

DOD-C-24556 (SH)
12 December 1977

METRIC

MILITARY SPECIFICATION
CURTAIN, TRACK AND SUSPENSION SYSTEM, BERTH
(SHIPBOARD USE) (METRIC)

This specification is approved for use by the Naval Sea Systems Command and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers fire-resistant, shrink-resistant, woven-fiber berth curtains and associated fittings for shipboard use.

1.2 Classification.

1.2.1 Types. Berth curtains, curtain tracks, and suspension systems covered by this specification shall be of the following types, classes, and styles, as specified (see 6.2.1):

- Type I. Berth side curtain.
- Type II. Berth end curtain.
- Class 1. Heavyweight, pleated.
- Class 2. Lightweight, pleated.
- Class 3. Lightweight, unpleated.
- Style A. Curtain track and suspension system, slide tape, internal.
- Style B. Curtain track and suspension system, snap-on, external.

2. APPLICABLE DOCUMENTS

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

SPECIFICATIONS

FEDERAL

- QQ-A-200/9 - Aluminum Alloy Bar, Rod, Shapes, Tube, and Wire, Extruded, 6063.
- UU-P-268 - Paper, Kraft, Wrapping.
- PPP-T-60 - Tape: Packaging, Waterproof.
- PPP-B-636 - Boxes, Shipping, Fiberboard.
- PPP-B-640 - Boxes, Fiberboard, Corrugated, Triple-Wall.

MILITARY

- MIL-P-116 - Preservation-Packaging, Methods of.
- MIL-F-902 - Furniture, Shipboard, Aluminum: General Specification for.
- MIL-C-24500 - Cloth, Drapery, Bunk Curtain, Slipcovers, and Label, Polyaramid and Polyaramid Novoloid Fiber Blends, Shipboard Use.

STANDARDS

FEDERAL

- FED-STD-751 - Stitches, Seams, and Stitching.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Ship Engineering Center, SFC 6124, Department of the Navy, Washington, DC 20362 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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MILITARY

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

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

(Copies of specifications, standards, drawings, and publications required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

UNIFORM CLASSIFICATION COMMITTEE

Uniform Freight Classification Ratings, Rules, and Regulations.

(Application for copies should be addressed to the Tariff Publishing Officer, Room 1106, 222 South Riverside Plaza, Chicago, Illinois 60606.)

NATIONAL MOTOR FREIGHT CLASSIFICATION

National Motor Freight Traffic Association Classes and Rules.

(Application for copies should be addressed to the National Motor Freight Traffic Association, Inc., 1616 P Street, N.W., Washington, DC 20036.)

(Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

3. REQUIREMENTS

3.1 First article. When specified (see 6.2.1), the contractor shall furnish sample units for first article inspection and approval (see 4.3 and 6.3).

3.2 Cloth. The berth curtain cloth shall meet the requirements of MIL-C-24500, except for the modifications specified herein.

3.3 Labels. Labels shall be made of the fire-resisting material conforming to and containing the labeling information specified in MIL-C-24500 and shall be sewn to the inside of the finished berth curtain.

3.4 Patterns. Patterns, where required, shall be cut from .5-millimeter (mm) thick Permaplast or equal. All patterns shall be clearly marked to control orientation and location of markings.

3.5 Layout and marking. Materials shall be spread flat without tension or wrinkles for marking. Patterns, if required, shall be aligned with the warp of the material within 5 degrees, as indicated by the alignment marks on the pattern.

3.6 Cutting. Component parts being cut shall be within 2 mm of pattern or size markings and follow alignment markings indicating the warp of the material.

3.7 Stitching types. Stitching shall be of the following types in accordance with FED-STD-751.

- (a) Straight stitching - Type 301, 3 to 4 stitches per centimeter (cm).
- (b) Overedge stitching - Type 504, 3 to 5 stitches per cm.
- (c) Basting stitching - Nominally type 301, 2 to 3 stitches per cm with no termination required. These stitches are used for temporary holding of parts in place and are not controlled.

3.8 Edgeloading. Cut fabric edges (excluding selvage edges which are locked), shall be edgeloading by means of overedging prior to seam construction.

3.9 Tension. The machine tension shall be set to provide a balanced stitch with a maximum fabric take-up of .5 mm per 100 mm. Adequate tension shall be verified by grasping a sample seam and pulling on each side. An opening or "grinning" of the seam indicates insufficient tension. Knotting or puckering is also an indication of insufficient tension. The machine tension shall be checked whenever a new seam construction or operation is started.

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3.10 Thread. All stitching shall be performed with aromatic polyamide thread, size E.

3.11 Thread tie-off and thread end burying.

3.11.1 Thread tie-off. Thread ends at seam termination shall be tied off in accordance with figure 1 and shall be on the concealed side of the seam wherever possible (see figure 2, step 1). Where tie-off is required to be exposed, it shall be accomplished as on figure 2, step 2 with thread ends buried as specified (see 3.11.2). Step 1 is required on all seam endings, except basting seams. Wherever possible, tie-offs are to be on an inner face or concealed side of a seam. Where the tie-off is exposed, step 2 is required. Tie-offs shall have 10-mm to 30-mm ends.

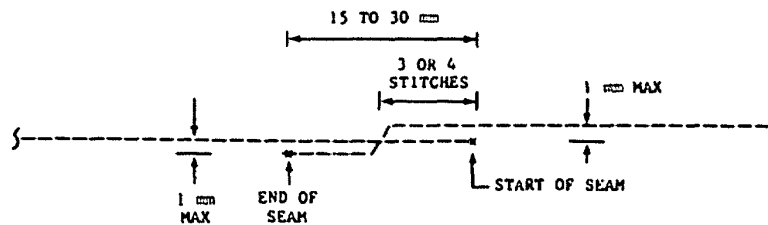


FIGURE 1. For seams terminating on themselves (plan view - looking down on fabric).

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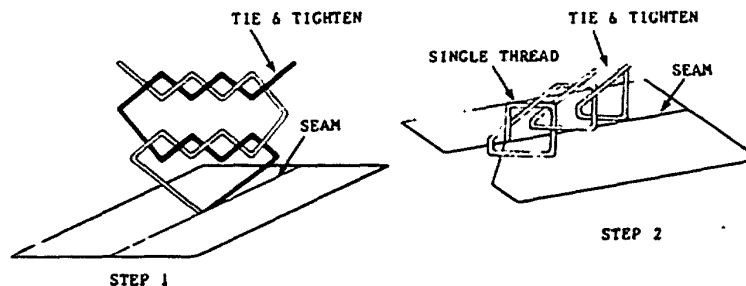


FIGURE 2. Standard tie-off.

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3.11.2 Thread end burying. All thread ends at seam termination and knot tie-offs which are exposed shall be properly buried by means of hand sewing through the fabric 6 mm in from seam termination or knot tie-off, using a 1-mm stitch holding the material in a compressed manner. After completion of the stitch, the thread end shall be cut and the material relaxed, thus burying the thread end.

3.12 Hems. Hems shall be in accordance with FED-STD-751, stitching type EFB-1. All edges of the bunk curtain shall have hems a minimum of 20-mm wide. Class 2 curtains need not be hemmed (selvage edges are permitted at bottom edges).

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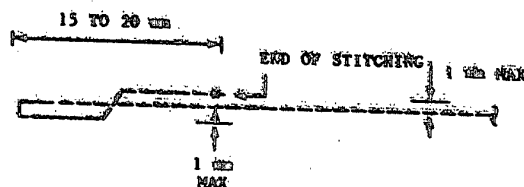
3.13 Dimensions. The finished bunk curtains shall be as shown in table I, plus or minus 3 mm, including fittings, unless otherwise specified (see 6.2.1).

TABLE I. Dimensions (mm).

	Height	Length
Type I	560	(2 per set) 1020
Type II	560	760

3.14 Color. Color of curtains shall be as specified (see 6.2.1).

3.15 Standard seams and terminations. The seam constructions and terminations shown on figures 1, 3, and 4 are required for fabrication and rework, as specified.



NOTE: Stitches shall be permitted to run to the edge of the seam, but not run off.

FIGURE 3. Standard back tack - required except on basting seams, seams crossed over, or as otherwise specified below.
(Plan view - looking down on fabric)

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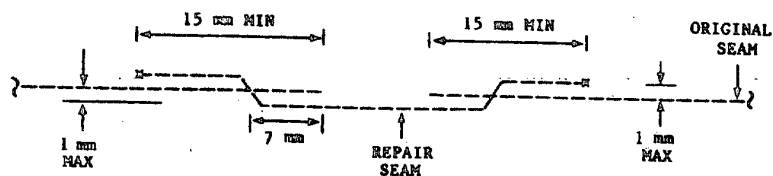


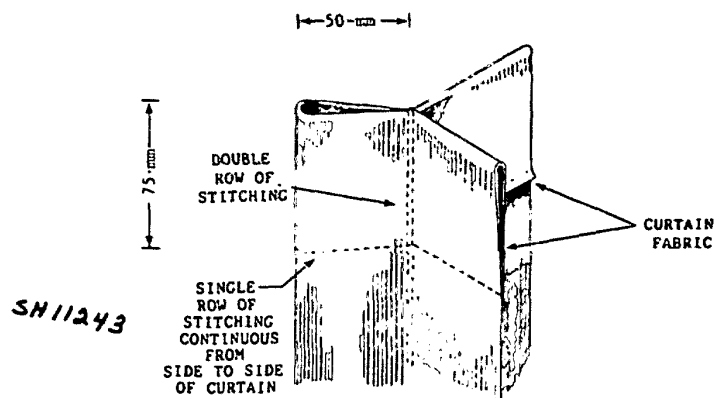
FIGURE 4. For over stitching or repair of broken stitches.

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3.16 Pleating. Class 1 and 2 curtains shall be pleated as specified in 3.16.1 through 3.16.3.

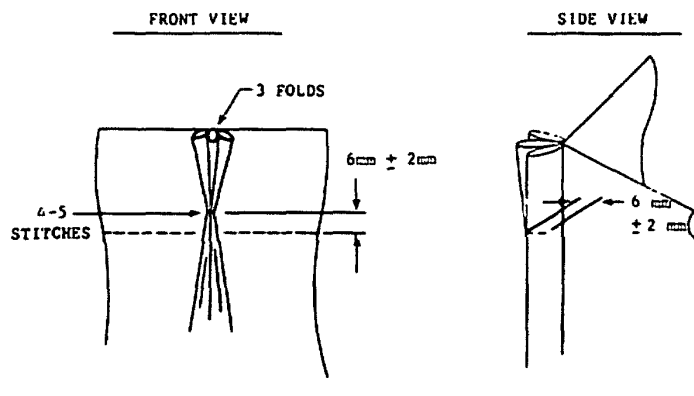
3.16.1 Pleat width and spacing. All pleating and spacing shall be such that there will be an equal size pleat (50 mm, using 100 mm of fabric) as shown on figure 5 and the spacing between pleats shall be equal.

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FIGURE 5. Pleat showing stitching prior to fan folding.

3.16.2 Pleat and spacing stitching. All pleating and spacing shall be stitched as shown on figure 5 using Nomex thread or equal, size E, 3 to 4 stitches per cm.

3.16.3 "Fan folding" of pleats. "Fan folding" or french pleating shall be accomplished by stitching $6\text{ mm} \pm 2\text{ mm}$ up from the bottom of the pleat seam, 4 to 6 stitches for a distance of $6\text{ mm} \pm 2\text{ mm}$ toward the back of the pleat while the pleat is "fan folded", as shown on figure 6.

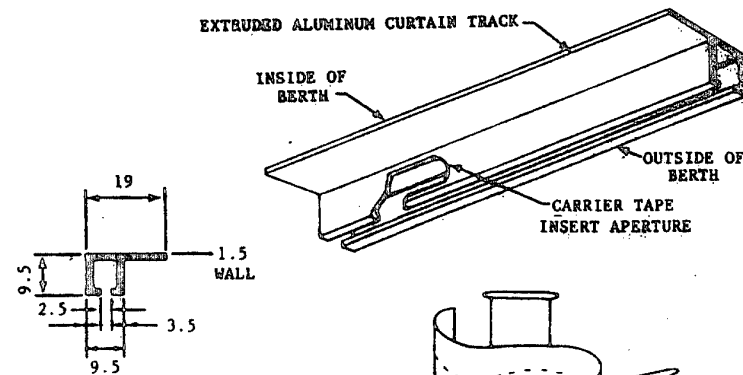
FIGURE 6. Fan-folded pleat showing stitching.

3.17 Fabric weights. Class 1 curtains shall be fabricated from 140 gram (g) material. Class 2 curtains shall be fabricated from not less than 210 g material.

3.18 Tracks. Curtain tracks shall be style A or B, as specified (see 6.2.1) and shall be in accordance with MIL-F-902.

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3.18.1 Style A. Style A curtain tracks shall be extruded anodized aluminum alloy, 6063T-5 conforming to QQ-A-200/9, section size 9.5 mm by 9.5 mm with 19-mm flange, minimum wall thickness, 1.5 mm fabricated in one continuous length (see figure 7). The aperture for inserting or removing slider tape shall be milled in face of track side facing flange, 100 mm from either right or left end of track. The aperture shall be 15-mm long by 5-mm high elongated slot joined to track raceway by 3-mm slotted groove inclined at 22 degrees to the horizontal face of the track as shown on figure 6. Tracks for type I curtains shall be 2-meter (m) long. Tracks for type II curtains shall be 710-mm long. Each track shall be provided with end stops to prevent the carriers from running off the end of the track.



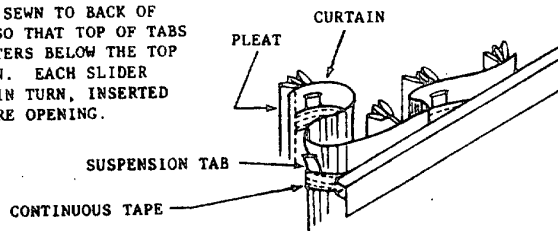
(DIMENSIONS IN MILLIMETERS)

SLIDE TAPE AND SUSPENSION TABS

INDIVIDUAL COVERED TABS SPACED AT 125 mm CENTERS ALONG A CONTINUOUS RUNNING COTTON TAPE AND SEWN TO THE BACK OF THE CURTAIN TO COINCIDE WITH PLEATS.

ASSEMBLY DETAIL (VIEWED FROM INSIDE OF BERTH)

SLIDER TAPE IS SEWN TO BACK OF BERTH CURTAIN SO THAT TOP OF TABS ARE 20 MILLIMETERS BELOW THE TOP EDGE OF CURTAIN. EACH SLIDER TAPE IS THEN, IN TURN, INSERTED THROUGH APERTURE OPENING.



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FIGURE 7. Curtain track and suspension system, style A.

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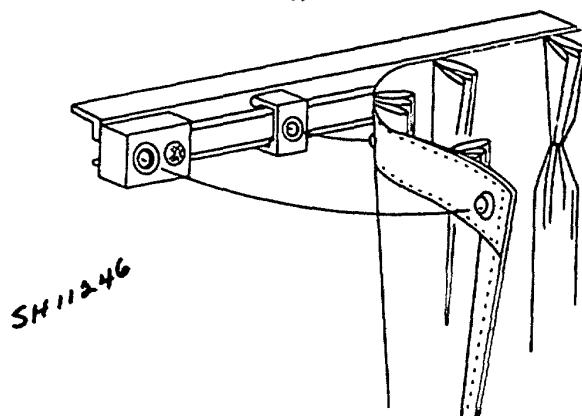
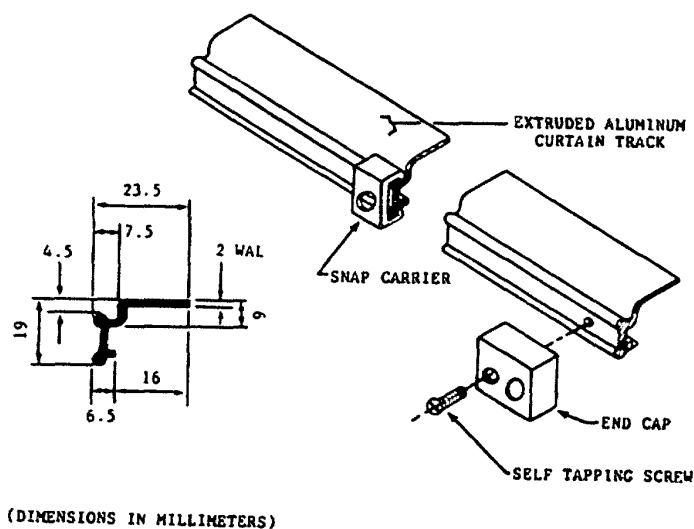


FIGURE 8. Curtain track and suspension system, style B.

3.18.2 **Style B.** Style B curtain tracks shall be extruded anodized aluminum alloy 6063-T5, conforming to QQ-A-200/9, minimum wall thickness 1.25 mm, fabricated in one continuous length (see figure 8). Tracks for type I curtains shall be 2-m long. Tracks for type II curtains shall be 710-mm long. Each track shall be provided with end caps to prevent the carriers from running off the end of the track. End caps shall be made of acetal and secured in place by one M3.5 by 0.50 by 16 sheet metal screw. End caps shall also have a hole which provides a minimum of .05-mm and a maximum of .13-mm interference with the endmost snaps of the berth curtain. Style B tracks shall be as shown on figure 8.

3.19 **Carrier tape.** Berth curtain carrier tapes shall be a continuous running piece for each curtain. Carrier tapes shall be fabricated from woven nylon or material conforming to MIL-C-24500. Carrier tapes shall be a minimum of 20-mm and a maximum of 25-mm wide fabric. Individual carriers or snaps shall be spaced 125 mm apart. Individual carriers for use with the style A track (see 3.18.1) shall be formed of a cadmium-plated C channel with woven

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nylon tape wrapped and crimped around the channel. Alternatively, the carrier may be made of molded nylon. Individual carriers for use with the style B track (see 3.18.2) shall be molded acetal with a hole to receive the carrier snap. The hole shall provide a minimum of .05-mm and a maximum of .13-mm interference with the carrier snap to ensure proper fit. The carrier snaps shall be nickel-plated brass riveted to the tape. The critical diameter of the snap shall be 7.19-mm minimum and 7.21-mm maximum. Carrier tapes shall be sewn to the inside of the berth curtain so that the top of the curtain hangs 3 mm below the top of the track.

3.19.1 Carrier tape color. Carrier tapes shall either be of the same color as the curtain or white.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by 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 supplies and services conform to prescribed requirements.

4.1.1 Certificate of compliance. When specified, the contractor shall prepare certification of compliance in accordance with the data ordering documents included in the contract (see 6.2.2). Where certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

4.2 Classification of inspection. The inspection requirements specified herein are classified as follows:

- (a) First article inspection (see 4.3).
- (b) Quality conformance inspection (see 4.4).

4.3 First article inspection. First article inspection shall consist of the examinations specified (see 4.5).

4.3.1 First article inspection report. The contractor shall prepare a first article inspection report in accordance with the data ordering document specified in the contract (see 6.2.2).

4.4 Quality conformance inspection. Quality conformance inspection shall consist of the examinations specified (see 4.5).

4.4.1 Sampling for quality conformance inspection.

4.4.1.1 Lot. All curtains presented for delivery at one time shall be considered a lot.

4.4.1.2 Inspection level. A random sample of curtains shall be selected in accordance with sampling requirements in MIL-STD-105. Acceptance Quality Level (AQL) shall be 1.5 for major and 4.5 for minor defects, inspection level II.

4.5 Examination. Each of the sample curtains selected in accordance with 4.4.1.2 shall be visually and dimensionally examined to verify compliance with the requirements of this specification. Classification of defects shall be conducted as specified (see table II). Any curtain in the sample containing one or more visual or dimensional defects shall not be offered for delivery, and if the number of defective units of curtains in any sample exceeds the acceptance number for that sample, this shall be cause for rejection of the lot represented by the sample.

TABLE II. Classification of defects.

Categories	Defects
Critical	None
Major 101	In any seam margin, run-offs, or stitch outside of tolerance such as to fail to securely attach all overlaps, cause damage to fabric or affect form, fit, or function of curtain.
102	Any broken stitch.

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TABLE II. Classification of defects. (Continued).

Categories	Defects
103	Any stitch per inch outside of tolerance over 10 percent of a seam resulting in a loose seam or causing material damage.
104	Any skipped stitch.
105	A series of loose stitches resulting in an opening or "grinning" of a seam or which can be picked up or rolled under the finger.
106	Curtain track malformed, misshapened, or otherwise affected, affecting function.
107	Noncompliance with dimensions.
108	Materials not as specified.
109	Labels missing or with incorrect data.
110	Carrier jams in track.
111	Scissors or knife cuts, tear, mend, or burn.
112	Any needle chews which may develop into a hole.
113	Any burr, tool mark, or sharp edge on track.
Minor	
201	Labels not properly attached.
202	Isolated skipped stitches in a seam, not representing a general condition.
203	Isolated loose stitches not presenting an open loop which may be snagged.
204	Poorly formed or knotted stitches.
205	Stitches outside of tolerance over less than 10 percent of a seam.

4.6 Examination of preparation for delivery requirements. An examination shall be made to determine that packaging, packing, and marking requirements of the applicable specifications are complied with. Defects shall be scored in accordance with table III. The sample unit shall be one shipping container fully prepared for delivery with the exception that it need not be sealed. Defects of closure listed below shall be examined on shipping containers fully prepared for delivery. The lot size shall be the number of shipping containers in the end item inspection lot.

TABLE III. Examination of preparation for delivery defects.

Examine	Defect
Marking, exterior and interior	Omitted, incorrect, illegible, of improper size, location, sequence, or method of application.
Materials	Any component missing. Any component damaged, affecting serviceability. Any component not as specified.
Workmanship	Inadequate application of components, such as: incomplete closure of container flaps, loose strapping, inadequate stapling, incorrect application of tape. Bulging or distortion of containers.
Content	Number of packages is more or less than specified. Number of items per package is less than specified. ^{1/}

^{1/} For this defect, two packages from each shipping container in the sample shall be examined.

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5. PREPARATION FOR DELIVERY

(The preparation for delivery requirements specified herein apply only for direct Government procurements. For the extent of applicability of the preparation for delivery requirements of referenced documents listed in section 2, see 6.4.)

5.1 Packaging. Packaging shall be level A or C as specified (see 6.2.1).

5.1.1 Level A.

5.1.1.1 Curtains. Each curtain or each pair of curtains shall be neatly folded and completely wrapped with kraft paper conforming to UU-P-268, type II, grade C or D. The wrapped package shall be secured with 2-inch minimum width pressure-sensitive tape conforming to PPP-T-60, type III, class 1, natural.

5.1.1.2 Curtain tracks. Each curtain track shall be a unit, protected by wrapping as specified (see 5.1.1.1), by use of snug-fitting paperboard, or by fiberboard containers. Alternatively, shrink wrap plastic packaging conforming to method IC-10 of MIL-P-116 may be used. Attaching hardware shall be placed in a transparent waterproof plastic bag, minimum 4-mil thick. Bag closure shall be by heat sealing. An assembly-installation instruction sheet shall be provided and inserted in the bag containing the attaching fittings. The fittings bag shall be placed within the curtain track package.

5.1.2 Level C. Curtains and curtain tracks shall be packaged to afford protection against deterioration, damage, or loss during shipment from the supply source to the first receiving activity for immediate use. The contractor's normal retail or wholesale packaging methods may be utilized when such meet the requirements of this level.

5.2 Packing. Packing shall be level A, B, or C as specified (see 6.2.1).

5.2.1 Level A.

5.2.1.1 Curtains. Twenty packages of curtains of one type, size, and color only, packaged as specified (see 5.1), shall be packed in a snug-fitting shipping container conforming to PPP-B-636, class weather-resistant, grade V3c or V3s, style RSC-L. Liners shall be of the same material grade as the container used. Containers shall be closed and reinforced with nonmetallic tape or banding with method V closure applicable as specified in the appendix to the container specification.

5.2.1.2 Curtain tracks. Curtain tracks of one type and size packaged as specified (see 5.1), shall be packed in snug-fitting fiberboard boxes conforming to PPP-B-636, class weather-resistant, grade V, or PPP-B-640, class 2, at the contractor's option. Containers shall be closed, waterproofed, and reinforced with tape as specified in the appendix to the applicable specification, with method V closure applying to PPP-B-636 containers.

5.2.2 Level B.

5.2.2.1 Curtains. Twenty packages of curtains of one type, size, and color only, packaged as specified in 5.1, shall be packed in a snug-fitting shipping container conforming to PPP-B-636 class domestic, grade 275, style RSC-L. Liners shall be of the same material grade as the container. Containers shall be closed in accordance with method I, as specified in the appendix to the container specification.

5.2.2.2 Curtain tracks. The curtain tracks, packaged as specified (see 5.1.1.2), shall be packed for domestic shipments in accordance with the industry practice.

5.2.3 Level C. Curtains and curtain tracks, packaged as specified (see 5.1), shall be packed in containers acceptable to the common carrier and which will insure safe delivery at destination in a satisfactory condition at the lowest applicable rate. Containers, packing, or method of shipment shall comply with Uniform Freight or National Motor Freight Classification Rules or Regulations or other carrier rules as applicable to the mode of transportation.

5.3 Marking. In addition to any special marking required by the contract (see 6.2.1), interior packages or exterior shipping containers shall be marked in accordance with MIL-STD-129.

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

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6. NOTES

6.1 Intended use. Berth curtains are intended for use aboard ship to provide a measure of privacy and quiet for individuals. Although developed primarily for berths, this specification can also be used for ports and full length curtains for compartments. When used for full length curtains, care should be taken that the track is adequately supported so as not to deflect.

6.1.1 Class 1. Class 1 achieves the highest degree of privacy and light and sound absorption. It should be used if possible.

6.1.2 Class 2. Class 2 renders a lesser degree of privacy and light and sound absorption than class 1 curtains.

6.1.3 Class 3. Class 3 provides the least amount of privacy and light and sound protection.

6.2 Ordering data. Procurement documents should specify the following:

6.2.1 Procurement requirements.

- (a) Title, number, and date of this specification.
- (b) Type, class, and style of curtain required (see 1.2.1).
- (c) When a first article is required for inspection and approval (see 3.1).
- (d) Dimensions, if other than standard (see 3.13).
- (e) Color required (see 3.14).
- (f) Style of track and carrier (see 3.18 and 3.19).
- (g) Levels of packing and packaging (see 5.1 and 5.2).
- (h) If special marking is required (see 5.3).

6.2.2 Data requirements. When this specification is used in a procurement which invokes the provision of the "Requirements for Data" of the Armed Services Procurement Regulations (ASPR), the data identified below, which are required to be developed by the contractor, as specified on an approved Data Item Description (DD Form 1664), and which are required to be delivered to the Government, should be selected and specified on the approved Contract Data Requirement List (DD Form 1423) and incorporated in the contract. When the provisions of the "Requirements for Data" of the ASPR are not invoked in a procurement, the data required to be developed by the contractor and required to be delivered to the Government should be selected from the list below and specified in the contract.

Paragraph	Data requirements	Applicable DID	Option
4.1.1	Certificate of compliance	DI-E-2121	None
4.3.1	First article	UDI-T-23450	None

(Copies of data item descriptions required by the contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.)

6.2.2.1 The data requirements of 6.2.2 and any task in section 3, 4, or 5 of the specification required to be performed to meet a data requirement may be waived by the procuring/purchasing activity upon certification by the offeror that identical data were submitted by the offeror and accepted by the Government under a previous contract for identical item procured to this specification. This does not apply to specific data which may be required for each procurement regardless of whether an identical item has been supplied previously (for example, test reports).

6.3 First article inspection.

6.3.1 Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection as to those bidders offering a product which has been previously procured or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending procurement.

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6.4 Subcontracted material and parts. The preparation for delivery requirements of referenced documents listed in section 2 do not apply when material and parts are procured by the contractor for incorporation into the equipment and lose their separate identity when the equipment is shipped.

Preparing activity:
Navy - SH
(Project 7230-N043)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER

2. DOCUMENT TITLE

3a. NAME OF SUBMITTING ORGANIZATION

4. TYPE OF ORGANIZATION (Mark one)

☐ VENDOR

☐ USER

☐ MANUFACTURER

☐ OTHER (Specify): _____

b. ADDRESS (Street, City, State, ZIP Code)

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER (Last, First, MI) - Optional

b. WORK TELEPHONE NUMBER (Include Area Code) - Optional

c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional

8. DATE OF SUBMISSION (YYMMDD)

(TO DETACH THIS FORM, CUT ALONG THIS LINE.)