U.S. Consumer Product Safety Commission
Log of Meeting

SUBJECT: WCMA Technical Committee Meeting
DATE OF MEETING: April 14, 2004
LOG ENTRY SOURCE: Caroleene Paul
DATE OF LOG ENTRY: May 03, 2004
LOCATION: Baltimore Convention Center

CPSC ATTENDEES:
Scott Heh, Office of Emerging Hazards and Reduction
Caroleene Paul, Directorate for Engineering Sciences
Renae Rauchschwalbe, Office of Compliance

NON-CPSC ATTENDEES:

Name	Company
Cliff Birch	Levelor Kirsch
Tim Bates	Techniku
Mike Cienian	Springs Window Fashions
Alan Duggan	Lewis Hyman
Krister Hard	IKEA
Joe Jankoski	Hunter Douglas
Carolynn Jennings	WCMA
Tom Kefor	WCMA
Julius Koch	WCMA
Robert LeBlanc	Lewis Hyman
Tom Marusak	Comfortex
Rory McNeil	TechStyles
John Morris	Springs Window Fashions
Chris Outlaw	Hunter Douglas

SUMMARY OF MEETING:

Tom Marusak presented the findings of the technical sub-committee tasked with analyzing the body of data on fatal blind cord incidents that occurred between January 1996 to December 2002. Of the 79 total reports received from the CPSC, the sub-committee discarded 13 from further review because the reports did not contain enough information to provide useful insight to the analysis.

The key findings of an analysis of the remaining 66 reports were:

- more incidents involved cord lift products (approximately 60% of the reports where the product type was able to be identified) than continuous cord products (approximately 36%)

- 90% of the incidents involved older products that were manufactured before the voluntary standard requirements became industry effective

- 70% of the incidents involved a component of the product that has since been addressed by the voluntary standard (e.g. inner cord strangulations have been addressed by inner cord stops)

- 30% of the incidents involved consumer alteration of the product (such as tying a knot in the cord) which is not addressed by the voluntary standard

- where conformance of the product was able to be determined, 90% of the incidents involved products that did not conform to the voluntary standard. of the remaining 10% of incidents where the product did not conform to any voluntary standard, all involved consumer alteration of the blind cord.

- 80% of the incidents could have been prevented if the products had tension devices or inner cord stops. these two design solutions directly affect a majority of the incidents.

Tom Marusak stated that the findings of the analysis are encouraging in that the voluntary standard appears to address the majority of the incidents. However, the following issues remain to be addressed:

1) Tension devices -- how to encourage consumers to use these devices on continuous loop products

2) Inner Cord Stops -- how to encourage users to retrofit older blinds with inner cord stops

3) Cord Stop (aka Stop Balls -- device used to join ends of several cords and provide a single cord for operation below the stop/ball) -- in light of one reported fatality involving a cord stop, the voluntary standard requirements should be reviewed

At the last full technical committee meeting on November 26, 2002, the CPSC asked the WCMA to address the following issues:

- use of a device other than inner cord stops to eliminate the formation of loops in inner cords
- have no more than 7.25 inches of exposed cord at any time
- eliminate loop above the stop ball (cord stop)
- make continuous loop cord products inoperable if the cord is not tied down with a tension device

After a short discussion on the feasibility of making a vertical blind inoperable if the continuous cord is not tied down, Tom Marusak suggested that a sub-committee be formed to use the insight gained from the data analysis to review and respond to CPSC's request at the November 26, 2002 meeting. In addition, all members were asked to explore ways to highly encourage consumers to use tension devices on continuous cord products (for example one person stated a spring loaded system could

easily be designed to render a vertical blind inoperable if the cord is not tied down and another person envisioned a tension device that would lock onto the cord unless the device was installed). Some discussion ensued on the need to propose performance requirements that mandate an intended result instead of a solution that could be patented or proprietary in nature.

The technical committee approved the analysis report for presentation to the WCMA full committee.

Scott Heh informed committee members that Caroleene Paul is in the process of drafting a report summarizing the data analysis for Commission review. The report is based on the same data set developed by the subcommittee (of which Caroleene Paul was an active member).

Other Issues

The committee approved a move to correct the Spanish translation in the warning label requirement for cords with cord stops (section 5.2.3). The Spanish translation currently omits one phrase.

The committee approved a request by the Canadian Standards Association (CSA) to adopt ANSI A100.1.

The current warnings in the voluntary standard were discussed. Some wording to specifically warn users from defeating safety devices was proposed, but final agreement was made that Tim Smith of CPSC should be consulted if there is a strong desire to change the current label requirements.

Action Items

- a new subcommittee will review CPSC's request at the November 26, 2002 WCMA Technical Meeting
- WCMA Technical Subcommittee members will explore ways to highly encourage consumers to use tension devices on continuous cord products
- the next WCMA technical meeting is tentatively scheduled for July 2004

A Study of Design Factors and Other Influences Impacting Window-Covering Cord Strangulation Deaths as Recorded by the Consumer Product Safety Commission Between 1996-2002

ANSI/WCMA 100.1 Technical Sub-Committee
Comprised of WCMA Members and CPSC Staff

December, 2003

Introduction

This study of window-covering cord* strangulation deaths from 1996 through 2002 was undertaken by the Engineering & Design Safety Task Group of the ANSI/WCMA A100.1 Technical Committee in an effort to:

- examine window-covering cord strangulations in terms of product engineering and design to determine possible hazard patterns;
- identify possible shortcomings in the design provisions addressed by the ANSI/WCMA A100.1 standard;
- ascertain any new concerns that could be addressed by engineering or design initiatives to reduce window-covering cord strangulations.

It is important to note that no effort was made in this report to assess the extent to which consumer conduct or negligence may have contributed to the reported strangulations, or whether consumers received or were aware of safety alerts, warnings or other communications, and whether they heeded any such communications. Finally, acknowledgment is given to the U.S. Consumer Product Safety Commission (CPSC) for its provision of the incident files and related data used in this study, as well as its active participation in the task group's deliberations.

Background

Over the years, corded window coverings have become increasingly common, with an estimated 850 million units in American residences today. Despite their prevalence in all types of homes, including the 17 million U.S. households with children under the age of 6, corded window coverings are often overlooked by parents and caregivers as a potential safety hazard to infants and young children. From 1990-2002, the CPSC received reports of 175 window-cord strangulation deaths involving children aged 6 and under.

Since 1995, in cooperation with the CPSC, the U.S. window covering industry has introduced a variety of design changes to reduce potential strangulation hazards, and has participated in the development and revisions of the ANSI/WCMA A100.1 standard for the safety of corded window-covering products. This has resulted in:

- the elimination of loop-ended pull cords on horizontal blinds, cellular and pleated shades (industry action effective Jan. 1, 1995), and the effective mitigation of looped pull-cords on all types of horizontal blinds and shades (ANSI/WCMA A100.1-96 and A100.1-02);
- the requirement for permanently attached tie-down devices (tensioners) for continuous-looped cords used in the operation of vertical blinds and traverse rods used for draperies (ANSI/WCMA A100.1-96 and A100.1-02);

** Cords or chains involved in raising and lowering or changing the slat/vane orientation of corded window coverings.*

- the addition of cord-stop mechanisms on corded horizontal blinds and shades to eliminate the formation of an inner cord loop (industry action effective Nov. 1, 2000), and the subsequent addition of cord-stop requirements to the 2002 revision of ANSI/WCMA A100.1.

Parameters of the Study

The CPSC monitors reports of window-cord strangulation deaths and assigns follow-up, in-depth investigations (IDIs) of these incidents. These IDIs typically include a summary of the incident from a CPSC field officer, police reports filed on the incident, death certificate, and medical examiner's report. Photos of the incident scene are sometimes included. The most complete IDIs include all of these items; a few include only a death certificate and newspaper clipping.

To compile as much data as possible for this study, initial plans called for reviewing the 175 IDIs on window-cord deaths reported to the CPSC from 1990 through 2002. However, upon further examination, the CPSC Directorate of Epidemiology determined that the IDIs from 1990 through 1995 were generally too incomplete or inconsistent to provide useful data. The study was therefore redefined to encompass the remaining 79 IDIs for accidental window-cord deaths from 1996 through 2002. The task group felt this smaller data sample was nevertheless sufficient for examining typical cord-hazard patterns and scenarios, given the length of time covered (seven years), and the correlation of that time frame to the introduction of cord-safety design changes through industry initiatives and the ANSI/WCMA standard.

All 79 incident IDIs from 1996-2002 were individually reviewed by representatives of the CPSC Directorate of Engineering Sciences and a WCMA technical subcommittee. They were then re-reviewed and discussed by the group to reach consensus. Because IDI narratives rarely contain technically accurate descriptions or terminology regarding window-cord incidents, cord configurations and decedent entanglement determinations were based, whenever possible, on medical examiner descriptions and/or photos of ligature marks on the decedent.

Due to the relatively small number of cases that could be analyzed, a significant quantity of unknown or undetermined factors in the incident reports, and the need to rely heavily on descriptive narratives rather than definitive documentation, no statistically reliable inferences concerning all window-cord deaths or window-covering designs should be drawn from this study.

Data Categories

All IDI incident reports were reviewed for the following categories of information; consensus findings were recorded in spreadsheet format. The data categories are listed below:

- ***Reference #.*** Number assigned by the task group to simplify incident identification.
- ***IDI #.*** Official in-depth investigation tracking numbers assigned by the CPSC.
- ***Date of Incident.***

- *Age (in months)* of the decedent.
- *Gender of the decedent.*
- ***Type of Product.*** For accuracy and consistency in describing the window-covering products involved, a glossary was derived from the definitions used in the ANSI/WCMA A100.1 standard (Attachment A).
- ***Operating System (OS) Type.*** For accuracy and consistency in identifying product operating systems, an industry-developed glossary was used. Definitions of the operating system types identified in the incident data are provided in Attachment B.
- ***Operating System (OS) Design.*** For consistency and ease of understanding, the task group agreed upon a series of descriptive terms for identifying specific system designs and components. Definitions of terms referenced in this study are provided in Attachment B.
- ***Component Complies with Standard***

  (1996). This category indicates -- regardless of when the product was manufactured -- if the design component involved in the reported strangulation was in conformance with the 1996 ANSI/WCMA A100.1 standard, *American National Standard for Safety of Corded Window Covering Products*.

  (2002). This category indicates -- regardless of when the product was manufactured -- if the design component involved in the reported strangulation was in conformance with the 2002 revision of the ANSI/WCMA A100.1 standard. (The 2002 standard requires cord-stop mechanisms.)

- ***Principal Entanglement Factor***

  Decedent Manipulated. This category indicates that the decedent manipulated the product to cause a noose where none previously existed in the design of the product.

  Consumer Altered. This category indicates that the consumer altered the product to form a noose where none previously existed in the design of the product.

  Product Design. This category indicates that a design component of the product contributed to, or caused the formation of, a noose, and no apparent decedent manipulation or consumer alteration was involved.

- ***Inner Cord.*** This category indicates if the incident was reported as an inner-cord strangulation.
- ***Design Detail to Avoid Incident.*** A mechanism or design that could have effectively eliminated the principal entanglement factor, excluding elimination of the cord.
- ***Comments.*** Elucidating or clarifying information.

Findings

Table 1 lists the 79 window-cord death incidents reported to the CPSC from 1996 through 2002 that were reviewed for the study. From these 79 incidents, 13 were eliminated from further study because both

the operating system type and the operating system design were unknown; they are indicated as shaded entries on Table 1.

Findings for the remaining 66 incidents -- the analyzed incident data -- are discussed below. They are categorized by operating system, since cord control and design mechanisms used in window coverings are primarily dictated by the operating system employed, and thus are key to analyzing design and engineering factors.

Findings: Conventional Cord Lift Operating Systems (Table 2)

Of the analyzed incident data, 40 cases involved window coverings using conventional cord lift systems. Horizontal blinds accounted for 38 of the 40 cases. One incident involved a Roman shade, and 1 product type was unknown.

Operating System Design. Of the 40 cases involving conventional cord lift systems, 16 employed a tassel loop design; 15 system designs were unknown; 6 used two cords with separate tassels; 1 used a three-cord design with unknown ends, 1 involved separate cords and separate tassels of an undetermined number; and 1 used multiple cords into a stop ball.

Principal Entanglement Factor. In 17 cases, both decedent manipulation and product design were listed as the principal entanglement factor because formation of the noose was dependent upon decedent manipulation as well as product design. Thirteen of these 17 cases involved inner-cord strangulations.

It was the consensus of the task group that all inner-cord entanglements should be attributed to both decedent manipulation and product design because creation of an inner-cord loop could not be achieved without active manipulation of the product, and that the lack of cord-stop mechanisms contributed to the effects of manipulation.

Consumer alterations were deemed the principal entanglement factor in 13 incidents. In almost all of these cases, the consumer knotted the cords to create the entanglement hazard. Product design was listed as the entanglement factor in 5 cases because of the absence of apparent consumer alteration or decedent manipulation; 4 of these 5 cases involved tassel loop designs (*i.e.*, pre-1995 looped pull cords), and 1 case involved multiple cords into a stop ball. In 4 cases, the principal entanglement factor could not be determined. In 1 case, the principal entanglement factor was listed as both decedent manipulated and consumer altered because evidence indicated both factors contributed to the formation of the noose.

Conformance with Standard. Of the 40 cases associated with conventional cord lift operating systems, 29 involved design components that did not meet the ANSI/WCMA A100.1 standard. (Conformity with the 1996 standard was deemed "not applicable" for incidents involving inner-cord hazards, since this strangulation risk was not identified at the time and not addressed in the 1996 standard.) In another 6 cases, conformity with the standard could not be determined.

In 5 cases, the design components involved met the ANSI/WCMA standard. In 3 of the 5 cases, entanglement was attributed to consumer alteration of the product. In the remaining 2 cases, the principal entanglement factor was unknown or could not be determined; conflicting information from IDI narratives,

official reports and photographic evidence rendered it impossible to accurately determine the cord configuration at the time of strangulation.

Design Detail to Avoid Incident: Of the 21 incidents in which a design detail was identified for avoiding the incident, it was deemed that 13 could have been avoided with cord stops; 7 could have been avoided by eliminating the tassel loop; and 1 incident could have been avoided by eliminating the stop ball.

Key Findings for Conventional Cord Lift Systems:

- Conventional cord lift systems accounted for 40 of the 66 analyzed incidents, or 61 percent of the total.
- Tassel loops accounted for 16 of the 25 identified operating system designs in the conventional cord lift systems category.
- Incidents involving the inner cord accounted for 13 of the 40 deaths in this category.
- There were no death incidents involving products that employed cord stops.
- Consumer alterations were an entanglement factor in at least 14 of the 40 incidents in this category.
- Of the 34 incidents where conformance with the standard could be determined, 29 involved design components that did not meet the ANSI/WCMA standard.
- Of the 5 cases where components met the ANSI/WCMA standard, entanglement was attributed to consumer alterations in 3 cases, and undetermined or unknown causes in 2 cases.

Findings: Continuous Loop Operating Systems (Table 3)

Of the analyzed incident data, 24 incidents employed continuous loop operating systems. Vertical blinds accounted for 13 cases; 7 cases involved traverse rods with draperies; 1 case involved a horizontal blind; 1 case involved a cellular shade, 1 case involved a roller shade, and 1 product type was unknown.

Operating System Design. Of the 24 cases with continuous loop operating systems, 8 used a rotator without tensioner; 6 used a traverse rod without tensioner; 3 used a clutch without tensioner; 3 used a traverse without tensioner; 2 used a traverse with weight without tensioner; 1 used a chain without tensioner; and 1 used a traverse rod with tensioner (deactivated by consumer).

Principal Entanglement Factor. All 24 cases involved an effective lack of tensioners. Product design (*i.e.*, the lack of tensioners) was identified as the principal entanglement factor in 20 cases; consumer alteration was identified as the principal entanglement factor in 2 cases; and both consumer alteration and product design were identified as the principal entanglement factor in 2 cases.

Conformance with Standard. In 23 of the 24 incidents, the product design components involved did not meet the ANSI/WCMA A100.1 standard. In the 1 case where the design component met the

ANSI/WCMA standard, the consumer deactivated the installed tension device to effectively negate conformity with the standard.

Design Detail to Avoid Incident. In all cases not meeting the standard, it was determined that the use of a tensioner could have avoided formation of a noose. In the 8 cases using a rotator without tensioner, it was suggested that 2 separate cords or a wand design also could have been utilized to avoid the incident.

Key Findings for Continuous Loop Operating Systems:

- Continuous loop systems accounted for 24 of the 66 analyzed incidents, or 36 percent of the total.
- The lack of tensioners was a design factor common to all causes of entanglement.
- Consumer alteration appeared to occur at a significantly lower rate with continuous loop operating systems than with conventional cord lift systems. (17 % vs. 35 %)
- There were no death incidents involving continuous loop operating systems when tensioners were in use.
- There were no death incidents involving components that met the ANSI/WCMA standard, except the 1 case where the consumer altered the product to effectively negate its conformance with the standard.

Findings: Cord Loop Lift Operating Systems (Table 4)

Only 2 of the 66 incidents analyzed in the study involved cord loop lift operating systems. Both involved roll-up blinds using a looped pull cord design. Neither product met the ANSI/WCMA standard. The principal entanglement factor in 1 case was decedent manipulation, and involved a 6-year-old child "with a mental capacity of a one-year-old." In the other incident, consumer alteration of the product was deemed the principal entanglement factor.

Key Findings for Cord Loop Lift Systems:

- Cord loop lift systems accounted for 3 percent of the analyzed incidents.
- Incidents in this category were restricted to roll-up blinds with looped pull cord designs.
- No incidents in this category involved components that met the ANSI/WCMA standard.

Conclusions:

As noted previously, the limited data sample and the significant amount of undetermined or unknown factors precludes drawing statistically reliable inferences concerning window-cord deaths or window-covering designs. Similarly, drawing conclusions based on percentage weightings can be highly misleading, since the addition, subtraction or reclassification of an incident can skew certain percentage findings in some

categories by 10 percent or more. These limitations should be kept in mind at all times when reviewing this study.

- Older corded window coverings (*i.e.*, those manufactured before industry actions or the ANSI/WCMA standard addressed an identified cord-strangulation hazard) accounted for 90 percent of the analyzed death incidents.

  includes cord loop w/o tensioner

- In those incidents where an entanglement factor could be identified, 70 percent were attributed, all or in part, to product design. All of these product design factors have been addressed by the provisions of the ANSI/WCMA standard.*

- In those incidents where an entanglement factor could be identified, more than 30 percent of the analyzed death incidents were attributed, all or in part, to consumer alterations of the product.

- Of those incidents where conformance with the ANSI/WCMA standard could be determined, 90 percent of the window covering products were not in conformance. Of the 10 percent in conformance, the product was altered by the consumer in every case where an entanglement factor could be determined.

- Of the incidents where the principal entanglement factor was attributed to product design, it was determined that 80 percent could have been eliminated by the use of tensioners or cord stops. No product using tensioners or cord-stop mechanisms were involved in any death incidents.

**One case involved a stop ball, as to which there are questions as to how it should be addressed in the standard in terms of an exposed loop when the product is raised.*

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TABLE 1—REPORTED WINDOW COVERING CORD STRANGULATION DEATHS
(U.S. CONSUMER PRODUCT SAFETY COMMISSION, 1/96 - 12/02)

Ref #	IDI #	Date of Incident	Age (in months)	Gender	Product Type	OS Type	OS Design	Component Complies With Standard		Principal Entanglement Factor			Inner Cord	Design Detail to Avoid Incident (excluding elimination of cord)*	Comments
								1996	2002	Decedent Manipulated	Consumer Altered	Product Design			
1	960304HCN0685	19960206	44	F	Horizontal Blind	conventional cord lift	2 cords separate tassels	Y	Y	U	U	U	N	N/A	
2	960227CWE5006	19960215	31	F	U	U	U	U	U	U	U	U	U	U	
3	960403CCC5089	19960221	30	M	Roller Shade	continuous loop	clutch without tensioner	N	N			X	N	Have Tensioner	
4	960611CCC5239	19960512	8	F	Horizontal Blind	U	U	U	U	U	U	U	N	U	
5	960520CNE5140	19960517	39	F	Cellular Shade	continuous loop	clutch without tensioner	N	N			X	N	Have Tensioner	
6	960827CBB5576	19960517	41	M	Horizontal Blind	conventional cord lift	tassel loop	N	N			X	N	Eliminate Tassel Loop	
7	960524CCC5190	19960521	17	M	Horizontal Blind	conventional cord lift	N/A	N/A	N	X		X	Y	Cord Stops	
8	960611CCC5238	19960604	11	M	Horizontal Blind	conventional cord lift	tassel loop	N	N			X	N	Eliminate Tassel Loop	
9	970218CCC5320	19960616	9	M	U	U	U	U	U	U	U	U	U	U	
10	960717CCC5351	19960713	40	F	Horizontal Blind	conventional cord lift	tassel loop	N	N			X	N	Eliminate Tassel Loop	
11	970619CCC3227	19960808	22	F	Horizontal Blind	continuous loop	clutch without tensioner	N	N			X	N	Have Tensioner	
12	961023CCC5005	19960915	23	F	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	
13	961107CCC5040	19960916	31	F	Horizontal Blind	conventional cord lift	tassel loop	N	N	X	X		N	N/A	Unclear as to who formed noose
14	961125CWE7249	19961026	11	F	Horizontal Blind	conventional cord lift	N/A	N/A	N	X		X	Y	Cord Stops	
15	970708CCC3254	19961114	14	M	U	U	U	U	U	U	U	U	U	U	
16	98109CCC2177	19961127	20	F	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	
17	981020CCC3026	19970108	43	F	Horizontal Blind	conventional cord lift	tassel loop	N	N	U	U	U	N	U	
18	970127CNE5071	19970116	39	M	Vertical Blind	continuous loop	traverse without tensioner	N	N			X	N	Have Tensioner	
19	980115HCC3534	19970118	14	M	Vertical Blind	U	U	U	U	U	U	U	N	U	
20	970321CWE4110	19970125	24?	F	Horizontal Blind	U	U	U	U	U	U	U	U	U	
21	980113CCC2220	19970305	15	F	Horizontal Blind	conventional cord lift	N/A	N/A	N	X		X	Y	Cord Stops	
22	970916CWE4149	19970403	36	M	U	U	U	U	U	U	U	U	U	U	
23	970522CCC3168	19970517	19	M	Vertical Blind	continuous loop	traverse without tensioner	N	N			X	N	Have Tensioner	
24	981001CCC4014	19970417	14	M	Horizontal Blind	conventional cord lift	separate cords, separate tassels	Y	Y		X		N	N/A	

SOURCE: ( )-Depth Investigation (INDP), Death Certificate (DCRT), Injury or Potential Injur( )nt (IPII), and National Electronic Injury Surveillance System (NEISS) data file( )

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								1996	2002	Decedent Manipulated	Consumer Altered	Product Design			
25	970709CCC3258	19970622	32	M	Horizontal Blind	conventional cord lift	U	U	U		X		N	N/A	
26	971119CWE5009	19971108	14	M	Horizontal Blind	conventional cord lift	tassel loop	N	N			X	N	Eliminate Tassel Loop	
27	980112CCN0131	19971229	14	M	Horizontal Blind	conventional cord lift	N/A	N/A	N	X		X	Y	Cord Stops	
28	980209CCC3581	19980130	39	M	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	
29	980305CBB5364	19980204	34	M	Horizontal Blind	conventional cord lift	tassel loop	N	N	X		X	N	Eliminate Tassel Loop	Strangulation noose is dependent upon victim manipulation of existing loop (product or consumer caused)
30	980522CCC1437	19980218	58	M	Vertical Blind	continuous loop	traverse with weight without tensioner	N	N			X	N	Have Tensioner	
31	980326CCC0231	19980228	21	F	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	
32	980310CBB6684	19980303	34	F	Vertical Blind	continuous loop	traverse without tensioner	N	N		X	X	N	Have Tensioner	Parent raised product loop off floor by wrapping around support rod which caused multiple loops
33	980528CCC6842	19980514	44	M	Roman Shade	conventional cord lift	U	U	U		X		N	N/A	
34	980701CWE7175	19980625	26	F	Draperies	continuous loop	traverse rod without tensioner	N	N			X	N	Have Tensioner	
35	980813CBB5779	19980710	13	M	Draperies	continuous loop	traverse rod without tensioner	N	N			X	N	Have Tensioner	
36	980821CBB0662	19980818	16	F	Horizontal Blind	conventional cord lift	N/A	N/A	N	X		X	Y	Cord Stops	
37	981222CCC2128	19980901	70	F	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	

SOURCE: (-Depth Investigation (INDP), Death Certificate (DCRT), Injury or Potential Inju nt (IPII), and National Electronic Injury Surveillance System (NEISS) data file (

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								1996	2002	Decedent Manipulated	Consumer Altered	Product Design			
38	001013CBB0041	19981026	17	F	Horizontal Blind	conventional cord lift	U	U	U	X		X	N	U	Strangulation noose is dependent upon victim manipulation of existing loop (product or consumer caused)
39	990818CCC0674	19981224	40	F	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	
40	990325CCC0369	19990103	12	F	Horizontal Blind	conventional cord lift	N/A	N/A	N	X		X	Y	Cord Stops	
41	990728HCC3423	19990111	13	F	Horizontal Blind	conventional cord lift	N/A	N/A	N	X		X	Y	Cord Stops	
42	990121CBB2205	19990116	15	M	Horizontal Blind	conventional cord lift	2 cords separate tassels	N/A	N	X		X	Y	Cord Stops	
43	990520CNE5172	19990517	41	F	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	
44	990618CWE6004	19990615	32	F	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	
45	001017CBB2033	19991030	48?	F	Draperies	continuous loop	traverse rod without tensioner	N	N		X	X	N	Have Tensioner	photos indicate that product was probably not used as designed; state of cords uncertain
46	010117CCC0232	19991210	36	F	Horizontal Blind	conventional cord lift	three cords unknown ends	U	U		X		N	N/A	
47	001117CBB3055	20000103	15	F	Horizontal Blind	conventional cord lift	tassel loop	N	N	X		X	N	Eliminate Tassel Loop	Strangulation noose is dependent upon victim manipulation of existing loop (product or consumer caused)
48	000214CBB2293	20000130	49	M	Horizontal Blind	conventional cord lift	tassel loop	N	N	X		X	N	Eliminate Tassel Loop	Strangulation noose is dependent upon victim manipulation of existing loop (product or consumer caused)

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								1996	2002	Decedent Manipulated	Consumer Altered	Product Design			
49	000331CWE6005	20000229	40	F	Draperies	continuous loop	traverse rod without tensioner	N	N			X	N	Have Tensioner	
50	000714CNE5665	20000317	32	M	U	conventional cord lift	multiple cords into stop ball	U	U			X	N	eliminate stop ball or have break away stop ball	
51	010626CCC3361	20000321	60	F	U	U	U	U	U	U	U	U	N	U	Detective reported to investigator that there were 3 pull cords
52	010323CCC3221	20000328	14	F	U	continuous loop	chain without tensioner	N	N			X	N	Have Tensioner	
53	000831CNE5737	20000826	32	M	Horizontal Blind	conventional cord lift	2 cords separate tassels	Y	Y		X		N	N/A	consumer tied knot in cord which created loop
54	010614HCC2573	20000926	47	F	Draperies	continuous loop	traverse rod without tensioner	N	N		X		N	Have Tensioner	execptionally large tangle of cords
55	001102CNE5849	20001101	14	M	Roll-Up	cord loop lift	looped pull cord	N	N		X		N	N/A	multiple knots; last two were slip knots
56	010111CCC3134	20001119	78	F	Roll-Up	cord loop lift	looped pull cord	N	N	X			N	N/A	child's mental age was 1 and she had a propensity to play with the cords
57	010103CBB0204	20010107	42	M	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	
58	010123CNE6092	20010124	48?	F	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	Blinds were used to cover closet; not on window
59	010205CCN0282	20010203	57	F	Vertical Blind	continuous loop	traverse with weight without tensioner	N	N			X	N	Have Tensioner	
60	010607CCC3331	20010404	12	F	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	committee assumed OS type was a continuous loop
61	010510CNE6334	20010508	42	M	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	series of in-line knots
62	010615CNE6462	20010519	157	M	Horizontal Blind	U	U	U	U	U	U	U	U	U	
63	011212CCC2118	20010704	12	M	Horizontal Blind	conventional cord lift	N/A	N/A	N	X		X	Y	Cord Stops	

SOURCE: C Depth Investigation (INDP), Death Certificate (DCRT), Injury or Potential Injur nt (IPII), and National Electronic Injury Surveillance System (NEISS) data files

TABLE 1—REPORTED WINDOW COVERING CORD STRANGULATION DEATHS
(U.S. CONSUMER PRODUCT SAFETY COMMISSION, 1/96 - 12/02)

Ref #	IDI #	Date of Incident	Age (in months)	Gender	Product Type	OS Type	OS Design	Component Complies With Standard		Principal Entanglement Factor			Inner Cord	Design Detail to Avoid Incident (excluding elimination of cord)*	Comments
								1996	2002	Decedent Manipulated	Consumer Altered	Product Design			
64	010815CNE6651	20010810	78	F	Horizontal Blind	conventional cord lift	U	U	U		X		N	N/A	
65	011211CCC1174	20011023	25	F	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	
66	020301CCC1368	20011027	20	M	Horizontal Blind	conventional cord lift	2 cords separate tassels	Y	Y		X		N	N/A	police are relooking at case because of drowning death of another child
67	030100CCC1285	20011217	31	M	Horizontal Blind	U	U	U	U	U	U	U	U	U	
68	021016CCC3022	20020107	42	F	Draperies	continuous loop	traverse rod with tensioner	Y	Y		X		N	N/A	tension device installed; consumer deactivated
69	020610CCC1605	20020408	8	F	Horizontal Blind	conventional cord lift	2 cords separate tassels	Y	Y	U	U	U	N	U	
70	020716HCC3266	20020527	14	F	Horizontal Blind	conventional cord lift	N/A	N/A	N	X		X	Y	Cord Stops	
71	020604CNE7347	20020528	17?	M	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	listed as suspicious death by ME
72	020619CCN0542	20020612	12	F	Horizontal Blind	conventional cord lift	N/A	N/A	N	X		X	Y	Cord Stops	
73	020807CCN0684	20020801	22	F	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	
74	020905CCN0794	20020903	57	M	Horizontal Blind	U	U	U	U	U	U	U	U	U	
75	021112CCN0097	20021028	14	F	Horizontal Blind	conventional cord lift	N/A	N/A	N	X		X	Y	Cord Stops	
76	021107CNE7560	20021105	30?	F	Draperies	continuous loop	traverse rod without tensioner	N	N			X	N	Have Tensioner	
77	021219CCN0213	20021216	11	M	Horizontal Blind	conventional cord lift	N/A	N/A	N	X		X	Y	Cord Stops	
78	021218CCC3132	20021217	12	M	U	U	U	U	U	U	U	U	U	U	most information in newspaper article
79	971015CCC1584	19971008	20	M	Horizontal Blind	U	U	U	U	U	U	U	U	U	

SOURCE: CPSC In-Depth Investigation (INDP), Death Certificate (DCRT), Injury or Potential Injury Incident (IPII), and National Electronic Injury Surveillance System (NEISS) data

TABLE 2—CONVENTIONAL CORD LIFT OPERATING SYSTEMS

Ref #	IDI #	Date of Incident	Age (in months)	Gender	Product Type	OS Type	OS Design	Component Complies With Standard		Principal Entanglement Factor			Inner Cord	Design Detail to Avoid Incident (excluding elimination of cord)*	Comments
								1996	2002	Decedent Manipulated	Consumer Altered	Product Design			
1	960304HCN0685	19960206	44	F	Horizontal Blind	conventional cord lift	2 cords separate tassels	Y	Y	U	U	U	N	N/A	
6	960827CBB5576	19960517	41	M	Horizontal Blind	conventional cord lift	tassel loop	N	N			X	N	Eliminate Tassel Loop	
7	960524CCC5190	19960521	17	M	Horizontal Blind	conventional cord lift	U	N/A	N	X		X	Y	Cord Stops	
8	960611CCC5238	19960604	11	M	Horizontal Blind	conventional cord lift	tassel loop	N	N			X	N	Eliminate Tassel Loop	
10	960717CCC5351	19960713	40	F	Horizontal Blind	conventional cord lift	tassel loop	N	N			X	N	Eliminate Tassel Loop	
12	961023CCC5005	19960915	23	F	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	
13	961107CCC5040	19960916	31	F	Horizontal Blind	conventional cord lift	tassel loop	N	N	X	X		N	N/A	Unclear as to who formed noose
14	961125CWE7249	19961026	11	F	Horizontal Blind	conventional cord lift	U	N/A	N	X		X	Y	Cord Stops	
16	98109CCC2177	19961127	20	F	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	
17	981020CCC3026	19970108	43	F	Horizontal Blind	conventional cord lift	tassel loop	N	N	U	U	U	N	U	
21	980113CCC2220	19970305	15	F	Horizontal Blind	conventional cord lift	U	N/A	N	X		X	Y	Cord Stops	
24	981001CCC4014	19970417	14	M	Horizontal Blind	conventional cord lift	separate cords, separate tassels	Y	Y		X		N	N/A	
25	970709CCC3258	19970622	32	M	Horizontal Blind	conventional cord lift	U	U	U		X		N	N/A	
26	971119CWE5009	19971108	14	M	Horizontal Blind	conventional cord lift	tassel loop	N	N			X	N	Eliminate Tassel Loop	
27	980112CCN0131	19971229	14	M	Horizontal Blind	conventional cord lift	U	N/A	N	X		X	Y	Cord Stops	
29	980305CBB5364	19980204	34	M	Horizontal Blind	conventional cord lift	tassel loop	N	N	X		X	N	Eliminate Tassel Loop	Strangulation noose is dependent upon victim manipulation of existing loop (product or consumer caused)
31	980326CCC0231	19980228	21	F	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	

TABLE 2—CONVENTIONAL CORD LIFT OPERATING SYSTEMS

Ref #	ID#	Date of Incident	Age (in months)	Gender	Product Type	OS Type	OS Design	Component Complies With Standard		Principal Entanglement Factor			Inner Cord	Design Detail to Avoid Incident (excluding elimination of cord)*	Comments
								1996	2002	Decedent Manipulated	Consumer Altered	Product Design			
33	980528CCC6842	19980514	44	M	Roman Shade	conventional cord lift	U	U	U		X		N	N/A	
36	980821CBB0662	19980818	16	F	Horizontal Blind	conventional cord lift	U	N/A	N	X		X	Y	Cord Stops	
37	981222CCC2128	19980901	70	F	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	
38	001013CBB0041	19981026	17	F	Horizontal Blind	conventional cord lift	U	U	U	X		X	N	U	Strangulation noose is dependent upon victim manipulation of existing loop (product or consumer caused)
40	990325CCC0369	19990103	12	F	Horizontal Blind	conventional cord lift	U	N/A	N	X		X	Y	Cord Stops	
41	990728HCC3423	19990111	13	F	Horizontal Blind	conventional cord lift	U	N/A	N	X		X	Y	Cord Stops	
42	990121CBB2205	19990116	15	M	Horizontal Blind	conventional cord lift	2 cords separate tassels	N/A	N	X		X	Y	Cord Stops	
46	010117CCC0232	19991210	36	F	Horizontal Blind	conventional cord lift	three cords unknown ends	U	U		X		N	N/A	
47	001117CBB3055	20000103	15	F	Horizontal Blind	conventional cord lift	tassel loop	N	N	X		X	N	Eliminate Tassel Loop	Strangulation noose is dependent upon victim manipulation of existing loop (product or consumer caused)
48	000214CBB2293	20000130	49	M	Horizontal Blind	conventional cord lift	tassel loop	N	N	X		X	N	Eliminate Tassel Loop	Strangulation noose is dependent upon victim manipulation of existing loop (product or consumer caused)
50	000714CNE5665	20000317	32	M	U	conventional cord lift	multiple cords into stop ball	U	U			X	N	eliminate stop ball or have break away stop ball	

TABLE 2—CONVENTIONAL CORD LIFT OPERATING SYSTEMS

Ref #	IDI #	Date of Incident	Age (in months)	Gender	Product Type	OS Type	OS Design	Component Complies With Standard		Principal Entanglement Factor			Inner Cord	Design Detail to Avoid Incident (excluding elimination of cord)*	Comments
								1996	2002	Decedent Manipulated	Consumer Altered	Product Design			
53	000831CNE5737	20000826	32	M	Horizontal Blind	conventional cord lift	2 cords separate tassels	Y	Y		X		N	N/A	consumer tied knot in cord which created loop
61	010510CNE6334	20010508	42	M	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	series of in-line knots
63	011212CCC2118	20010704	12	M	Horizontal Blind	conventional cord lift	2 cords separate tassels	N/A	N	X		X	Y	Cord Stops	
64	010815CNE6651	20010810	78	F	Horizontal Blind	conventional cord lift	U	U	U		X		N	N/A	
66	020301CCC1368	20011027	20	M	Horizontal Blind	conventional cord lift	2 cords separate tassels	Y	Y		X		N	N/A	police are relooking at case because of drowning death of another child
69	020610CCC1605	20020408	8	F	Horizontal Blind	conventional cord lift	2 cords separate tassels	Y	Y	U	U	U	N	U	
70	020716HCC3266	20020527	14	F	Horizontal Blind	conventional cord lift	U	N/A	N	X		X	Y	Cord Stops	
71	020604CNE7347	20020528	7?	M	Horizontal Blind	conventional cord lift	tassel loop	N	N	U	U	U	N	U	listed as suspicious death by ME
72	020619CCN0542	20020612	12	F	Horizontal Blind	conventional cord lift	U	N/A	N	X		X	Y	Cord Stops	
73	020807CCN0684	20020801	22	F	Horizontal Blind	conventional cord lift	tassel loop	N	N		X		N	N/A	
75	021112CCN0097	20021028	14	F	Horizontal Blind	conventional cord lift	U	N/A	N	X		X	Y	Cord Stops	
77	021219CCN0213	20021216	11	M	Horizontal Blind	conventional cord lift	U	N/A	N	X		X	Y	Cord Stops	

TABLE 3—CONTINUOUS LOOP OPERATING SYSTEMS

Ref #	IDI #	Date of Incident	Age (in months)	Gender	Product Type	OS Type	OS Design	Component Complies With Standard		Principal Entanglement Factor			Inner Cord	Design Detail to Avoid Incident (excluding elimination of cord)*	Comments
								1996	2002	Decedent Manipulated	Consumer Altered	Product Design			
3	960403CCC5089	19960221	30	M	Roller Shade	continuous loop	clutch without tensioner	N	N			X	N	Have Tensioner	
5	960520CNE5140	19960517	39	F	Cellular Shade	continuous loop	clutch without tensioner	N	N			X	N	Have Tensioner	
11	970619CCC3227	19960808	22	F	Horizontal Blind	continuous loop	clutch without tensioner	N	N			X	N	Have Tensioner	
18	970127CNE5071	19970116	39	M	Vertical Blind	continuous loop	traverse without tensioner	N	N			X	N	Have Tensioner	
23	970522CCC3168	19970517	19	M	Vertical Blind	continuous loop	traverse without tensioner	N	N			X	N	Have Tensioner	
28	980209CCC3581	19980130	39	M	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	
30	980522CCC1437	19980218	58	M	Vertical Blind	continuous loop	traverse with weight without tensioner	N	N			X	N	Have Tensioner	
32	980310CBB6684	19980303	34	F	Vertical Blind	continuous loop	traverse without tensioner	N	N		X	X	N	Have Tensioner	Parent raised product loop off floor by wrapping around support rod which caused multiple loops
34	980701CWE7175	19980625	26	F	Draperies	continuous loop	traverse rod without tensioner	N	N			X	N	Have Tensioner	
35	980813CBB5779	19980710	13	M	Draperies	continuous loop	traverse rod without tensioner	N	N			X	N	Have Tensioner	
39	990818CCC0674	19981224	40	F	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	
43	990520CNE5172	19990517	41	F	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	
44	990618CWE6004	19990615	32	F	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	
45	001017CBB2033	19991030	48?	F	Draperies	continuous loop	traverse rod without tensioner	N	N		X	X	N	Have Tensioner	photos indicate that product was probably not used as designed; state of cords uncertain

TABLE 3—CONTINUOUS LOOP OPERATING SYSTEMS

Ref #	IDI #	Date of Incident	Age (in months)	Gender	Product Type	OS Type	OS Design	Component Complies With Standard		Principal Entanglement Factor			Inner Cord	Design Detail to Avoid Incident (excluding elimination of cord)*	Comments
								1996	2002	Decedent Manipulated	Consumer Altered	Product Design			
49	000331CWE6005	20000229	40	F	Draperies	continuous loop	traverse rod without tensioner	N	N			X	N	Have Tensioner	
52	010323CCC3221	20000328	14	F	U	continuous loop	chain without tensioner	N	N			X	N	Have Tensioner	
54	010614HCC2573	20000926	47	F	Draperies	continuous loop	traverse rod without tensioner	N	N		X		N	Have Tensioner	execptionally large tangle of cords
57	010103CBB0204	20010107	42	M	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	
58	010123CNE6092	20010124	48?	F	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	Blinds were used to cover closet; not on window
59	010205CCN0282	20010203	57	F	Vertical Blind	continuous loop	traverse with weight without tensioner	N	N			X	N	Have Tensioner	
60	010607CCC3331	20010404	12	F	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	committee assumed OS type was a continuous loop
65	011211CCC1174	20011023	25	F	Vertical Blind	continuous loop	rotator without tensioner	N	N			X	N	Have Tensioner, 2 separate cords or wand	
68	021016CCC3022	20020107	42	F	Draperies	continuous loop	traverse rod with tensioner	Y	Y		X		N	N/A	tension device installed; consumer deactivated
76	021107CNE7560	20021105	30?	F	Draperies	continuous loop	traverse rod without tensioner	N	N			X	N	Have Tensioner	

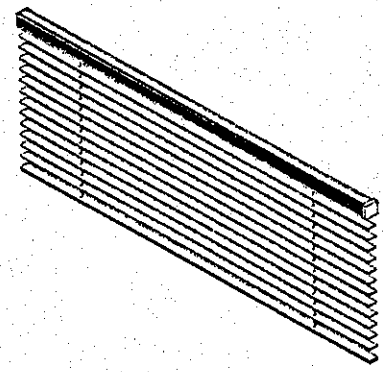
TABLE 4—CORD LOOP LIFT OPERATING SYSTEMS

Ref #	IDI #	Date of Incident	Age (in months)	Gender	Product Type	OS Type	OS Design	Component Complies With Standard		Principal Entanglement Factor			Inner Cord	Design Detail to Avoid Incident (excluding elimination of cord)*	Comments
								1996	2002	Decedent Manipulated	Consumer Altered	Product Design			
55	001102CNE5849	20001101	14	M	Roll-Up	cord loop lift	looped pull cord	N	N		X		N	N/A	multiple knots; last two were slip knots
56	010111CCC3134	20001119	78	F	Roll-Up	cord loop lift	looped pull cord	N	N	X			N	N/A	child's mental age was 1 and she had a propensity to play with the cords

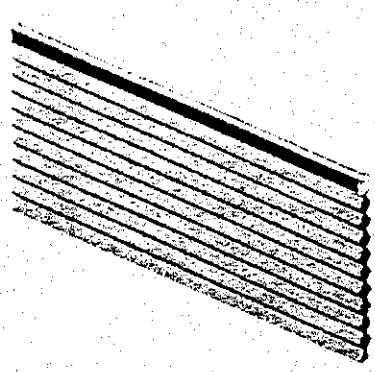
ATTACHMENT A: Window-Covering Product Types

Derived from American National Standard for safety of corded window covering products – ANSI/WCMA A100.1-2002

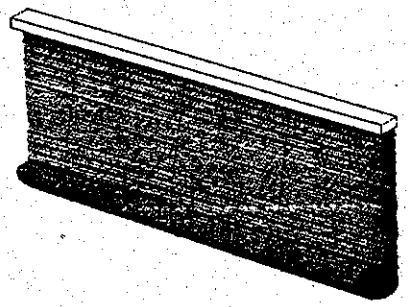
Horizontal Blinds. Includes those products referenced and commonly known as Microblinds, Miniblinds, and Venetian Blinds. Horizontal blinds consist of slats of various widths. Horizontal slats are manufactured using a number of natural and artificial materials, which include, but are not limited to, aluminum, fabric, polymers, steel, and wood. That slats are suspended from a headrail by "ladders," which hold the slats in a horizontal orientation. The headrail houses mechanisms that allow ladders to be actuated to tilt the slats for maximum light control and privacy, or raised to stack against the headrail.



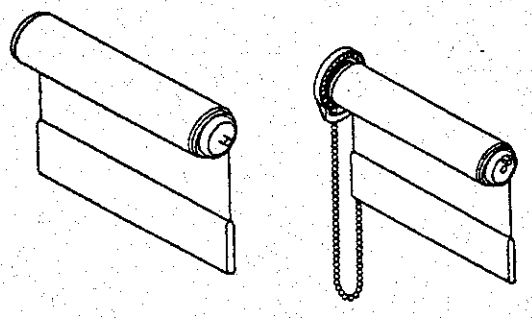
Pleated Shades; Cellular Shades. Pleated shades include those products referenced and commonly known as Accordion, and Z-fold. These products are manufactured using a number of natural and artificial materials, which include, but are not limited to, fabric, polyester film, and paper products. Pleated shade substrates consist of single or multiple layers of material with permanent pleats in a horizontal orientation. Cellular shades include those products referenced and commonly known as Honeycomb Shades. These products are manufactured using a number of natural and artificial materials, which include but are not limited to, fabric, and polyester film. Cellular shade substrates consist of multiple layers (referenced to as a single, double or triple cell construction) of material formed into tubes or cells in a horizontal orientation.



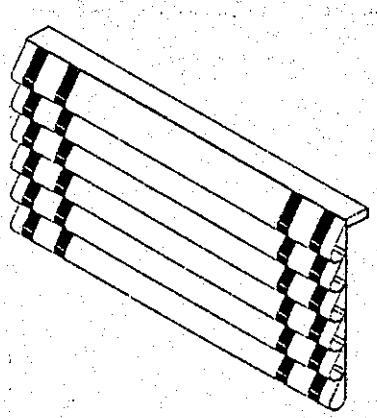
Roll-Up Blinds. Includes those products referenced and commonly known as Porch Shades, Roll-Up Shades, and Woven Woods. A window covering of a flexible sheet comprised of narrow strip of plastic or wood (in a horizontal orientation) woven together by cords. When the cord is pulled, a loop rises, causing the flexible sheet to roll-up from the bottom of the blind.



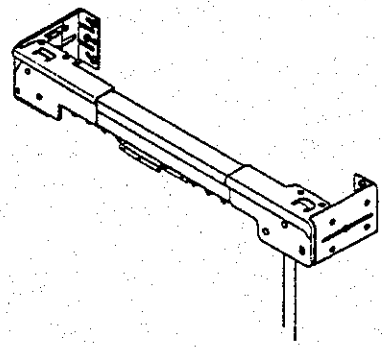
Roller Shade. A window-covering product comprised of a roller, a means of supporting the roller, and flexible sheets of material attached to the roller. The window covering operates by activating a spring mechanism in the roller or by a cord or bead loop attached to the roller.



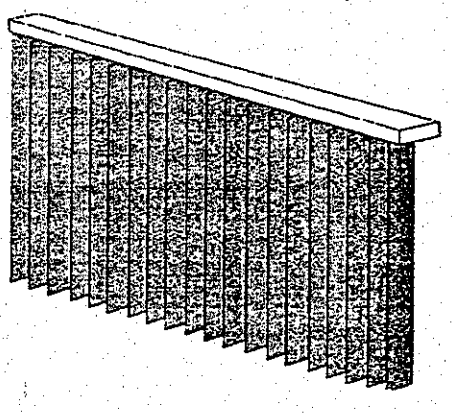
Roman Shades. Includes those products referenced and commonly known as Austrian Shades, Balloon Shades, and Soft Shades. Roman Shades often consist of a flexible fabric with rings attached to the back. The rings are aligned in columns, and spaced so that the fabric folds or gathers as desired. The fabric is suspended from a headrail that contains hardware for guiding cords and operating the shade. Cords run from the headrail, through a column of rings, and are attached to the lowest ring. As the shade is raised, the fabric gathers from the bottom upwards towards the headrail.



Traverse Rod. Includes those products referenced and commonly known as Drapery Rods, used to mount draperies made of cloth or other materials in a window. The rod is usually comprised of a metal tube with an open side. Each end of the rod will have a housing containing wheels to guide the operating cord. Multiple carriages driven by the operating cord travel along the open side of the rod and provide a means to hang and traverse the draperies open and closed.



Vertical Blinds. Consist of slats or "vanes" in a vertical orientation that can be stacked in a small space to one or both sides of the headrail. Vertical vanes are manufactured in a number of natural and artificial materials, which include, but are not limited to, aluminum, fabric, glass, PVC, polymers, steel and wood. Vane carriers suspend the vanes from a headrail. The headrail houses mechanisms that allow vane carriers to rotate and traverse the vanes.



ATTACHMENT B: DEFINITIONS

OPERATING SYSTEM TYPES & DESIGNS

Conventional Cord Lift – An operating system that raises and lowers corded horizontal, pleated, cellular and Roman blinds or shades using two or more cords external to the blind or shade. The number of cords is dependent on the width of the blind or shade and the rigidity of the bottomrail. A locking mechanism holds the blind or shade in the raised position at any point along its length. The external cords enter the headrail through a lock mechanism, then pass through the blind or shade and attach to the bottomrail. Cords inside the blind or shade are referred to as internal cords.

Tassel Loop Design – The external cords used to raise and lower the blind or shade are designed to be a loop formed by a combination of two or more external cords terminating at a single point where a tassel is usually attached.

Two Cords, Separate Tassels Design – The external cords used to raise and lower the blind or shade are designed to consist of two or more individual cords, each terminating at a single point where a tassel is usually attached.

Multiple Cords into Stop Ball Design – The external cords used to raise and lower the blind or shade are designed to be a loop formed by a combination of two or more external cords terminating at a stop device, below which a single cord terminating in a tassel is used to operate the blind or shade.

Continuous Loop Control - An operating system with a mechanism controlled by a continuous loop or heavy cord or bead chain that raises and lowers a horizontal blind or shade, or traverses open and closed a vertical blind or drapery rod. On a horizontal blind, the continuous loop control is also used to tilt the louvers. On some vertical blinds, the continuous loop control may also be used to rotate the vanes.

Traverse Design – A traverse design that has a channel with internal carriages that traverse side to side to open and close the blind vanes as the operating cord is pulled.

Traverse Rod Design – A traverse design that has a channel with internal carriages that traverse side to side to open and close cloth draperies as the operating cord is pulled.

Rotator Design – A tilt design that rotates the blind vanes or louvers into an open or closed position using a mechanism operated by a continuous bead chain or cord.

Clutch Design – A lift design that raises and lowers the blind or shade using a clutch mechanism operated by a continuous bead chain or cord. The clutch mechanism holds the blind or shade in the raised position at any point along its length. On horizontal blinds, the same continuous bead chain or cord is also used to tilt the louvers.

Cord Loop Lift – An operating system which lifts a roll-up shade using a conventional cord lift system that wraps around the bottom of the product and enables the shade to roll up from bottom to top. A locking mechanism holds the shade in the raised position at any point along its length. The external cords enter the headrail through the lock mechanism, then pass down the front of the shade around the bottom and up the back, attaching to the headrail.

Looped Pull Cord – The external cords used to raise and lower the shade combine to form a loop at the lower end of the cord. There may be more than one loop, depending on the width of the shade. There are no tassels with this design.

RELATED DEFINITIONS

Bottomrail – (Sill rail, bottom channel) Member of the blind or shade that acts as an attaching point for the lift cords and supports the blind as it is being lowered or raised.

Bead Chain – A series of small spheres, equally spaced on a cord or connected by metal shafts, and used to operate a window-covering product.

Clutch – A device used to manually operate a shade or blind. Consists of a chain wheel that drives the roller tube or shaft through a system of one-way spring clutches. The springs allow the tube to rotate when the user applies force to the cord, and prevents rotation when the force is removed.

Continuous Loop Cord – A curving or doubling of a cord so as to form a closed loop.

Cord Lock – A mechanism in the headrail of the blind with the lift cords running through it used to hold the blind in position once it is raised or lowered to a desired height.

Cord Stop – A small passive device firmly affixed to a lift cord of a conventional lift system, and located proximate to the cord lock when the blind/shade is in the fully deployed position, such that the device restricts the cord from passing through the cord lock in the direction that would otherwise shorten the lift cord and allow for a loop to form with the corresponding inner cord.

Headrail – Element of window covering, normally at the top, which is attached to the installation brackets and houses the operational components (i.e. cord lock, carriers, etc.) of the window covering.

Inner Cord – The internal cord of a horizontal, pleated, cellular or Roman blind or shade that helps to suspend and lift the bottomrail and any horizontal louvers or fabric collected upon it at any position, raised or lowered.

Ladder – On a horizontal blind, the vertical members that the support the slats and determine the spacing between the slats.

Lift Cords – the cords used to raise and lower a blind or shade. Internal lift cords are those cords contained inside the body and rails of the blind or shade. External lift cords are exposed and are intended to be used to operate the blind or shade.

Louver – Element of a horizontal blind, which obstructs light and view through a window and is supported by ladders. Sometimes called a slat.

Pull Cord – An external form of chain, rope, strap or string used to raise and lower or open and close window coverings.

Stop Ball – A device used to join the ends of several individual cords and provide a single cord for operation below the device.

Tassel – A device used to terminate and cover the end of a free hanging cord of a window covering.

Tassel Loop – Pull cord loop formed by the combination of two or more cords terminating in a single tassel.

Tensioner – A device attached to continuous loop cord or chain which, when mounted to the wall or sill, pulls and keeps the cord or chain taut.

Traverse Rod – Rod using carriers to allow drapery or vertical blind vanes to be drawn across the window, controlled by a draw cord.

Vane – Element of a vertical blind that obstructs light and view through a window.

Wand – A rod usually operated with a twisting motion to rotate vertical blind vanes or tilt horizontal blind louvers. A wand can also be used to traverse a vertical blind drapery.