

INCH-POUND

MIL-S-12227F

May 8, 1989

SUPERSEDING

MIL-S-12227E

4 September 1980

MILITARY SPECIFICATION

SUIT, TOXICOLOGICAL AGENTS PROTECTIVE COVER, COOLING

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 two-piece cotton birdseye cloth cooling suit comprised of a jacket and trousers.

1.2 Classification. The suit shall be of one type and one size in the following items (see 6.2):

- Item 1 - Suit, Cooling, Jacket
- Item 2 - Suit, Cooling, Trousers

2. APPLICABLE DOCUMENTS

2.1 Government documents.

* 2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Officer in Charge, Navy Clothing and Textile Research Facility, 21 Strathmore Road, Natick, MA 01760-2490 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 8415

DISTRIBUTION STATEMENT A. Approved for public release, distribution is unlimited.

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SPECIFICATIONS

FEDERAL

- V-T-276 - Thread, Cotton
- * NN-P-71 - Pallet, Material Handling, Wood, Stringer Construction, 2 Way and 4 Way (Partial)
- CCC-C-425 - Cloth, Birdseye and Gauze; Cotton
- DDD-L-20 - Label; for Clothing, Equipage, and Tentage (General Use)
- DDD-T-86 - Tape, Textile; Cotton, General Purpose (Unbleached, Bleached, or Dyed)

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- MIL-W-530 - Webbing, Textile, Cotton, General Purpose, Natural or in Colors
- MIL-B-543 - Buckles, Tongueless and Web Strap
- MIL-F-10884 - Fasteners, Snap
- * MIL-P-15011 - Pallet, Material Handling, Wood, Post Construction, 4 Way Entry
- MIL-B-17757 - Boxes, Fiberboard, Corrugated (Modular Sizes)
- * MIL-T-43548 - Thread, Polyester Core: Cotton-, Rayon-, or Polyester-Covered

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-147 - Palletized Unit Loads
- * MIL-STD-2073-1 - Department of Defense Materials Procedures for Development and Applications of Packaging Requirements
- * MIL-STD-2073-2 - Packaging Requirement Codes

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

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U.S. POSTAL SERVICE MANUAL

(Copies of the manual may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001)

* 2.2 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted shall be those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT

National Motor Freight Classification

(Application for copies should be addressed to the American Trucking Association, ATTN: Traffic Department, 1616 P Street, N.W., Washington, DC 20036-1404).

UNIFORM CLASSIFICATION COMMITTEE, AGENT

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago, Illinois 60606-5808).

TECHNICAL MANUAL OF THE AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS

Method No. IA, T.M. 61-1980

(Application for copies should be addressed to AATCC National Headquarters, P.O. Box 12215, Research Triangle Park, NC 27709-2215)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

* 2.3 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. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

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

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3.2 First article. When specified, the contractor shall furnish sample unit(s) for first article inspection and approval (see 4.3 and 6.2).

3.3 Material. (See 6.4).

* 3.3.1 Basic material. The basic material for the jacket and trousers shall be cotton birdseye cloth, approximately olive green shade No. 107, conforming to Type I, class 3 of CCC-C-425, except the weight per square yard shall be 3.7 oz. min; the residual shrinkage shall not exceed 10 percent in either the warp or filling directions; and the minimum absorption shall be 50 percent.

* 3.3.1.1 Colorfastness. The colorfastness requirement shall be colorfastness to laundering (after 3 cycles), perspiration and crocking. Colorfastness to laundering shall be in accordance with AATCC T.M.61-1980, Method IA. Samples shall be dried after each complete laundering cycle and only the stain on the cotton fibers of the transfer cloth shall be evaluated.

3.3.2 Tape, cotton. The tape for leg tie cords shall be cotton herringbone twill weave, 1/2 inch wide, olive green shade No. 107, conforming to type I, class 3 of DDD-T-86, except the only colorfastness requirement shall be colorfastness to laundering.

3.3.3 Webbing, cotton. The webbing for the waist adjustment straps shall be cotton, 5/8 inch wide, olive drab shade No. 7, conforming to type II or type IIa, class 3 of MIL-W-530, except the only colorfastness requirement shall be colorfastness to laundering.

* 3.3.4 Thread. The thread for seaming and stitching shall be cotton, ticket No. 50, 2 or 3 ply and ticket No. 70, 2 ply conforming to type IA3 of V-T-276. As an alternate, either cotton-covered or rayon-covered polyester thread, ticket No. 50, 3 ply and ticket No. 70, 2 ply, conforming to MIL-T-43548 may be substituted for the cotton thread. The color shall approximate the basic material and be uniform throughout the garment.

3.3.4.1 Colorfastness. The dyed thread shall show fastness to laundering equal to or better than the standard sample. As a limit of acceptability, or when no standard sample is available, the dyed thread shall show good fastness to laundering.

* 3.3.5 Label. Each jacket and trouser shall have a combination identification and instruction label conforming to type I, class 15 of DDD-L-20. The printing shall show fastness to laundering. The label shall bear the following inscription:

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SUIT, TOXICOLOGICAL AGENTS PROTECTIVE COVER, COOLING

BASE FABRIC: 100% COTTON

CONTRACT NO: DLA 100-00-0-0000 (EXAMPLE)

STOCK NO. 8415-00-000-0000 (EXAMPLE)

NAME OF CONTRACTOR:

NAME OF MANUFACTURER: (If other than contractor)

INSTRUCTIONS

1. Wear over impermeable type suit for reduction of body heat stress.
2. Keep soaked with water for maximum evaporative cooling effect.
3. Wear legs outside of footwear.
4. After use, rinse suit thoroughly and hang up to dry.

LAUNDRY INSTRUCTIONS

Hand Wash Cold

Hang Dry

DO NOT REMOVE THIS LABEL

3.3.6 Buckles, tongueless. The buckles for the waist adjustment straps shall be tongueless, 2-bar, 5/8 inch, conforming to type II, style 4, class 1, 3, or 4, construction B of MIL-B-543.

3.3.7 Buckles, slide. The slide buckles for the suspender adjustment shall be buckles, center bar slide, 1-1/4 inch, conforming to type III, style 3, class 1, 3, or 4, construction A of MIL-B-543.

3.3.8 Fasteners, snap. The snap fasteners for attaching the suspenders to the trousers shall be style 2A, finish 2, brass, male and female complete, conforming to MIL-F-10884.

3.4 Design. The jacket is a loose fitting, slip-on type, with long sleeves and back tie belt. The trouser is a loose fitting slip-on type, with attached suspenders, waist adjustment straps, and leg tie tapes (see Figure 1).

3.4.1 Figure. The figure is furnished for information purposes only. When inconsistencies exist between the written specification and the figure, the written specification shall govern.

* 3.5 Patterns. Standard patterns to be used to cut working patterns will be furnished by the Government (see 6.3). The working patterns shall be identical to the Government patterns. Neither the Government patterns nor the working patterns shall be altered in any way, except that additional notches for use during construction are permitted on the working patterns. Also, minor modifications are permitted where necessary when using automatic equipment. These modifications shall not alter the dimensional, serviceability, or appearance requirements cited in the specification. The patterns provide a seam allowance of 3/8 inch for single needle and 1/2 inch for double needle seams.

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* 3.5.1 Pattern parts. The component parts shall be cut from the material specified in accordance with the following pattern parts:

<u>Materials</u>	<u>Nomenclature of pattern parts</u>	<u>Cut parts</u>
Basic material	Jacket	
	Back <u>1</u> /	2
	Front <u>2</u> /	2
	Sleeve	4
	Front facing	2
	Neck facing	1
	Tie belt	2
	<u>Trouser</u>	
	Back	2
	Front	2
	Suspender strap <u>3</u> /	2
	Suspender adjustment strap <u>3</u> /	2
	Waist facing	1

1/ A four piece back may be used to accommodate cloth in widths less than 29 inches. Additional seam allowance is required to meet jacket dimensions stated in Table II.

2/ To accommodate cloth in widths less than 29 inches, the front shall be cut with a sewn-on facing in lieu of the grown-on type reflected on the pattern. Additional seam allowance is required to meet jacket dimensions stated in Table II.

3/ A 2 piece suspender strap or suspender adjustment strap may be used to accommodate a special two (2) needle banding machine as listed in Table I, operation 21e. Additional seam allowances are required to meet suspender strap and suspender adjustment strap dimensions stated in Table I.

3.6 Construction.

* 3.6.1 Stitches, seams, and stitching. Stitch, seam, and stitching types specified in Table I shall conform to the requirements of FED-STD-751. Whenever two or more methods for seam or stitch types are given for the same part of the operation, any one may be used. Where stitch type 401 is used, the looper (underthread) shall be on the inside of the garment. Ends of all seams produced by stitch type 401 shall be caught in other seams or stitching. The bight of overedge stitching shall be 3/16 inch. The guide and knife shall be set to trim only the ravelled ends of the fabric. Unless otherwise specified, all double needled stitching shall be double lapped. The double needle stitching shall be 1/4 (+ 1/16) inch gauge, with the outer row of stitching 1/16 to 1/8 inch from finished edge.

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* 3.6.2 Thread breaks and ends of seams. Ends of all seams and stitchings when not caught in other seams or stitchings shall be backtacked not less than 3/8 inch. The ends of a continuous line of stitching (except label) shall be overlapped not less than 1/2 inch. The ends of the label stitching shall be overlapped not less than 3 stitches. Thread breaks (all stitch types) shall be secured by stitching back of break not less than 1/2 inch. Skipped stitches or thread breaks on 401 seaming may be repaired by using 301 stitch type. When ends of overedge stitching are not caught in other seams or stitching, the ends shall be tacked or extend 1/4 to 3/8 inch.

3.6.3 Stitches per inch. The minimum and maximum number of stitches shall be as specified in Table I.

* 3.7 Manufacturing operations requirements. The suit (jacket and trousers) shall be manufactured in accordance with operation requirements as specified in Table I. The contractor is not required to follow the exact sequence of operations provided the finished suit (jacket and trousers) is identical to that produced by following the sequence listed in Table I. Minor modifications are permitted where necessary when using automatic equipment. These modifications shall not alter the dimensional, serviceability, or appearance requirements cited in the specification.

* 3.7.1 Abbreviations in table of operations. The abbreviations used in Table I are as follows:

Stch	-	Stitch
in	-	inch
Ndl	-	Needle
Bob	-	Bobbin
Lpr	-	Looper
Mchne	-	Machine
Brck	-	Bartack
Comrc1	-	Commercial
smlr	-	similar
Btnhl	-	Buttonhole
incl	-	including
dbl	-	double
chnstch	-	chainstitch

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TABLE I - CONSTRUCTION OF SUIT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD		
					NDL	BOB	LPR
*1.	<u>Cutting suit.</u>						
	a. The suit (jacket and trousers) shall be cut in accordance with patterns furnished which show notches for proper assembling and directional lines for laying of patterns. To accommodate cloth in widths less than 29 inches, the back shall be cut in two pieces and the front shall be cut with a sewn-on facing in lieu of the grown-on type reflected in the pattern. Additional seam allowance is required so jacket will finish to dimensions stated in Table II. The component parts shall be bundled for shade marking.						
2.	<u>Replacement of defective components.</u>						
	During the spreading, cutting, and manufacturing process, components having material defects or damages that are classified as defects in section 4 shall be removed from production and replaced with non-defective components.						
3.	<u>Make jacket back and shoulder pleats.</u>						
	a. The back shall be made of two plies of the basic material.						
	b. When alternate four piece back is used, join the four pieces at the center back, using a double lapped and double stitched seam.	301 or LSc-2 401		10-14	50	50	50 70
	OR						
	As an alternate, the back seam may be safety stitched.	515, 516 or 519	SSa-2	10-14	50	70	(for chnstch) 70 70 (for over- edge stch)

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TABLE I - CONSTRUCTION OF SUIT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	c. The double ply back may be stitched or overedge stitched all around the outside edges, except the bottom edge, catching the shoulder pleats in the stitching. Shoulder pleats shall be formed in accordance with marks indicated on patterns. Pleats shall finish with folded edges of all pleats toward the armholes or all pleats towards the center back.	301 or 503 504 or 602	SSa-1	8-12	50 or 70	50 or 70
4.	<u>Make sleeves.</u>					
	a. Each sleeve shall be made of two plies of the basic material.					
	b. Stitch the two plies of the sleeve all around outside edges.	301	SSa-1	8-12	50	50
	OR					
	c. As an alternative, overedge stitch the two plies of the sleeve all around the outside edges.	503 or 504 or 602	SSa-1	8-12	70	70
5.	<u>Join shoulder seams.</u>					
	a. Join shoulder seams, with fronts over backs, with a double-lapped and double stitched seam, catching the shoulder pleats in the seaming.	301 or 401	LSc-2	10-14	50 50	50 70
	OR					
	As an alternate, the shoulder seams may be safety stitched, catching the shoulder pleats in the seaming.	515 or 516 or 519	SSa-2	10-14	50 (for chnstch) 70 (for over- edge stch)	70 70
	OR					
	b. When backs are overedge stitched, turn in the raw edge of the fronts and double stitch to back, lapping front over back, catching the shoulder pleats in the seaming.	301 or 401	LSb-2 ;	10-14	50 50	50 70

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TABLE I - CONSTRUCTION OF SUIT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL BOB/ LPR	
6.	<u>Set sleeves.</u>					
	a. Join sleeves to armhole, distributing fullness, with a double lapped and double stitched seam.	301 or 401	LSc-2	10-14	50 50 50 70	
	OR					
	As an alternate, the sleeves may be set using a safety stitch, distributing fullness.	515 or 516 or 519	SSa-2	10-14	50 70 (for chnstch) 70 70 (for over-edge stch)	
	OR					
	b. When sleeves are overedge stitched all around, join sleeves to armhole distributing fullness, turning in the raw edge of the front.	301 or 401	LSb-2	10-14	50 50 50 70	
7.	<u>Join side seams of jacket and inseam of sleeves.</u>					
	a. Join side seams and underarm seam in a continuous operation with a double lapped and double stitched seam. Ends of armhole seams shall not be staggered more than 1/2 inch.	301 or 401	LSc-2	10-14	50 50 50 70	
	OR					
	As an alternate, the side seams and underarm seam may be joined in a continuous operation using a safety stitch.	515 or 516 or 519	SSa-2	10-14	50 70 (for chnstch) 70 70 (for over-edge stch)	
	OR					
	b. When back and sleeves are overedge stitched, join side seams and underarm seams in a continuous operation, turning in the raw edges of the fronts.	301 or 401	LSb-2	10-14	50 50 50 70	

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TABLE I - CONSTRUCTION OF SUIT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL BOB/ LPR	
8.	<u>Hem bottom of sleeves.</u>					
	a. Turn up the bottom edge of sleeves as indicated by patterns, turn in the raw edge and stitch 1/16 to 1/8 inch from edge, with the ends of stitching backstitched. The finished hem shall measure 1 (+ 1/8) inch wide.	301	EFb-1	10-14	50	50
	OR					
	b. When sleeves are overedged all around, the sleeve hem may be as above, except the overedge sleeve bottom need not be turned in.	301	EFa-1	10-14	50	50
9.	<u>Make jacket tie belts.</u>					
	a. The finished belts shall measure 32 (+ 1/2) inches long and 1-1/4 (+ 1/8) inches wide.					
	b. Fold tie belts lengthwise, as indicated by pattern marks, turning in the raw edges of one end and the sides and stitch 1/16 to 1/8 inch from edge and continuing along the folded edge.	301	EFp-2	10-14	50	50
	OR					
	c. The tie belts may be made by using a special two needle machine, turning in the raw edges at sides and stitching 1/16 to 1/8 inch from edge with a row of stitching along the length of fold.	301	EFp-2	10-14	50	50
	OR					
	d. The tie belt may be made on a special banding machine which stitches two separate pieces of material together 1 (+ 1/8) inch gauge with raw side edges turned in and each row of stitching 1/16 to 1/8 inch from folded edge.	301 or 401	EFn-2	10-14	50	50
	e. When tie belts are made by using a special machine, one end of the belt shall be finished by turning in the raw edges and stitching 1/16 to 1/8 inch from folded edge.	301	SSc-1	10-14	50	50

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NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
10.	<u>Finish jacket grown-on facing.</u>					
	a. When alternate sewn-on facing is used, join facing to front, face to face.	301 or 401	SSe-2a	10-14	50 50	50 70
	b. Fold facing to finished position and edgestitch 1/16 to 1/8 inch from folded edge.	301	SSe-2b	10-14	50	50
	c. Turn in the back edge of the facing and stitch 1/16 to 1/8 inch from edge, through jacket front.	301	LSd-1	10-14	50	50
	OR					
	d. As an alternate, the back edge may be overedged, and then stitched 1/16 to 1/8 inch from edge, through jacket front.	503 or 504 or 602 and 301	EFa-1 LSd-1	8-12 10-14	70 50	70 50
11.	<u>Attach jacket front and neck facings, tie ends, and label.</u>					
	a. Join front and neck facings at ends.	301 or 401	SSa-1	10-14	50 50	50 70
	b. Stitch facing assembly to jacket at front edge and neck.	301 or 401	SSe-2a	10-14	50 50	50 70
	c. Turn facing to finished position and edgestitch 1/16 to 1/8 inch from folded edge.	301	SSe-2b	10-14	50	50
	d. Turn in the raw edges at end of each front facing and insert the unfinished end of each belt piece not less than 1/2 inch under the facing. Edgestitch 1/16 to 1/8 inch from edge of facing, joining the facing to inside front, catching the ends of the belt in the stitching.	301	LSd-1	10-14	50	50

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TABLE I - CONSTRUCTION OF SUIT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	e. Turn in the back edge of front and neck facings and stitch 1/16 to 1/8 inch from edge, through facing and jacket, simultaneously catching the top edge of the combination label in the stitching. The label shall be centered on the back. When alternate 4 piece back is used, the label may be placed adjacent to the center seam. The three remaining sides of the label shall be stitched 1/8 to 3/16 inch from the edge.	301	LSd-1 and LSbj-1	10-14	50	50
	OR					
	f. As an alternate, the back edge of the facing may be overedge stitched, and then stitched as stated in 11e except the back edge shall not be turned in.	503 or 504 or 602 and 301	EFd-1	8-12	70	70
			LSbj-1	10-14	50	50
	g. The tie belts may be attached to fronts as indicated by patterns, with the unfinished end turned under not less than 1/2 inch and then cross-box stitched.	301	LSd-1 and cross-box stitched	10-14	50	50
12.	<u>Hem bottom of jacket.</u>					
	a. Turn up bottom of jacket, as indicated by pattern marks, turning in the raw edge and stitch 1/8 to 3/16 inch from edge with the finished hem over the fronts. The finished hem shall measure 1-1/4 (\pm 1/8) inches wide.	301	EFb-1	10-14	50	50
	OR					
	b. Overedge stitch bottom of jacket and turn up bottom as above except the overedged bottom shall not be turned in.	503 or 504 or 602 and 301	EFd-1	8-12	70	70
			LSbj-1	10-14	50	50
13.	<u>Buttonhole.</u>					
	Finished appearance - Buttonhole shall be eyelet end, taper bar, square bar or straight bar type. The purling shall finish on the outside.					

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NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL BOB/ LPR
	a. Make a buttonhole, cut length 1-1/4 (+ 1/4) inches long, on left side of back adjacent to side seam as indicated by pattern marks.	Btnhl		70 per btnhl	50 50
	b. The ends of the square bar buttonhole shall be bartacked the width of the bars.	Brtck		21 per brtck	50 50
*14.	<u>Clean jackets.</u>				
	a. Trim all ends of stitching.				
	b. Remove all loose thread.				
	NOTE: Care shall be taken when trimming thread ends that damage to the fabric does not result.				
15.	<u>Join trouser front parts.</u>				
	Join fronts of trousers with double lapped and double stitched seam.	301 or LSc-2 401		10-14	50 50 50 70
	OR				
	As an alternate, the fronts of trousers may be joined with a safety stitch.	515 or SSa-2 516 or 519		10-14	50 70 (for chain stch) 70 70 (for overedge stitch)
16.	<u>Join trouser back parts and right outseam.</u>				
	a. Join back seam of trousers with a double lapped and double stitched seam.	301 or LSc-2 401		10-14	50 50 50 70
	OR				
	As an alternate, the back seam may be joined with a safety stitch.	515 or SSa-2 516 or 519		10-14	50 70 (for chain stch) 70 70 (for overedge stitch)

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NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	b. Join right outseam of trousers using a double lapped and double stitched seam.	301 or 401	LSc-2	10-14	50 50	50 70
	OR					
	As an alternate, the right outseam may be joined using a safety stitch.	515 or 516 or 519	SSa-2	10-14	50 (for chain stch) 70 (for overedge stitch)	70 70
17.	Attach trouser waistband facing. Stitch facing to the top edge of front and back trouser parts.	301	SSe-2(a)	10-14	50	50
18.	Join trouser left side seam and inseams.					
	a. Join left side seam, simultaneously joining the edges of the waistband facing, using a double lapped and double stitched seam.	301 or 401	LSc-2	10-14	50 50	50 70
	OR					
	As an alternate, the left side seam may be joined using a safety stitch.	515 or 516 or 519	SSa-2	10-14	50 (for chain stch) 70 (for overedge stitch)	70 70
	b. Join inseams, using a double lapped and double stitched seam. The crotch seam shall not be staggered more than 1/2 inch.	301 or 401	LSc-2	10-14	50 50	50 70
	OR					
	As an alternate, the inseam may be joined using a safety stitch. The crotch seam shall not be staggered more than 1/2 inch.	515 or 516 or 519	SSa-2	10-14	50 (for chain stch) 70 (for overedge stitch)	70 70

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NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
19.	<u>Finish trouser waistband.</u>					
	a. <u>The waistband facing</u> shall finish 1-1/4 (+ 1/8) inches wide.					
*	b. Stitch waistband facing to top edge of front and back trouser parts.	301	SSe-2(a)	10-14	50	50
	c. Turn waistband facing to inside and edgestitch 1/16 to 1/8 inch from folded edge.	301	SSe-2(b)	10-14	50	50
	d. Turn the bottom raw edge of facing to inside and edgestitch 1/16 to 1/8 inch from folded edge through front and back parts.	301	LSd-1	10-14	50	50
	OR					
	e. Edgestitching may be performed simultaneously using a special two needle machine, 1 (+ 1/8 inch) gauge, with bottom raw edge turned to the inside and the rows of stitching 1/16 to 1/8 inch from folded edges.	301	SSe-2b and LSd-1	10-14	50	50
20.	<u>Attach trouser label.</u>					
	a. Center label over the inside back seam 1/2 inch below finished waistband and stitch all four sides 1/8 to 3/16 inch from the edge.	301	LSbj-1	10-14	50	50
	OR					
	b. Center label over inside back seam catching top edge of label when bottom raw edge of waist facing is turned in (see operation 19c or d). Stitch remaining three sides 1/8 to 3/16 inch from the edge.	301	LSbj-1	10-14	50	50
21.	<u>Make suspenders and suspender adjustment straps.</u>					
	a. The suspender straps shall finish 1-1/8 (+ 1/8) inches wide.					
	b. Fold suspenders and suspender adjustment straps in half lengthwise, turning the raw edges to the inside and stitching 1/16 to 1/8 inch from each edge.	301	EFp-2	10-14	50	50

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NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	c. Turn in the raw edges of one end of each suspender strap and stitch 1/16 to 1/8 inch from edge.	301	SSc-1	10-14	50	50
	OR					
	d. The straps may be made on a special two needle banding machine, 1 (+ 1/8) inch gage, which folds the straps lengthwise, turns the raw edges to the inside and stitches each row of stitching 1/16 to 1/8 inch from folded edge. One end of strap shall be finished as in operation 21c.	301 or 401	EFp-2	10-14	50 50	50 70
	OR					
	e. Each strap may be made with two separate pieces of material on a special two needle banding machine, 1 (+ 1/8) inch gage, with the raw edges turned to the inside and stitched 1/16 to 1/8 inch from each edge. One end of each strap shall be finished as in operation 21c.	301 or 401	EFn-2	10-14	50 50	50 70
22.	Attach suspenders.					
	a. The suspenders shall be positioned on the inside of the back, as indicated by pattern marks, with the ends extending to the bottom edge of the waist facing. Turn under the raw edge of the ends and stitch to back through the waistband, 1/16 to 1/8 inch from edge, forming a cross-boxstitch.	301	LSd- and cross- box- stitch	10-14	50	50
	b. Cross suspender straps as indicated by pattern marks and stitch together forming a cross-boxstitch.	301	Cross-box stitch	10-14	50	50
	c. The finished suspender straps shall measure 48 (+ 1) inches long.					

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TABLE I - CONSTRUCTION OF SUIT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
23.	<u>Make suspender adjustment strap and buckle assembly.</u>					
	a. The finished suspender adjustment strap shall measure 5-1/4 (+ 1/4) inches in length.					
	b. Fold strap across its width, threading one end over and under the center bar of the adjustment buckle, with one end 1/2 to 3/4 inch shorter than the other.					
	c. Securely stitch through both plies of the strap as close to center bar as possible, with ends of stitching backstitched.	301	SSv-1	10-14	50	50
	d. Fold the long end of strap over the short end, turning in the end and stitch 1/16 to 1/8 inch from edge, with the ends of stitching securely backstitched.	301	SSl-1	10-14	50	50
24.	<u>Attach snap fasteners.</u>					
	a. Attach the socket part of the snap fastener through each double suspender adjustment strap assembly in the middle of its length with the socket on the inside as indicated by pattern marks.					
	b. Attach two stud parts of the snap fastener on the outside of trouser front; one each positioned in the center of the waistband, as indicated by pattern marks.					
25.	<u>Make and attach waist adjustment straps.</u>					
	a. The waist adjustment straps shall consist of a short buckle strap positioned on front part with buckle toward the side seam and a long adjustment strap on the back part as indicated by pattern marks.					

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TABLE I - CONSTRUCTION OF SUIT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD	
					NDL	BOB/ LPR
	b. Thread one end of the buckle strap over the second bar of the buckle, with the underfold of strap $5/8$ ($\pm 1/8$) inch less than the upper fold. Fold under the end of the upper strap over the end of the lower and boxstitch to fronts, boxstitching to finish $5/8$ ($\pm 1/8$) inch in length.	301	EFy- box- stitched	10-14	50	50
NOTE:	For handling purposes, the buckle may be secured to the strap with a single line of stitching $3/8$ to $1/2$ inch from outer bar.	301	SSa-1	10-14	50	50
	c. Turn under one end of adjustment strap and stitch $1/16$ to $1/8$ inch from edge, with the stitching continuing around each edge, forming a boxstitch $5/8$ ($\pm 1/8$) inch in length. Thread unhemmed end of adjustment strap through buckle as far as possible.	301	EFb- box- stitched	10-14	50	50
	d. Turn under the unhemmed end of the adjustment strap and stitch to trouser through waistband as indicated by pattern marks forming a boxstitch $5/8$ ($\pm 1/8$) inch in length. The finished strap shall measure $6-1/2$ ($\pm 1/2$) inches.	301	LSd- box- stitched	10-14	50	50
OR						
*	e. As an alternate, two bartacks may be used instead of the boxstitching in operations 25b, c and d. The bartacks shall be set within $1/2$ inch of one another, and shall not be less than $1/2$ inch in length.	Brck		28 per brck	50	50
26.	<u>Hem trouser legs.</u>					
	a. Hem trouser legs as indicated by pattern marks with the raw edge turned in.	301	EFb-1	10-14	50	50
	b. Hem shall finish $3/4$ ($\pm 1/8$) inch wide.					

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TABLE I - CONSTRUCTION OF SUIT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL BOB/ LPR	
27.	<u>Attach leg tie tapes.</u>					
	a. The leg tie tapes shall measure 38 (+ 1) inches long.					
	b. Attach middle of the tape to the outside of back part at leg bottom as indicated by pattern marks, tacking the tape by backstitching or bartacking.	301 or brtck	LSd-1	10-14 21-28 per tack	50 50	50 50
28.	<u>Attach suspender adjustment straps.</u> Snap socket of suspender adjustment strap to stud on trouser front.					
*29.	<u>Clean trousers.</u>					
	a. Trim all ends of stitching.					
	b. Remove all ends of stitching.					
	NOTE: Care shall be taken when trimming thread ends that damage to the fabric does not result.					

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3.8 Measurements. The finished suit shall conform to the measurements shown in Table II (jackets) and Table III (trousers).

Table II - Measurement of jacket

Measurement	Inches	Tolerance
One half chest <u>1/</u>	28	+ 3/4
Back length <u>2/</u>	28	+ 3/4
Sleeve inseam <u>3/</u>	20-1/2	+ 1/2

1/ One half chest - the chest shall be measured with the jacket smoothed out flat with fronts folded one over the other and extended to side seam. Measure across front at base of armhole from folded edge to folded edge.

2/ Back length - the back length shall be measured from the top of neck facing at middle of back to bottom of jacket hem.

3/ Sleeve inseam - the sleeve inseam shall be measured from the base of armhole to bottom of sleeve hem along the inseam.

Table III - Measurement of trouser

Measurement	Inches	Tolerance
One half waist <u>1/</u>	24	+ 3/4
One half seat <u>2/</u>	28	+ 3/4
Inseam <u>3/</u>	31	+ 3/4
One half leg bottom <u>4/</u>	11	+ 1/2

1/ One half waist - with the trouser laid flat and smoothed out, measure across middle of waistband from folded edge to folded edge.

2/ One half seat - with the trouser laid flat and smoothed out, measure across seat 12-1/2 inches down from top of waistband, from folded edge to folded edge.

3/ Inseam - the inseam shall be measured along the trouser inseam from crotch seam to bottom of leg hem.

4/ One half leg bottoms - smooth trouser leg from inseam to outseam and measure across width of leg bottom from seam to seam.

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

4. QUALITY ASSURANCE PROVISIONS

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* 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 (examinations and tests) 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 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 ensure supplies and services conform to prescribed requirements.

* 4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.1.2 Certificate of compliance. 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:

1. First article inspection (see 4.3).
2. Quality conformance inspection (see 4.4).

4.3 First article inspection. The first article submitted in accordance with 3.2 shall be inspected as specified in 4.4.2 for compliance and design, construction, workmanship, and dimensional requirements.

4.4 Quality conformance inspection. Sampling for inspection shall be performed in accordance with MIL-STD-105, except where otherwise indicated.

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

4.4.2 Examination of the end item. Examination of the end item shall be in accordance with 4.4.2.1 and 4.4.2.2. The sample unit for these examinations shall be one suit (jacket and trouser). The lot size shall be expressed in units of one suit (jacket and trouser). The applicable inspection levels and acceptable quality levels (AQL's) shall be in accordance with 4.4.2.3.

4.4.2.1 Visual examination. The suit (jacket and trouser) shall be examined for defects in color, design, material, construction, workmanship, and marking and the defects classified in accordance with the list below:

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Defects	Classification	
	Major	Minor
MATERIAL DEFECTS AND WORKMANSHIP DAMAGES		
a. Hole, cut, tear, smash, scorched area, drill hole, or open place:		
1. On outside (longest dimension in any direction):		
(a) - up to 1/4 inch inclusive		X
(b) - more than 1/4 inch	X	
2. On inside of jacket, back panel, any		X
b. Misweave, area of no dye penetration, needle chew, thin place, visible mend, missing yarn, or broken yarn - more than 1/2 inch (largest dimensions in any direction)		
- on outside		X
c. Knot or slub on outside		X
d. Permanent fold, pleat, or crease in cloth (when caught in seaming or stitching):		
- on outside		X
e. Loose yarn, snagged thread, coarse yarn or woven in waste: more than 1 inch (largest dimension in any direction):		
- on outside		X
COMPONENTS AND ASSEMBLY		
a. Any component part or required operation omitted (unless otherwise classified herein)	X	
b. Any component not as specified (type, size, color, etc).	X	
c. Any operation not as specified (unless otherwise classified herein)		X
d. Any component part noticeably twisted, distorted, or puckered, affecting appearance		X
CUTTING		
a. Any component part not cut in accordance with specified pattern, directional lines on patterns or not in accordance with specification requirements	X	

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Defects	Classification	
	Major	Minor
CLEANNESS		
a. Any non-removable spot or stain on outside, clearly noticeable, affecting appearance		X
b. Thread ends not trimmed or loose thread not removed throughout jacket or trouser		X
SEAMS AND STITCHING		
a. Accuracy of seaming		
1. Part of suit caught in any unrelated stitching operation	X	
2. Seam noticeably puckered, twisted, or pleated affecting appearance or serviceability		X
3. End of stitching when not caught in another seam or stitching backtacked less than 3/8 inch		X
4. Ends of a continuous line of stitching overlapped less than 1/2 inch		X
5. Needle perforations visible on outside		X
6. Thread breaks not secured or stitching back of the break less than 1/2 inch		X
7. Any seam restitched damaging cloth to a degree where it may tear along the row of stitching	X	
8. Restitched seam not neatly accomplished		X
9. Shade of thread used on outside not as specified		X
b. Stitching margin		
1. Edge or top stitching sewn too close to edge resulting in serious damage to cloth	X	
2. Irregular or not within range specified or varied more than 1/8 inch when no range is specified (score only when condition exists on more than 1/2 the length of seam)		X
c. Seam allowance width not as specified by more than 1/16 inch (score only when condition exists on more than 1/2 the length of seam)		X

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Defects	Classification	
	Major	Minor
d. Open seam (skipped or broken stitches)		
1. On outside:		
(a) - less than 3/4 inch		X
(b) - 3/4 inch or more	X	
2. On inside:		
- 3/8 inch or more		X
e. Runoff		
1. On joining seams, score as open seam		
2. Edge or top stitching more than 1/4 inch		X
f. Raw edges		
1. On outside:		
(a) - less than 3/4 inch		X
(b) - 3/4 inch or more	X	
2. On inside:		
- 3/4 inch or more		X
g. Seam and stitch type		
1. Any line of stitching omitted	X	
2. Not specified seam or stitch type		X
3. Looper thread on outside (when 401 stitch is used)		X
4. Any line of stitching not beginning or ending where specified		X
h. Stitch tension		
1. Loose tension resulting in loosely exposed loops of lower or top thread (score only when condition exists on more than 1/2 the length of seam)		
(a) affecting serviceability or appearance, seriously	X	
(b) affecting serviceability or appearance, not seriously		X
2. Tight tension (stitches break when normal strain is applied in the direction of the seam or stitching)	X	

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Defects	Classification	
	Major	Minor
i. Stitches per inch (score only when condition exists on more than 1/2 the length of seam):		
1. More than the maximum specified		X
2. Less than the minimum specified by two or more stitches		X
j. Bartack, backtack, or tacking:		
Missing, insecure, misplaced, not serving intended purpose or not as specified size or type		X
LABEL		
a. Missing, incorrect, or illegible		X
b. Not stitched on all four sides		X
c. Positioned off center by more than 1 inch		X
d. Stitching through the printing		X
BUTTONHOLE		
a. Misplaced or not positioned as specified		X
b. Stitches not securely caught in fabric (stitches can be pulled away from fabric)	X	
c. Uncut buttonhole		X
d. One or more broken or continuous skipped stitches in buttonhole		X
e. Cut length less than 1 inch or more than 1-1/2 inches		X
f. Constructed with the purling on the underside		X
BUCKLES		
a. One or both missing, broken, defective or not specified type, size, color or finish	X	
b. Rough finish		X
c. Sharp edges or corners		X

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Defects	Classification	
	Major	Minor
<u>JACKET</u>		
ARMHOLE AND SLEEVE		
a. Sleeve constructed with one ply of material	X	
b. Bottom hem of sleeve less than 7/8 inch or more than 1-1/8 inches wide		X
c. Armhole seam staggered by 1/2 inch or more (measure from center of seam to center of seam)		X
TIE BELT		
a. Less than 31-1/2 inches or more than 32-1/2 inches long		X
b. Less than 1-1/8 inches or more than 1-3/8 inches wide		X
c. Belts out of alignment at joining to fronts by more than 1/2 inch		X
d. Raw edge on free ends not turned under when stitched		X
e. Attachment of belt ends (when inserted under facing construction is used):		
1. Unfinished ends of belts not securely stitched or not tacked to ends of facing		X
2. Unfinished ends of belts inserted less than 1/2 inch under facing		X
f. Attachment of belt ends (when cross-box stitch construction is used)		
1. Turn under less than 1/2 inch		X
2. Ends not boxstitched or stitched on four sides		X
3. One or both diagonal rows of stitching from corner to corner omitted		X
FRONT AND NECK FACINGS		
a. Fullness or twists on fronts or along neck of jacket between rows of stitching affecting appearance or serviceability		X
b. Facings irregular in width by 1/4 inch or more		X

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Defects	Classification	
	Major	Minor
BACK		
a. Constructed with one ply of material	X	
b. Back overlapping front at shoulder seam (when applicable)		X
SHOULDER PLEATS		
a. Placed at unequal distance from both armhole seams by more than 1/4 inch		X
b. Pleats not formed in same direction		X
BOTTOM HEM		
Less than 1-1/8 inches or more than 1-3/8 inches wide		X
<u>TROUSERS</u>		
SUSPENDERS		
a. Not cross-boxstitched to inside back of trousers		X
b. Raw edge on free end not turned under		X
c. Less than 47 inches or more than 49 inches long		X
d. Less than 1-1/8 inches or more than 1-3/8 inches wide		X
e. Not securely cross-boxstitched together		X
f. Back ends positioned more than 1/8 inch below or more than 1/4 inch above bottom edge of band		X
g. Center of back ends of suspenders placed at unequal distance from back seam by more than 1/2 inch		X
h. Raw edge not turned under when stitched to backs of trousers		X
i. One or both rows of diagonal rows of stitching from corner to corner of cross-boxstitching omitted		X
SUSPENDER ADJUSTMENT STRAPS		
a. Less than 5 inches or more than 5-1/2 inches long		X
b. Less than 1-1/8 inches or more than 1-3/8 inches wide		X

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Defects	Classification	
	Major	Minor
c. Strap not securely stitched to center bar of buckle		X
d. Raw edge of long end of strap not turned under, not folded over raw edge of short ends, or not securely stitched		X
SNAP FASTENERS		
a. Any missing, loose, broken, defective or mismatched	X	
b. Not specified type, size, or finish		X
c. One or more clinched too tightly cutting surrounding fabric	X	
d. Snap fasteners reversed, i.e., socket on trousers and stud on strap	X	
e. Socket not attached through double fold of strap, or socket not on inside of strap	X	
f. Stud attached to inside of front	X	
g. Socket off center with width of strap by more than 1/8 inch		X
h. Stud off center of band by 3/16 inch or more		X
i. Unequally spaced on each front by more than 3/8 inch from front seam		X
WAIST ADJUSTMENT STRAPS		
a. General		
1. Webbing not specified type, shade or size	X	
2. Improperly or not securely boxstitched		X
3. Position of strap not as specified		X
4. Boxstitch less than 1/2 inch or more than 3/4 inch in length		X
b. Buckle straps		
1. Strap not threaded over second bar of buckle	X	
2. Buckle end not toward side seam	X	
3. Buckle reversed - strap stitched to trousers with underside of buckle on outside	X	

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Defects	Classification	
	Major	Minor
4. Raw edge on long end of strap not folded over raw edge of short end when strap is stitched to trousers		X
c. Adjustment straps		
1. Raw edge on free end not turned under		X
2. Not centered on waistband by 3/16 inch or more		X
3. Less than 6 or more than 7 inches long		X
4. Twisted through buckle		X
WAISTBAND		
a. Less than 1 inch or more than 1-1/4 inches wide		X
b. Irregular in width by 1/4 inch or more		X
BACK		
Back overlapping front at inseam or side seam (when applicable)		X
BOTTOM HEM		
Less than 5/8 inch or more than 7/8 inch wide		X
CROTCH		
Crotch seam staggered by more than 1/2 inch (measure from center of seam to center of seam)		X
TIE TAPES		
a. Not specified type, color, or width		X
b. Not tacked or bartacked to leg bottom		X
c. Tacking or bartacking through tapes caught through one ply of material		X
d. Not positioned on back of leg bottom		X
e. Cut length less than 37 inches or more than 39 inches long		X
f. Ends of tape not equal distance from tack by more than 1 inch		X

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4.4.2.2 Dimensional examination. The suit (jacket and trouser) shall be examined for defects in dimensions in accordance with the following:

a. Any measurement deviating from nominal dimensions and tolerances specified shall be scored as a measurement defect.

b. Sleeve or trouser inseams unequal in length by 1/2 inch or more shall be scored as a measurement defect.

4.4.2.3 Inspection levels and acceptable quality levels. The inspection levels and acceptable quality levels (AQL's) expressed in defects per 100 units, for visual and dimensional examinations shall be as follows:

	<u>AQL's</u>	<u>Inspection level</u>
For visual examination in 4.4.2.1		
Major	2.5	II
Total (Major and Minor combined)	15.0	II
For dimensional examination in 4.4.2.2		
One class	4.0	S-3

* 4.4.3 Examination of packaging requirements. An examination shall be made to determine that packaging, packing, and marking comply with Section 5 requirements of this specification. Defects shall be scored in accordance with the list below. The sample unit shall be one shipping container fully prepared for delivery. Defects of closure listed below shall be examined on shipping containers fully prepared for delivery. The lot size shall be on the number of shipping 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.

<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.
Workmanship	Inadequate application of components, such as: incomplete closure of polyethylene bag or container flaps, loose strapping, improper taping, inadequate stapling, bulged or distorted container.
Content	Number of suits per shipping container is more or less than required. <u>1/</u>

1/ For this defect, two shipping containers in sample shall be examined.

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4.4.4 Palletization examination. An examination shall be made to determine that the palletization complies with the section 5 requirements. Defects shall be scored in accordance with the list below. The sample unit shall be one palletized unit load fully packaged. The lot size shall be the number of palletized unit loads in the end item inspected lot. The inspection level shall be S-1 and the AQL, expressed in terms of defects per hundred units, shall be 6.5 in accordance with MIL-STD-105.

<u>Examine</u>	<u>Defect</u>
Finished dimensions	Length, width, or height exceeds specified maximum requirements.
Palletization	Pallet pattern not as specified. Interlocking of loads not as specified. Load not bonded with required straps as specified.
Weight	Exceeds maximum load limits.
Marking	Omitted, incorrect, illegible, of improper size, location, sequence, or method of application.

5. PACKAGING

5.1 Preservation-packaging. Preservation-packaging shall be level A or C as specified (see 6.2).

5.1.1 Level A. Each suit shall be folded as follows:

a. Fold trousers in half lengthwise with tapes and suspenders concealed inside the fold. Fold in half again by bringing bottom of trouser up to the waist.

b. Place jacket out flat with belt untied and fold fronts toward center. Fold sleeves across chest, one over the other.

c. Position folded trousers lengthwise over the sleeves with one edge adjacent to the shoulder line.

d. Bring bottom edge of jacket up over the trousers so that completely folded suit measures approximately 23 x 14-1/2 inches.

Each suit shall then be packaged in a snug-fitting clear polyethylene film bag having a thickness of 0.003 inch (+ 20 percent tolerance). The 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 bag shall be heat sealed with the seal made as close as possible to the open end. A 1/4 inch diameter hole shall be made at one corner of the polyethylene bag to allow excess air to escape. As an alternate, the polyethylene bag may be the tuck-in overlap type, in which a heat seal closure and vent hole are not required.

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5.1.2 Level C. Each suit shall be packaged to afford adequate protection against physical damage during shipment from the contractor to the first receiving activity. The package and the quantity per package shall be the same as that normally used by the contractor for retail distribution.

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

* 5.2.1 Level A. Fifteen (15) suits, packaged as specified in 5.1, shall be packed in a fiberboard shipping container assembled, closed, and reinforced conforming to type CF, class weather-resistant, variety DW, grade V15c, size 3A of MIL-B-17757. The fiberboard for the box liner shall conform to type CF, class domestic of MIL-B-17757. Level A packages shall be packed flat, fifteen in depth within a shipping container. Each container shall have the contents completely covered on the top and bottom with a sheet of commercial grade kraft paper.

* 5.2.2 Level B. Fifteen (15) suits, packaged as specified in 5.1, shall be packed in a fiberboard shipping container assembled and closed conforming to type CF, class domestic, grade 275, variety DW, size 3A of MIL-B-17757. The fiberboard for the box liner shall conform to type CF, class domestic of MIL-B-17757. Level A packages shall be packed flat, fifteen in depth within a shipping container. Each container shall have the contents completely covered on the top and bottom with a sheet of commercial grade kraft paper.

5.2.3 Level C. Item packaged, as specified in 5.1, shall be packed in a manner to insure carrier acceptance and safe delivery at destination at the lowest transportation rate for such supplies. The quantity per shipping container shall be the same as that normally used by the contractor for retail distribution. Containers shall comply with the US Postal Service Manual, Uniform Freight Classification Rules or National Motor Freight Classification Rules, as applicable.

* 5.3 Marking. In addition to any special marking required by the contract or order, interior packages, shipping containers, and palletized unit loads shall be marked in accordance with MIL-STD-129.

* 5.3.1 Polyethylene bagged packages. Polyethylene bagged packages 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 adhering to the bag so as to permit ready identification.

* 5.4 Palletization. When specified (see 6.2) item packed as specified shall be palletized on a 4-way entry pallet in accordance with load type 1A of MIL-STD-147. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means C, K, and L or O or P. Pallet pattern shall be in accordance with the appendix of MIL-STD-147.

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The pallet shall be 4-way, Type IV; Type V, Class 1, Size 2; or Type VIII, fabricated from wood group I, II, III or IV, Grade A of NN-P-71, or 4-way, Style 1, Size A, Type I, Class 1 fabricated from wood groups specified of MIL-P-15011. Interlocking of loads shall be effected by reversing the pattern of each course. If the container is of a size which does not conform to any of the patterns specified in MIL-STD-147, the pallet pattern used shall be approved by the contracting officer.

* 5.5 MIL-STD-2073. When specified (see 6.2), Preservation and Packing shall be in accordance with MIL-STD-2073-1 and MIL-STD-2073-2.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The suit is intended for wear over the suit, protective, impermeable, M-3, as a supplementary garment for cooling purposes.

* 6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification
- b. Item required (see 1.2)
- c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- d. When first article sample is required (see 3.2). The item will be tested and should be a first article sample. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, quantity, testing and approval of the first article.
- e. Levels of packaging and packing required (see 5.1 and 5.2)
- f. When palletization is required (see 5.4)
- g. When all packaging data is to be found in MIL-STD-2073-1 and MIL-STD-2073-2 (see 5.5)

6.3 Samples and patterns. For access to samples and patterns, address the procuring activity issuing the invitation for bids (see 3.1 and 3.5).

6.4 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of this 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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* 6.6 Subject term (key word) listing.

Cover, Toxicological Agents Protective Cooling
Jacket, Cooling
Suit, Cooling
Suit, Cotton Birdseye Cloth
Trouser, Cooling

Custodian:
Navy - NU
Air Force - 99

Preparing Activity:
Navy - NU

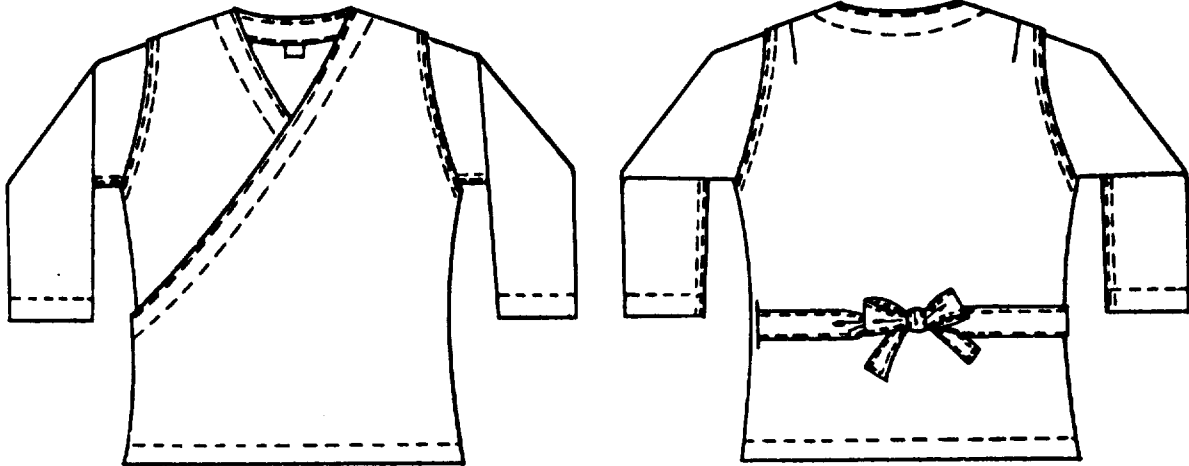
Review Activity:
DLA-CT
Air Force - 82

Project No. 8415-0671

User Actitivity:
Navy - MC, OS
Air Force - 11

MIL-S-12227F

JACKET



TROUSERS

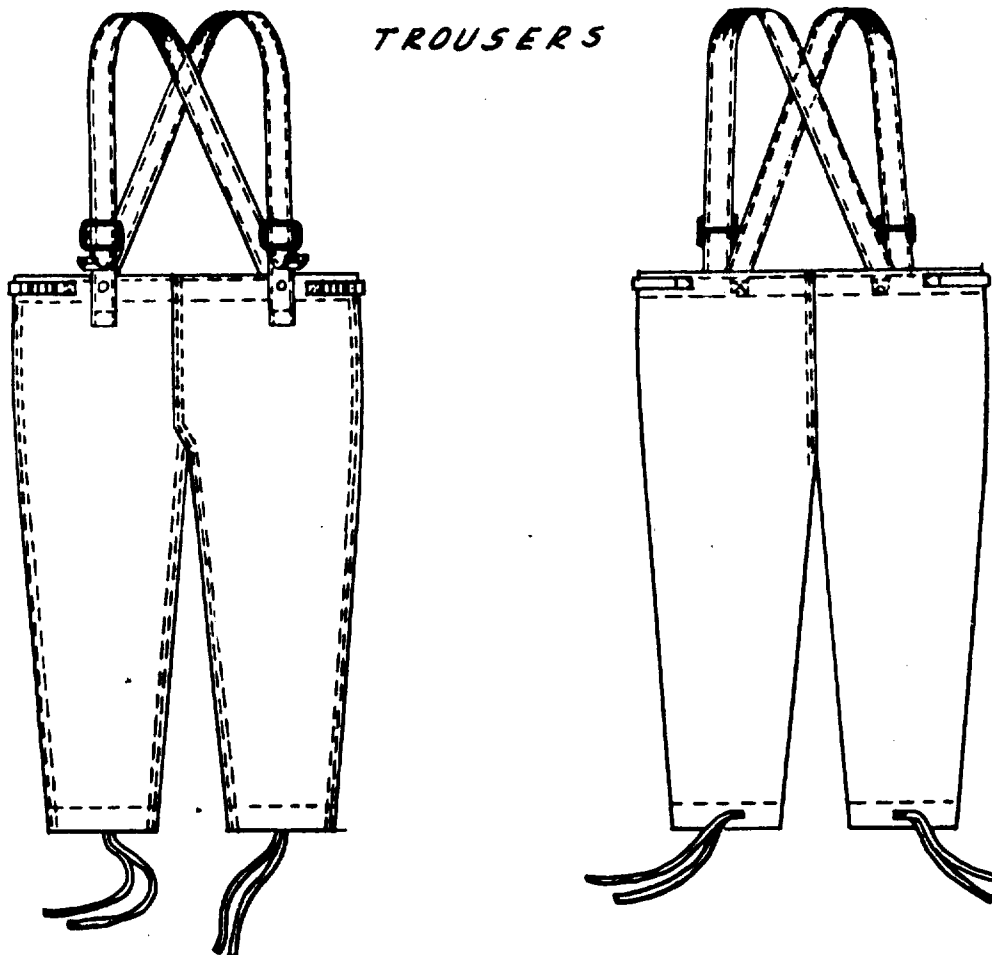


FIGURE 1 - SUIT, TOXICOLOGICAL AGENTS PROTECTIVE COVERALLS, COOLING

INSTRUCTIONS: In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (*DO NOT STAPLE*), and nailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

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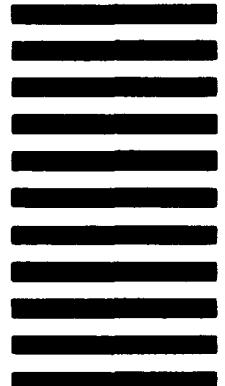
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21 Stratmore Road, Natick, Mass. 01760



STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL*(See Instructions – Reverse Side)*

1. DOCUMENT NUMBER MIL-S-12227F		2. DOCUMENT TITLE SUIT, TOXICOLOGICAL AGENTS PROTECTIVE COVER, COOLING	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
b. ADDRESS (Street, City, State, ZIP Code)		<input type="checkbox"/> VENDOR	
		<input type="checkbox"/> USER	
		<input type="checkbox"/> MANUFACTURER	
		<input type="checkbox"/> OTHER (Specify): _____	
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)	