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MIL-L-43466C
22 June 1981
SUPERSEDING
MIL-L-43466B
23 October 1977

MILITARY SPECIFICATION

LINER, EXTREME COLD WEATHER, PARKA

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for a button-in insulating liner for the extreme cold weather parka. The liner is made of nylon fabric quilted to a polyester batting material.

1.2 Classification. The liner shall be of one type in the following sizes as specified (see 6.2):

Schedule of sizes

X-Small
Small
Medium
Large
X-Large

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:

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: US Army Natick Research and Development Laboratories, Natick, MA 01760 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC 8415

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SPECIFICATIONS

FEDERAL

V-T-280	-	Thread, Gimp, Cotton, Buttonhole
UU-P-268	-	Paper, Kraft, Wrapping
DDD-L-20	-	Label: For Clothing, Equipage, and Tentage (General Use)
PPP-B-636	-	Boxes, Shipping, Fiberboard

MILITARY

MIL-C-508	-	Cloth, Oxford, Nylon, 3 Ounce
MIL-B-41826	-	Batting, Synthetic Fibers: Polyester (Quilted and Unquilted)
MIL-T-43548	-	Thread, Polyester, Cotton-Covered
MIL-T-43566	-	Tape, Textile, Cotton, General Purpose, Natural or in Colors

STANDARDS

FEDERAL

FED-STD-751	-	Stitches, Seams, and Stitchings

MILITARY

MIL-STD-105	-	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	-	Marking for Shipment and Storage
MIL-STD-1188	-	Commercial Packaging of Supplies and Equipment

(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.)

3. REQUIREMENTS

3.1 Samples.

3.1.1 Guide sample. Samples, when furnished, are solely for guidance and information to the contractor (see 6.3). Variation from the specification may appear in the sample, in which case this specification shall govern.

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3.2 Material (see 6.5).

3.2.1 Basic material. The basic material shall be a quilted polyester batting, conforming to type IV, class 1, style a of MIL-B-41826.

3.2.2 Facing and binding. The nylon oxford material for facings, neck buttonhole reinforcements, and bias binding shall be 3-ounce, Olive Green 106, conforming to type I, class 2 of MIL-C-508, except the colorfastness requirement for wet-dry cleaning shall not apply.

3.2.3 Tape. The tape for buttonhole tabs shall be type I, class 3, 1-inch width, dyed Olive Drab 7 conforming to MIL-T-43566.

3.2.4 Thread. The thread shall be a cotton-covered polyester, dyed Olive Drab S-1, C.A. 66022 conforming to MIL-T-43548, ticket numbers 50-2 or 3 ply and 70-2 ply for stitching and seaming, 50-2 or 3 ply for buttonholes and bartacking, and 70-2 ply for overedging. The dyed thread shall show fastness to laundering equal to or better than the standard sample. When no standard sample is available, the dyed thread shall show good fastness to laundering.

3.2.5 Gimp. The cotton gimp for reinforcing buttonholes shall be Olive Drab S-1, C.A. 66022, size No. 8, conforming to type I or II of V-T-280. The dyed gimp shall show fastness to laundering equal to or better than the standard sample. When no standard sample is available, the dyed gimp shall show "good" fastness to laundering.

3.2.6 Labels. Each liner shall have an identification label, a size label and an instruction label conforming to DDD-L-20. The fastness to laundering requirements shall apply.

* 3.2.6.1 Identification label. The identification label shall conform to type VI, class 1.

* 3.2.6.2 Size label. The size label shall conform to type VI, class 2 and contain the following information for each respective size:

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X-Small

Chest: Under 33 inches
Stock No.
NATO Size: 7080/7484

Small

Chest: From 33 to 37 inches
Stock No.
NATO Size: 7080/8494

Medium

Chest: From 37 to 41 inches
Stock No.
NATO Size: 7080/9404

Large

Chest: From 41 to 45 inches
Stock No.
NATO Size: 7080/0414

X-Large

Chest: From 45 inches and upward
Stock No.
NATO Size: 7080/1424

3.2.6.3 Instruction label. The instruction label shall conform to type VI, class 3 and contain the following information:

LINER, EXTREME COLD WEATHER, PARKA

1. Button into parka for extra warmth.
2. Dry liner and parka separately when damp or wet.
3. Avoid contact with heated stoves, open fires, or other heat sources; fabric may fuse.
4. Wash by hand or machine in warm water with mild soap or detergent, rinse thoroughly and drip or machine dry. DO NOT DRY CLEAN.

DO NOT REMOVE THIS LABEL

* 3.2.6.4 Combination size and identification label. The identification label (class 1) and the size label (class 2) may be combined into one label conforming to type VI, classes 1 and 2 combined.

3.2.6.5 Combination size, identification and instruction label. The identification label (class 1) size label (class 2) and instruction label (class 3) may be combined into one label. The combination label shall conform to the requirements of the class 14 label. The coating requirement shall conform to class 3 label.

3.3 Design. This is a button-in liner with buttonholes at neck, along both sides of front opening and on sleeve tabs at wrists (see figure 1).

3.4 Figure. Figure 1 is furnished for information purposes only. To the extent of any inconsistencies between the written specification and the figure, the written specification shall control.

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3.5 Patterns. Standard patterns which provide 3/8 inch seam allowance for all seams except the facing seams which shall have 1/4 inch seam allowance, will be furnished by the Government. The standard patterns shall not be altered in any way and are to be used only as a guide for cutting the contractor's working patterns. The working patterns shall be identical to the standard patterns.

3.5.1 List of pattern parts. The components of the liner shall be cut from materials as specified in accordance with the pattern parts indicated.

Material	Pattern nomenclature	Cut parts
Basic material:		
Quilted polyester batting	Left front 1/	1
	Right front 1/	1
	Back 1/	1
	Top sleeve	2
	Under sleeve	2
Cloth, nylon, oxford	Neck buttonhole reinforcement	1

1/ Fronts and back may be cut as one piece deducting seam allowance at side seams.

3.6 Construction.

* 3.6.1 Stitches, seams, and stitching. All stitches, seams and stitching shall conform to FED-STD-751. The type of seam, stitching and stitches per inch shall be as specified in table I. Seam allowances shall be maintained with seams sewn so that no raw edges, run-offs, pleats, puckers, or open seams occur. Where two or more methods of seams or stitch types are given for the same operation, any one of them may be used. Where stitch type 401 is used, the looper (underthread) may be on the outside or inside of the liner, except where seam type LSbm-3 is used, the looper shall be concealed on the inside of the folded seam. The side of the liner toward the body, when worn, shall be considered the inside. The guides and knives on safety and overedging machines shall be set to trim only the ravelled ends of the fabric.

* 3.6.1.1 Type 301 stitching. Ends of all stitching shall be backstitched or overstitched not less than 1/4 inch except where ends are turned under or caught in other seams or stitching. Ends of a continuous line of stitching shall overlap not less than 1/2 inch. Thread tensions shall be maintained so that there will be no loose stitching resulting in loose bobbin or top thread or excessively tight stitching resulting in puckering of the materials sewn. The lock shall be imbedded in the materials sewed.

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* 3.6.1.1.1 Repairs of type 301 stitching.

* 3.6.1.1.1.1 Quilted batting stitching. Broken stitches of the quilting pattern may be repaired by stitching back of each end of break not less than 1 inch.

* 3.6.1.1.1.2 Liner fabrication stitching.

a. When thread breaks or bobbin run-outs occur during stitching, except prestitching, the stitching shall be repaired by restarting the stitching a minimum of 1/2 inch back of the end of the stitching. 1/

b. Except for prestitching, thread breaks, or two or more consecutive skipped or run-off stitches noted during inspection of the item shall be repaired by overstitching. The stitching shall start a minimum of 1/2 inch in back of the defective area, continue over the defective area, and continue a minimum of 1/2 inch beyond the defective area onto the existing stitching. Loose or excessively tight stitching shall be repaired by removing the defective stitching without damaging the materials, and restitching in the required manner. 1/

1/ When making the above repairs, the ends of the stitching are not required to be backstitched.

* 3.6.1.2 Type 401, 503, 504, 515, 516, 517, 518 and 519 stitching. Thread tension shall be maintained so that there will be no loose stitching. All repairs shall be in accordance with 3.6.1.1.1.2a. and 3.6.1.1.1.2b. Thread tension shall be maintained so that there will be no loose or excessively tight stitching resulting in puckering of the materials sewn.

* 3.6.2 Buttonholes. The buttonholes shall be eyelet end, taper bar type, worked over gimp (see 3.2.5) with not less than four tacking stitches at bar end (not counting cross over stitch). The purling shall be on the facing side and reinforcement side. The finished cut lengths shall be 3/4 to 7/8 inches. The buttonholes shall be clean cut with the stitching securely caught in the fabric. Additive treatments or materials used to secure the ends of the stitching or to stiffen the fabric, prior to stitching the buttonholes are prohibited.

* 3.6.3 Bartack. Bartack shall be 1/2 ± 1/16 inch long, 1/8 ± 1/32 inch wide and shall contain 28 stitches. The bartack shall be free from thread breaks and loose or tight stitching.

3.7 Manufacturing operation requirements. The liners shall be manufactured in accordance with all operation requirements specified in table I. The contractor is not required to follow the exact sequence of operations. Additional basting or holding stitching may be used providing the threads are removed or not visible on the finished liners.

3.7.1 Marking. The component parts of the liner shall be marked or bundled to insure a uniform size throughout the garment. Any method of marking may be used except:

a. Corrosive metal fastening devices.
b. Sew-on type tickets.
c. Adhesive type tickets which discolor the material or leaves traces of paper or adhesive on the material after removal of the ticket.

NO.	TABLE I MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
1.	Cut basic material.						
*	a. Cut the liner in strict accordance with patterns furnished, which show size, directional lines (warp or filling direction) and notches for proper assembly of all parts. The directional lines must be the same for all parts when the garment is assembled. Fronts and backs may be cut as one-piece providing the direction of the directional lines is maintained.						
	NOTE: Care shall be exercised when cutting the basic material and handling the cut parts in that the ends of the quilting stitching have a tendency to run back.						
2.	Cut nylon oxford material.						
	a. Cut the nylon oxford for the center back neck buttonholes reinforcement in accordance with patterns furnished which show size and directional lines.						
	b. Cut the nylon oxford for the facing in accordance with the requirements specified in operation 8.						
	c. Cut the nylon oxford for reinforcement for right front neck buttonhole in accordance with dimensions specified in operation 10.						
	d. Cut the binding on the straight or bias in sufficient width to meet the requirements specified in operation 11.						
	e. Cut the tape for sleeve buttonhole tabs to meet the finished length specified in operation 9.						

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NO	TABLE I MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
3.	Replacement of defective components. Care shall be exercised during the spreading, cutting and manufacturing operations to assure that material defects and damages as specified in 4.2.2.1 are excluded, and replaced with non-defective and properly matched material. NOTE: Broken stitches of the quilting pattern may be repaired by stitching back of each end of break, not less than one inch.						
4.	Size marking. Mark, ticket or bundle all parts of the liner to insure a uniform size.						
5.	Labels. Sew labels on all four sides to inside center (1/2 inch of center tolerance) of back as follows: (1) Size label. May abut or be caught in the line of stitching of the neck buttonhole reinforcement piece. (2) Identification label. May abut or be caught in the line of stitching of the size label. (3) Instruction label. May abut or be caught in the line of stitching of the identification label.	301	LSbj-1	10-14	50	50	

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NO.	TABLE I MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
5.	Labels. (cont'd)						
	(4) Combination size and identification label (when applicable). Shall be positioned as in (1) above, and the instruction label shall be positioned as in (2) above.						
	(5) Combination size, identification and instruction label (when applicable) shall be positioned as in (1) above.						
6.	Join liner.						
	Finished appearance. The overedge stitched edges shall finish on the outside of liner. The bight of overedge stitching shall be 3/16 to 1/4 inch gage.						
	a. Fold pleats on under sleeve, as indicated by marks on pattern, and stitch along edge. The outside fold of pleats shall be toward the bottom.	301 or 401		10-14 10-14	50 50	50 70	
	b. Join backarm seams, shoulder seams, and set sleeves by overedging and seaming the raw edges together in one operation, respectively. Join side seams and underarm seams (one continuous operation) by overedging and seaming the raw edges together in one operation.	515 or 516 or 519 or	LSbm-3(a)	10-14	50 Chain stitching) 70 (Overedge stitching)	50 70	

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NO.	TABLE I MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
6.	Join liner. (cont'd)						
		517	LSbm-3(a)	10-14	50 (Lock stitching)	50	
					70 (Overedge stitching)	70	
		or 518					
	- or -						
	c. When fronts and back are cut as one piece, join backarm and forearm seams, shoulder seams and set sleeves to armhole by overedging and seaming the raw edges together in one operation, respectively.	515	LSbm-3(a)	10-14	50 (Chain stitching	50	
					70 (Overedge stitching)	70	
		or 516 or 519 or 517	LSbm-3(b)	10-14	50 (Lock stitching)	70	
					70 (Overedge stitching)	70	
		or 518					
	d. Turn seam allowances of joining seams to one side and top stitch 3/16 to 1/4 inch from folded edges.	301 or 401	LSbm-3(b)	10-14	50 50	50 70	

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NO.	TABLE I MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
7.	Overedge stitch raw edges.						
	Overedge stitch raw edges around fronts, neck sleeve bottoms and bottom edge.	503 or 504	SSa-1	6-14	70	70	
8.	Attach facings.						
	Finished appearance: The facings shall be 1-3/4 ± 1/8 inches wide and of sufficient length so as to cover the full length of the front edge of the front piece for the width of the facing. The length of the facing shall be cut in the warp direction of the cloth.						
	a. Position facings on inside of front parts respectively, with the front edges of facings even with front edges of fronts. Turn in back edges of facings and single stitch 1/16 to 1/8 inch from turned edges.	301 or 401	LSd-1	10-14	50 50	50 70	
	b. Stitch front edges of facings to front edge of front parts.	301 or 401	SSa-1	10-14	50 50	50 70	
	c. Trim the top and bottom edges of the facings to match the underlying edges of the front pieces.						
	- or -						
	d. Front edges of facings may be caught in over-edge stitching of front parts (see operation 7).						
	- or -						

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NO.	TABLE I MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
8.	Attach facings. (cont'd)						
	e. Turn in back raw edges of facings 3/16 to 1/4 inch, on inside of front parts respectively, and with front edges of facings even with front edges of fronts, double stitch facings to fronts with 1-3/8 to 1-1/2 inch gage.	301 or 401	LSd-1 and SSa-1	10-14	50 50	50 70	
9.	Make and attach sleeve buttonhole tabs.						
	Finished appearance. Each liner shall have four buttonhole tabs, measuring finished and attached to sleeve, 2-7/8 ± 1/4 inches in length.						
	a. Turn in one raw end of each tab 1/4 to 3/8 inch and stitch or bartack 3/16 to 1/4 inch from folded edge across width of tape.	301 or Bartack	EFa-1	10-14 28 per bartack	50 50	50 50	
	b. Make a vertical buttonhole in the center (1/8 inch off center tolerance) of each tab, with the inside edge of eyelet 1/2 to 5/8 inch from the turned edge of tab.	Buttonhole		52-56 per buttonhole including tack	50	50	
	c. Center a buttonhole tab on each backarm and underarm seam of both sleeves on the inside, (1/4 inch off center tolerance) with the finished end of tab toward top of sleeve, and single stitch to bottom of sleeve, across the width of tab, 1/8 to 1/4 inch from edge. Purling shall face the inside of the sleeve when tab is extended below bottom edge of sleeve.	301 or 401	SSa-1	10-14	50 50	50 70	

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NO.	TABLE I MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
10.	Make and attach neck buttonhole reinforcements.						
	Finished appearance. The reinforcement piece for buttonhole at neck edge of right front shall finish 3 ± 1/8 inches long and 1-1/2 ± 1/8 inches wide. The finished length shall be taken from top edge of binding through center of reinforcement pieces.						
	Position reinforcement pieces on inside of liner as indicated on pattern, with the top raw edges even with neck edge; turn in raw edges of sides and bottoms and stitch through liner 1/16 to 1/8 inch from turned edges.	301 or 401	LSd-1	10-14	50 50	50 70	
11.	Bind edges of liner.						
	Finished appearance. The binding shall finish 3/8 to 5/8 inch wide with the raw edges turned in and caught in the stitching. The raw ends of the neck buttonhole reinforcements, sleeve buttonhole tabs, and facings shall be covered by the binding and caught in the stitching of the binding.						
	a. Bind all overedge stitched edges of liner which include neck, fronts, bottom and sleeve bottom edges	301	BSc-1	10-14	50	50	
	b. The raw ends of binding shall be turned in and caught in the stitching; or may be turned over binding to the outside of liner and tacked or bartacked.	301 or Bartack	SSa-1	10-14 28 per bartack	50	50	

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NO.	TABLE I MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		
					NEEDLE	BOBBIN/ LOOPER	COVER
12.	Make buttonholes. Finished appearance. The five buttonholes on right and left fronts shall be vertical through facings with the inside edge of eyelets 7/8 to 1 inch from front edges. The two neck buttonholes on back shall be at right angles to the neck edge, positioned as indicated by marks on pattern with the inside edges of eyelets 1 to 1-1/8 inches from the top edge of liner. The right front neck buttonhole shall be centered (1/4 inch tolerance) on reinforcement piece, parallel to neck edge, and the inside edge of buttonhole 1 to 1-1/8 inches from neck edge.						
	Make 13 buttonholes, five in each front and 3 at neck, as indicated by marks on pattern. The eyelets of the buttonholes along front edges may be up or down, i.e., on one front, the eyelet end may be up and on the other front, the eyelet end may be pointed down.	Buttonhole		52-56 per buttonhole including tack	50	50	
13.	Clean liner. a. Trim and remove all thread ends, except ends of the quilting stitching on the basic material. b. Remove all spots, stains, and size markings.						

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3.8 Finished measurements. The liner shall conform to finished measurements shown in table II. Measurements shall be taken after liner has been smoothed flat (applying slight tension) along the dimension to be measured. During the measurement, however, no tension whatsoever shall be applied to the end item.

TABLE II. Finished measurements.

Size	X-Small	Small	Medium	Large	X-Large	Tolerance
	Inches	Inches	Inches	Inches	Inches	Inches
1/2 chest 1/	25	27	29	31	33	± 3/4
Back length 2/	32-1/2	33	33-1/2	34	34-1/2	± 3/4
Sleeve length 3/	24	24-1/2	25	25-1/2	26	± 3/4

1/ Measurement shall be taken, with liner flat and front edges abutting, from the folded edge to folded edge at base of armholes.

2/ Measured from top edge at neck to bottom edge along center back.

3/ Measure overedged side of back arm seam from top of overedge stitching at armhole to bottom of sleeve with no tension applied to seam.

* 3.9 Workmanship. The finished liner shall conform to the quality of product established by this specification. The occurrence of defects shall not exceed the applicable acceptable quality levels.

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.

4.2 Quality conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with MIL-STD-105.

4.2.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected 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.

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4.2.2 End item examination. The end item shall be examined in accordance with 4.2.2.1 and 4.2.2.2. The lot size shall be expressed in units of one liner. The sample unit shall be one liner.

* 4.2.2.1 Visual examination. The end item shall be examined for the defects listed below. The inspection level shall be II and the acceptable quality level (AQL) shall be 2.5 major, 15.0 major and minor A (combined), and 40.0 total (major, minor A, and minor B combined) defects per hundred units.

Defect	Classification Major	Minor A	Minor B
Material defects and damages			
a. Any hole, cut, tear, needle chew, smash, or multiple float (in any ply)	X		
b. Darn or mend (in any ply)		X	
c. Exposed drill hole (in any ply)			X
d. One or more rows of stitching omitted in the quilting	X		
e. Broken or missing stitches in the quilting:			
- up to 1-1/2 inches (cumulative)			X
- 1-1/2 inches and over, but less than 1 complete row of stitching (cumulative)		X	
f. Gaps or bare areas in the polyester filler material	X		
g. Piecing or splicing of outer covering (either ply)	X		
Cleanness			
a. Any spot or stain on outside			X
b. Thread ends not trimmed or loose thread ends not removed from liner except thread ends of quilting stitching on basic material		X	
c. One or more size markings not removed, when applicable		X	
d. Any size markings exposed or visible on outside of liner		X	

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Defect	Classification Major	Minor A	Minor B
Component and assembly			
a. Any component part or required operation omitted (unless otherwise classified herein)	X		
b. Any operation not performed as specified (unless otherwise classified herein)			X
Cutting			
Any component part not cut in accordance with directional lines indicated on pattern or not cut in accordance with specification requirements	X		
Seams and stitching			
a. Accuracy of seaming:			
1. Seams twisted, puckered, or pleated		X	
NOTE: Nylon fabric has a tendency to pucker at joining seams and at stitchings. The puckering, when not so excessive as to seriously affect appearance, shall not be classified as a defect.			
2. Part of liner caught in any unrelated operation or stitching	X		
3. End of seam or stitching produced with 301 stitch type, when not caught in other seams or stitching, backstitched or overstitched less than 1/4 inch		X	
4. Stitching overlapping end(s) of thread break(s) less than 1/2 inch			X
5. Various shades of thread used on outside of same garment		X	
6. Ends of a continuous line of stitching not overlapped or overlapped less than 1/2 inch			X
b. Gage of stitching and seam allowances			
1. Irregular, i.e., unevenly gaged or corresponding stitchings not uniformly gaged (to be scored only when the condition exists on major portion of seam)		X	
2. Width not as specified or not within range of gage specified or varies more than 1/16 inch when no range is specified			X

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Defect	Classification Major	Minor A	Minor B
Seams and stitching (cont'd)			
3. Edge or raised stitching sewn too close to edge resulting in damage to cloth		X	
c. Open joining seams:			
Any joining seam open:			
- more than 1 inch	X		
- more than 1/4 inch and up to 1 inch inclusive		X	
- up to 1/4 inch inclusive			X
NOTE: Open seam - a break in a line of stitching or continuous skipped or run-off stitches (except on edge, top or raise stitching) constitutes an open seam. On double stitched seam, a seam is classified as open when either one side or both sides of seam is open.			
d. Raw edges (excluding overedge stitching and end of binding, when not turned under):			
- more than 1 inch	X		
- more than 1/4 and up to 1 inch inclusive		X	
- 1/8 up to 1/4 inch inclusive			X
Any raw edge caused by omission of overedge stitching for a distance of 3 inches or more			X
NOTE: Raw edges are classified as such when they occur at places where edge is required to be turned under or overedge stitched.			
e. Run-off:			
1. Joining seams. When resulting in an open seam use "Open seam" classification.			

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Defect	Classification Major	Minor A	Minor B
Seams and stitchings (cont'd)			
2. Edge or raised stitching (when not resulting in an open seam):			
- 1/4 to 1/2 inch inclusive			X
- more than 1/2 inch		X	
f. Seam and stitch type:			
1. Wrong seam or stitch type		X	
2. Overedge stitched edge on joining seams not finishing on outside of liner		X	
3. Looper thread of 401 stitch type on joining seam using seam type LSbm-3 finishing on outside of seam			X
g. Stitch tension:			
1. Loose tension resulting in a loose seam	X		
2. Loose tension on raised or edge stitching		X	
3. Tight tension (stitches break when strain is applied to seam or stitching)	X		
NOTE: Puckering is evidence of tight tension. When puckering is evident, the seam shall be tested by exerting pull in lengthwise direction of seam.			
h. Stitches per inch (to be scored only when the condition exists on the major portion of seam except labels):			
1. Less than minimum specified:			
- one or two stitches		X	
- three or more stitches	X		
2. One or more stitches less than minimum specified on one or more labels		X	
3. One or more than the maximum specified			X

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Defect	Classification Major	Minor A	Minor B
Seams and stitching (cont't)			
i. Stitches skipped or broken (on other than joining seams)			
- 1/4 to 1/2 inch inclusive			X
- more than 1/2 inch		X	
Buttonholes (construction)			
a. Stitching not caught on fabric, causing stitches to pull away from fabric	X		
b. Wrong type, incomplete stitching or uncut buttonhole		X	
c. One or more broken stitches in:			
- one buttonhole		X	
- two or more buttonholes	X		
d. Gimp omitted on one or more buttonholes			X
e. Cut length less than 3/4 or more than 7/8 inch		X	
f. Purling finishing on outside of liner			X
g. Ends stitched with less than four stitches per bar end (see 3.6.2):			
- one buttonhole			X
- two or more buttonholes		X	
h. More than two skipped stitches in:			
- one buttonhole			X
- two or more buttonholes		X	
Bartacks			
Any bartack omitted	X		
Loose stitching, incomplete or broken		X	
Binding			
a. Not caught on fabric, i.e., can easily be pulled away from edge of fabric	X		
b. Ends of binding not turned over the binding to outside of liner and tacked, or not turned under and caught in the stitching			X

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Defect	Classification Major	Minor A	Minor B
Binding (cont'd)			
c. Binding less than 3/8 or more than 5/8 inch wide			X
d. Binding stretched, i.e., edges having a wavy appearance			X
Front facings			
a. Stitched on outside of liner	X		
b. Front, top, or bottom edges not completely caught in binding stitching		X	
c. Tight, short, or twisted, causing fullness or twist on fronts.		X	
d. Back edges not turned under and stitched		X	
Front buttonholes (position)			
a. Unequally spaced by more than 1/2 inch		X	
b. Front buttonholes less than 7/8 inch or more than 1 inch from front edge		X	
c. Constructed in horizontal position			X
Neck buttonholes (position)			
a. Inside edge of eyelet less than 1 inch or more than 1-1/8 inches from neck edge			X
b. Eyelet end not toward neck edge of liner or positioned horizontally		X	
c. One or more not through reinforcement piece		X	
Buttonhole reinforcement at neck edge of right front			
a. Less than 2-7/8 or more than 3-1/8 inches in length, or less than 1-3/8 or more than 1-5/8 inches in width		X	

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Defect	Classification Major	Minor A	Minor B
Sleeve buttonhole tabs			
a. One or more omitted or not caught in binding stitching	X		
b. Less than 2-5/8 or more than 3-1/8 inches long			X
c. Placed more than 1/4 inch from center of back arm or under arm seam of sleeve			X
d. Placed on angle, not permitting tab to be in vertical position			X
e. One or more tabs not positioned on the inside of liner		X	
f. Inside edge of eyelet less than 1/2 inch or more than 5/8 inch from bottom edge			X
g. Buttonhole off center with tab width by more than 1/8 inch			X
h. Bottom hem of tab less than 1/4 inch or more than 3/8 inch in length			X
i. Purling of buttonhole not toward the inside of liner when tab is extended below bottom edge of sleeve			X
Labels			
a. Size, instruction, or combination label (when applicable) missing, incorrect, or illegible	X		
b. Identification label missing, incorrect, or illegible		X	
c. Any label not stitched on four sides			X
d. Any label off center on back by more than 1/2 inch			X
e. Not positioned as specified		X	

* 4.2.2.2 Dimensional examination. The end item shall be examined for the defects listed below. The inspection level shall be S-3 and the AQL shall be 4.0 defects per hundred units.

Defect
Any dimension deviating from the dimension and tolerance specified in table II.
Sleeves uneven in length by 3/4 inch or more.

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4.2.3 Packaging inspection. An examination shall be made to determine that the preservation, packing, and marking comply with the section 5 requirements. Defects shall be scored in accordance with the list below. The sample unit shall be one shipping container fully packaged with the exception that it need not be closed. Examination for closure defects listed below shall be made on shipping containers fully packaged. The lot size shall be the number of containers in the end item inspection lot. The inspection level shall be S-2 and the AQL shall be 2.5 defects per hundred units.

Examine	Defect
Markings (exterior and interior)	Omitted; incorect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing, damaged, or not as specified.
Workmanship	Inadequate application of components such as: incomplete closure of container flaps, loose strapping, improper taping, or inadequate stapling. Bulged or distorted container.
Content	Number of bundles per container is more or less than required. Number of liners per bundle is more or less than required. 1/

1/ For this defect, one bundle from each container in the sample shall be examined.

5. PACKAGING

* 5.1 Preservation. Preservation shall be level A or Commercial as specified (see 6.2).

* 5.1.1 Level A. Each liner shall be laid flat, front up with front edges overlapping so that the width measures approximately 23 inches. The sleeves shall be folded at right angles across the chest. The liner shall then be folded in half the length. The completely folded liner shall measure approximately 23 by 14-1/2 inches. Prior to folding the liner in half, the bottom edge when applicable shall be folded over sufficiently so that the specified dimension is accomplished. Five folded liners of one size only shall be neatly stacked in a bundle and securely tied with cotton tape or twine approximately 4 inches from each end.

* 5.1.2 Commercial. The liners shall be preserved in accordance with MIL-STD-1188.

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* 5.2 Packing. Packing shall be level A, B, or Commercial as specified (see 6.2).

* 5.2.1 Level A packing. Ten liners of one size only, preserved as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC-L, grade V2s of PPP-B-636. The inside of each container shall be fitted with a box liner conforming to type CF, class weather-resistant, variety DW, grade V15c of PPP-B-636. Level A bundles shall be packed flat two in depth within a shipping container. Inside dimensions of each container shall approximate 23-1/2 inches in length, 15 inches in width, and 15 inches in depth. Approximate dimensions are furnished as a guide only. Each contaianer shall have the contents completely covered on the top and bottom with a sheet of 30-pound minimum basis weight kraft paper conforming to type I, grade B of UU-P-268. Each shipping container shall be closed in accordance with method III, waterproofed in accordance with method V and reinforced as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.2.3. Toward the end of the contract or when there are less than the required amount per container of the same size, mixed sizes may be packed within the same shipping container.

* 5.2.2 Level B packing. Ten liners of one size only, preserved as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC-L, type CF (variety SW) or SF, class domestic, grade 275, of PPP-B-636. The inside of each shipping container shall be fitted with a box liner conforming to type CF, class domestic, variety DW, grade 275 of PPP-B-636. Inside dimensions of each shipping container shall approximate 23-1/2 inches in length, 15 inches in width, and 15 inches in depth. Approximate dimensions are furnished as a guide only. Each container shall have the contents completely covered on the top and bottom with a sheet of 30-pound minimum basis weight kraft paper conforming to type I, grade B of UU-P-268. Each shipping container shall be closed in accordance with method II as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.2.3. Toward the end of the contract or when there are less than the required amount per container of the same size, mixed sizes may be packed within the same shipping container.

* 5.2.2.1 Weather-resistant fiberboard containers. When specified, (see 6.2), the shipping container shall be a grade V3c, V3s, or V4s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with method III as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.2.3.

* 5.2.3 Commercial packing. Liners, preserved as specified in 5.1, shall be packed in accordance with MIL-STD-1188.

* 5.3 Marking. In addition to any special marking required by the contract, shipping containers shall be marked in accordance with MIL-STD-129 or MIL-STD-1188, as applicable.

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5.3.1 Labels, mixed sizes. Each shipping container, packed with mixed sizes, shall have securely attached to the end and side, directly under the printing or stenciling, a white paper label 5 by 4 inches, with the words "MIXED SIZES" plainly stamped or printed thereon, and under these words shall be legibly printed or stamped the correct quantity and sizes contained therein.

6. NOTES

6.1 Intended use. The liner is intended for wear by military personnel of the Department of Defense, as a component of the cold-dry uniform in conjunction with the Parka, Extreme Cold Weather.

* 6.2 Ordering data. Procurement documents should specify the following:

(a) Title, number and date of this specification.
(b) Size required (see 1.2).
(c) Selection of applicable levels of preservation and packing (see 5.1 and 5.2).
(d) When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).

6.3 Samples. For access to samples, address the procuring activity issuing the invitation for bids.

* 6.4 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of the specification.

* 6.5 Changes from previous issue. The margins of this specification are marked with an asterisk (*) to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

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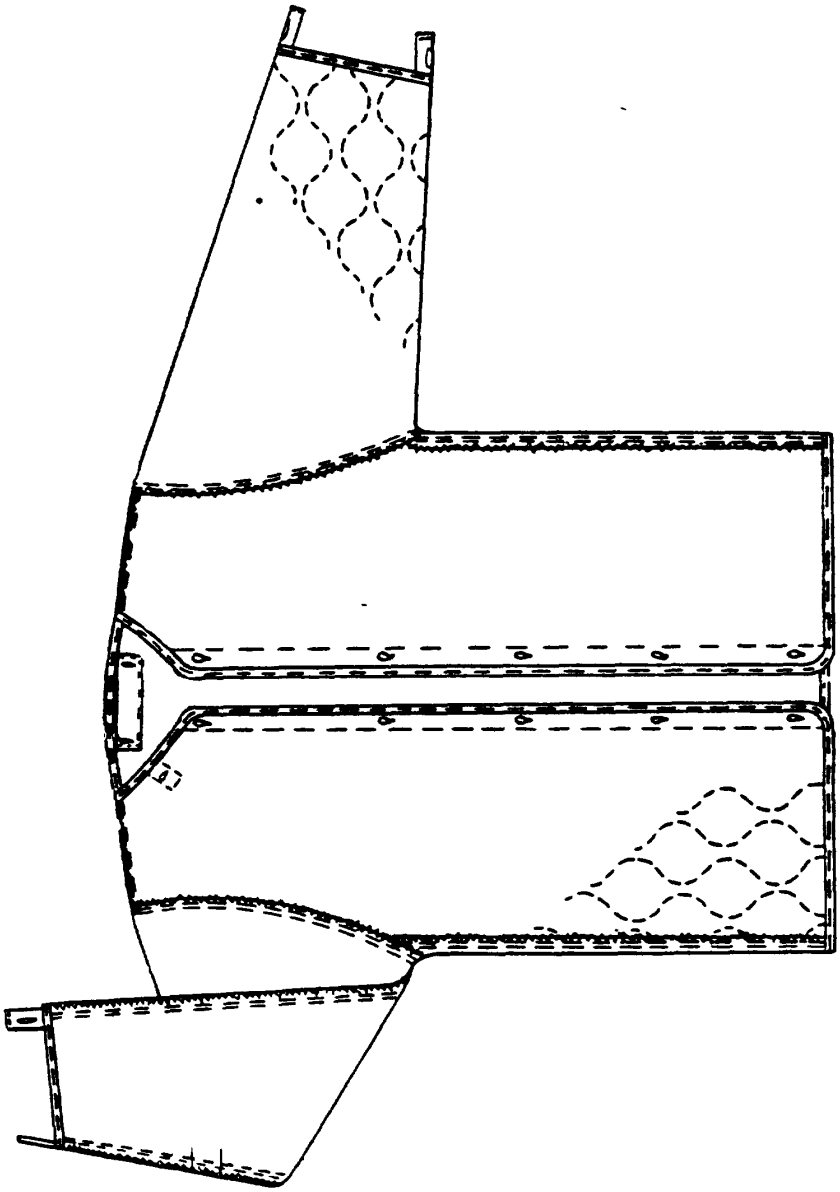

FIG. 1 LINER, EXTREME COLD WEATHER, PARKA

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DOCUMENT IDENTIFIER *(Number)* AND TITLE

MIL-L-43466C Liner, Extreme Cold Weather, Parka

NAME OF ORGANIZATION AND ADDRESS OF SUBMITTER

☐ VENDOR ☐ USER ☐ MANUFACTURER

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