

INCH-POUND

A-A-55244

November 2, 1993

## COMMERCIAL ITEM DESCRIPTION

## INSECT NET PROTECTOR

The General Services Administration has authorized the use of this commercial item description in preference to MIL-I-10901.

Abstract. This document covers one type and size insect bar made from nylon netting to be used by personnel of the Department of Defense.

Salient characteristics. The construction of the insect bar shall conform in all respects to Figures I and II and as specified herein.

Material

Cloth, netting, nylon. The basic material shall be woven nylon netting, 1.6 ounces per square yard maximum, Camouflage Green 483, or knitted nylon netting, 2.0 ounces per square yard maximum, Camouflage Green 483. The basic material shall meet the requirements listed in table I below.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Defense Personnel Support Center, Clothing and Textiles Directorate, Attn: DPSC-FSSD, 2800 South 20th Street, Philadelphia, PA 19101-8419, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 7210

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distribution is unlimited.

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TABLE I - BASIC MATERIAL REQUIREMENTS

Characteristic	Test Method	Requirement	
		Woven	Knitted
Weight (oz/sq yd)	ASTM D3776	1.6 max	2.0 max
Yarns per inch Warp Filling	ASTM D3775	54 min, 56 max 54 min, 56 max	- -
Breaking strength Warp Filling Length <u>1</u> / Width <u>1</u> /	ASTM D5034	50 lbs min 50 lbs min - -	- - 50 lbs min 50 lbs min
Mesh size: Initial Warp Filling Vertical pillars and horizontal inlay	<u>2</u> /	0.035 inches max 0.035 inches max -	- - 0.035 inches max
Mesh size: After 3 launderings and yarn slippage tests	FED-STD-191 5410, 5552 <u>2</u> /	0.100 inches max	0.100 inches max
Meshes per sq in	Visual	729 min 784 max	470 min 635 max
Weave	Visual	<u>3</u> /	-
Knit	Visual	-	<u>4</u> /
Resin finish	<u>5</u> / <u>6</u> /	<u>7</u> /	<u>7</u> /
Shrinkage in laundering Warp (length) Filling (width)	FED-STD-191 5552	2.0% max 2.0% max	2.0% max 2.0% max <u>8</u> /
Colorfastness Laundering Accelerated weathering	AATCC 61 <u>9</u> / FED-STD-191 5671	Equal to or better than the standard sample or "good"	Equal to or better than the standard sample or "good"

1/ Except that only a constant-rate-of-extension (CRE) tester shall be used.

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2/ Mesh size shall be measured with a traveling microscope or other suitable apparatus which can be read to nearest 0.001 inch. For woven type, dimensions of the individual mesh opening shall be obtained by measuring and recording the distance between two parallel filling yarns which form the mesh opening. For knitted type, dimensions of the individual mesh opening shall be obtained by measuring and recording the distance between the two parallel vertical pillar yarns and the distance between the two parallel horizontal inlay yarns which form the mesh opening. A total of twenty dimensions shall be obtained and averaged from the ten mesh openings measured, and the average obtained shall be reported to the nearest 0.001 inch.

3/ The cloth shall be woven with three picks of plain and one pick of leno and repeated, causing the three picks of plain to be pushed together on each side of the leno pick forming well defined mesh openings. Selvages shall be not less than 1/4 inch nor more than 1/2 inch in width.

4/ The netting shall be of the mesh type produced on warp knitting equipment utilizing the pillar inlay principle to form a rectangular shaped mesh. One bar shall knit the vertical pillars (chain stitch) and the other bar shall be used for producing the horizontal inlays.

5/ Unless otherwise specified, a certificate of compliance shall be submitted and will be acceptable for the stated requirement.

6/ The contractor shall indicate on the test report the type of dye and process used (resin bonded, premetallized, etc).

7/ The cloth shall be given a permanent resin finish and the character of the finished cloth shall be equal to that of the standard sample. In order to assure the proper number of meshes per inch and the size of the meshes, the cloth shall be heat set and framed to appropriate dimensions.

8/ The knitted fabric shall be subjected to the same pressing procedure as prescribed for woven cloth.

9/ Use two to six grams of the applicable material, so held together to form a unit for testing unless otherwise specified in the procurement document. The laundering cycle of the launderometer or similar machine shall be 30 minutes and the temperature of the container and its contents shall be maintained at  $100^{\circ} \pm 4^{\circ}\text{F}$  ( $38^{\circ} \pm 2^{\circ}\text{C}$ ).

Cloth, oxford, nylon. The material for the buttonhole stay and tie tape reinforcements shall be nylon oxford, 3-ounce Camouflage Green 483, conforming to the requirements listed in table II below:

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TABLE II - NYLON OXFORD CLOTH REQUIREMENTS

Characteristic	Test Method	Requirement
Weight (oz/sq yd)	ASTM D3776-Opt C	2.9 min
Yarns per inch Warp Filling	ASTM D3775	180 min 76 min
Breaking strength (lbs) Warp Filling	ASTM D5034	220 min 135 min
Scouring, calendering, and heat setting	<u>1/</u>	<u>2/</u>
Dimensional stability	<u>3/</u>	<u>4/</u>
Nonfibrous material	FED-STD-191 2611	1.0% max
pH	ASTM D2165	5.0 - 8.5
Colorfastness Wet dry cleaning Laundering Perspiration Light Crocking	AATCC 132 AATCC 61 <u>5/</u> AATCC 15 AATCC 16 AATCC 8	<u>6/</u>

1/ Unless otherwise specified, a certificate of compliance is required and will be acceptable for the requirement stated.

2/ The cloth shall be scoured, heat set, and lightly calendered. The heat setting shall be done with dry heat or boiling water or both as required to meet the dimensional stability requirements.

3/ Each test specimen shall be a square of cloth at least 20 by 20 inches. The specimens before marking and before measuring for dimensional change shall be in equilibrium with standard conditions as defined in FED-STD-191. While laid flat without tension, each specimen shall be inscribed with an 18-inch square approximately equidistant from the edges and with sides parallel to the warp and normal filling directions. The marked specimens shall be placed in a preheated oven and maintained at a temperature of 280°F ( $\pm 2^\circ$ ) for a period of 2 hours. The specimens may be looped over a rod or laid flat on a rack but shall have free air circulation on both sides. The rod or rack shall be of low-conductivity (nonmetallic) material. Following the heating period, the specimens shall be removed promptly from the oven and allowed to cool to room temperature on a flat

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surface and then brought to equilibrium under standard conditions as defined in FED-STD-191. Each side of each inscribed square shall then be measured for dimensional change in both the warp and filling directions (two measurements each for the warp and filling per specimen). Each change in dimension shall be reported to the nearest 0.1 percent. The specimens shall also be visually compared with the original unheated cloth for any appreciable distortion or puckering. Appreciable means a change that is immediately noticeable when comparing the tested specimen with the original. If closer inspection is required to make apparent a slight change, the change is not considered appreciable.

4/ The cloth shall show no appreciable distortion or puckering. There shall not be more than 2.0 percent dimensional change in either warp or filling when tested as specified.

5/ Use two to six grams of the applicable material, so held together to form a unit for testing unless otherwise specified in the procurement document. The laundering cycle of the launderometer or similar machine shall be 30 minutes and the temperature of the container and its contents shall be maintained at  $100^{\circ} \pm 4^{\circ}\text{F}$  ( $38^{\circ} \pm 2^{\circ}\text{C}$ ).

6/ The finished dyed cloth shall show fastness to wet dry cleaning, laundering, perspiration, and light equal to or better than the standard sample or at least equal to the rating of "good" when tested as specified. The cloth shall show fastness to crocking equal to or better than the standard sample or shall have an AATCC Chromatic Transference Scale rating not lower than 3.5 when tested as specified.

Tape, nylon. The nylon tape for the tie tapes shall 3/4 inch wide conforming to the requirements listed in table III below.

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TABLE III - NYLON TAPE REQUIREMENTS

Characteristic	Test Method	Requirement
Thickness (inches)	ASTM D1777	.015-.025
Weight (oz/lb yd)	ASTM D3776-Opt C	0.20 max
Warp ends Face and back warp	ASTM D3775	150 min
Filling Picks per inch	ASTM D3775	33 min
Breaking strength Original After light test After heat test	FED-STD-191 4108 4108 1/ 4108 2/	400 lbs min 3/ 3/
Elongation	FED-STD-191 4108 4/	18% min
Weave	Visual	plain, 1-up and 1-down
pH	ASTM D2165	5.0 - 8.5
Colorfastness Laundering Light	AATCC 61 5/ AATCC 16A	6/ 6/

1/ Five tests shall be conducted on each sample unit of the tape or webbing. The test specimens shall be exposed in the accelerated weathering unit as specified in AATCC 111A. The unbacked specimen shall be placed in a stainless steel holder or suspended from the rack. Corex D filters and sunshine carbons shall be used. The exposure time shall be 50 hours. The spray heads shall be shut off during the entire exposure period. The relative humidity conditions shall be 55 + 5 percent throughout the test cycle. At the end of the exposure period, the specimens shall be brought to equilibrium under standard conditions as defined in FED-STD-191. The specimens shall then be tested for breaking strength as specified and the percent of breaking strength (B.S.) loss shall be calculated as follows:

$$\frac{\text{Original average B.S.} - \text{Average B.S. after aging}}{\text{Original average B.S.}} \times 100$$

= Percent of B.S. loss

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2/ Five tests shall be conducted on each sample unit of the tape or webbing. The test specimens shall be suspended in a circulating air oven at a temperature of  $180^{\circ}\text{C} \pm 3^{\circ}\text{C}$  ( $356^{\circ}\text{F} \pm 5^{\circ}\text{F}$ ) for 1 hour. After removal from the oven, the specimen shall be brought to equilibrium under standard conditions as defined in FED-STD-191. The specimens shall then be tested for breaking strength as specified and the percent of breaking strength (B.S.) loss shall be calculated as follows:

$$\frac{\text{Original average B.S.} - \text{Average B.S. after aging}}{\text{Original average B.S.}} \times 100$$

= Percent of B.S. loss

3/ The nylon tape and webbing shall not lose more than 25 percent of the original breaking strength upon exposure to light and heat when tested as specified.

4/ The pretension load (pounds) shall be equivalent to 1 percent of the minimum rated breaking strength requirements.

5/ Use two to six grams of the applicable material, so held together to form a unit for testing unless otherwise specified in the procurement document. The laundering cycle of the launderometer or similar machine shall be 30 minutes and the temperature of the container and its contents shall be maintained at  $100^{\circ} \pm 4^{\circ}\text{F}$  ( $38^{\circ} \pm 2^{\circ}\text{C}$ ). Only the stain on the nylon fibers of the color transfer cloth shall be evaluated.

6/ The dyed tape or webbing shall show fastness to laundering and light equal to or better than the standard sample or equal to or better than a rating of "good" when tested as specified.

Thread, polyester. The polyester thread shall be sizes A and B, conforming to type I or II, any class, subclass A of V-T-285. The thread shall be dyed Camouflage Green 483 and shall show colorfastness to weathering equal to or better than the standard sample. When no standard sample is available, the thread shall show "good" colorfastness to weathering.

Gimp. The gimp for reinforcing the buttonholes shall be cotton, No. 8, conforming to A-A-50198, type I or II. The gimp shall be treated for mildew resistance using copper 8-quinolinolate, and the color shall be that naturally imparted by the treatment. As an alternate, an approved aqueous mildew inhibitor such as Cunilate 2002 may be used.

Label. The identification label shall measure  $3\text{-}1/2 \pm 1/8$  inches by  $2\text{-}1/2 \pm 1/8$  inches and shall conform to type VI, class 5 of DDD-L-20. The label shall be located as shown on Figures I and II.

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Label/tag. Each item shall be individually bar-coded with the type VIII, class 17 label/tag of DDD-L-20. This label/tag shall be located so that it is completely visible on the item when it is folded and/or packaged as specified and causes no damage to the item.

Patterns. Patterns shall be made by the contractor and shall provide a 1/2 inch seam allowance for the nylon netting and nylon oxford. Allowance shall be incorporated into the patterns for the seams, hems and seaming take-up.

Measurements. The finished insect bars shall conform to the measurements specified in Figures I and II.

Workmanship. After completion, the finished insect bars shall be thoroughly cleaned, and all loose thread, lint, and foreign matter removed.

Product demonstration model. When required, offerers shall submit samples of their intended production. The product demonstration model will consist of units independently developed. Product demonstration models will be analyzed and evaluated by the Government. Evaluation criteria and basis for award are contained in the solicitation. Product demonstration models will be retained by the Government. One (1) product demonstration model approved by DPSC under the resultant contract will serve as a manufacturing standard for the corresponding production items delivered under this contract. Offerers are advised that the product demonstration model does not relieve the successful offerer of his responsibility to perform in accordance with the commercial item description specified above.

#### Quality assurance

Certification. The contractor shall certify that the product offered meets the salient characteristics of this description and that the product conforms to the producer's own drawings, specifications, standards and quality assurance practices. The Government reserves the right to require proof of such conformance prior to the first delivery and thereafter as may be otherwise provided for under the provisions of the contract. Reliance on contractor quality assurance systems 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.

#### Examination

Visual examination. The insect bars shall be examined for the defects listed below. The lot size shall be expressed in units of insect bars. The sample unit is one insect bar.



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Defects. The insect bars shall be examined for the following defects: nylon oxford has any hole, cut, tear, smash, color not as specified; any spot or stain (outside); abrasion mark or open place; any cut or tear in nylon netting; mesh opening more than three times normal size; any hole, cut or tear in tape; open seams; raw edges; loose stitch tension resulting in loose top or bobbin thread; excessively tight stitch tension resulting in puckering of material on seams; thread breaks, skipped stitches or runoffs; any required component or part of insect bar omitted (unless otherwise classified herein); needle chews; mend, darn or patch; any unauthorized repair; any required row of stitching omitted; looper thread showing on outside of insect bar; any component part not cut in conformance with stated requirements; either side of body constructed with more than one horizontal seam; body constructed with more than two vertical splices or more than one vertical splice in any panel; hems constructed with a single turn-under instead of double; body tapes attached through single thickness of tie tape reinforcement; ridge tapes not attached through seam; ends of tapes not fused; any tape spliced or not cut in one piece as specified; buttonholes not constructed as specified; buttonhole omitted or uncut; buttonhole stitching incomplete, loose, or broken; buttonholes not parallel to ridge seam; eyelet end reversed, i.e., facing body; any bartack omitted; stitching loose, incomplete, or broken; end of bartack runs off edge of tie tape; dirt, grease, or oil stains clearly noticeable; thread ends not trimmed as specified throughout; label missing, incorrect, or illegible or size of characters and label not as specified; label located on incorrect side of insect bar; measurement of item not as specified; bar code omitted or not readable by scanner, Human-Readable Interpretation (HRI) omitted or illegible; not visible on folded, packaged item; causes damage to the item.

Dimensional examination. The finished insect bar shall conform to the dimensions specified. Any dimension that is not within the established tolerance shall be classified as a defect. The sample unit shall be one insect bar.

Packaging examination. The fully packaged shipping containers shall be examined in accordance with defects listed below. The lot size shall be the number of shipping containers in the inspection lot.

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EXAMINE	DEFECT
Marking (exterior and interior)	Omitted; incorrect; illegible; of improper size, location, 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
Content	Number of items in container is more or less than required  NSN shown on one or more items not as specified on shipping container
Palletization	Length, width, or height exceeds specified maximum requirements  Pallet type not as specified  Load not bonded as specified

Regulatory requirements. The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580 to the maximum extent practicable.

Packaging, packing, marking, palletization. Packaging, packing, marking, palletization shall be in accordance with ASTM-D 3951, Standard Practice for Commercial Packaging, as specified for shipments to the Department of Defense.

Source of Government documents. Copies of military and Federal documents are available from:

Standardization Documents Order Desk  
Bldg. 4D  
700 Robbins Avenue  
Philadelphia, PA 19111-5094

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Sources of non-Government documents

ASTM Test Methods

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

AATCC Test Methods

(Applications for copies should be addressed to American Association of Textile Chemists and Colorists (AATCC), P.O. Box 12215, Triangle Park, NC 27709-2215)

Custodian:

Army - GL  
Navy - NU  
Air Force - 99

Civil Agency Coordinating  
Activity:  
GSA - FSS

Review Activity:

Army - MD  
Air Force - 82, 45

Preparing Activity:  
DLA - CT

User Activity:

Navy - MC

Project No. 7210-0309

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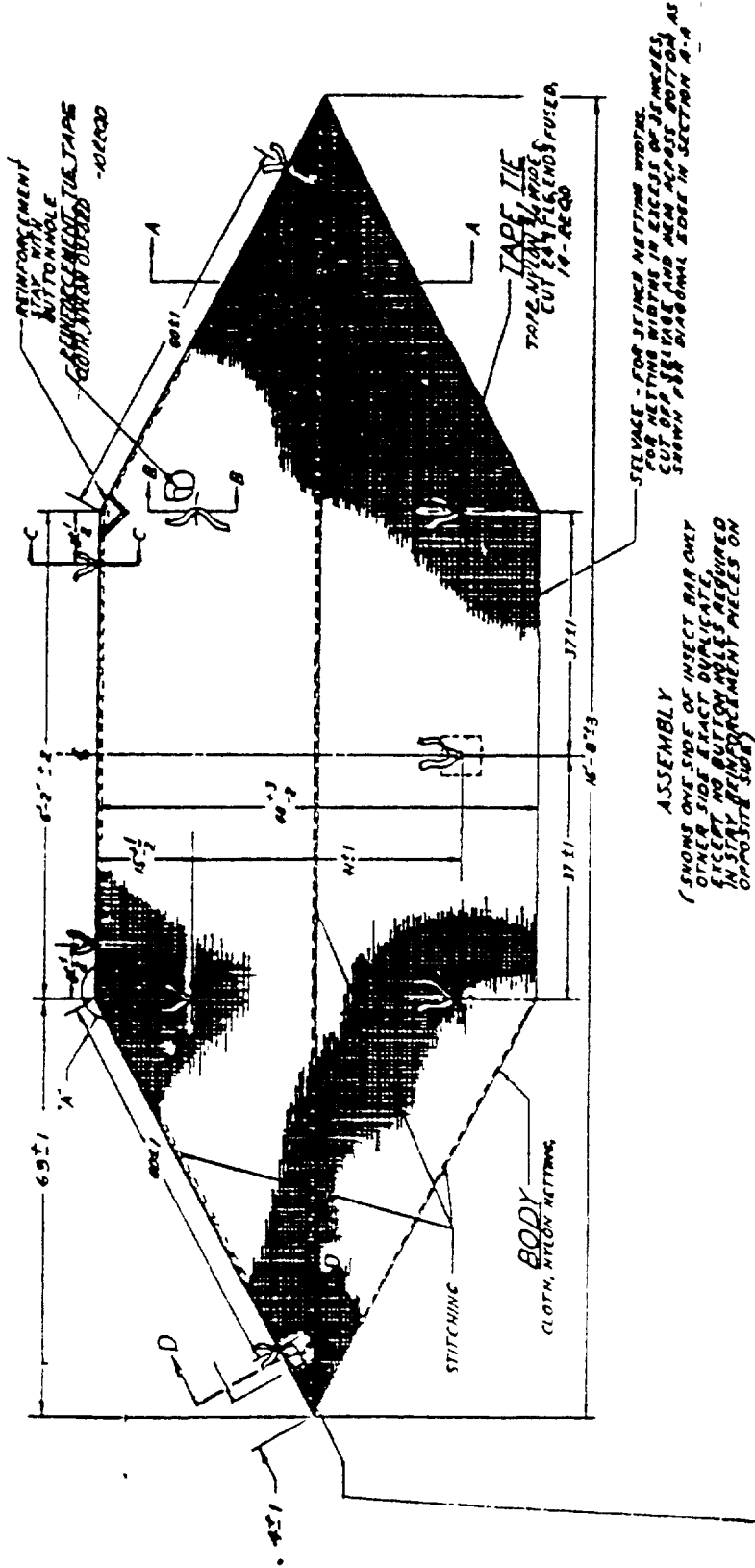
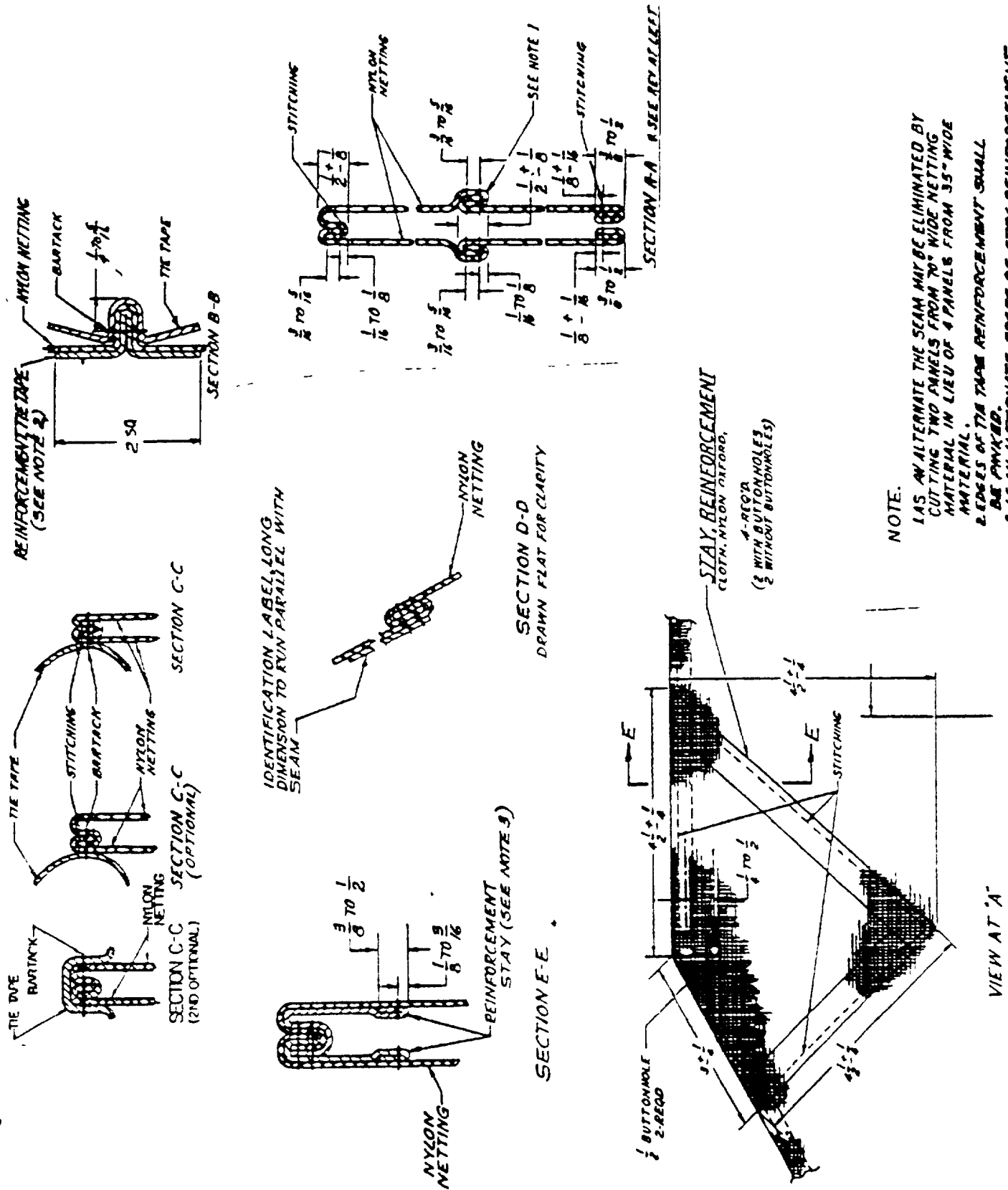


Figure I. Insect Net Protector

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**NOTE.**  
 1. AS AN ALTERNATE THE SEAM MAY BE ELIMINATED BY CUTTING TWO PANELS FROM 70" WIDE NETTING MATERIAL IN LIEU OF 4 PANELS FROM 35" WIDE MATERIAL.  
 2. EDGES OF TIE TAPE REINFORCEMENT SHALL BE PINKED.  
 3. AS AN ALTERNATE, EDGES OF STAY REINFORCEMENT MAY BE PINKED IN PLACE OF TABLING TO PREVENT FRAYING.

Figure II. Insect Net Protector

## 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.

1 RECOMMEND A CHANGE:		1 DOCUMENT NUMBER A-A-55244	2 DOCUMENT DATE (YYMMDD) 02 NOVEMBER 1993
3 DOCUMENT TITLE INSECT NET PROTECTOR			
4 NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)			
5 REASON FOR RECOMMENDATION			
E. SUBMITTER			
a. NAME (Last, First, Middle Initial)		b. ORGANIZATION	
c. ADDRESS (Include Zip Code)		d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (if applicable)	7. DATE SUBMITTED (YYMMDD)
8 PREPARING ACTIVITY			
a. NAME Defense Personnel Support Center ATTN: DPSC-FSSD (12-3-D)		b. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON	
c. ADDRESS (Include Zip Code) 2800 South 20th Street P. O. Box 8419 Philadelphia, Pennsylvania 19115		IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT Defense Quality and Standardization Office Ate 1403 Falls Church VA 22041 3466 AUTOVON 289 2340	