standard are adequate to address the risk of injury. Because of the inadequate reduction of risk and the lack of "existence" of ANSI/WCMA A100.1-2022, staff advises that the Commission should not rely on the balloted draft voluntary standard and recommends that staff's analysis of the current standard, ANSI/WCMA-2018, discussions and correspondence with stakeholders through the voluntary standards process (placed on the rulemaking record), as well as comments on the NPR, be the basis for requirements in the draft final rule.

III. Evaluation ANSI/WCMA A100.1 – 2018, Recommended Requirements for the Draft Final Rule, and Technical Feasibility

As in the NPR, staff recommends that to adequately address the strangulation hazard for custom window coverings, the Commission should finalize the rule under sections 7 and 9 of the CPSA by:

- Applying the requirements for stock window coverings in section 4.3.1 of ANSI/WCMA A100.1 – 2018 to custom window coverings requires cordless, short cords (8 inches or less, or inaccessible cords); and
- allowing a rigid shroud that meets the requirements of the rule as a permissible method of making standard operating systems (pull cords) and continuous cord loop operating system inaccessible.

For the final rule, staff recommends two additional methods to meet the objectives of the rule. First, staff recommends allowing a second method of making operating cords inaccessible in the draft final rule, using a Single Retractable Cord Lift System, provided the retractable cord meets the requirements in the draft final rule to adequately address the strangulation hazard. Second, staff recommends that loop cord and bead chain restraining devices be an option to make continuous cord loop operating systems non-hazardous, provided such devices meet the requirements in the draft final rule. Tab D, Regulatory Language for Draft Final Rule, contains the exact language for the retractable cord and loop cord and bead chain restraining device requirements.

CPSC recommends these two modifications based on the comments, discussions with stakeholders during the ANSI meetings, feedback from consumer groups, and consideration of the Canadian window covering regulation that became effective in May 2022. CPSC received hundreds of comments from businesses opposing elimination of continuous cord loop operating systems to meet the requirements of the rule. These comments are summarized and addressed in Tab H. During conversations with industry and consumer advocates during the ANSI process, staff discussed performance requirements and tests for rigid cord shrouds and cord retraction devices. Meeting logs from the ANSI discussions have been placed on the docket for this rulemaking. Staff notes that consumer advocates also sent a letter.⁷ Finally, enforcement of Canada's regulations began in May 2022. Companies that sell in both Canada and the U.S. have already redesigned their custom offerings to be compliant with the Canadian regulations, which are substantively similar to those being recommended here, so already have stock of compliant product designed and ready to sell through small dealers and interior designers.

A. Requirements on Rigid Cord Shrouds

For the final rule, staff recommends finalizing the requirements for rigid cord shrouds as proposed in section 1260.2(b) and (c) of the NPR. Tab D, Regulatory Language for Draft Final Rule, contains the exact language for the requirements.

⁷ <https://www.regulations.gov/document/CPSC-2013-0028-3664>

1. Rationale

In the NPR, staff recommended applying stock window covering requirements to custom window coverings. Section 4.3.1 in the voluntary standard requires that window coverings be cordless, have short cords (8 inches or less), or have inaccessible operating cords, to eliminate the strangulation hazard. CPSC received hundreds of comments from businesses opposing elimination of continuous cord loop operating systems to meet the requirements of the rule. Neither the NPR nor section 4.3.1 eliminates non-hazardous continuous cord loop operating systems; manufacturers can still use standard operating systems (operating pull cords or continuous cord loop operating systems) if the cord is not accessible when tested to the requirements of the rule. The NPR allowed for a rigid cord shroud to make the cords on a continuous cord loop operating system or standard operating system inaccessible.

2. Feasibility of Rigid Cord Shrouds

The ANSI/WCMA-2018 standard defines a Cord Shroud as a device or material added to limit the accessibility of a cord or formation of a hazardous loop. Per section 4.3.2.5.2 of the 2018 standard, one of the ways that accessible cords (continuous cord loops and standard operating systems) can meet the standard is to contain the cords in a rigid cord shroud that meets the requirements in sections 6.3.1 (Appendix C: Test Procedure for Accessible Cords) and 6.3.2 (durability, impact, and operational cycle tests). Rigid cord shrouds must also meet the staff-recommended deflection and deformation tests described in 1260.2(b). In the NPR, staff determined that the use of rigid cord shrouds that meet the inaccessibility requirement is acceptable. Rigid Cord Shrouds (Figures 1 and 2) can be used to enclose continuous cord or bead chain loops. Rigid cord shrouds are incorporated into a window covering (Figure 1) or sold as retrofits to existing corded window coverings (Figure 2).

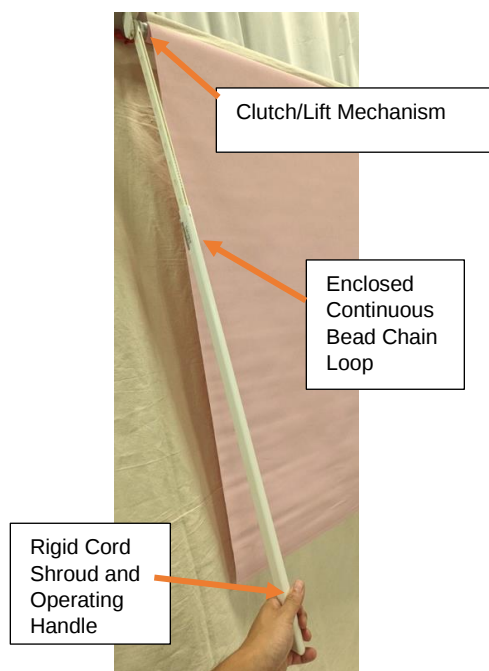


Figure 1. Rigid Cord Shroud on Stock Product.

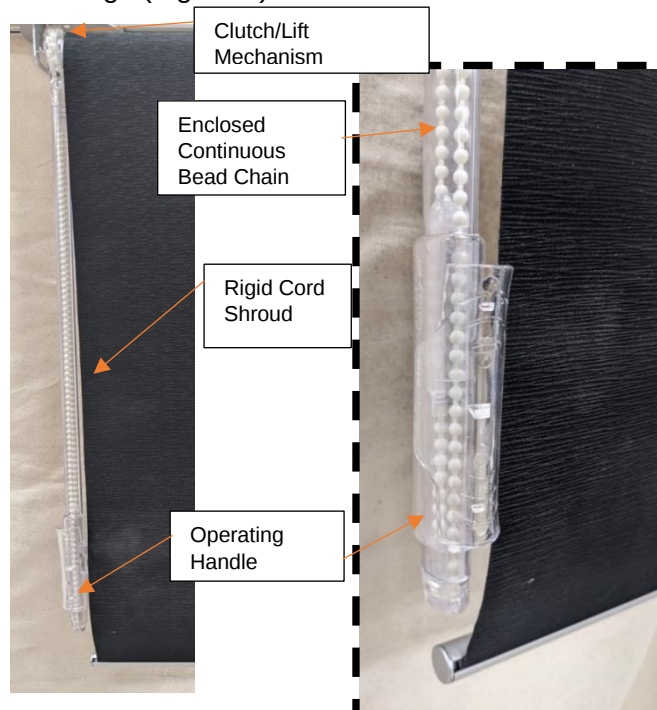


Figure 2. Rigid Cord Shroud Retrofit Kit for Custom or pre-2018 standard stock product.

Figures 3 and 4 demonstrate how to operate the currently available cord shrouds. For the stock product shown in Figure 1, the user slides the operating handle up the rigid shroud, as shown in Figure 3.

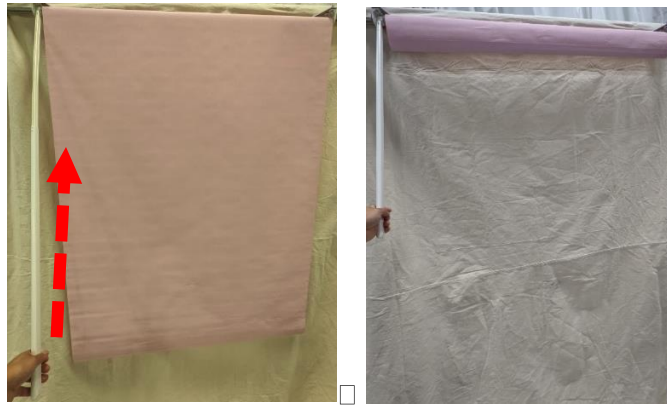


Figure 3. To raise/lower the window covering, the user slides the operating handle up/down.

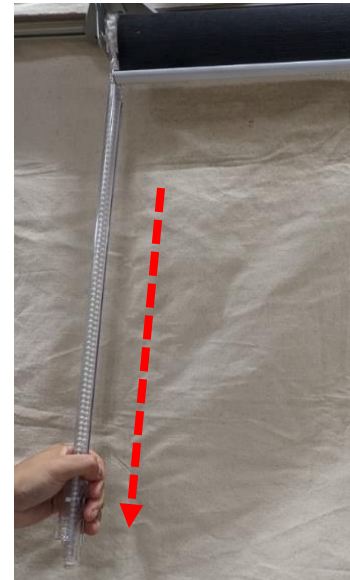
To raise the window covering using the retrofit rigid cord shroud shown in Figure 2, the user slides the operating handle up the rigid cord shroud as shown in Figure 4, step 1. Then while squeezing the top edge of the handle (Figure 4 step 2), the user pulls the handle down (Figure 4 step 3). The user performs the same steps to lower the window covering, except the bottom edge of the handle is pressed.



Step 1. Slide handle up



Step 2. Squeeze top edge of handle



Step 3. Pull handle down

Figure 4. To raise the window covering, the user first slides the handle to the top of the Rigid Cord Shroud. Then, while squeezing the top edge of the handle, the user pulls down, raising the shade. The user performs the same steps to lower the window covering, except the bottom edge of the handle is pressed.

Staff found two window coverings currently on the market that use rigid cord shrouds. Staff purchased and evaluated these products. Based on staff's examination and the available products on the market, a rigid cord shroud can operate window coverings up to 76.75 inches (stock) to 96-inches tall (retro-fit). After examining the current rigid cord shroud product line, engineering staff concludes that a rigid cord shroud can be designed to operate window coverings over 96 inches tall, if the shroud is made from more rigid materials such as metal, that meet the deflection requirements in the draft final rule.

Engineering staff evaluated two rigid cord shrouds that were similarly configured. Figure 5 shows the components that make up the rigid cord shroud retrofit kit described above. The product consists of five parts: (1) the head that attaches to the window covering, (2) the cord shroud that encapsulates (3) the bead chain, (4) the handle that operates the bead chain, and (5) the bottom pulley that keeps the cord loop taught. Figure 5 shows that the length of the rigid cord shroud is dependent on the shroud (part #2) and bead chain (part #3) length. Long shrouds over 8 feet may need to be made with a stiffer material other than plastic, such as aluminum to prevent excessive bending. The clutch and pulley components in the head (part #1) are sized to the desired lift capacity. Heavier shades usually require a larger clutch and pulley to provide a gear ratio that would make raising the shade easier. The size of the clutch and pulley will be similar to products that use a continuous cord loop lift system without a rigid shroud. The handle (part #4) consists of a mechanism inside the handle that engages the bead to either side of the loop, allowing the operator to raise or lower the shade. The handle would be the same for any length shroud because the handle is not dependent on the window covering's size or weight. The bottom pulley (part #5) keeps the bead chain taught and would be the same for any length shroud because the size of the pulley is dependent upon the size of the bead chain, which does not change with the height of the window covering.

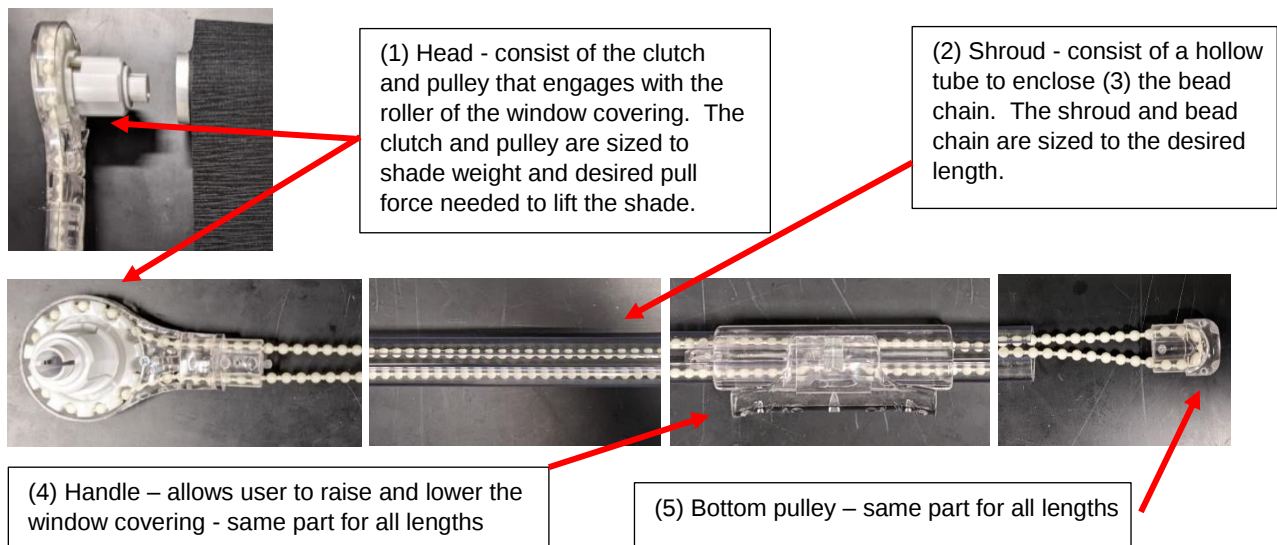


Figure 5. Components of a Rigid Cord Shroud.

Large rigid cord shrouds may require additional development and tooling for continuous cord loop operating systems with window shades over 96 inches tall; however, existing shrouds should not require major redesigns because these products have already been developed and only require adjustments to the head and the length of the cord shroud to fit the window covering. Based on engineering staff's review of the rigid cord shrouds currently on the market,

which includes shrouds on window coverings up to 96 inches, staff concludes that extensive development is unnecessary for custom manufacturers to incorporate rigid cord shrouds for window coverings that currently use a continuous bead chain operating system. Staff estimates that the development cost for rigid cord shrouds for 10 feet or larger window coverings would range from \$550K to \$1M over a 2-2.5-year period while it would be more if this period were shortened (See Appendix).

Based on staff's examination of rigid cord shrouds on the market and review of the comments, staff concludes that a continuous cord loop operating system with a rigid cord shroud could be manufactured to operate window coverings of all sizes and meet the requirements of the draft final rule. Rigid cord shrouds are available for window covering under 10 feet; therefore, these products do not require extensive research and development. If manufacturers have not started product development of shrouds for window coverings over 10 feet long, they may need additional development time (2 years) to produce these larger shrouds that meet the requirements in the draft final rule.

B. Requirements for Loop Cord and Bead Chain Restraining Devices

The ANSI/WCMA-2018 defines a Cord and Bead Chain Restraining Device as a device that prevents the creation of a hazardous loop from an accessible continuous operating cord. For the draft final rule, staff recommends that loop cord and bead chain restraining devices (as defined in section 1260.1(e) of the draft final rule) be a permissible way to make accessible continuous cord loop operating systems non-hazardous. Staff recommends modifying the performance requirements for loop cord and bead chain restraining devices, as set forth in section 6.5 of ANSI/WCMA-2018, to adequately address the risk of strangulation associated with accessible operating cords on custom window coverings. Specifically, staff recommends the following modifications to address the risk of injury:

- Add a deflection requirement for loop cord and bead chain restraining devices that prevents bending of the device to an extent that a child could wrap it around their neck that meet similar deflection requirements for rigid cord shrouds as stated in section 1260.2(d) of the draft final rule.
- Test one sample to section 6.5.2.2, Ultraviolet (UV) Stability, followed by section 6.5.2.1, Operational Cycle Test. This change will simulate real world conditions of a loop cord and bead chain restraining device exposed to sunlight and operated over the life of the window covering.

According to section 6.5 of ANSI/WCMA-2018, loop cord and bead chain restraining devices must meet durability, UV stability, and impact testing and must pass the hazardous loop testing procedure to confirm that a loop cord and bead chain restraining device prevents the creation of a hazardous loop from an accessible continuous cord loop. Staff recommends inclusion of these loop cord and bead chain restraining devices in the draft final rule as these would address the continuous cord loop strangulation hazard and are technically feasible. However, staff does not find the test sequence identified in section 6.5 representative of real-world scenarios and recommends adding a test to expose the loop cord and bead chain restraining device to UV light first, and then conduct the operational cyclic test. The test is similar to the test that rigid cord shrouds go through as described in section 6.6 of the ANSI/WCMA 2018 standard. Staff also recommends incorporating a deflection test that is similar to the one recommended in the NPR for rigid cord shrouds to improve the safety of these products. With these modifications to the draft final rule, continuous cord loop operating systems on custom window coverings have two methods to meet the final rule: (a) a loop cord and bead chain restraining device or (b) a

rigid cord shroud. TAB D, Regulatory Language for Draft Final Rule, contains the exact language for the requirements.

1. Rationale

In the NPR SBP, staff assessed that loop cord and bead chain restraining devices are designed and installed by the manufacturer onto the window covering, are integral to the window covering, and do not need to be attached on the wall to keep the loop taut. These loop cord and bead chain restraining devices are required to meet durability, UV stability, and impact testing and must pass the hazardous loop testing procedure to confirm that the loop cord and bead chain restraining device prevents the creation of a hazardous loop from an accessible continuous cord loop. The NPR requested comment on the adequacy of loop cord and bead chain restraining devices to address the risk of strangulation on custom window coverings. CPSC received hundreds of comments from businesses opposing elimination of continuous cord loop operating systems to meet the requirements of the rule. In response to comments, staff evaluated additional methods to make continuous cord loop operating systems non-hazardous. Additionally, CPSC staff, industry, and consumer advocates discussed loop cord and bead chain restraining devices in the WCMA Steering Committee meetings. On June 21, 2022; consumer groups sent a letter to WCMA recommending that loop cord and bead chain restraining devices used with continuous cord loop operating systems be deemed an acceptable method in the voluntary standard for custom window coverings to address the strangulation hazard.⁸

Staff recommends that the draft final rule allow loop cord and bead chain restraining devices defined in 1260.1(e) that meet staff-proposed test methods described in 1260.2(d).

2. Feasibility of Loop Cord and Bead Chain Restraining Devices

Staff is not aware of cord or bead chain restraining devices that are currently on the US market but has become aware of a version marketed internationally in the past. A CPSC contractor evaluated a similar device for the “Technical Feasibility and Cost Improvement Analysis of Safer Window Covering Technologies” report.⁹

Staff considers development of a loop cord and bead chain restraining device to have the same level of complexity as developing a rigid cord shroud, because the components are similar and previous products on the market confirm feasibility. Therefore, staff concludes that a continuous cord loop operating system with a loop cord and bead chain restraining device can be manufactured to operate window coverings of all sizes and meet the requirements of the draft final rule.

C. Modifications to Requirements for Single Retractable Cord Lift Systems

For the draft final rule, staff recommends allowing single retractable cord lift systems as an additional method to eliminate hazardous operating cords. However, staff does not recommend the retractable cord requirements in the ANSI/WCMA A100.1 – 2018 standard, because the

⁸ Meeting log can be found at <https://www.regulations.gov/document/CPSC-2013-0028-3654>.
Consumer groups’ letter can be found at <https://www.regulations.gov/document/CPSC-2013-0028-3664>

⁹ See “Tethered Loop Cord” on page 12 of the report. Report can be accessed at https://www.cpsc.gov/s3fs-public/012517_CPSC_S_15_0072_Phase5_Final_Report.pdf.

standard does not contain a maximum stroke length, allowing a child to pull a long enough cord to wrap around their neck.

To address the strangulation hazard, staff recommends the following modifications to the retractable cord requirements in the voluntary standard:

- Limit the stroke length for cord retraction devices to 12 inches measured from the bottom of the headrail.
- Require the mechanism to maintain full retraction when a 30-gram weight is attached to the Operating Interface (the part of the cord retractor that the operator pulls on) to ensure the device fully retracts the cord.
- Eliminate cords attached to the Operating Interface (the part of the cord retractor that the operator pulls on) to prevent the creation of a hazardous loop.

Tab D, Regulatory Language for Draft Final Rule, has the exact language for the proposed requirements.

1. Rationale

In the NPR SBP, staff determined that the retractable cord requirement, as written in ANSI/WCMA-2018, 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. The NPR requested 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. The Commission received at least 149 comments stating that retractable cords are safe and should not be eliminated. Moreover, the June 21, 2022 letter from consumer advocates to WCMA suggested that retractable cords be allowed with the following text: “All cords must be inaccessible. The maximum allowable cord length is 12 inches from the headrail.”¹⁰

After further consideration, discussion with stakeholders through the ANSI/WCMA process, and review of comments, for the draft final rule, staff recommends that retractable cords be a permissible method of making an operating cord inaccessible if the stroke length is limited to 12 inches from the bottom of the headrail. Staff concludes that it is extremely unlikely for a child to be able to climb to get to the exposed cord that is within 12 inches of the headrail while pulling the retraction device from the bottom and wrapping the tensioned cord around his/her neck (Tab B and Tab I). Staff determined that limiting the stroke length to 12 inches is reasonable and will maintain the system’s usability. Also, a 12-inch maximum stroke length is consistent with the rationale in the ANSI/WCMA 2018 standard (Appendix C) regarding inner cords:

“Inner cords on the window covering product that are within 12 inches of the bottom of the headrail are considered not accessible.”

2. Feasibility of Single Retractable Cord Lift System

CPSC staff determined that single retractable cord lift systems can be limited to a 12-inch stroke length while maintaining consumer usability. To raise a window covering with a single retractable cord lift system, the user pulls the cord retraction device downward, as shown in Figure 6. This drives the spool mechanism in the headrail to raise the shade. The distance the shade is raised is usually equal to the stroke length. For example, if the user pulls the retractor

¹⁰ <https://www.regulations.gov/document/CPSC-2013-0028-3664>

12 inches, the shade will raise 12 inches. Next, the user releases their pull on the device, allowing it to retract back up to the headrail. Then the user can repeat the pull process until the shade is fully raised.



Figure 6. Single Retractable Cord Lift System.

To lower a window covering, the user pulls the operating interface laterally to activate the switch allowing the shade to lower (Figure 7).

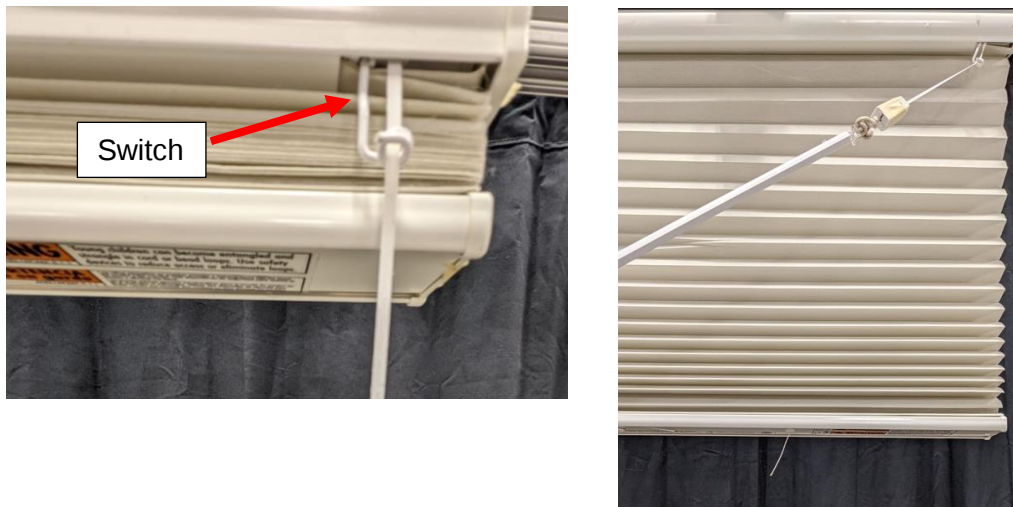


Figure 7. Activating the switch to lower the shade.

Currently, one manufacturer offers a cord retractor operating system that uses a 24-inch stroke length. Reducing the stroke length of this type of cord retractor to 12-inches would require the user to perform twice as many strokes to lift the shade. For example, if a shade covers a 5-foot window, the user will pull a 12-inch stroke retractor five times to raise the shade from a fully lowered position to a fully raised position.

IV. Conclusion

As stated in the NPR, staff concludes that continuous cord loop operating systems with external tension devices that are attached on a wall or window sill pose a strangulation hazard because they require the consumer or installer to properly install them to eliminate the hazard, and because external tension devices can break, be removed, or not be installed. However, passive devices that make an operating cord inaccessible, meaning those installed on the product itself by the manufacturer that cannot be easily defeated, uninstalled, or break, such as a rigid cord shroud for operating cords and a loop cord or bead chain restraining device on a continuous cord loop operating system, eliminate the strangulation hazard and the need to rely on a consumer or installer to make the product safe as installed. Therefore, staff recommends for the draft final rule that the requirements for custom window coverings that use a continuous cord loop operating system be required to incorporate a loop cord and bead chain restraining device or rigid cord shroud, and to meet the recommended tests for rigidity and durability specified in Tab D, as a means of making hazardous operating cords durable and inaccessible to children.

Additionally, staff recommends allowing a retractable cord, as modified in the draft final rule (see Tab D), to be an additional way to remove hazardous accessible operating cords on a custom window covering. As stated in the NPR SBP, page 48, “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.” After a review of comments and further consideration, staff concludes that limiting the maximum stroke length for a Cord Retraction Device to 12-inches measured from the bottom of the headrail would address the strangulation hazard and is technically feasible. Accordingly, the draft final rule includes modified requirements for a retractable cord as an additional method of meeting the mandatory standard.

Appendix: Development Process and Cost Estimate for Rigid Cord Shroud

A. Development Process

Figure 1 shows a top-level generic product design process. For this analysis, staff considered most manufacturers were in Phase III, Engineering Design, Development and Testing Phase (EDDTP) (shown in the box of figure A1) for development of a rigid cord shroud for their continuous cord loop operating systems.

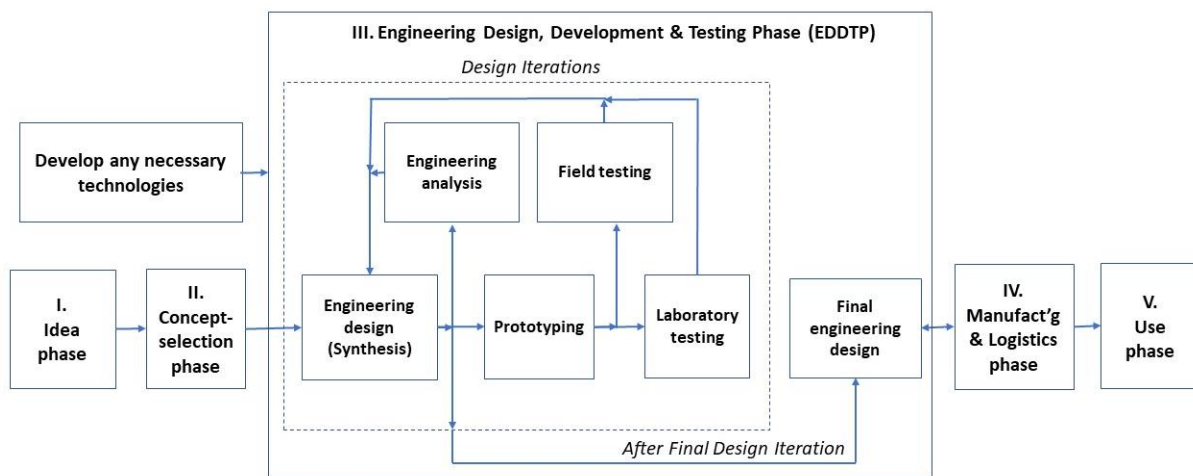


Figure 1. Product Design Process. Ref: D'Entremont, K. (2021). *Engineering ethics and design for product safety*. The McGraw-Hill Companies, Inc.

Engineering Sciences (ES) Staff used this process to estimate the time and cost to market for design, development, and production of a rigid cord shroud used with a continuous cord loop operating system. The analysis assumed the product development is performed in-house by the window covering manufacturer. If the manufacturer outsources the product design, then the same process would be used by the supplier except the manufacturer's role would be to ensure the supplier meets product specifications and quality requirements.

B. Idea and Concept Selection Phase

The ANSI/WCMA standard establishes Rigid Cord Shrouds as a method to make continuous loop operating systems safe without the use of tension devices. A comment made by a manufacturer of continuous cord loop clutch mechanisms (<https://www.regulations.gov/comment/CPSC-2013-0028-3505>) stated that they are in development of rigid shrouds that cover operating cords, in whole or in part, and had previously produced a shroud but have since withdrawn it from the market. The commenter did not estimate cost or time required to develop rigid cord shrouds.

Also, at ANSI/WCMA meetings during the past several years, participants have discussed use of shrouds on continuous cord loop operating systems. 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 draft final rule 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 at the time of the NPR, WCMA had not balloted the requirements.¹¹ Since the NPR, WCMA has balloted these requirements, but this ballot has not passed nor has the new standard been published. Staff is also aware of rigid cord shrouds available to retrofit window coverings that use a continuous bead chain loop and stock products that incorporate a rigid shroud into their continuous cord loop shade. Because of the current availability of stock and retrofit the rigid cord shrouds on the market, staff considers this option as the most likely path of compliance to the draft final rule. Staff determined that Phase I (idea) and Phase II (concept selection) have been completed or nearly completed by many custom window covering manufacturers and suppliers.

C. Engineering Design Development & Testing Phase (EDDTP) of a Rigid Cord Shroud

CPSC staff considered a rigid cord shroud to be a relatively low technology product consisting of low cost injected molded plastic. Shrouds may need to use metal components such as aluminum or steel extrusions, stampings, or machining for longer shrouds. Available rigid cord shrouds are attached to the roller at the headrail as shown in Figure 2. The clutch mechanism is driven by a continuous cord loop over a pulley. Staff found clutches with pulley diameters from 1.5 inches to 3.5 inches (Figure 3) depending on the lift capacity of the clutch. A clutch system with a 3.5-inch pulley could lift a 53-pound shade and smaller clutch systems with a pulley 1.5 inches lifted a 6-pound shade.

¹¹ Task group meeting logs can be found at:
https://cpsc.gov/Newsroom/FOIA/ReportList?month=all&year=2018&nfr_type=All&title=%22wcma+rigid+cord+shroud+task+group+meeting%22

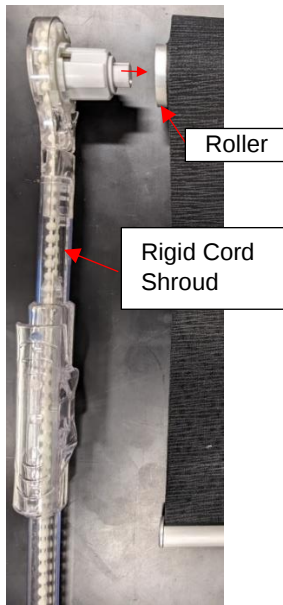


Figure 2. Rigid Cord Shroud Attached to the Shade Roller.

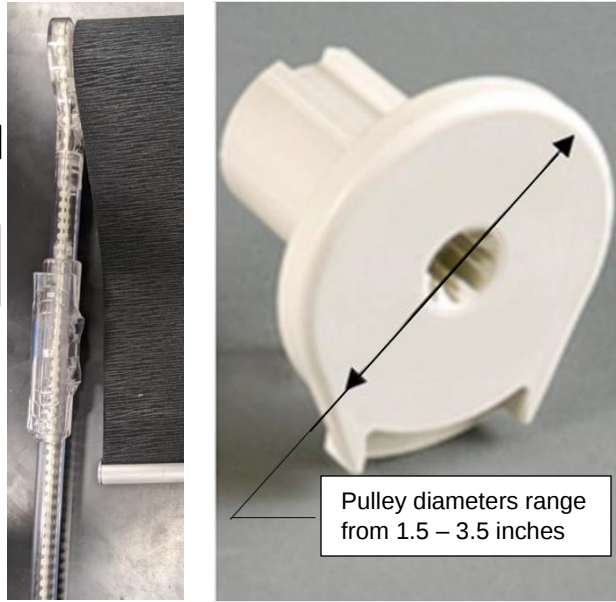


Figure 3. Clutch Component.

In addition, cut-to-size rigid shroud extension could be fitted between the clutch component and existing rigid cord shroud. Staff is aware of products such as clutch adaptors that are on the market that accommodate various roller tube sizes. Staff concludes that a rigid cord shroud with different size pulley heads (interface between shroud and clutch mechanism), could be fitted onto all continuous cord loop operating systems that use a clutch. Therefore, a manufacturer could develop one basic Rigid Cord Design with a few pulley head sizes to accommodate different shade weights. Manufacturers could use this process to make all product lines that currently use continuous cord loop operating systems with inaccessible operating cords.

D. Product Development Estimated Cost and Time Requirements

Based on comments and product development cycles for other consumer products, staff estimates 12 months to complete Phase III (Engineering Design, Development & Testing) and an additional 12 month to complete Phase IV (Manufacturing & Logistics) and V (Use) to develop a rigid cord shroud. CPSC also received several comments from manufacturers about difficulties due to supply chain disruptions and production delays with their Asian manufacturers. Therefore, staff estimates an additional 6-months if supply chain issues continue. Staff estimated the development of a rigid cord shroud would require a design team consisting of a one lead design engineer, one manufacturing engineer, one engineering technician, a machinist for prototyping, and an engineer to design the injection mold and other tooling to fabricate the rigid cord shroud. Staff estimated a 2 - 2.5-year development time with associated labor costs as shown in Table 1 below.

Table 1. Rigid Cord Shroud Development Cost Estimate.

Rigid Cord Shroud Development Resource	Phase III (12 month)	Phase IV, V (12 – 18 month ¹)	Total cost
Lead design Engineer Mechanical Engineers (bls.gov) mean annual wage \$97,000/year	12 months \$97K	6 months \$49K	18 months \$146K
Manufacturing Engineering Technician Industrial Engineering Technologists and Technicians : Occupational Outlook Handbook: : U.S. Bureau of Labor Statistics (bls.gov) mean annual wage \$60,220/year	4 months \$20.07K	12 months \$60.22K	16 months \$80.29 K
Test Engineering Technician Mechanical Engineering Technologists and Technicians : Occupational Outlook Handbook: : U.S. Bureau of Labor Statistics (bls.gov) mean annual wage \$60,460/year	4 months \$20.15K	2 months \$10.10K	6 months \$30.23K
Prototyping and fabrication (machinist) Machinists and Tool and Die Makers: Occupational Outlook Handbook: U.S. Bureau of Labor Statistics (bls.gov) mean annual wage \$47,940/year	3 months \$11.98K	1 month \$4.00K	4 months \$15.98K
Mold Designer Mechanical Engineers (bls.gov) mean annual wage \$97,000/year	2 months 16.17K	10 months 80.83K	12 months \$97K
Cost of mold²		\$80K	\$80K
Total direct cost	\$165.38K	\$284.13K	\$449.50K
Overhead cost = 75%	\$124.03K	\$213.09K	\$337.128K
Total Cost	\$289.41K	\$497.22K	\$786.63K
¹ If Supply Chain issues persists, staff estimates an additional 6 months for production.			
² 2.5 x \$31,261; estimated cost for molds by Panchal, Manufacturing Cost Analysis Cordless vs. Corded Window Covering Products, 2016, (https://www.cpsc.gov/s3fs-public/ManufacturingCostAnalysis.pdf)			

Staff estimates a cost of \$787K over a 2-2.5 -year period to develop a production ready Rigid Cord Shroud.

Staff notes that several commenters provided specific timelines for the manufacturing phase that applies to Phase IV shown in Table 1. Custom product manufacturers commented that overseas third-party suppliers will need sufficient time to develop new tooling such as injection molds and to implement manufacturing line changes to assemble new parts. Transit of new parts from Asia to the U.S for final assembly into new window coverings requires added time to build inventory to maintain supplies for consumers. Manufacturers estimated a 9 – 20 months product development and production cycle (see Table 1a below). Manufacturing delays due to impacts such as supply chain issues, work hours redirected to training operators on new assembly processes and other unforeseen problems are also likely to occur. CPSC staff considers a 12 month effective date to be reasonable time frame for manufacturers to come into compliance with the draft final rule for custom window coverings under 10 ft long.

Table 1a. Comments of Estimated Time to Produce New Product

Activity	Comment 2013-0028-3452	Comment 2013-0028-3587
Acquire and implement new tooling	22-25 weeks	4-12 months
Air freight logistics time for tooling	8 weeks	
Ocean transit		3-4 months
Manufacturing (build component inventory)	6-16 weeks	2-4 months
Total time	36-57 weeks, 9 – 14.5 months	9-20 months

E. Comparison of Staff's cost estimate to comments:

Most commenters did not describe in detail their product design process. However, using the generally accepted product development phases and average labor costs, staff was able to estimate the times and costs of 2 major manufacturers.

A comment made by a major custom manufacturer of custom window coverings (<https://www.regulations.gov/comment/CPSC-2013-0028-3352>) estimated that a new product has a 32–40-month new product development cycle.

A comment made by another major custom window covering manufacturer (<https://www.regulations.gov/comment/CPSC-2013-0028-3587>) estimated \$1M-3M cost to redesign a single product line and another \$1M for capital equipment, totaling \$2M-\$4M. The manufacturer multiplied this cost for every product line. The manufacturer added an additional \$1M-\$2M to accelerate product development to within 2 years. Including other expenses such as marketing and IT, the total development cost equaled \$77.06M-125.89M over 16 product lines or 4.8M – \$7.86M per product redesign.

During its rulemaking to prohibit hazardous window covering cords, Health Canada's analysis ([Canada Gazette, Part 2, Volume 153, Number 9: Corded Window Coverings Regulations](#)) estimated a 6- month product development cycle. Health Canada's cost analysis assumes one full time engineer for 6-months at \$35.67/hour totaling \$37,196 (2017 Canadian). Tooling cost by an overseas manufacturer was estimated to require 2,000 hours at \$49.35/hour totaling \$98,700 (2017 Canadian). Total product development cost would be \$135,896 (2017 Canadian) or \$104,639 (2017 USD)¹² per manufacturer. Adjusting for inflation, the 2022 cost is \$121.140.¹³ Health Canada then multiplied these costs over 107 Canadian manufacturers to estimate a total cost of \$3.98 million (2017 Canadian) for research and development and \$11.1 million (2017 Canadian) for tooling.

¹² Canadian dollar to USD Exchange Rate in 2017 = 0.77

¹³ Inflation calculation using [CPI Inflation Calculator \(bls.gov\)](https://www.bls.gov/calculators/cpi-inflation-calculator)

One comment from a manufacturer of rigid cord shrouds (<https://www.regulations.gov/comment/CPSC-2013-0028-3356>) stated that Health Canada's estimate for research and development and tooling should be zero. The commenter stated:

- *Research & Development cost of \$3.98 million is unnecessary and should default to \$0. Every Manufacturer either already has a cordless alternative or has been working on one and has already incurred this cost regardless of a new Regulation.*
- *Tooling cost estimate of \$11.1 million is unnecessary and should default to \$0. Every Manufacturer must build new tools about every 5 to 7 years as a normal course of their business regardless of current or new design.*

Staff's estimate of \$787K to develop a rigid cord shroud was close to the industry commenters' low end estimate of \$1M to redesign a single product line. Staff determined that a rigid cord design with different head sizes to accommodate various clutch pulleys will cover all product lines that currently use continuous cord loop operating systems, rather than developing different shrouds for each product line as indicated by one commenter (<https://www.regulations.gov/comment/CPSC-2013-0028-3587>). Table 2 is a comparison of staff's development cost and time estimates compared to estimates received from commenters on the NPR and Health Canada's analysis.

Table 2. Product development time and cost estimates.

Development of Rigid Cord Shroud	Major Custom Window Covering Manufacturer https://www.regulations.gov/comment/CPSC-2013-0028-3352	Major Custom Window Covering Manufacturer https://www.regulations.gov/comment/CPSC-2013-0028-3587	Rigid Cord Shroud Manufacturer https://www.regulations.gov/comment/CPSC-2013-0028-3356	Health Canada Regulation Canada Gazette, Part 2, Volume 153, Number 9: Corded Window Coverings Regulations	CPSC Staff
Product Development time	32-40 months	27-48 months	0 months	6 months	24-30 months
Development Cost	No estimate	\$4.8M-\$7.86M per product line	\$0	\$121,140 (2022 USD)	\$787,000

Comments on development cost and time ranged from no cost to \$7.86M per product line and a development time from 0 months to 48 months. If a 30% accuracy range is applied to staff-estimated development cost of \$787,000, the cost would range from \$550K to \$1M. The development time remains the same, 2-2.5 years.

F. Conclusion

Staff concludes that the development cost of rigid cord shrouds for continuous loop operating systems would range from \$550,000 to \$1M over a 2-2.5-year time. Staff assumes manufacturers have developed concepts but have not started product development or tooling for products. Staff also assumes the development cost and time for a new rigid cord shroud would be the same whether the development is done in-house or outsourced. However, if a

manufacturer is further along in the development phase and has existing fabrication and production capability in place, development time and cost would be reduced.

Tab D: Recommended Regulatory Text for Draft Final Rules

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 finalizing, as proposed, the addition of 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*) has the same meaning as 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” prior to distribution in commerce, subsequent changes to the product do not change its categorization.

(g) *Custom window covering* (also known as a *custom blind, shade, or shading*) has the same meaning as 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 finalizing the proposal that the requirements for operating cords on stock products in the ANSI/WCMA-2018 standard be extended to custom window coverings. Additionally, staff recommends finalizing the rigid cord shroud requirement, as a means to meet the inaccessibility option in ANSI/WCMA-2018 section 4.3.1.3, with minor clarifications. For the final rule, staff also recommends allowing a retractable cord as an option to meet the inaccessibility option, as long as the requirements as set forth below, are met. Staff also recommends adding a final option for a non-hazardous cord in the final rule, and that is to allow a *Cord and Bead Chain Restraining Device* that meets the requirements set forth below. Accordingly, for the final rule, staff recommends adding a new part to title 16, chapter II of the Code of Federal Regulations, as follows:

PART 1260-SAFETY STANDARD FOR CUSTOM WINDOW COVERING PRODUCTS

Sec.

1260.1 Scope and definitions.

1260.2 Requirements for custom window covering products.

1260.3 Prohibited stockpiling

1260.4 Findings.

1260.5 Incorporation by Reference

Authority: 15 U.S.C. 2051(b), 2056, 2058, 2063(c), 2076(e)

§ 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 (incorporated by reference, see § 1260.5):

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

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

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

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

(5) *Cord retraction device* has the same meaning as defined in section 3, definition 2.08, of ANSI/WCMA A100.1 – 2018.

(c) *Rigid Cord Shroud* is a cord shroud that is constructed of inflexible material, rendering the cord inaccessible as defined in Appendix C, of ANSI/WCMA A100.1 – 2018, to prevent children from accessing a window covering cord.

(d) *Retractable Cord* is a cord that extends when pulled by a user, and fully retracts when the user releases the cord, rendering the cord inaccessible as defined in Appendix C, of ANSI/WCMA A100.1 – 2018.

(e) *Loop Cord and Bead Chain Restraining Device*. A device, integrated to and installed on the window covering, that prevents the creation of hazardous loop from an accessible continuous operating cord.

(f) *Operating Interface*. The part of the window covering that the user physically touches or grasps by hand or a tool to operate the window covering, for example a wand to tilt the slats of the product or the bottom rail to raise or lower the product.

§ 1260.2 Requirements for operating cords on custom window coverings.

(a) *Requirements for operating cords*. Each custom window covering shall comply with section 4.3.1 or 4.3.2.5.2, 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) (incorporated by reference, see § 1260.5).

(b) *Requirements for rigid cord shrouds*. If a custom window covering complies with paragraph (a) using a rigid cord shroud, the rigid cord shroud shall meet the requirements in section 6.3, of ANSI/WCMA A100.1 – 2018 and shall not have an accessible cord when tested for cord accessibility using the test methods defined in paragraphs (b)(1) and (2).

(1) *Test methods for rigid cord shrouds: Center load test*.

(i) 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.

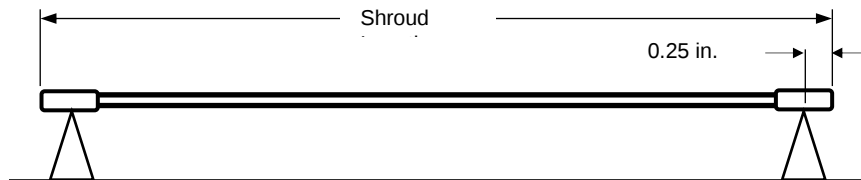


Figure 1. Rigid Cord Shroud Test Set-up.

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

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

(iv) 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.

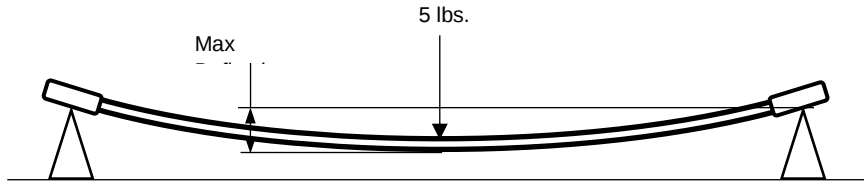


Figure 2. Rigid Cord Shroud Center Load Test and Deflection Measurement.

(v) 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.

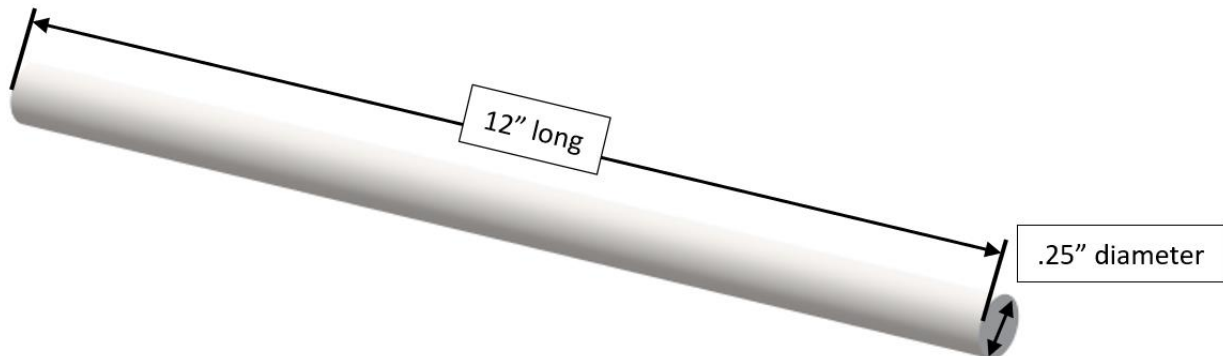


Figure 3. Cord Shroud Accessibility Test Probe.

(2) *Test methods for rigid cord shrouds: Axial torque test.*

(i) Mount one end of the rigid cord shroud and restrict the rotation along the axial direction.

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

(iii) 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.

(c) *Requirements for cord retraction devices.* If a custom window covering complies with paragraph (a) using a cord retraction device, the retraction device shall meet the requirements in paragraphs (c)(1) through (4).

(1) When a 30 grams mass is applied to the Operating Interface, the Cord Retraction Device shall maintain full retraction of the Retractable Cord such that the Retractable Cord is not accessible per Appendix C of ANSI/WCMA A100.1 – 2018.

(2) The maximum stroke length for a Cord Retraction Device is 12 inches measured from the bottom of the headrail.

(3) The Operating Interface for Cord Retraction Devices may not be a Cord of any length including a Short Static or Access Cord. It may be a ring and pole, a wand or any other design that cannot bend on itself, eliminating the potential of creating a hazardous loop.

(4) The Cord Retraction Device shall have a service life of at least 5,000 cycles after exposed portions or components have been subjected to 500 hours of UV exposure per AATCC Test Method 16-2004, Option 3 of ANSI/WCMA A100.1 – 2018.

(d) *Requirements for Loop Cord and Bead Chain Restraining Devices.* If a custom window covering complies with paragraph (a) using a Loop Cord and Bead Chain Restraining Device, the Loop Cord and Bead Chain Restraining Device shall meet the requirements in section 6.5, of ANSI/WCMA A100.1 – 2018 with an additional test as defined in paragraph (e)(l), and shall not form a hazardous loop when tested for a hazardous loop using the test methods defined in paragraphs (d)(2) and (3).

(1) *Test methods for Loop Cord and Bead Chain Restraining Device: UV Stability and Operational Cycle test.* One sample Loop Cord and Bead Chain Restraining Device shall be tested to section 6.5.2.2 of ANSI/WCMA A100.1 – 2018, UV Stability, followed by section 6.5.2.1 of ANSI/WCMA A100.1 – 2018, Operational Cycle Test.

(2) *Test methods for Loop Cord and Bead Chain Restraining Device: Center load test.*

(i) Support each end of the Loop Cord and Bead Chain Restraining Device, 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 4.

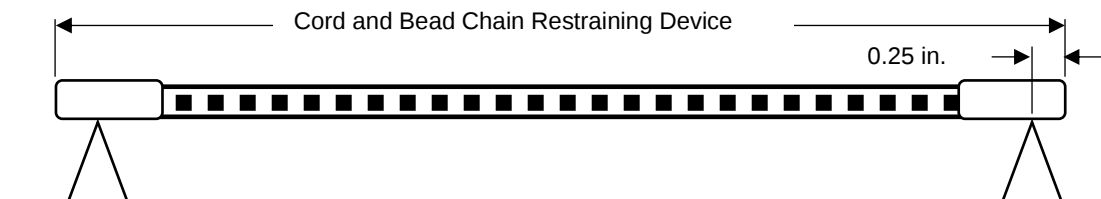


Figure 4. Cord and Bead Chain Restraining Device Test Set-up.

(ii) Apply a 5-pound force at the center of the Cord and Bead Chain Restraining Device for at least 5 seconds as shown in figure Y.

(iii) Measure the maximum deflection of the Cord and Bead Chain Restraining Device, while the 5-pound force is applied.

(iv) For Cord and Bead Chain Restraining Device 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 5.

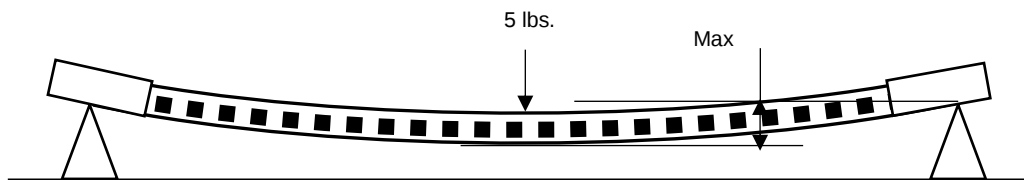


Figure 5. Loop Cord and Bead Chain Restraining Device Center Load Test and Deflection Measurement

(v) While continuing to apply the 5-pound force, determine if the cord(s) create an opening between the cord and the restraining device. If the Hazardous Loop Head Probe (ANSI/WCMA A1001-2018, figure D1) can pass through the opening, the opening is considered a hazardous loop.

(3) Test methods for Cord and Bead Chain Restraining Devices: Axial torque test.

(i) Mount one end of the *Cord and Bead Chain Restraining Device* and restrict the rotation along the axial direction.

(ii) Apply a 4.4 in-lb. (0.5 Nm) torque along the other end of the Cord and Bead Chain Restraining Device for 5 seconds. While continuing to apply the torque, determine if the cord(s) if the cord(s) create an opening between the cord and the restraining device. If the Hazardous Loop Head Probe (ANSI/WCMA A1001-2018, figure D1) can pass through the opening, the opening is considered a hazardous loop.

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.

[Findings and Incorporation by Reference are part of the draft final rule.]

1260.5 Incorporation By Reference.

[Incorporation by Reference is part of the draft final rule.]

1260.6 Severability.

[Severability is part of the draft final rule.]

Tab E: Draft Final Rule for Window Covering Cords Under Section 15(j) of the CPSA: Window Coverings Small Business Considerations



Memorandum

TO: Rana Balci-Sinha, Project Manager,
Division of Human Factors,
Directorate for Engineering Sciences

DATE: September 28, 2022

THROUGH: Alexander P. Moscoso, Associate Executive Director,
Directorate for Economic Analysis

FROM: Mark Bailey, Directorate for Economic Analysis

SUBJECT: Draft Final Rule for Window Covering Cords Under Section 15(j) of the CPSA: Window Coverings Small Business Considerations

I. Introduction

This memorandum addresses small business considerations related to a draft final rule under section 15(j) of the Consumer Product Safety Act (CPSA). The Commission did not receive any comments opposed to the rule, or on the small business considerations of the proposed rule. Accordingly, staff recommends finalizing the rule as proposed, and that the Consumer Product Safety Commission (CPSC or Commission) determine that window covering products, as defined in the final rule, that do not conform to one or more readily observable characteristics set forth in the ANSI/WCMA A100.1 – 2018, American National Standard for Safety of Corded Window Covering Products (ANSI/WCMA A100.1 – 2018) voluntary standard present a substantial product hazard (SPH).

II. 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 is effective in reducing the risk of injury; and (c) products substantially comply with the requirements in the voluntary standard. On January 7, 2022, the Commission published a proposed rule to deem as an SPH, “stock” window covering products that do not conform to one or more readily observable characteristics in WCMA A100 1.2018 and “custom” window covering products that do not conform to the inner cord provisions in WCMA A100 1.2018 section 6. 87 FR 891.

In the NPR, the Commission found that ANSI/WCMA-2018 adequately addresses the risk of injury associated with hazardous cords on “stock” window coverings and inner cords on both “stock” and “custom” window coverings. ANSI/WCMA-2018 has been in effect since December 2018. Staff noted in the NPR staff briefing package (SBP) that many manufacturers began offering cordless stock products before the standard went into full effect.

CPSC received three comments on the section 15(j) rule during the comment period, and two comments before the comment period began, with all of the commenters supporting the rule.

Based on staff's assessment of the ANSI/WCMA-2018 standard and all comments in support of the rule, staff recommends finalizing the rule as proposed. If the Commission votes to promulgate the draft final rule under section 15(j) of the CPSA, the rule would make failure to comply with one or more of the following readily observable characteristics required in WCMA A100.1-2018 a reason for deeming stock window coverings an SPH.

- *Stock window coverings* that fail to comply with one or more of the following requirements of ANSI/WCMA A100.1 – 2018:
 - 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
 - Inner cord requirements in section 4.5.
- *Custom window coverings* that fail to comply with inner cord requirements in section 4.5 of ANSI/WCMA A100.1 – 2018.
- *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.

Window coverings that fall within the scope of ANSI/WCMA-2018 and the draft final 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.

III. Market Information

The draft final rule would apply to operating cords on all stock window covering products, and inner cords on both stock and custom window coverings, as defined in the draft final rule, consistent with the definitions in ANSI/WCMA-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 2021 was approximately \$6.7 billion.¹ (Euromonitor 2022a) CPSC staff estimates that firms classified as small by Small Business Administration (SBA) guidelines account for \$3.9 billion annually, and that none of these firms account for more than three percent of total market share by revenue. (Euromonitor 2022b)

IV. 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).² Importers of window coverings are generally

¹ 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)

² 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. Retailers that sell window coverings could also be listed under a few other products codes, but it is unlikely that window coverings revenues account for a significant share of the total revenues.

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 fewer than 1000 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 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. (Bailey 2021) Nearly all of the 302 small manufacturers identified are far below the 1000 employee SBA threshold as a majority are firms with under 5 employees. The window coverings produced by these firms would likely meet the voluntary standard definition of a custom product, because many are hand crafters and produce products to a specific customer order.

V. Small Business Impacts

The draft final rule designating window covering products that do not conform to ANSI/WCMA-2018 provisions concerning stock products and custom product inner cord accessibility 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 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.³ Samples tested by CPSC staff also indicate a high level of conformance in custom products related to inner cord accessibility.⁴

Firms already conforming to the standard would experience no impact on their manufacturing costs by the draft final 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. (Bailey 2021) Based on the level of compliance, staff concludes it unlikely that a substantial number of small manufacturers will experience this cost impact. Staff does not expect retailers and importers 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.

VI. Summary

The draft final rule would make failure to comply with one or more readily observable characteristics required in ANSI/WCMA-2018 as specified in the regulatory text a reason for

³ CPSC staff conducted in person unannounced visits to window covering retailers, manufacturers, and importers in major metropolitan areas and only found one instance of non-compliance, in which a stock product was available with accessible cords. Two other non-compliance cases were found concerning warning/manufacture labels but were related to a custom product and out of scope.

⁴ Staff tested custom product samples using test parameters defined in WCMA A100 1.2018 which involved the use of a cord accessibility probe.

deeming stock and custom window coverings an SPH. There are a large number of small businesses in the market and nearly all of these firms comply with the sections of the voluntary standard concerning these observable characteristics. CPSC received only comments in support of this action. The commission could certify the rule as proposed.

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Bailey, Mark, 2021. *Preliminary Regulatory Analysis of the Draft Proposed Rule for Custom Window Coverings* U.S. Consumer Product Safety Commission, 2021.

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Tab F: Final Regulatory Analysis Report by the Directorate for Economic Analysis



United States
Consumer Product Safety Commission

Final Regulatory Analysis

Draft Final Rule for Custom Window Coverings

September 28, 2022

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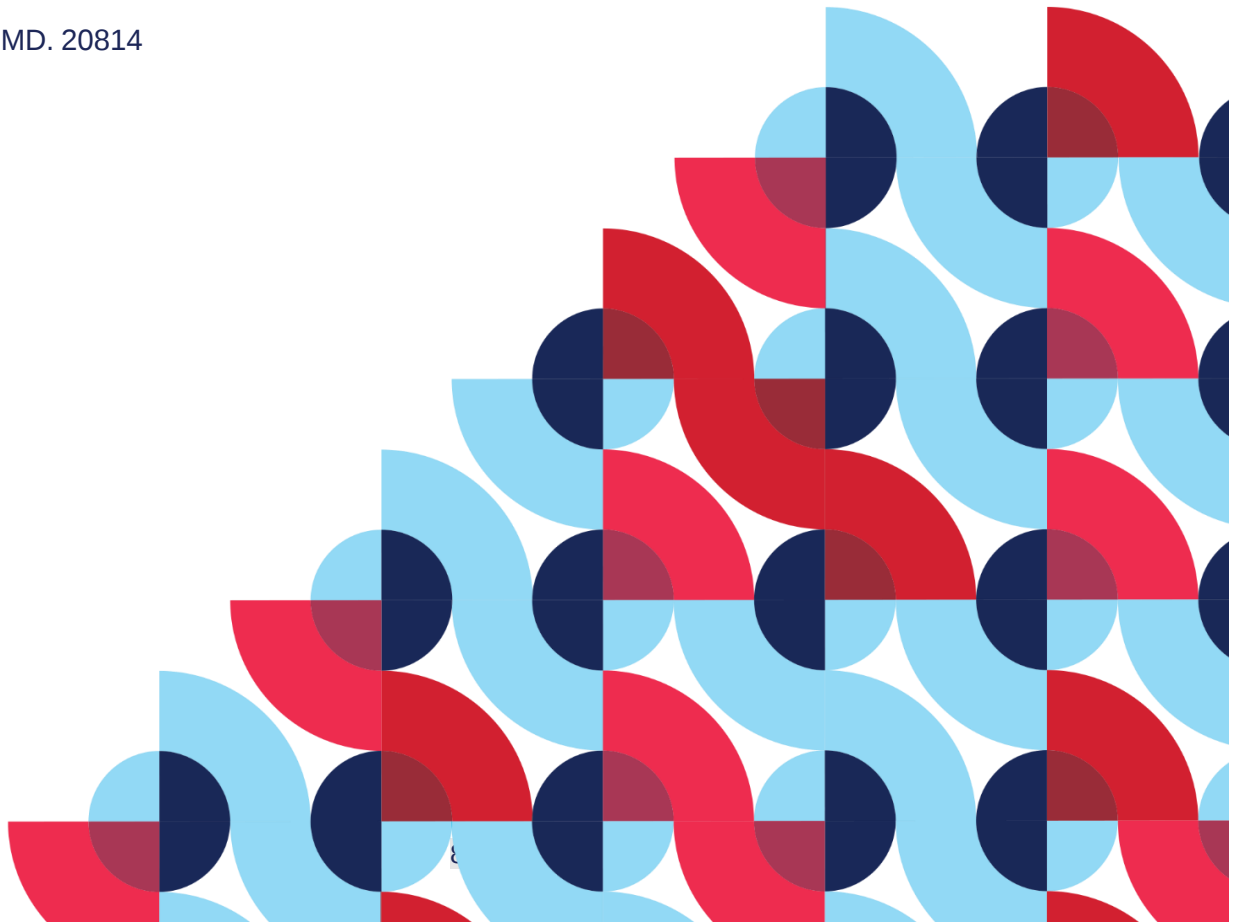




Table of Contents.....	84
Executive Summary.....	86
I. Introduction.....	88
A. Draft Final Rule.....	88
II. Market Information.....	89
A. The Product.....	89
B. Corded Window Covering Products.....	89
C. Cordless Window Products.....	90
D. Other Types of Safety Devices.....	90
E. Retail Prices.....	90
F. Annual Shipments.....	91
G. Window Coverings In Use.....	92
III. Final Regulatory Analysis.....	93
A. Annual Injury Costs.....	94
1. Fatal and Nonfatal Injuries involving Window Covering Cords.....	94
2. Annual Injury Costs, per Window Covering in Use.....	97
B. The Expected Costs of the Rule.....	99
C. Comparison of Costs and Benefits of the Draft Final Rule.....	109
D. Characterization of Uncertainty in Benefit and Cost Estimates.....	112
E. Sensitivity Analysis.....	113
F. Additional Discussion.....	116
G. Unquantified Benefits.....	116
H. Summary of Changes to Preliminary Regulatory Analysis in response to comments received.....	117
I. Summary and Conclusion.....	117
IV. Regulatory Alternatives.....	118
A. No Action Alternative.....	118
B. Improve Voluntary Standard for Window Coverings.....	118
C. Later Effective Date.....	119
D. Narrow Final Rule to Vertical Blinds, Curtains, and Drapes.....	120
E. Continue and Improve Information and Education Campaign.....	120
References.....	122

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 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, American National Standards Institute/Window Coverings Manufacturers Association 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. Corded window coverings can be made safer by incorporating a passive mechanism to make hazardous cords inaccessible or less hazardous to children, such as using a rigid cord shroud, a retractable cord, or a loop cord and bead chain restraining device.

Over the last 5 years, three large manufacturers have accounted for over 40 percent of sales in the U.S. window coverings market. Only one of these manufacturers is a publicly-held firm and has accounted for nearly 30 percent of all U.S. window covering sales in terms of revenue in 2021. The other two large manufacturers account for a much smaller share of revenue, but a slim majority of all revenues in the window covering market is from firms that account for less than three percent market share individually. Approximately 15.85 million *corded custom* window coverings were shipped in 2020.

The draft final rule would address the risk of strangulation to children aged 8 and under by eliminating hazardous accessible cords from custom window covering products. ANSI/WCMA published a voluntary standard which has been in effect since late 2018. CPSC staff assesses that compliance with this voluntary standard eliminates accessible cords from stock window covering products and is adequate to address the strangulation risk in those products. However, staff also assesses that the ANSI/WCMA standard does not eliminate the risk of strangulation from custom window covering products because the standard still allows for the use of hazardous accessible cords in custom products. This draft final rule requires custom window coverings to meet the same requirements as stock products in section 4.3.1 of the ANSI/WCMA standard, meaning products must be cordless, use operating cords that are 8 inches or shorter, or make operating cords inaccessible. The draft final rule contains requirements for two methods to meet the inaccessibility option: rigid cord shrouds and retractable cords. The draft final rule also allows for corded products that use a loop cord or bead chain restraining device that meets the requirements of the rule to address the strangulation hazard.

Based on estimates from the National Electronic Injury Surveillance System (NEISS) and the Injury Cost Model (ICM), CPSC staff estimates that 7.6 nonfatal medically treated injuries and 6.8 fatalities occur annually among all corded window coverings after excluding incidents

involving inner cords and lifting loops.¹ (Chowdhury 2022). Staff in the Directorate for Economic Analysis (EC) estimate the societal costs of these injuries to be about \$72 million annually using the adult-focused \$10.5 million VSL. Overall, staff found that fatalities account for an overwhelming majority of societal costs at \$71.4 million annually, and that nonfatal injuries account for about \$498,000 in societal costs annually.

Staff assesses that the voluntary standard adequately addresses the risk of injury from stock window coverings, and addresses stock window coverings in a separate draft final rule under section 15(j) of the Consumer Product Safety Act (CPSA). The draft final rule addressing custom window coverings, under sections 7 and 9 of the CPSA, would only address the proportion of corded window covering injuries attributable to the operating cords of custom products. Staff estimates the societal cost of deaths and injuries attributable to custom products to be \$31.6 million annually, (about 44 percent of the total) based on a CPSC staff review of incidents. Staff divided that societal cost by the estimated 145 million *corded custom* window coverings in use for the year of 2020 which resulted in a per-unit societal cost of \$0.22.

Staff calculated the present value of the societal cost of deaths and injuries for each blind type based on each type's expected product life. The present value of societal cost per unit for Metal and Vinyl horizontal blinds, and Wood and Faux Wood horizontal blinds amounts to \$1.06 and \$1.61 respectively. For cellular, pleated, roman, roller, and soft sheer shades, the per unit present value equates to \$2.04, \$2.12, \$2.43, \$2.04, and \$2.04 respectively. Staff combines these societal unit costs with *corded custom* window covering shipments in 2020 to generate a gross annual societal cost of \$24.35 million. Finally, staff adjusts this estimate for the expected effectiveness of the draft final rule to estimate a total benefit of approximately \$23 million from the draft final rule.

The draft final rule would impose costs on manufacturers of custom window covering products. Manufacturers would likely pass much of incremental per unit manufacturing cost to consumers in the form of higher prices. Based on component cost estimates, assembly/manufacturing costs, consumer surplus loss, and proportions of domestic manufacturing, the incremental cost per corded custom window covering produced would range from \$2.20 to \$35.79 and is highly dependent on product type. Data show that approximately 53 percent of custom products shipped in 2021 were corded (WCMA 2022b). The draft final rule would not result in any cost increases for cordless custom window coverings. Staff combines the 2020 *corded custom* shipment estimate of 15.85 million units with the per unit cost increase to generate an aggregate cost estimate ranging between \$54.4 million and \$114 million. An additional cost estimate for the research, development, implementation, time, and retooling required for some corded product amounts to approximately \$14.7 million after discounting future expenses by 3 percent. Including this value results in a total aggregate cost estimate range of \$54.4 million to \$129 million.

Based on staff's estimated benefit and costs, net benefits, (*i.e.*, benefits minus costs) for the market of custom window coverings (*i.e.*, excluding stock window covering products) amounted between -\$106 million to about -\$31.3 million. Staff also conducted a sensitivity analysis for a few variables, with net benefits varying from the main analysis with the highest value equating to approximately positive benefit of \$14.3 million. Specifically, staff's adjustment to a child-focused VSL of \$31.5 million increased the net benefits range to -\$45.3 million to \$14.3 million.

¹ Incidents involving inner cords and lifting loops are addressed by the rule concerning stock and custom product inner cords/lifting loops. These incidents would be addressed by the draft final rule for Window Covering Cords Under Section 15(j) of the CPSA.

Staff's analysis also discusses several alternatives to the draft final rule, including:

- No Action Alternative
- Rely upon or Improve the Voluntary Standard for Window Coverings
- Later Effective Date
- Limit the Scope of the Final Rule to Vertical Blinds, Curtains, and Drapes
- Continue and Improve Information and Education Campaign
- Adopt Canadian Mandatory Standard

The costs related to four alternatives would be lower than the expected costs of the draft final rule, but the benefits would also be lower. Staff recommends a longer effective date for the rule as it reduces some costs related to research and development for larger window coverings with an inconsequential expected reduction in benefits. Staff does not recommend any of the other alternatives, as discussed later in this Tab, because none of those alternatives adequately address the risk of injury or provide additional benefits.

I. Introduction

Parents for Window Blind Safety, Consumer Federation of America, Consumers Union, Kids in Danger, Public Citizen, U.S. Public Interest Research Group (PIRG), Independent Safety Consulting, Safety Behavior Analysis, Inc., and Onder, Shelton, O'Leary & Peterson, LLC petitioned the 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 publishing 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 (ANSI/WCMA-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 stock window covering products to be without cords, without accessible cords, or with a short, static cord (*i.e.*, maximum eight inches in length). The voluntary 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. The voluntary standard allows for several types of accessible hazardous cords or loops in custom window coverings (Tab C).

A. Draft Final Rule

The draft final rule addresses the strangulation hazard involving corded custom window covering products by applying the requirements for stock products in section 4.3.1 of ANSI/WCMA-2018 to custom window coverings – with an allowance for rigid cord shrouds, retractable cords, and cord and bead restraining devices, that meet the requirements in the rule. Staff concludes that the requirements for stock products are effective at preventing

strangulations and would be 94.4 percent effective when applied to custom window coverings. (Balci-Sinha 2022)

II. Market Information

A. 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. Window covering products are further classified by a “stock” or “custom” designation, as defined in ANSI/WCMA-2018. The standard defines a “stock” window covering product as a specific stock keeping unit, 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. A stock window covering can either be sold “as is” or modified or adjusted by the seller, manufacturer, or distributor before or after being distributed in commerce. Even after modification, the product would still be considered a stock blind or shade. Custom products are all products which do not meet the definition of a stock product.

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.). 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., but operation may be limited.

B. 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 the headrail 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 in 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.

C. 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.² Staff note that while cordless options are currently available for nearly all window covering *types*, these options are not available for all *sizes*. Cordless window coverings may require inner cords, but these cords are made inaccessible or do not allow hazardous loop to be created through a variety of approaches, as required in the voluntary standard for both stock and custom window coverings. 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 handle or directly by hand. For this regulatory analysis, “cordless” or cordless products will refer to systems where a cord is inaccessible either through the absence of a cord or use of safety device that would meet the requirements of the rule.

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, electrical outlet, solar powered, and what is commonly called “hardwired.”

D. Other Types of Safety Devices

Rather than eliminating the operating cord entirely, some manufacturers offer other devices to render the operating cord inaccessible. These alternatives include, among others: retractable cord devices, cord shrouds, cord and bead chain restraining devices, 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. A cord shroud encloses the pull cord or continuous cord loops for various types of blinds and shades with a rigid material, usually plastic. Wands are simple pieces of plastic that the consumer rotates or pulls to operate the window covering in place of a cord.

E. Retail Prices

Retail prices for window coverings vary, depending on the type of the product and retailer. Stock window covering products can be purchased at a variety of retailers, such as big box stores, home furnishing stores, and e-commerce retailers, such as Amazon and Wayfair. The type of material and brand affect the price. According to a D+R International (2021) study, average prices for window coverings range from \$54 to \$94 for shades and from \$25 to \$250 for blinds.³

²The availability of alternatives to corded window coverings may sometimes be constrained due to size and weight limitations but still feasible with additional research. See Tab C Lee 2022.

³ 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.

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).⁴

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 can be as high as \$5,000.⁵ 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.

F. Annual Shipments

Staff obtained annual shipment estimates by product type for the years 2015 to 2025 from D+R International as part of a CPSC-funded contract for a window covering market characterization report.⁶ D+R International based these estimates on manufacturer-submitted data from a 2007 to 2015 time frame. Table 1 provides staff's annual shipment estimates by product type from 2015 to 2020.

⁴ 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.

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

⁶ See Figure 7 of D+R International 2021.

Table 1. Annual Window Covering Shipments by Type (Millions)

	2015	2016	2017	2018	2019	2020
Metal/Vinyl Horizontal Blinds	36.77	34.39	31.91	33.53	39.24	34.02
Wood or Faux Wood Horizontal Blinds	17.62	22.72	23.45	23.02	21.28	16.34
Cellular Shades	10.02	13.84	13.55	13.26	13.07	10.67
Pleated Shades	6.61	4.52	3.44	3.95	5.48	7.02
Roman Shades	2.19	2.82	2.92	2.86	2.64	2.03
Roller Shades	11.48	13.12	10.62	9.70	10.89	10.60
Soft Sheer	8.32	6.90	4.77	3.31	3.23	4.24
Vertical Blinds	18.99	25.16	25.83	24.50	21.73	16.59
Sheer Drapery	1.73	2.60	3.22	3.96	4.70	4.95
Curtains/Drapery	5.52	7.94	10.67	13.46	15.81	17.06
Interior Shutters	1.04	1.00	0.65	0.60	0.78	0.67
Total	120.29	135.02	131.01	132.15	138.84	124.17
Source: D+R International (2021)						

G. Window Coverings In Use

CPSC staff calculated an estimate of the number, and statistical distribution, of custom window coverings in use using CPSC's Product Population Model (PPM).⁷ The PPM is a statistical model that projects the number of products in use given estimates of annual product shipments/unit sales and information on product failure rates over time. For this analysis, staff estimated the population of each type of window covering in 2020. Staff assumed the failure rate for each type of window coverings would follow a gamma distribution (with a shape parameter of 3) which is a commonly used distribution for modeling product failure rates.⁸ Using the annual unit shipment estimates from the D+R International (2021) report (See Table 1), along with estimates on the number of corded products sold/in use, estimates for the share of custom products sold/in use, and estimates of the expected product life for window coverings by type provided by WCMA; staff estimates approximately 145 million corded custom window coverings in use in the United States in 2020. This includes about 76 million horizontal blinds, and approximately 23 million each for shades/vertical blinds/curtains/drapes. Horizontal blinds,

⁷ Lahr, M.L., Gordon, B.B., 1980. Product life model feasibility and development study. Contract CPSC-C-79-009, Task 6, Subtasks 6.01-6.06). Columbus, OH: Battelle Laboratories.

⁸ See Zamula, Rodgers, Bailey (2016), Smith (2016), and Bailey (2018) for other examples.

shades, vertical blinds, and curtains/drapes account for 52.4 percent, 15.9 percent, 15.9 percent, and 15.9 percent of the window covering population, respectively.

Table 2 shows the breakdown and calculation of estimated *corded custom* products in use, by type. The estimate is created by multiplying the total number of window coverings in use (created with the PPM) by the share of custom product sales and the share of corded product sales. For example, the estimate for the number of Vinyl/Metal horizontal blinds in use in 2020 is 46.2 million. (251.35 million products in use × 20% of products that are custom × 91.9% of products that are corded).⁹

Table 2. Estimates of the Number of Corded Custom Window Coverings in Use

	[1]	[2]	[3]	[4]	[5]
	Number of Products in use (Millions)	% of Custom products in use (WCMA 2022a)	% of Corded Products (WCMA 2022b)	Expected Product Life (WCMA 2022b)	Number of Corded Custom Products in use (Millions)
Horizontal Blinds	474.24				76.02
Vinyl/Metal	251.35	20%	91.9%	6.7	46.20
Wood/Faux Wood	222.89	20%	66.9%	10.8	29.82
Shades	280.36				22.67
Cellular	94.46	20%	21.0%	7.2	3.97
Pleated	40.66	20%	31.0%	7.5	2.52
Roman	23.29	20%	41.2%	8.75	1.92
Roller	84.27	20%	57.3%	7.2	9.66
Soft Sheer	37.69	20%	61.1%	7.2	4.61
Vertical Blinds	177.84	20%	64.8%	7.6	23.05
Curtains/Drapery	212.59	20%	54.4%	15	23.13
Total	1,145.03				144.87

III. Final Regulatory Analysis

Pursuant to section 9(c) of the Consumer Product Safety Act, publication of a final rule must include a final regulatory analysis containing the following:

⁹ These estimates have an underlying assumption that the share of shipments/sales will equal the population in use. Staff note that changes in consumer preferences over time and differences in the product life between custom and stock products could result in significant deviations in this estimate.

- (1) a description of the potential benefits and costs of the final 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;
- (2) a description of any reasonable alternatives to the final rule, together with a summary description of their potential costs and benefits and why such alternatives should not be published as a proposed rule and
- (3) a summary of significant issues raised by the comments submitted during the public comment period in response to the preliminary regulatory analysis, and a summary of the assessment by the commission of such issues.

This analysis discusses the benefits (sections III.A, III.C, and III.F) and costs (sections III.B, III.C) of the draft final rule from a societal perspective, considering all significant costs and health outcomes (Gold et al., 1996; Haddix, Teutsch, and Corso, 2003; Neumann et al., 2016). Staff measures benefits of the draft final rule as the reduction in societal costs from deaths and injuries involving corded window coverings. Some potential benefits could not be quantified and are instead discussed qualitatively in section III.F. The costs of the rule are defined as the added costs associated with bringing custom corded window coverings into compliance with the draft final rule. The primary outcome measure is expected net benefits (i.e., benefits minus costs) of the draft final 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 a custom window covering.

A. Annual Injury Costs

Staff developed annual estimates of societal cost of injuries and deaths involving corded window coverings. These injury costs represent the pool of potential benefits of the final rule. Staff then distributed the societal costs over the major window covering categories (e.g., horizontal blinds, shades, vertical blinds, and curtains/draperies) and classification (stock/custom) to calculate annual societal costs, per window covering, during the 2009 through 2021 time period. Staff then adjusted these estimates to account for safety improvements associated with 2018 revisions to the voluntary standard and CPSC enforcement actions that have taken place in recent years.

1. Fatal and Nonfatal Injuries Involving Window Covering Cords

According to the Directorate for Epidemiology (EPI), there were 100 reported fatalities from 2009 to 2021, which translates to an average of 7.7 deaths. Excluding incidents involving inner cords/lifting loops, there were 88 fatalities over the same time period, which corresponds to an average of 6.8 deaths per year (Chowdhury, 2022). Many of these fatal incidents occurred before the introduction of the 2018 voluntary standard, however staff finds that the ANSI/WCMA 2018 standard does not eliminate or adequately reduce the risk of injury for custom products as described above because hazardous loops and hazardous lengths of cords remain accessible (Tab C). Staff notes that the average annual fatalities addressed by the draft final rule was 4.8 for the time frame 2018 to 2021, however, the data for these years is not complete, and staff cannot yet draw any trend conclusions from this fact. For example, since staff completed the NPR staff briefing package (SBP) in October 2021, the number of fatalities reported has actually risen to eight (from three, as initially reported) in 2020, and six (from zero, as initially reported) in 2021. Staff expects that these numbers will likely increase over the next year, as CPSC receives more data.

EPI also provided estimates of injuries reported through the National Electronic Injury Surveillance System (NEISS), a national probability sample of U.S. hospital emergency departments. This NEISS estimate of nonfatal injuries treated in hospital emergency departments did not meet the reporting requirements established by CPSC.¹⁰ Further detail on this can be found in Tab A of this package.

EPI's estimated death and injury estimates are based on 209 flagged incidents that fall within the scope of the strangulation hazard from corded window coverings. Staff performed an incident review of the 209 incidents, which includes fatalities and nonfatal injuries, from 2009 to 2021. Of the 209 incidents, 23 involved inner cords and 4 involved lifting loops which would not be addressed by this rule.¹¹ Eliminating these incidents reduces the total to 182.¹² Staff identified window covering type and stock/custom classification based on the investigations completed for CPSC, the submitted NEISS narratives, and the information submitted through CPSC's Consumer Product Safety Risk Management System (CPSRMS). Based on this work, Table 3 shows the share of incidents by window covering type and stock/custom classification.

Table 3. Percentage Share of Injury Incidents from 2009 to 2021 by Blind Type and Classification

	Fatalities			Nonfatal			Total
Product type	Stock	Custom	Unknown	Stock	Custom	Unknown	
Horizontal Blinds	7.7%	3.3%	13.2%	9.3%	6.6%	6.6%	46.7%
Shades	1.1%	2.2%	2.7%	0.5%	3.3%	2.7%	12.6%
Vertical Blinds	0.5%	1.6%	3.8%	0.0%	0.0%	0.5%	6.6%
Unknown Type	0.0%	0.0%	9.9%	0.0%	1.1%	20.9%	31.9%
Drapes	0.0%	0.0%	2.2%	0.0%	0.0%	0.0%	2.2%
Total	9.3%	7.1%	31.9%	9.9%	11.0%	30.8%	100.0%

Horizontal blinds account for the largest share of incidents. Window coverings that could not be identified, "Unknown Type", compose the second largest share of incidents. For both the fatal and nonfatal incidents, the largest share of incidents occurred on products where the classification (stock/custom) could not be determined. For the incidents where the classification could be identified, stock products accounted for a larger share of incidents than custom products.

¹⁰ Due to this, the benefit estimates, and estimates of injuries treated outside of emergency departments described later in this report, are based on only reported incidents.

¹¹ The four lifting loop incidents involved shade product types, but the classification for only 1 (stock) could be determined.

¹² These 27 incidents would be addressed by the other rule in this package under section 15(j) of the CPSA which addresses the inner cord hazard for both classifications and lifting loop hazard for the stock classification. The lifting loop hazard for custom classification products would be addressed by the draft final rule but as no incidents involving custom products with lifting loops could be identified they are excluded from the calculations in this analysis.

For many incidents, staff could not determine both the windows covering type and stock/custom classification. Staff distributed these “unknown” incidents among the other categories based on the proportion of incidents for each window covering type and classification with the “unknowns” set aside. This approach assumes that incidents with unidentifiable window covering type and/or classification closely resemble the breakdown of incidents in incidents with known types and classifications.¹³

Table 4 displays the “adjusted” percentage share of incidents after the removal and reassignment of the unknown product type and/or classification. The adjusted share of custom product fatalities and nonfatal injuries is about 44 percent and 54 percent, respectively.¹⁴

**Table 4. Adjusted Percentage Share of Injury Incidents
by Blind Type and Classification**

	Fatalities		Nonfatal	
Product Type	Stock	Custom	Stock	Custom
Horizontal Blinds	43.59%	18.68%	41.37%	30.26%
Shades	5.02%	10.04%	3.43%	21.63%
Vertical Blinds	4.02%	12.06%	1.65%	1.65%
Curtains/Drapes	3.30%	3.30%	0.00%	0.00%
Sub Total	55.93%	44.07%	46.45%	53.55%
Total	100.00%		100.00%	

The NEISS estimates of injuries capture those treated in hospital emergency departments (EDs). However, many product-related injuries are treated in other medical settings like physicians’ offices, clinics, and ambulatory surgery centers. Some injuries also result in direct hospital admission, bypassing the ED entirely. To estimate the number of nonfatal corded window covering injuries treated outside of hospital EDs, staff used the CPSC’s Injury Cost Model (ICM) (Lawrence et al., 2018).¹⁵ 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). The ICM uses the Medical Expenditure Panel Survey (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

¹³ Staff split incidents 50/50 between stock and custom if for a product type there were no incidents with an identifiable classification.

¹⁴ If staff had limited the incident analysis to the time frame of 2018 to 2021, therefore eliminating incidents before the 2018 voluntary standards, the custom fatality and nonfatal injury share would change to 52.5 percent and 50 percent, respectively. Staff notes that many of the incidents between 2018 and 2021 the product type and/or classification could not be identified and CPSC assumed a 50 percent split between stock and custom.

¹⁵ Additional detail related to these calculations can be found in the ICM documentation section 5 which is available at: [The Consumer Product Safety Commission’s Revised Injury Cost Model, February 2018 \(cpsc.gov\)](https://www.cpsc.gov/Document-Details/2018/02/CPSC-Revised-Injury-Cost-Model-February-2018).

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.

Based on the reported NEISS incidents of window covering injuries initially treated in hospital EDs from 2009 through 2021, the ICM projects a total of 99 injuries with a majority (61) of these injuries treated in treatment settings like a doctor's office.¹⁶ This equates to estimated annual total of about 7.6 medically treated nonfatal injuries involving corded window coverings. Staff note that for injuries of these types to younger age groups the estimate of medically treated injuries in non-ED settings will typically account for 60 to 75 percent of the total nonfatal injury estimate.

2. Annual Injury Costs, per Window Covering in Use

Staff monetized nonfatal and medically treated injury costs using the 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 injuries initially treated outside of hospital emergency departments. The injury cost components calculated 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 injured 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. Staff derived cost estimates for these expenditure categories from a number of national and state databases, including the MEPS, the Nationwide Inpatient Sample of the 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 can 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 HCUP-NIS, 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

¹⁶ For this analysis, staff assigned a weight of 1 to each of the 35 reported NEISS incidents, which is a subset of the total 209 observed incidents. The subset only includes incidents from the NEISS data set that have enough standardized information (e.g., location of the injury, and diagnosis) to comport with the ICM's data needs and potentially develop an estimate.

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. (Lawrence et al., 2018).

Based on estimates from the ICM, the injury costs of the approximately 7.6 nonfatal medically treated injuries involving corded window coverings amounted to about \$498,000 annually, or an average of about \$65,000 per injury. These injury costs ranged from about \$9,900 per injury treated outside of a hospital ED, to about \$14,200 per injury treated and released from the ED, to about \$483,000 per hospitalized injury.

EPI estimated 6.8 deaths involving window coverings occurred annually during 2009-2021 (Chowdhury, 2022). Staff assigns a cost of \$10.5 million for each death, based on current estimates of the value of a statistical life (VSL) in 2021 dollars. The costs associated with these deaths amount to \$71.4 million annually (6.8 deaths × \$10.5 million).^{17, 18} When combined with the injury costs of nonfatal injuries, the aggregate societal costs from corded window coverings incidents amounted to about \$72 million annually (\$71.4 from deaths + \$0.5 million from nonfatal injuries). The impact of using a child-focused VSL is described in the Sensitivity Analysis in Section III.I of this Tab.

To narrow the societal cost estimate to only include incidents from *custom* corded window coverings, staff multiplied societal costs from deaths and nonfatal injuries from *all* corded window coverings (excluding inner cord and lifting loop incidents) by the adjusted percentage share of incidents for *custom* products in Table 4. This calculation results in an annual *custom* product societal cost estimate of \$31.3 million for fatalities and \$0.27 million for nonfatal as illustrated in Table 5.

Table 5: Calculations of Societal Cost Custom Corded Window Coverings (2009-2021)

Product Type	[1]	[2]	[3]	[4]	[5] = [1] × [3]	[6] = [2] × [4]
	Adjusted Percentage Share of Injury Incidents		All Corded WC Death Cost	All Corded WC Nonfatal Injury Cost	Custom Corded WC Death Cost	Custom Corded WC Nonfatal Injury Cost
	Fatalities	Nonfatal				
Horizontal blinds	18.68%	30.26%	\$71,076,923	\$497,651	\$13,278,462	\$150,610
Shades	10.04%	21.63%			\$7,134,615	\$107,648
Vertical Blinds	12.06%	1.65%			\$8,571,635	\$8,235
Curtains/Drapes	3.30%	0.00%			\$2,342,308	\$0
Total					\$31,327,019	\$266,493

To calculate societal costs per custom window covering in use, staff divided the total societal cost for each window covering type (sum of columns [5] and [6] of each type in Table 5) by the

¹⁷ Staff repeated these calculations using only the incidents from the 2018 to 2021 (after the publication of the 2018 voluntary standards) which resulted in a societal cost total of \$50.4 million (4.8 deaths × \$10.5 million) and nonfatal of \$0.4 million, however the fatality data for the most recent years are incomplete and expected to increase as more data are received.

¹⁸ The number of deaths is rounded up to 6.8 from 6.77. Performing the calculation with 6.77 deaths results in a total value of \$71.08 million.

estimated number of *custom* window coverings in use (column [5] of Table 2). For example, staff divides the total societal cost of drapes of \$2.3 million (\$2.3 million in deaths + \$0 in nonfatal injury) by the estimated 23.1 million drapes in use to calculate societal cost of \$0.10 per unit. Societal costs per custom window covering in use, range from \$0.10 per curtain or drape to \$0.37 per vertical blind.

Staff estimates the present value of these annual per unit societal cost estimates over the expected product life of the window coverings using a 3 percent discount rate. Staff obtained expected product life for each window covering type from WCMA. (WCMA 2022b). Table 6 below displays these results by product type along with the expected product life.

Table 6. 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	\$13.4	76.0	\$0.18		
Vinyl/Metal			\$0.18	6.7	\$1.06
Wood/Faux Wood			\$0.18	10.8	\$1.61
Shades	\$7.2	22.7	\$0.32		
Cellular			\$0.32	7.2	\$2.04
Pleated			\$0.32	7.5	\$2.12
Roman			\$0.32	8.75	\$2.43
Roller			\$0.32	7.2	\$2.04
Soft Sheer			\$0.32	7.2	\$2.04
Vertical Blinds	\$8.6	23.0	\$0.37	7.6	\$2.50
Curtains/Drapery	\$2.3	23.1	\$0.10	15	\$1.21
* Calculated using a 3% discount rate.					

B. The Expected Costs of the Rule

Staff's cost analysis relied primarily on two window covering reports prepared for the CPSC. Jitesh H. Panchal, Ph.D., an academic engineering expert, prepared one of the reports. Dr. Panchal designed a study to estimate the incremental manufacturing costs of implementing cordless designs for window covering products (Panchal, 2016). Industrial Economics (IEC) prepared the second report, a comprehensive cost analysis that evaluated 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 cost estimates of eliminating accessible cords from window coverings. The study based its lower bound largely on the Panchal (2016) study and the upper bound on information from the WCMA's (2016a) May 2015 presentation at CPSC testing laboratories and reported in the IEc study (2016b).

1. Low-End Cost Estimates

Panchal (2016) used a product archeology¹⁹ approach, supplemented by models that calculate manufacturing and assembly costs, to estimate the incremental cost of implementing cordless 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, Panchal's estimates are suited for estimating costs for basic and inexpensive cordless products at the low end of pricing for window coverings. Panchal's estimates do not account for product development and design innovations, testing, licensing of technology, manufacturing restrictions due to existing patents, and training of personnel. These components would further add to the costs of implementing cordless technologies (Panchal, 2016). Additionally, Panchal notes that higher incremental costs could result from the use of higher-quality cordless systems than those analyzed in his report and from customized solutions for window coverings above average size and weight. Thus, staff assigns the estimates in the Panchal (2016) report as the low-end estimate of compliance with the draft final rule.

Panchal specifically analyzes three low-price stock products: horizontal blinds, cellular shades, and Roman shades. For each product, Panchal provides incremental costs for two window covering sizes. Panchal also provided separate cost estimates for window coverings produced in (1) a low-cost manufacturing environment, and (2) a high-cost manufacturing environment. The low-cost environment reflects costs for window coverings produced abroad and imported into the U.S., and the high-cost environment reflects costs for window coverings produced domestically. Finally, to make the per-unit cost estimates applicable to the large array of window coverings in the marketplace, Panchal estimated increased manufacturing costs as a percent of retail price for each product.

Table 7 shows the cost findings from Panchal's study. Note that the percentage range for each window covering type, size, and manufacturing environment reflects the range for production volume. Thus, the lower percentage estimate in each range reflects costs when there is a high production volume (about one million units annually); the higher percentage reflects costs when there is a smaller production volume (about 100,000 units annually).

¹⁹ Product Archeology is a methodology used to calculate the differences in manufacturing cost for functionally similar products through direct observation and comparison of the physical products.

Table 7. 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.		

Table 8 presents the share of window covering production that is manufactured in either foreign or domestic production (IEc, 2016b). These data allow staff 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 United States).

Table 8. 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.		

Staff applied Panchal's cost estimates as a percentage of retail price to the retail prices from the D+R International study described in section II.B.4 to estimate the low-end estimates for compliance with the draft final rule. (IEc, 2016b)²⁰ Table 9 shows the calculation of low-end per unit cost estimates for each window covering type.

Table 9. Average Incremental Costs Associated with the Draft Final Rule (2020 dollars)

Window Covering Type	[1] Mean Unit Price	Low-End Estimates (Based on Panchal, 2016)	
		[2] Average Cost Increase as a % of Retail Price	[3] Average Unit Cost Increase
Vinyl/Metal Blinds	\$37.36	8%	\$2.99
Wood/Faux Wood Blinds	\$69.79	9%	\$6.28
Cellular Shades	\$94.51	4%	\$5.67
Pleated Shades	\$54.53	6%	\$2.18
Roman Shades	\$69.36	8%	\$5.55
Roller Shades	\$64.04	8%	\$5.12
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 more appropriate.			

2. High-End Cost Estimates

To capture costs possibly omitted in Panchal (2016), the IEC study (2016b) also reported high-end estimates. In May 2015, WCMA delivered a presentation to CPSC staff. WCMA representatives noted that the cost of implementing cordless technology is within a range of 20 to 40 percent of the overall cost for custom products and 40 to 60 percent for stock products.²¹

Staff combined WCMA's estimates with information from Supplier Relations US, LLC (2010) reports, that the producer price represents 46.4 percent of the total retail price for window coverings,²² to determine high-end per unit incremental costs. Staff used the producer share of price to convert WCMA's stated increase in cost from cordless technology into its quantified impact on price. For example, cordless technology will increase cost for custom products by 20 to 40 percent, which would then 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 study applied this methodology for all

²⁰ The derivations of mean unit price and average cost increase as percentage of retail price fully detailed in Industrial Economics Inc. (IEc), 2016b. "Memorandum to CPSC: Final Cordless Window Coverings Comprehensive Cost Analysis".

²¹ 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.

²² The remainder of the retail price is comprised of margins for wholesalers (9.6 percent), freight (7.1 percent), and retailers (36.9%).

window covering types to estimate the average cost increase as a percentage of retail price. (IEc 2016b). Table 10 shows the application of this cost increase to mean unit price to calculate the high-end average per unit cost increase from the draft final rule.

Table 10. Average Incremental Costs Associated with the Draft Final Rule (2020 dollars)

Window Covering Type	[1] Mean Unit Price	High-End Estimates (Based on WCMA, 2015a)	
		[2] Average Cost Increase as a % of Retail Price	[3] Average Unit Cost Increase
Vinyl/Metal Blinds	\$37.36	23%	\$8.59
Wood/Faux Wood Blinds	\$69.79	14%	\$9.77
Cellular Shades	\$94.51	14%	\$13.23
Pleated Shades	\$54.53	14%	\$7.63
Roman Shades	\$69.36	14%	\$9.71
Roller Shades	\$64.04	14%	\$8.97

As cordless designs are currently available for all window covering product types, but not available for all window covering sizes, firms are expected to incur some research and development and retooling costs for these larger/unusual sizes. The most likely path of compliance for these larger sizes is through the use of a rigid cord shroud. (Tab C Lee 2022) CPSC staff developed an estimate of approximately \$787,000 over a 2-year period for a firm to implement a rigid cord shroud solution.²³ The estimate amounts to approximately \$289,000 in costs the first year and an additional \$498,000 the second year.²⁴ After discounting the second year value, the total cost per firm is equal to approximately \$772,500.

However, the impact may be somewhat less than originally estimated, due to the enforcement of Canada's regulations beginning in May 2022. Staff reviewed product offerings in the U.S. and Canada and found significant overlap in the manufacturers and retailers operating in the two countries. Companies that sell in both Canada and the U.S. have already redesigned their custom offerings to be compliant with the Canadian regulations, which are substantively similar to those being finalized here. Therefore, those companies likely already have compliant product designed that would be ready to sell through small dealers and interior designers. This potential reduction in impact is limited, though, because it would only affect the research and development and retooling costs. The per unit cost of compliance in the U.S. is unaffected by the adoption and enforcement of the Canadian standard.

Staff expect only the firms with more than 75 employees will make this investment. Smaller firms with fewer than 75 employees will either license a solution from a larger firm or purchase rigid cord shrouds from a firm with a patented product.

3. Annual Shipment

²³ More detail on the individual components of this estimate can be found in appendix A of Tab B of this package.

²⁴ These costs are one-time charges and will not accrue beyond the time to develop and implement.

To calculate aggregate annual cost, staff must estimate the number of units that will be affected by the draft final rule. WCMA (2015b) provided an 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 units from 2015 to 2020. For purposes of this analysis, staff uses annual sales of 124.9 million units of window coverings in 2020, which is consistent with estimates of the current population of window coverings in use and their expected product life.

Based on statements from WCMA, CPSC staff assumed that 20 percent of window covering shipments were custom products in 2020. Staff also applied the WCMA data submitted during the comment period on the percent of corded products to calculate the number of shipments of *corded custom* products. Table 11 illustrates the calculation of estimated shipments for each window covering product using these assumptions.

Table 11. Estimated Window Covering Shipments, Total and Corded Annually, by Window Covering Type

Window Covering Type	Estimated Annual Sales 2020 (Units Shipped)	Percent Share of Shipments Custom	Custom Shipments	Percent Share of Corded Shipment (2021)	Estimated Corded Custom Shipments
Metal/Vinyl Horizontal Blinds	34,017,312	20%	6,803,462	91.9%	6,252,382
Wood or Faux Wood Horizontal Blinds	16,342,311	20%	3,268,462	66.9%	2,186,601
Cellular Shades	10,669,117	20%	2,133,823	21.0%	448,103
Pleated Shades	7,016,809	20%	1,403,362	31.0%	435,042
Roman Shades	2,025,071	20%	405,014	41.2%	166,866
Roller Shades	10,599,143	20%	2,119,829	57.3%	1,214,662
Soft Sheer	4,946,911	20%	989,382	61.1%	604,513
Vertical Blinds	16,587,800	20%	3,317,560	64.8%	2,149,779
Sheer Drapery	4,946,911	20%	989,382	54.4%	538,224
Curtains/Drapery	17,055,616	20%	3,411,123	54.4%	1,855,651
Interior Shutters	674,335	20%	134,867	54.4%	0
Total	124,881,335		24,976,267		15,851,822
Source: D&R International (2021), WCMA (2022a) WCMA (2022b)					

4. Impact of Higher Prices on Sales and Lost Consumer Surplus

The increasing retail prices of custom window coverings, as costs are passed on to consumers, may result in a reduction in window covering sales. Consequently, consumers may experience a loss in consumer surplus. Figure 1 illustrates these impacts. The downward sloping curve in Figure 1 represents the demand for custom window coverings; p_0 and q_0 represent,

respectively, the pre-regulatory price and quantity demanded for custom window coverings. After the regulation becomes effective, custom window covering prices rise to p_1 , and the quantity of custom window coverings purchased declines to q_1 . The change in price from p_0 to p_1 represents the direct costs²⁵ of the rule per custom window covering. The area given by the rectangle **a** represents the aggregate direct costs of the rule over the time period being considered (e.g., one year); it is equal to the product of the increase in window covering price ($p_1 - p_0$) and the quantity demanded during the period (i.e., q_1).

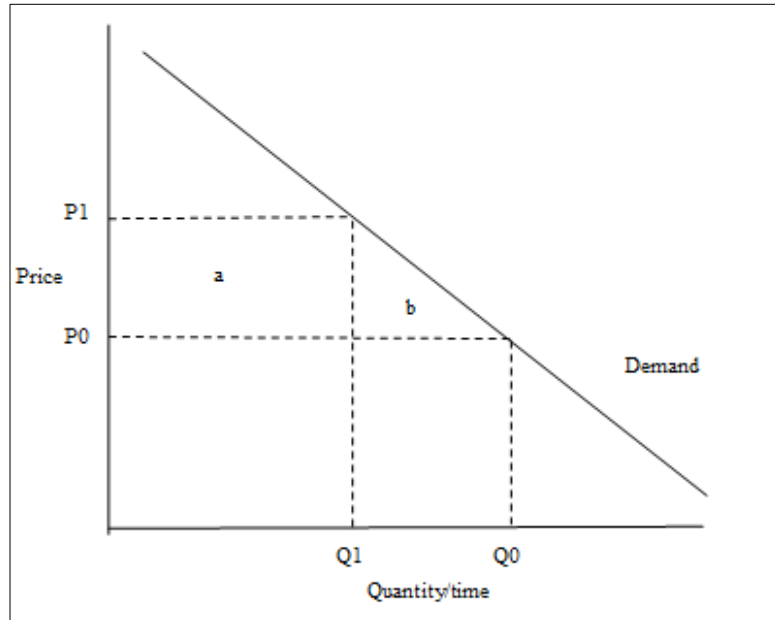


Figure 1. Demand for Window Coverings.

The triangle **b** represents an additional loss in consumer surplus. Triangle **b** specifically represent the loss to consumers which the final rule pushes out of the market due to the higher price, p_2 .^{26 27}

²⁵ Rectangle **a** is a transfer in wealth from consumers to producers due to the increase in price from the draft final rule. This transfer is then used towards the costs of compliance with the rule, and therefore labeled as a direct cost.

²⁶ In general, consumer surplus represents the difference between the market clearing price and the maximum amount consumers would have been willing to pay for the product. Ideally, we would like to measure the costs of lost producer surplus (i.e., a measure of revenue accruing to firms that produce and sell products over and above the price that they would have been willing to supply the products), as well as lost consumer surplus. However, to do so would require information on the supply and demand functions for window coverings, which is not available. As an alternative, we assume that the cost of the regulation is borne by consumers in the form of higher prices, and we estimate the change in consumer surplus resulting from increased prices. Additionally, although information needed to derive a well-specified demand curve is not currently available, we employ an assumption about the slope of the demand curve, based on an estimate of price elasticity of demand for home goods provided in Taylor and Houthakker (2010). (Note also that while we have referred to the area of the triangle **b** in Figure 1 as the loss in consumer surplus for consumers not willing to pay the higher price p_1 , technically, the entire area **a** + **b** represents the lost consumer surplus relative to the original pre-regulatory price of p_0 .)

²⁷ Alternatively, the increasing retail prices of custom window coverings could result in consumers substituting stock window coverings which already conform to the safety standard, possibly reducing the loss in consumer surplus.

Given information on the pre-regulatory price (p_0) and quantity demanded (q_0), the expected impact of the rule on product prices, and information on the elasticity of demand for window coverings (*i.e.*, the percentage change in quantity demanded given a percentage change in price), staff can estimate the expected reduction in sales ($q_0 - q_1$) and the lost consumer surplus represented by b in the above graph.

For this analysis, staff used an elasticity estimate of -0.3367 for home goods from Taylor and Houthakker (2010), to calculate loss of consumer surplus.²⁸ An elasticity of -0.3367 suggests that a 1 percent increase in the price of window coverings results in a reduction in the quantity demanded of about one-third of a percent.²⁹

Consider, for example, the *low-end* cost estimates for metal/vinyl horizontal blinds. From Table 9, the pre-regulatory baseline price for metal/vinyl horizontal blinds is \$37.36 and sales amounted to about 6.25 million annually. Given these parameters, and combining the *low-end* direct cost estimate of \$2.99, shown in Table 9, staff estimates a sales decline of 2.69 percent [0.08×-0.3367], which is a reduction of about 168,000 metal/vinyl horizontal blinds (0.0269×6.25 million) annually. Additionally, the lost consumer surplus (represented by the area of triangle b in the graph above), amounts to about \$251,000 (*i.e.*, $0.5 \times (p_1 - p_0) \times (q_0 - q_1) = 0.5 \times \$2.99 \times 168,000$).

Table 12 shows the expected reduction in annual sales and the expected lost consumer surplus for all the product types and sub totals. Reduced sales could range from 4,500 window coverings under the low-end cost estimates (column a), to about 587,000 under the high-end cost estimates (column e), representing a sales reduction of about 2.69 percent to 7.74 percent. The annual loss in consumer surplus ranges from about \$6,400 under the low-end cost estimates (column c), to about \$2.08 million, under the high-end cost estimates (column g).³⁰

²⁸ "Home goods" are defined to include products such as "floor coverings; picture frames; mirrors; art products; portable lamps; window coverings and hardware; telephone equipment; writing equipment; and hand, power, and garden tools."

²⁹ The elasticity of demand value from Taylor and Houthakker (2010) would apply to the purchases of residential consumers and exclude commercial users.

³⁰ Vertical blinds and curtains/drapes are not included in these estimates due to the underlying assumption that costs will be borne completely by consumers. Staff expects no price increases for these product types.

Table 12. Aggregate Expected Post-Regulatory Annual Window Covering Sales, Sales Reduction, and Lost Consumer Surplus, by Cost Level and Aggregated Window Covering Type

	Low-End Cost Estimate				High-End Cost Estimate			
Window Covering Type ¹	(a) Expected Sales Reduction	(b) Expected Post-Regulatory Sales	(c) Aggregate Lost Consumer Surplus	(d) Per Unit Lost Consumer Surplus	(e) Expected Sales Reduction	(f) Expected Post-Regulatory Sales	(g) Aggregate Lost Consumer Surplus	(h) Per Unit Lost Consumer Surplus
Horizontal Blinds	-234,675	8,204,308	- \$459,772.77	-\$0.06	-587,263	7,851,720	- \$2,583,814.66	-\$0.33
Vinyl/Metal	-168,414	6,083,968	- \$251,678.12	-\$0.04	-484,191	5,768,191	- \$2,080,276.99	-\$0.36
Wood/Faux Wood	-66,261	2,120,341	- \$208,094.65	-\$0.10	-103,072	2,083,529	-\$503,537.67	-\$0.24
Shades	-68,408	2,800,778	- \$291,169.11	-\$0.10	-135,248	2,733,938	- \$1,011,550.22	-\$0.37
Cellular	-9,053	439,050	-\$25,666.77	-\$0.06	-21,123	426,980	-\$139,741.28	-\$0.33
Pleated	-5,859	429,183	-\$6,389.99	-\$0.01	-20,507	414,535	-\$78,277.33	-\$0.19
Roman	-4,495	162,371	-\$12,470.09	-\$0.08	-7,866	159,000	-\$38,189.65	-\$0.24
Roller	-32,718	1,181,944	-\$83,810.76	-\$0.07	-57,257	1,157,405	-\$256,670.47	-\$0.22
Soft Sheer	-16,283	588,229	- \$162,831.51	-\$0.28	-28,496	576,017	-\$498,671.49	-\$0.87
Total	-303,082	11,005,086	- \$750,941.89	-\$0.07	-722,510	10,585,658	- \$6,179,179.54	-\$0.58
Vertical blinds and curtains/drapes are excluded from the calculation as no change to prices paid by the consumer is expected.								

Table 13 presents the total costs per window covering, including the direct manufacturing costs, and lost consumer surplus. The direct manufacturing cost estimates, per window covering, are from Table 9 and 10. The lost consumer surplus, per window covering, is calculated as the aggregate lost consumer surplus (from Table 12, columns c and g) divided by the post-regulatory estimate of sales (Table 12, columns b and f). Total per-unit costs range from roughly \$3.03 to \$10.01 per horizontal blind, to \$2.20 to \$35.87 per shade.

Table 13. Total Costs of the Final Rule, per Window Covering, by Cost Level and Window Covering Type

	Low-End Cost Estimates, per window covering			High-End Cost Estimates, per window covering		
	(a) Direct Costs	(b) Lost Consumer Surplus	(c) Total (a) + (b)	(d) Direct Costs	(e) Lost Consumer Surplus	(f) Total (d) + (e)
Product Type						
Horizontal Blinds						
Vinyl/Metal	\$2.99	\$0.04	\$3.03	\$8.59	\$0.36	\$8.95
Wood/Faux Wood	\$6.28	\$0.10	\$6.38	\$9.77	\$0.24	\$10.01
Shades						
Cellular	\$5.67	\$0.06	\$5.73	\$13.23	\$0.33	\$13.56
Pleated	\$2.18	\$0.01	\$2.20	\$7.63	\$0.19	\$7.82
Roman	\$5.55	\$0.08	\$5.63	\$9.71	\$0.24	\$9.95
Roller	\$5.12	\$0.07	\$5.19	\$8.97	\$0.22	\$9.19
Soft Sheer	\$20.00	\$0.28	\$20.28	\$35.00	\$0.87	\$35.87

Staff estimates the aggregate costs of the rule in 2020 in columns (c) and (f) of Table 14. The total cost of the draft final rule in 2020 is \$54.40 million for the low-end estimate and \$114.41 million for the high-end estimate. Horizontal blinds account for about 59 percent of the total, under the low-end annual cost estimates, and about 63 percent of the costs under the high-end estimates.

Table 14. Annual Post-Regulatory Sales, Per-Unit Cost Estimates, and Aggregate Annual Costs of the Final Rule, by Cost Level and Window Covering Type

Window Covering Type	Low-End Cost Estimates			High-End Cost Estimates		
	(a) Annual Post- Regulatory WC Sales	(b) Per Unit Costs (Direct Costs + Lost Consumer Surplus)	(c) Aggregate Costs (a) × (b)	(d) Annual Post- Regulatory WC Sales	(e) Per Unit Costs (Direct Costs + Lost Consumer Surplus)	(f) Aggregate Costs (d) × (e)
Horizontal Blinds	8,204,308	\$3.90	\$31,961,607	7,851,720	\$9.23	\$72,506,059
Vinyl/Metal	6,083,968	\$3.03	\$18,435,441	5,768,191	\$8.95	\$51,645,191
Wood/Faux Wood	2,120,341	\$6.38	\$13,526,166	2,083,529	\$10.01	\$20,860,868
Shades	2,800,778	\$8.01	\$22,437,869	2,733,938	\$15.33	\$41,907,123
Cellular	439,050	\$5.73	\$2,515,346	426,980	\$13.56	\$5,789,287
Pleated	429,183	\$2.20	\$942,524	414,535	\$7.82	\$3,242,921
Roman	162,371	\$5.63	\$913,435	159,000	\$9.95	\$1,582,144
Roller	1,181,944	\$5.19	\$6,139,145	1,157,405	\$9.19	\$10,633,502
Soft Sheer	588,229	\$20.28	\$11,927,420	576,017	\$35.87	\$20,659,269
Total	11,005,086	\$4.94	\$54,399,476	10,585,658	\$10.81	\$114,413,182

C. Comparison of Costs and Benefits of the Draft Final Rule

This section compares the costs and benefits of the draft final rule over the expected product life of 2020 sales of corded custom window coverings. First, staff use estimated annual sales for each type of custom corded window coverings in 2020 from section III.E to determine the number of window covering products that will be affected by the draft final rule. Second, staff compared the costs and benefit estimates from the previous sections.

1. Unit Costs for Custom Window Coverings, by Type, and Aggregate Costs and Benefits for One Year of Product Sales

Table 15 presents cost and benefit information. Column 1 contains the estimates of affected corded products post-regulation, which accounts for the reduced demand due to price increase. Staff uses this quantity to calculate aggregate costs because firms will adjust the quantity they produce to the decrease in demand caused by the price increase from compliance with the rule. Column 2 contains estimates of the affected corded products pre-regulation, which does not account for the reduced demand. Staff uses this quantity to calculate aggregate benefits because window coverings that are no longer purchased due to the price increase still generate benefits because they are removed as potential strangulation hazards; for example, by consumers substituting the purchase with lower price compliant stock window coverings. Column 3 presents the low-end per unit cost estimates and Column 4 multiplies those cost estimates with column 1 to calculate low-end aggregate costs. Column 5 presents the high-end per unit cost estimates and Column 6 multiplies those cost estimates with column 1 to calculate high-end aggregate costs. Column 7 presents the per unit benefit estimates and Column 8 multiplies those cost estimates with column 2 to calculate aggregate benefits.

Table 15. Preliminary Description of the Potential Benefits and Costs of the Draft Proposed Rule, by Detailed Distribution of Window Covering Types

	Annual Unit Sales of Corded Custom			Low-End Costs		High-End Costs		Benefit Estimate	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	Affected Window Coverings Post Regulation (Low End Cost) (millions)	Affected Window Coverings Post Regulation (High End Cost) (millions)	Affected Window Coverings Pre Regulation (millions)	Cost per Window Covering	Aggregate Costs (millions \$)	Cost per Window Covering	Aggregate Costs (millions \$)	PV of Injury Costs per unit*	Aggregate Benefits (millions \$)
Horizontal Blinds									
Vinyl/Metal	6.08	5.77	6.25	\$3.03	\$18.44	\$8.95	\$51.65	\$1.06	\$6.61
Wood/Faux Wood	2.12	2.08	2.19	\$6.38	\$13.53	\$10.01	\$20.86	\$1.61	\$3.52
Shades									
Cellular	0.44	0.43	0.45	\$5.73	\$2.52	\$13.56	\$5.79	\$2.04	\$0.91
Pleated	0.43	0.41	0.44	\$2.20	\$0.94	\$7.82	\$3.24	\$2.12	\$0.92
Roman	0.16	0.16	0.17	\$5.63	\$0.91	\$9.95	\$1.58	\$2.43	\$0.40
Roller**	1.18	1.16	1.21	\$5.19	\$6.14	\$9.19	\$10.63	\$2.04	\$2.48
Soft Sheer**	0.59	0.58	0.60	\$20.28	\$11.93	\$35.87	\$20.66	\$2.04	\$1.23
Vertical Blinds	2.15	2.15	2.15	\$0.00	\$0.00	\$0.00	\$0.00	\$2.50	\$5.37
Curtains/Drapery	2.39	2.39	2.39	\$0.00	\$0.00	\$0.00	\$0.00	\$1.21	\$2.89
-	-	-	-	-	-	-	-	-	-

* The per unit present value of injury costs associated with corded window coverings equals the implied benefits associated with removal of accessible cords.

** The cost increase as a percent of retail price for roman shades is applied to these product types.

No costs are associated with cordless vertical blinds or curtains/drapery based on the assumption that wands can generally be substituted for cords in these types (Panchal, 2016).

Table 16 summarizes aggregate costs and benefits by window covering type (e.g., horizontal blinds, shades, vertical blinds, and curtains/drapery) after the adjustment to benefits by the estimate of the draft final rule's effectiveness of 94.4 percent (Balci-Sinha 2022). Blinds account for the majority of costs and approximately 42 percent of benefits. In aggregate, the estimated costs ranged from \$54 million to \$129 million, while the estimated benefits amounted to about \$23 million. Aggregate net benefit estimate is between -\$31 million and -\$106 million annually.³¹

³¹ Performing this same analysis but limiting the time period of review to only 2018 to 2021 results in a minimum benefit estimate of \$18.5 million which further decreases the net benefit estimate.

Table 16. Estimates of Aggregate Costs, and Benefits Adjusted for Effectiveness of Standard, by Category 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	8.44	\$31.96	\$72.51	\$9.57
Shades	2.87	\$22.44	\$41.91	\$5.62
Vertical Blinds	2.15	\$0.00	\$0.00	\$5.07
Curtains/Drapery	2.39	\$0.00	\$0.00	\$2.73
Total*	15.85	\$54.40	\$129.09	\$22.99
*The estimate of research, development, and retooling of \$14.7 million is included in the high-end cost estimate total.				

Given the ubiquity of window coverings, cost and benefit estimates in the aggregate may not be an intuitive framework to perceive how the additional cost of the draft final rule impacts consumers. In this regard, staff used the data point that the average detached single-family household has 12 window coverings to convert costs and benefits into an additional cost per household. (D+R International 2013) For example, horizontal blinds composed of metal or vinyl have low-end per unit cost estimate of \$3.03 and a per unit benefit estimate of \$1.06. This translates into a net cost of the draft final rule of \$1.97 for metal/vinyl horizontal blinds. Using the assumption of 12 window coverings per household, this equates to a net cost (above the benefits provided) of \$23.67 per household of the rule every time they update their window coverings. For metal/vinyl horizontal blinds, \$23.67 is a slightly over 5 percent of the \$448.32 of the total cost a household would spend to update their window coverings. Table 17 shows this calculation for all window covering types.

Table 17: Household Net Costs from Draft Final Rule

WC Types	Mean Unit Price	Household Cost to update WC (pre-rule)	Low-End Cost per Unit	Benefit per Unit	Net per Unit	Household Net Cost
	[1]	[2] = [1] × 12 households	[3]	[4]	[5] = [4] - [3]	[6] = [5] × 12 households
Vinyl/Metal	\$37.36	\$448.32	\$3.03	\$1.06	(\$1.97)	(\$23.67)
Wood/Faux Wood	\$69.79	\$837.48	\$6.38	\$1.61	(\$4.77)	(\$57.24)
Cellular Shade	\$94.51	\$1,134.12	\$5.73	\$2.04	(\$3.69)	(\$44.25)
Pleated Shade	\$54.53	\$654.36	\$2.20	\$2.12	(\$0.08)	(\$0.94)
Roman Shade	\$69.36	\$832.32	\$5.63	\$2.43	(\$3.20)	(\$38.38)
Roller Shade	\$64.04	\$768.48	\$5.19	\$2.04	(\$3.15)	(\$37.83)
Soft Sheer	\$250.00	\$3,000.00	\$20.28	\$2.04	(\$18.24)	(\$218.82)

D. 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 judgment, and public/private data there are likely to be many sources of uncertainty. This section examines several sources of uncertainty in the analysis that could impact the findings. These include the VSL applicable to analyzing risks to children, the incremental cost of cordless products, the number of corded custom window coverings in use, and a longer average product life than used for horizontal vinyl/metal custom blinds. Particularly of note is that for a child-focused VSL value of \$31.5 million, net benefits are slightly positive.

1. Value of Reducing Fatal Risks

The analysis valued the benefit of preventing a fatal incident at \$10.5 million per incident. The VSL is not a value of a life, but an estimate of the amount people would be willing to pay for a small reduction in risk of death. This exercise is surveyed and 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.

Staff's literature review found research 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.³² 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 for example we substituted the high end of this range, which suggests that the VSL for children could be 3 times the VSL for adults (\$31.5 million), the estimated benefits of the draft final rule

³² There are two primary methods to estimate a person's willingness to pay (WTP) for reductions in fatal risks, revealed or stated preference. Revealed preference research is not informative for estimating how an individual values risk to children as the primary sources of information in a revealed preference estimate are typically wage risk models i.e. market decision type models. Stated preference research is better able to estimate how an individual values risks to children as the primary sources of information rely on survey research techniques and contingent valuation experiments with hypothetical scenarios.

would be higher at almost \$69 million.³³ The sensitivity analysis later in this report provides the results of an increased VSL for children.

2. Incremental Cost of Cordless Technology

As already indicated, some uncertainty exists regarding the incremental cost of the cordless technologies. Therefore, staff used a range of costs in the analysis, including cost estimates from Panchal (2016) and IEc (2016b). We note 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 products. 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. Staff considered retail markups and incremental costs and determined that the cost estimates presented in this analysis are reasonable. Additionally, one commenter to the NPR submitted an alternative incremental cost estimate of \$7.78 per custom product. This estimate is reasonable and closely resembles the limited analysis on custom products performed in Panchal's report. From this the staff concludes that the actual per unit costs are probably within the ranges of the estimated costs used in this analysis, but there is some chance that the cost estimates underestimate the actual cost.

3. Estimate of Corded Custom Window Coverings in Use

The estimate of corded custom window coverings in use that staff used in the base analysis is given in Table 2. As noted, staff based this estimate on estimates of the total number of window coverings created with CPSC's PPM using as inputs, shipment estimates from D+R International and estimates of the expected product life for window coverings from WCMA. Estimates 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. Staff has no basis for stating whether we have over or underestimated the number. If the share of custom cordless products has grown by a greater amount than estimated, 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 final rule.

E. Sensitivity Analysis

³³ The source of the factor of 3 WTP estimate is Hammitt and Haninger (2017) in which respondents provided separate estimates of WTP for themselves, a child in their household, and another adult in the household. The survey was related to nonfatal risks, but the concept and study is very similar to evaluating fatal risks. The authors noted that respondents valued the risk to another adult at a factor of 2.5 greater than themselves. Another study indicating a WTP factor of 3 for children is Hammitt and Herrera (2017) which specifically looked at fatal risks. CPSC staff note that this survey was administered to French adults and not the U.S. population.

The primary focus of this report described staff's benefit-cost methodology and the results from the analysis. This section presents an analysis that will describe the sensitivity of the results to variations in key parameters of the primary analysis. A sensitivity analysis accounts for the uncertainty in the values of some input variables. The variables staff examined include: discount rate, time period analyzed, VSL, percent of corded products in use, expected product life, low/high estimates of expected product life, increase/decrease of the number of injuries (fatal and nonfatal) by 50 percent, an alternative incremental cost estimate provided by a commenter to the NPR, an imputed price elasticity of demand provided by WCMA in a comment to the NPR, and an increase/decrease of the average annual shipments of corded custom products by 20 percent.

Relative to the primary analysis, the table below presents the results for a 7 percent discount rate, limited time period analyzed to 2018-2021, alternative VSL that varies by 300 percent and 50 percent, an increase/decrease of corded custom window coverings in use by 20 percent, high and low estimates of the expected product life, the number of injuries varying by 50 percent, a flat alternative incremental cost estimate of \$7.78, an imputed price elasticity of demand by product type, and a 20 percent increase/decrease of the average annual sales of custom corded products. The range of estimates for each input variable is presented for a low-cost and high-cost environments as described earlier in this report.

Table 18 below presents the results of the sensitivity analysis. Only benefits/costs associated with custom window coverings are shown. The methodology to estimate benefits/costs is the same as used in the reference case with only the input variables adjusted.

Increasing the discount rate as well had a minor impact on net benefits as shown in table 18 row b. Limiting the time period of injuries analyzed to the 2018 to 2021 resulted in a significant reduction in benefits (from \$23 million to \$18.5 million shown in row c) as the average annual value of addressable incidents noticeably drops. Staff notes that that the data used in this calculation for the recent years is not complete, as data on the number of deaths is lagged by about 2 to 3 years. In addition to the lagged data for many of the incidents in this time frame, the window covering type and classification could not be identified and therefore were arbitrarily split between stock and custom products. Increases and decreases in the VSL estimate resulted in significant changes to the benefit estimates which is shown in rows d and e. Particularly of note is that for a VSL value of \$31.5 million net benefits turn slightly positive.

Table 18. Sensitivity Analysis

<i>Input Values</i>			
<i>Row</i>	<i>Input Values for Sensitivity Analysis</i>	<i>Expected Benefits (millions of 2020 dollars)</i>	<i>Range of Expected Costs (millions of 2020 dollars)</i>
a.	Reference Case Analysis	\$23.0	\$54.4 to \$129.1
Discount Rate			
b.	7 percent	\$19.4	\$54.4 to \$129.1
Average Number of Injuries Calculation, Time Period			
c.	2018 to 2021	\$18.5	\$54.4 to \$129.1
Value of Statistical Life (VSL)			
d.	VSL= \$31.5 million	\$68.7	\$54.4 to \$129.1
e.	VSL= \$5.25 million	\$11.6	\$54.4 to \$129.1
Percentage of Corded Custom Window Coverings In Use			
f.	Increase of 20%	\$19.7	\$54.4 to \$129.1
g.	Decrease of 20%	\$28.8	\$54.4 to \$129.1
Expected Product life			
h.	High Estimate	\$28.3	\$54.4 to \$129.1
i.	Low Estimate	\$17.6	\$54.4 to \$129.1
Estimate of Injuries (Fatal and Nonfatal)			
j.	Increase of 50%	\$34.7	\$54.4 to \$129.1
k.	Decrease of 50%	\$11.4	\$54.4 to \$129.1
Alternative Cost Estimate			
l.	Flat per unit cost \$7.78	\$23.0	\$83.2
Price Elasticity of Demand			
m.	Imputed WCMA Value	\$23.0	\$52.5 to \$112
Annual Sales of Custom Corded Products			
n.	20% Higher	\$27.6	\$65.2 to \$151.5
o.	20% Lower	\$18.4	\$43.5 to \$105.9

Adjustments of 20 percent to the estimate of corded custom products in use (rows f and g) resulted in large changes to benefit estimates with a decrease resulting in a non-proportional increase in benefits to \$28.8 but net benefits are still largely negative. Applying the high and low estimates of expected product life are shown in rows h and i with net benefits still negative despite the adjustments. Increasing the estimate of injuries by a large amount (50 percent) had a large impact on potential benefits but the range of net benefits still remained negative as shown in rows j and k.

The alternative incremental cost estimate, and imputed price elasticity adjustments results shown in rows l and m are slightly mixed, with the alternative cost estimate within staff's estimated range and the imputed elasticity slightly lowering total cost. The alternative incremental cost estimate is in the range of the low and high end cost estimates but still results in negative net benefits with the base VSL. The imputed price elasticity results in slightly lower costs but CPSC staff believe this is related to the method used to create the values.³⁴ Changes in the annual sales of custom corded products produce a proportional change as it effects the point estimate in the same manner.

F. Additional Discussion

EC staff note that cordless window covering options exist for nearly every window covering type. In 2018, WCMA published a voluntary safety standard requiring that all stock window coverings be cordless, have a short cord, or have inaccessible cords. According to WCMA, stock window coverings account for about 80 percent of all window coverings sold. These products are generally less expensive than custom window coverings, whether they are corded or cordless. Additionally, cordless options exist for most types of custom window coverings and some consumers do opt for cordless custom window coverings (D+R International 2021).

However, there could be some inefficiencies in the market that result in less than the optimal amount of safety being provided by the market. The first type of inefficiency or market failure related to window coverings 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. 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 and their children. A landlord may choose a custom window covering with a hazardous cord because of personal preference, rather than consumer safety, which would not be in the best interests of his or her tenants.

The second type of market failure is related to information asymmetry. Some consumers might have inadequate information concerning the hazard and either underestimate, or be generally unaware of, the risks posed by corded window coverings even though corded window coverings include warnings of the strangulation risk. The final 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 could undervalue the risk reduction offered by cordless window coverings.³⁵ In addition, staff note that the draft final rule is intended to protect young children who are unlikely to read warnings or to understand the risks of their actions.

G. Unquantified Benefits

The monetized benefits in this analysis only reflect the subset of benefits attributable to a reduction in fatal and nonfatal injuries associated with custom window coverings. There may

³⁴ WCMA provided estimates of the expected changes in sales as a result of the rule. These values were obtained through a survey of members which may not accurately reflect what could occur in the market. Of particular note is pleated shades which an imputed price elasticity of demand from the provided values shows an increase in quantity demanded despite cost increases. This can occur with some consumer products, but it is uncommon.

³⁵ Conversely, 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 cordless window coverings solely for reducing the risk of strangulation while they occupy the home.

also be unquantifiable benefits related to operation or aesthetics of cordless products or reductions in emotional distress for parents.

Some consumers may derive additional utility from the more streamlined look of cordless products. Also, note that cordless products may more reliably operate during lift or tilt operation which can be a source of frustration with corded products. However, because cordless alternatives exist for virtually all types of custom window coverings, the value of these unquantified benefits is assumed to be less than the price differential between the corded and cordless options.

The emotional distress level of caregivers could also be reduced by the draft final rule. This benefit is not directly accounted for in the primary VSL estimate of \$10.5 million, or the pain and suffering estimates of CPSC's ICM.³⁶ The value of the shock or perceived guilt related to a caregiver's inattentiveness could be significant as it could result in large reductions to physical well-being or income loss. More information and formal study would be required to include such values in the primary analysis of the draft final rule.

H. Summary of Changes to Preliminary Regulatory Analysis in response to comments received

Substantive comments were submitted by the public in response to the NPR. Many of these comments included data related to cost, benefit, and market conditions. Staff updated the final regulatory analysis in this report to include much of this data and address criticisms of the analysis. Of particular note is data related to the estimates of custom products in use, expected changes in annual sales as a result of the rule, and an alternative cost estimate.

Staff created a new estimate of custom products in use using CPSC's PPM which is discussed in more detail earlier in this report. As part of the sensitivity analysis staff also included a per unit cost estimate which was very similar to a limited cost analysis on custom products conducted in Panchal 2016. This estimate was within the low to high range of the cost estimates included in this report. Also included in the sensitivity analysis is an imputed price elasticity of demand calculated from data provided by a commenter. Staff also expanded the number of variables included in the sensitivity analysis to better demonstrate the effect of the primary inputs on the analysis.³⁷

I. Summary and Conclusion

This analysis estimates the monetized costs from the draft final rule for most shade and horizontal blinds to be greater than the monetized benefits. However, for curtains/ draperies and for vertical blinds, the analysis estimates monetized benefits to be greater than the monetized costs. In the aggregate, across all product types, the monetized benefits are less than the monetized costs. Staff estimated aggregate benefits for one year's worth of sales amounted to approximately \$23 million or approximately \$1.45 per corded custom unit sold. The estimated aggregate costs using the low-end/high-end cost environment amounts to \$54 million and

³⁶ Some of this potential benefit could be indirectly captured in estimates of pain and suffering related to consumer product injuries. Staff notes that this potential benefit is most likely bounded by the estimate of an increased multiplier (3X) for children's VSL discussed in section 3.6. The benefit should not be treated as "in addition" to an increased VSL for children and is most likely already accounted for in that estimate. This is because the source of the children's VSL estimate is based on surveys where respondents reviewed and valued risk/harm reductions to children where presumably respondents accounted for emotional and physical effects related to the risks/harms.

³⁷ Comment responses can be found in Tab H of this package.

\$129.1 million, respectively. These values equate to a per unit sold cost of \$3.41 for the low-end environment and \$7.20 for the high-end environment.

Inherent in all estimates is some level of uncertainty. Particularly of note is that for a VSL value of \$31.5 million net benefits turn slightly positive. There is uncertainty concerning the distribution of deaths and injuries by the stock and custom categories. Specifically, a voluntary standard becoming effective in the middle of the time period where CPSC collected data on incidents makes it difficult to determine precisely how many of the deaths actually involve custom products during this time frame. This is due to the standard having different sets of requirements for custom as opposed to stock products. To address this and other uncertainties, staff conducted a sensitivity analysis which is discussed in the section above.

IV. Regulatory Alternatives

A. No Action Alternative

Under this alternative the status quo would be maintained. This option might be selected if the risk associated with custom corded products was considered reasonable, considering that warning 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 does nothing to address the fatal and nonfatal injuries involving corded custom window coverings. Corded custom products would still be available to consumers but admittedly at a higher price than cordless stock products.

B. Rely Upon or Improve Voluntary Standard for Window Coverings

Another alternative is to adopt the draft balloted standard (ANSI/WCMA A100.1-2022) as a mandatory standard in this final rule, without waiting for the standard to become effective. In July 2022, WCMA issued a ballot to revise the 2018 voluntary standard. The proposed revisions would prohibit standard operating systems (operating pull cords) and the use of continuous loop systems in custom horizontal blinds only. Staff voted against the ballot on August 15, 2022, stating that hazardous cords remain an option for operating cords on all other custom products other than horizontal blinds,³⁸ leaving a maximum of 87 incidents (fatal and non-fatal) unaddressed covering the time period from 2009 through 2021.³⁹ The balloted draft standard's requirements for retractable cords are also inadequate because they allow for a 36-inch retractable cord (2 feet longer than the draft final rule) and because the UV test method allows for testing only a section of a rigid cord shroud (instead of the complete sample). Staff concludes that the balloted draft standard is inadequate to address the risk of injury based on this information, and also assesses that adopting the balloted draft standard would narrow the benefits as well as the costs. The estimated costs would range from approximately \$32 million to \$72.5 million, but benefits would be just \$9.6 million, leaving an unaddressed potential benefit of \$13.4 million. This unaddressed potential benefit is 58.3 percent of the total \$23 million potential benefits estimated in this report under the proposed final rule. Hazardous cords would remain an option on custom shades, custom vertical blinds, and curtains/drapes, meaning an estimated 7.4 million units of custom products sold annually going forward.

³⁸ CPSC staff letter is available at <https://www.regulations.gov/document/CPSC-2013-0028-3667>.

³⁹ Includes custom/unknown product categories, and continuous loops/unknown cord types.

A related alternative might be for Commission staff to continue participating in, 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 relevant conditions on stock products to custom, in the same manner that staff has been pursuing unsuccessfully for many years, as a conditional alternative to a mandatory standard developed by the Commission. The Commission could reconsider a mandatory standard if efforts to improve the voluntary standard on custom products remain unsatisfactory. As discussed in this briefing package, operating cords on custom window coverings are not adequately addressed in ANSI/WCMA 2018. Staff also notes that the history of WCMA’s efforts, as well as the incremental nature of the balloted draft standard in 2022, demonstrate that continuing to wait for WCMA to address the injuries in the voluntary standard will result in additional deaths and injuries to children, with little hope of progress if the Commission does not pursue rulemaking. Accordingly, staff does not recommend this option.

As a third alternative, the Commission could wait and see whether ANSI and/or WCMA approve the balloted draft standard, and then modify in a rulemaking the requirements for custom shades, custom vertical blinds, and curtains/drapes to have the same requirements as the draft final rule. This alternative would lead to a similar cost-benefit ratio as discussed in this report (with lower costs but also lower benefits), and would delay the implementation of a rule. Delaying the final rule risks the lives of more children to strangulation on hazardous custom products.

Furthermore, if the Commission chose to remove costs by addressing custom horizontal blinds under Section 15(j) of the CPSA, the additional methods to make cords inaccessible on horizontal blinds, such as rigid cord shrouds and loop cord and bead chain restraining devices, could not be subject to any requirement that is not “readily observable,” and so could not be subject to the durability requirements in the draft final rule. Shifting horizontal blinds to a section 15(j) rule would save burden, but may introduce cord hazards if the methods of making cords inaccessible are not subject to adequate testing.

Consequently, staff concludes that the voluntary standards process is unlikely to lead to an adequate, or more beneficial and less costly, custom cordless requirement for all product types in the short or long run.

C. Later Effective Date

The NPR proposed an effective date of 180 days after the final rule’s publication in the *Federal Register*. During the comment period, many commenters representing manufacturers and retailers stated their concerns about meeting the proposed 180-days effective date due to long lead times for receiving equipment or input material, manufacturing compliant window coverings, and delivering the product to consumers. Commenters provided timelines of 9 to 20 months in obtaining and transporting equipment/materials from overseas suppliers. Two commenters, both large manufacturers, specifically stated long lead times of 4 to 12 months related to acquiring necessary equipment and materials. One of the commenters asserted an additional 1 to 4 months would be required upon delivery to assemble component inventory. Another commenter stated an additional delay related to continued COVID-19 disruptions. Additionally, staff has assessed that the redesigning of window coverings for unusually sized-windows to be compliant with the final rule would create even more additional effort and time, above typical sized-window modifications, for manufacturers to address. (Tab C Appendix)

Staff found these concerns to be credible because of the specific examples provided by commenters and because these comments comport to what staff has determined about the industry's supply chain. Additionally, Staff assesses that supply disruption could result in temporary, but significant, shift in consumer behavior. Supply chain disruptions and delayed deliveries could result in a shift in demand from custom products to stock products. Stock products have a lower profit margin than custom products and thus may have a significant cost impact to manufacturers and retailers even if the shift is temporary. Further, most custom window coverings sellers are small businesses, and therefore a temporary shift to stock products could have a significant impact to small businesses. A later effective date would allow manufacturers more time to redesign, distribute costs of compliance along the entire year, or discontinue product variants that cannot meet compliance.

As these examples show, a 180-days effective date has the potential to be very disruptive for producers and consumers. An extended effective date would mitigate costs related to redesign/research and development for manufacturers. Further, postponing the effective date by several months would reduce the benefits of the rule by only a very small amount as most noncompliant window coverings will take years to cycle out of use. Given the totality of these comments and assessments, staff accordingly assesses that there is good cause to extend the effective date beyond 180 days. Staff recommends the effective date in the final rule be extended to one year after publication for most custom window coverings and two-years for large/unusual sized window coverings.

D. Narrow Final Rule to Vertical Blinds, Curtains, and Drapes

The Commission could narrow the draft final 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 for most applications because a plastic rod can be used for operation. Narrowing the final 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 exceed the length described in the final 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 30 percent of 2020 window covering product shipments. However, the number of injuries and deaths associated with these products represents a small fraction of the total. This would equate to annual net benefits of approximately \$7.8 million. The net benefits of this option would be greater than the final rule due to the large costs to conform for the other product types, however a large fraction of the deaths and injuries would not be addressed.

E. 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 does not have information to quantify the effectiveness of public information campaigns, that have been in effect since 2003, on reducing the risk of injury associated with corded window coverings.

Staff notes that based on the continuing number of fatalities, the effective injury reduction of the campaign is most likely very small. As a result, staff does not recommend this alternative because staff finds 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.

F. Adopt Canadian Window Covering Mandatory Standard

Under this alternative the Commission could adopt the Canadian Corded Window Coverings Regulations (SOR/2019-97), as it is similar to the draft final rule. Staff estimates that this option would add more costs without adding more benefits than the draft final rule, although staff notes that it would provide some unquantifiable benefits related to harmonization of product standards for firms operating in both countries. The additional costs under this scenario are associated with requirements in the Canadian regulation that are more burdensome than the draft final rule, such as the pull force and inner cord requirements for products. In addition to higher costs, these differences could lead to permanent reductions in consumer choice if some custom product variations and sizes cannot meet these inner cord requirements. Under this alternative, net benefits are less than the draft final rule as the additional costs are expected to be greater than the unquantifiable benefit of standard harmonization.

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Tab G: Final Regulatory Flexibility Analysis Memorandum by the Directorate for Economic Analysis



Memorandum

TO: Rana Balci-Sinha, Project Manager,
Division of Human Factors,
Directorate for Engineering Sciences

THROUGH: Alexander P. Moscoso, Associate Executive Director,
Directorate for Economic Analysis

Jose E. Tejeda, Senior Staff Coordinator,
Directorate for Economic Analysis

FROM: Mark Bailey, Economist,
Directorate for Economic Analysis

SUBJECT: Final Regulatory Flexibility Analysis of a Rule that Would Establish a Standard for Custom Window Coverings

DATE: September 28, 2022

I. Introduction

The Commission is considering a draft final rule that would establish a mandatory safety standard for operating cords on custom window coverings. The draft final rule would require that custom window coverings be cordless, have no accessible cords, or have short, static cords no longer than eight inches in length as set forth in section 4.3.1. of ANSI/WCMA A100.1-2018.

Whenever an agency publishes a final rule, the Regulatory Flexibility Act (5 USC 601 – 612) requires that the agency prepare a final regulatory flexibility analysis (FRFA) that describes the impact the rule would have on small businesses and other entities. The FRFA must contain

1. a statement of the need for, and objectives of, the rule;
2. a statement of the significant issues raised by the public comments in response to the initial regulatory flexibility analysis, a statement of the assessment of the agency of such issues, and a statement of any changes made in the proposed rule as a result of such comments;
3. the response of the agency to any comments filed by the Chief Counsel for Advocacy of the Small Business Administration (SBA) in response to the proposed rule, and a detailed statement of any change made to the proposed rule in the final rule as a result of the comments;
4. a description of and an estimate of the number of small entities to which the rule will apply or an explanation of why no such estimate is available;
5. a description of the projected reporting, recordkeeping and other compliance requirements of the 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;
6. a description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes,

including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each one of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected;

II. Reason for Agency Action

The draft final rule is intended to address the strangulation hazard involving corded custom window covering products. The Directorate for Epidemiology, Division of Hazard Analysis (EPHA), reports an average of 6.8 fatal injuries involving all corded window covering products annually to children less than 8 years old (Tab A, Chowdhury, 2022). The societal costs of these fatal injuries amounted to about \$71.4 million annually (Tab F Bailey, 2022). Based on the estimate of about 7.6 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 \$498,000. (Tab F, Bailey, 2022). Combining these estimates amounts to annual societal costs associated with corded window coverings of approximately \$72 million. The draft final rule would only address the proportion of these injuries attributable to custom products which, based on a CPSC review of 209 reported incidents, would be approximately \$31.6 million annually. (Tab F, Bailey, 2022)

The draft final rule would adopt for custom products the same requirements in section 4.3.1 of ANSI/WCMA-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 B (Balci-Sinha 2022).

III. 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 final rule would be issued under the authority of Sections 7 and 9 of the Consumer Product Safety Act (CPSA).

IV. Comments of the Chief Council for Advocacy, SBA

The Office of Advocacy of the SBA (SBAA) submitted several comments on the proposed rule. One of the comments by SBAA resulted in CPSC staff recommending a change to the draft final rule. To reduce the burden of the final rule, in addition to rigid cord shrouds as a method to make cords inaccessible, staff also recommends allowing a retractable cord or a loop cord or bead restraining device, as long as such devices meet the requirements in the draft final rule. Staff also recommends a longer effective date, two years, for products 10 feet or greater in length to reduce burden on small businesses. This section discusses SBAA's specific comments along with CPSC staff responses below.

Comment: SBAA states that CPSC's Initial Regulatory Flexibility Act (IRFA) analysis relies on incomplete information and advises that the Commission publish an updated analysis for comment. Of note is an incorrectly cited Census Bureau data set used in the analysis.

Response: CPSC staff has updated the Final Regulatory Flexibility Analysis (FRFA) to reflect the requested minor change related to firms affected and corrected the citation SBAA pointed out. Staff provides an estimate for the potential firms that may meet the criteria for small businesses and is discussed in more detail later in this memorandum.

Comment: SBAA also stated that CPSC should consider alternatives for the final rule that reduce the burden to small businesses while still meeting the stated objectives of increased child safety. SBAA expressed concerns about the costs to comply, time to comply, and whether an updated voluntary standard would adequately address the risk of injury.

Response: CPSC staff has considered alternatives to reduce the potential burden of the rule to small businesses. Alternatives considered were included in the IRFA and included continued work on education efforts, narrowing the scope of the rule, and updating the voluntary standard. An additional size exemption alternative was considered in response to comments from SBA and the public, but ultimately not recommended. Staff found that it is feasible to make larger window coverings safe, and the hazard associated with larger window coverings is the same as that of smaller products. However, CPSC staff included a longer effective date for products 10 feet or greater in length to allow manufacturers to spread research and development costs over a longer time period. This will also allow manufacturers more time to source necessary component parts. CPSC staff also recommends allowing two additional methods to make operating cords on custom products inaccessible or non-hazardous to children: retractable cord systems and cord and bead loop restraining devices, as long as these devices meet the requirements of the rule.

In addition, CPSC staff recommends an effective date of one year for all other custom window coverings to allow firms more time to obtain complaint component parts and retool production lines. CPSC staff note that many of the firms supplying the US market with custom window coverings also supply the same products to the Canadian market where all corded products are non-compliant.

Also, ANSI/WCMA-2018 is the latest effective standard and, as of the date of this memorandum, WCMA has not approved any revisions to the standard. On July 15, 2022, WCMA balloted a revision to the standard, but staff is unclear whether the balloted revisions will become an approved revised standard. CPSC submitted a negative vote on the ballot.¹ CPSC staff does not recommend adopting the current or draft voluntary standard because it does not adequately address the risk of injury associated with custom window coverings.

Comment: Lastly, SBAA stated that CPSC should consider exceptions in situations where corded window coverings are a necessity, such as under the Americans with Disabilities Act (ADA).

Response: Sections 308.2 and 308.3 of 2010 ADA Standards for Accessible Design specify forward and side reach distances.² For example, the ADA requires that an unobstructed high forward reach shall be 48 inches; if there is obstruction, high reach shall be 48 inches or 44 inches where the reach depth is 20 inches maximum or 25 inches maximum, respectively. Unobstructed high side reach shall be 48 inches; if there is obstruction, the high side reach shall be maximum 48 inches and 46 inches if the reach depth is 10 inches maximum and if the reach depth is over 10 inches but less than or equal to 24 inches, respectively. Staff is aware of

¹ CPSC staff letter is available at <https://www.regulations.gov/document/CPSC-2013-0028-3667>

² Department of Justice (2010). 2010 ADA Standards for Accessible Design, accessed at <https://www.ada.gov/regs2010/2010ADASTandards/2010ADASTandards.pdf>

alternative solutions for window coverings that can safely replace the existing hazardous cords, such as cordless, rigid cord shrouds, cord and bead chain restraining devices, retractable wands, and assistive poles, which can allow access to a height that is about at the same height as corded products. For example, retractable cords can be made accessible with a rigid wand or handle to an easy-to-access height. Poles are currently being offered to reach the bottom of cordless products.

Staff notes that per the ADA, operable parts need to be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds maximum. Staff questions whether the traditional operating pull cords as well as continuous loop bead chains and cords are compliant with this requirement as they require tight pinching and grasping to operate. Further, in many cases, the pull force of a corded system can exceed 5 pounds.

V. Significant Economic Issues Raised by the Public

These are discussed in Tab H of this package.

VI. 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,).³ Window coverings can be sold in a variety of retail channels and could be listed under a large number of NAICS codes. These could include but are not limited to 442299 (All Other Home Furnishings Stores), 452210 (Department Stores), 452311 (Warehouse Clubs and Supercenters), 454110 (Electronic Shopping and Mail-Order Houses), and 454390 (Other Direct Selling Establishments).

Under U.S. Small Business Administration (SBA) guidelines, a manufacturer of window coverings is categorized as small if the firm has less than 1,000 employees. (NAICS code 337920) Importers would be considered small if the firm has less than 100 employees. 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. (Bailey 2021) Most retailers of window coverings would be considered small if they have sales revenue less than \$8.0 million. (NAICS codes 442291, 454390) Department stores, warehouse clubs, and electronic shopping and mail order houses must have revenues less than \$35 million, \$32 million, and \$41.5 million respectively to be considered small. Based on 2017 Census Bureau Statistics of US Businesses (SUSB) data, there were 1,898 blinds and shades manufacturers,

³ 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.

(NAICS 337920), and retailers (NAICS 442291).⁴ Of these, 1,840 firms (302 manufacturers and 1,538 retailers) are small entities by SBA guidelines.

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 \$250,000.⁵ 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 \$100,000, based on SUSB payroll data from the U.S. Census Bureau.

VII. Compliance Requirements of the Draft Final Rule, Including Reporting and Recordkeeping Requirements

To eliminate the strangulation hazard on cords, the draft final rule would establish a performance standard that would require custom window coverings to meet the same requirements in section 4.3.1 of the voluntary standard ANSI/WCMA A100.1 – 2018 that apply to stock window coverings.⁶ To comply with the performance requirements, all accessible operating cords would need to be removed, made inaccessible, or shortened to less than 8 inches. The draft final rule provides two methods to make cords inaccessible (rigid cord shrouds and retractable cord devices) and one method that would remove the hazard from an accessible cord (cord or bead restraint device). Products that use one of these methods to meet the requirements must also conduct additional testing on durability, as set forth in the rule.

Under section 14 of the CPSA, as codified in 16 CFR part 1110, manufacturers and importers of general use 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 final 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. Certificates must accompany the product or the product shipment but may be in electronic format. Certificates 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).⁷ Manufacturers and importers of custom window coverings that are also children's products, as defined in 16 CFR part 1200, must use a CPSC-accepted third party conformity

⁴ This estimate focuses strictly on firms where window coverings are a majority of the operation. The other NAICS codes provided (322230, 454390, 442299, 452210, 452311, 454110) may include firms participating in the window coverings market but most likely account for a very small share of the firm's operation. In addition, it is possible some retailers of window coverings are listed under NAICS code 541410 Interior Design Services.

⁵ Based on Census Bureau SUSB data, a review of firm financial reports, and Dun & Bradstreet reports.

⁶ 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. In addition, staff note that retractable cord systems would be considered compliant with the requirements.

⁷ The regulations governing the content, form, and availability of the certificates of compliance are codified at 16 CFR part 1110.

assessment body to test products for compliance, and issue a certificate of compliance based on such third-party testing.

VIII. Costs of Draft Final 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 final rule. As discussed in the preliminary regulatory analysis of the proposed rule (Tab F Bailey, 2022), the cost to modify window covering lift systems to comply with the proposed rule ranges from \$2.99 to \$9.77 per horizontal blind, \$2.18 to \$35 per shade, and no expected cost increase for vertical blinds and curtains/drapes. CPSC staff estimates of redesign costs equate to approximately \$772,500 over a 2-year period. (Tab F Bailey 2022) Only manufacturers with at least 75 employees are anticipated to perform this investment as this is a significant investment for smaller manufacturers with fewer employees and lower annual revenues. Likely these manufacturers will either purchase the necessary completed hardware or license a patented solution from a larger firm. CPSC staff expects component costs to be significant as inaccessible cord operation is on the order of a few dollars per window covering up to a high-end estimate of as much as about \$35 per window covering for one type of window covering as shown in Tab F containing the final regulatory analysis. However, the impact may be less than originally estimated, due to the enforcement of Canada's regulations beginning in May 2022. Companies that sell in both Canada and the U.S. have already redesigned their custom offerings to be compliant with the Canadian regulations, which are substantially similar to the proposed final rule, so already have stock of compliant product designed and ready to sell through small dealers and interior designers.

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.⁸ 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 cordless 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 cordless 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 cordless technologies (Panchal, 2016).

Manufacturers would likely incur some additional costs to certify that their window coverings meet the requirements of the draft final 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 assesses 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

⁸ See Table 3 Summary of incremental manufacturing costs for sample entry-level products in different product categories in Panchal 2016 for additional detail on these values.

covering model.⁹ 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 final rule.

CPSC staff note that a reasonable testing program for general-use window coverings 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 of general use window coverings with the draft final rule is likely much lower than the cost of conducting a third-party certification test of each product, as required for children's products.

IX. Impact on Small Manufacturers

In order to comply with the draft final rule, small manufacturers are expected to incur redesign and incremental component costs described above for some product lines which currently are not available in inaccessible cord variants. Staff does not expect small manufacturers to suffer a disproportionate cost effect from the draft final rule as the cost calculations and research were completed on a per unit basis and little if any redesign costs are expected. Staff expects small manufacturers of window coverings to incur, at a minimum, a 2 percent impact to their custom window covering revenue from the draft final rule. This implies that if custom products account for all of a firm's revenue then the minimum impact of the draft final 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. As the smallest estimate of incremental compliance cost from Panchal (2016) is 2 percent of retail price, staff concludes that the draft final rule could have a significant impact on manufacturers of custom window coverings. This effect is dependent on the share of annual revenues attributable to custom products. For example, if a small firm only manufactures custom cellular shades then staff expects a lowest possible compliance cost of 2 percent of retail price.¹⁰ 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 at least 50 percent of their revenues related to custom window covering products affected by the draft proposed rule could be significantly impacted. This is due to the lowest possible compliance cost equating to 2 percent of retail price which at a 50 percent custom product share would equate to a 1 percent minimum impact on annual revenues. CPSC staff expects the draft final rule to have a significant effect on a substantial number of small firms.

⁹ Based on quotes from firms to conduct certification tests to the current WCMA voluntary standard on window covering products currently available at retailers.

¹⁰ There is presumably some retail markup in the retail price of these products which would translate to a higher cost as a percentage of a manufacturers annual revenues. The lowest possible compliance cost in this estimate has an implicit assumption that a manufacturer can capture the full retail price of the product. This is an unlikely scenario but helpful for illustrative purposes as only a manufacturer with a large focus on vertical blinds and curtains/drapes could possibly be below the CPSC 1 percent significant effect criteria.

X. 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 final rule.

XI. Alternatives for Reducing the Adverse Impact on Small Entities

Under the Regulatory Flexibility Act, a Final Regulatory Flexibility Analysis should contain “a description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each one of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected.” CPSC staff examined several alternatives to the draft final rule which could reduce the impact on small entities. Staff discusses the alternatives below.

A. No Action Alternative

Under this alternative the status quo would be maintained. This option might be selected if the risk associated with custom corded products was considered reasonable, considering that warning 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 does nothing to address the fatal and nonfatal injuries involving corded custom window coverings. Corded custom products would still be available to consumers but admittedly at a higher price than cordless stock products.

B. Improve Voluntary Standard for Window Coverings

Another alternative would be for Commission staff to continue participating and encouraging safety improvements to the voluntary standard for window coverings, ANSI/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, in the same manner that staff has been pursuing this unsuccessfully for many years, 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 some aspects of recent changes in the voluntary standard, but overall has found them inadequate and has voted against them due to inadequacies 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. And the most recent, July 15, 2022 balloted revisions to the standard would still allow hazardous operating 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.

C. Later Effective Date

The NPR proposed an effective date of 180 days after the final rule's publication in the *Federal Register*. During the comment period, many commenters representing manufacturers and retailers stated their concerns about meeting the proposed 180-days effective date due to long lead times for receiving equipment or input material, manufacturing compliant window coverings, and delivering the product to consumers. Commenters provided timelines of 9 to 20 months in obtaining and transporting equipment/materials from overseas suppliers. Two commenters, both large manufacturers, specifically stated long lead times of 4 to 12 months related to acquiring necessary equipment and materials. One of the commenters asserted an additional 1 to 4 months would be required upon delivery to assemble component inventory. Another commenter stated an additional delay related to continued COVID-19 disruptions. Additionally, staff has assessed that the redesigning of window coverings for unusually sized-windows to be compliant with the final rule would create even more additional effort and time, above typical sized-window modifications, for manufacturers to address. (Tab C Appendix)

Staff found these concerns to be credible because of the specific examples provided by commenters and because these comments comport to what staff has determined about the industry's supply chain. Additionally, Staff assesses that supply disruption could result in temporary, but significant, shift in consumer behavior. Supply chain disruptions and delayed deliveries could result in a shift in demand from custom products to stock products. Stock products have a lower profit margin than custom products and thus may have a significant cost impact to manufacturers and retailers even if the shift is temporary. Further, most custom window coverings sellers are small businesses, and therefore a temporary shift to stock products could have a significant impact to small businesses. A later effective date would allow manufacturers more time to redesign, distribute costs of compliance along the entire year, or discontinue product variants that cannot meet compliance.

As these examples show, a 180-days effective date has the potential to be very disruptive for producers and consumers. An extended effective date would mitigate costs related to redesign/research and development for manufacturers. Further, postponing the effective date by several months would reduce the benefits of the rule by only a very small amount as most noncompliant window coverings will take years to cycle out of use. Given the totality of these comments and assessments, staff accordingly assesses that there is good cause to extend the effective date beyond 180 days. Staff recommends the effective date in the final rule be extended to one year after publication for most custom window coverings and two-years for large/unusual sized window coverings.

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

The Commission could narrow the draft final 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 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 30 percent of 2020 window covering product sales. However, the number of injuries and deaths associated with these products represents a small fraction of the total. This would equate to annual net benefits of approximately \$7.8 million. The net benefits of this option would be greater than the proposed rule due to the large costs to conform for the other product types, however a large fraction of the deaths and injuries would not be addressed.

E. 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 assess that continuing current information and education campaigns would not reduce injuries associated with window coverings below current rates.

F. Adopt Canadian Window Covering Mandatory Standard

Under this alternative the Commission could adopt Canadian Corded Window Coverings Regulations (SOR/2019-97), which is similar to the draft final rule. This option is not appropriate for consideration under the Regulatory Flexibility Act as staff estimates this alternative would not reduce costs for small businesses. The alternative increases costs with no additional benefits than the draft final rule. See section IV.F Tab F of this briefing package for additional detail.

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Tab H: Draft Final Rules for Corded Window Coverings: Summary of Comments on the Proposed Rules and Staff's Recommended Responses for the Final Rules



Memorandum

TO: Commission
Alberta E. Mills, Secretary

DATE: September 28, 2022

THROUGH: Duane Boniface, Assistant Executive Director,
Office of Hazard Analysis and Reduction (EXHR)

FROM: Window Coverings EXHR Team

SUBJECT: Draft Final Rules for Corded Window Coverings: Summary of Comments on the Proposed Rules and Staff's Recommended Responses for the Final Rules

I. Background

On January 7, 2022, the Commission published two notices of proposed rulemaking in the *Federal Register*: (1) Safety Standard for Operating Cords on Custom Window Coverings (87 *Fed. Reg.* 1,014) (Custom NPR); and (2) Substantial Product Hazard List: Window Covering Cords (87 *Fed. Reg.* 891) (15J NPR) and requested comment on the proposals. Taken together, the proposed rules are intended to 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. The Commission is now finalizing the two rules and in preparation for a final rule, CPSC staff reviewed the comments received on the each of the NPRs. Below we summarize the comments and provide staff's responses.

CPSC received 2,060 comments on the Custom NPR during the comment period and 4 comments on the 15J NPR. All four commenters on the 15J NPR (three consumer organizations and one trade association) supported the proposed rule. For the Custom NPR, about 1,620 comments were from businesses, including sellers, dealers, retailers, manufacturers, component suppliers, and designers. Nineteen of these 1,620 business commenters were supportive of the Custom NPR whereas 1,517 indicated opposition; 84 commenters did not indicate clearly whether they support the Custom NPR.¹ About 42 comments were from families and friends of victims as well as legal representatives of victims who were all supportive of the Custom NPR. About 68 comments were from consumers, 31 of which were supportive of the Custom NPR and 35 opposed the Custom NPR. Three commenters were trade associations, all of which opposed the Custom NPR. This memorandum summarizes the comments received on the NPRs and provides technical staff's responses to the issues raised.

On March 16, 2022, CPSC held an oral hearing on the custom NPR, at which time, seven presenters provided comments. In addition, two late comments were received in July 2022.

¹ Staff determined that nine comments were duplicative: 8 were from businesses, and one from a victim's.

II. Comments and Responses on the 15J NPR

CPSC received three comments on the section 15(j) rule during the comment period, and two comments before the comment period began. All comments supported the 15(j) rule and have been placed on the docket for this rule. Commenters include WCMA (two comments), Consumer Federation of America, Consumer Reports, and Parents for Window Blind Safety. All of these organizations strongly supported the proposed rule and did not recommend any changes. Based on staff's assessment of the ANSI/WCMA-2018 standard and all comments in support of the rule, staff recommends finalizing the 15J NPR as proposed.

III. Comments and Responses on the Custom NPR

A. General Support or Opposition

At least 114 commenters expressed support for the Custom NPR rulemaking effort, some stating that given the hidden nature of the hazard and severity of the risk, a mandatory standard is necessary. At least 1,842 commenters were against the Custom NPR, most suggesting that a regulation will have a negative economic impact on the window covering industry. At least 440 comments stated that the proposed rule is either overreaching or unnecessary because commenters believe that the current requirements in the standard are strong, risk is low and customers without young children would be adversely impacted, customers need more options and choices, and businesses will have limitations to meet their needs.

Response

Staff is generally in agreement with those supporting the rulemaking. CPSC staff agrees that a rule is required because the ANSI/WCMA A100.1 – 2018 standard is not likely to eliminate or adequately reduce the risk of injury. Furthermore, the draft final rule to require inherently safe custom window coverings is feasible, and the rule will not affect the utility or availability of custom window coverings, but could affect cost. However, the average increase to consumers is only approximately \$24 every time a household replaces *all* of its custom window coverings. Consumers will likely bear this cost to ensure that their children, or children who are guests, are not strangled on window covering cords. The feasibility of safer window coverings, and the fact that consumers will pay more for safer window coverings, has already been shown in the stock window covering market. Most stock window coverings are already manufactured to be safe, without regulatory intervention. Voluntary compliance with the ANSI standard for stock products did not cause a decline in revenue, by either units or by total revenue, as most of the industry transitioned to cordless only product, even though the price of some stock coverings nearly doubled. A similar observation is made for the Canadian market. Staff has no evidence from the Canadian market of a significant reduction in consumer choice. Rather, the market has reacted with cost-effective substitutes and redesigned products.

Data show that the hazard is silent, quick, and hidden to consumers. Also, the hazard overwhelmingly involves the death of a child, and in many other cases a serious injury, such as coma; paralysis or problems controlling movement; sensory disturbances including pain; seizures; cognitive and memory deficits; long-term or permanent vegetative state requiring tracheotomy and gastrointestinal tube feeding. As commenters from victims' families report, the death of a child on a window covering cord results in severe pain and trauma that never goes away. Victims' families hope that this rule will prevent corded products not only in private

residences, but also hotels, rental properties, military housing, public buildings, and effectively any place where children could be injured or killed, so that no family, parent, or grandparent should bear the pain of losing a child on a window covering cord.

B. Voluntary Standard

Most of the businesses, including manufacturers, dealers, designers, and sellers, who are opposed to the rule stated that the voluntary standard process has led to substantial improvements in window covering safety and that a mandatory rule is not necessary. However, other commenters including at least 70 victims' families, consumers, and consumer organizations stated that a mandatory standard is necessary to address the hazard associated with custom window coverings, because the voluntary standard still allows products with hazardous cords to be sold.

Response

Staff has worked closely with the voluntary standards organization, WCMA, to develop and revise the ANSI/WCMA A100.1 standard over the past 26 years. Staff agrees that the 2018 version of the voluntary standard has significantly reduced the risk of strangulation from stock window coverings, and from inner cords on both stock and custom products. However, CPSC staff assesses that a mandatory rule is needed because ANSI/WCMA-2018 is not likely to eliminate or adequately reduce the risk of injury associated with custom window coverings. Staff also assesses that the draft ANSI/WCMA-2022 still allows continuous loops with tension devices that pose a strangulation hazard and therefore is inadequate. Both corded custom and stock window coverings have identical hazard patterns. Since 2018, stock products are made cordless with manual or motorized lifts or made with inaccessible cords. These same technologies can also apply to most sizes of custom window coverings, and additional technologies to make cords inaccessible or safer for children are feasible. Based on staff's review of available technologies for use in manufacturing safer window coverings, staff concludes that custom products could be made equally safe as stock window coverings and meet the same cord requirements. Staff assesses that compliance with the ANSI standard for stock products did not cause a decline in revenue, by either units or by total revenue, even though the price of some stock coverings nearly doubled; similarly, Canadian market responded with cost-effective substitutes and redesigned products to the Canadian regulations.

C. Data Issues

1. NEISS vs CPSRMS

One commenter (WCMA) stated that the 34 injury reports from NEISS were combined with the anecdotal reports received by CPSC and that the briefing package did not explain how NEISS data injury reports were added to the other incident data, and how CPSC ensured that no double-counting occurred.

Response

Staff routinely ensures that CPSC data counts are not duplicative. For example, for the data presented in the NPR where staff combined the reports from NEISS with anecdotal reports in CPSRMS, staff compared the individual NEISS nonfatal injuries with the reports received through CPSRMS by taking into consideration the injury date, victim age and sex, and the injury scenario description, and ensured that no double counting of incidents have occurred for the nonfatal incidents. All fatal injury reports that are reported through NEISS are also reported through CPSRMS. As such, staff did not need to combine these reports to the incident data.

2. Low Risk

At least 185 commenters, including 158 businesses, suggested that the risk associated with corded window coverings is low, advancements have been made in the voluntary standard that reduced the hazard further, and some commenters compared the number of deaths associated with corded window coverings to other products.

Response

Commission staff is well-aware that children die from interacting with other household products; however, that does not diminish the seriousness of the hidden and fatal strangulation hazard from window covering cords, nor the necessity of setting a performance standard to reduce the risk. The strangulation hazard to young children from window covering cords is serious, with most incidents resulting in death. The strangulation hazard is a “hidden hazard,” because many consumers do not understand or appreciate the hazard, and do not take appropriate steps to prevent death and injury from window covering cords. Staff assesses that neither the ANSI/WCMA-2018 nor the draft ANSI/WCMA-2022 standard adequately addresses the strangulation risk associated with custom window coverings. Staff also assesses that compliance with the ANSI standard for stock products did not cause a decline in revenue, by either units or by total revenue. Staff concludes that manufacturers can apply similar technologies used in stock window coverings as well as additional mechanisms such as retractable cords and loop cord and bead chain restraining devices to custom products to make them safer without impacting utility, availability or cost.

Many commenters cited the anecdotal data that staff presented in Custom NPR briefing package as an indicator of a downward trend in strangulation incidents and a reason why CPSC should not finalize the rule. However, staff does not have an assurance that the data on window covering cord strangulations is inclusive of all such incidents that may have occurred, either fatal or nonfatal. As such, CPSC has no evidence of any trend--increasing, decreasing, or stationary. In the Custom (Section 7 and 9) NPR package, staff stated that the anecdotal data are not necessarily a representation of reality. The anecdotal data represent a *minimum* number of incidents, which are known to have occurred. Additionally, reporting of incidents to CPSRMS is ongoing. For example, since the data analysis was completed for the NPRs in 2021, the number of fatalities reported has risen to eight (from three, as initially reported) in 2020, and six (from zero, as initially reported) in 2021. Staff expects that these numbers will likely increase over the next year, as CPSC receives more data.

D. Economic Issues

1. Alternative methods for the Regulatory Impact Analysis

Two commenters (Institute for Policy Integrity and WCMA) suggested that instead of or in addition to a comparison of costs versus benefits, CPSC could have performed a breakeven analysis, citing the OMB guidance (Circular A-4) that this method can be appropriate when the benefits cannot be quantified.

Response

Staff agrees that there are unquantifiable benefits for the draft final rule. However, the benefits in this case can be estimated based on more than 10 years of anecdotal incident data. The Injury Cost Model utilized by CPSC staff accounts for some unquantified benefits, so it would not be accurate to say that the benefits of the rule are completely unknown. Given that staff has data for strangulation deaths and has assessed that the draft final rule would address the

hazard patterns, staff was able to calculate benefits and costs associated with the draft final rule. Furthermore, recognizing that there are possible variations in costs or benefits to consider, staff conducted a sensitivity analysis including looking at a children's VSL of 3 times the VSL for adults, as discussed in the NPR as well, and found that in some cases this type of increased VSL for children could result in the draft rule having a net benefit. Additionally, for the draft final rule, staff discusses additional unquantifiable benefits, because not all benefits of the rule are represented in the benefits analysis.

In addition, as one commenter pointed out, the CPSC requires only that the benefits of a CPSC rule "bear a reasonable relationship to its costs." CPSC is an independent regulatory agency, not an Executive Branch agency, and CPSC is not subject to the requirements in EO 12866 or 13563 that require the agency to "justify" the costs, or to comply with OMB Circular A4.

2. Cost of Safer Products

At least 579 commenters, including 331 businesses, stated that safer window coverings are too expensive for some consumers, regulations will increase the cost of window coverings, and motorized window coverings cost much more and are cost-prohibitive for many consumers.

Response

Market data on stock window coverings do not support the commenters' hypothesis regarding the cost of cordless window coverings. Voluntary compliance with the ANSI standard for stock products did not cause a decline in revenue, by either units or by total revenue, as most of the industry transitioned to cordless only product, even though the price of some stock coverings nearly doubled. Multiple commenters representing manufacturers and retailers noted that sales of cordless stock products have *increased* in the past few years, thus demonstrating consumer demand for cordless products as an acceptable replacement for corded products, even at a higher price.²

In 2019, Canada published the new Corded Window Coverings Regulations to restrict the length of cords and the size of loops allowed on window coverings sold in Canada, the requirements apply to all products, both stock and custom. The evidence from the Canadian custom window coverings market is that the transition to cordless options in the custom market has been relatively inexpensive for consumers. Staff observed that many designs are priced the same for cordless wand options as for the previous corded design, while motorized options add under \$100 to the retail price for commonly ordered sizes.

3. Commercial Establishments

At least 12 businesses raised issues about mandating safer window coverings in commercial buildings and suggested an exemption. Three commenters stated that in an emergency situation such as a lock down, school teachers should be able to close the window coverings quickly and that new systems may require teachers to climb up ladders to operate the window covering, which is impractical and time consuming. One manufacturer stated that based on the NPR, the proposed standard appears to intend to address potential hazards of window coverings in residences, but the scope of the proposed rule covers all custom products. Given the broad interpretation of the definition of "consumer products" under the Consumer Product Safety Act, the commenter believes that many of the strictly commercial products could be

² Based on Euromonitor annual revenue estimates and D&R (2021)

subject to the regulation, unless the Commission makes clarifying changes to its definition of “custom window covering.”

Response

CPSC has jurisdiction over window coverings that are produced or distributed for the use of consumers, as long as the product is customarily produced or distributed for use by consumers. 15 U.S.C. 2052(a)(5). Custom window coverings that are produced or distributed for use in residences, schools, recreation, or otherwise, fall within the scope of CPSC’s jurisdiction. Staff is unclear what a “commercial” window covering is and how such a product would be exempted. For example, CPSC staff is not aware of products that are solely sold for use by workers in a specialized context that are not also present for the use and enjoyment of consumers that visit such business. If consumers have access to custom window coverings and are subject to the potential harm, the product is within CPSC’s jurisdiction.

Additionally, exempting window coverings in businesses from the requirements of the draft final rule would not address the strangulation hazard, as there is still a hazard to children in office buildings, retail locations, and other buildings, such as commercially-managed residential apartment buildings. The final rule allows multiple ways to make custom window coverings safer, such as cordless products, short cords, cord shrouds, retractable cords, and loop cord and bead restraining devices. Also, staff recommends a longer implementation date for larger-sized custom window coverings. The draft final rule applies to all custom window covering products, meaning those products used in residential and other settings where consumers have access to window covering cords and any associated hazards.

4. Competition from Overseas Manufacturers

Several commenters claimed that U.S. manufacturers cannot compete against cheap imports, and that “the cost of the mechanism to make many products cordless is more than the cost of the entire product imported from overseas unless you purchase container loads of the mechanism at a time. The new rules make it more difficult to compete especially with China.”

Response

Imported products will be subject to the same requirements as products made in the U.S. The economies of scale should be the same for manufacturers of any nation. We anticipate that the expanded demand for cordless mechanisms should lower the costs of those mechanisms in the medium term, due to economies of scale.

Overall, this comment does not seem specifically relevant to custom-made products. This regulation covers *custom* products, which are made to a unique customer’s specifications, ordered from a U.S. brick and mortar retailer, online store, or through an interior designer. This regulation does not require U.S. manufacturers or retailers to source the parts or materials from any particular country. While it is theoretically possible for a U.S. consumer to order custom blinds from Chinese websites in small lots, we have no evidence that customers ordering custom window coverings directly from China is common, or a measurable portion of the market. While U.S. consumers can easily order custom blinds from Canadian online retailers that already have compliant window coverings in stock, this does not appear to be the “cheap imports” to which the commenters refer, and the Canadian online retailers are in several cases subsidiaries or affiliates of U.S.-based companies.

5. Impact on Businesses

At least 1,007 commenters (at least 938 identified themselves as businesses) stated that the proposed rule would cause a significant impact on their businesses. Particularly, small custom window coverings retailers, commented that the rule would reduce sales and raise costs. Large suppliers commented that they intended to require licensed dealers to purchase new “sample books” costing thousands of dollars each. Large suppliers and associations also provided extensive data on estimated costs of retooling and costs of components at the wholesale level.

Response

As explained in the Staff Briefing Package (SBP) to the NPR, CPSC does anticipate a significant impact on small businesses in the short term, as firms transition product lines to being compliant with the standard. However, the impact may be less than originally estimated, due to the enforcement of Canada’s regulations beginning in May 2022. Companies that sell in both Canada and the U.S. have already redesigned their custom offerings to be compliant with the Canadian regulations that are substantively similar to those in this draft final rule, so already have stock of compliant product designed and ready to sell through small dealers and interior designers.

While the window covering manufacturing sector as a whole is highly fragmented, the custom part of the market is concentrated, with a few large suppliers accounting for approximately 40 percent of the industry revenue. The large suppliers are multinational companies with distribution in multiple countries. This means that those large suppliers already have compliant products available for the Canadian market, and that any incremental costs of redesign for the U.S. market will largely fall on those relatively large companies, rather than their small distributors and dealers. If suppliers in this industry choose to force small distributors to buy new sample books, that decision is in no way a requirement of this rule, or an inevitable consequence of this rule.

6. Small versus Large Businesses

One commenter suggested that a regulation will give larger corporations an unfair disadvantage as the hard window coverings can comply with it but small manufacturers who make soft window coverings cannot.

Response

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 the NPR preamble and Tab J of the NPR SBP, 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, as detailed in Tab F and summarized in Tab G. 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.

7. Stockpiling should not be prohibited

One online retailer of blind and shade repair parts suggested that companies should be allowed to purchase whatever products they deem necessary or prefer. This same commenter also

stated that the rule states no consequence for violating the rule and was unclear on who will be enforcing it.

Response

The stockpiling provision in the draft final rule reflects a balance between the competing policy goals of addressing the hazard but also accounting for realistic supply chain limits and considering the compliance costs for businesses and particularly those for small entities. A less specific base period, or a higher proportion above the base production amount, would allow more non-compliant units to be manufactured and sold, which could reduce the burden to industry. However, it would reduce safety benefits to consumers and also force suppliers of compliant units to compete against a larger stockpiled supply of non-compliant, likely cheaper, units for a longer period of time. A more stringent provision would increase the burden to industry, and might not have a corresponding benefit, because the reduced hazard might not be proportional to the reduced sales of non-compliant units. Considering the balance of competing policy goals, staff does not recommend changing the stockpiling provision.

If a manufacturer or importer violates any provision of a mandatory rule, including the stockpiling provision, CPSC can enforce that provision using authority under section 19(a)(1) of the CPSA, which prohibits the sale, offer for sale, manufacture for sale, distribution in commerce, or importation into the United States, any consumer product that is regulated under the CPSA, that is not in conformity with an applicable consumer product safety rule. 15 U.S.C. 2068(a)(1). CPSC's authority allows for corrective actions, or recalls, refusal of admission and/or seizure of products at the ports, and civil penalties for failure to conform to required regulations.

8. Unquantified Benefits are Larger Than Estimated

Multiple commenters (Institute for Policy Integrity and A. Finkel, economist) suggested that the RIA underestimated the benefits of the rule, by not discussing unquantified, but potentially very large, benefits of the rule. The unquantified benefits suggested included parental grief, reduced cost of litigation for manufacturers and retailers, and averted recall costs. Two commenters specifically cited the example of a Federal Motor Vehicle Safety Standard for rear visibility cameras in passenger cars, where the regulatory impact analysis for that rule discussed the large unquantified benefits of reducing parental grief and emotional trauma from causing the death of one's own child or a relative or neighbor. One commenter pointed out that particular standard as an example of an "experience good", where the standard caused people's preferences to change to favor a safety technology with which they were previously unfamiliar.

Response

These potential unquantified benefits would be included in an increased value of statistical life, or VSL, for children. A discussion of this is included in the sensitivity analysis portion of Tab F. We note that the Injury Cost Model already takes pain and suffering into account, so a portion of parental grief benefits are accounted for and would be accounted for in an increased VSL for children. Moreover, we cannot accurately assign a value to the potential that people might experience a shift in preferences towards a safer product, although the evidence of continued growth of demand for cordless stock coverings does indicate this is a potential for custom window coverings as well.

9. Value of a Statistical Life

Two commenters (Institute for Policy Integrity and A. Finkel) suggested that CPSC use different references and different theoretical justifications to derive a value of statistical life (VSL) for children.

Response

As the commenters noted, CPSC has many possible references and several alternative methods for deriving a value of statistical life specifically for children. However, as evidenced by the many alternative sources and several methods suggested by the commenters, no consensus exists (either in the U.S. or internationally) on what value or method should be used by regulators. Therefore, staff provided a range of possible values in the RIA, as part of the discussion of the uncertainty of the magnitude of benefits. The current range of values in the peer reviewed literature for a child's VSL ranges from less than 1 to more than 7 times the value of an adult VSL, as discussed in more detail in the RIA. CPSC staff added a discussion of this range to the sensitivity analysis but have not changed the core estimate of children's VSL. As noted in the discussion, increasing a child VSL to three times the base VSL, \$31.5 million, would result in a calculated net benefit for the draft proposed rule of \$14.3 million.

E. Consumer Issues

1. Accessibility issues with disabled population, people with short stature and seniors

At least 383 comments (331 businesses, 8 consumers, and 44 unknown) stated that having a short cord introduces accessibility issues for various consumers such as people in wheelchairs or otherwise challenged to access cords higher up. Some commenters questioned whether the proposed rule is compliant with Americans with Disabilities Act (ADA).

Response

People with accessibility concerns have other product choices beyond short cords to address the strangulation hazard. Specifically, the draft final rule provides several options, consistent with the ADA, to address accessibility of window coverings. Sections 308.2 and 308.3 of 2010 ADA Standards for Accessible Design specify forward and side reach distances that would be applicable to window coverings.³ For example, an unobstructed high forward reach shall be 48 inches; if there is obstruction, high reach shall be 48 inches or 44 inches where the reach depth is 20 inches maximum or 25 inches maximum, respectively. Unobstructed high side reach shall be 48 inches; if there is obstruction, the high side reach shall be maximum 48 inches and 46 inches if the reach depth is 10 inches maximum and if the reach depth is over 10 inches but less than or equal to 24 inches, respectively. Based on these requirements in the ADA, several alternative window covering solutions can safely replace existing hazardous cords, such as rigid cord shrouds and loop cord and bead chain restraining devices, which can allow access to a height that is about at the same height as corded products. In addition, retractable cords can be made accessible with a rigid wand or handle to an easy-to-access height. Poles are currently being offered to reach the bottom of cordless products.

Staff also notes that existing corded window covering designs may not be ADA compliant. The ADA states that operable parts need to be operable with one hand and shall not require tight

³ Department of Justice (2010). 2010 ADA Standards for Accessible Design, accessed at <https://www.ada.gov/regs2010/2010ADASTandards/2010ADASTandards.pdf>

grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds maximum. Staff questions whether traditional operating pull cords and continuous loop bead chains and cords are compliant with this ADA requirement, as such cords require tight pinching and grasping to operate. Further, in many cases, the pull force of a corded system can exceed the maximum 5 pound requirement. Staff determined that many cordless or shrouded products that would meet the draft final rule are operable with one hand and do not require pinching, tight grasping, or twisting of the wrist. Staff concludes that the custom window covering requirements in the draft final rule do not limit accessibility, allow for products that have one-handed operation, and eliminate the strangulation hazard.

2. Acknowledgement of Risks before Ordering

At least 48 commenters (45 businesses) stated that they either currently ask or suggest that consumers acknowledge the strangulation risk associated with cords before ordering a custom corded window covering.

Response

Even though consumers may acknowledge the risk associated with the corded window coverings that they are purchasing, the hazard with the corded window covering remains on the product. Household members other than the consumer who signed the document; as well as future residents of the household, may still be unaware of the hazard and may allow a child to be exposed to the hazardous cord.

3. Climbing on ladders or other furniture is unsafe

At least 56 commenters, including 42 businesses, stated that climbing on ladders or other furniture is unsafe for consumers, particularly older consumers. Due to the short cord requirement, climbing will be required to operate hard-to-reach window coverings. Some commenters provided statistics on falls.

Response

Staff agrees that climbing should not be a regular practice to operate a window covering. Alternative solutions to climbing that can safely replace the existing hazardous cords include: poles to operate cordless systems, rigid cord shrouds, loop cord and bead chain restraining devices, as well as retractable devices that would be within easy reach of users. Accordingly, there is no reason why the draft final rule would lead to the unsafe behavior envisioned by these commenters.

4. Exclude Draperies

Several commenters, including two businesses, noted that draperies should be excluded from the rule. One stated that there are no “aesthetic” alternatives to cords for draperies. Another commented that there is no evidence that draperies are unsafe, given that the cords are on pulleys attached to the floor.

Response

Multiple cordless options for draperies are available, including wands and motorized controls, as well as simply pulling the draperies on the traverse rod by hand, with no cord or other control. The SBP and draft final rule detail fatal incidents involving draperies in the data. Corded draperies are common, and often do not have the cord on a loop or attached to the floor as the commenter claims. Of the different types of window coverings analyzed in the RIA, draperies

had the lowest costs of compliance, assumed to be near zero because the cost of a control wand is approximately equal to the cost of the cord it replaces. The benefits of including draperies in scope exceed the near-zero costs of compliance for draperies.

5. Informing the Customer

About 593 businesses stated that they regularly educate their clients on the safer options during the ordering process and that consumers make an informed choice by being aware of the hazards associated with the corded product. At least 120 commenters stated that people should be made aware of the dangers and then make their own choices.

Response

Staff encourages sellers to inform and educate consumers on the operating systems that contain hazardous cords. However, information and education does not negate the fact that the window covering that may be purchased and installed can still be hazardous. If consumers do not appreciate the hazard, they may choose to buy a hazardous window covering even when children are present in the home. Moreover, custom window coverings have a long product life. When a home is sold or rented, a new resident, potentially residents with children, will likely live with the hazardous window covering, unaware of the associated hazards. These consumers would not be properly informed about the hazard as they are not the original purchasers of the product; due to the ineffectiveness of warning labels on such product, even a permanent label may not get the attention of the user (see the ESHF memorandum in the NPR staff briefing for warning label assessment.) Information and education remain important to address the existing cord hazard, but as the incident data reflect, education and warning labels do not adequately address the risk of injury.

6. Parental Responsibility

At least 24 commenters including 17 businesses suggested that parents are responsible for supervising their children around window coverings.

Response

Strangulation with cords requires only a few minutes to occur and happens silently. Parental supervision is unlikely to effectively 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 a bedroom or family room.⁴ A more effective solution to the window covering cord hazard is to ensure that window coverings do not have hazardous cords.

7. Rental Leases and Real Estate Documents

One business suggested informing and disclosing the hazards associated with corded window coverings to inform renters as well as purchasers. Two businesses (Comfortex Window Fashions and Inviting Interior Style) suggested home inspections when dwellings change hands.

⁴ Balci-Sinha, R. (2021) Human Factors Considerations for the Proposed Rule on Custom Window Coverings. CPSC memorandum to the Window Coverings Rulemaking File, U.S. Consumer Product Safety Commission, Rockville, MD. Accessed at <https://www.cpsc.gov/s3fs-public/NPRs-Add-Window-Covering-Cords-to-Substantial-Product-Hazard-List-Establish-Safety-Standard-for-Operating-Cords-on-Custom-Window-Coverings-updated-10-29-2021.pdf?VersionId=HIM05bK3WDLRZrINGogQLknhFvhtx3PD>

Response

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. Certain state and local authorities may have regulations in place with regard to window coverings in rental homes. However, CPSC regulates consumer products, wherever consumers may use such products (homes, schools, in recreation, or otherwise), rather than the terms of commercial contracts. Mandatory inspections of installations of corded window coverings would not prevent deaths and injuries without an additional safety rule, because hazardous loops can still be accessible even when cord loops are correctly installed and with tension (see Tab I).

8. Replacement of Old Window Coverings

At least 12 commenters, including 10 businesses, stated that the rule would discourage people from replacing their decades old blinds and shades containing non-compliant dangerous cords with new window coverings because they would not want to give up their corded products.

Response

Market data on stock window coverings does not support the commenters' hypothesis. Voluntary compliance with the ANSI standard for stock products did not cause a decline in revenue, by either units or by total revenue, as most of the industry transitioned to cordless only product. Multiple commenters representing manufacturers and retailers noted that sales of cordless stock products have *increased* in the past few years, thus demonstrating consumer demand for cordless products as an acceptable replacement for corded products.

In addition, the expected product life provided by one industry commenter for custom products is at most 10 years. (The RIA had a range of expected life with the lower end of the range around 7 years, based on expected product life of stock products, particularly inexpensive vinyl blinds.) Customers cannot realistically keep corded blinds and shades for much longer than the expected product life. Staff notes that the total expected additional net cost for a household living in a single family detached home would equate to about \$24 for custom vinyl blinds, although less expensive options are available.

9. Require Professional Installers to Install

As an alternative to the rule, several commenters (one interior designer and one business owner) suggested that CPSC should require that custom window coverings be professionally installed. This would help small businesses and improve consumer safety. Others suggested that inspection of custom window treatments should be a mandatory part of home inspections.

Response

Although staff agrees that these practices may improve safety, these alternatives of regulating professional services are outside of CPSC's authority. Also, staff believes that these alternatives would be more costly than the rule, without providing as many benefits; so, it would be less cost effective than finalizing the rule. The typical cost for adding cordless options to a custom window covering ranges from under \$10 to about \$100, except for some very large, motorized options, far less than the cost of hiring a professional installer for corded custom window coverings. In general, commenters' alternatives would raise costs for custom window

covering installation, while addressing few of the known incidents and fatalities, as well as not addressing the known hazard of corded window coverings. Therefore, the costs would likely greatly exceed the potential benefits. Most importantly, mandatory inspections of installations of corded window coverings would not prevent deaths and injuries without an additional safety rule, because hazardous loops can still be accessible even when cord loops are correctly installed and with tension (see Tab I).

10. Twisting Wand Takes Time and Effort and Use is Inconvenient; Poles may not Work for Elderly

At least 38 commenters, including 36 businesses, stated that using a wand is time consuming and may be difficult for some consumers.

Response

The wands that staff evaluated are easy to learn and use and staff anticipates that further innovation will make wands even more efficient and easy to use. Staff notes that some traditional wands used to rotate horizontal slats have thinner diameters, which can make such wands more difficult to use compared to rigid cord shrouds that staff evaluated which have thicker diameters and are more comfortable to use. Also, the draft final rule does not require the use of wands. Many other types of safe operating systems can be used instead of a wand, such as cordless, retractable cords, or motorized systems.

F. Warnings, Public Awareness, and Education

At least 5 businesses mentioned that warning labels on the products should be relied on to address the strangulation hazard as they inform the consumer about the hazard while at least 2 other commenters stated that warning labels and educational efforts were tried, did not work, and are insufficient to address the strangulation risk.

Response

CPSC's Human Factors staff state that research demonstrates that consumers are less likely to look for and read safety information on products that they use frequently and are familiar with.⁵ This research is demonstrated in the data. 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 quantify 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, as evidenced by the continuing number of fatalities. Accordingly, staff does not recommend relying solely on education campaigns to address the risk of injury.

G. Other Product-Related Hazards

⁵ *Ibid.*

1. Access to battery to recharge or replace

At least 15 businesses stated that replacing or swapping batteries located on the headrail is difficult for consumers as they need to climb on ladders. At least 4 commenters also stated that the new rule would increase the use of batteries, which is wasteful for the planet.

Response

Staff found examples of window coverings where the batteries are stored in the bottom rail. This would make it easier for consumers to recharge or replace batteries. Batteries are rechargeable. In addition, some window coverings are hardwired or solar powered.

2. Button batteries used in remote controls

At least 3 comments (WCMA, Parents for Window Blind Safety, Independent Safety Consulting) suggested that remote controls that contain button batteries either comply with ASTM F963, other applicable button battery standards, or simply stated that battery compartments should have a screw.

Response

On August 2, 2022, Congress passed H.R. 5313, or Reese's Law, and the President signed the bill into law on August 16, 2022. Reese's Law directs the Commission to establish a mandatory standard to protect children and other consumers against hazards associated with the accidental ingestion of button cell or coin batteries used in consumer products. Accordingly, staff is preparing implementation of this law, and anticipate that window covering remote controls that use button batteries will fall within the scope of the rule. The 2022 draft balloted revision of the ANSI/WCMA standard also has a requirement for battery compartments to meet ANSI/UL 4200A, which staff supports.

3. Continuous loops with tension devices are safe

At least 429 commenters stated that continuous loops with properly attached tension devices are safe and should not be eliminated. Commenters said that windows that are high up, windows over a sink, and windows behind a couch need continuous loops.

Response

Incident data demonstrate that tension devices may come off the wall, may not be installed at all, or that continuous loops may not be taut enough to prevent incidents. Because of these reasons, staff finds that window coverings operated with continuous loops with tension devices can leave hazardous loops accessible and do not adequately address the risk. Instead, staff finds that inherently safe window coverings that do not rely on the consumer or a third party installer to install and maintain a safety device are the most effective solution to address the strangulation hazard. Staff received various comments stating that some consumers do not want the tension devices attached (e.g., comment CPSC-2013-0028-2047 states: "approximately 90% of my clients do NOT want the cord safety device installed because it is unattractive.")

Staff analyzed how a window covering that is behind a piece of furniture or sink would be operable with a continuous loop if it is attached to a wall to keep the loop taut. See ESHF memo (Tab B) for a visual comparison. Staff assesses that the continuous loop would likely remain unattached to the wall with a tension device so that the consumer can pull the loop towards him/her to operate. This means that the continuous loop remains accessible to children and

hazardous. Given children's ability to climb and incident data demonstrating this hazard scenario, staff concludes that continuous loops that are contained in a rigid shroud or restrained within a passive restraining device are much safer for children and much easier to operate for both access and ease of use by consumers.

4. Consumer preference for corded products

At least 2 businesses suggested that they have customers who prefer to use corded window shades because they find them easier to use. Some stated that the most recent safety change to limit the free hanging cord length to 40% of the product length generated complaints because some of their clients can't reach the cord with ease. Some businesses stated that they sell custom blinds to nursing homes and retirement homes; the users demand that the cords be long enough to be reached, which usually means 40" or more.

Response

Staff acknowledges that some decrease in sales may occur and lead to a lost consumer surplus. This cost is accounted for in the RIA. Staff notes also that stock products currently on the market that comply with ANSI/WCMA 100.1-2018 are available in a variety of materials, sizes, and types to meet consumer needs. Proposed custom product requirements allow a variety of solutions to ease the operation of window coverings, including poles for cordless systems, rigid cord shrouds and loop cord and bead chain restraining devices, motorized window shades, and retractable cords. All of these options provide easy reach for consumers. Based on the comments, staff recommends that the draft final rule for custom window coverings permit corded window coverings as long as they use a single cord retractor, rigid cord shroud, or a cord restraining device, to create more options for non-motorized safe window coverings, provide options for accessible custom window coverings, and allow for ease of use.

5. Cord cleats

About 42 commenters stated that cord cleats are provided with the corded window covering and address the hazard.

Response

Cord cleats do not adequately address the strangulation hazard associated with window covering cords because such devices rely on consumers to wrap the excess cord around the cord cleat every time they raise or lower the window covering. Incident data demonstrate that consumers may not be wrapping the cords around the cleat every time they operate the window covering, which results in dangling operating cords with which children can strangle. 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.⁶ Further, cord cleats can be accessed by a child if he/she climbs up. In one incident "A four year old boy moved a small plastic table over near the window, climbed upon the table and reached up and removed the shortened pull cord for the window covering from the "safety" cleat. He pulled the cord out and wrapped it around his neck. He then jumped off of the table. The cord

⁶ Ibid.

broke and he fell to the floor. His parents were able to remove the cord from his neck. The boy recovered from his injuries.”⁷

6. Effective date

At least 401 commenters stated that the proposed six-month-effective-date is very short to meet the proposed requirements; 94 commenters suggested at least one year effective date, three commenters suggested at least an 18 month to 2 years effective date, and seven commenters suggested at least 2 years to comply with the rule. Two commenters submitted the extent of the delays in obtaining equipment, transit time in both sea and air to get equipment and components from overseas suppliers, and delays in lead times for raw materials. Consumer organizations stated that a mandatory standard should be issued as soon as possible; one manufacturer (Safe-T-Shade, LLC) stated that 180-day lead time is more than sufficient for industry implementation.

Response

Based on the Directorate for Economic Analysis memorandum (Tab F, Bailey 2022,) a duration of one year provides adequate time for window covering manufacturers to come into compliance with the draft final rule for custom window coverings under 10 ft long. Staff assesses that a one-year timeframe is sufficient to accommodate delays in lead times for raw materials, logistics, equipment, and building inventory. For larger windows covering over 10-feet long, manufacturers may require additional time to develop non-motorized lift systems such as rigid shrouds on continuous loop systems. Staff estimates a 2-year development cycle for larger window coverings and therefore recommends a 2-year effective date for custom window coverings that are at least 10 feet tall.

7. Free hanging cords

At least three commenters stated that free hanging cords should be removed because they pose a higher risk to a child. At least one manufacturer stated that free hanging cords are a large portion of their business.

Response

Free-hanging window covering cords are associated with 18 of 36 custom product strangulations or near strangulations (74 free-hanging cord incidents of the overall total of 209 incidents) , and staff recommends removing them from custom window coverings. The window covering industry is moving away from free-hanging cords, as WCMA, in their latest draft balloted revision to ANSI/WCMA-2018, intends to remove cord lock systems and thus free hanging operating pull cords from all custom products, regardless of type, size, and weight of the window covering. Staff agrees with this proposal, which aligns with the recommended language in the NPR. As stated earlier, the draft final rule contains several alternatives to hazardous free-hanging cords, such as rigid cord shrouds, loop cord and bead chain restraining devices, and retractable cords, in addition to manual and motorized cordless lift systems that can replace cord lock systems.

⁷ Lee, K. (2014). Mechanical Engineering Response to Window Coverings Petition. CPSC memorandum to Rana Balci-Sinha, Project Manager, Window Coverings Petition CP 13-2. U.S. Consumer Product Safety Commission, Rockville, MD. Accessed at https://www.cpsc.gov/s3fs-public/pdfs/blk_pdf_PetitionRequestingMandatoryStandardforCordWindowCoverings.pdf

8. High windows or windows that are hard-to-reach are impossible to use with an 8-inch cord

At least 385 commenters stated that windows located at higher locations, windows behind the kitchen sink, or behind furniture cannot be operated with an 8-inch cord.

Response

Staff agrees that an eight-inch cord hanging from the headrail is unlikely to be useful for hard-to-reach locations. In response to this and other comments and staff considerations, an option was added to allow the use of single cord retractor systems with a 12-inch stroke. Staff notes that several safer alternatives besides eight-inch operating cords, replacing existing hazardous cords exist. Consumers can use:

- Cordless blinds with an access wand
- Motorized window covering with a remote control
- Single cord retractor systems with a 12-inch stroke
- Rigid cord shrouds
- Cord restraining devices

Manual spring system is not durable

At least 8 businesses stated that manual spring systems are not durable and break easily.

Response

Cordless window coverings often use a series of constant force springs. Any spring has a limited fatigue life (number of cycles to failure). Manufacturers can control fatigue life of the lift system by selecting the proper spring size, strength, and number of springs for the lift system. Also, if the springs break, the window covering fails safe, meaning cords do not become accessible to consumers, because cordless window coverings do not have accessible operating cords.

9. Off-the-shelf products

At least 3 commenters suggested that stock products are more dangerous than custom products because stock products are allowed to 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.

Response

Stock window coverings that are compliant with the existing voluntary standard cannot have lengthy pull cords as the commenter suggests. All stock products must be cordless, have short cords (equal to or shorter than 8 inches), or have inaccessible cords. 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 paramount particularly to reduce the risk associated with the corded window coverings already installed in consumers' homes. However, as discussed in this staff briefing package, education campaigns are insufficient to address the hazard, and manufacturing inherently safe custom window coverings that comply with the ANSI/WCMA standard's stock products requirements is needed. Staff also observed in several

public comments that installers may remove the tension device from the product if the customer does not want it mounted, which would allow a hazardous loop on the product.

10. Product options / Limited choices for consumers

At least 321 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.

Response

The draft final rule does not eliminate operating system options but rather applies performance requirements that eliminate hazardous cords. Manufacturers can develop new operating systems that do not have accessible cords or implement existing solutions such as cordless systems, shrouded or continuous loop systems, or shrouded pull cord systems. These technologies are available and are being used for both stock and custom window coverings.

For example, suppliers of custom window coverings to the Canadian market have already adjusted their products to comply with Canada's window treatment regulations which are substantially similar to this draft final rule. This has apparently resulted in changes to advertised product lines; such as those shades that could not meet the inner cord requirements (e.g., light pleated shades, narrow metal blinds) appear to have been removed from the market, as well as some of the largest sizes of other categories. Manufacturers are offering cost-effective redesigns to other types that are cordless. In addition, manufacturers are offering new designs to replace the discontinued options in Canada, such as shades with light blocking material on the bottom and sheer on the top as a replacement for "top down/bottom up" shades. Staff has no evidence from the Canadian market of a significant reduction in consumer choice. Rather, the market has reacted with cost-effective substitutes and redesigns.

11. Retractable cords work well and are safe

At least 149 commenters stated that retractable cords are safe and should not be eliminated.

Response

In the Custom Window Coverings NPR, the Commission sought comment on whether retractable cords should be included in the final rule. Staff is not aware of incidents associated with retractable cords, and based on the comments received, staff now recommends that custom window coverings be permitted to use a single retractable cord lift system that exposes up to 12 inches of cord from the bottom of the headrail as a stroke length. Staff recommends the 12 inch cord limit based on staff's analysis demonstrating that it is extremely unlikely for a strangulation to occur in this scenario for both younger and older children due to their abilities and physical dimensions, as well as lack of incidents within 12 inches of the headrail.

12. Technology unavailable to cover all products in all sizes and weights

At least eight commenters, including WCMA, stated that non-motorized cordless lift systems are not feasible for large window coverings. Commenters stated that continuous loop cords with tie down devices are capable of lifting any size window covering. At least 3 commenters stated that manual cordless lift systems have limitations such as size and weight of the window covering that could limit the application (e.g., for faux wood blinds, a general estimate for the maximum dimensions for cordless is 96 inches wide by 48 inches high and 60 inches wide by 84 inches high.)

Response

Staff considered the comments provided by manufacturers about the limitations for larger products to accommodate the manual cordless systems.

Staff also reviewed the incident data to determine the largest products that were involved in incidents: the longest product that was involved in a nonfatal incident had a reported length of 112 inches (width was 124 inches). A reported fatality involved a roller shade; based on other dimensions provided in the IDI, staff estimates the length as 119 inches (width was estimated as 54 inches).

Based on staff's market research, rigid cord shrouds are currently limited to operating window coverings up to 96" tall. Staff reviewed the available technologies on the market and determined that it is feasible to implement rigid cord shrouds, cord or bead chain restraining devices or retractable cords on larger window coverings (Tab C.)

Staff received comments stating that there is an increased presence of taller windows in homes. Because hazard patterns in taller window coverings are the same as hazard patterns for shorter window coverings, and the potentially increased number of installations of taller window coverings in residences, and the feasibility of applying safer technologies on these products, staff does not recommend excluding taller products from the scope of the rule. However, staff's product development time estimates (Tab C) demonstrates that a longer implementation date (*i.e.*, 2 years) is reasonable for manufacturers to implement the technologies for products that are raised and lowered and are 10 feet or more in length.

13. Top-Down-Bottom-Up (TDBU) shades

About 33 commenters believe that TDBU shades would be eliminated if the proposed rule becomes final. They believe that TDBU shades are safe and should not be eliminated.

Response

Staff did not recommend eliminating TDBU shades. A TDBU shade can be manufactured as long as it does not contain hazardous operating cords and hazardous inner cords. The inner cord requirements differ between the ANSI/WCMA-2018 and the Canadian rule; however, even if the TDBU shades fail to meet the draft final rule, Canadian custom window treatment retailers have already adjusted their products to comply with Canada's window treatment regulations. Manufacturers are offering cost-effective redesigns to replace the discontinued options, such as shades with light blocking material on the bottom and sheer on the top as a replacement for "top down/bottom up" shades. There is no evidence from the Canadian market of a significant reduction in consumer product choice. Rather, the market has reacted with cost-effective substitutes and redesigns. Since the same large companies sell window coverings to the Canadian and U.S. markets, we anticipate that these innovative replacements will be available in the U.S. at competitive prices.

14. Training Installers

At least 353 businesses stated that they train their installers so that window coverings and safety devices are properly mounted.

Response

Staff encourages sellers to train installers so that safety devices, in particular, are installed in a proper manner. However, over the lifetime of the product use, external safety devices such as tension devices may break or come off the wall. In addition, consumers who do the installation

by themselves may not have the knowledge or ability to properly install the device. The type of wall and fasteners can make a big difference in the proper installation of tension devices and that is not within the control of manufacturers. Custom window coverings that use a tension device are inadequate to address the strangulation risk. Staff testing found that a child can still fit their head through a properly tensioned cord (Tab I), so this option does not eliminate or adequately reduce the risk of strangulation. Moreover, consumers may not install tension devices, or alternatively they may break or be uninstalled. Safer options to reduce the risk of injury include passive safety devices that do not rely on consumer behavior to prevent the hazard.

H. Stories of Loss

Over 40 commenters either were personally affected by window covering cord injury or death or knew someone who was affected by a child's death on a window covering cord.

Response

Staff appreciates the courage of these families in sharing their difficult stories of a tragic loss. 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 the final rules for stock and custom window coverings, so that no family must endure the same tragedy of losing a child to a window covering cord.

Tab I: Draft Final Rule for Operating Cords on Custom Window Coverings: Assessment of Draft ANSI/WCMA 2022 Balloted Standard



Memorandum

TO: The Window Coverings Rulemaking File **DATE:** September 28, 2022

THROUGH: Joel Recht, Deputy Assistant Executive Director for Hazard Identification and Reduction

FROM: Engineering Sciences Staff
Office of Hazard Identification and Reduction

SUBJECT: Draft Final Rule for Operating Cords on Custom Window Coverings: Assessment of Draft ANSI/WCMA 2022 Balloted Standard

I. Background

On July 15, 2022, WCMA issued a ballot to revise the ANSI/WCMA A100.1 – 2018 standard (draft ANSI/WCMA-2022). Staff reviewed the draft ANSI/WCMA-2022 and, in this memorandum, assesses the proposed changes to the standard and evaluates its adequacy to address the strangulation hazard associated with corded custom window coverings.

II. Discussion

A. Assessment of the draft balloted standard

Staff reviewed the draft ANSI/WCMA-2022 and determined that the standard contains no revisions to requirements for stock window coverings. All revisions in the draft ANSI/WCMA-2022 are to requirements for custom window coverings. Staff's assessment of these revisions includes the following:

1. Elimination of accessible free hanging operating cords and tilt cords

Staff Assessment:

Staff assesses that the revision to eliminate accessible free hanging operating cords and tilt cords for custom products is an adequate requirement. This revision should result in safer custom window coverings. According to Appendix C of the draft ANSI/WCMA-2022, tilt cords on a custom window covering product that are within 12 inches (31 cm) of the bottom of the headrail are considered not accessible. Staff concurs with this accessibility allowance for tilt cords, which is the same as the allowance for inner cords. Staff is not aware of reported incidents involving operating or inner cords that are within 12 inches of the headrail. Based on the climbing ability and neck circumference of children, discussed below, twelve inches of cord is unlikely to allow a child who is at a climbing age to hold the cord and wrap it around their neck.

Children generally are able to walk up the stairs with support when they are 1 year old (Bayley, 1969); and older 1-year-olds are capable of climbing on and off furniture without assistance (Therrell, Brown, Sutterby, & Thornton, 2002). Frost and colleagues (2001) report that gross motor play and the use of climbers are dominant, starting at about 1-½ years of age; and as these children approach age 2, they engage extensively in gross-motor play and begin to learn to use large playground apparatuses independently. Two-year-old children especially enjoy climbing, and can climb steps, short ladders, and jungle gyms (Therrell, Brown, Sutterby, & Thornton, 2002; Hughes, 1991).

A 2-year-old would need to climb about 4.2 ft to get to the headrail in a room with common dimensions such as 9-feet tall ceiling and the top of the window placed at 1.5 feet below the ceiling. The 97th percentile height of a 2-year-old child is 3.3 ft (Steenbekkers, 1993). Staff concludes this is a very unlikely scenario based on both the abilities of children at this age and the common placement of windows (Figure 1).

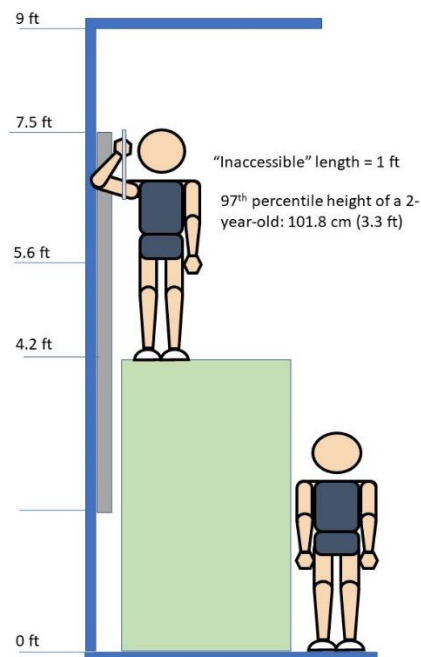


Figure 1. Two-year-old's climbing to access the "inaccessible" cord area.

After climbing, children would need to be able to hold the cord and wrap it around their neck. Although older children may be able to climb taller heights, a 12-inch length cord is not sufficient to strangle a child in the above scenario because the neck circumference of a 5th percentile 8-year-old is 9.6 inches (Snyder 1977) and the hand breadth at the palm is 2.4 inches, which is exactly 12 inches with no distance to spare between the window covering cord and the child.

2. Modified requirements for single cord retraction devices

- a. Elimination of cords attached to the Operating Interface (the part of the cord retractor that the operator pulls on) to prevent the creation of a hazardous loop. Section 6.3.1 of the draft balloted standard eliminates cords as the Operating Interface, and requires such interface to be a rigid device, such as a wand or ring that cannot bend on itself.

Staff Assessment:

Staff supports the elimination of cords for consumers to pull on when using single cord retraction devices because this revision eliminates a corded component that could lead to a potential strangulation.

- b. A maximum stroke length of 36 inches. Section 6.1.2 of the draft balloted standard sets the maximum stroke length for a cord retraction device at 36 inches.

Staff Assessment:

Staff finds this revision inadequate because a 36-inch extended cord could allow a child to wrap the cord around his/her neck. Staff recommends no more than a 12-inch stroke length to adequately address the strangulation hazard associated with corded window coverings. See Tab B (ESHF memorandum) for a comparison between 36-inch stroke length and staff-recommended 12-inch stroke length. At 12 inches, younger children with smaller neck circumferences are unlikely to be able to climb to get to the bottom of the head rail and wrap the cord around their necks; older children who can climb to that height would not have sufficient length of cord to hold and wrap the cord around their necks as explained above.

- c. Section 6.1.1 of the draft ANSI/WCMA-2022 requires that when a 30 grams mass is applied to the Operating Interface, the Cord Retraction Device shall maintain full retraction of the Retractable Cord such that the Retractable Cord is not accessible per the accessibility test in Appendix C of the standard.

Staff Assessment:

Staff supports this revision because this ensures a minimum pull force to access the exposed cord. Staff supports this revision if the maximum stroke length is limited to 12 inches as recommended in b. Staff assessed that a child is unlikely to simultaneously pull on the retraction device and wrap the exposed 12 inch cord around his neck.

3. Additional requirements for tension devices used with continuous loop operating systems

Based on the incident data, staff determined that if tension devices are not installed, are installed improperly, damaged or are removed from the cord, a hazardous loop is present. Staff's incident review for the NPR found that a total of 12 strangulations or near strangulations occurred in a custom product containing continuous loops between 2009 and 2020, in addition to 21 incidents involving stock (3) and unknown stock/custom (18). Since the NPR, staff is aware of two additional fatal incidents involving a continuous loop operating system, one of which is identified as a likely custom product; a tension device was not observed in either incident. Staff communicated their concerns and objections to tension devices numerous times to the ANSI/WCMA committee.¹ Below staff analyzes the effectiveness of each requirement for a tension device in the draft ANSI/WCMA-2022.

- a. 6.3.1 The Tension Device shall be attached to the Cord or Bead Chain Loop by the manufacturer. It shall be designed, placed and shipped such that, unless properly installed

¹ Staff's letters can be found at <https://cpsc.gov/Regulations-Laws--Standards/Voluntary-Standards/Window-Blind-Cords>

or altered from the shipped condition with Sequential Process or tools, it prevents the window covering from operating.

Staff Assessment:

This draft requirement would require a consumer or installer to use a tool or perform at least two independent steps to remove the tension device and make the window covering operable. For example, a zip tie may need to be cut to remove the connection between the tension device and the headrail. The requirement attempts to ensure a linkage between the tension device and the safe operation of the window covering, by causing the consumer or installer to properly install the tension device to use the window covering. However, the requirement still allows consumers or the installer to use the window covering in an unsafe manner, by removing the tension device from the loop, which would leave the hazardous loop accessible to children for the remaining life of the product.

- b. 6.3.2 The manufacturer shall attach the Tension Device to the Cord or Bead Chain Loop by means of a Permanent Assembly Method. This Cord or Bead Chain Loop and Tension Device assembly must meet the durability requirements in section 6.3.5.

Staff Assessment:

This requirement ensures that if an installer or consumer attempts to remove the tension device, the device or component will break. Staff is aware of an incident involving a tension device that used one way snap features as permitted by the standard. The snap features broke off, exposing the continuous loop cord. This incident shows that a permanent assembly method requirement does not ensure that the tension device will remain assembled. Staff finds this provision inadequate, because even if the tension device breaks, the looped cord will not necessarily be damaged. Therefore, for hard-to-reach locations or for people who do not want holes on their walls, removing the tension device may be preferable and the window covering will remain fully operable. One business owner in their comments stated that even in recent window covering installations they frequently witnessed cord tensioners that were not installed, that have been removed by the homeowner after installation, or were broken.

- c. 6.3.3 The Tension Device in conjunction with the product shall maintain Tension on the operating cords when properly installed. If the Tension Device is installed in a location that does not maintain Tension on the operating cords, the Tension Device will prevent the window covering from operating as designed for full operation of the product. The window covering may not operate independently of the Cord or Bead Chain Loop.

Staff Assessment:

The draft ANSI/WCMA-2022 defines "Tension" as "The applicable, consistently applied force required to eliminate or prohibit the creation of a Hazardous Loop in any operating position." This requirement is intended to ensure that the location of the tension device on the wall or window jamb is such that the cord moves freely and allows full operation of the window covering while not allowing a hazardous loop. Staff finds this requirement inadequate because staff confirmed that an amount of tension that allowed full operation of the window covering still allowed a head probe to be inserted into the loop (Figure 2). Accordingly, a properly installed tension device still allows an accessible hazardous loop.



Figure 2. Head probe goes through the loop that has Tension.

The draft ANSI/WCMA-2022 requires the Tension Device to prevent the window covering from operating as designed for full operation of the product. Staff concludes that this requirement is inadequate because the window covering can be operated partially as shown in Figure 3.



Figure 3. Partially operable window covering when tension device is not attached to a fixed surface.

- d. 6.3.4 The Tension Device shall be supplied with fasteners and instructions to attach to wood substrates. The Tension Device shall also be supplied with information about attaching to drywall and metal substrates. The fasteners shall have a minimum fastener manufacturer-rated or tested release force of 20 pounds (89 Newton).

Staff Assessment:

Staff finds this requirement inadequate because it relies on the installer or the consumer to properly, securely and permanently attach to the wall a critical safety component for continuous loop operating systems. The draft ANSI/WCMA-2022 relies on a third party (consumer or installer) to install this critical safety component. Staff concludes that the requirement does not adequately address installation issues that could lead to a strangulation incident for the following reasons:

1. Consumers or installers may not recognize the safety importance of a properly installed tension device or may not have the skills or training to perform the task. Relying on the consumer or installer to properly install the tension device, a critical safety component, into an unknown substrate (wood, drywall, metal or other material) is not a reasonable expectation. The standard shifts the manufacturer's responsibility to produce a safe product to the consumer or installer to properly attach the tension device. Staff considers the balloted requirement inadequate and unenforceable.
2. Installing the tension device into a wood stud or wood trim is not always an available option for all homes. The draft ANSI/WCMA-2022 requires wood fasteners to be included in the packaging, however fasteners to attach the tension device to metal or drywall are not required and is left to the installer or consumer to find/supply. Therefore, the required instructions and hardware to attach the tension device into wood will not apply for all installations.
3. Figure 4 shows a typical tension device installed to the window jamb (Figure 4a) and to the wall (Figure 4b). If the window jamb or wall is drywall, the screw may not be in a wood stud location and can only be fastened into drywall. The structural integrity of a screw fastened into drywall is less secure than a screw fastened into wood. Even if the screw is fastened into drywall using a drywall anchor, the screw and drywall anchor can loosen and pull out over time due to forces transmitted to the screws while raising and lowering the window covering.



Figure 4. Typical installation of a tension device: 4(a) inside mount to jamb ([Secure-child-safe-cords-cord-tensioner-pirouette-Skyline-Window-Coverings.jpg \(900×601\) \(skylinewindowcoverings.com\)](#)), 4(b) outside mount to wall ([Universal Cord Tension Device for Roman Shades 6 Colors DIY - Etsy](#)).

4. The requirement does not specify a product or test standard to ensure the fastener meets the 20 lb. release force. Staff is not aware of a standard test that provides a “minimum fastener manufacturer-rated or tested release force.” Because the standard does not require supplying fasteners for drywall or metal, the 20 lbs. manufacturer-rated release force is not required for fastening into drywall or metal.
- e. 6.3.5 The tension device, in conjunction with the product, shall be designed for durability to meet the following test requirements:

6.3.5.1 Operational Cycle Tests:

Changes to ANSI/WCMA standard: The 2022 standard uses the same test method as the 2018 standard.

6.3.5.2 UV Stability:

Changes to ANSI/WCMA standard: The 2022 standard uses the same test method as the 2018 standard except the tension device is removed from the Loop Cord or Bead Chain to allow placement into the UV chamber.

6.3.5.4 Loop Cord and Bead Chain Durability Testing:

Changes to ANSI/WCMA standard: In the 2022 standard, the tension device now needs to be reassembled onto the Loop Cord or Bead Chain before testing can start. The 2022 standard uses the same cyclic test method as the 2018 standard.

Staff Assessment:

These tests include operational cycle, UV stability, impact, and durability tests. The test specifies that each sample is mounted on drywall, wood, and metal. Staff does not support these tests because the attachment hardware to drywall and metal is not required for tension devices (see paragraph d, 2 above). These tests cannot control how a consumer or installer fastens the tension device to the window jamb or wall. Therefore, these requirements do not adequately assess the integrity of the attachment method to drywall or metal substrate.

4. Elimination of continuous cord loop systems for horizontal blindsStaff Assessment:

Section 4.4.2.5.1 of the draft ANSI/WCMA-2022 eliminates continuous cord loops on horizontal blinds. Staff supports this revision because it will require horizontal blinds to use safer options, such as cordless systems, rigid cord shrouds, or retractable lift systems. However, sheer horizontal shades are not included in the definition of a “horizontal blind,” they are considered “horizontal shades,” and at least two incident units were horizontal shades (Figures 5 and 6). The incident units have horizontal slats but do not meet the definition of a horizontal blind, as written in the standard, because they are not suspended from a headrail by ladders (Figures 7 and 8). Instead, these products have horizontal vanes held together by sheer fabric.



Figure 5. Incident unit in IDI 140203CCC2348.



Figure 6. Close-up view of a horizontal shade
<https://www.vistashades.com/horizontal-shades/>.

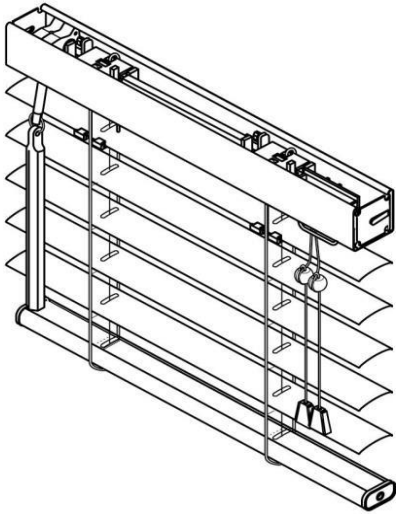


Figure 7. Horizontal blinds (Figure H1, ANSI/WCMA A100.1 – 2018).



Figure 8. Close-up view of a horizontal blind <https://www.inprocorp.com/products/commercial-window-treatments/horizontal-blinds/horizontal-blinds/>.

5. Elimination of Cord Loop Lift systems

Staff Assessment:

The draft ANSI/WCMA-2022 eliminates the section 4.3.2.7 of ANSI/WCMA-2018 which allowed cord loop lift system is now removed. Staff supports this revision because this type of operating system uses accessible cords that pose a strangulation hazard and are associated with incidents. Cord Loop Lift System are commonly used for roll-up shades. (Figure 9).



Figure 9. Roll up shade.

6. Additional requirements for remote control battery compartments to align with ANSI/UL 4200A.

Staff Assessment:

Section 4.3 of the draft ANSI/WCMA-2022 requires remote control devices to meet the requirements of ANSI/UL 4200A – *Standard for Safety for Products Incorporating Button or Coin Cell Batteries of Lithium Technologies*. Staff supports this revision in the standard to minimize ingestion of button cell batteries. Staff notes that Reese's Law was enacted on August 16, 2022 and requires CPSC to establish product safety standards with respect to batteries that pose an ingestion hazard (e.g., button cell or coin batteries). Specifically, consumer products with these batteries must include (1) a warning label instructing consumers to keep the batteries out of the reach of children, and (2) a battery compartment that prevents access to the batteries by children who are six years of age or younger. Additionally, such batteries, if sold separately or included separately with a product, must comply with federal child-resistant packaging regulations.

7. Additional requirements for Rigid Cord Shrouds to test for deflection and deformation

Staff Assessment:

Section 6.5.2.4 of the draft ANSI/WCMA-2022s requires rigid cord shrouds to meet the "Deflection and Deformation" test, which evaluates accessibility of the shrouded cords when the product is bent or twisted. Staff supports this revision because the added requirement prevents the cords from coming out of the shroud due to bending or twisting of the shroud.

8. Exempting curtains and draperies from the scope of the standard

Staff Assessment:

Staff finds this exemption inadequate because staff is aware of at least four fatalities involving draperies and curtains; all deaths were a result of continuous loops. There are multiple cordless options for draperies, including wands and motorized controls, as well as simply pulling the draperies on the traverse rod by hand, with no cord or other control. The Directorate for Economic Analysis memorandum states that of the different types of window coverings analyzed in the Regulatory Impact Analysis, draperies had the lowest cost of compliance, assumed to be near zero because the cost of a wand is approximately equal to the cost of the cord it replaces.

9. New warning labels for (a) continuous loop tension devices and (b) retractable cords

Staff Assessment:

Overall staff supports improved warnings. The draft ANSI/WCMA-2022 has two new permanent warning labels regarding the strangulation risk: one to warn the consumer about damaged, loose, or missing tension devices; and the second to warn about a retractable cord that fails to fully retract. Both warning labels include the attention-getting pictogram of a strangling child and follow ANSI Z535.4 formatting guidelines. In addition, window coverings that contain a continuous loop and a tension device must include a warning tag which has a list of six bullet items for the consumer to follow. The window covering with a retractable cord lift system must include another warning tag containing four bullet items. Both tags have formatting that follow ANSI Z535 guidelines and include the same pictogram as permanent warning labels. Although the warning labels and warning tags have attention-getting features that should improve their noticeability, even well-designed warning labels will have limited effectiveness in communicating the hazard on a product that is familiar to consumers and used frequently. See Tab I of the staff briefing package for the NPR for a detailed analysis of the limitations of relying on warning labels.

B. Addressability of Incidents with the Draft ANSI/WCMA 2022

Staff assesses below whether the reported custom product incidents would be addressed by the draft ANSI/WCMA-2022 based on the type of the cord involved in each incident.

1. Continuous Loop Incidents

Staff assesses that the following use scenarios involving continuous loops that come with tension devices are not addressed in the balloted standard (Table 1). Window covering arrives with tension device attached to the cord loop.

Table 1. Unaddressed Scenarios in the Incident Data Involving Tension Devices
 (green indicates fully functional window covering, yellow indicates possibility of hazardous loop and partially operable window covering, orange indicates hazardous loop)

TENSION DEVICE ATTACHMENT TO WALL	TENSION DEVICE LOCATION	OPERABILITY OF THE WINDOW COVERING	HAZARDOUS LOOP
1. Consumer or installer attaches the tension device to a wall/ window sill	a) Installation is in a proper location to maintain Tension	Loop cord freely moves and fully operates the window covering	A hazardous loop can form depending on the amount of Tension (IDI 141003CAA1005 involves a product with tension device attached and full operable shade but child was able to insert his head through the loop.)
	b) Installation is in a location that does not maintain Tension	Window covering is not fully operational but is partially operable	A hazardous loop can form
2. Consumer or installer decides not to attach the tension device to the wall:	a) If tension device is left on the cord loop	Tension device prevents full operation of window covering but is partially operable	A hazardous loop is present (e.g., IDI 050804CCC1029 involves a tension device that would prevent the full operation, but the tension device was still not attached to the wall.)
	b) If consumer or professional installer decides to remove the tension device	Tension device or a component breaks. Once tension device is not on the loop, window covering is fully functional	A hazardous loop is present (IDI 140203CCC2348 involves a tension device that broke off from the loop)

Out of the 36 custom product incidents in the aggregated incident data, 13 incidents involved strangulation on a continuous loop. Staff's review of these incidents demonstrates that they are likely to remain unaddressed, even if the products complied with WCMA's draft ANSI/WCMA-2022. Consumers can remove the tension device, or it can be damaged. A consumer's preference, knowledge of, and concern with the strangulation hazard, the location where the product will be installed, and consumer satisfaction with a partially operable window covering, could each result in a consumer choosing an unsafe option.

1. In one of the incidents (110516CCC3728), the tension device was attached only to the cord and not to the wall or window jamb. The draft ANSI/WCMA-2022 would require that if a tension device is used, full operation of the window covering be prevented if the tension

device is not properly installed. Reviewing the facts of CPSC's in-depth investigation (IDI), staff learned that the incident product was installed by the landlord in a rented home, and that the family living there did not know what the tension devices were used for or that they needed to be secured to a wall or window jamb. Scenario 2(a) in Table 1 would result in a partially operable window covering and a hazardous loop. Staff cannot determine whether the consumer in this case would have preferred to attach the tension device to the wall to make the window covering fully operable, or whether they would have preferred the tension device to be completely removed (given that they never attached the tension device to the wall). Staff assesses that some consumers do not attach the tension device because they do not want holes in their walls.

2. In another continuous loop incident (140924CAA1966), staff observed the same situation where the tension device was on the cord but not installed, although there were no images of the tension device. Scenario 2(a) in Table 1 would result in a partially operable window covering and a hazardous loop.
3. In four incidents (140924CAA1969, 090915CCC3962, 140924CAA2904, 160517CBB2597) a tension device on the cord was missing or was not installed; scenario 2(b) is likely applicable, and it would create a hazardous loop.
4. In one incident (140203CCC2348), the tension device was broken prior to the incident; staff determined that the tension device would have met the requirement for Permanent Assembly Method in section 6.3.2 of the draft ANSI/WCMA-2022. The definition for Permanent Assembly Method is:

3.04. Permanent Assembly Method - Any assembly method that cannot be disassembled without breaking a component, including without limitations one way snap features, sonic welding, crush pins or other compliant method.

The IDI indicated that the tension device was assembled using one way snap features as required by the draft ANSI/WCMA-2022 (see Figure 10 from IDI 140203CCC2348). Despite compliance, the broken tension device left an accessible hazardous loop, resulting in a near-strangulation. IDI 140203CCC2348 indicated that the consumer ordered four custom made horizontal blinds from a home improvement store. The consumer installed the blinds and the tension devices. Over the following 2 years, the covers to all four tension devices broke off, exposing the cord loop as shown in Figure 11.

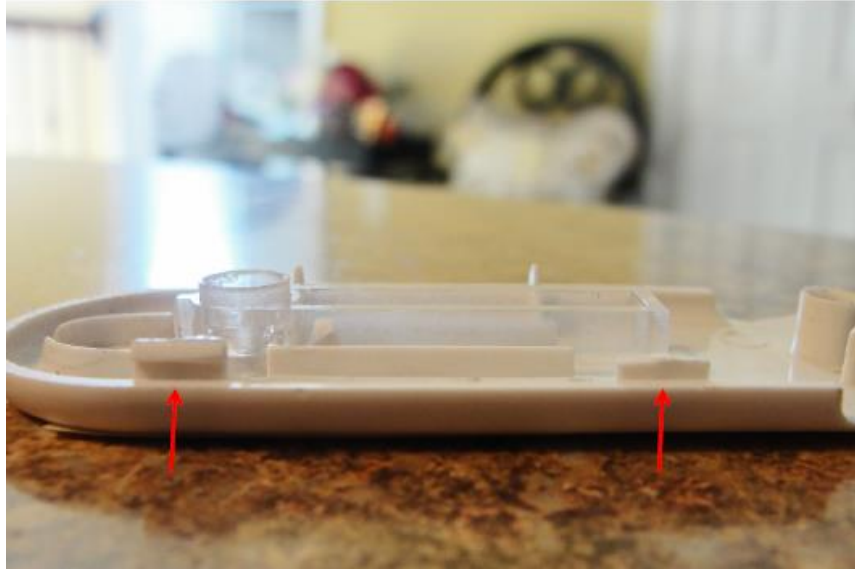


Figure 10. Photograph from IDI 140203CCC2348 indicates the tension device was constructed with one way snaps and would have met the requirement for Permanent Assembly as required in the balloted standard.



Figure 11. Photograph from IDI 140203CCC2348 shows the incident blind with the broken tension device and exposed cord loop.

The consumer said that she saw her son standing on a chair with the looped cord around his neck. The consumer grabbed her son from the chair. He was uninjured. This IDI shows

that a tension device that meets the draft ANSI/WCMA-2022 can fail in an unsafe manner, exposing an accessible cord loop, which is the most hazardous cord condition.

5. In five incidents (090901CCC3939, 100920CBB1174, 160531CBB1714, 161213CBB3244, 211006CCC1032,) the tension device was not mentioned in the incident report and staff did not observe a tension device in photographs of the incident product. Continuous loop products without a tension device result in fully functioning window coverings and a hazardous loop as defined in scenario 2(b).
6. Finally, one incident (141003CAA1005) had a tension device attached on the cord and on the wall or jamb, but the cord was not taut enough to prevent the victim from inserting his head into the loop. The draft ANSI/WCMA-2022 requires that if the tension device is installed in a location that does not maintain tension on the operating cords, the tension device will prevent the window covering from operating as designed for full operation of the product. Scenarios 1(a) or 1(b) are likely, meaning a hazardous loop can form.

Staff notes that one of the incidents mentioned in (3) above and the incident in (4) above involved horizontal shadings (Figures 6 and 7). These products are not considered horizontal blinds by definition, therefore, according to the draft ANSI/WCMA-2022, they can still contain a tension device instead of the other options that are deemed safe by staff (no cords, short static cords, inaccessible cords, retractable cords.) Therefore, staff's addressability assessment remains the same.

2. Operating Pull Cord or Tilt Cord Incidents

Eighteen custom window covering incidents involved pull or tilt cords. Fifteen of the 18 operating pull cord incidents reportedly occurred on horizontal blinds and would be addressed with the draft ANSI/WCMA-2022 because horizontal blinds under the balloted standard must include one of the other options (cordless, short cords, inaccessible cords, retractable cords) that are deemed safe by staff, not a continuous loop with a tension device.

The remaining three operating pull cord custom window covering incidents of the 18 involved a horizontal shade, a cellular shade, and a Roman shade. If those units were designed to use a continuous loop with a tension device, the hazard would remain. If one of the safer options (cordless, short cords, inaccessible cords, retractable cords) are chosen, the strangulation hazard would be addressed.

3. Inner Cord Incidents

All three inner cord incidents would be addressed by complying with the voluntary standard, which will be codified in the draft final rule under section 15(j) of the CPSA.

Overall, staff assesses that 15 of 36 incidents (41.7%) would be prevented by compliance with the draft ANSI/WCMA-2022, 3 of 36 incidents (8.3%) would be prevented by compliance with ANSI/WCMA-2018, which corresponds to a total of 50.0% (3 incident units with pull cords may switch to continuous loops and therefore not counted in this assessment), compared to the 94.4% that are addressed in the draft final rule for the known types of cords, as discussed in Tab B of this briefing package.

III. Conclusion

ES staff assessed the draft ANSI/WCMA-2022 and evaluated the effectiveness of the draft ANSI/WCMA-2022 to address the custom product incidents. Although there are several

improvements in this revision, primarily the elimination of operating pull cords and tilt cords, the draft ANSI/WCMA-2022 still allows continuous loops with tension devices that pose a strangulation hazard.

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