

DDD-S-251d
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SUPERSEDING
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FEDERAL SPECIFICATION

SHADE, ROLLER, WINDOW; ROLLER, SLAT,
CORD, AND ACCESSORIES

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for use of all Federal Agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers one type of cloth window shade in stock widths or special widths, complete with all accessories.

2. APPLICABLE DOCUMENTS

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

Federal Specifications:

V-T-276 - Thread, Cotton.
CCC-C-521 - Cloth, Coated, Window Shade.
CCC-T-191 - Textile Test Methods.
PPP-B-636 - Box, Fiberboard.

Federal Standards:

Fed. Std. No. 102 - Preservation, Packaging, and Packing Levels.
Fed. Std. No. 123 - Marking for Domestic Shipment (Civilian Agencies).
Fed. Std. No. 751 - Stitches, Seams, and Stitching.

(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, D.C. 20402.

(Single copies of this specification and other product specifications required by activities outside the Federal Government for bidding purposes are available without charge at the General Services Administration Regional Offices in Boston, New York, Washington, D.C., Atlanta, Chicago, Kansas City, Mo., Dallas, Denver, San Francisco, Los Angeles, and Seattle, Wash.

(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 Specification:

MIL-B-43291 - Boxes: Fiberboard; Corrugated, Double-Wall, Weather Resistant.

Military Standards:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

MIL-STD-129 - Marking for Shipment and Storage.

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

3. REQUIREMENTS

3.1 Preproduction sample. When specified (see 6.1), before production is commenced, a sample of the finished item covered by this specification shall be submitted or made available to the contracting officer or his authorized representative for examination and approval as specified in 4.2. Approval of the preproduction sample authorizes the commencement of production, but does not relieve the supplier of responsibility for compliance with all applicable provisions of this specification. The preproduction sample shall be manufactured by the supplier in the same facilities to be used for the manufacture of the production items.

3.2 Materials.

3.2.1 Shade cloth. The shade cloth shall be in accordance with CCC-C-521.

3.2.2 Cords. The cords shall be of cotton, natural color, firmly and evenly braided and shall be approximately 1/8 inch in diameter. The minimum breaking strength shall be 30 pounds. When purchased separately, the cords shall be put up in hanks of approximately 48 feet each. When furnished with the shade, the length of cord shall be as specified (see 6.1).

3.2.2.1 Ring pull. When a ring pull is furnished with the shade, it shall be made of a rayon or cotton twisted cord crocheted around a solid metal ring and finished off with an integral cord loop. The finished ring pull shall be approximately 1 1/2 inches in outside diameter with an approximate overall length of 12 inches. The color of the pull shall be a good approximation to that of the shade or the lighter of two-color shades.

3.2.3 Rollers. Rollers shall be made of wood, except as stated (see table I and 3.2.6), of any of the following species: Basswood; hemlock, eastern and western; Idaho white, ponderosa and sugar pine, western red and white fir; redwood; spruce. Moisture content shall not exceed 12 percent. Slope of grain shall not exceed 1 inch to 10 inches. Wood shall be free of defects except that mineral streaks and sound tight knots or not over 1/4 inch in diameter will be permitted provided the knots are not in clusters.

3.2.3.1 Roller diameter. The diameters of the rollers for the width and length of the shade specified shall be as shown in table I. The necessary brackets and screws shall be included with the rollers unless otherwise specified (see 6.1).

3.2.4 Slats. Slats shall be of wood specified in 3.2.3, except that slope of grain shall not exceed 1 inch in 15 inches and knots shall not exceed 1/8 inch in diameter. Unless otherwise specified, the width of the slat shall be 7/8 +/- 1/16 inch for shades up to and including 48 inches, and 1 1/4 +/- 1/16 inch for shades over 48 inches. The length of the slat shall not exceed nor be more than 1/4 inch less than the width of the shade cloth. The cross section of the slats shall be that of commercial practice and length, when ordered separately, shall be within a tolerance of plus or minus 1/8 inch.

3.2.5 Springs. The spring of the roller shall be adjustable for the tension required and shall catch readily at each turn of the roller. Spring shall release readily when properly handled. The minimum length of the spring for the diameter of the roller shall be as given in table II. This spring length shall be determined by its length when mounted on the dowel.

TABLE I. Roller diameter for width and length of shade cloth (minimum)

Length of shade Feet	Width of shade [1]				
	To 42 inches	Over 42 to 48 inches	Over 48 to 63 inches	Over 63 to 72 inches	Over 72 to 77 inches
	Inches	Inches	Inches	Inches	Inches
3 to 8 inclusive	15/16	1-1/8	1-1/4	1-1/4	1-1/2
Over 8 to 10, inclusive ...	1-1/8	1-1/8	1-1/4	1-1/4	1-1/2
Over 10 to 12, inclusive...	1-1/4	1-1/4	1-1/4	1-1/4	1-1/2

[1] Wooden rollers shall be used for shades up to and including 72 inches in width. Metal rollers shall be used for shades over 72 inches in width.

TABLE II. Length of spring for diameter of rollers (minimum)

Diameter of rollers	Length of spring	Cross-sectional area of wire (minimum)	Weight of wire per gross of springs (minimum)
Inches	Inches	Square inch	Pounds
15/16	8-1/4	0.00130	10-1/2
1-1/8	12-1/2	.00160	19-1/2
1-1/4[1]	12-1/2	.00189	23

1-1/4[2]	13-1/2	.00222	31
1-1/2[3]	13-1/2	.00222	31
1-3/4[3]	20[4]	.00390	80

[1] Widths up to and including 49 inches.

[2] Widths above 49 inches.

[3] Metal rollers.

[4] A 16-1/2 inch spring having a wires cross-sectional area of 0.00508 minimum square inch may be substituted for the 20-inch spring.

3.2.6 Brackets, metal rollers, ferrules, and ends. The brackets, metal rollers, ferrules, stop sheave, or catch pulleys and ends shall be of a grade known as standard of one of the following: Malleable iron or stamped steel, nonmetallic coated or nickel, cadmium or bright zinc plated. Metal parts shall be free of burrs and rough edges.

3.2.7 Thread, cotton. The cotton thread shall conform to V-T-276, 3 ply, ticket 40. White thread shall conform to type IB2 and colored thread shall conform to type IB3. Colored thread shall show good fastness to light when tested as specified in V-T-276.

3.3 Dimensions.

3.3.1 Length. Window shades shall be furnished in finished lengths after hemming, of 3 to 12 feet in 6-inch increments, as specified (see 6.1).

3.3.1.1 Hems. Hems shall be of ample width to include free inclosure of the slat and shall be turned and sewed. The stitching shall conform to stitch type 301 or 401 of Fed. Std. No. 751, using 3 to 5 stitches per inch. The beginning and ends of the stitching shall be tied or tucked in.

3.3.2 Width. Window shades shall be furnished in the following stock widths as specified: 36, 42, 48, 54, 63, 72, and 77 inches. In between widths, where necessary, shall be specified by the contracting officer (see 6.1).

3.3.2.1 Tolerance. Tolerances shall be as specified below:

Width, inches	Tolerance, inch
Up to and including 54	Plus or minus 1/4
Over 54	Plus or minus 3/8

3.23.2.2 Roller coverage. The roller shall extend not more than 1/2 inch beyond each end of the shade cloth when shades are intended to be hung between the jambs with inside fixtures. When shades are intended to be hung on the face of window casing, the roller shall extend not more than 3/4 inch beyond each end of the shade cloth (see 6.1).

3.4 Color. Window shades shall be of the following solid colors or two-color combinations (dark color on one side and light color on the reverse side) as specified in table III (see 6.1).

TABLE III. Color

Solid colors	Two-color combinations	
	Dark	Light
Black	Green	White
White	Green	Light ecru
Green		
Light ecru		
Dark ecru		

3.5 Construction. The shade shall be furnished mounted on rollers and shall be complete with bottom hem, slat inserted and cord or cord pull. Rustproof eyelet shall be inserted at the center of the slat. Stop and catch pulley shall be furnished when specified (see 6.1). The shade cloth shall be cut square and true and shall be mounted evenly on the roller, using suitable substantial fasteners.

3.6 Workmanship. The finished shade shall be clean, well made, and free from any defect which may affect appearance or serviceability. The occurrence of defects shall not exceed the applicable acceptable quality levels (AQLs) specified in section 4.

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 required, the preproduction sample submitted in accordance with 3.1 shall be inspected for defects listed in 4.3.3.1, 4.3.3.2, and 4.3.3.3, and tested in accordance with 4.34.1.

4.3 Inspection. Sampling for inspection shall be performed in accordance with the provisions of 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 documents.

4.3.1.1 Certificate of compliance. Components listed below shall be accepted of compliance with requirements specified for the characteristics as listed below.

Component	Characteristic	Requirement
Rollers	Moisture content	3.2.3
Slats	Moisture content	3.2.4
Springs	Cross-sectional area	Table II
Cord (when furnished with shade)	Weight per gross Breaking strength	Table II 3.2.2

4.3.2 Intermediate inspection.

4.3.2.1 Visual examination. Examination of the slats shall be in accordance with the list of defects set forth in table IV. The lot sizes shall be expressed in units of slats for the purposes of determining the sample size in accordance with MIL-STD-105. The sample unit for this examination shall be one complete slat prior to insertion in the shade. The inspection level and AQL shall be as specified in 4.3.3.5.

TABLE IV. List of defects

Examine	Defect
Slats for material and workmanship	Not species of wood required. Slope of grain exceeds 1 inch in 15 inches. Any knot exceeding 1/8 inch in diameter. Clustered knots. not smooth or splinter free.

The inspection levels and AQLs shall be as specified in 4.3.3.5. The lot size for purposes of determining the sample size in accordance with MIL-STD-105 shall be expressed in units of shades.

4.3.3.1 Visual examination. Examination of the window shades shall be in accordance with the list of defects listed in table V. The sample unit for this examination shall be one complete window shade (with brackets and screws, when specified).

TABLE V. List of defects

Examine	Defect
Slats for material and workmanship	Not species of wood required. Slope of rain exceeds 1 inch in 15 inches. Any knot exceeding 1/8 inch in diameter. Clustered knots. Not smooth or splinter free.

4.3.3 Examination of the end item. The end item shall be examined for the defects listed in 4.3.3.1, 4.3.3.2, and 4.3.3.3. The inspection levels and AQLs shall be as specified in 4.3.3.5. The lot size for purposes of determining the sample size in accordance with MIL-STD-105 shall be expressed in units of shades.

4.3.3.1 Visual examination. Examination of the window shades shall be in accordance with the list of defects listed in table V. The sample unit for this examination shall be one complete window shade (with brackets and screws, when specified).

TABLE V. List of defects

Examine	Defect
Shade cloth	Pin hole-any. Cut, hole, or tear. Uncoated area. Separation of coating from base fabric. Cracked or checked coating. Blister or soft lump. Nonuniform coating-clearly visible at normal inspection distance (approximately 3 feet). Crease or wrinkle. Wavy, rolled, or folded edges. Spot, stain, or streak. Objectionable odor. Color not as specified.
Other material construction and workmanship	Color nonuniform, shaded, spotted, or mottled. Cord pull with attached eyelet missing. Cord pull not a matching color. Stop and catch pulley missing (when specified). Wood of roller not species required. Knot in roller over 1/4 inch in diameter, or clustered knots. Slope of grain in wood of roller exceeds 1 inch in 10 inches. Roller not smooth and splinter free. Brackets and screws missing (when specified). Wood rollers used on shades over 72 inches wide. Material and coating of brackets, metal rollers, ferrules and ends not as required. Metal components not free from burrs or rough edges. Hems not turned and completely sewed, or edges not tied or tucked in. Stitching not type 301 or 401, or less than 3 or more than 5 stitches per inch. Roller barrel extends more than 1/2 inch beyond end of shade cloth when shades are for use between jambs (i.e. inside mounting). Roller barrel extends more than 1/2 inch beyond end of of shade cloth when shades are for use on face of window casing. Shade cloth not securely fastened to rollers.

4.3.3.2 Dimensional examination. Examinations shall be made of the shades for compliance with dimensions specified. Any deviation from specified dimensions shall constitute a defect. The sample unit for this examination shall be one complete window shade.

4.3.3.3 Examination for spring action. Examination shall be made on shades for adjustability and proper catching and releasing. The shade shall be mounted on the rackets, pulled down a minimum of 50 percent of its length and checked for releasing and catching a minimum of three times during rewind. This procedure shall be repeated for a total of 10 cycles. Any failure to readily catch and release shall be considered a defect. The sample unit for this examination shall be one complete shade.

4.3.3.4 Examination of preparation for delivery. An examination shall be made to determine that the packaging, packing, and markings comply with the requirements of section 5. Defects will be scored in accordance with table VI. The sample unit shall be one shipping container fully prepared for delivery with the exception that it need not be sealed. The lot size shall be in the number of containers in the inspection lot. The inspection level shall be S-2 with an AQL of 2.5 defects per 100 units.

TABLE VI. List of defects

Examine	Defect
Markings (exterior and interior container)	Incorrect; illegible; of improper size, location, sequence or method of application.
Materials	Any nonconforming component; component missing, damaged or otherwise defective affecting serviceability.
Workmanship	Inadequate application of components such as: incomplete closure of container flaps, loose strapping, inadequate stapling, improper wrapping or taping.
Weight	Bulged or distorted containers.
Count	Weight of contents exceeds requirements. Less than indicated number of shades per container.

4.3.3.5 Inspection levels and AQLs for examination. The inspection levels for the purposes of determining the sample size and the AQLs expressed in defects per hundred units, shall be as follows:

Examination paragraph	Inspection level	AQL
4.3.2.1	I	4.0
4.3.3.1	II	4.0
4.3.3.2	S-2	4.0
4.3.3.3	S-2	4.0

4.4 Test methods.

4.4.1 Breaking strength of cord. The breaking strength of the cord specified in 3.2.2 shall be determined by method 4102 of CCC-T-191. When purchased separately, not less than 3 yards of cord shall be taken at random from each 100-hank lot, or fraction thereof, offered for delivery. The lot shall be unacceptable if the average value for each test unit fails to meet the minimum breaking strength specified.

5. PREPARATION FOR DELIVERY

(For civil agency procurement, the definitions and application of levels of packaging and packing shall be in accordance with Fed. Std. No. 102.)

5.1 Packaging. Packaging shall be level A or C as specified (see 6.1).

5.1.1 Level A. The hardware (when required) for each shade shall be placed into a coin-type kraft paper envelope or plastic bag and the envelope flap or bag opening securely closed. Each shade, together with hardware (when required), shall be completely wrapped with draft paper or plastic material in a manner which will cushion the ends of the roller. The wrap shall be secured with gummed paper or pressure sensitive tape (see 6.5).

5.1.2 Level C. Shades and hardware (when required) 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 (see 6.1).

5.2.1 Level A. Shades of one size and color or two color combination only, and hardware (when required), packaged as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to style RSC (end opening may be used), V3c or V3s of PPP-B-636. Alternatively shipping containers shall conform to style RSC (end opening may be used), V3c of MIL-B-43291. Each shipping container shall be waterproofed in accordance with the appendix of PPP-B-636. Each shipping container shall be closed and reinforced with flat steel strapping or tape banding in accordance with the appendix of the container specification. The weight of the contents of each shipping container shall not exceed 65 pounds.

5.2.2 Level B. Shades of one size and color or two color combination only, and hardware (when required), packaged as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to style RSC (end opening may be used) type CF or SF, class domestic, variety S of PPP-B-636. Each shipping container shall be closed in accordance with method II of the appendix of the container specification. The weight of the contents of each shipping container shall not exceed 65 pounds.

5.2.2.1 When specified, shipping containers shall be fabricated from V3c or V3s fiberboard (see 6.1).

5.2.3 Level C. Shades and hardware (when required), packaged as specified in 5.1, shall be packed in a manner to insure carrier acceptance and safe delivery at destination at the lowest transportation rate for such supplies. Containers shall be in accordance with rules or regulations of carriers applicable to the mode of transportation.

5.3 Marking.

5.3.1 Civil agencies. In addition to any special marking required by the contract or order, interior packages and shipping containers shall be marked in accordance with Fed. Std. No. 123.

5.3.2 Military requirements. In addition to any special marking required by the contract or order, interior packages and shipping containers shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

- (a) Title, number, and date of this specification.
- (b) Whether preproduction sample is required (see 3.1).
- (c) Whether cord (specify length) or ring pull is required (see 3.2.2).
- (d) Whether brackets and screws re required (see 3.2.3.1).
- (e) The length required (see 3.3.1).
- (f) The width required (see 3.3.2).
- (g) Whether inside or outside mounting is required, (see 3.3.2.2).
- (h) The color or two-color combination required (see 3.4).
- (i) Whether stop and catch pulley are required (see 3.5).
- (j) Selection of applicable levels of packaging and packing (see 5.1 and 5.2).
- (k) Whether V-board shipping containers are required for level B shipments (see 5.2.2.1).

6.2 The length of window shades should be 12 inches longer than the window opening in order to minimize the danger of pulling the cloth from the roller.

6.3 The widths of window shades, specified in 3.3.2, are actually the widths of the shade cloth. The actual length of the rollers will be greater by about 1 1/2 inches for outside hung and about one inch for inside hung shades.

6.4 When level B packaging requirements are specified for civil agency procurements, the requirements in 5.1.1 shall apply.

6.5 The method of packaging referred to in 5.1.1 is similar to method III of MIL-P-116.

MILITARY CUSTODIAN:

Army - GL
Navy - YD
Air Force - 69

Review activities:

Navy - YD
Air Force - 69

User activity:

Army - CE

Preparing activity:

Army - GL

Review and user information is current as of the date of this document. For future coordination of changes to this document, draft circulation should be based on the information in the current Federal Supply Classification Listing of DOD Standardization Documents.

Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein. Price 5 cents each.