

MIL-J-43470B(GL)

26 July 1982

SUPERSEDING

MIL-J-43470A(GL)

31 March 1971

MILITARY SPECIFICATION

JACKETS, AIR TO GROUND IDENTIFICATION

This specification is approved for use by the Natick Research and Development Laboratories, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This document covers oversized jackets having an olive green cotton poplin back and a fluorescent colored front.

1.2 Classification. The jackets shall be one size in the following classes:

- Class 1 - Chartreuse
- Class 2 - Orange
- Class 3 - Yellow
- Class 4 - Red
- Class 5 - White

2. APPLICABLE DOCUMENTS

- * 2.1 Government documents. Unless otherwise specified, the following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this document 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-276 - Thread, Cotton
- UU-P-268 - Paper, Kraft, Wrapping
- DDD-L-20 - Label: For Clothing, Equipage and Tentage
(General Use)
- DDD-T-86 - Tape, Textile, Cotton, General Purpose,
(Unbleached, Bleached, or Dyed)
- PPP-B-636 - Boxes, Shipping, Fiberboard

MILITARY

- MIL-C-342 - Cloth, Wind Resistant, Poplin, Cotton
- MIL-F-10884 - Fasteners, Snap
- MIL-F-21840 - Fastener Tapes, Hook and Pile, Nylon Synthetic
- MIL-C-43303 - Cord, Elastic, Cotton

STANDARDS

FEDERAL

- FED-STD-191 - Textile Test Methods
- 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 documents required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document shall take precedence.

3. REQUIREMENTS

3.1 Guide sample. Guide samples, when furnished, are solely for guidance and information to the contractor (see 6.3). Variations from this document may appear in the sample, in which case this document shall govern.

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3.2 Material.

- * **3.2.1 Basic material for back.** The basic material for the back shall be rip stop cotton poplin, Olive Green 107, conforming to class A of MIL-C-342.

3.2.2 Basic material for front. The basic material for the front shall be a 5-harness nylon satin conforming to the following requirements when tested as specified in 4.2.1. The nylon shall be bright, high tenacity and ultra violet resistant.

Weight in ounces/square yard - 3.0
(minimum)

Yarns per inch
Ends (minimum) - 160
Picks (minimum) - 80

Breaking strength, pounds
(minimum)

Warp - 162
Filling - 120

3.2.2.1 Color. The color of the nylon satin for each class jacket shall be as specified in the following table. When tested as specified in 4.2.1, the color of the dyed and finished nylon satin shall match the shade standard (see 6.3) in the color specified.

Class 1	-	Fluorescent Chartreuse Shade No. 313
Class 2	-	Fluorescent Orange Shade No. 314
Class 3	-	Fluorescent Yellow Shade No. 315
Class 4	-	Fluorescent Red Shade No. 316
Class 5	-	Fluorescent White Shade No. 317

3.2.2.1.1 Colorfastness. Each of the colors of the nylon satin shall show fastness to laundering, light, and perspiration equal to or better than the standard sample. When no standard sample is available, each color shall show "good" fastness to laundering, light, and perspiration when tested as specified in 4.2.1.

- * **3.2.3 Tape.** The material for facing the neck and armholes and for tie tapes shall be 1/2-inch wide cotton tape, Olive Green 107, conforming to type I, class 3 of DDD-T-86. The tape shall show colorfastness to laundering and light. (See operation 1.c for alternate material.)

3.2.4 Elastic cord. The elastic for the wrists and bottom of jackets shall be 3/16-inch diameter cotton tubular cord, natural color, conforming to class 1 of MIL-C-43303.

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3.2.5 Nylon fastener tape. The material for the front closure shall be a 1-inch wide nylon fastener tape, Olive Green 106, conforming to type II of MIL-F-21840.

3.2.6 Snap fastener. The snap fastener for the bottom of the front closure shall be style 2, finish 2, male and female complete, consisting of stud and eyelet in size 1 or 2, and 24-line button in size 1 or 2 with socket, conforming to MIL-F-10884.

* 3.2.7 Thread. The thread for all stitching shall be type IA3, ticket Nos. 30, 3 ply, and 50, 3 ply, Olive Drab S-1, C.A. 66022, conforming to V-T-276. The colored thread shall show fastness to perspiration and laundering equal to or better than the standard sample. When no standard sample is available, the colored thread shall show "good" fastness to perspiration and laundering.

* 3.2.8 Label. Each jacket shall have an instruction label conforming to type VI, class 3 of DDD-L-20 except that the contract number, stock number and the information required by the applicable products labeling act and the name of the contractor shall be included in 8-point size print. The contract number and stock number shall follow the item description and the labeling act information shall follow the instructions. The fastness to laundering requirements of DDD-L-20 shall apply. The body of instructions shall be as follows:

WARNING: Launder or dry clean with the fastener tapes closed. Do not press the fastener tapes.

3.3 Design. The jackets have a two-piece back, dolman sleeves with elastic wrists, a deep-cut neckline, a nylon fastener hook and pile tape closure with a metal snap fastener at the base, and an elastic cord inclosed in the hem. A panel with tie tapes is attached to the inside of the back to be used as a self container by rolling the garment and wrapping with the panel (see figure 1).

3.4 Figures. Figures are furnished for information only. To the extent of any inconsistencies between the written description and the figures, this document shall govern.

3.5 Patterns. Standard patterns which provide a 1/2-inch seam allowance for the double-lapped seams and 1/4-inch for all other seams, will be furnished by the Government. The Government patterns which show directional lines and markings for proper assembly, shall not be altered, in any way and are to be used as a guide for cutting the contractor's working patterns. The working patterns shall be identical to the Government patterns.

3.5.1 List of pattern parts. The pattern components for the jackets shall be cut from materials as specified and according to the number of parts listed in table I.

TABLE I. List of pattern parts

Material	Pattern nomenclature	Cut parts
Cotton poplin	Back	2
	Panel	1
Nylon satin	Front	2

3.6 Construction.

- * 3.6.1 Stitches, seams, and stitchings. All stitches, seams and stitchings shall conform to FED-STD-751. The type of seam, stitching and stitches per inch shall be as specified in table II. Seam allowances shall be maintained with seams sewn so that no raw edges, run-offs, pleats or open seams occur. When two or more methods of seams or stitches are given for the same operation, any one may be used. Where stitch type 401 is used, the looper (underthread) shall be on the inside of the jacket. The gage of stitching for double-lapped, double-stitched seams shall be 1/4 to 5/16 inch, with the outer row of stitching 1/16 inch from turned edge on outside of jacket.
 - * 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.
 - * 3.6.1.1.1 Repairs of type 301 stitching.
 - a. When thread breaks, skipped stitches, run-offs, or bobbin runouts occur during sewing, the stitching shall be repaired by restarting the stitching a minimum of 1/2 inch back of the end of the stitching. 1/
 - b. 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 beyond the defective area unto 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.

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- * 3.6.1.2 Type 401, 502 and 503 stitching. Thread tension shall be maintained so that there will be no loose stitching. All repairs shall be in accordance with 3.6.1.1.1a. and b. Thread tension shall be maintained so that there will be no loose or excessively tight stitching resulting in puckering of the materials sewn.
- * 3.6.1.3 Bartacking. Bartacking shall be $1/2 + 1/16$ inch long, $1/8 + 1/32$ inch wide and shall contain 28 stitches. Bartacks shall be free from thread breaks and loose stitching.

3.7 Manufacturing operation requirements. The jackets shall be manufactured in accordance with operations requirements specified in table II. The contractor is not required to follow the exact sequence of operations listed. Any additional basting or holding stitching used to facilitate manufacture is permissible provided the thread is removed or does not show on the finished jackets.

- * 3.7.1 Marking. The cut parts shall be marked or bundled to insure a uniform shade throughout jacket. Any method or marking may be used except:
 - (1) Metal fastening devices.
 - (2) Sew-on shade tickets.
 - (3) Adhesive type tickets which leave traces of paper or adhesive after removal of the tickets.

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NO.	TABLE II. MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
1.	<p><u>Cutting.</u></p> <p>a. Cut the jackets in accordance with patterns which show directional lines, marks and notches for proper assembly. Directional lines shall be placed in the warp direction of the material.</p> <p>b. Cut the poplin parts, except the back panel and the stripping for facing the armholes and neck, from the same piece of material. The panel piece may be cut from ends.</p> <p>c. Cut stripping of basic material (if option to use tape, see 3.2.3, is not used) for facing the neck and armholes on the straight or on the bias in sufficient width to finish $1/2 + 1/8$ inch wide when attached. (See operations 4 and 8c.)</p> <p>d. Cut the fronts from the same piece of material, and with the front edges on the selvage when possible. (See operation 9.)</p> <p>e. Cut the tie tape $21 + 1/2$ inches long.</p> <p>f. Cut elastic cord for the bottom of jacket of sufficient length to comply with operation 11.</p> <p>g. Cut the elastic cord for the wrists of sufficient length to comply with operation 10.</p> <p>h. Cut the hook and pile tapes of equal length to comply with operation 12.</p>						

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS <u>Replacement of damaged parts.</u>	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
2.	a. Replace at time of cutting any part of the material containing weakening defect such as hole, smash, multiple float or loose slub. b. Replace any part damaged during the manufacturing process, such as needle chew, cut, tear, hole, snag or burn. A unit containing one or more clearly visible mends will not be acceptable.						
3.	<u>Marking.</u> Mark, ticket or bundle component parts, except parts cut from ends, to assure a uniform shade.						
4.	<u>Overedge stitching.</u> a. Overedge one side of armhole and neck facing stripping (see operation 1.c). b. Turn under raw edge on one side of the stripping and crease.	502 or 503	Efd-1 Efd-1	10-14 10-14	50-3 50-3	50-3 50-3	
5.	<u>Make panel.</u> a. Overedge all four sides of the back panel. b. Bartack the center of the tie tape to the center (1/2 inch off center tolerance) of one of the shorter sides of the rectangular panel. The bartack shall extend across the width of the tape and shall be positioned 1/8 to 1/4 inch from the edge of the panel. The two ends of the tape shall not be uneven in length by more than 1/2 inch.	502 or 503 Bartack	Efd-1 Efd-1	10-14 10-14 28 per bartack	50-3 50-3	50-3 50-3 30-3	

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
6.	<p><u>Make back and attach label.</u></p> <p>a. Join the two back pieces with a double-lapped, double-stitched seam.</p> <p>b. Stitch the end of the panel (the end without the tie tape) to the back, as indicated by marks on pattern.</p> <p>c. Center the label to the center of back, not less than 3/4 or more than 1-1/4 inches from raw edge of neck, and stitch on all four sides. The stitching shall not be through the printing and the label shall not be off center by more than 1/2 inch. The ends of the stitching shall be overlapped not less than three stitches.</p>	<p>301 or 401</p> <p>301</p> <p>301</p>	<p>LSc-2 LSc-2</p> <p>LSbj-1</p> <p>LSbj-1</p>	<p>10-14 10-14</p> <p>10-14</p> <p>10-14</p>	<p>30-3 30-3</p> <p>30-3</p> <p>30-3</p>	<p>30-3 30-3</p> <p>30-3</p> <p>30-3</p>	
7.	<p><u>Assemble fronts and backs.</u></p> <p>a. Join the backs to the fronts at top sleeve, undersleeve and sides with double-lapped, double-stitched seams.</p>	<p>301 or 401</p>	<p>LSc-2 LSc-2</p>	<p>10-14 10-14</p>	<p>30-3 30-3</p>	<p>30-3 50-3</p>	
8.	<p><u>Face neck and armhole.</u></p> <p>a. Stitch tape to the inside of neck and to the inside of armholes with two rows of stitching and with the raw edges turned in. Each row of stitching shall be 1/16 to 1/8 inch from edge.</p> <p>- or -</p>	<p>301</p>	<p>SSt-2</p>	<p>10-14</p>	<p>30-3</p>	<p>30-3</p>	

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
8.	<u>Face neck and armhole.</u> (cont'd)						
	b. Stitch tape to the outside of neck and to the outside of armholes 1/8 to 5/32 inch from edge; turn to inside of jacket and stitch tape down 1/16 to 1/8 inch from edge.	301 or 401 and 301	SSae-2(a) SSae-2(a) SSae-2(b)	10-14 10-14 10-14	30-3 30-3 30-3	30-3 50-3 30-3	
	- or -						
9.	c. Stitch the raw edge of the basic fabric stripping to the outside of neck and to the outside of the armholes 1/8 to 5/32 inch from edge; turn to inside of jacket and stitch stripping down 1/16 to 1/8 inch from edge.	301 or 401 and 301	SSae-2(a) SSae-2(a) SSae-2(b)	10-14 10-14 10-14	30-3 30-3 30-3	30-3 50-3 30-3	
	<u>Hem front openings (applicable if fronts are not cut on selvage - see operation 1.d).</u>						
	a. Turn the edge of the right front to the outside of the jacket 1/8 to 1/4 inch and stitch 1/16 to 1/8 inch from edge.	301 or 401	Efa-1 Efa-1	10-14 10-14	30-3 30-3	30-3 50-3	
	b. Turn the edge of the left front to the underside 1/8 to 1/4 inch and stitch 1/16 to 1/8 inch from edge.	301 or 401	Efa-1 Efa-1	10-14 10-14	30-3 30-3	30-3 50-3	
	NOTE: This operation may be omitted. See operation 12.a.						

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
10.	<u>Hem sleeves and insert elastics.</u> a. Place the ends of the elastic (see operation 1.g) adjacent to each other with one end extending beyond the other $3/4 + 1/4$ inch. Bartack the ends together with the bartack across both widths. The elastic shall measure 5 to 5-1/2 inches (half wrist measurement) long in the finished sleeve. b. Turn in the raw edge at wrist and stitch 1/16 to 1/8 inch from folded edge. This operation may be omitted provided the hem, operation 10.d is accomplished without twists, or pleats and is uniform in width. c. Elastic may be anchored to the sleeve 1-1/8 to 1-1/2 inches from bottom with a tack or bartack through the underarm seam to hold it in position for hemming, operation 10.d. d. Hem sleeve inclosing the elastic within the fold. Do not catch the elastic in this stitching. The hem shall finish $3/4$ to 1 inch wide. <u>Hem bottom and insert elastic.</u> a. Turn in the raw edge along bottom and stitch 1/16 to 1/8 inch from folded edge. This operation may be omitted provided the hem operation, 11.b, is accomplished without twists or pleats and is uniform in width.	Bartack 301 or 401 301 or bartack 301	 EFA-1 EFA-1 EFB-1 EFA-1 EFA-1	28 per bartack 10-14 10-14 10-14 28 per bartack 6-10 6-10 6-10	30-3 30-3 30-3 30-3 30-3 30-3 30-3	30-3 30-3 50-3 30-3 30-3 30-3 50-3	
11.							

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
11.	Hem bottom and insert elastic. (cont'd) b. Hem bottom inclosing the elastic within the fold and securely anchoring each end of the elastic. Do not catch the elastic in the stitching except at ends. The hem shall finish 3/4 to 1 inch wide. The bottom of the finished jacket with the elastic inserted shall measure $24 + 1/2$ inches long.	301	EFb-1	10-14	30-3	30-3	
12.	<u>Attach fasteners.</u> a. Position the pile part of the fastener tape on the outside of the right front and the hook part on the inside of the left front and stitch along all edges not less than 1/16 inch from edge. Trim ends of tape even ($+ 1/8$ inch) with top and bottom of front opening. If fronts have not been cut on the selvage and operation 9 has not been performed, turn in raw edges in directions specified in operation 9 when attaching the tapes. When a double needle is used for attaching tapes, the tapes shall be stitched across the top and bottom. The ends of all stitching shall overlap not less than 1 inch. b. Attach the stud (male) part of the snap fastener to the center (1/8 inch off center tolerance) of the pile fastener tape, through all plies, 3/8 to 1/2 inch from bottom of jacket (measured from center of fastener). c. Attach the socket (female) part of the snap fastener to the center (1/8 off center tolerance) of the hook fastener tape, through all plies, to correspond to the stud part.	301	SSaa-2	10-14	30-3	30-3	

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
13.	<u>Clean jacket.</u> a. Trim all thread ends and remove loose threads. b. Remove all spots, stains and shade tickets.						

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- * **3.8 Measurements.** The finished jackets shall conform to the finished measurements shown in table III. The tolerance for all measurements except for breadth shall be $\pm 3/4$ inch.

TABLE III. Measurements (inches)

Breadth <u>1/</u>	- 26 to 28
Back length <u>2/</u>	- 33-1/2
Sleeve length <u>3/</u>	- 35-1/2
Front length <u>4/</u>	- 22-1/2

1/ With the front closure engaged measure across front at base of armhole from folded edge to folded edge.

2/ Measure back seam length from neck to bottom of jacket.

3/ Measure top sleeve seam from neck to bottom of sleeve.

4/ With the front closure engaged, measure down center front from neck to bottom of jacket.

3.9 Workmanship. The finished jackets shall conform to the quality of product established by this document. 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 or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, in the contract or purchase order, 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 document where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Certificate of compliance. When a certificate of compliance is submitted, the Government reserves the right to check test such items to determine the validity of the certification.

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- * **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 documents unless otherwise excluded, amended, modified, or qualified in this document or applicable purchase document.
- * **4.2.1.1 Fluorescent cloth testing.** The fluorescent cloth shall be tested for the characteristics as specified in table IV. Unless otherwise indicated, tests shall be conducted in accordance with methods prescribed in FED-STD-191. When data in the "Number of determinations per sample unit" and the "Results reported as" columns are not specified in table IV, they shall be as required by the referenced test method. The lot shall be unacceptable if one or more sample units fail to meet any test requirement specified. The sample unit shall be 1 yard full width and the lot size shall be expressed in "yards". The sample size shall be as follows:

<u>Lot size (yards)</u>	<u>Sample size (sample units)</u>
800 or less	2
801 up to and including 22,000	3
22,001 and over	5

TABLE IV. Fluorescent cloth tests

<u>Characteristic</u>	<u>Requirements reference</u>	<u>Test method</u>	<u>No. determinations per sample unit</u>	<u>Results reported as</u>
Weave	3.2.2	Visual	1	Pass or fail
Material identification	3.2.2	<u>1/</u>		
Weight	3.2.2	5041		
Yarn count	3.2.2	5050		
Breaking strength	3.2.2	5102		
Color matching	3.2.2.1	9010		
Colorfastness:				
Laundering		5614		
Light		5660		
Perspiration		5680		

1/ A certificate of compliance shall be submitted and will be acceptable for the stated requirement.

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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 jacket. The sample unit shall be one jacket.
- * 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), expressed in terms of defects per hundred units shall be 15.0.

Defect

Material defects and damages

- a. Hole, cut, tear, burn or needle chew.
- b. Visible mend, darn or patch on outside.
- c. Weakening defects.
 - 1. Smash.
 - 2. Multiple float or loose slub on outside.
- d. Permanent crease in cloth when caught in stitching.
- e. Unsightly slub, shade bar or multiple snags on outside.

Shaded parts

- a. Front or back parts shaded.

Cleanness

- a. Any spot or stain on outside clearly noticeable.
- b. One or more shade tickets not removed.
- c. Any shade marking visible on outside.
- d. Thread ends not trimmed or loose threads not removed throughout the jacket.

Component and assembly

- a. Any component part or required operation omitted (unless otherwise classified herein.)
- b. Any required operation improperly performed (unless otherwise classified herein).

Cutting

- a. Any component part not cut in conformance with directional lines on pattern or in accordance with the document requirement.

Defect

Seams or stitching

a. Accuracy of seaming.

1. Seam(s) twisted, puckered, or pleated (unless otherwise classified herein).
2. Part of material caught in unrelated operation or stitching.
3. Ends of stitching when not caught in other seams or stitching backtacked less than 1/4 inch.
4. Stitching overlapping the end(s) of thread break less than 1/2 inch.
5. Ends of a continuous line of stitching, except stitching on fastener tapes and label, overlapped less than 1/2 inch.
6. Ends of fastener tape stitching overlapped less than 1 inch.
7. Ends of label stitching overlapped less than three stitches.

b. Gage of stitching.

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).
2. Width not as specified or not within range of gage specified, or varies more than 1/16 inch when no range is specified.

c. Stitches broken or missing (except overedging).

d. Stitches broken or missing on overedging more than 1/4 inch.

e. Skipped stitches more than 1/4 inch long.

f. Runoff more than 1/4 inch long.

g. Raw edge on outside more than 1/4 inch.

h. Seam and stitch type.

1. Seam type or stitch type not as specified.

2. Looper thread on 401 stitch type on outside of the jacket.

i. Stitches per inch (to be scored only when condition exists on major portion of seam of stitching) not as specified.

j. Stitch tension (except bartacks).

1. Loose tension resulting in a loose seam.

2. Loose tension (exposing loops of top or bottom thread for a distance of 1/2 inch or more, on outside.

3. Tight tension (stitches break when normal strain is applied in the direction of the seam or stitching).

NOTE: Puckering is evidence of tight tension. When puckering is evident, the seam shall be tested by exerting normal pull in the lengthwise direction of seam.

k. Loose tension on bartacks.

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Defect

Back panel

- a. Tie tape more than 21-1/2 or less than 20-1/2 inches long.
- b. Tie tape positioned off center of panel by more than 1/2 inch.
- c. Tie tape positioned less than 1/8 or more than 1/4 inch from bottom of panel.
- d. The two ends of the tie tape uneven in length (from bartack) by more than 1/2 inch.

Label

- a. Missing, incorrect or illegible.
- b. Not stitched on all four sides.
- c. Stitching through the printing.
- d. Positioned off center by more than 1/2 inch.
- e. Positioned less than 1/2 or more than 1-1/8 inches from neck.

Sleeve hems

- a. Hem twisted.
- b. Half wrist measurement less than 5 or more than 5-1/5 inches long.
- c. Elastic caught in stitching (except at underarm seam).
- d. Hem less than 3/4 or more than 1 inch wide.

Bottom hem

- a. Hem twisted.
- b. Length of bottom (from end to end) less than 23-1/2 or more than 24-1/2 inches long.
- c. Elastic caught in the stitching except at each end.
- d. Hem less than 3/4 or more than 1 inch wide.

Stripping for facing the armholes and neck

- a. Finished width of basic fabric stripping for face (when used), less than 3/8 or more than 5/8 inch wide.
- b. Overedge stitching omitted on one side of armhole or neck facing (basic fabric).

Defect

Front closure

- a. Pile part of fastener tape not positioned on the outside of the right front and the hook part not positioned on the inside of the left front.
 - b. Ends of the fastener tape not even with top and bottom of jacket by more than 1/8 inch.
 - c. Snap fastener faulty (does not function properly).
 - d. Stud part of snap fastener not placed on right side or socket part not positioned on left side.
 - e. Stud part of snap fastener placed less than 3/8 or more than 1/2 inch from bottom of jacket.
 - f. Stud or socket part of snap fastener placed off center on fastener tape by more than 1/8 inch.
 - g. Socket part of snap fastener out of alignment with the stud part causing a bulge on tape.
 - h. Row of stitching across top or bottom ends of fastener tapes omitted (applicable when double needle construction is used).
-

- * 4.2.2.2 Dimensional examination. Any measurement deviating from dimensions specified in 3.8 shall be scored as a defect. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units shall be 4.0.
- * 4.2.3 Packaging inspection. An examination shall be made to determine that the preservation, packing and marking requirements 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 of closure defects listed below shall be made on shipping containers fully packaged. The lot size shall be the number of containers in the inspection lot. The inspection level shall be S-2 and the AQL expressed in terms of defects per hundred units shall be 2.5.

<u>Examine</u>	<u>Defect</u>
Marking (exterior and interior)	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing, damaged or not as specified. Inadequate application of components such as; incomplete closure of container flap, improper taping, loose strapping, or inadequate stapling. Open and noncontinuous heat sealed seams of polyethylene bag. Omission of vent hole in polyethylene bag. Bulged or distorted container.
Content	Number of jackets per container is more or less than required.

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* 5. PACKAGING

* 5.1 Preservation. Preservation shall be level A or Commercial as specified (see 6.2).* 5.1.1 Level A. Each jacket laid out full length shall have its width neatly folded so that it approximates the width dimension of the self container panel. The jacket shall then be firmly rolled within the panel and securely tied with the tie tapes attached to the panel. Each rolled jacket shall be unit packed in a close fitting clear polyethylene film bag of 0.00125 inch thickness (+ 20 percent tolerance). The polyethylene bag shall be formed with heat sealed seams that are straight, continuous and parallel to each other and the formed edges of the bag. The final closure of the polyethylene bag shall be heat sealed with the heat seal made as close as possible to the open end; or the extended open end of the bag secured with a mechanical tie (paper or plastic covered soft steel wire or aluminum band). A 1/4-inch diameter hole shall be made at one corner of each polyethylene bag to allow excess air to escape.* 5.1.2 Commercial. Each cover shall be preserved in accordance with MIL-STD-1188.* 5.2 Packing. Packing shall be level A, B or Commercial as specified (see 6.2).* 5.2.1 Level A packing. Sixty jackets of one class 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 fiberboard shipping 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 unit packs shall be packed on end six in length, five in width, and two in depth within a shipping container. Inside dimensions of each shipping container shall approximate 21-1/2 inches in length, 18 inches in width, and 16 inches in depth. Approximate dimensions are furnished as a guide only. Each container shall have the contents completely covered on 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 fiberboard container shall be closed in accordance with method III, waterproofed in accordance with method V and reinforced in accordance with the appendix of PPP-B-636, except the inspection shall be in accordance with 4.2.3.* 5.2.2 Level B packing. Sixty jackets of one class 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 fiberboard container shall be fitted with a box liner conforming to class domestic, variety DW, grade 275 of PPP-B-636. Level A unit packs shall be packed on end six in length, five in width, and two in depth within a shipping container. Inside dimensions of each shipping container shall approximate 21-1/2 inches in length, 18 inches in width, and 16 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 the inspection shall be in accordance with 4.2.3.

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- * 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 the container specification, except the inspection shall be in accordance with 4.2.3.
- * 5.2.3 Commercial packing. Covers, 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 or purchase order, unit packs and shipping containers shall be marked in accordance with MIL-STD-129 or MIL-STD-1188, as applicable.
- * 5.3.1 Polyethylene bagged unit packs. Polyethylene bagged unit packs shall have the required identification information legibly printed or stamped in black directly on the bag across the center face or on a white paper label inserted within the bag so as to permit ready identification.

6. NOTES

6.1 Intended use. The jackets are intended for wear by male personnel of the Department of the Army.

- * 6.2 Ordering data. Acquisition documents should specify the following:
 - (a) Title, number and date of this document.
 - (b) Class required (see 1.2).
 - (c) When fluorescent emission measurement is required (see 3.2.2.1.1).
 - (d) Selection of applicable levels of preservation and packing (see 5.1 and 5.2).
 - (e) When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).

6.3 Samples. For access to sample of end item and shade samples, address the contracting activity issuing the invitation for bids.

- * 6.3.1 Dye color samples. The standard samples for the fluorescent colors have been dyed with the following dyes:

Chartreuse 313	- Acid Yellow #7, C.I. 56205 Acid Blue #7, C.I. 42080
Orange 314	- Acid Red #52, C.I. 45100 Acid Yellow #7, C.I. 56205
Yellow 315	- Acid Yellow #7, C.I. 56205 Acid Red #52, C.I. 45100
Red 316	- Acid Red #52, C.I. 45100
White 317	- Fluorescent Brightener P. G.

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- * 6.3.2 Color samples. The standard samples for the fluorescent colors show the following characteristics:

Chartreuse 313 - Y .768, dominant wavelength is 551 mu, spectral purity 62%.
 Orange 314 - Y .558, dominant wavelength is 595 mu, spectral purity 75%.
 Yellow 315 - Y 1.13, dominant wavelength is 573 mu, spectral purity 72%.
 Red 316 - Y .271, dominant wavelength is 504 mu, spectral purity 60%.
 White - Y 1.06, dominant wavelength is 471 mu, spectral purity 8%.

- * 6.3.3 Fluorescent emission. Fluorescent emission is measured by the procedures outlined in the following paragraphs:

6.3.3.1 Equipment. Spectrophotometer capable of illuminating the specimen with full energy from source and spectrally analyzing reflected energy. (An instrument satisfying these requirements is the Beckman DU spectrophotometer with external illumination of the specimen.)

6.3.3.2 Geometry of Assembly. Geometry of Assembly shall be 0°/45°.

6.3.3.3 Energy of Source. Xenon compact arc lamp of the following characteristics: 140-170 watts, 8.5 amps, 18-25 volts operated from 60 cycle AC 110-120 volt line.

6.3.3.4 Procedure. The specimen is mounted in the port of a reflecting head; one side of which has been cut away to serve as an exit port for the reflected energy. The same head carries a magnesium oxide or magnesium carbonate reference block. The reflecting head is set so that the reflected energy beam impinges on a collecting mirror in the spectrophotometer. The position of the mirror must be carefully set so as to achieve maximum intensity of the reflected energy. The optical arrangement that satisfies the above requirements is one in which the lamp housing is placed close to the reflecting head so that the specimen is illuminated normal to its surface and the reflected head with respect to the source, specimen and collecting mirror, surface subtends an angle of 45°. (See figure 2,) In proceeding with the measurement, the reflecting energy from the specimen is analyzed within the spectrophotometer at 10 mu increments with the instrument being calibrated at each point against the white reference. The reflectance measurements at each 10 mu increment describe a spectral reflectance curve which is integrated with respect to Source "C" and the CIE standard observer functions. Computations shall be made which shall record the total integrated reflectance, Y, dominant wavelength and percent spectral purity. Procedure for these measurements is detailed in Handbook of Colorimetry, Technology Press, Massachusetts Institute of Technology.

- * 6.4 Changes from previous issue. The margins of this document 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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Preparing activity:

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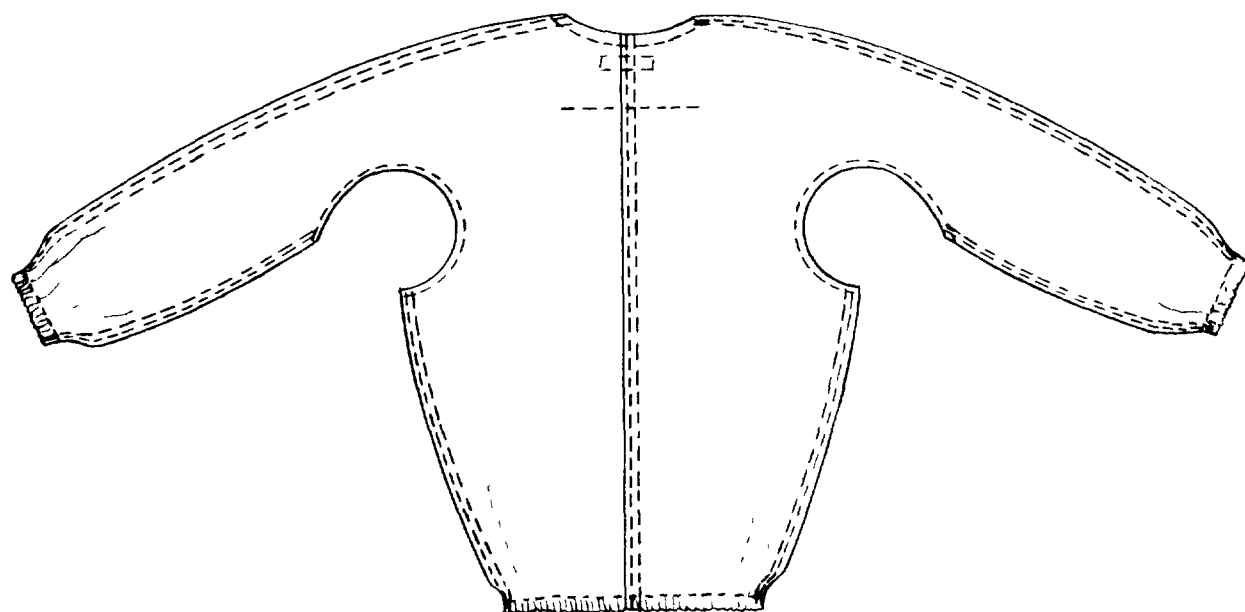
Review activities:

Army - MD

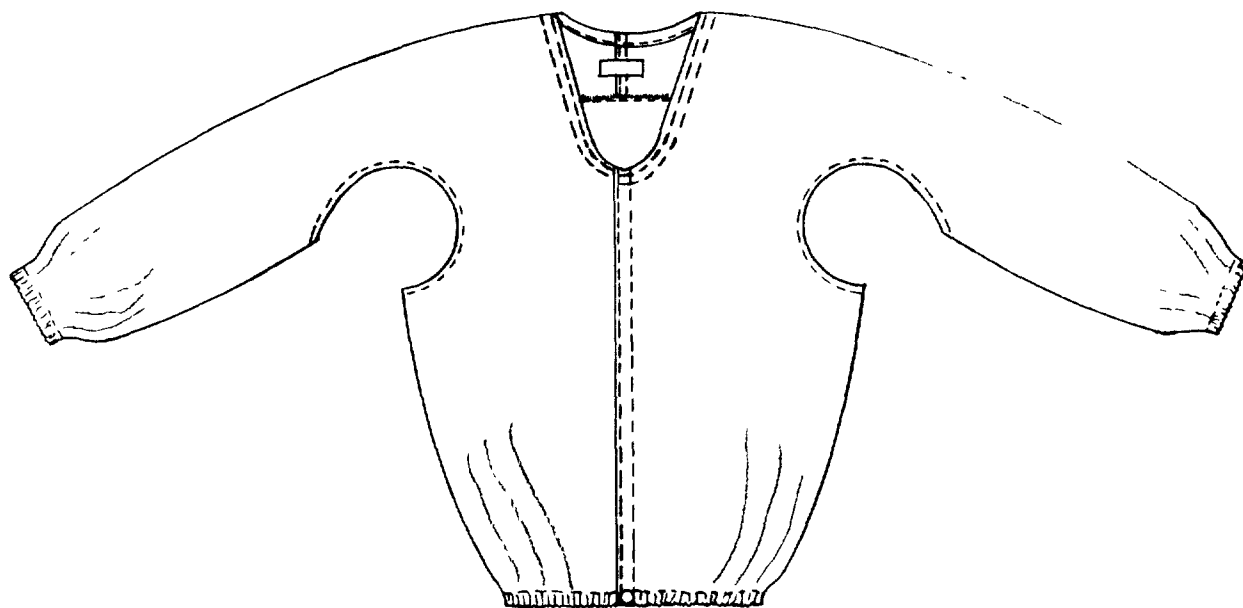
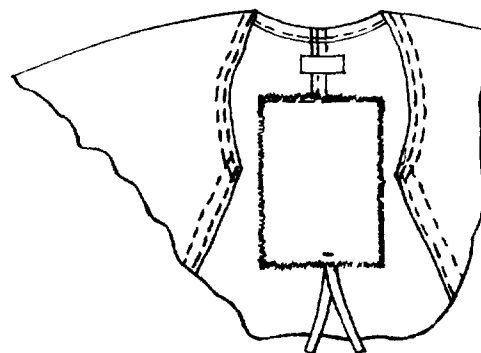
DLA - CT

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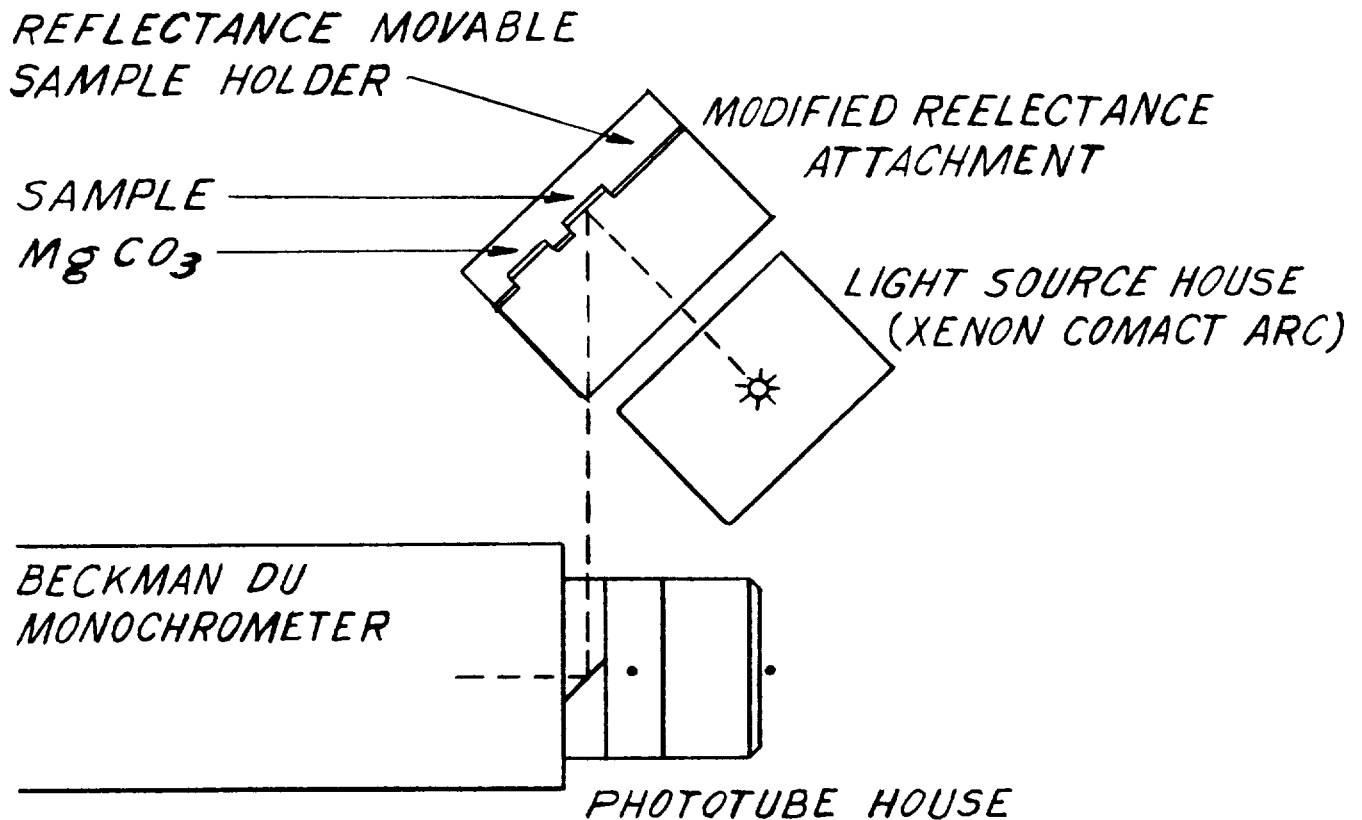


BACK



FRONT

FIGURE 1 - JACKET, AIR TO GROUND RECOGNITION



THE BECKMAN DIFFUSE REFLECTANCE ATTACHMENT IS MODIFIED. THE ORIGINAL ELLIPSODIAL MIRROR, THE PLANE MIRROR AND THE DIFFUSING GLASS FACE ARE REMOVED. A SLOT IS CUT OUT ON ONE SIDE THROUGH ONE OF THE MIRROR SUPPORTS TO ALLOW THE LIGHT TO PASS OUT AT APPROXIMATELY 45° . A PORTION OF THE REFLECTED AND EMITTED LIGHT PASSES OUT THROUGH THE OPEN CUT DIRECTLY IN THE SPECTROPHOTOMETER.

FIG. 2
MODIFIED DIFFUSE
REFLECTANCE ATTACHMENT

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