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INTERIM FEDERAL SPECIFICATION

VENETIAN BLINDS

This Interim Federal Specification was developed by the Federal Supply Service, General Services Administration, Washington, DC 20406, based upon currently available technical information. It is recommended that Federal agencies use it in procurement and forward recommendations for changes to the preparing activity at the address shown above.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers two types of venetian blinds.

1.2 Classification. The venetian blinds covered by this specification shall be of two types:

Type I - 2 inch slats
Type II - 1 inch slats

1.2.1 Size. The size of windows for blinds that are required shall be as specified in the invitation for bids (6.2). Blinds over 144 inches in width and over 25 pounds in weight are not subject to this specification.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issues in effect on the date of invitation for bids or request for proposal form a part of this specification to the extent specified herein:

Federal Specifications:

PPP-B-636 - Box, Fiberboard.
PPP-C-843 - Cushioning Material, Cellulosic.

Federal Standards:

Fed. Std. No. 102 - Preservation, Packaging, and Packing Levels.
Fed. Std. No. 123 - Marking for Domestic Shipment (Civilian Agencies).
Fed. Test Method Std. No. 141 - Paint, Varnish, Lacquer, and Related Materials; Methods of Inspection, Sampling, and Testing.
Fed. Test Method Std. No. 191 - Textile Test Methods.

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

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(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Military Standards:

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
- MIL-STD-129 - Marking for Shipment and Storage.
- MIL-STD-130 - Identification Marking of U.S. Military Property.

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3. REQUIREMENTS

3.1 Preproduction sample. When specified (6.2), a preproduction sample of the finished blind shall be submitted or made available to the contracting officer or his authorized representative for approval in accordance with 4.2. The size of the preproduction sample shall be the largest size under contract.

3.2 Materials. Materials shall conform to the applicable specifications and requirements specified herein. All materials shall be new, unused, and free from defects that will affect serviceability or appearance of finished product.

3.3 Construction and design. The venetian blinds and components covered by this specification shall be of the free-hanging design with horizontal slats adjustable to various angles and various heights. The venetian blinds shall be constructed so as to be easily removed from the windows and individual components must be removable for replacement if necessary, without damage to the equipment. Type I venetian blinds shall be as specified in 3.3.1 and Type II venetian blinds shall be as specified in 3.3.2.

3.3.1 Type I venetian blinds. The Type I venetian blinds shall be constructed and designed as specified in 3.3.1.1 through 3.3.1.6.4.

3.3.1.1 Slats. The slats shall be aluminum or steel as specified (6.2). The slats shall be 2 inches (plus 1/64 inch, minus 1/32 inch) wide. Aluminum slats shall be not less than 0.0008 inch. Steel slats shall be not less than 0.007 inch. The ends of the slats shall be cut at right angles to the sides. The corners shall be rounded to not less than 1/4 inch radius and not more than 9/32 inch radius. The finished slats shall have a maximum crown of 1/4 inch and have sufficient flexibility to permit a 180 deg. bend on both the convex and concave sides without permanent deformation of the slats when tested as specified in 4.4.1. After the bend test, the perpendicular distance from the supporting surface to any one point on either edge of the slat shall not exceed 1/8 inch, and the maximum difference in the perpendicular distance from the supporting surface to the edge of the slat for any two points, 3 inches apart, along the edge shall not exceed 1/32 inch

when tested as specified in 4.4.2; and the slat shall be capable of supporting itself when tested as specified in 4.4.3.

3.3.1.2 Rails. The head and bottom rails shall be of sufficient thickness, strength, and rigidity so that there will be no twisting, sagging, or distorting when tested as specified in 4.4.4 and 4.4.11. Ends of rails shall be cut at right angles to the sides.

3.3.1.2.1 Head rail and braces. Head rail shall be in one piece of U-shaped construction. Front, back, and bottom shall be of sufficient depth to conceal operating mechanism when viewed at eye level. Braces shall be constructed to provide maximum resistance to the head rail from impact, shock, and compression.

3.3.1.2.2 Bottom rail and tape fittings. The bottom rail shall be a formed section of not less than 1/2 inch nor more than 1 inch thick. Fittings shall be provided that will securely fasten the bottom end of the tapes to the bottom rail. Exposed fittings shall match the color of the bottom rail.

3.3.1.2.3 End caps. The ends of bottom rail shall be equipped with metal or plastic end caps. When holddown or sway-stop brackets are specified, the end caps shall have a stud at or near the center to fit into the brackets or equivalent device for securing the bottom rail to the holddown or sway-stop brackets.

3.3.1.3 Ladder tapes. The ladder tapes shall be plastic, woven synthetic, or cotton as specified, and shall be the same color as the slats unless otherwise specified (6.2). Tapes shall be of ladder type with face tapes 1-1/2 +/- 1/16 inch wide and cross straps (ladders) at least 5/16 inch wide. Spacing of the ladders shall be uniform and accurate to allow not less than 1/4 inch overlap of slats when blind is closed. The accumulated error in ladder spacing shall not exceed plus or minus 1/8 inch in 6 feet of tape. All measurements shall be made while tape is under constant tension of a 3/4 pound pull. The ends of the ladders shall be interwoven or fused as applicable into the backs of the face tapes. The tape ends shall be neatly and securely fastened in a positive manner at the bottom rail and to tape supports inside the head rail. No loose ends shall be visible from head or bottom rail. Tapes shall afford easy removal for maintenance or replacement. Tapes shall be in line with all lifting cords and routs on both sides of the blind. Spacing of tapes shall be uniform and shall not exceed 34 inches between centers. The center of the first and last tapes shall be not more than 7 inches from the edge of the blind.

3.3.1.3.1 Breaking strength. Face tapes when tested individually, shall have a minimum warp breaking strength of 60 pounds when tested in accordance with 4.4.5. Cross straps (ladders), when tested individually, shall have a breaking strength greater than 10 pounds and shall not tear or break away from the face tapes at less than 10 pounds when tested as specified in 4.4.6.

3.3.1.3.2 Colorfastness and dimensional stability. The face tapes and cross straps of the ladder tapes shall have good colorfastness to light and water when tested in accordance with 4.4.7 and shall not shrink or stretch more than 2 percent when tested in accordance with 4.4.8.

3.3.1.4 Cords. Cords shall be of sufficient length for convenient and efficient use and shall be easily detachable and replaceable. Cords shall be made of synthetic fibers or cotton as specified, and shall be the same color as the slats unless otherwise specified (6.2).

3.3.1.4.1 Size. Cords for use with slats shall have a minimum diameter of 1/8 inch for cotton cords and a minimum diameter of 0.115 inch for synthetic fiber cords and shall be constructed to minimize wear, stretch, and abrasion when tested in accordance with 4.4.10 and 4.4.11.

3.3.1.4.2 Strength. Cords shall have a breaking strength of not less than 175 pounds when tested in accordance with 4.4.9.

3.3.1.4.3 Colorfastness. Cords shall have good colorfastness to light and water when tested in accordance with 4.4.7.

3.3.1.4.4 Lifting cord equalizer. Blinds shall be provided with equalizers to hold the pull cords together and insure even raising and lowering of the blinds for the life of the blinds.

3.3.1.4.5 Tassel. All exposed ends of cords shall have neat metal, wood, or plastic pull knobs or tassels attached and shall match the cord in color.

3.3.1.5 Operating hardware. All operating hardware shall be of the quality normally furnished commercially. All hardware shall be free from burrs that will in any way interfere with the operation or cause excessive wear or abrasion of any other part.

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3.3.1.5.1 Tilting devices. Unless otherwise specified (6.2), the tilting device shall be securely attached to head rail on the left side between the left tape rout and the end of blind and shall operate from the front of the blind. The tilting device shall be either of the cord-adjustable type or constructed in such a way that the cords, when locked in place, shall not slip. The gear and worm gear shall be constructed to insure proper interworking of parts and ease of operation. The device shall tilt and securely hold the tilting rod, slats and bottom rail at any set angle. It shall consist of a worm and gear design capable of changing the tilt position of the blind from one extreme to the other when tested in accordance with 4.4.11. All exposed edges where moving cord contact is made shall be rounded.

3.3.1.5.2 Tilting rod. The tilting rod shall be of sufficient strength and rigidity to tilt a blind uniformly and positively without appreciable twisting, sagging, or distorting when proper supporting components are used. The rod shall be securely attached to the other hardware components to insure perfect alignment of tapes at all times, when tested in accordance with 4.4.11. When installed in the blind, the tilting rod shall be securely held in place in a manner that does not interfere with its operation.

3.3.1.5.3 Tilting-rod supports. All blinds over 48 inches in width shall have additional tilting rod supports so constructed as to carry the weight of the blind as transferred to the tilting rod through the tapes and assure proper alignment of the tilting rod. Test shall be in accordance with 4.4.11 on blinds over 48 inches in width. Additional tilting rod supports shall be placed at or near each tape support except the two end supports where the cord lock and tilt assemblies are constructed to perform this function.

3.3.1.5.4 Tape support. The tape support shall be so constructed that when the blind is fully tilted, all slats shall be in their closed positions. The tape support shall be constructed for the positive and secure support of the tape by means of loops formed in the end of each face tape. The support shall be securely positioned on the tilting rod to prevent any movement of drum on rod and insure perfect alignment of tapes. Tape supports shall be securely attached to the tilting rod at each tape position.

3.3.1.5.5 Lifting cord lock. Unless otherwise specified (6.2), the locking device shall be securely attached to the head rail at the right side of the blind between the right end tape rout and the end of the blind, and shall operate from the front of the blind. The lifting cord locks shall be constructed to hold the blind securely at any height, when the lifting cord is released in the proper position, without the necessity of fastening the lifting cord. The device shall operate effectively without shredding the cords when tested in accordance with 4.4.10.

3.3.1.5.6 Pulleys or grommets. Pulleys or grommets shall be made to operate with a minimum of noise and in such a manner as to allow free and easy cord travel to prevent shredding of the cord when tested in accordance with 4.4.10. When a direct lift is used, the head rail shall securely and efficiently house a sufficient number of pulleys or grommets to provide easy means of cord operation. When a compound lift is used, both the head and bottom rails shall securely and efficiently house a sufficient number of pulleys or grommets for easy operation of the lifting cords.

3.3.1.6 Installation hardware. Installation hardware used on all blinds regardless of size shall be of metal of quality and strength to give proper support to any blind up to 144 inches in width and 25 pounds in weight.

3.3.1.6.1 Head-rail installation brackets. Head-rail installation

brackets shall be specially constructed so as to support the head rail at each end. The brackets shall be so constructed that the blind can be easily removed and replaced as a unit. The brackets shall have locking covers that will securely lock the head rail in place and shall be so constructed that, when closed, the head rail cannot be pulled out of the brackets. Brackets shall match in color the head rail, and shall be free from defacing marks other than screw holes and rivet holes.

3.3.1.6.2 Head-rail intermediate supports. Intermediate supports shall be so constructed as to give additional support to the head rail between installation brackets when necessary because of the width and weight of the blind. Metal blinds in excess of 64 inches shall have intermediate supports in accordance with Table I, and at no point shall supports be over 48 inches apart.

TABLE I. Number of supports

Length of head rail or boxes	Minimum number of intermediate supports
64 inches or less	No support
Over 64 up to 96 inches	1 support
Over 96 up to 144 inches	2 supports

3.3.1.6.3 Holddown brackets. Holddown or sway-stop brackets shall be provided for windows or door installations when specified (6.2). They shall be installed in such a position that they hold the blind taut when the blind is in a fully lowered position.

3.3.1.6.4 Installation screws. Blinds for use where the installation screws are to be installed in wood or metal shall be provided with No. 6 screws by 5/8 inch or longer. For special installations, suitable fasteners shall be provided for safe installation.

3.3.2 Type II venetian blinds. The Type II venetian blinds shall be constructed and designed as specified in 3.3.2.1 through 3.3.2.10.

3.3.2.1 Head channel. Unless otherwise specified (6.2), the head channel shall be a minimum of .018 inch thick steel. The channel shall be treated for corrosion resistance and shall have a high temperature baked plastic coating. The head channel shall be "U" shaped with flanged edges at the top and shall be formed after painting. The head channel shall be of sufficient depth to conceal operating mechanism when viewed with blinds in installed position. Braces shall be constructed to provide maximum resistance to the head channel from impact, shock, and compression. The head channel shall have the strength and rigidity so that there will be no twisting, sagging, or distorting when tested as specified in 4.4.4 and 4.4.11.

3.3.2.2 Bottom rail. Unless otherwise specified (6.2), the bottom rail shall be a minimum of .018 inch steel. The rail shall be treated for corrosion resistance and shall have a high temperature baked plastic coating. Bottom rail shall be shaped to impart stiffness and to accommodate its accessories and shall be formed after painting. Bottom rail shall be equipped with molded plastic end caps to provide a finished look to the rail. The bottom rail shall have the strength and rigidity so that there will be no twisting, sagging, or distorting when tested as specified in 4.4.4 and 4.4.11.

3.3.2.3 Slats. The slats shall be aluminum or steel as specified (6.2). Slats shall be one inch wide, plus 0, minus .03 inch. Aluminum slats shall be not less than 0.0095 inch thick. Steel slats shall be not less than 0.008 inch thick. Slats shall be painted with a high temperature baked plastic type coating. The ends of the slats shall be cut at right angles to the sides. The corners shall be rounded to not less than 1/8 inch radius and not more than 3/16 inch radius. The finished slats shall have a maximum crown of

1/8 inch and have sufficient flexibility to permit a 180 deg. bend on both the convex and concave sides without permanent deformation of the slats when tested as specified in 4.4.1. The slat shall show reasonable stability when tested as specified in 4.4.3.

3.3.2.4 Installation brackets. Unless otherwise specified (6.2), brackets shall be a minimum of 0.030 inch thick steel. Brackets shall be treated for corrosion resistance and shall have a high temperature baked plastic type coating to match the color of the headrail. Brackets shall be made to hold the headrail securely in place. Where necessary, wide blinds shall be equipped with an adequate number of intermediate support brackets treated for corrosion resistance.

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3.3.2.5 Tilt rod support and drum. All blinds shall have tilt rod supports and a drum for each braided ladder. The tilt rod supports shall be constructed to provide bearing and support for the tilt rod and shall properly align the tilt rod with the tilter. The drum shall be designed to give full support to the braided ladders and to give a full tilting action when tilting the blind at the same time retaining the same level on each slat.

3.3.2.6 Cord lock. The cord lock shall be securely attached to the headrail and shall lock all pull cords to hold the blind securely at any height. Cord lock shall be treated for corrosion resistance and shall be equipped with a locking device which will prevent a free fall of the blind if the pull cords are accidentally released. Unless otherwise specified (6.2), the cord lock shall be firmly attached to the right side of the head channel.

3.3.2.7 Operating hardware. All operating hardware shall be of the quality normally furnished commercially. All hardware shall be free from burrs that will in any way interfere with the operation or cause excessive wear or abrasion of any other part. The tilting devices, including tilter, tilt rod and tilt supports shall be tested in accordance with 4.4.11.

3.3.2.7.1 Tilter. The tilter shall be designed to hold the slats at any angle so that vibration or movement of ladders and slats will not drive the tilter. The slats shall be tilted by pulling tilt cords. Unless otherwise specified (6.2), the tilter shall be firmly attached to the left side of the head channel.

3.3.2.7.2 Tilting rod. The tilting rod shall be steel and treated for corrosion resistance. The tilting rod shall be shaped to correspond to opening through drum and the gear of the tilter for instant and accurate tilting response.

3.3.2.8 Cords. Cords shall have either a braided polyester or braided nylon jacket over a rayon, nylon or cotton core. Depending on the overall size and weight of the blind, an adequate number of lift cords shall be used to insure safe and proper raising and lowering of the blind. Cords shall be of sufficient length for convenient and efficient use and shall be easily detachable and replaceable. Cords shall have a minimum diameter of 1/8 inch for cotton core cords, and 0.065 inch for other than cotton core cords and shall be constructed to minimize wear, stretch, and abrasion when tested in accordance with 4.4.10 and 4.4.11. Cords shall have a breaking strength of not less than 175 pounds when tested in accordance with 4.4.9. Cords shall have good colorfastness to light and water when tested in accordance with 4.4.7. Cords shall be the same color as the slats unless otherwise specified (6.2).

3.3.2.9 Tapes. The slat supports (tapes) shall be braided of high tenacity polyester yarn, the vertical component of which shall not be less than .045 inch diameter, nor greater than .066 inch diameter for maximum strength and flexibility with minimum stretch. The horizontal component, or rungs shall consist of not less than four threads. Braiding shall be accurate to assure proper control and adequate overlap of slats. The distance between end ladders and ends of slats shall not exceed 6 inches. The distance between braided ladders shall not exceed 22 inches. Ladder rungs shall be spaced evenly 45 in 36 inches. Tapes shall have a breaking strength of not less than 50 pounds when tested in accordance with 4.4.9. There shall be no evidence of weakness of the horizontal component attachment when subject to pull by hand (strong tension shall be used). Colorfastness to light and water shall be good when tested as specified in 4.4.7, and shrinkage or stretch shall be not more than 2.5 percent when tested as specified in 4.4.8. The

tapes shall be the same color as the slats unless otherwise specified (6.2). Breaking strength shall apply to the single braided strand and not the fully constructed tape. Shrinkage or stretch shall also apply to the single braided strand.

3.3.2.10 Lifting cord lock and pulleys or grommets. The lifting cord lock and pulleys or grommets shall be as specified in 3.3.1.5.5 and 3.3.1.5.6.

3.4 Assembly requirements for types I and II venetian blinds.

3.4.1 Length and width limitation. The blinds shall be constructed for installation between the jambs or outside the jambs as specified (6.2). When the blind is installed between the jambs and in the open-hanging position, the bottom rail shall be not more than 5/8 inch above the window sill. The ends of each slat shall be not less than 1/8 inch nor more than 3/8 inch from the edge of the casing. When the blind is installed outside the jambs, the slats shall be of sufficient length to extend at least 1-1/2 inches on each side of the maximum width of the opening. The head rail of the blind shall be mounted so that it does not extend below the top of the window opening. The bottom rail shall hang below the bottom of the window opening unless the sill ledge extends beyond the wall. When sill extends beyond the wall, the length limitation shall be the same as when the blind is installed between the jambs. When holddown brackets are specified the bottom rail shall be not more than 5/8 inch above the window sill with the blind in a fully closed position. When type I audio-visual venetian blinds are required and when full window coverage is required, the bottom rail may rest on the sill.

3.4.2 Size and weight limitation. A direct two-cord lift shall not be used on blinds over 90 inches in width. The maximum pull force to raise a blind shall not exceed 45 pounds when tested in accordance with 4.4.12.

3.4.3 Raising and lowering limitation. When a direct two-cord lift is used, the blind shall be provided with one cord lock and two lifting cords that pass through the lock. When a direct four-cord lift is used, the blind shall be provided with two cord locks and four lifting cords with two lifting cords passing through each lock. When a direct six-cord lift is used, the blind shall be provided with three cord locks and six lifting cords with two lifting cords passing through each lock. Whenever a direct lift is used, all lifting cords shall operate together. When a compound lift is used, the blind shall be provided with one cord lock and two lifting cords that pass through the lock at a ratio of at least two to one with the cord travel being at least twice the rate of the blind travel. The head rail shall securely and effectively house a sufficient number of pulleys or grommets to operate the lift cords. When a compound lift is used both the head and bottom rails shall securely and efficiently house a sufficient number of pulleys or grommets to operate the lift cords.

3.4.4 Assembled slats. All slats in the full handing position of the blind at any angle shall be parallel and evenly spaced. When the blind is completely raised to its highest position, it shall be neat and compact. When the slats are tilted in either of the extreme closed positions when the blind is in the handing position, practically no light shall show between the slats and head rail. The blind shall be easily detachable and replaceable as a unit. When in handing position, the blind shall be securely locked in place.

3.5 Finish. Prior to the application of a finish, all burrs and sharp edges shall be removed.

3.5.1 Slats, rails, brackets, and caps. The slats, rails, brackets, and metal caps shall be electrogalvanized, phosphate coated, chemically treated, or equivalent followed by baked enameling. The finished coat shall be an alkyd resin base or equivalent and unless otherwise specified (6.2), the color shall be white or eggshell. The coating shall level out to produce a smooth, dry, uniform thickness, without objectionable orange peel, wrinkles, drops, streaks, or areas of no film. The finish shall be capable of withstanding a 100 hour salt spray test, a 100 hour humidity cabinet test, and a 100 hour weathering test with no deterioration of paint or metal in excess of 1/8 inch creepage from a scored line when tested in accordance with 4.4.13.

3.6 Identification marking. Unless otherwise specified, each blind shall be permanently marked in an inconspicuous location with the manufacturer's name or trademark and the month and year of manufacture. When specified (6.2), identification marking shall be in accordance with MIL-STD-130.

3.7 Workmanship. The finished blinds shall conform to the quality and grade of product established by this specification.

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3.7.1 Operation of parts. All component parts shall fit properly and securely and all movable or revolving devices or parts shall operate smoothly and easily and shall be simply and easily adjustable or controlled. Hardware used for lifting devices and automatic stops or lifting cord locks shall fit and operate efficiently with the type and size of cord provided with each blind.

3.7.2 Wearing surface of parts and bearings. The wearing surfaces of moving parts and bearings shall be designed so as to provide maximum durability.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.2 Preproduction sample inspection. When a preproduction sample is required, the preproduction sample shall be examined for defects in Table III and specified dimensions, and tested as specified in 4.4.4, 4.4.10, 4.4.11 and 4.4.12. The size of the preproduction sample shall be the largest size under contract.

4.3 Sampling for inspection and acceptance. Sampling for inspection and acceptance shall be performed in accordance with the provisions set forth in MIL-STD-105 except where otherwise indicated herein.

4.3.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected and tested in accordance with all the requirements of referenced specifications, drawings, and standards unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document.

4.3.1.1 In process inspection. Inspection shall be made at any point or during any phase of the manufacturing process to determine whether the required operations are accomplished as specified. In process inspection shall be conducted to see that metal slats, rails, brackets, and end caps are pretreated as specified in 3.5.1. Whenever nonconformance is noted, correction shall be made to affected items and lot in process.

4.3.1.2 Materials testing. Materials shall be tested in accordance with Table II for the test characteristics shown therein. Random selection of samples of the components shall be made. Any sample failing to meet a test requirement shall be cause for rejection of the entire lot. Also, end items, into which such components may have been included, shall be cause for rejection of the end item lots.

TABLE II. Material testing

Components and lot expressed in terms of	Characteristic	Reqmnt. paragraph	Test method	Sample unit	No. deterns. per unit	Results reported as pass or fail	Inspection level	AQL
Slats	Bend test	3.3.1.1 and 3.3.2.3	4.4.1	1 slat	1	X	S-1	6.5
	Straightness test	3.3.1.1	4.4.2	1 slat	1	X	S-1	6.5
	Supporting test	3.3.1.1 and 3.3.2.3	4.4.3	1 slat	1	X	S-1	6.5
	Salt spray test	3.5.1	4.4.13	1 slat	1	X	S-1	6.5
	Humidity test	3.5.1	4.4.13	1 slat	1	X	S-1	6.5
	Weathering test	3.5.1	4.4.13	1 slat	1	X	S-1	6.5
Face tape, Type II (yards)	Breaking strength	3.3.1.3.1	4.4.5	1 yard	5	X [1]	S-1	6.5
	Colorfastness to light	3.3.1.3.2	4.4.7 [2]	1/4 yard	1	X	S-1	6.5
	Colorfastness to water	3.3.1.3.2	4.4.7 [2]	1/4 yard	1	X	S-1	6.5
	Shrinkage or stretch test	3.3.1.3.2	4.4.8	6 feet	2	X [1]	S-1	6.5
Cross tape (yards)	Breaking strength	3.3.1.3.1	4.4.6	1 yard	5	X [3]	S-1	6.5
	Colorfastness to light	3.3.1.3.2	4.4.7 [2]	1/4 yard	1	X	S-1	6.5
	Colorfastness to water	3.3.1.3.2	4.4.7 [2]	1/4 yard	1	X	S-1	6.5
Cords and Type II tape (yards)	Breaking strength	3.3.1.4.2, 3.3.2.8 and 3.3.2.9	4.4.9 [4]	4 yards	5	X [1]	S-1	6.5
	Colorfastness to light	3.3.1.4.3, 3.3.2.8 and 3.3.2.9	4.4.7 [4]	1/4 yard	1	X	S-1	6.5
	Colorfastness	3.3.1.4.3, 4.4.7 [4]	4.4.7 [4]	1/4 yard	1	X	S-1	6.5

to water 3.3.2.8
and
3.3.2.9

Shrinkage or stretch test 3.3.2.9 4.4.8 [4] 6 feet 2 X [1] S-1 6.5

- [1] Based on an average of the determinations per unit.
- [2] Specimen shall be the full width of the tape with the long dimension parallel to the warp.
- [3] Failure of one or more determinations in a unit shall be cause for rejection of the unit.
- [4] The single braided strand shall be obtained by cutting through centers of rungs, for Type II tape.

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4.3.2 Inspection of the end item. The lot shall be the number of blinds of one size offered for inspection at one time. The sample unit for this inspection shall be one complete blind.

4.3.2.1 Visual examination. Examination of the blinds shall be in accordance with the classification of defects in Table III. The inspection level shall be II with an acceptable quality level (AQL) of 2.5 for major defects, and 10.0 for total defects, expressed in terms of defects per hundred units.

TABLE III. Classification of defects

Examine	Defect	Classification	
		Major	Minor
Finish (general)	Not color specified.	X	
	Runs, wrinkles, grit, areas of no film, separation of color, or finish not smooth	X	
Construction and workmanship	Hardware components not deburred.		X
Slats	Not shaped as specified.		X
	Not flexible.		X
	Corners not rounded.		X
Rails or Channel: Head	Not U shaped and size specified.	X	
	Does not conceal operating mechanism. Locking covers not furnished.		X X
Bottom	Holddown brackets not furnished when specified.		X
	Not equipped with end caps.		X
Ladder tape (Type I)	Spacing of ladders not uniform.		X
Cords	Too short.	X	
	Equalizer on pull cord not furnished or does not hold cord together.		X
	Exposed ends of cords not furnished with knots or tassels.		X
Tilting device	Not attached to left side of head rail, if applicable.	X	
Tilting rod and support	Not secure to other components.	X	
	Does not carry the weight of the blind.	X	
	Does not hold the tape in alignment.	X	
Lifting cord lock	Not furnished.	X	
	Does not hold cord securely at any height	X	
Installation hardware	Not furnished		X

Marking

Omitted, wrong location, incorrect,
incomplete or illegible.

X

4.3.2.2 Dimensional examination. Inspection shall be made of the blinds for compliance with dimensions specified. The ladder spacing shall be taken while under 3/4 pound pull. Any deviation from specified dimensions shall constitute a defect. The inspection level shall be S-2 with an AQL of 4.0 expressed in terms of defects per hundred units.

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4.3.3 Examination of preparation for delivery. An examination shall be made to determine that the packaging, packing, and marking as required by Section 5 are complied with. Defects shall be scored as specified in Table IV. The sample unit shall be one shipping container fully prepared for delivery with the exception it need not be sealed. The lot size shall be the number of shipping containers in the end item inspection lot. The inspection level shall be S-2 with an AQL of 4.0 defects expressed in terms of defects per hundred units. Examination for closure and strapping shall be in accordance with PPP-B-636.

TABLE IV. Examination of preparation for delivery

Examination	Defect
Marking (exterior and interior container)	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Material	Component missing, damaged, or otherwise defective.
Contents	Weight per container is more than required or exceeds weight limitation of the box specification.

4.4 Testing of the end item. Tests shall be performed for the characteristics specified herein as applicable to the end item. Random selection of samples shall be made. The sample size (number of sample units) shall be as follows:

SAMPLE SIZE

<u>Lot size (units)</u>	<u>Sample size</u>
75 or less	2
76 to 200	3
201 to 500	5
501 and over	7

The lot shall be unacceptable if one or more sample units fail to meet a test requirement. Acceptance of the test characteristics may be based on a contractor's certificate of compliance. The certificate shall be accompanied by actual test or other verifiable quality data.

4.4.1 Bend test. The slat shall be bent around a 2 inch diameter rod or cylinder and held for a period of not less than one minute. The slat shall then be released and examined for compliance with 3.3.1.1 or 3.3.2.3.

4.4.2 Straightness test. The straightness shall be determined by placing the slats on a flat surface with the concave side down. The perpendicular distance from the supporting surface to any one point on either edge of the slat shall not exceed 1/8 inch. With the slat similarly supported, the maximum difference in the perpendicular distance from the supporting surface to the edge, the slat for any two points, 3 inches apart, along the edge shall not exceed 1/32 inch for compliance with 3.3.1.1.

4.4.3 Supporting test. The slat for the Type I blind and the steel slat for the Type II blind, when laid flat on a table with the concave side up and

extended beyond the edge of the table at a distance of 1/3 its length or 45 inches, whichever is the lesser, shall be capable of supporting itself for compliance with 3.3.1.1 or 3.3.2.3. The aluminum slat for the type II blind shall be tested in the same manner for conformance to requirements, except that the extended distance beyond the edge of the table shall be 1/6 of its length or 12 inches, whichever is the lesser.

4.4.4 Head rail or channel and bottom rail test. A fully assembled blind including head and bottom rails, shall be suspended and fully lowered in its natural hanging position and examined for compliance with 3.3.1.2, 3.3.2.1 and 3.3.2.2.

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4.4.5 Breaking strength test of face tape. The breaking strength of the tape shall be determined in accordance with Method 5100 of Fed. Test Method Std. No. 191 for compliance with 3.3.1.3.1. The width of the jaws utilized shall be greater than the full width of the tape being tested. Warp direction only shall be tested.

4.4.6 Breaking strength test of cross straps. Breaking strength of the cross straps shall be determined in accordance with Method 5100 of Fed. Test Method Std. No. 191 for compliance with 3.3.1.3.1 except that one jaw shall grip the full width of the tape and the other jaw shall grip the full width of the cross strap so that the cross strap will overlap itself at the part where it is attached to the face tape. Horizontal component of Type II blinds shall be subjected to pull by hand.

4.4.7 Colorfastness to light and water test. The colorfastness to light and water of the face tapes and cross straps shall be determined in accordance with Methods 5660 and 5630 respectively of Fed. Test Method Std. No. 191 for compliance with 3.3.1.3.2. The colorfastness to light and water of the cords and Type II tape shall be determined in accordance with Methods 5660 and 5630 respectively of Fed. Test Method Std. No. 191 for compliance with 3.3.1.4.3, 3.3.2.8 and 3.3.2.9.

4.4.8 Shrinkage or stretch test of tapes. The shrinkage or stretch of Type I tapes shall be determined by attaching a sample piece of tape six feet long at one end to a supporting member of sufficient height allowing full length suspension. At the lower end of the tape a five pound weight shall be attached for approximately fifteen minutes and while under load in this suspended position, a distance of five feet shall be marked off on the specimen with indelible ink or other marking medium that will not vanish in the subsequent boiling. After removing the weight from the tape and tape from the supporting member, the tape shall then be submerged in boiling water for fifteen minutes. While wet, the tape shall be suspended again with the five pound weight attached until dry at room temperature. The test shall be repeated once more. At the end of the second wet-dry cycle, while under load, the distance between marks shall again be measured and the percentage of stretch or shrinkage calculated from the original 5 foot measurement. Type II tape shall be tested in the same manner as Type I tape, except that a three pound weight shall be used in lieu of five pounds, and only the single braided strand (obtained by cutting through centers of runs) shall be tested.

4.4.9 Breaking strength test of cords and Type II tape. The breaking strength of the cords and Type II tape shall be determined in accordance with Method 4102 of Fed. Test Method Std. No. 191 for compliance with 3.3.1.4.2, 3.3.2.8 and 3.3.2.9.

4.4.10 Test for automatic stop or lifting cord lock, lifting cord pulleys or grommets, and cord abrasion. A blind shall be mounted on a wall or wall supported rack with an electrically operated device stationed so as to properly move the lifting cords to raise, lock, release, and lower the blind in the testing operation cycle. A counter shall be installed to the bottom rail so as to count once for each cycle. The blind shall be raised to the extreme top position, prior to locking. It shall then be locked in place, the locking action occurring within 12 inches of the extreme top most position. The blind shall then be lowered to the bottom of travel, then it shall be raised to start the next cycle. The running cycle speed shall be fifteen seconds per cycle or four hours and ten minutes per one thousand cycles. The test shall be conducted on 1,000 cycles. At the end of the test, the blind shall be in operable condition that will include the ability to lock and hold the blind at any height and shall be free from excessive wear and noise for compliance with 3.3.1.5.5, 3.3.1.5.6, and 3.3.2.10. The

size of the blind tested under this paragraph shall be equivalent to the largest size under contract, unless otherwise specified by the contracting officer. When a contractor's certificate of compliance is accepted, the accompanying test or other verifiable quality data shall be based on testing of a size no smaller than the largest size under contract. At the option of the contractor, any of the operations in this test may be performed manually. When any of the operations are performed manually, the running cycle speed may be adjusted by the contractor to that considered reasonable for such an operation, except that running of the cycles shall be continuous and the time of any cycle shall not exceed thirty seconds.

4.4.11 Test for slat tilting device and tilting rod. After the test in 4.4.10 has been completed, the blind shall be equipped with a mechanical device so that the complete tilting of the slats can be accomplished in each direction. The cords shall be taut during this test. Each tilting cycle shall be from one extreme to the other and back and shall be counted by a mechanical counter. The tilting action speed shall be approximately one complete cycle in ten seconds for a total of 2,000 cycles. The tilting rod shall be strong and rigid enough to give satisfactory and equal closures across the blind. The inability to tilt the blind evenly for the full width shall represent failure of the tilting rod. The operating mechanism shall operate smoothly without undue friction or force and without excessive slipping or abrasion of the tilting cord, and the slats shall remain in any desired open or closed position for compliance with 3.3.1.5.1, 3.3.1.5.2, 3.3.1.5.3, and 3.3.2.7. Failure of the blind to operate properly during or upon completion of this test shall be considered a failure. No lubrication other than that normally used by the manufacturer for the operating parts shall be added to the parts prior to or during this test. The test as specified in 4.4.4 shall be repeated. At the option of the contractor, any of the operations in this test may be performed manually. When any of the operations are performed manually, the tilting action speed may be adjusted by the contractor to that considered reasonable, except that running of the cycles shall be continuous and the time of any cycle shall not exceed twenty seconds. When a contractor's certificate of compliance is accepted, the accompanying test or other verifiable quality data shall be based on testing of a size no smaller than the largest size under contract.

4.4.12 Pull force test. The pull force to raise the blind shall be measured by attaching an extension scale to the lifting cords when the blind is within 6 inches of its fully raised position. A reading shall be taken of the pull force required to raise the blind in the remaining 6 inches for compliance with 3.4.2.

4.4.13 Salt-spray, humidity, and weathering test. The salt-spray, humidity, and weathering shall be determined in accordance with Method 6061 for salt-spray, 6201 for humidity, and 6151 for weathering of Fed. Test Method Std. No. 141. Finished specimens of a convenient size shall be used for this test for compliance with 3.4.1. Any cut edge or hole in the specimen shall be coated with a suitable protective material. The test finish shall be scored through the metal with a sharp instrument starting about 1/4 inch from the top and ending about 1/4 inch from the bottom of the specimen.

5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A or C as specified (6.2).

5.1.1 Level A.

5.1.1.1 Venetian blind. Each complete blind shall be packaged in the most compact manner in a close-fitting box conforming to PPP-B-636, class domestic. The component units of the blind shall be cushioned and braced in the box with die-cut built-up fiberboard pads made of the same material as the box or cushioned with material conforming to PPP-C-843. Closure shall be in accordance with the appendix of the box specifications.

5.1.1.2 Ladder tape. Each roll of tape shall be packaged in a close-fitting box conforming to PPP-B-566, PPP-B-665 or PPP-B-676. Closure shall be in accordance with the appendix to the applicable box specification.

5.1.2 Level C. Complete blinds or ladder tape shall be packaged to

afford adequate protection against damage during shipment from the supply source to the first receiving activity. The supplier may use his standard practice when it meets this requirement.

5.2 Packing. Packing shall be level A, B, or C as specified (6.2).

5.2.1 Level A.

5.2.1.1 Venetian blind. Complete blinds, packaged in 5.1, shall be packed in a close-fitting box conforming to PPP-B-636, grade V3c. Closure, waterproofing by means of tape and reinforcing with flat steel strapping or tape banding shall be in accordance with the appendix of the container specification. The weight of contents for shipping containers shall not exceed 65 pounds.

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5.2.1.2 Ladder tape. Tape packaged as specified in 5.1 shall be packed in quantities as specified (6.2) in a close-fitting box conforming to PPP-B-636. The box shall be waterproofed with tape in accordance with the appendix of the box specification.

5.2.2 Level B.

5.2.2.1 Venetian blinds. Complete blinds, packaged as specified in 5.1, shall be packed in a close-fitting box conforming to PPP-B-636, class domestic. Closure shall be in accordance with the appendix of the box specification. The weight of contents for shipping containers shall not exceed 65 pounds.

5.2.2.2 Ladder tape. Tape packaged as specified in 5.1 shall be packed in quantities as specified (6.2) in a close-fitting box conforming to PPP-B-636, class domestic. Closure shall be in accordance with method II of the appendix to PPP-B-636.

5.2.3 Level C. Complete blinds or ladder tape, packaged as specified in 5.1, shall be packed to insure carrier acceptance and safe delivery at destination at lowest rates in containers complying with the Uniform Freight Classification Rules or National Motor Freight Classification Rules, as applicable.

5.3 Marking. In addition to any special markings required by the contract or order, all marking shall be in accordance with 5.3.1 or 5.3.2 as specified (6.2).

5.3.1 Civil agencies. All marking shall be in accordance with Fed. Std. No. 123.

5.3.2 Military agencies. All marking shall be in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. The blinds covered by this specification are intended to be used on windows as covering to simultaneously control the degree of light, air and privacy.

6.2 Ordering data. Purchasers should exercise any desired options offered herein and procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Type required (1.2).
- (c) The number and size of windows for which blinds are required (1.2.1).
- (d) When a preproduction sample is required (3.1).
- (e) Whether slats shall be aluminum or steel (3.3.1.1 and 3.3.2.3).
- (f) Type of tape material and color if other than color slats is required (3.3.1.3 and 3.3.2.9).
- (g) Type of cord material and color if other than color of slats desired (3.3.1.4 and 3.3.2.8).
- (h) Whether the tilting device shall be located other than on the left side of the blind (3.3.1.5.1 and 3.3.2.7.1).
- (i) Whether the lifting cord lock shall be located other than on the right side of the blind (3.3.1.5.5 and 3.3.2.6).
- (j) If holddown or sway-stop brackets are required (23.3.1.6.3).
- (k) Thickness of head channel, bottom rail, or brackets for type II blinds, if other than as specified (3.3.2.1, 3.3.2.2 and 3.3.2.4).

- (l) Whether blind is to be installed between or outside the jambs (3.4.1).
- (m) The color of slat, head rail, bottom rail and installation brackets required if other than white or eggshell is desired (3.5.1).
- (n) When identification marking in accordance with MIL-STD-130 is required (3.6).
- (o) Selection of applicable levels of packaging and packing, and marking (5.1, 5.2 and 5.3).
- (p) Quantities of ladder tape to be packed (5.2.1.2 and 5.2.2.2).

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6.2.1 Measurement. Measurements may be determined by measuring the width of each blind as represented by the length of the slats, and the height as represented by the overall height of the blinds when in a full-length open-hanging position, measured from the top edge of the head rail or head box to the lower edge of the bottom rail, with the slats and rails in a horizontal (non-tilted) position. The product obtained by multiplying these figures shall be the "blind area".

6.2.2 Uniformity. For purpose of uniformity within a room or on the same floor of a building, the purchaser may desire to specify that all blinds within the given area, room, et cetera, be of the same materials, color or slat size.

6.2.3 Special conditions. Special conditions, such as round heads, molded front head boxes, transoms, antisway equipment, et cetera, shall be clearly indicated in the job specification or invitation for bids.