

INCH-POUND

MIL-P-0043700D(GL)  
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USED IN LIEU OF  
MIL-P-43700C  
1 May 1987

## MILITARY SPECIFICATION

### PONCHO, WET WEATHER

This specification is approved for use by the Natick Research, Development, and Engineering Center, Department of the Army, based upon currently available technical information but it has not been approved for promulgation as a coordinated revision of MIL-P-43700D. It is subject to modification. However, pending its promulgation as a coordinated military specification, it may be used in acquisition.

#### 1. SCOPE

1.1 Scope. This specification covers extra lightweight ponchos, with hoods.

1.2 Classification. The ponchos shall be of the following types and classes as specified (see 6.2).

- |         |  |
|---------|--|
| Type I  | - Standard size (92 inches by 66 inches) |
| Class 1 | - Olive Green 207                        |
| Class 3 | - Woodland camouflage                    |
| Class 4 | - Desert Camouflage (3 color)            |
| Type II | - Small size (82 inches by 60 inches)    |
| Class 3 | - Woodland camouflage                    |
| Class 4 | - Desert Camouflage (3 color)            |

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be used in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5019 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 8405

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## 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 document to the extent specified herein. Unless otherwise specified, the issues of these documents are 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).

## SPECIFICATIONS

## FEDERAL

- V-T-285 - Thread, Polyester.
- PPP-B-636 - Boxes, Shipping, Fiberboard.
- PPP-T-45 - Tape, Gummed, Paper, Reinforced and Plain, For Sealing and Securing.

## MILITARY

- MIL-B-371 - Braid, Textile, Tubular.
- MIL-F-10884 - Fasteners, Snap.
- MIL-G-16491 - Grommet, Metallic.
- MIL-L-35078 - Loads, Unit: Preparation of Semipерishable Subsistence Items; Clothing, Personal Equipment and Equipage; General Specification for
- MIL-C-43473 - Cloth, Coated, Nylon, Polyurethane Coated.

## STANDARDS

## FEDERAL

- FED-STD-191 - Textile Test Methods.
- FED-STD-751 - Stitches, Seams, and Stitching.

## 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-731 - Quality of Wood Members for Containers and Pallets

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

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.

#### DRAWINGS

U.S. ARMY NATICK RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER

2-6-103 - Cord, Lock, Double Cord

(Copies of drawings are available from the U.S. Army Natick Research, Development, and Engineering Center, ATTN: STRNC-UX, Natick, MA 01760-5017.)

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are 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).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 3951 - Standard Practice for Commercial Packaging

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.)

(Non-Government standards and other publications are normally available from 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 First article. When specified (see 6.2), a sample shall be subjected to first article inspection (see 6.3) in accordance with 4.3.

3.2 Guide samples. Samples, when furnished, are solely for guidance and information to the contractor (see 6.4). Variations from this specification may appear in the sample, in which case this specification shall govern.

3.2 Materials. It is encouraged that recycled material be used when practical as long as it meets the requirements of this specification.

3.3.1 Cloth, nylon, polyurethane coated. The coated cloth for fabrication of both types of ponchos shall be as follows:

<u>Poncho</u>	<u>Coated cloth</u>	<u>Color</u>
Class 1	Type I of MIL-C-43473	Olive Green 207
Class 3	Type III of MIL-C-43473	Woodland camouflage pattern
Class 4	Type IV of MIL-C-43473	Desert camouflage pattern

3.3.2 Thread, polyester. The thread for seaming the ponchos shall conform to type I, class 1, subclass A, sizes A, AA, and B of V-T-285. For the hemming and hood attachment operations, thread conforming to type II, class 1, subclass A of V-T-285 may be used as an alternate for sizes AA and B thread. The thread color for classes 1 and 3 ponchos shall be Olive Drab S-1, C.A. 66022. The thread color for classes 4 ponchos shall be Khaki P-1, C.A. 66019. The colorfastness requirements of V-T-285 shall not apply.

3.3.2.1 Thread lubricant. Water and isopropyl alcohol only may be used for lubrication of the thread during sewing of the coated cloth (see 4.4.1.1).

3.3.3 Grommets. The grommets shall conform to type II, class 3, sizes 0 and 3 of MIL-G-16491.

3.3.4 Snap fasteners. The snap fasteners shall consist of a socket and stud eyelet combination conforming to MIL-F-10884 as follows:

- a. The socket shall be construction A, B, C, or D, style 2, finish 2.
- b. The stud eyelet combination shall be size 1 or 2, style 2, finish 2.

3.3.5 Drawcords. The drawcords shall be braid, textile, dyed Olive Green 107 (for classes 1 and 3) and Tan 380 (for class 4) conforming to type IV, class 3 of MIL-B-371 except that the requirement for colorfastness to laundering shall not apply. The ends of the drawcord shall be either tipped or resin coated.

3.3.6 Clamp, cord. The cord clamp shall conform to Drawing 2-6-103.

3.3.7 Reinforcement materials.

3.3.7.1 Snap fastener and grommet reinforcements. The cloth for reinforcing the grommets and snap fasteners shall be lightly coated cotton cloth weighing a minimum of 7.5 ounces per square yard and having a minimum breaking strength of 75 pounds in both warp and filling. The light coating on both sides shall be accomplished within a polymerized or copolymerized vinyl chloride resin plasticized exclusively with either phosphate or phthalate esters (see 4.4.1.1).

3.3.8 Seam sealant. The seam sealant used to seal the seams and allowable needle holes shall be a dull unpigmented solvent solution of polyurethane. The unpigmented sealant may be tinted providing there is no visual change in the exterior appearance of the garment and no infrared reflectance change of the

finished seam when tested as specified in MIL-C-43473. If plasticization of the sealant is necessary, only phosphate or phthalate ester plasticizer may be used (see 4.4.1.1). The sealant shall meet the hydrolytic stability requirement when tested as specified in 4.4.1.

3.3.8.1 Color and appearance. The seam sealant used on the class 1 poncho, when dry, shall produce a color gloss and appearance matching the basic coated cloth specified in 3.3.1. The seam sealant used on the class 3 or 4 ponchos, when dry, shall not change the color gloss and appearance of the camouflage print on the basic camouflage coated cloth specified in 3.3.1, when tested as specified in 4.4.1.

3.3.9 Seam dusting powder. All sealant areas shall be dusted. The dusting powder shall be whiting, talc or other finely divided mineral material which does not support mildew growth (see 4.4.1.1).

3.4 Design. The poncho shall have sides and ends that are hemmed and shall be equipped with snap fasteners for closing, as well as grommets for attaching tent pin lines. The poncho shall have a hood with a drawcord for face opening adjustment. In addition, a drawcord shall be included for type I, class 3 and class 4 ponchos for waist adjustment.

3.5 Patterns. Standard patterns which provide an allowance of 1/2 inch for all seams except waist drawcord tabs and side edges of hood facing pieces which provide an allowance of 1/4 inch, and separate side and end facings which provide an allowance of 3/8 inch will be furnished by the Government. The Government patterns shall not be altered in any way and are to be used only as a guide for cutting the contractor's working patterns. The working patterns shall be identical to the Government patterns.

#### 3.5.1 List of pattern parts.

3.5.1.1 Method 1. The component parts of the poncho, constructed in accordance with method 1, shall be cut from materials as specified in accordance with the pattern parts indicated:

##### List of pattern parts

<u>Material</u>	<u>Nomenclature</u>	<u>Cut parts</u>
Cloth, coated	Body of poncho	2
	Hood	1
	Hood facing piece	2

3.5.1.2 Method 2. The component parts of the poncho, constructed in accordance with method 2, shall be cut from materials as specified in accordance with the pattern parts indicated:

List of pattern parts

<u>Material</u>	<u>Nomenclature</u>	<u>Cut parts</u>
Cloth, coated	Neck reinforcement piece	1
	Hood	1
	Hood facing piece	2
	Body of poncho	1

3.6 Construction. The construction shall conform in all respects to the requirements specified in tables I or II and herein. Figures 1, 2, and 3 are furnished solely for guidance and information. Should variation from this specification appear in the figures, this specification shall govern.

3.6.1 Care during fabrication. Care shall be taken during fabrication operations, especially during seaming, stitching, and sealing, to insure that the coated cloth area adjacent to the seams is not damaged (see 6.5).

3.6.2 Stitches, seams, and stitching. All stitches, seams and stitching shall conform to FED-STD-751. The type of seam, stitching, and stitches per inch shall be as specified in table I or II as applicable. Seam allowances shall be maintained with seams sewn so that no raw edges, run-offs, twists, pleats, puckers, or open seams occur. The needle shall be the smallest possible size which can be used with specified thread in order to minimize the size of the hole made in the coated cloth by the needle.

3.6.2.1 Type 301 stitching. Ends of all stitching shall be backstitched or overstitched 1/2 inch minimum except when caught in other stitching or turned under in a hem. Thread tension shall be maintained so that there will be no loose stitching resulting in puckering of the materials sewn. The lock shall be embedded in the materials sewn.

3.6.2.1.1 Repairs of type 301 stitching. Repairs of type 301 stitching shall be as follows:

- a. When thread breaks or bobbin run-outs occur during sewing, the stitching shall be repaired by restarting the stitching a minimum of 1 inch back of the end of the stitching. 1/
- b. Thread breaks or two or more consecutive skipped or run-off stitches noted during inspection of the item (in-process or end item) shall be repaired by overstitching. The stitching shall start a minimum of 1 inch in back of the defective area and continue a minimum of 1 inch beyond the defective area onto the existing stitching. Loose or excessively tight stitching shall be repaired by removing the defective stitching, without damaging the materials, and restitching in the required manner. 1/

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

3.6.2.2 Type 401 stitching. Thread tension shall be maintained so that there will be no loose stitching. Both ends of all seams or stitching produced with 401 stitch type, when not turned under in a hem or held down by other stitching, shall have a 1/2 to 3/4 inch chain extending beyond each end. The looper (underthread) shall be on the inside of the poncho. All repairs shall be in accordance with 3.6.2.1.1a and 3.6.2.1.1b. Repairs may be made using 301 stitch type.

### 3.6.3 Sealing of seams and stitching.

3.6.3.1 Sealed areas. All stitching, except the peripheral hems and the facing piece seams around the face opening of the hood, shall be sealed with the sealant specified in 3.3.8 to meet the seam hydrostatic requirement in 3.6.4.1. The waist drawcord tabs, when applicable, shall be sealed on the outside with a minimum of three coats of sealant. The straight joining seams on the front and back, or the straight side joining seam of the poncho shall be sealed with a minimum of three coats of sealant on either the inside or outside of the poncho. The center seam of the hood and the seam joining the hood to the neck of the poncho shall be sealed with a minimum of three coats of sealant on either the inside or outside of the poncho, and with a minimum of one coat of sealant on the side opposite to that sealed with the three coats. Additional coats may be applied to any seam on either side as required to meet the seam hydrostatic requirement.

3.6.3.2. Application. The sealant shall be applied in such a manner as not to cause twists, pleats, or puckers on the seam or on the cloth adjacent to the seam. The first coat of sealant on the inside and outside 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 in under any turned edges of the seams. The succeeding coats of sealant may be brushed or squeegeed on. The cement line shall extend not less than 1/4 or more than 1 inch on each side of the seam or stitching. The coats of sealant shall be allowed to dry before the ponchos are folded or before sealed surfaces are allowed to contact any other parts of the poncho or other sealed surfaces.

3.6.3.3. Dusting. When the coats of sealant are dry, the sealed seams shall be dusted thoroughly with the seam dusting powder specified in 3.3.9. Care shall be exercised that only sealed seam areas are dusted and that dust is not distributed over other areas of the poncho.

### 3.6.4 Sealed seam area performance requirements.

3.6.4.1 Hydrostatic resistance. The sealed seams and the immediate adjacent area shall pass the hydrostatic test as specified in 4.4.4. Before testing, the test area shall be flexed as specified in 4.5.1 and shall show no peeling, whitening, or lifting of the sealant.

3.6.4.2 Resistance to low temperature flexing. Unless otherwise specified (see 6.2), the seam sealant shall be tested for resistance to low temperature flexing as specified in 4.4.4. After testing, the seam sealant show no cracking, flaking, or separation from the coated fabric.

3.6.4.3 Blocking. The sealed seam shall block no more than Scale Rating No. 3 when tested as specified in 4.4.4.

### 3.7 Marking.

3.7.1 Type I. Each type I, (class 1, 3 and 4) poncho shall have a combined contractor and instruction marking. The location shall be as specified in figure 1 except that, for the class 3 poncho, the exact location shall be adjusted so that none of the marking is any part of the black portion of the camouflage print. The marking shall be clearly and legibly printed directly on the uncoated side (inside) of the poncho with black, 1/4 inch high letters and shall contain the following data:

Nomenclature  
 Stock Number  
 Name of contractor  
 Date and number of contract  
 Multipurpose ponchos  
 Rain garment and ground sheet  
 Blanket or sleeping bag cover (snap the two long edges together)  
 Tent (snap two ponchos together as side walls)  
 Floor (third poncho will snap inside tent as a floor)  
 Two open tents will go end to end with common center pole

The marking shall retain good legibility and shall show fair fastness to crocking, both wet and dry, when tested as specified in 4.4.4.

3.7.2 Type II. The type II, (class 3 and 4) poncho shall be marked in accordance with the marking for the class 3 poncho in 3.7.1 except that the data shall be as follows:

Nomenclature  
 Stock Number

The marking shall retain good legibility and shall show fair fastness to crocking, both wet and dry, when tested as specified in 4.4.4.

3.7.3 Care instruction marking (type I and II ponchos). Each poncho shall have care instructions marking located approximately 1 inch above the marking specified in 3.7.1 and 3.7.2. The marking shall be clearly and legibly printed directly on the uncoated side (inside) of the poncho with black, 1/4 inch high letters and shall contain the following information:



CAUTION: DO NOT MACHINE LAUNDRER. DO NOT DRY CLEAN. HAND WASH IN WARM WATER AND MILD SOAP OR DETERGENT USING A SOFT BRISTLE BRUSH. RINSE THOROUGHLY AND AIR DRY.

The marking shall retain good legibility and shall show "fair" fastness to crocking, both wet and dry, when tested as specified in 4.4.4.

### 3.8 Repairs on finished poncho.

3.8.1 Repairable areas generated during manufacture of the poncho shall be generally defined as follows:

3.8.1.1 Scuffs. Any break in the coated surface (nylon yarns intact) other than a pickoff of the coating or a pinhole. Scuffs not exceeding four in number may be repaired. The size of any repair shall not exceed 2 inches in length and 1 inch in width.

3.8.1.2 Pinhole. Pinholes in coating not exceeding eight in number may be repaired and the sizes of the repair shall not exceed 3/4 inch in length and width.

3.8.1.3 Needle holes. Needle hole repairs shall not exceed 2 inches in length and 1 inch in width.

3.8.1.4. Pick-offs. Pick-offs in the coating not exceeding four in number may be repaired and the overall size of such repairs shall not exceed 1/2 inch in diameter.

3.8.2. Repair compound. The repair compound shall be as specified in 3.3.8.

3.8.3 Repair procedure. Each repairable area shall be coated with a minimum of two coats of the repair compound. The first coat of compound shall be brushed in and worked in such a manner as to completely wet and cover the scuff, pinhole, needle hole, or pick-off. The second coat shall be brushed smoothly and evenly over the first coating. The repaired areas, after the compound is dry, shall be lightly dusted with the mica specified in 3.3.9.

3.8.4 Requirements for repaired areas. The repaired areas shall show no stiffening or other defects that would affect the serviceability or the outside appearance of the poncho. The repaired area shall conform to the blocking requirements of the sealed seams specified in 3.6.4.3. The repair compound shall be well adhered to the coated fabric and when subjected to a flexing or scrubbing action between the hands, will show no lifting of the edge, and no cracking, flaking or removal of the repair compound.

3.9 Manufacturing operations requirements. The poncho shall be made in accordance with all operations listed in table I or II although not necessarily in the same sequential order, utilizing working patterns which have been cut by the supplier to conform with standard patterns.

No part of the poncho shall be cut less than 1/2 inch from the beginning of the coating of an untrimmed edge of the coated cloth. The type I poncho shall conform to the finished measurements shown in figure 1. The type II poncho shall conform to the finished measurements shown on figure 2. Stitches, seams and stitching shall conform to the requirements of 3.6.2 and sealing of seams and stitching shall be in conformance with 3.6.3

3.9.1 Method 1. The center seamed poncho shall be made in accordance with the operations listed in table I.

NO.	TABLE I. (Method 1) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
1.	<p><u>Cut poncho.</u></p> <p>a. The coated side of the material shall be on the outside of the poncho.</p> <p>b. The coated cloth shall be carefully laid in uniform widths and lengths and care shall be taken in spreading the material. The plies shall not be stretched or pulled and one side of the lay shall be even.</p> <p>c. All component parts of the poncho shall be cut out of the material in such a manner as to assure that they harmonize with each other in shade, except the hood facing, side and end facings.</p> <p>d. Side and end facings shall be cut with sufficient seam allowance to fit a standard folder and shall finish 1-1/2 + 1/4 inches wide. The facings may be cut on a stripping machine.</p> <p>e. All snap fastener and grommet reinforcement pieces shall be cut of one continuous piece the full length or width of the poncho. The reinforcement pieces shall be of sufficient width to be caught in the double stitching of the facings.</p> <p>f. Cut hood drawcord 46 + 1 inch long.</p> <p>g. Cut waist drawcord 93 + 1 inches long (applicable only for type I, class 3 and 4 ponchos).</p>						

NO.	TABLE 1. (Method 1) (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
1.	<u>Cut poncho.</u> (cont'd)  h. The use of drill holes is prohibited except for marking the position of the center hem grommets.						
2.	<u>Replacement of damaged parts.</u>  a. Care shall be exercised during the spreading, cutting, and manufacturing operations to assure that material defects and damages, as specified in 4.4.2, are excluded and replaced with nondefective and properly matched material.  b. There shall be no replacement of parts or removal or replacement of stitching after assembly of the finished poncho.						
3.	<u>Join front halves of poncho.</u>  Join front halves of poncho from bottom to neck with two rows of stitching, 3/16 inch apart. The rows of stitching shall be 1/16 to 1/8 inch from turned edges.	401	LSc-2	9-11	AA	A or AA	
4.	<u>Attach hood to poncho.</u>  Seam hood to neck of poncho in a continuous seam from edge to edge with the hood overlapping the body on the outside. The seam shall be two rows of stitching 3/16 inch apart. The rows of stitching shall be 1/16 to 1/8 inch from the turned edges.	401	LSc-2	9-11 or 7-9	AA or B	A or AA	

NO.	TABLE I. (Method 1) (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
5.	<p><u>Join center back seam and hood.</u></p> <p>Join center back seam and hood in one continuous operation with two rows of stitching 3/16 inch apart. The rows of stitching shall be 1/16 to 1/8 inch from turned edges. Hood-poncho joining seams may be staggered by not more than 1/2 inch. Bottom edge of poncho and front of the hood shall finish even.</p>	401	LSc-2	9-11	AA	A or AA	
6.	<p><u>Hem sides and ends of poncho.</u></p> <p>a. All snap fasteners and grommets on the sides and ends of the poncho shall be reinforced and the reinforced pieces may be stitched in the hem in one operation. The reinforcement pieces shall be inside the hem between the body and facing and caught in each row of stitching.</p> <p>b. The sides and ends of the poncho shall be faced with a strip of self material, the raw edges turned in and double stitched with stitching 1/16 to 1/8 inch from turned edges. The facing shall finish 1-1/2 + 1/4 inches wide.</p> <p style="text-align: center;">or</p> <p>c. The sides and ends of the poncho may have grown-on hem as indicated by pattern. The ends shall be turned to the inside with the raw edge turned in and the hem stitched, 1/16 to 1/8 inch from each turned edge. Hem shall finish 1-1/2 + 1/4 inches wide.</p> <p>d. Close open ends of hems and facing in line with hem stitching.</p>	301 or 401	LSm-2  LSm-2	9-11 or 7-9 9-11 or 7-9	AA or B AA or B	AA  A or AA	
		301 or 401	LSD-1  OSF-1	9-11 or 7-9 9-11 or 7-9	AA or B AA or B	AA  A or AA	
		301	SSa-1	9-11	AA	AA	

NO.	TABLE I. (Method 1) (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
7.	<u>Grommets.</u> Eight grommets, size No. 3, reinforced, shall be inserted in the four hems and centered in the hems located as follows: (a) One in each corner; (b) One in each hem equidistant from the corners (1 inch tolerance permitted), (see operation 1.e).						
8.	<u>Snap fasteners.</u> The snap fasteners shall be inserted in both long hems as shown on figure 1 or figure 2 as applicable. There shall be no prepunched holes for inserting the snap fasteners. When the poncho is folded in half, either way, the snap fasteners shall correspond without gaping along the side seams when fasteners are snapped together.						
9.	<u>Join hood facing pieces.</u> a. The hood facing shall consist of left and right facing pieces of the basic fabric. b. Seam ends of left and right pieces at the back and at the front.	301	SSa-1	9-11	AA	AA	
10.	<u>Position and attach hood grommets.</u> Mark position and attach two No. 0 grommets through reinforcement pieces and front of hood as indicated by marks on pattern.						

NO.	TABLE I. (Method 1) (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
11.	<p><u>Seam facing to front of hood.</u></p> <p>a. Seam facing to front edge of hood to form tunnel for face drawcord. Thread drawcord through grommets with drawcord crossing between grommets inside the facing.</p> <p>b. Thread both ends of drawcord through the first hole of the slide keeper, then through the second hole and knot the ends.</p> <p>c. Position drawcord around periphery of hood.</p> <p>d. Turn down the facing over drawcord, turning the edge and single stitch 1/8 inch from edge, forming the face tunnel; the face drawcord tunnel shall finish 3/4 to 7/8 inch wide.</p> <p style="text-align: center;">or</p> <p>e. The back edge of hood facing may be hemmed prior to the seaming operation.</p> <p>f. The joining seam at the top of facing shall be positioned on, or adjacent to the hood joining seam. The joining seam at the bottom of facing shall be centered between the face drawcord grommets at the front. A 1/2 inch off center tolerance is allowed for both positions.</p>	301	SSa-1	9-11	AA	AA	
		301	LSd-1	9-11	AA	AA	
		301	Efa-1	9-11	AA	AA	

NO.	TABLE I. (Method 1) (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
12.	<p><u>Make waist drawcord tabs (applicable only to type I, class 3 and 4 ponchos).</u></p> <p>a. Cut two pieces of the reinforcement material 1-1/8 inches wide by 5 inches long, fold in half, and attach a size No. 0 grommet to each tab, 1/2 to 5/8 inch front the folded edge, centered on the 1-1/8 inch width.</p> <p>b. Spread open ends of tabs, position on the inside front (uncoated side of the poncho) as indicated by marks on the pattern and stitch each end with a 7/8 + 1/8 inch box of stitching 1/8 to 1/4 inch from the edge.</p>	301		9-11	AA	AA	
13.	<p><u>Sealing of seams.</u></p> <p>All seams and stitching shall be sealed as specified in 3.6.3.</p>						
14.	<p><u>Cleaning.</u></p> <p>All ends of threads shall be trimmed and loose threads removed from poncho; all spots and stains shall be removed.</p>						



3.9.2 Method 2. The one-piece or side seamed poncho with manufacturing operations specified in table II, can be made in any of the three following ways:

- a. One piece if coated cloth of sufficient width is available.
- b. Two panels if the side panel does not exceed 20 inches in width.
- c. Three panels when one side panel would exceed 20 inches. Then two side panels of equal width shall be used.

NO.	TABLE II. (Method 2) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
1.	<p><u>Cut poncho.</u></p> <p>a. The coated side of the material shall be on the outside of the poncho.</p> <p>b. The coated cloth shall be carefully laid in uniform widths and lengths and care shall be taken in spreading the material. The plies shall not be stretched or pulled and one side of the lay shall be even.</p> <p>c. All component parts of the poncho shall be cut out of the material in such a manner as to assure that they harmonize with each other in shade, except the waistcord grommet tabs, hood facing, side and end facings, and neck reinforcement piece.</p> <p>d. Side and end facings shall be cut with sufficient seam allowance to fit a standard folder and shall finish 1-1/4 to 1-3/4 inches wide. The facings may be cut on a stripping machine.</p> <p>e. All snap fastener and grommet reinforcement pieces shall be cut in one continuous piece the full length or width of the poncho. The reinforcement pieces shall be of sufficient width to be caught in the double stitching of the facings.</p> <p>f. Cut hood drawcord 46 + 1 inches long.</p> <p>g. Cut waist drawcord 93 + 1 inches long (applicable only for type I, class 3 and 4 ponchos).</p>						

NO.	TABLE II. (Method 2) (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
1.	<p><u>Cut poncho.</u> (cont'd)</p> <p>h. The neck binding may be strip cut and shall be cut on the bias, 3/4 inch to 7/8 inch wide.</p> <p>i. The use of drill holes is prohibited except for marking the position of the center hem grommets.</p>						
2.	<p><u>Replacement of damaged parts.</u></p> <p>a. Care shall be exercised during the spreading, cutting and manufacturing operations to assure that material defects and damages, as specified in 4.4.2, are excluded and replaced with nondefective and properly matched material.</p> <p>b. There shall be no replacement of parts or removal or replacement of stitching after assembly of the finished poncho.</p>						
3.	<p><u>Join side pieces to poncho.</u></p> <p>Seam the long side to body poncho with two rows of stitching, 3/16 inch apart. The rows of stitching shall be 1/16 to 1/8 inch from turned edges.</p>	401	LSc-2	9-11	AA	A	
4.	<p><u>Hem sides and ends of poncho.</u></p> <p>a. All snap fasteners and grommets on the sides and ends of the poncho shall be reinforced and the reinforced pieces may be stitched in the hem in one operation. The reinforcement pieces shall be inside the hem between the body and facing and caught in each row of stitching.</p>						

NO.	TABLE 11. (Method 2) (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
4.	<p>Hem sides and ends of poncho. (cont'd)</p> <p>b. The sides and ends of the poncho shall be faced with a strip of self material, the raw edges turned in and double stitched with stitching 1/16 to 1/8 inch from turned edges. The facing shall finish <math>1-1/2 \pm 1/4</math> inches wide.</p> <p>or</p> <p>c. The sides and ends of the poncho may have grown-on hem as indicated by pattern. The ends shall be turned in the inside with the raw edge turned in and the hem stitched, 1/16 to 1/8 inch from each turned edge. Hem shall finish <math>1-1/2 \pm 1/4</math> inches wide.</p> <p>d. Close open ends of hems and facing in line with hem stitching.</p> <p><u>Grommets.</u></p> <p>Eight grommets, size No. 3, reinforced, shall be inserted in the four hems and centered in the hems located as follows: (a) One in each corner; (b) One in each hem equidistant from the corners (1 inch tolerance permitted), (see operation 1.e).</p> <p><u>Snap fasteners.</u></p> <p>The snap fasteners shall be inserted in both long hems as shown on figure 1 or figure 2 as applicable. There shall be no prepunched holes for inserting the snap fasteners. When the poncho is folded in half, either way, the snap fasteners shall correspond without gaping along the side seams when fasteners are snapped together.</p>	<p>301 or 401</p> <p>301 or 401</p> <p>301</p>	<p>LSm 2</p> <p>LSm-2</p> <p>LSD-1</p> <p>OSF-1</p> <p>SSa 1</p>	<p>9-11 01 7-9</p> <p>9-11 01 7-9</p> <p>9-11 01 7-9</p> <p>9-11 01 7-9</p> <p>9 11</p>	<p>AA 01 B</p> <p>AA 01 B</p> <p>AA 01 B</p> <p>AA 01 B</p> <p>AA</p>	<p>AA</p> <p>A 01 AA</p> <p>AA</p> <p>A 01 AA</p> <p>AA</p>	
5.							
6.							

NO.	TABLE II. (Method 2) (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
7.	<u>Attach neck reinforcement piece.</u>  Position the neck reinforcement piece on poncho with the upper edges even with the neck opening. Seam the lower edge of reinforcement piece through poncho with the stitching 1/16 to 1/8 inch from turned edge.	301	SSa-1	9-11	AA	AA	
8.	<u>Make hood.</u>  The backseam shall be joined with two rows of stitching 3/16 inch apart. The rows of stitching shall be 1/16 to 1/8 inch from turned edges.	401	LSc-2	9-11	AA	A	
9.	<u>Join hood facing pieces.</u>  a. The hood facing shall consist of left and right facing pieces of the basic fabric.  b. Seam ends of left and right pieces at the back and at the front.	301	SSa-1	9-11	AA	AA	
10.	<u>Position and attach hood grommets.</u>  Mark position and attach two No. 0 grommets through reinforcement pieces and front of hood as indicated by marks on pattern.						
11.	<u>Seam facing to front of hood.</u>  a. Seam facing to front edge of hood to form tunnel for face drawcord. Thread drawcord through grommets with drawcord crossing between grommets inside the facing.	301	SSa-1	9-11	AA	AA	

NO.	TABLE II. (Method 2) (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
11.	<u>Seam facing to front of hood.</u> (cont'd)						
	b. Thread both ends of drawcord through the first hole of the slide keeper, then through the second hole and knot the ends.						
	c. Position drawcord around periphery of hood.						
	d. Turn down the facing over drawcord, turning the edge and single stitch 1/8 inch from edge, forming the face drawcord tunnel; the face drawcord tunnel shall finish 3/4 to 7/8 inch wide.	301	LSd-1	9-11	AA	AA	
12.	e. The back edge of hood facing may be hemmed prior to the seaming operation.						
	or						
	f. The joining seam at the top of facing shall be positioned on, or adjacent to, the hood joining seam. The joining seam at the bottom of facing shall be centered between the face drawcord grommets at the front. A 1/2 inch off center tolerance is allowed for both positions.	301	EFa-1	9-11	AA	A or AA	
	<u>Join hood to neck of poncho.</u>						
	a. Seam hood to neck of poncho through neck reinforcement piece and binding strip 1/4 to 3/8 inch seam allowance.	301	SSa-1	9-11	AA	AA	
	b. Turn hood over first stitching and then fold binding strip around and under the edges of the neck, reinforcement and hood and raise stitch 1/16 to 3/32 inch from folded edge through all plies of the material as shown on figure 3.	301	(Figure 3a shows finished seams)	9-11	AA	AA	

NO.	TABLE II. (Method 2) (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
12.	Join hood to neck of poncho. (cont'd)  or  c. Seam hood to neck of poncho through neck reinforcement piece and binding strip with a folder.  d. Turn hood under bound edges of first seam and top stitch through hood 1/16 to 3/32 inch from the edge of bound seams.	301   301	BSb-1  (Figure 3b shows finished seams)	9-11  9-11 or 7-9	AA  AA	AA  AA	
13.	Make waist drawcord tabs (applicable only to type I, class 3 and 4 ponchos).  a. Cut two pieces of the reinforcement material 1-1/8 inches wide by 5 inches long, fold in half, and attach a size No. 0 grommet to each tab, 1/2 to 5/8 inch front the folded edge, centered on the 1-1/8 inch width.  b. Spread open ends of tabs, position on the inside front (uncoated side of the poncho) as indicated by marks on the pattern and stitch each end with a 7/8 $\pm$ 1/8 inch box of stitching 1/8 to 1/4 inch from the edge.  14. Sealing of seams.  All seams and stitching shall be sealed as specified in 3.6.3.	301		9-11	AA	AA	

NO.	TABLE II. (Method 2) (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	T H R E A D		
					NEEDLE	BOBBIN/ LOOPER	COVER
15.	<p><u>Cleaning.</u></p> <p>All ends of threads shall be trimmed and loose threads removed from poncho; all spots and stains shall be removed.</p>						



3.10 Dimensions. The dimensions of the finished type I poncho and the location of the snap fasteners and grommets shall be as indicated in figure 1. The dimensions of the finished type II poncho and location of snap fasteners and grommets shall be as indicated in figure 2. The hood shall be  $18 \pm 1/2$  inches in height and  $15-1/2 \pm 1/2$  inches in width. Measurements shall be taken as indicated in 4.4.3. Tolerance for measurement of distance between side peripheral hem snap fasteners and grommets shall be  $1/4$  inch.

3.11 Workmanship. The poncho shall conform to the quality and grade of product established by this specification. The occurrence of defects shall not exceed the applicable acceptable quality levels.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations or tests) as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this 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 requirement 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 accept defective material.

4.1.2 Responsibility for dimensional requirements. Unless otherwise specified in the contract or purchase order, the contractor is responsible for ensuring that all specified dimensions have been met. When dimensions cannot be examined on the end item, inspection shall be made at any point, or at all points in the manufacturing process necessary to ensure compliance with all dimensional requirements.

4.1.3 Certificates of compliance. When certificates of compliance are submitted, the Government reserves the right to inspect such items to determine the validity of the certification.

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

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

4.3 First article inspection. When a first article is required (see 3.1 and 6.2), it shall be examined for the defects specified in 4.4.2 and 4.4.3.

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

4.4.1 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 specification or applicable purchase document. The seam sealant specified in 3.3.8 shall be tested for hydrostatic stability in accordance with 4.5.4 and for color, gloss and appearance in accordance with 4.5.5. The sample for testing shall be a one pint composite. The inspection level shall be S-1 and shall be used only to determine the number of containers to be sampled in arriving at the composite. Three specimens shall be tested for each characteristic and there shall be no failure of any specimen to meet the requirement as specified.

4.4.1.1 Component and material certification. A certificate of compliance will be accepted as evidence that the components and materials listed below conform to the requirements specified.

<u>Component</u>	<u>Requirement paragraph</u>
Thread lubricant (material)	3.3.2.2
Reinforcement material (fastener and grommet)	3.3.7.1
Seam sealant (material only)	3.3.8
Seam dusting material	3.3.9

4.4.2 End item visual examination. The end items shall be examined for the defects listed in table III. The lot size shall be expressed in units of ponchos. The sample unit shall be one poncho. The inspection level shall be II and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 for major defects, 15.0 for major and minor A defects combined, and 65.0 for total (major, minor A, and minor B combined) defects.

TABLE III. End items visual defects

<u>Examine</u>	<u>Defect</u>	<u>Classification</u>	
		<u>Major</u>	<u>Minor A B</u>
Cleanness	Any spot or stain of a permanent nature on any portion of garment which would be visible when poncho is worn	101	

TABLE III. End items visual defects (cont'd)

Examine	Defect	Classification	
		Major	Minor A B
Cleanness (cont'd)	Any spot or stain of a permanent nature not visible when poncho is worn		201
	Removable spot or stain on outside of poncho		301
	Thread ends not trimmed		302
	Excessive seam dusting powder distributed over exterior or interior seams of poncho		202
	Dusting powder on any area other than seams (except that which may have come from seams as garment is folded)		203
	Fabric or thread scraps not removed from garment		303
	Any defective component, (unless otherwise specified)	102	
	Any component part omitted, (unless otherwise specified)	103	
Component and assembly	Any required operation omitted or improperly performed	104	
	Any end not tipped or resin coated		304
	Any drawcord omitted or caught in tunnel stitching	105	
Drawcord	Any end not knotted		305
	Grommet within 1/16 inch of edge	106	
Grommets	Omitted, broken, bent, or not securely clinched:		
	- one grommet		204
	- two grommets	107	
	One or more too tightly clinched, cutting coated cloth	108	
	One or more having sharp or rough edge	109	
	Not clinched through reinforcement when applicable:		
	- one or two grommets		205
	- three or more grommets	110	
	Any not completely on hem	111	

TABLE III. End items visual defects (cont'd)

Examine	Defect	Classification	
		Major	Minor A B
Marking	Marking missing, incorrect, or illegible		206
	Not located as specified		306
Coated cloth defects and damages	Any blister	112	
	Lump exceeding 1/4 inch in diameter or three or more lumps of any size within a square foot area		207
	Hard permanent crease or wrinkle	113	
	Uneven coating resulting in sharply contrasting shade area of heavy warpwise lines		208
	Foreign matter		307
	Any uncoated area	114	
Workmanship damages	Needle chew	115	
	Any mend, cut, or hole in other than hem area	116	
	Any mend, cut, or hole in hem area:		
	- less than 3/16 inch in length or diameter		308
	- 3/16 inch or more in length or diameter	117	
	Any tear or burn	118	
	Any scuff, pinhole, pick-off, or needle hole uncoated	119	
	Repair compound on fabric crack, lifts or flakes when flexed or scrubbed		309
	Any repaired area not dusted		209
	More than four scuffs repaired		210
	Any scuff repair exceeding 2 inches in length and 1 inch in width		211
	More than eight pinholes repaired		212
	Any pinhole repair exceeding 3/4 inch in length or width		310
	Any needlehole repair exceeding 2 inches in length and 1 inch in width:		
	- not occurring within 3 inches of the outside peripheral hem of poncho		213
	- occurring within 3 inches of the outside peripheral hem of poncho		311

TABLE III. End items visual defects (cont'd)

Examine	Defect	Classification	
		Major	Minor A B
Workmanship damages (cont'd)	Any pick-off repair area exceeding 1/2 inch in diameter		214
<p>NOTE: Coated cloth defects and workmanship damages to the coating of the basic cloth, shall be determined by visual examination using through lighting on the finished poncho. The through lighting equipment shall conform to the following requirements:</p> <p>A table with a clear glass top, lighted with a minimum of two parallel 25-watt fluorescent bulbs spaced 5 to 6 inches apart (distance between bulbs). The top of the glass shall be 9 to 10 inches above the top of the bulbs. The inside of the light housing shall be painted flat white. The table, sides and ends, shall be 6 to 8 inches from the bulbs.</p> <p>The table shall be used in a darkened area. The darkened area shall be defined as follows: The surface to be examined shall be illuminated with not more than 25 foot candles of artificial or natural or combination of artificial and natural light with the test lights out (see 6.6). The poncho shall be examined with the outside of the poncho towards the table light.</p>			
Sealing of seams and stitching	Any seam or stitching required to be sealed, not properly sealed, i.e., sealant not under the turned edge of seam or does not completely cover the stitching or any needle hole, or evidence of air bubbles Cement line extends less than 1/4 inch	120	215

TABLE III    End items visual defects (cont'd)

Examine	Defect	Classification	
		Major	Minor A    B
Sealing of seams and stitching (cont'd)	Cement line exceeds more than 1 inch on either side of seam or stitching		312
	Sealant not dusted (to be scored only when the condition exists on the major portion of the seam)		216
	Sealant not dull and transparent <u>1/</u>		217
	Sealant changes color or appearance of seam area <u>1/</u>		218
	Sealant cracks or flakes when creased <u>2/</u>	121	
	Sealant tacky <u>2/</u>	122	
	Seam badly twisted, pleated, or puckered when the condition is caused by improperly performed sealing operation <u>2/</u>		313
	Sealant blocked to the extent that unfolding of the poncho results in breaking of sealant or pick-off of coating from the fabric <u>2/</u>	123	
Accuracy of seaming	Seam badly twisted, pleated or puckered		219
	NOTE: A characteristic of nylon is to show a certain amount of puckering at seams or stitching. This puckering is not to be classified as a defect.		
	Part of poncho caught in any unrelated operation or stitching		220
	End of stitching not caught in other seams or stitching, not securely backstitched		221
	Wrong shade of thread in contrast with color and shade of poncho		314
	Rows of stitching in LSc-2 seams not 3/16 inch apart		315
	Stitching more than 1/8 inch from edge		316
	Stitching less than 1/16 inch from edge resulting in no damages to the material		317
	Stitching less than 1/16 inch from edge resulting in damage to the material	124	

TABLE III. End items visual defects (cont'd)

Examine	Defect	Classification	
		Major	Minor A B
Open seams	Open seam at peripheral hem or at hood facing piece:		
	- more than 1/4 inch but not more than 1 inch		222
	- more than 1 inch	125	
	Any other open seam:		
	- more than 1/8 inch but not more than 1/2 inch		223
	- more than 1/2 inch	126	
	NOTE: One or more broken or two or more continuous skipped or run-off stitches constitute an open seam. On double stitched seams, a seam is considered open when one or both sides of the seam is open.		
Raw edge (when edge is required to be turned under and stitched)	On peripheral hem of poncho or facing of hood:		
	- more than 1/2 inch but not more than 1 inch		224
	- more than 1 inch	127	
	NOTE: Raw edge not securely caught in stitching shall be classified as an open seam.		
Run-off	Joining seam - when resulting in an open seam, use open seam classification		
	No defect when not resulting in an open seam		
Seam and stitch type	Looper thread located on outside of poncho when 401 stitch type is used		318
Stitch tension	Loose tension in any area of peripheral hem or facing of poncho:		
	- more than 1 inch but not more than 2 inches		225
	- more than 2 inches	128	

TABLE III. End items visual defects (cont'd)

Examine	Defect	Classification	
		Major	Minor A B
Stitch tension (cont'd)	Tight tension (stitches break when normal strain is applied to the seam or stitching)	129	
Stitches per inch (to be scored only when the condition exists on the major portion of the seam)	Less than minimum specified		
	- 1 stitch		319
	- 2 or more stitches		226
	More than maximum specified:		
	- 2 stitches		320
	- 3 stitches		227
	- 4 stitches	130	
Snap fastener	Stud or socket omitted, defective, improperly clinched or having rough or sharp edge	131	
	Stud and socket reversed, i.e., placed on side opposite to side indicated on figure	132	
Hood	Drawcord not crossed between grommets		228
	Drawcord slide keeper omitted		229
	Drawcord not properly assembled through slide keeper		321
	Drawcord end not knotted		322
Waist drawcord tab (applicable only to type I, class 3 and 4 ponchos)	The center of the waist drawcord tab less than 12-1/2 inches or more than 13-1/2 inches below the neck seam		230
	Drawcord not knotted each side of each garment		323

1/ Although sealant passed component testing for color, gloss and appearance, the method of application in sealing operation may cause changes in color, gloss, and appearance of seam area if not properly applied.

2/ Poncho drawn for examination for these defects shall have been production folded for packing for a minimum of 1 hour.

4.4.3 End item dimensional examination. The end item shall be examined for the defects listed below. The lot size shall be expressed in units of ponchos. The sample unit shall be one poncho. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0.



<u>Examine</u>	<u>Defect</u>
Poncho body	Length more or less than specified as applicable Width more or less than specified, as applicable Width of hem less than 1-1/4 inches or more than 1-3/4 inches
NOTE: Length measurement taken from end to end along center of poncho. Width measurement is taken from edge to edge. Height of hood measurement is taken with the hood folded in half, along face opening from top folded edge to seam joining hood to neck of poncho. Half width of hood measurement is taken with hood folded in half from front folded edge at point in line with lower edge of face openings.	
Hood	Height less than 17-1/2 inches or more than 18-1/2 inches Width less than 15 inches or more than 16 inches
Hem snap fasteners	Measurement of location of any snap fastener from another snap fastener or center grommet varies from nominal measurement specified in figure 1 or figure 2, as applicable, by more than 1/4 inch
Hem grommets	Center hem grommet not equidistant from corner grommets by more than 1 inch
Hood drawcord	Hood drawcord less than 45 inches or more than 47 inches
Waist drawcord	Waist drawcord less than 92 inches or more than 94 inches (applicable only to type I, class 3 and 4 ponchos)

4.4.4 End item testing. The end items shall be tested for the characteristics listed in table IV. The methods of testing specified in FED-STD-191 wherever applicable and as listed in table IV shall be followed. Any sample unit test failure shall be classified as a defect. The lot size shall be expressed in units of ponchos. The sample unit shall be one poncho. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 6.5.

TABLE IV. End item tests

<u>Characteristic</u>	<u>Requirement reference</u>	<u>Test Method</u>	<u>Number of determinations per sample unit</u>
Sealed seam area, hydrostatic resistance	3.6.4.1	4.5.1	7

TABLE IV End item tests (cont'd)

Characteristic	Requirement reference	Test Method	Number of determinations per sample unit
Sealed seam sealant:			
Resistance to low temperature flexing	3.6 4 2	4.5.2	1
Resistance to blocking	3.6.4.3	4.5.3 1	
Colorfastness and legibility of labels	3.7	5651	1

4.4.5 Packaging examination. The fully packaged end item shall be examined for the defects listed below. The lot size shall be expressed in units of shipping containers. The sample unit shall be one shipping container fully packaged. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 2.5.

<u>Examine</u>	<u>Defect</u>
Marking (exterior and interior)	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing, damaged, or not as specified.
Workmanship	Inadequate application of components such as: incomplete closure of container flaps, loose strapping, improper taping, or inadequate stapling. Bulged or distorted container.
Contents	Number of intermediate containers per shipping container is more or less than required. Number of ponchos per intermediate container is more or less than required. <u>1/</u>

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

4.4.6 Palletization examination. The fully packaged and palletized end items shall be examined for the defects listed below. The lot size shall be expressed in units of palletized unit loads. The sample unit shall be one palletized unit load, fully packaged. The inspection level shall be S-1 and the AQL, expressed in terms of defects per hundred units, shall be 6.5.

<u>Examine</u>	<u>Defect</u>
Finished dimension	Length, width or height exceeds specified maximum requirement.
Palletization	Pallet pattern 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.

#### 4.5 Methods of inspection.

4.5.1 Determination of hydrostatic resistance of sealed seam area. The hydrostatic resistance of sealed seam areas of the poncho shall be determined in accordance with Method 5516 of FED-STD-191 except for the following: The seam area of the fabricated poncho, sample unit, shall be tested without cutting or otherwise damaging the poncho. The seam shall be flexed 10 times in the following manner. The poncho seam shall be grasped using the thumb and fingers of each hand in such a manner that the thumbs are parallel to each other and approximately 1/2 inch beyond (outside) the edges of the sealant. With the seam held firmly in the above manner the thumbs shall be brought together so the cloth and the sealant are in contact. The sealed area shall be flexed vigorously 10 times with the cloth and sealant in contact with itself throughout the test. The flexing action shall be such that when fully flexed in either direction there shall be a minimum of 2 inches between each thumb nail when the flexed area is fully extended with the test area in contact with itself at all times. The test area shall be visually examined for the characteristic indicated in 3.6.4.1 prior to conduct of the hydrostatic test. The water level shall be adjusted to yield a hydrostatic head of 50 centimeters and after this adjustment the valve shall be opened and the water level maintained at 50 centimeters for 10 minutes.

##### 4.5.1.1 Report.

4.5.1.1.1 Poncho fabricated with center or side seams. Tests shall be run on the finished poncho at seven different locations as follows: One on the front joining seam, one on the back joining seam; two on the center hood seam; and three on the seam joining the hood to the neck of the poncho. The seven determinations shall be reported separately as "pass" or "fail". No more than one area of the seven test areas on each poncho shall show leakage in less than 10 minutes at the required hydrostatic head. A failure of the poncho is defined as a hydrostatic failure in two or more of the seven determinations.

4.5.1.1.2 Poncho fabricated with no center or side seam. Tests shall be run on the finished poncho at five different locations as follows: Two on the center hood seam and three on the seam joining the hood and reinforcement piece

to the neck of the poncho. The five determinations shall be reported separately as "pass" or "fail". No more than one area of the five test areas on each poncho shall show leakage in less than 10 minutes at the required hydrostatic head. A failure of the poncho is defined as a hydrostatic failure in two or more of the five determinations.

4.5.2 Determination of low temperature flexibility of sealed seam sealant. Method 5874 of FED-STD-191 shall be followed except that the test for hydrostatic resistance shall not be performed. The poncho (test specimen) shall be exposed for  $35 \pm 5$  minutes at a temperature of  $0 \pm 5^{\circ}\text{F}$  and tested immediately thereafter without removal from the low temperature test chamber. The hood joining seam of the poncho shall be folded back on itself 180 degrees so that the two outer sealed seam surfaces are superimposed. The roller weight shall be passed along the fold and across the seam. Any cracking, flaking, or separation of sealant shall be classified as a failure.

4.5.3 Determination of resistance to blocking. Method 5872 of FED-STD-191 shall be followed except that the sample unit shall be one completely fabricated poncho and that the test specimen shall be prepared by folding the hood seam of the poncho so that only the two outer sealed seam surfaces are superimposed and are in the center of the glass plates

4.5.4 Sealant hydrolytic stability. Three coats of sealant specified in 3.3.8 shall be applied in a 2-inch stripe across an 8 by 8-inch piece of coated cloth specified in 3.3.1. The sealant shall be applied to the coated side of the cloth and shall be allowed to dry at standard conditions for 24 hours prior to testing. The specimen with the sealant shall be laid flat, coated side up, on a supporting plate and the assembly placed in a desiccator containing water in the lower portion. The water level shall be approximately 1 inch below the specimen. The lid of the desiccator shall be put in place and the desiccator placed in a circulating air oven having a temperature of  $125 \pm 2^{\circ}\text{F}$  for a period of seven days. At the end of the aging period, the specimen shall be removed from the desiccator, the specimen folded in such a manner that the stripe of sealant is in complete contact across the specimen and the sample placed under a load of 4 pounds evenly distributed over the sample for 5 minutes. The load shall be removed and the sample opened up and laid flat. There shall be no more than a number 3 blocking (the sample can be separated without the sealant being removed from the coated cloth).

4.5.5 Color, gloss, and appearance of sealant. Three specimens prepared as specified in 4.5.4 shall be examined for color, gloss, and appearance in accordance with Method 9010 of FED-STD-191.

## 5. PACKAGING

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

5.1.1 Level A. Each poncho laid flat shall have the length folded in half twice, with the hood inside the fold, to a folded dimension of approximately 23 inches. The width shall be folded in twice from each end toward the center in increments of approximately 13 inches resulting in a completely folded poncho measuring 23 inches by 14 inches. Eight folded ponchos shall be unit packed flat, with each one reversed in an intermediate fiberboard box conforming to style RSC, type CF, (variety SW) or SF, class domestic, grade 200 of PPP-B-636. The outside dimensions of each box shall be 23-1/4 inches in length, 14-3/4 inches in width, and 5 inches in depth. Box closure will be secured with 1-1/2 inch minimum width gummed paper tape conforming to type III, grade b of PPP-T-45.

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

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

5.2.1 Level A packing. Twenty-four ponchos of one type and class only, preserved as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to style RSC, grade V2s of PPP-B-636. Level A intermediate packs shall be packed flat, three in depth, within the shipping container. Inside dimensions of each shipping container shall approximate 23-1/2 inches in length, 15 inches in width, and 15 inches in depth. Approximate dimensions are furnished as a guide only. Each shipping container shall be closed in accordance with method III, waterproofed in accordance with method V, and reinforced as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.5. Shipping containers shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class of load specified (6.2). Strapping shall be limited to non-metallic strapping, except for type II, class F loads.

5.2.2 Level B packing. Twenty-four ponchos of one type and class only, preserved as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to style RSC, type CF (variety SW) or SF, class domestic, grade 275 of PPP-B-636. Level A intermediate packs shall be packed flat, three in depth, within the shipping container. Inside dimensions of each shipping container shall approximate 23-1/2 inches in length, 15 inches in width, and 15 inches in depth. Approximate dimensions are furnished as a guide only. Each shipping container shall be closed in accordance with method II as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.5.

5.2.2.1 Weather-resistant containers. When specified (see 6.2), the shipping container shall be a grade V3c, V3s, or V4s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with method III as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.5.

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

5.3 Palletization. When specified (see 6.2), ponchos packed as specified in 5.2.2 or 5.2.3, shall be palletized on a 4-way entry pallet in accordance with load type Ia of MIL-STD-147. Pallet types shall be type I (4-way entry), type IV, or type V in accordance with MIL-STD-147. Pallets shall be fabricated from wood groups I, II, III, or IV of MIL-STD-731. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means C and D or film bonding means F or G. Pallet pattern shall be number 32 in accordance with appendix of MIL-STD-147.

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

## 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 ponchos are intended to be used as rain garments, ground sheets, blankets, sleeping bag covers, or shelter halves.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Type and class of poncho 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 a first article is required (see 3.2, 4.3, and 6.3).
- e. When resistance to low temperature flexing is not required (see 3.6.4.2).
- f. Levels of preservation and packing (see 5.1 and 5.2).
- g. Type and class of unit load required (see 5.2.1).
- h. When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).
- i. When palletization is required (see 5.3).

6.3 First article. When a first article sample is required, it shall be inspected and approved under the appropriate provisions of FAR 52.209. The first article should be a preproduction sample. The contracting officer should specify the appropriate type of first article and the number of units to be furnished. The contracting officer should include specific instructions in acquisition documents regarding arrangements for selection, inspection, and approval of the first article.

6.4 Sample For access to samples, address the procuring activity issuing the invitation for bids or request for proposal.

6.5 Fabrication operations. Experience has shown that sewing machine speeds up to 3200 stitches per minute will result in a more efficient sewing operation and higher quality stitching and seaming on this type of fabric (see 3.6.1)

6.6 Illumination of test surface. An instrument found suitable for determining the illumination of the test surface (see 4.4.2) is Weston Illumination Meter, Model 756, made by Daystrom, Incorporated, Weston Instrument Division, Newark, NJ 07114.

6.7 Subject term (key word) listing.

Blanket  
Camouflage  
Ground sheet  
Rain garment  
Shelter half  
Sleeping bag  
Tent

6.8 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodian

Army - GL

Preparing activity:

Army - GL

(Project 8405-A151)

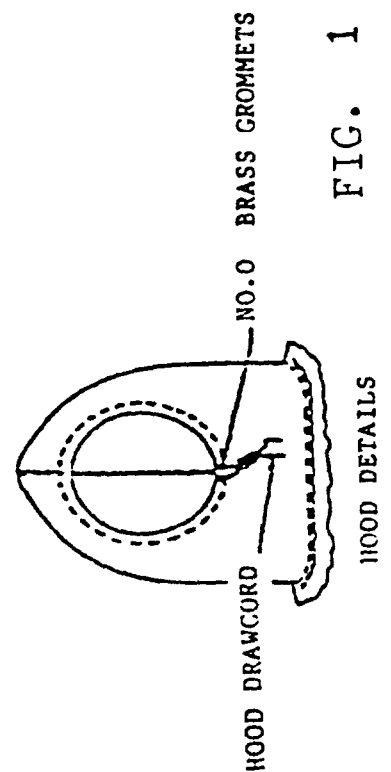
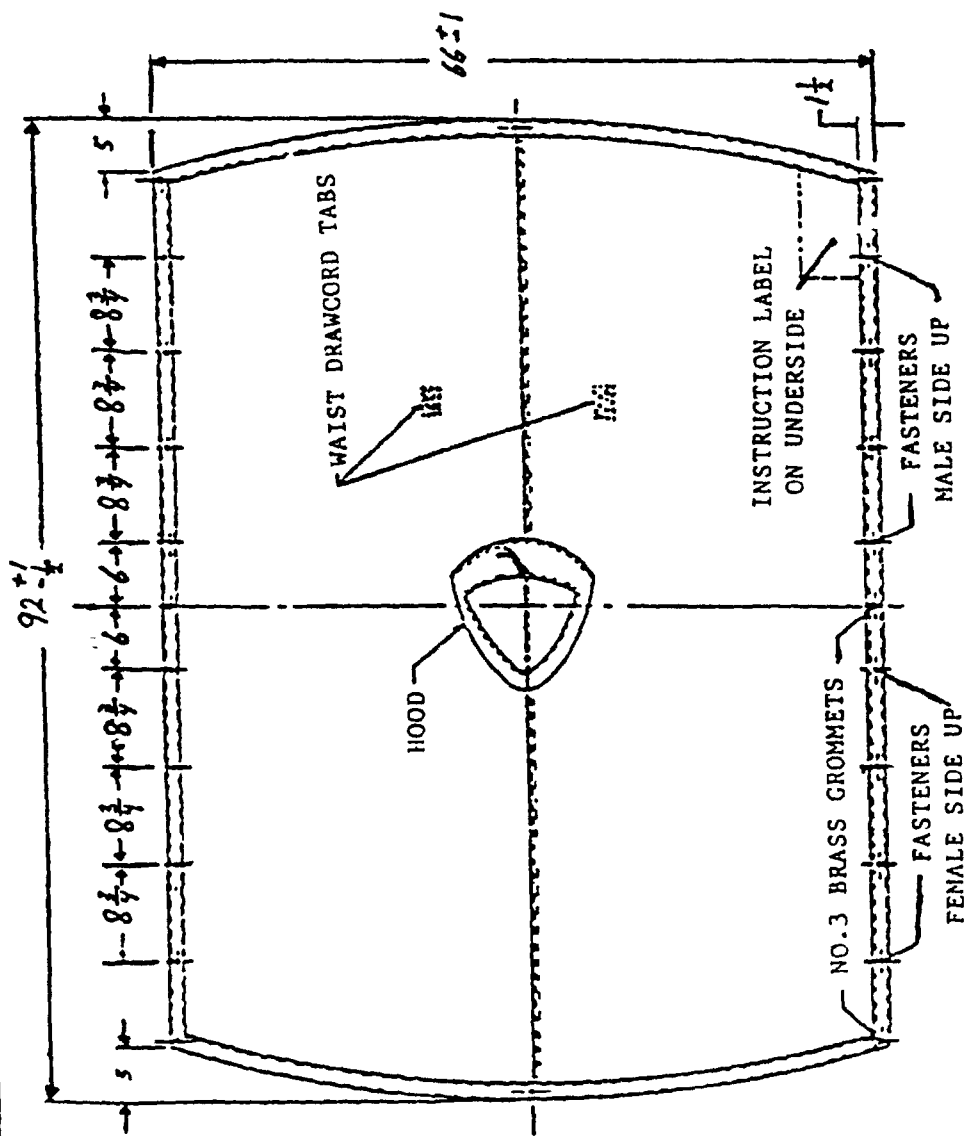


FIG. 1 TYPE I PONCHO, WET WEATHER



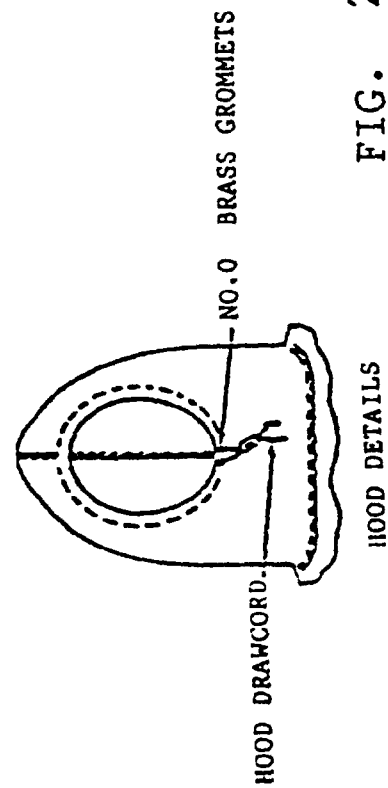
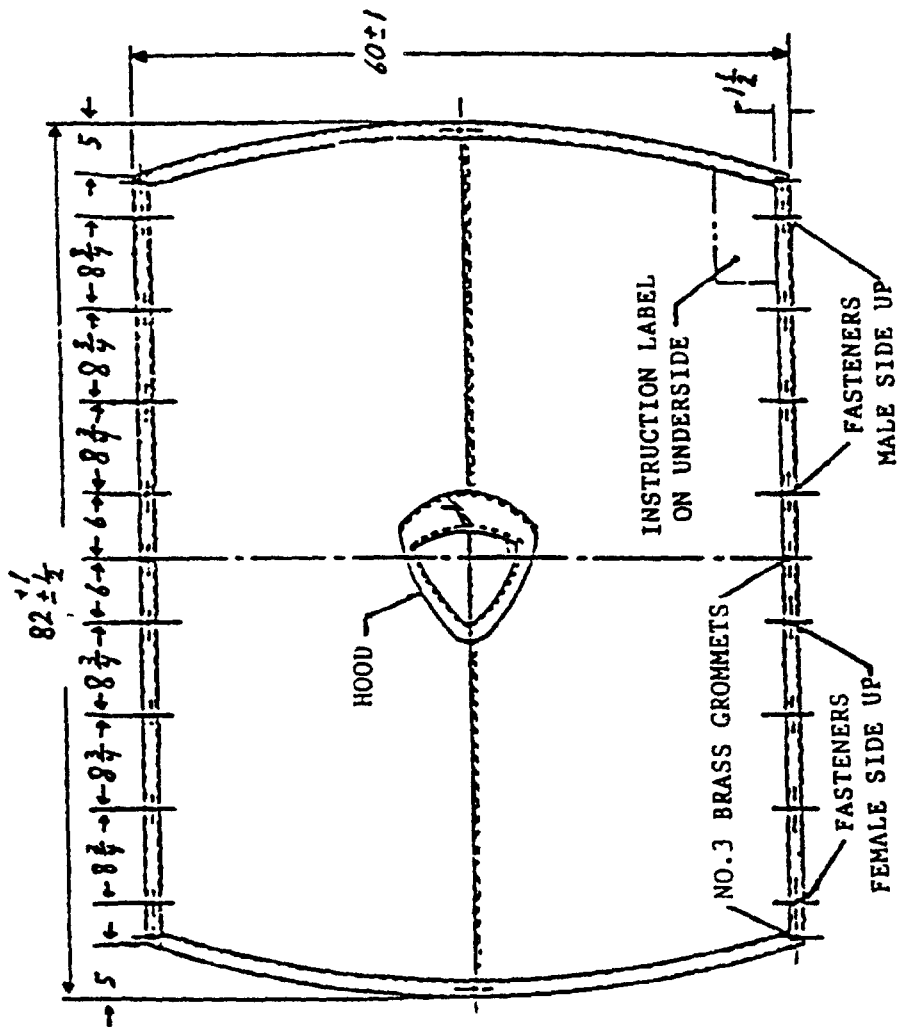
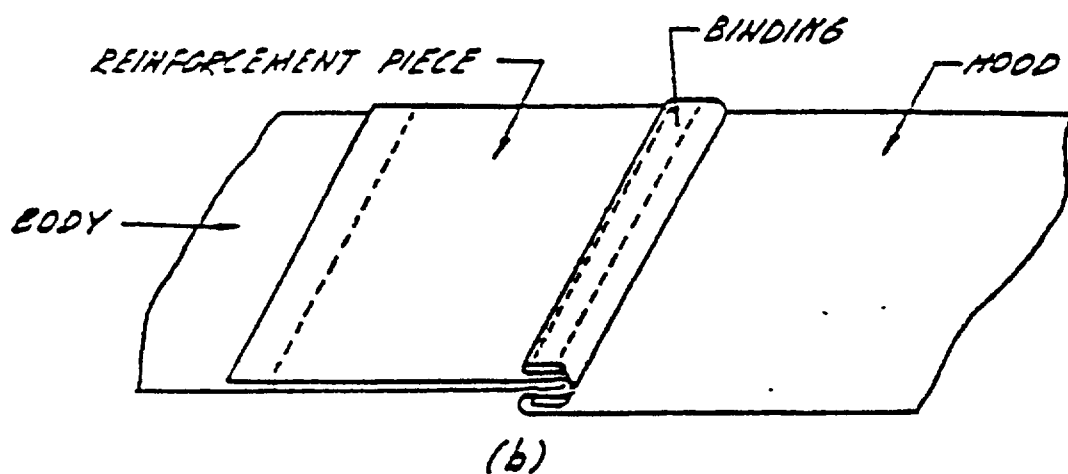
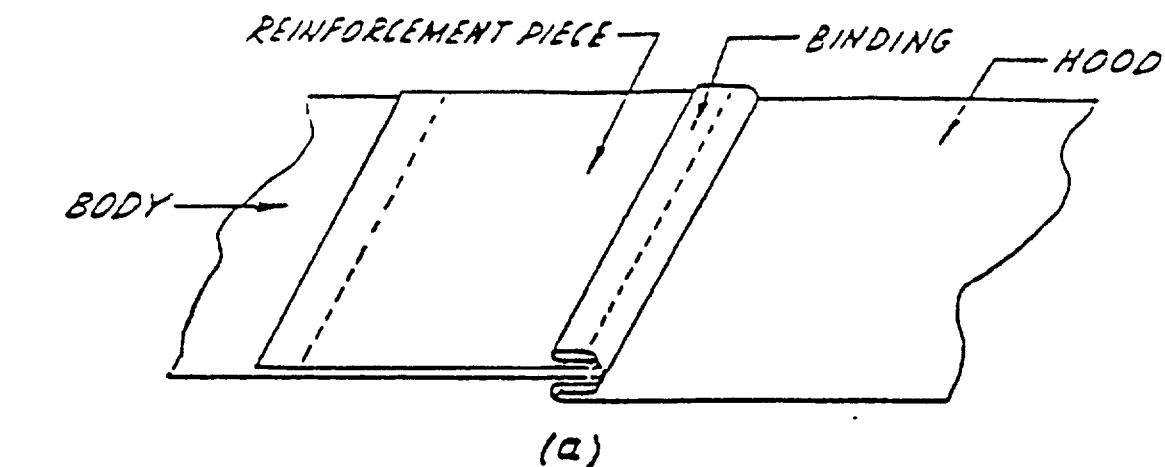


FIG. 2 TYPE II PONCHO, WET WEATHER



HOOD-NECK JOINING SEAM (OPERATION 12 OF TABLE II)

FIG. 3 - PONCHOS, WET WEATHER

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

<b>I RECOMMEND A CHANGE:</b>	<b>1 DOCUMENT NUMBER</b>	<b>2 DOCUMENT DATE (YYMMDD)</b>
	MIL-P-0043700D (GL)	1990 December 4

**3 DOCUMENT TITLE**  
PONCHO, WET WEATHER

**4. NATURE OF CHANGE** (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

## 5. REASON FOR RECOMMENDATION

<b>6. SUBMITTER</b>	
<b>a. NAME (Last, First, Middle Initial)</b>	<b>b. ORGANIZATION</b>
<b>c. ADDRESS (Include Zip Code)</b>	<b>d. TELEPHONE (Include Area Code)</b>
	<b>7. DATE SUBMITTED (YYMMDD)</b>
	<b>(1) Commercial</b>
	<b>(2) AUTOVON</b>

<b>8. PREPARING ACTIVITY</b>	
<b>a. NAME</b>	<b>b. TELEPHONE (Include Area Code)</b>
U.S. Army Natick RD&E Center	<b>(1) Commercial</b> 508-651-4532 <b>(2) AUTOVON</b> 256-4532
<b>c. ADDRESS (Include Zip Code)</b>	<b>IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:</b>
Commander, U.S. Army Natick RD&E Center	Defense Quality and Standardization Office