MIL-R-38213B(USAF)
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SUPERSEDING
MIL-R-38213A(USAF)
28 May 1965

MILITARY SPECIFICATION

RAINCOAT, MAN'S, LIGHTWEIGHT, BLUE

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

1. SCOPE

1.1 Scope This specification covers the requirements for a man's lightweight, blue raincoat

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

Schedule of lengths and sizes

Short	32	34	36	38	40	42	44	46	48	
Regular	32	34	36	38	40	42	44	46	48	50
Long		34	36	38	40	42	44	46	48	
Extra Long		34	36	38	40	42	44	46	48	

2. APPLICABLE DOCUMENTS

2.1 Government documents

2.1.1 Specifications and standards. Unless otherwise specified, the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation, form a part of this specification to the extent specified herein

SPECIFICATIONS

FEDERAL

A-A-203	Paper, Kraft, Untreated
U-T-30	Talcum Powder
V-B-871	Button, Sewing Hole, and Button, Staple, (Plastic)
V-T-276	Thread, Cotton

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: ASD/ENES, Wright-Patterson AFB OH 45433 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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

MILITARY

MIL-C-297	Cloth, Interlining, Cotton Warp, and Spun Hair-Wool or Rayon Filling
MIL-C-3395	Cloth, Netting; Nylon or Polyester
MIL-T-3530	Thread and Twine; Mildew Resistant or Water Repellent Treated
MIL-C-14366	Cloth, Coated, Nylon, Twill (One Side Coated)
MIL-C-43718	Cloth, Twill, Polyester; Polyester and Cotton; Polyester and Rayon

STANDARDS

FEDERAL

FED-STD-175	Adhesives, Methods of Testing
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-1393	Provisions for Evaluating Quality of Coated Fabric Raincoats

(Copies of specifications and standards 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 Other publications. The following documents form a part of this specification to the extent specified herein. The issues of the document which is indicated as DoD adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3951	Standard Practice for Commercial Packaging

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race St., Philadelphia PA 19103.)

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

THE COLOR ASSOCIATION OF THE U.S., INC.

Department of Defense (DoD) Standard Shades for Buttons 1966

Department of Defense (DoD) Standard Color Card of America

(Application for copies should be addressed to The Color Association of the U.S., Inc., 24 East 38th St., New York NY 10016.)

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

3. REQUIREMENTS

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

3.2 Materials

3.2.1 Coated fabric. The coated fabric shall conform to type I of MIL-C-14366 except that the cloth shall have good colorfastness to crocking and shall be tested for crocking in accordance with test method 5651 of FED-STD-191. The color of the fabric shall match USAF Color Shade No. 1157 (see 6.3).

3.2.2 Nylon cloth. The lining for the body, the sleeves, and the back yoke shall be nylon taffeta cloth. The finished cloth shall be clean, evenly woven and shall conform to the quality and grade of product specified herein.

3.2.2.1 Yarns. Warp and filling yarns of the nylon taffeta cloth shall be first quality; 70 denier; bright, semibright, or semidull; continuous filament yarns with 34 filaments and with sufficient twist to meet the requirements of this specification. The fibers shall be nylon 66 (polyhexamethylene adipamide), having a minimum melting point above 450°F when tested as specified

3.2.2.2 Physical requirements. The finished nylon cloth shall conform to the requirements listed in table I.

TABLE I. Physical requirements of nylon cloth.

Characteristic	Requirement
Weave	Plain
Weight, ounces per square yard	1.9 ±0.15
Yarns per inch	
Warp	108 minimum
Filling	71 minimum
Breaking strength, pounds	
Warp	125 minimum
Filling	85 minimum
Tearing strength, pounds	
Warp	5 minimum
Filling	3.5 minimum

3.2.2.3 Color. The color of the cloth shall match USAF Color Shade No. 1157 (see 6.3). Unless otherwise specified, the cloth shall be dyed with applicable premetallized or acid dyes.

3.2.2 3 1 Matching The color shall match the standard shade sample (see 6.3) under artificial daylight having a color correlated temperature of 7000 ±500 kelvins and shall be a good approximation to the standard sample under incandescent lamplight at 2850 ±100 kelvins.

3.2 2 3 2 Colorfastness The dyed cloth shall have good colorfastness to laundering, perspiration, and crocking when tested as specified in 4.2.1.

3.2.2.4 Nonfibrous material. The starch and protein content of the cloth shall not exceed 1 percent when tested as specified in 4.2.1.

3.2.2.5 Shrinkage. The cloth shall be preshrunk and shall not shrink more than 2 percent in the direction of either the warp or filling when tested as specified in 4.2 1.

3.2.3 Interlining The material for interlining the lapel facing and collar shall conform to type II of MIL-C-297. The material used for interlining the shoulder loops, sleeve tabs, front facing tab, pocket welts, front edges and for lining pockets shall conform to class 1 of MIL-C-43718. The color for all interlinings shall be black

3.2.4 Nylon netting material. The material for ventilating the back shall conform to type I of MIL-C-3395. The color shall be natural. The requirements for colorfastness, mildew resistance, and loss in breaking strength after exposure for 240 hours shall not apply.

3.2.5 Thread. The thread for seaming, stitching, and buttonhole making shall conform to type IA3, ticket No. 50, 3 ply and type IA3, ticket No. 60, 3 ply of V-T-276, and the thread for sewing on buttons shall conform to types IA3, ticket No. 20, 4 ply of V-T-276 All colored thread shall be vat dyed to match the material upon which it is sewn and shall show good colorfastness to laundering and weathering The thread shall have a water-repellent finish conforming to type II, class 1 of MIL-T-3530. The thread or fabric shall not be lubricated by any means prior to or during seaming.

3.2.6 Gimp. The gimp for reinforcing the buttonholes shall match the color of the basic fabric and shall conform to type I, size No. 8 of V-T-280. The gimp shall have a good colorfastness to laundering and shall have a water-repellent finish conforming to type II, class 1 of MIL-T-3530.

3 2 7 Buttons. The buttons shall conform to type II, class D, sizes 24 line, 30 line, and 45 line, styles 20 or 21, and size 18 line, style 15 of V-B-871. The buttons shall have a glossy finish, and the color of the buttons shall approximate blue USAF Color Shade No 1157 (see 6.3).

3.2.8 Eyelets. Ventilating eyelets shall be made of brass or aluminum The outside diameter shall be 0.24 to 0.32 inch for the top flange, and the inside diameter shall be 0.12 to 0 20 inch. The eyelets shall be enameled to match the basic fabric.

3.2.9 Seam tape. The seam tape shall be of basic fabric, bias cut 1 ±1/8 inch wide.

3.2.10 Seam sealant. The seam sealant shall be a virgin polyvinyl butyral, plasticized with phosphate or phthalate ester plasticizers exclusively and may be pigmented or filled to aid in shortening the drying time. The sealant when applied to the raincoat shall produce a stripe that does not differ materially in color from the surrounding area. The seam sealant when used in combination with the coated fabric being used shall comply with the requirements specified in table II when tested as specified in 4.3.1.

TABLE II. Physical requirements of seam sealant.

Characteristic	Requirement	
	Maximum	Minimum
Hydrostatic resistance of seam sealant		No leakage 1/
Blocking resistance (160°F) scale rating	No. 3 of 5872 (FED-STD-191)	
Resistance to low temperature		Pass 2/
Stiffness		
Initial, centimeters	7	
After heat aging, centimeters 2/	10	
Solids content, percent		20

1/ Leakage shall be defined as the appearance of water at three different places in any portion of the 4-1/2-inch diameter test areas.

2/ The seam sealant shall show no cracking, no flaking, and no separation from the fabric.

3.2.11 Adhesive for reinforcement patches, seam tape, and adhering of yoke to back. The adhesive used for adhering of reinforcement patches, seam tape and adhering of yoke to the back of the raincoat shall be a buna-N rubber base adhesive conforming to the requirements of table III when tested as specified in 4.3.2.

TABLE III. Physical requirements of adhesive.

Characteristic	Requirement	
	Maximum	Minimum
Adhesive		
Initial, pounds per 2 inches		4
After aging, pounds per 2 inches		2.5
Flexibility		
Initial, centimeters	15	
After aging, centimeters	16	

3.2.12 Seam dusting material. All sealant and exposed reinforcement adhesive areas shall be dusted with talcum powder conforming to U-T-30.

3.2.13 Labels. Each raincoat shall have a size label and a combination identification, instruction and personal label conforming to DDD-L-20. The raincoat is not intended to be laundered. The combination identification, instruction and personal label is only required to be fast to the laundering transference test specified in DDD-L-20, and the colorfastness of the label is not required. If the label is clearly legible after laundering, it shall be satisfactory.

3.2.13.1 Size label. The size label shall show the size of the raincoat in black letters and numerals and shall conform to type VI, class 2 of DDD-L-20. The length may be abbreviated as follows: S (Short), R (Regular), or L (Long). A sufficient margin shall be allowed at the top of the label so that the inscription will be visible when the label is sewn in the collar.

3.2.13.2 Combination label. The combination identification, instruction and personal label shall conform to type VI, classes 10 and 15 of DDD-L-20. The combination label shall bear the following inscription:

Name:
Service No.:
Raincoat, Man's, Lightweight, Blue
MIL-R-38213B(USAF)
Contract No.: DLA-100-00-0-0000 (Example)
Stock No.: 8405-00-000-0000 (Example)
Supplier's Name:

CLEANING INSTRUCTIONS

1. Do not dry clean, launder, or press.
2. Remove spots by rubbing gently with mild soap and water or with mild detergent and water.
3. When not in use, hang raincoat at full length to remove wrinkles.

3.3 Design. The raincoat shall be single breasted and shall have a button fly front, a button tab closure on the lower left facing, shoulder loops, a convertible collar with a collarstand, welt style pockets with pass-thru, and upper back storm shield. The raincoat shall be quarterlined and the sleeves lined with nylon taffeta cloth.

3.3.1 Patterns. Standard patterns, which provide a 3/8-inch seam allowance for regular and double-lapped seams, 5/8 inch for lining seams, 3/8 inch for armhole seams from step to step, 3/16 inch at the bottom of the armhole seams from step to step and a 1/4 inch for joining netting to the back, will be furnished by the Government (see 6.3). 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 supplier's working patterns. Seam allowances shall be in accordance with those shown, unless otherwise specified. The working patterns shall be identical to the standard patterns and the corners shall not be cut off.

3.4 Construction. The construction of the raincoat shall be in accordance with table IV. Unless otherwise specified herein, the manufacturer will not be required to follow the exact sequence of operations as listed therein.

3.4.1 Stitches, seams, and stitching. All stitches, seams and stitching shall conform to FED-STD-751. The type of seam, stitching, and stitches per inch shall be as specified in table IV. Seam allowances shall be maintained with seams sewn so that no raw edges, run-offs, pleats, puckers 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 raincoat. Except that the lower thread shall be 60/3 ply when sewing on buttons and when stitch type 401 is used, the upper and lower threads for sewing shall be 50/3 ply.

3.4.1.1 Thread breaks and ends of seams. Thread breaks of all stitch types shall be secured by stitching back of the break 1/2 to 1 inch. Ends of seams produced with stitch type 301, if not caught in other seams or stitching, shall be securely backtacked.

3.4.1.2 Stitches per inch. The minimum and maximum number of stitches per inch shall be as specified in table IV.

3.4.2 Buttonholes. The purling on the buttonhole on the left lapel shall be on the facing. The purling on the buttonhole on the front fly shall be on the facing side of the fly. The purling on the buttonholes on the facing tab and the shoulder loops shall be on the outside of the tab and the loops. The stitching shall be securely caught in the fabric.

3.4.3 Sealing of seams and stitchings. All side seams, sleeve armhole joining seams, sleeve joining seams, the double row of stitching at the top and the bottom edge of the pocket welt, bartacks, and tacks which penetrate through to the outside of the raincoat, and shoulder loop button stitching shall be sealed on the inside with brush coats of the seam sealant specified in 3.2.10. (The seam shall have no less solids content at the time and the point of application than specified in table II.) The sealant shall be brushed on and worked in such a manner as to completely wet and cover the stitching and needle holes and shall be worked under any turned or raw edges of the seams. The sealant shall be applied in a manner so that it will not cause twists, pleats, or puckers on the seam or on the material in the adjacent area.

TABLE IV. Sewing Operations.

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
1.	Cutting. a. The cloth shall be carefully laid up in uniform widths and lengths, and care shall be taken in the spreading of the material so that the plies are not stretched or full and so that one side of the lay is even. Each component part in the top ply of the main lay shall be marked with the size of the raincoat. Holding devices (such as staples) that puncture the fabric parts shall not be used on the paper patterns. b. The raincoats shall be cut in strict accordance with the patterns which show size, shape, and placement of pockets and welts and also the notches for proper assembling of all parts. The uncoated side of the fabric shall finish on the outside of the raincoat. c. Except for the underarm eyelets reinforcing pieces, the undercollar, and the buttonhole tab for the facings which may be cut out of ends of the same material and when so cut shall approximately match the raincoat, all component parts of the raincoat shall be cut out of one piece of the material. Both inside hanging pockets and the fly linings may be cut from ends of the same material, and when so cut the pieces shall harmonize with the shade of the raincoat. The hanger, the hinge loop, the facing pieces for the pocket opening, the seam tape and the underply of the shoulder may be cut from ends.			

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	d. Except for marking the position of the underarm eyelets and at each end of the pocket opening, as indicated on the pattern, drill holes shall not be used. e. Patterns shall be laid in accordance with the directional lines indicated on the patterns for each component part of the raincoat. f. Provided that the size of the opening is as indicated on the patterns and that the corners are not tongue notched, the position of the pocket welt openings may be cut in the cutting room with a die. When cut by a die, the pocket opening shall be cut 3/8 inch back of the finished front welt position.			
2.	Replacement of damaged parts. a. All parts containing holes or any other defects in the basic fabric such as smashes, slubs, or multiple floats shall be replaced at the time of cutting. b. Component parts that are damaged by needle chews, scissor or knife cuts, tears, or holes shall be discarded and replaced prior to joining the component parts to the finished raincoat. There shall be no replacement of parts or removal or replacement of stitching after assembly of the finished raincoat except for needle holes caused by runoffs, repair,			

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	or removal of thread for a distance not exceeding 8 stitches (single or double rows), providing the needle holes are sealed.			
3.	Cut linings.			
	a. The lining for the body of the raincoat and the sleeves shall be cut with the warp in strict accordance with the patterns.			
	b. Each components part in the top ply of the main lay shall be marked with the size of the raincoat.			
4.	Cut trimmings.			
	a. The interlinings for the lapel facing of the raincoat shall be cut in the direction of the warp. The interlining for the collar and the stand shall be cut on the bias.			
	b. The material for the welt interlining shall be cut with the warp. The material for the front edges shall be bias cut 1 inch wide.			
	c. All other trimming shall be cut in accordance with pattern.			
5.	Shade marking.			
	a. Except for those parts cut from ends as indicated in operation No. 1, all component parts of the rain-			

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	coat and the linings shall be marked to insure a uniform shade and size throughout the raincoat. b. Metal fastening devices shall not be used. The fabric shall not be cut or punctured. c. The parts of the sleeve lining shall match each other, but the sleeve linings need not match the body lining. d. Provided the numbering does not show on the outside and is covered, wherever possible, by the seam allowance, a numbering machine, ink stamp, or pencil will be allowed.			
6.	Make shoulder loops and front facing tab. a. The shoulder loops and the front facing tab shall each be made of two pieces of the raincoat material and shall be interlined. They shall finish smooth and flat without twists, pleats, or raw edges and shall be of uniform appearance.			
	b. The loops and tab shall be seamed parallel, forming a point, with the end open for turning, with a single row of stitching, 1/4 inch from the edge. In seaming the shoulder loops together the interlining shall be adjacent to the outer ply.	301	SSe-2(a)	8-12
	c. The corners and the points shall be trimmed and turned, and the corners and the points and the edges	301	SSe-2(b)	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	worked out. The tabs and the shoulder loops shall be single stitched 1/8 inch from the edge.			
7.	Make buttonholes in tab and shoulder loops.			
	a. The buttonholes shall be 5/8 inch, cut-first or cut-after, taper-bar or square-bar type made over a No. 8 gimp; the ends shall be securely tacked.	button-hole		46 per buttonhole
	b. When square-bar type of buttonholes are used, the bartacking shall be a separate operation.	bartack		21 per tack
	c. The buttonholes shall be centered in the tab and the shoulder loops, with the eyelets 1/2 ±1/8 inch from the point.			
8.	Make collar.			
	a. The collar and the undercollar shall be made with a separate stand and a leaf and shall be interlined.			
	b. Seam stand interlining to undercollar stand 1/16 to 3/16 inch from all edges. The undercollar stand and the interlining shall be joined to the undercollar leaf, turned, and raise stitched 1/16 and 1/8 inch from the folded edge. The undercollar stand shall overlap the undercollar leaf.	301	LSq-2	8-12
	c. Seam leaf interlining to topcollar leaf 1/16 to 3/16 inch from all edges. Join the topcollar stand	301	LSq-2(b)	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	to topcollar leaf and interlining; turn the stand down, and raise stitch 1/16 to 1/8 inch from the folded edge or the stand.			
	d. Seam the undercollar to the topcollar and the interlining 1/4 to 5/16 inch from the edge. In the finished collar leaf edges the interlining shall be adjacent to the topcollar.	301	SSe-2(a)	8-12
	e. Trim the corners, turn, work out the points and the edges, and stitch 1/8 inch from the edge.	301	SSe-2(b)	8-12
	f. Sew the collar and the undercollar together approximately 1/8 inch from the bottom raw edges.	301	SSa-1	8-12
9.	Make hanger and yoke loops.			
	Make one hanger and hinge loop fabricated from the raincoat material. The hanger and the loops shall be uniform in width and gage, and the edge stitching shall be uniform. The finished hanger shall measure 3/8 to 1/2 inch wide by 2 $\pm$1/4 inches long. The finished back loop shall measure 1/2 by 4 $\pm$1/2 inches long.	301	EFp-2	8-12
10.	Make sleeves.			
	a. The top seam shall be joined with a double-lapped and double-stitched seam 3/16-inch gage, with the front part overlapping the back part.	301 or 401	LSc-2	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	b. The underarm seam of the sleeves shall be joined with a double-lapped and double-stitched seam 3/16-inch gage, and with the front part overlapping the back part.	301 or 401	LSc-2	8-12
11.	Seam lapel interlining to front facings.			
	The interlining shall be seamed to the facing along the edges of the lapel and at the fronts of the facing, 3/32 inch from the edge.	301	SSa-1	8-12
12.	Make fly on the left front facing.			
	a. The fly lining shall be seamed 1/4-inch gage to the front edge of the facing, through the facing, catching the interlining buttonhole reinforcement, starting and finishing at the notches as indicated on the patterns.	301	SSe-2(a)	8-12
	b. Turn and raise stitch 1/8 inch from the edge. The free ends of the fly lining above and below the notches shall be stitched along the front edge.	301 301	SSe-2(b) SSa-1	8-12 8-12
	c. Mark and make three buttonholes on the left fly facing, positioned as indicated on the patterns, with the eyelet 5/8 ±1/8 inch from the edge of the fly. The purling shall be on the facing side.			70-83 per buttonhole
	d. The buttonholes shall be 1-1/4 inch, cut-first or cut-after, eyelet-end-taper or square-bar type,			

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	worked over a No. 8 gimp; the ends of buttonholes shall be securely tacked.			
	e. When square-bar type of buttonholes are used, the bartacking shall be a separate operation from the buttonhole making.	bartack		21 stitches per tack
13.	Make body and sleeve linings.			
	All body linings and sleeve linings except the front facing shall be serged.			
	a. The foreparts and the back of the lining shall be joined at the side seams with a single row of stitching and overedged stitched together.	301 and 502 or 503 or 515 or 516 or 517 or 518 or 519	SSa-2	8-12
	b. The bottom edge of the lining shall be hemmed with the raw edge turned in and single stitched 1/16 inch from the edge. The hem shall finish 1/2 ±1/8 inch wide.	301	EFb-1	8-12
	c. The foreparts of the linings shall be seamed to the back edge of the facing and raise stitched 1/16-inch to 1/8-inch gage. The facing shall overlap the lining.	301	LSq-2	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	d. Turn under the back edge of the right and the left facing and stitch 1/16 to 1/8 inch from the folded edge. The hem shall finish 3/8 to 1/2 inch.	301	EFa-1	8-12
	e. The shoulder seams of the linings shall be joined.	301 and 502 or 503 or 515 or 516 or 517 or 518 or 519	SSa-2	8-12
	f. The underarm seam and the top seam of the sleeve lining shall each be joined with a single row of stitching and overedge stitched.	301 and 502 or 503 or 515 or 516 or 517 or 518 or 519	SSa-2	8-12
	g. The sleeve lining shall be sewn to the armhole of the lining, with the fullness properly distributed and with the armhole and the sleeve notches meeting.	301 and 502 or 503 or 515 or 516 or 517 or 518 or 519	SSa-2	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
14.	Press linings. All of the lining seams and the hem shall be pressed flat with a heated pressing iron. The side and the shoulder seams shall be turned toward the back.			
15.	Sew on left facing tab. a. The top of the back edge of the tab shall be located halfway between the bottom buttonhole of the fly and the finished bottom of the raincoat, with the point of the tab 3/4 inch inward from the finished raincoat front. b. Seam the back edge of the tab to the facing only; turn toward the front, and raise stitch 3/16 to 1/4 inch.	301	LSq-2	8-12
16.	Make pockets - finished appearance. The welts and the inside hanging pockets shall be uniform in construction and appearance. The pockets shall finish flat and smooth without twists, puckers, or raw edges. The stitching shall be uniform in width. The tongue notch and the end of the facing shall not be exposed on the outside of the welt. a. Make the pocket welt. The welts shall be made of a folded-in-half piece of raincoat material that is interlined.			

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	b. Seam the interlining to the welt on the inside along edge of interlining at center fold of welt.	301	SSa-1	8-12
	c. Fold the welt, as indicated on the patterns, and seam both ends of the welt with a 3/16-inch to 1/4-inch seam.	301	SSe-2(a)	8-12
	d. Trim the corners, turn, work out the corners.			
	e. Stitch the folded edge of the welt 1/8 inch from the edge, with the stitching continued across the ends.	301 301	OSf-1 SSe-2(b)	8-12
17.	Make and set pockets and attach label.			
	The hanging pocket shall be made of one ply of basic material and interlined. The finished pocket shall have the uncoated side of the material to the inside of the pocket.			
	a. Sew the combination identification, instruction and personal label along all four edges to the pocket with a single row of stitching 1/16 inch from edge. The label shall be positioned on the outside of the coated nylon of the right pocket approximately 1-1/2 inches upward from the bottom edge and approximately 4 inches inward from the back edge. The stitching shall not be through the printing.	301	SSa-1	8-12
	b. Position the welt on the raincoat, with the raw edges of the welt 3/8 inch back of the finished welt	301	SSa-1	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	position as indicated on the patterns. Seam through the welt and the raincoat.			
	c. Cut the pocket opening (when not cut in cutting room) 3/8 inch back of finished welt and smooth out.			
	d. The facing piece shall be folded in half with the coated side of the material on the inside of the facing and seamed to the fronts 3/8 to 1/2 inch from the welt seaming to the fronts. The stitching shall start and finish so that when the pocket opening is cut the notched ends shall be completely covered by the welt.	301	SSe-2(a)	8-12
	e. The facing shall be turned to the inside and stitched 1/16 inch from the back folded edge.	301	SSe-2(b)	8-12
	f. Position the pocket pieces on each other in such a manner that the uncoated side of material is to the inside of the finished pockets. Join the two parts of the pocket by seaming the edges 3/16 to 1/4 inch from the edge.	301	SSe-2(a)	8-12
	g. Turn the pocket and stitch all around the edges 1/8 to 3/16 inch from the edge, turning in the back raw edge of the interlining, and stitch the length of the opening to the basic material part of the pocket with stitching continued across the bottom with the tongue notch turned in and stitched 1/16 to 1/8 inch from the edge.	301 301	SSe-2(b) LSd-1	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	h. Seam the pocket to the welt seam allowance and the front; turn the pocket to the front of the raincoat and raise stitch the welt 1/16 to 1/8 inch from the edge through the raincoat and the welt. The ends of the pockets shall be securely backstitched.	301	LSq-2(b)	8-12
	OR			
	i. Before the hand opening is cut (when not cut in the cutting room) and after the pocket has been made, position the raw edge of the pocket on the welt as positioned on the raincoat front, stitch through the pocket, the welt, and the raincoat.	301	LSq-2(a)	8-12
	j. Cut the pocket opening (when not cut in the cutting room) 3/8 inch back of the finished front welt position; tongue notch corners.			
	k. Turn the pockets through the opening; smooth out the pocket and welt, and raise stitch welt 1/16 inch from the edge through the raincoat and welt.	301	LSq-2(b)	8-12
	l. Smooth out welt and pocket, and tack the ends of the welt, with two rows of stitching, 1/16 inch from the edge to the point of the welt, then diagonally across to the welt raised stitching, and then across the welt covering the welt raised stitching.	301	SSa-1	8-12
	m. The pocket shall be smoothed out and the underply of the hanging pocket shall be seamed along the front	301	SSa-1	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	edge of the pocket through the front edge of the raincoat. The stitching shall be not more than 3/16 inch from the front edge. n. The double row of stitching at the top and the bottom edge of the pocket welt shall be sealed on the underside as specified in 3.4.3.			
18.	Set underarm eyelets. Position three eyelets, on each front, as indicated by the patterns. The eyelets shall be reinforced by a patch of self material that has been fully adhered to the fabric. Before setting the sleeve, position the top of the patch 3/4 inch from the raw edge of the armhole. A coat of adhesive shall be applied to the coated side of the patch and on the raincoat directly under the patch. The reinforcement pieces shall be rolled to insure good adhesion.			
19.	Make left front fly. The fly lining shall be seamed to the left front and the underply of the hanging pocket with a 1/4-inch gage, starting and finishing at the notches indicated on the patterns. Turn and single stitch 1/8 inch from the edge. The free ends of the fly lining above and below the notches shall be stitched along the front edges.	301	SSe-2	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
20.	Make back.			
	a. Seam the nylon coated material together for the netting insert.	301	SSa-2	8-12
	b. Position the netting to the cut out of the nylon material. Fold the nylon over the netting and seam. Turn up the nylon netting and stitch 1/16 inch from the edge.	301	SSw-2	8-12
	c. Position the netting back on the nylon back at the pattern notches. Fold the nylon material over the netting and stitch 1/16 inch from the edge as indicated by the notches on the patterns.	301	SSw-2	8-12
	d. Operations 20b and 20c may be performed with double-lapped and double-stitched seam.	401	LSc-2	8-12
21.	Make back yoke.			
	a. Turn up the bottom of the yoke (basic fabric) in accordance with the pattern notch and single stitch 1/16 inch from the folded edge through the bottom edge to form the hem, catching the hinge loop at the center of the yoke. The hem shall finish 1/2 $\pm$1/8 inch wide.	301	EFb-1	8-12
	b. Join the yoke to the back with a single row of stitching 1/8 inch from the edge at the side seams, the shoulder seams, and the neck of raincoat. The	301	SSa-1	6-10

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	yoke shall be adhered to the back at the armhole, prior to setting in the sleeve, using the adhesive specified in 3.2.11.			
	c. Bartack or securely stitch the hinge loop at the center of the back through the seam joining the netting to the back. The hinge loop shall be of sufficient length to allow the yoke to hang free without twists or puckers. The hinge loop shall not be exposed below the bottom edge of the yoke. The hinge loop may be securely attached in the seam joining the netting to the back (No. 20c). When so attached, bartacks or tacking will not be required.	301 or bartack		28 per tack
22.	Join side seams - finished appearance.			
	The side seams of the raincoat shall be carefully joined, devoid of twists, puckers, pleats, or raw edges. The seams shall start and finish evenly. The gage of stitching shall be uniform in width.			
	a. Join side seams of raincoat, with a double-lapped and double-stitched seam, 3/16-inch to 1/4-inch gage, with the fronts overlapping the back parts.	301 or 401	LSc-2	8-12
23.	Join shoulder seams.			
	Join the shoulder seams, with a double-lapped and double-stitched seam, 3/16-inch to 1/4 inch gage, with the fronts overlapping the back parts.	301 or 401	LSc-2	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
24.	Set on shoulder loops.			
	The shoulder loops shall be of uniform length and setting. The loops shall lie flat and smooth without twists or fullness.			
	a. The back edge of the loop, at the armhole, shall be positioned 1/2 inch back of the shoulder seam. The length of the loop shall be adjusted so that the point of the loop will finish even with the collar joining seam in the finished raincoat.			
	b. Sew the shoulder loops to the shoulder with a straight row of stitching parallel with the armhole seam. Trim any excess loop material even with the raw edge of the armhole.	301	SSa-1	6-12
25.	Set sleeves.			
	The sleeves shall be set with the fullness properly distributed, with the armhole and the sleeve notches matching. The underarm seam of the sleeve shall match the notch at the base of the armhole.			
	a. Seam sleeves to armhole of coat with a single row of stitching. The width of the seam shall be 3/8 inch at the top of the armhole, step to step, and 3/16 inch at the bottom of the armhole, step to step. The end of the shoulder loop at the armhole shall be caught in the seaming.	301	LSq-2(a)	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	b. Turn sleeve and raise stitch armhole with a single row of stitching 1/8 inch from edge. NOTE: Before the armhole is raise stitched, the seam allowance shall be trimmed to produce an even width to facilitate the seam-sealing operation. This may be done by means of a sewing machine with a knife attachment. The width of the trimmed seam allowance shall be sufficient to allow it to be caught in the raise stitching and shall be narrow enough to preclude pleats and puckers which could cause hydrostatic failures.	301	LSq-2(b)	8-12
26.	Tape shoulder. Cover the shoulder seams with bias-cut tape and securely cement to seam. The seam tape shall be centered and securely cemented to the shoulder seaming and cover the 3/16-inch double stitching.			
27.	Join facing fronts. Sew the front edges through the raincoat, the facing, and the interlining with a 1/4-inch gage. The stitching shall extend from the lapel notch, across the top of the lapel down the front and along the bottom to the back edge of the facing. The stitching of the left front facing shall extend from the lapel notch to the top of the fly opening and from the bottom of the fly opening to the back edge of the	301	SSe-2(a)	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	facing. A strip of bias-cut material 1 inch wide shall be caught in the seaming. The material shall extend from the bottom edge of the pocket to the bottom edge on each side. The bias-cut material shall be placed adjacent to the forepart during seaming.			
28.	Join the collar to raincoat.			
	Trim the bottom corners and the lapel points prior to turning the raincoat right side out. The collar shall be carefully joined to the raincoat, with the notches matching and without distortion of the stand or the collar.			
	a. Position the collar on the outer shell and seam the bottom edge of the collar to the neck of the raincoat, catching the size label and the hanger.	301	SSq-2(a)	8-12
	b. Sew facing and lining to seam allowance with a 1/4-inch gage, forming a pleat at the center of the back.	301	SSa-1	8-12
	c. Turn the raincoat right side out; raise stitch through all plies, with a single row of stitching 1/16 inch from the edge, from lapel notch to lapel notch, with both ends backstitched. The outer shell and the lining shall overlap the collar. The hanger and the size label shall be caught in the raised stitching.	301	SSq-2(b)	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	d. Work out the corners of the lapels, the edges, and the bottom corner of the raincoat. Single stitch the edges across the top of the lapel, down the side of the lapel and the front to the back edge of the facing at the bottom. The gage of the stitching shall be 1/8 inch. The stitching of the left front shall extend from the lapel notch to the top of the fly and from the bottom of the fly to the back edge of the facing. The fly edge stitching and the front edge stitching shall meet and shall be the same width.	301	SSe-2(b)	8-12
29.	Tack front flies.			
	a. A tack shall be placed through the fly lining and the facing only, midway between each buttonhole. The tacking shall be secure and shall measure not less than 1/4 inch nor more than 5/8 inch. The tack shall be as close as possible to the front edge and shall be parallel to the front edge.	301	SSa-1	8-12
	b. A 1/2-inch bartack may be used. Tacking shall not be exposed to the outside.	bartack		28 per tack
30.	Close back edge of fly.			
	Mark and stitch the back of the fly through the front facing and the front, completing the fly opening. The fly stitching shall be 2-1/4 to 2-1/2 inches from the front edge, starting 3 ±1/2 inches above the top	301	SSa-1	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	fly buttonhole and continuing down parallel to the front edge to a position about 2-1/2 ±1/2 inches above the bottom fly opening, then slightly rounded and continued on an angle to the bottom of the fly opening. The edges of the fly lining and the facings shall not be exposed. The ends of the stitching shall be securely tacked.			
31.	Tack front facings.			
	a. The back edge of the facings shall be tacked through the hanging pockets only, from the bottom edge of the lining hem to the top of the hanging pockets but not through the front.	301	SSa-1	8-12
	b. Tack the bottom of the hanging pockets through the facing along the back edge of the facing. The tacking shall be secure and shall measure not less than 1/2 inch nor more than 3/4 inch long, or a 1/2-inch bartack may be used.	301 or bartack	SSa-1	8-12 28 per tack
32.	Hem bottom.			
	Turn up the bottom of raincoat with the raw edge turned in, and hem the bottom of raincoat, with a single row of stitching. Stitch across the bottom of the hem, catching the back edge of the facing. The stitching shall be 1/16 inch from the edge of the facing. The hem shall finish 3/4 ±1/8 inch.	301	EFb-1	8-12

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
33.	Hem sleeve.			
	Hem the bottom of the sleeve, with the raw edges of outer shell turned under 3/8 inch and sewed with a single row of stitching 1/16 inch from the edge through the outer shell and the lining. The finished hem shall measure 3/4 ±1/8 inch wide.	301	EFb-1	8-12
34.	Tack linings.			
	a. The linings at the sides shall be tacked through the hem and the side seam, and the shoulder seams of the outer shell and the lining shall be tacked about 1 inch from the armhole seam with a 1/4-inch to 1/2-inch tack, or a 1/2-inch bartack may be used.	301 or bartack	SSa-1	8-12 28 per tack
	b. The shoulder seams of the lining and the outer shell shall be in alignment with each other and the shoulder of the lining and the outer shell shall not be distorted.			
35.	Make lapel buttonhole.			
	Mark and make a 7/8-inch to 1-inch, cut-first, eyelet-end, square-bar buttonhole made over a No. 8 gimp; the ends shall be securely tacked. The bartacking of the ends of the buttonhole shall be a separate operation. The exposed interlining in the finished buttonhole shall be darkened by an approved method. The buttonhole shall be positioned 1-1/4	buttonhole bartack		52 stitches 28 stitches

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	inches down from the top edge of the lapel, with the inside eyelet 3/4 inch from the front edge, with the purling on the facing side.			
36.	Mark and sew on buttons.			
	a. Mark, position, and sew a 24-line button on each shoulder, conforming to the buttonhole in the shoulder loop. The buttons shall be positioned so that the loops will be smooth without bulging or twisting. The shoulder loop button shall not be sewn through the lining.	101 or 301		20-22 per button 14-16 per button
	b. Mark, position, and sew three 45-line buttons through the front, the front facing, and the stay buttons on the right front to correspond with the buttonholes in the left front 2-1/8 ±1/8 inch from the edge.	101 or 301		20-22 per button 14-16 per button
	c. Mark, position, and sew one 30-line button on the right front to correspond with the buttonhole in the lapel of the left front and positioned so that when the fronts are closed at the neck the collar ends will not overlap nor spread apart more than 1/2 inch. The button stitching shall be through the front and the interlining only.	101 or 301 or hand		20-22 per button 14-16 per button 4-6 double thread
	d. Mark, position, and sew one 24-line button on the right front, conforming to the position of the buttonhole in the left facing buttonhole tab. The button shall be sewn through the right front, the right	101 or 301		20-22 per button 14-16 per button

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	facing, and the stay button. The front of the raincoat shall not be distorted when closed.			
	e. The buttons on the right front only shall be necked and shank wrapped.	hand or machine		8 wraps of double thread 32 stitches per shank
37.	Pressing.			
	Double-stitched seams of the sleeve, the shoulder, and the side seam shall be pressed smooth with a heated pressing iron prior to sealing.			
38.	Sealing of seams.			
	All seams and stitching shall be sealed as specified in 3.4.3. The seams shall be held taut while sealant is being applied and dried tack-free prior to folding.			
39.	Clean coat.			
	a. Trim all ends of threads and remove the loose threads from the raincoat.			
	b. Remove all spots, stains, and shade markers.			

TABLE IV. Sewing Operations. - Continued

No.	Description of Operation	Stitch Type	Seam and Stitching Type	Stitches Per Inch
	c. Remove any talcum powder distributed over the exterior and interior areas of the raincoat, except on the sealed seams and the exposed reinforcement piece adhesive.			

3.4.3.1 Dusting of seams The seams shall be dusted with the talcum powder specified in 3.2.12. Care shall be exercised so that only sealed seams are dusted and that dust is not distributed over any other areas of the coat, either interior or exterior The seams shall be sealed with a sufficient number of coats of seam sealant and dusted in such a manner that the finished raincoat meets the blocking and hydrostatic requirements specified in 3.5.1 and 3.5.2 and tested as specified in 4.3.3 and 4.3.4 respectively.

3.4.4 Repairs in coating of finished raincoat

3.4.4.1 Reparable areas. Reparable areas generated during manufacture of the finished raincoat will be generally defined as follows:

a Scuffs. Any break in the coated surface (nylon yarns intact) not exceeding 1/16 inch in width or 1-1/2 inches in length, other than a pick off of the coating or pinhole.

b. Pinhole. A very small hole in the coating such as might be caused by puncturing the coating with a pin.

c. Needle holes. One or more needle holes in the fabric after removal of the sewing thread.

d. Pick offs. Areas where the coating is removed from the nylon base material by separation of plies of material after adhesion of surfaces to each other.

3.4.4.2 Repair compound. The repair compound shall be a suitably thinned and pigmented, room-temperature curing, virgin polyvinyl butyral resin, plasticized with phosphate or phthalate ester plasticizers exclusively and shall be compatible with the coating on the fabric. The color of the applied and dried compound shall approximate the color of the coated fabric

3.4.4.3 Repair procedure The repair compound shall be worked into the break in the coating on the coated side of the fabric and shall be spread smoothly and evenly over the damaged area. The repaired area shall be lightly dusted with the talcum powder specified in 3.2.12.

3.4.4.4 Requirements of repaired areas. The repaired areas shall show no compound strike through, stiffening, or any other defects that might affect the serviceability or the outside appearance of the raincoat. The repaired areas shall conform to the blocking requirements specified. The repair compound shall be well adhered to the coated fabric, and when it is subjected to scrubbing action between the hands, shall show no lifting of the edge and no cracking, flaking, or removal of the repair compound.

3.4.4.5 Location and number of repairs

3.4 4.5.1 Scuffs. Scuffs in the coating not exceeding four in number may be repaired as specified in 3.4.4.3, subject to the following limitations: The over-all length of the repaired area shall not exceed 1/2 inch.

3 4.4.5.2 Pinholes. Pinholes in the coating not exceeding eight in number may be repaired as specified in 3 4.4.3 Such pinhole repairs shall not exceed 1/2 inch in width.

3.4.4.5.3 Needle holes. Needle holes in the coating not exceeding eight (single row - eight and double row - sixteen) outside of the actual seam stitching may be repaired as specified in 3.4.4.3. Such needle hole repairs shall not exceed 1-1/2 inches in length and 1/2 inch in width.

3.4.4.5.4 Pick offs. Pick offs in the coating not exceeding four in number may be repaired as specified in 3.4.4.3, provided that the over-all diameter of such repair does not exceed 1/2 inch.

3.5 Performance

3.5.1 Blocking resistance (end item). When tested as specified in 4.3.3, the blocking scale rating shall be no greater than No. 3.

3.5.2 Hydrostatic resistance (end item). When tested as specified in 4 3.4, not more than two areas of the ten tests on any raincoat shall show leakage in less than 1 minute, and any raincoat shall be considered a failure if any area shows leakage below 25-centimeter head. Leakage shall be defined as the appearance of water at three different places in any portion of the 4-1/2 inch diameter test areas.

3.6 Finished measurements. The finished measurements of the raincoat shall be as specified in table V.

TABLE V. Finished measurements (inches).

Size	1/2 Bust 1/	Sleeve Inseam Length 2/				Back Center Length 3/			
		Short	Regular	Long	Extra Long	Short	Regular	Long	Extra Long
32	21	16-1/4	17-1/4			42-3/4	45		
34	22	16-1/4	17-1/4	18-1/4	19-1/4	43	45-1/4	47-3/4	50-1/4
36	23	16-1/4	17-1/4	18-1/4	19-1/4	43-1/4	45-1/2	48	50-1/2
38	24	16-1/4	17-1/4	18-1/4	19-1/4	43-1/2	45-3/4	48-1/4	50-3/4
40	25	16-1/4	17-1/4	18-1/4	19-1/4	43-3/4	46	48-1/2	51
42	26	16-1/4	17-1/4	18-1/4	19-1/4	44	46-1/4	48-3/4	51-1/4
44	27	16-1/4	17-1/4	18-1/4	19-1/4	44-1/4	46-1/2	49	51-1/2
46	28	16-1/4	17-1/4	18-1/4	19-1/4	44-1/2	46-3/4	49-1/4	51-3/4
48	29	16-1/4	17-1/4	18-1/4	19-1/4	44-3/4	47	49-1/2	52
50	30		17-1/4				47-1/4		
Tolerances	±3/4	±1/2	±1/2	±1/2	±1/2	±1	±1	±1	±1

1/ The 1/2 bust shall be measured, with the coat buttoned, from folded edge to folded edge at the base of the armhole.

The back length shall be measured along the center back from the undercollar joining seam to the bottom edge of the raincoat.

3/ The sleeve length shall be measured, along the underarm seam, from the armhole seam to the bottom edge of the sleeve.

3.7 Workmanship. The finished raincoat shall conform to the quality of product established by this document. The occurrence of defects shall not exceed the applicable acceptable quality levels specified in MIL-STD-1393.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the supplier may use his own or any other facility 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. Where certificates of compliance are submittted, the Government reserves the right to check test such items to determine the validity of the certification.

4.2 Quality conformance inspection. Sampling for inspection shall be performed in accordance with MIL-STD-105, except where otherwise indicated in MIL-STD-1393.

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 Component testing. In addition to any testing required by 4.2.1, components shall be tested as shown in table VII. The methods of testing specified in FED-STD-191 wherever applicable and as listed in table VII, shall be followed. The sample size shall be as specified in table VI. The lot shall be unacceptable if one or more sample units fail to meet any test requirement specified. The lot size units and the sample units shall be as follows:

Components	Lot size unit	Sample unit
Nylon taffeta cloth	Yard	3 yards full width
Seam sealant	Gallon	1 pint composite and prepared seams
Adhesive	Gallon	1 pint composite and 1 yard of coated fabric
Eyelets	Gross	10 each

TABLE VI. Sample size

Lot size	Sample size (sample units)
800 or less	2
801 to 22,000 inclusive	3
22,001 or more	5

TABLE VII. Component tests.

Component	Characteristic	Requirement paragraph	Test method or procedure
Coated fabric	Colorfastness Crocking	3.2.1	5651
Nylon taffeta cloth	Denier 1/	3.2.2.1	
	Filaments 1/	3.2.2.1	Visual
	Nylon identification	3.2.2.1	1530 1/
	Melting point	3.2.2.1	1534 1/
	Weave	3.2.2.2	Visual
	Weight	3.2.2.2	5041
	Yarns per inch	3.2.2.2	5050
	Breaking strength	3.2.2.2	5100
	Tearing strength	3.2.2.2.	5134
	Color	3.2.2.3	Visual
	Colorfastness Laundering Perspiration Crocking	 3.2.2.3.2 3.2.2.3.2 3.2.2.3.2	 5614 5680 5651
	Nonfibrous material	3.2.2.4	2611
	Shrinkage	3.2 2.5	5552
Eyelets	Material identification	3.2.8	1/
	Dimension	3.2 8	Standard commercial 3/
	Color	3 2.8	Visual

TABLE VII. Component tests. - Continued

Component	Characteristic	Requirement paragraph	Test method or procedure
Seam sealant	Composition 1/	3.2.10	Visual
	Hydrostatic resistance	3.2.10	see 4.3.1.1
	Blocking resistance	3.2.10	see 4.3.1.2
	Resistance to low temperature 2/	3.2.10	see 4.3.1.3
	Stiffness		
	Initial	3.2.10	see 4.3.1.4
	After heat aging	3.2.10	see 4.3.1.5
	Solids content	3.2.10	see 4.3.1.6
Adhesive for reinforcements	Composition	3.2.11	1/
	Adhesion		
	Initial	3.2.11	see 4.3.2.1
	After aging	3.2.11	see 4.3.2.2
	Flexibility		
	Initial	3.2.11	see 4.3.2.2
	After aging	3.2.11	see 4.3.2.4
Seam dusting material	Material identification	3.2.12	1/

1/ Unless otherwise specified, a certificate of compliance shall be submitted and will be acceptable for the stated characteristics.
2/ The seam sealant shall show no cracking, no flaking, and no separation from the fabric.
3/ Dimensions shall be reported to the nearest 0.01.

4.2.2 End item visual examinataion. The raincoat shall be examined for defects as specified in MIL-STD-1393. The sample units shall be one finished raincoat and the sample size shall be as indicated in MIL-STD-1393. Sleeve lengths uneven by more than 1/2 inch shall be classified as a defect.

4.2.3 End item dimensional examination. The raincoat shall be examined for conformance to the dimensions specified in table V. Any dimensions and tolerances deviating from the specified requirements shall be classified as defects

4.2.4 End item testing. The finished raincoat shall be tested for the characteristics listed in table VIII. The sample unit shall be one raincoat. All requirements are applicable to the sample unit. The inspection level shall be S-2 of MIL-STD-105. The acceptable quality level for each characteristic shall be 1.5 defects per 100 units. The lot shall be unacceptable if one or more sample units fail to meet any requirement specified in table VIII. All tests of the raincoat are nondestructive.

TABLE VIII. End item tests.

Characteristic	Requirement Paragraph	Test Method	Number of determinations per sample unit
Blocking resistance (end item)	3.5.1	see 4.3.3	2
Hydrostatic resistance (end item)	3.5.2	see 4.3.4	10

4.2.5 Packaging inspection. An inspection shall be made to determine that packaging, packing, and marking requirements comply with MIL-STD-1393.

4.3 Methods of inspection. Unless otherwise specified, all tests shall be performed at prevailing conditions of temperature and relative humidity

4.3.1 Seam sealant. For use as the test specimen, a 2-yard seam shall be prepared by joining two, 5-inch-wide pieces of the coated fabric with seam type LSc-2, stitch type 301 or 401, 10 to 14 stitches per inch, and thread size 50/3 for the needle and 60/3 for the bobbin and sealing by the method specified in 3.4.3.

4.3.1.1 Hydrostatic resistance of the seam sealant. The specimen specified in 4.3.1 shall be tested in accordance with method 5514 of FED-STD-191, with the following exceptions:

a. The test specimen shall be clamped in the test apparatus with the sealed seam in the center of the 4-1/2-inch test area with the uncoated side of the fabric in contact with the water.

b. The hydrostatic head shall be raised to 25 centimeters at a rate of approximately 1 centimeter per second and shall be held at that pressure for 1 minute.

c. Leakage shall be defined as the appearance of water at three different places in any portion of the 4-1/2-inch diameter test areas.

d. The scope of test method 5514 which excludes coated fabrics shall not apply.

4.3.1.2 Blocking resistance. Test specimens prepared as specified in 4.3.1 shall be tested in accordance with method 5872 of FED-STD-191, with the following exceptions:

a. Test specimens shall measure 6 inches by 8 inches with the seam in the center running the full 8-inch length.

b The seam shall be folded over on itself once to a size of 6 inches by 4 inches with the coated side of the fabric in the center of the folded specimen.

c The test temperature shall be $+160^{\circ}F \pm 1.6^{\circ}F$

d. A 1-pound weight shall be distributed evenly along the seam.

4 3.1.3 Resistance to low temperature. The resistance of the sealant of the specimen (see 4.3.1) to low temperature shall be determined in accordance with method 5874 of FED-STD-191 with the following exceptions:

a. Test specimens shall measure 6 inches by 8 inches with the seam in the center running the full 8-inch length.

b. The seam shall be folded over on itself once to a size of 6 inches by 4 inches with the coated side of the fabric in the center of the folded specimen.

c. The roller weight shall be run along the fold line.

d. Testing and measuring the specimens for hydrostatic resistance in accordance with method 5516 shall not apply.

e. The calculation of results (resistance to low temperature expressed as the change in hydrostatic resistance) shall not apply.

f. Reporting the percentage of loss in hydrostatic resistance of the Unit-of-Product shall not apply.

4.3 1.4 Stiffness (initial). A 2 mil (dry thickness) film of the seam sealant approximately 3 inches by 12 inches shall be cast on the coated side of the fabric specified in 3.2.1. The film shall be allowed to air dry for 24 hours. Test specimens shall be cut from this cloth, and the stiffness shall be determined in accordance with method 5204 of FED-STD-191.

4.3.1.5 Stiffness (after heat aging). Test specimens prepared as specified in 4.3.1 shall be placed in a circulating air oven +180°F for a 24-hour period. After the fabric is removed from the oven, the fabric shall be allowed to cool a minimum of 1 hour before testing. Tests shall be made in accordance with method 5204 of FED-STD-191.

4.3.1.6 Solids content. The solids content of the seam sealant shall be determined in accordance with 4021 of FED-STD-175.

4.3.2 Reinforcing patch adhesive. For use as the test specimen, two 6-inch long by 2-inch wide pieces of the coated fabric specified in 3.2.1 shall be brushed on the coated side only with one coat of the adhesive specified in 3 2 11 and dried for 8 minutes in an atmosphere of 65 ±2 percent relative humidity and 70°F ±2°F. The two pieces of cloth (adhesive layer to adhesive layer) shall be plied, rolled with a 10-pound roller, and aged for a minimum of 48 hours before testing.

4.3.2.1 Adhesion (initial). The test for adhesion (initial) shall be performed in accordance with method 5950 of FED-STD-191.

4.3.2.2 Adhesion (after aging). Test specimens prepared as specified in 4.3.2 shall be aged in accordance with method 5850 of FED-STD-191, at +158°F ±4°F. After aging the test specimens shall be conditioned for a minimum of 6 hours at a relative humidity of 65 ±2 percent and at a temperature of +70°F ±2°F and shall then be tested in accordance with method 5950 of FED-STD-191.

4 3 2 3 Flexibility (initial) Flexibility shall be tested as specified in method 5204 of FED-STD-191 Test specimens shall be cut from a 2-inch-wide by 12-inch-long sample prepared as specified in 4 3 2. Flexibility shall be tested in the direction of the warp only

4.3.2.4 Flexibility (after aging) Test specimens specified in 4.3.2.3 shall be aged as specified in 4.3.2.2 and shall then be tested for flexibility in accordance with method 5204 of FED-STD-191.

4 3 3 Blocking resistance (end item). The blocking resistance of the finished raincoat shall be determined in accordance with method 5872 of FED-STD-191, with the following exceptions:

a. The test specimen shall be a finished raincoat and shall be prepared by folding the raincoat so that two sealed seam surface are superimposed and in the center of the glass plates.

b. The test temperature shall be +160°F ±1.6°F.

c. A 1-pound weight shall be distributed evenly along the seam.

4.3.4 Hydrostatic resistance (end item). The hydrostatic resistance of the finished raincoat shall be determined as specified in 4.3.1.1, except that the preparation of the test specimen as outlined in 4.3.1 shall not apply. The test shall be conducted at ten different locations. Not more than two areas of the ten tests on any raincoat shall show leakage in less than 1 minute, and any raincoat shall be considered a failure if any area shows leakage below 25-centimeter head. Leakage shall be defined as the appearance of water at three different places in any portion of the 4-1/2-inch diameter test area. The ten locations tested shall be as follows:

Right armhole seam (front) - one
Right armhole seam (back) - one
Left armhole seam (front) - one
Left armhole seam (back) - one
Right side seam - two
Left side seam - two
Right top seam of sleeve at armhole - one
Left top seam of sleeve at armhole - one

5. PACKAGING

5 1 Preservation. Preservation shall be level A or Commercial as specified (see 6.2).

5.1.1 Level A. Each fully buttoned raincoat shall be folded to measure approximately 14-1/2 inches by 11-1/2 inches. Each folded raincoat shall be inserted in a snug-fitting, clear polyethylene film bag of 0.00125 inch thickness (±25 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 bag shall be heat sealed with the heat seal made as close as possible to the open end. The bag may be fabricated from polyethylene film tubing or sheeting. A 1/4-inch diameter hole shall be made at one corner of each polyethylene bag to allow excess air to escape Alternatively, the final closure of the polyethylene bag may be accomplished by means of a tuck or reverse flap

5.1.2 Commercial. The raincoats shall be preserved in accordance with ASTM D 3951.

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

5.2.1 Level A. Twenty raincoats, of one length and size only, preserved as specified in 5.1, shall be packed flat, front up, alternated side to side, two in length, one in width, 10 in depth within a weather resistant fiberboard shipping container conforming to PPP-B-636, style and grade optional. The inside of each shipping container shall be fitted with a box liner conforming to type CF, class weather-resistant, variety DW, grade V15C of PPP-B-636. 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 A-A-203. 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.

5.2.2 Level B. Twenty raincoats, of one length and size only, preserved as specified in 5.1, shall be packed flat, front up, alternated side to side, two in length, one in width, 10 in depth within a domestic fiberboard shipping container conforming to PPP-B-636, style and grade optional. The inside of each shipping container shall be fitted with a box liner conforming to class domestic, variety DW, grade 275 of PPP-B-636. 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 of A-A-203. Each shipping container shall be closed in accordance with Method II as specified in the appendix of PPP-B-636.

5.2.3 Commercial. Raincoats preserved as specified in 5.1 shall be packed in accordance with ASTM D 3951.

5.3 Marking. In addition to any special marking required by the contract or purchase order, unit packages and shipping containers shall be marked in accordance with MIL-STD-129 or ASTM D 3951, as applicable.

5.3.1 Polyethylene packages. Each polyethylene bag (see 5.1.1) shall have the stock number, nomenclature, size, and quantity of raincoats contained therein legibly printed or stamped in black across the center face of the bag, or a white paper label with the required information printed thereon in black shall be placed in the bag so that it is readable through the polyethylene.

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

6. NOTES

6.1 Intended use. The raincoat covered by this specification is intended for use by male personnel of the Department of the Air Force.

6.2 Ordering data. Procurement documents should specify the following:

a. Title, number, and date of this specification

b. Length and size required (see 1.2)

c. Selection of applicable levels of preservation and packing (see 5.1 and 5.2).

6.3 Samples and patterns. For acesss to samples of the end item, samples for the color shades, and patterns, address the procuring activity or as directed by the contracting officer

6.4 Figure. Figure 1 shows general style of the raincoat and is furnished for information only. Should any inconsistencies exist between the requirements of this specification and the figure, the requirements of this specification shall govern.

Custodian:
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Reviewers:
Air Force - 82, 99

User:
Air Force - 45

Preparing activity:
Air Force - 11

Project No. 8405-F957

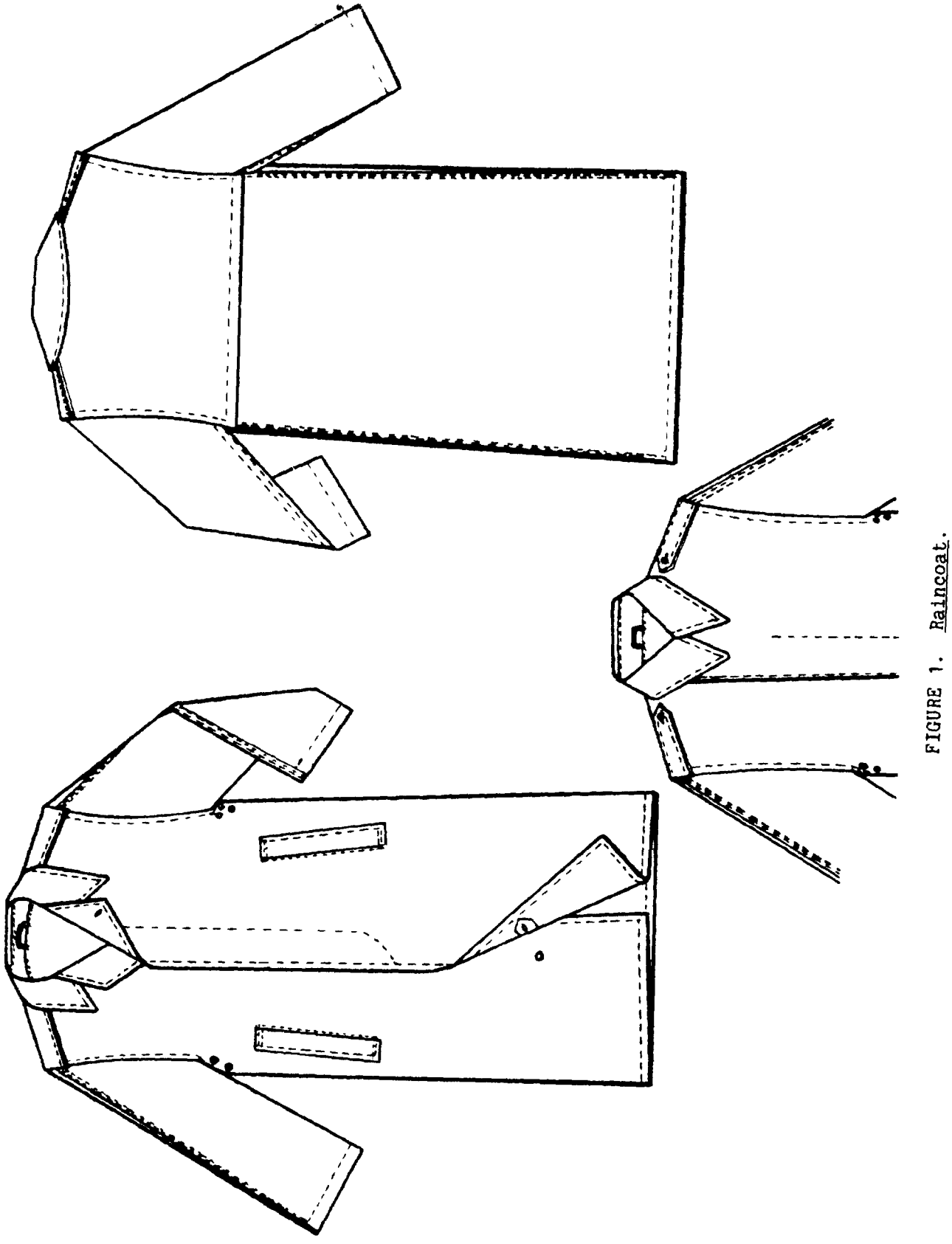

FIGURE 1. Raincoat.

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1 DOCUMENT NUMBER	2 DOCUMENT TITLE

3a. NAME OF SUBMITTING ORGANIZATION	4 TYPE OF ORGANIZATION *(Mark one)*
	☐ VENDOR
b. ADDRESS *(Street, City, State, ZIP Code)*	☐ USER
	☐ MANUFACTURER
	☐ 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)*

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