

INCH-POUND

NAWC PD 4631-04-24A  
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SUPERSEDING  
NAWC PD 4631-04-24  
16 December 2009

DRAWERS, FLYER’S, MEN’S, SILKWEIGHT, ARAMID KNIT CWU-90/P

This purchase description is approved for use by the Department of the Navy, NAVAIR, and is available for use by all departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This purchase description covers the requirements for one type of men’s silkweight aramid knit drawers.

1.1 Classification.

1.1.1 Sizes. The drawers will be furnished in the following sizes as specified (see 6.2)

- |                        |                          |
|------------------------|--------------------------|
| XSmall-Short           | Large-Short (L-SH)       |
| XSmall-Regular (XS-RG) | Large-Regular (L-RG)     |
| XSmall-Long (XS-LG)    | Large-Long (L-LG)        |
| Small-Short (S-SH)     | XLarge-Short (XL-SH)     |
| Small-Regular (S-RG)   | XLarge-Regular (XL-RG)   |
| Small-Long (S-LG)      | XLarge-Long (XL-LG)      |
| Medium-Short (M-SH)    | XXLarge-Short (XXL-SH)   |
| Medium-Regular (M-RG)  | XXLarge-Regular (XXL-RG) |
| Medium-Long (M-LG)     | XXLarge Long (XXL-LG)    |

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AMSC N/A

FSC 8415

Distribution Statement A: Approved for public release: distribution is unlimited.

1.1.2 Classes. The drawers will be furnished in the following class as specified (see 6.2)

Class 1: Black 3241

## 2. APPLICABLE DOCUMENTS

2.1. General. The documents listed in this section are specified in sections 3 and 4 of this purchase description. This section does not include documents cited in other sections of this purchase description or recommended for additional information or as examples.

While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3 and 4 of this purchase description, whether or not they are listed.

### 2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract (see 6.2).

## COMMERCIAL ITEM DESCRIPTIONS

A-A-55217 - Thread, Aramid, Spun Staple

## DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-DTL-32075 - Label: For Clothing, Equipage, and Tentage (General Use)

MIL-DTL-32717 - Cloth, Knitted, Silk Weight, Stretch, Flame Resistant

(Copies of this documents are available online at <http://assist.daps.dla.mil/quicksearch/> )

2.2 Other Government documents. The following other Government documents form a part of this document to the extent specified herein. Unless otherwise specified, the issue of the documents are those cited in the solicitation or contract.

## ENVIRONMENTAL PROTECTION AGENCY (EPA)

ENVIRONMENTAL PROTECTION AGENCY EPA chemicals-and-toxics-topics  
Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)

(Copies are available online at:

<https://www.epa.gov/environmental-topics/chemicals-and-toxics-topics>.

2.3 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 are those listed cited in the solicitation or contract (see 6.2).

AMERICAN SOCIETY FOR QUALITY CONTROL (ASQ)

ASQ-Z1.4 - Procedures, Sampling and Tables for Inspection by Attribute  
(Copies of this document are available from <http://www.asq.org> )

ASTM INTERNATIONAL

ASTM D276 FTIR Analysis – Standard Test Method for Identification of Fiber Textiles.  
ASTM D1777 - Standard Test Method for Thickness of Textile Materials.  
ASTM D2594 - Standard Test Method for Stretch Properties of Knitted  
Fabrics Having Low Power.  
ASTM D 3375 - Standard TEST Method for Column Capacity of Parachute  
Mixed Bed Ion Exchange Materials.  
ASTM D3774 - Standard Test Method for Width of Textile Fabrics.  
ASTM D3776/D3776M - Standard Test Method for Mass per Unit Area  
(Weight) of Fabric.  
ASTM D5034 - Standard Test Method for Breaking Strength and  
Elongation of Textile Fabrics (Grab Test).  
ASTM D6193 - Stitches and Seams, Standard Practices for

(Copies of these document are available from <http://www.astm.org> ).

AATCC - AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS

AATCC 20A -Fiber Analysis: Quantitative  
AATCC 135, I, II, A - Dimensional Changes of Fabrics after Home Laundering.

(Copies of these documents are available from <http://www.aatcc.org> ).

INFORMA HEALTHCARE

Repeat Insult Patch Test, Modified Draize Method, Principles and Methods of  
Toxicity.

(copies of this document are available from <http://www.crcpress.com>)

2.4 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 takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3.0 REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.2.

3.2 Design. The drawers shall be a lightweight circular knitted silkweight cloth pull-on style with a covered elastic waistband with drawstring. The drawstring shall face the inside of the drawers. The cord shall be centered in the elastic webbing. The drawers shall have a brief style fly. The legs shall be one-piece straight legs with a hemmed bottom. The legs shall be even in length. See Figures 1, 2, 3 and 4.

3.3 Materials and components. The materials and components shall conform to applicable specifications, patterns, and drawings and shall be specified herein. Equivalent materials and parts shall require approval by the Naval Air Warfare Center Aircraft Division, Code 4.6.7.3, Patuxent River, Maryland 20670-1906 (see 6.3).

3.3.1 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.3.2 Basic material. The material for the drawers and drawers fly and inset shall be flame resistant moisture management multi-directional stretch, flame resistant, circular knitted silk weight cloth conforming to MIL-PRF-32717, Types I or II. The color shall match the standard sample for shade.

3.3.3 Webbing.

3.3.3.1 Waistband. The webbing for the waistband shall be 1-1/4inch wide cotton or polyester elastic, encased in the waistband, with a drawstring embedded in the center of the elastic conforming to Table I. There shall be a 1/2inch buttonhole positioned on the inside of the front center of the waistband. The webbing shall be cut in lengths to construct (see operation 6) and conform to the finished waist measurement in Table IV.

3.3.3.2 Drawcord. The drawcord shall be a polyester cord. The drawcord shall be pulled through the buttonhole on front center of the waistband on the inside of the waistband and finish as one piece, not cut, and knotted at the end forming a loop approximately 1 to 2 inches inch from end. The cord shall face the inside of the garment (see Figure 4). The color of the drawcord shall be a good approximation of the basic material. The elastic webbing and drawcord shall conform to these requirements and those listed in Table I.

TABLE I – Waistband - Elastic with Drawcord

Material	Characteristic	Requirement
Elastic Webbing	Material Identification	Cotton and/or Polyester
	Color	Natural-Unbleached
	Width, inches	1 1/4 +/- 1/16

Material	Characteristic	Requirement
Elastic Webbing	Thickness, inches (min)	
	a. Elastic only	0.050
	b. Elastic with Drawcord	0.095
	Weight oz/linear yd. (min)	0.731
	Yarn Count (min)	
	a. Entire Width (Warp)	17
	b. Picks per inch	25
	Rubber Count Webbing, Visual: Ends	16
Elongation % (max)	95%	
Breaking Strength, lb. (min)	a. Initial	70
	b. After 5 Laundry Cycles	60
Weave Identification, Visual Elastic		Knit, Warp, Interlock
Drawcord	Material Identification	Polyester
	Weave Identification Visual	Braid, 6 ends

3.3.4 Thread. The thread for stitching the drawers shall be size Tex 40 conforming to Type I of A-A-55217. The color shall be a good approximation of the basic material (see 6.2).

3.3.5 Buttonhole. The buttonhole for the waistband shall be double barred, straight style. The finished cut length of the buttonhole shall be 9/16 inch. (+/- 1/16). The stitching shall be securely caught in the fabric, and the ends shall be securely tacked. The buttonhole shall be cut clean and all loose threads shall be trimmed to within 1/8 inch of the tack. Loose threads (floats) in the buttonhole shall be prohibited.

3.3.6 Labels. When commercial labels are placed on the drawers, the information on the label shall not conflict with the label requirements specified in this purchase description.

3.3.6.1 Identification/instruction label. Each drawer shall have a combination, identification/instruction label conforming to Type IV or VI, class 15 of MIL-DTL-32075. The size of the label shall be 2 inches wide (±1/8 inch) by 2-3/4 inches long (±1/8 inch). When Type IV is used, the printing shall be black and the label background shall be white. The printing shall show fastness to laundering and shall bear the following inscription:

NOMENCLATURE: DRAWERS, FLYER'S, MEN'S, SILKWEIGHT, CWU-90/P

PD NUMBER: NAWC PD 4631-04-24

FIBER CONTENT: 100% COTTON (EXAMPLE)

CONTRACT NUMBER: SPM1C1-00-C-0000 (EXAMPLE)

ID: \_\_\_\_\_

NAME OF CONTRACTOR: LMN MANUFACTURERS (EXAMPLE)

LAUNDERING INSTRUCTIONS:

MACHINE WASH COLD,  
 LINE DRY OR AIR TUMBLE-DRY.  
 DO NOT USE BLEACH OR FABRIC SOFTENERS.  
 FOR BEST RESULTS LAUNDRER SEPARATELY.  
 OR  
 FOLLOW SHIPBOARD WASH FORMULA III

3.3.6.2 Size label. Each drawer shall have a size label conforming to Type IV or VI, class 2 of MIL-DTL-32075. The size of the label shall be 1-3/4 inches wide by 1 inches long ( $\pm 1/8$ ). The inscription shall be as stated below.

S-SH (Example)  
 STOCK NO. 8405-00-000-0000 (Example)

3.3.6.3 Bar code label. Each item shall be individually bar-coded with a paper tag for personal clothing items. The paper used for the tags shall be a standard bleached sulfate having a basis weight of 100 pounds with a smooth finish to accept thermal transfer and direct printing. The tags shall have a hole and be attached to each item by a fastener, clearly legible and readable by scanner. The bar code element shall be a 13 digit national stock number (NSN). There shall be a twelve digit Universal Product Code (UPC) assigned for all NSNs by the Government. The initials "UPC" shall appear beneath code. The bar codes for NSN and UPC shall be a medium to high density and shall be located so that they are completely visible on the item when it is folded and or packaged as specified. The label's location shall cause no damage to the item.

3.3.6.4 Commercial manufacturer labels. Sewn in manufacturer and attached labels shall be allowed to identify brands of materials and the product manufacturer (see Figures 1 and 2). When commercial labels are attached, there shall be no conflict between the information on the commercial label and the information on the government labels.

3.4 Figures. Figures 1, 2, 3 and 4 are furnished for information purposes only. When inconsistencies exist between the written specification and the figures, the written specification shall govern.

3.5 Patterns. Standard patterns will be furnished to the contractor for use in cutting working patterns (see 6.3). The standard patterns shall not be altered in any way and are to be used as a guide for making the contractor's working patterns. Minor modifications of the working patterns are permitted when using automated equipment or to meet a manufacturer's process but the alterations shall not affect the serviceability, dimensions or appearance of the drawers. Patterns provide for a 3/8 inch seam allowance unless otherwise specified.

3.5.1 List of pattern parts. The component parts of the drawers shall be cut from the materials specified in accordance with Table II.

TABLE II: Pattern parts

Material	Pattern Nomenclature	Computer Nomenclature	Cut Parts
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Cloth, Knitted Silkweight (3.3.2)	Leg	<sup>i</sup> MLD-LEG	2
	Fly	<sup>i</sup> MLD-FLY	2

<sup>i</sup>MLD stands for Men’s Lightweight Drawers

3.6 Construction.

3.6.1 Stitches, seams, and stitching. Stitches, seams and stitch types specified in Table III shall conform to ASTM-D6193. Whenever two or more methods, seams, or stitches are given for the same part of an operation, any one of them may be used. Seam allowances shall be maintained with seam sewn so that no raw edges, run-offs, pleats, puckers, or open seams occur. Ends of all stitching when not caught in other seams or stitching shall be backstitched not less than 1/2 inch. Thread tension shall be maintained so there will be no loose stitching resulting in a loose bottom or top thread or no excessively tight stitching resulting in puckering of the materials sewn. Unless otherwise specified, edge stitching shall be 1/16 (± 1/64) inch. Thread ends shall be trimmed to 1/16 inch or less.

3.6.2 Repair of stitching.

a. When thread breaks or bobbin run-outs occur during sewing for stitch type 301, the stitching shall be repaired by restarting a minimum of 1/2 inch back of the end of the stitching.

b. Thread breaks (all stitch types) or two or more consecutive skipped or run-off stitches noted during inspection shall be repaired by over-stitching. Any chain stitch repair shall start one inch above the repair area and continue the entire length of the seam. The stitching for all other types of stitches shall start a minimum of 1/2 inch back of the defective area, continue over the defective area, and continue a minimum of 1/2 inch beyond the defective area onto the existing stitching. Loose or tight stitching shall be repaired by removing the defective stitching without damaging the material and re-stitching in the required manner. The ends of stitching are not required to be backstitched when making the above repairs.

3.6.3 Bartacking. The bartacks on the buttonhole shall be 3/8 (± 1/8) inch long, 1/8 (± 1/32) inch wide and shall contain 16 stitches minimal. Bartacks shall be free from thread breaks and loose stitching.

3.7 Manufacturing operations requirements. The drawers shall be manufactured in accordance with all operations specified in Table III. The contractor is not required to follow the exact sequence of operations.

TABLE III Manufacturing operations

No	Manufacturing Operations Requirements	Stitch Type	Seam Type	Stitches per inch

No	Manufacturing Operations Requirements	Stitch Type	Seam Type	Stitches per inch
1.	<u>Cut drawers.</u> The drawers shall be cut in strict accordance with the patterns. All component parts shall be cut lengthwise in the machine direction unless otherwise indicated on patterns.			
2.	<u>Replacement of damaged parts.</u> Care shall be exercised during the spreading, cutting and manufacturing operations to assure that material defects and damages as classified in Table VI are excluded and replaced with non-defective material.			
3.	<u>Marking.</u>			
	a. Mark or bundle cut parts of the drawers to insure a uniform size, uniformity of shade, and proper assembly throughout fabrication.			
	b. Any method of marking may be used except: (1) Metal fastening devices. (2) Sew-on tickets. (3) Adhesive type tickets which leave traces of adhesive on the material after removal of the tickets.			
4.	<u>Make Fly</u>			
	a. Hem edge of fly opening between notches.	605	EFa-2	10-14
	b. Sew fly to front leaving a 7 inch ( $\pm 1/16$ ) opening inside and outside.	607	FSa-1	
				10-14
5.	<u>Sew inseam and seat seam</u>			
	a. Stitch inseams.	607	FSa-1	10-14
	b. Stitch seat seam.	607	FSa-1	10-14



TABLE III: Manufacturing operations continued

No	Manufacturing Operations Requirements	Stitch Type	Seam Type	Stitches per inch
6.	<u>Sew waistband.</u> a. Take the ends of the webbing and overlap the ends 1/4 to 3/8 inch on itself. Stitch the webbing closed on all four sides with a box stitch 1/16 to 1/8 from the edges of the webbing.	301	LSa-1	10-14
	b. Place one side of the waistband webbing flat to the top edge of the waistband and stitch 1/8 to 1/4 inch from edge, starting and stopping at the center back seat seam. The box stitch shall be placed at the back seam.	604	LSa-1	10-14
	c. Place a vertical buttonhole centered on the free end of the waistband at center front of the drawers waistband (see 3.3.3). The finished cut length of the buttonhole shall be 9/16 inch centered on the inside of the waistband when finished. The buttonhole shall be stitched to the inside portion of the waistband only. Pull the drawcord through the buttonhole and knot the drawcord approximately 1 it 2 inches from the bottom forming a loop. The drawcord shall hang on the inside of the drawers. <u>NOTE:</u> Do not cut the drawcord. Leave as one-piece. (See Figure 3).	Buttonhole	Buttonhole	44-46 spi Buttonhole including tack.
	d. Fold the waistband down, with the webbing attached, to the inside and stitch to the drawers with two rows of stitching 1/4 inch apart, forming a covered waistband. The first row of stitching shall be 1/8 inch from the bottom edge of the waistband. The waistband shall finish 1 1/4 to 1 5/16 inches wide. <u>NOTE:</u> The labels may be attached at the time the waistband is sewn down. (see oper.7 and Figure 4 for placement).	401	SSa-2	10-14
	e. Topstitch the top of the waistband including the webbing with one row of stitching 3/16 to 1/4 inch from top folded edge of the waistband. <u>NOTE:</u> Be careful not to catch the drawcord in the stitching.	401	SSa-1	10-14

TABLE III: Manufacturing operations continued

No.	Manufacturing Operations Requirements	Stitch Type	Seam Type	Stitches per inch
7.	<u>Size label.</u>			
	a. Stitch the warning label to outside front right leg and top edge of label aligned with bottom edge of waistband 1 inch ( $\pm 1/16$ ) from side and $1/2$ ( $\pm 1/16$ ) inch down from waistband. Stitch $1/16$ to $1/8$ inch from all sides.	301	LSbj-1	10-14
	b. The size label shall be positioned on the inside and caught in the bottom of the stitched waistband, approximately 1 inch from center back seam on the left side as worn. (See Figure 4). If the label is directly printed on the drawers, the label shall be placed in the same area.	401	SSj-1	10-14
	c. Identification/Instruction label. Place the identification/instruction label directly next to the size label on the left back of the drawers as worn and caught in the bottom of the stitched waistband. (See Figure 3). If the label is directly printed on the drawers, the label shall be placed in the same area.	401	SSj-1	10-14
	d. Commercial manufacturers labels. The optional commercial manufacturers labels shall be stitched on the right inside back as worn, approximately 1 inch from seat seam as worn and caught in the bottom of the waistband	301	SSa-1	10-14
8.	<u>Hem legs.</u> The hem shall be turned to the outside and shall measure $5/8$ inch ( $\pm 1/16$ inch when finished).	605	EFa-1	10-14
9.	<u>Clean drawers.</u> All thread ends shall be trimmed to $1/16$ inch and loose threads removed. Remove all spots and stains.			

3.8 Finished garment measurements. The finished garment measurements shall be as shown in Table IV and shall be measured in accordance with 4.4.5.

TABLE IV: Finished garment measurements (inches)

Size	1/2 Waist <u>A/</u>	Inseam <u>B/</u>			1/2 Leg Opening <u>C/</u>	Back Gusset Location <u>D/</u>
		Short	Regular	Long		
		Short	Regular	Long	All lengths	All lengths
X Small	12	26-1/2	28-1/2	30-1/2	4-1/2	11-3/4
Small	14	27-1/8	29-1/8	31-1/8	4-3/4	12
Medium	16	27-3/4	29-3/4	31-3/4	5	12-1/4
Large	18	28-1/2	30-1/2	32-1/2	5-1/4	12-1/2
X Large	20	29-1/4	31-1/4	33-1/4	5-1/2	12-3/4
XX Large	22	30	32	34	5-3/4	13
Tolerance	$\pm 1/4$	$\pm 3/4$	$\pm 3/4$	$\pm 3/4$	$\pm 1/4$	$\pm 1/4$

3.9 Toxicity. The finished drawers shall not present a health hazard and shall show compatibility to with prolonged direct skin contact when tested as specified in 4.4.6.. Chemicals recognized by the Environmental Protection Agency (EPA) as human carcinogens shall not be used.

3.10 Workmanship. The finished drawers shall be uniform in quality and free from loose thread, foreign matter, and irregular defects that can adversely affect usage or durability and those defects specified in Table VI.

#### 4. VERIFICATION

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

- a. First article inspection (see 4.2).
- b. Conformance inspection (see 4.3).
- c. In-process inspection (see 4.4.1).

4.2 First article inspection. First article inspection shall consist of the examinations and tests specified in 4.4.1, 4.4.2, and 4.4.3.

4.2.1 First article samples. Unless otherwise specified in the contract or purchase order (see 6.2), the number of samples for first article inspections shall be one pair of drawers for each sized ordered. The sample unit shall be drawers and the lot size shall be expressed in units of pairs of drawers.

4.3 Conformance inspection. Conformance testing shall consist of the examinations specified in 4.4.1, 4.4.2 and 4.4.3.

4.3.1 Conformance inspection samples. Sampling for inspection shall be performed in accordance with ASQC-Z1.4. The sample unit shall be drawers and the lot size shall be

expressed in units of drawers.

#### 4.4 Inspection methods.

4.4.1 In-process inspection. Visual and dimensional examinations of the drawers and its components or optional items shall be made at any point or during any phase of the manufacturing process to determine whether construction details which cannot be examined in the finished product are in accordance with requirements specified in Section 3. Materials and components, which can be classified, as a defect in accordance with Table VI shall be removed from production.

4.4.2 Component and material examinations and tests. In accordance with 4.1, components and materials shall be examined and tested in accordance with the specified examinations and tests of Table V.

TABLE V: Component and material examinations and tests

Material	Characteristic	Reference	Test Method
Cloth, Knitted, Silkweight	Material identification	3.3.2	All examinations and tests specified in MIL-PRF-32717.
Webbing	Material identification	3.3.3 and Table I	ASTM D276 FTIR Analysis
	Width inches	3.3.3 and Table I	ASTM D3774
	Thickness, inches a. Elastic only b. Elastic with Drawcord	Table I Table I	ASTM D1777 ASTM D1777
	Weight, oz./linear yd.(min)	Table I	ASTM D3776/D3776M
	Yarn count a. Entire width (Warp) b. Picks per inch	Table I Table I	ASTM D3375 ASTM D3375
	Rubber count webbing, ends	Table I	Visual
	Elongation %	Table I	ASTM D2594-20 Fabric Stretch @ 5lbs (Loose Fitting)
	Breaking Strength, lb. a. Initial b. After 5 laundry cycles	Table I Table I	ASTM D5034 AATCC 135 I, II, A
Webbing	Weave identification, Elastic: Knit, Warp, Interlock	Table I	Visual
Drawcord	Material identification	Table I	ASTM D276 FTIR Analysis
	Weave identification: Braid, 6 ends	Table I	Visual
Thread	Material identification	3.3.4	All examinations and tests specified in A-A-55217
Label	Material identification	3.3.6	All examinations and tests specified in MIL-DTL-32075.

4.4.3 Classification of end item defects. The end items shall be visually examined and measured for the defects listed in Table VI.

TABLE VI: Classification of end item defects.

Examine	Defect	Classification	
		Major	Minor
General	Any hole, run, scissor or knife cut, tear, mend, burn, or weakening defect such as multiple floats, slubs, skips, needle chew or abraded area, including edges	101	
	Any spot or stain (compound, oil, dirt, including marks/markings) clearly visible	102	
	Color of any component not as specified, dye streaks, shade variation within a part or between parts	103	
	Any thread not trimmed to 1/16 inch or thread scraps not removed		201
Components and assembly	Any component part not as specified or omitted.	104	
	Any component distorted, full, tight, broken or twisted, not properly forced out having folds.	105	
	Any component part not cut in accordance with the pattern.	106	
	Any component part caught in any unrelated stitching.	107	
	Any operation not performed as specified or improperly performed or omitted.	108	
	Inseams not even more than ½ inch with each other.	109	
Buttonhole	Omitted	110	
	Buttonhole off center. Draw cord unable to be pulled through the buttonhole	111	
	Buttonhole measures more than 5/8 inch or less than 1/2/ inch.(see 3.3.5)		202
	Buttonhole not finished: not tacked on ends, Buttonhole not cut open.	112	

TABLE VI: Classification of end item defects continued.

Examine	Defect	Classification	
		Major	Minor
Waistband	Webbing at waistband exposed. Not completely covered in waistband		203
	Drawcord omitted.	113	
	Drawcord not knotted at end, or cut apart, not one piece.		204
Seams and Stitching.	Any open seam	114	
	Raw edges	115	
	Any seam or attachment of any component twisted, puckered, pleated or caught in any unrelated operation or stitching that is not properly forced out or contained in a fold more than 1/8 inch.	116	
	End of stitching not securely backstitched for at least ½ inch when not caught in other seams or stitching.		205
	Box X Stitch more than or less than 5/8 x 7/8 inch (+/- 1/16) .(see operation. 8c)		206
	Thread breaks, skips and run-offs not securely overstitched for at least ½ inch.	117	
	Any stitching irregular or unevenly gauged (greater than 50% of the seam length or 4 inches, whichever is less).		207
	Loose tension resulting in a loose seam or tight tension resulting in breaking of stitches when normal pull is applied.	118	
	Stitches per inch - more or less than specified (to be scored only when condition exists on 25% of the seam or more).		208

TABLE VI: Classification of end item defects continued.

Examine	Defect	Classification	
		Major	Minor
Labels, Identification/ instruction, size and bar code	Label missing, information illegible or incorrect	119	
	Label misplaced by more than 1 inch		209
	Bar code label omitted, incorrect, illegible, not attached where specified; bar codes not readable by scanner; human- readable interpretation (HRI) omitted or illegible; bar code not visible on folded, packaged item: bar code attachment causes damage to the item	120	
Dimensional	Any finished garment dimensions not within the specified tolerance	121	
	Any finished garment with greater than ½ inch difference in leg length between each leg.	122	
Cleanliness	Thread ends not trimmed to 1/16 inch. (See para. 3.6.1)		210

4.4.4 End item dimensional examination. The end item shall be examined for conformance to the dimensions specified in Table IV.

4.4.5 Method of measuring. The silkweight drawer shall be placed relaxed flat upon a table and measured as follows (see Figures 1, 2, 3 and 4):

A/ Half waist. The half waist measurement shall be taken flat across the front, from folded edge to folded edge of the waistband elastic.

B/ Inseam. The inseam measurement shall be taken from the bottom of the hem to the center of the fly seam. The measurement shall not be greater than 1/2 inch difference in leg length between each leg.

C/ Half leg opening. The half leg opening shall be taken from inside edge to inside edge at the bottom of the leg.

D/ Gusset. The gusset location shall be measured from the top of the gusset insert to the top of the elastic at the center back.

4.4.6 Toxicity test. When required (see 6.2), an acute dermal irritation study and a skin sensitization study shall be conducted on laboratory animals. When the results of these studies indicate the finished cloth is not a sensitizer or irritant, a Repeat Insult Patch Test shall be performed in accordance with the Modified Draize Procedure. (See 2.3). If the requirement (see 3.9) can be demonstrated with historical use data, toxicity may not be required.

4.5 Visual shade matching. The color and appearance of the (item) shall match the standard sample when viewed using the AATCC EP 9, Option C, (see 6.6) with a primary light source simulating the spectral quality of average daylight, CIE Illuminant D65, with a color temperature of 6500 ( $\pm$  200) Kelvin (K) illumination of 100 ( $\pm$  20) foot candles. Alternatively, the color and appearance of the (item) shall match the standard sample with a primary light source simulating artificial daylight, CIE Illuminant D75, with a color temperature of 7500K ( $\pm$  200) illumination of 100 ( $\pm$  20) foot candles in lieu of D65. (See 6.5.1). The (item) shall also be a good match to the standard sample with a secondary source simulating the spectral quality of incandescent lamplight, CIE Illuminant A, with a color temperature of 2856K ( $\pm$  200).

## 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of material is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by Inventory Control Point's packaging activity within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

## 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 drawers covered by this purchase description are intended for use in cold weather operations. When layered with other components, the drawers become part of the Multi Climate Protection clothing system.

6.2 Acquisition documents. Acquisition documents must specify the following:

- a. Title, number, and date of this purchase description, including any amendments.
- b. Applicable Government including any revisions and non-government documents cited under Section 2.
- c. Size, quantity and class desired (see 1.2).
- d. National stock number.
- e. Applicable Government patterns, including revisions.
- f. First article, conformance and in-process inspection requirements (see 4.2 ,4.3 and 4.4.1).
- g. Name and address of the first article inspection facility; and the name and address of the Government activity responsible for conducting the first article inspection program.
- h. Packaging requirements (see 5.1).
- i. Toxicity. ( See 2.3,3.9 and 4.4.6).

6.3 Pattern/Information requests. For access to information such as patterns, drawings, standard shade samples of cloth etc. go to Defense Supply Center Philadelphia's website for their Specification/Pattern/Drawing Request form, <http://www.dscp.dla.mil/portal/sreqfrm.aspx>. Complete the request form and then submit. Requests to use equivalent materials and/or components or to make changes to the pattern should be sent to the contracting officer for approval by the military services.



6.4 Toxicity. Further information on chemicals recognized by the Environmental Protection Agency (EPA) as human carcinogens may be found at <http://www.epa.gov/ebtpages/pollutants.html>.

6.5 Sources.

6.5.1 Circular knitted silkweight cloth. Deer Creek Knitting, Style 3231 with 3% Lycra, has been known to meet the requirements of paragraph 3.3.2. Deer Creek can be reached at 509 Glenbrook Road, Stamford, CT 06906, <http://www.deercreekfabrics.com>

6.5.2 Elastic webbing with drawcord. North East Knitting Inc., has been known to meet the requirements of paragraphs 3.3.3.1 and Table I. North East Knitting can be reached at 179 Conant Street, Pawtucket, RI 02860, <http://www.nekinc.com>.

6.6 NOTE. In 2017, Option A of AATCC Evaluation Procedure 9, Visual Assessment of Color Difference of Textiles was changed to Option C. NOTE: In case of confusion, the viewing geometry should be “The specimen plane and illumination source will be parallel to each other and aligned so that the light flux is incident at the center of the specimen plane, which is set at a 35 ( $\pm 5^\circ$ ) angle relative to the horizontal. The observer will view the specimens at a 90° angle, relative to the plane of the specimens”.

6.6.1 In 2022, the U.S. Military (All Services) accepted D65 as the new preferred light source for visual shade matching due to the supply chain issues with D75.

6.7 Subject terms (key word) listing.

Multi Climate Protection  
Silkweight Aramid Knit  
Elastic waistband with drawcord

CONCLUDING MATERIAL

Custodian  
Navy-AS

Preparing Activity:  
Navy - AS

Review Activity  
Navy-NU  
DLA-CT

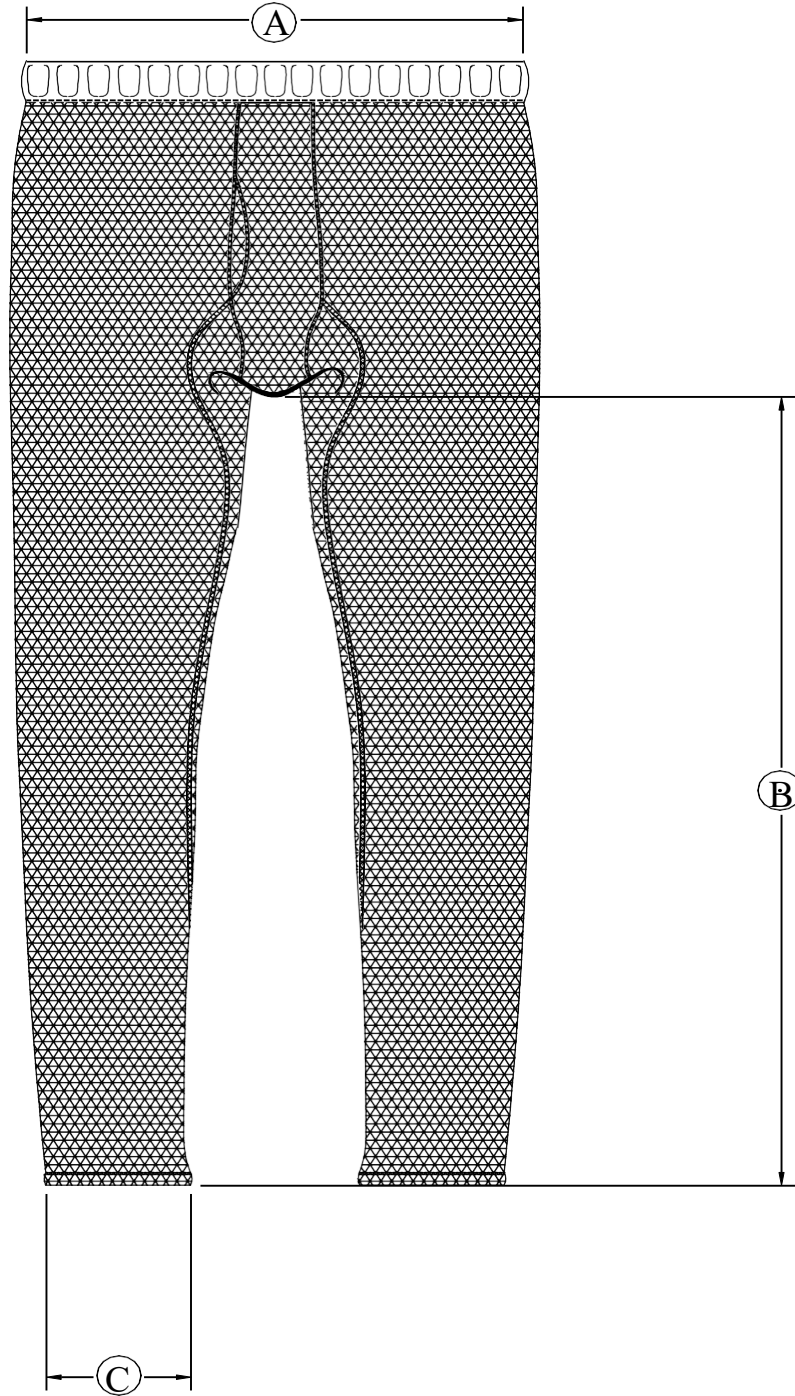


FIG. 1  
SILK-WEIGHT  
DRAWERS  
(OUTSIDE FRONT)

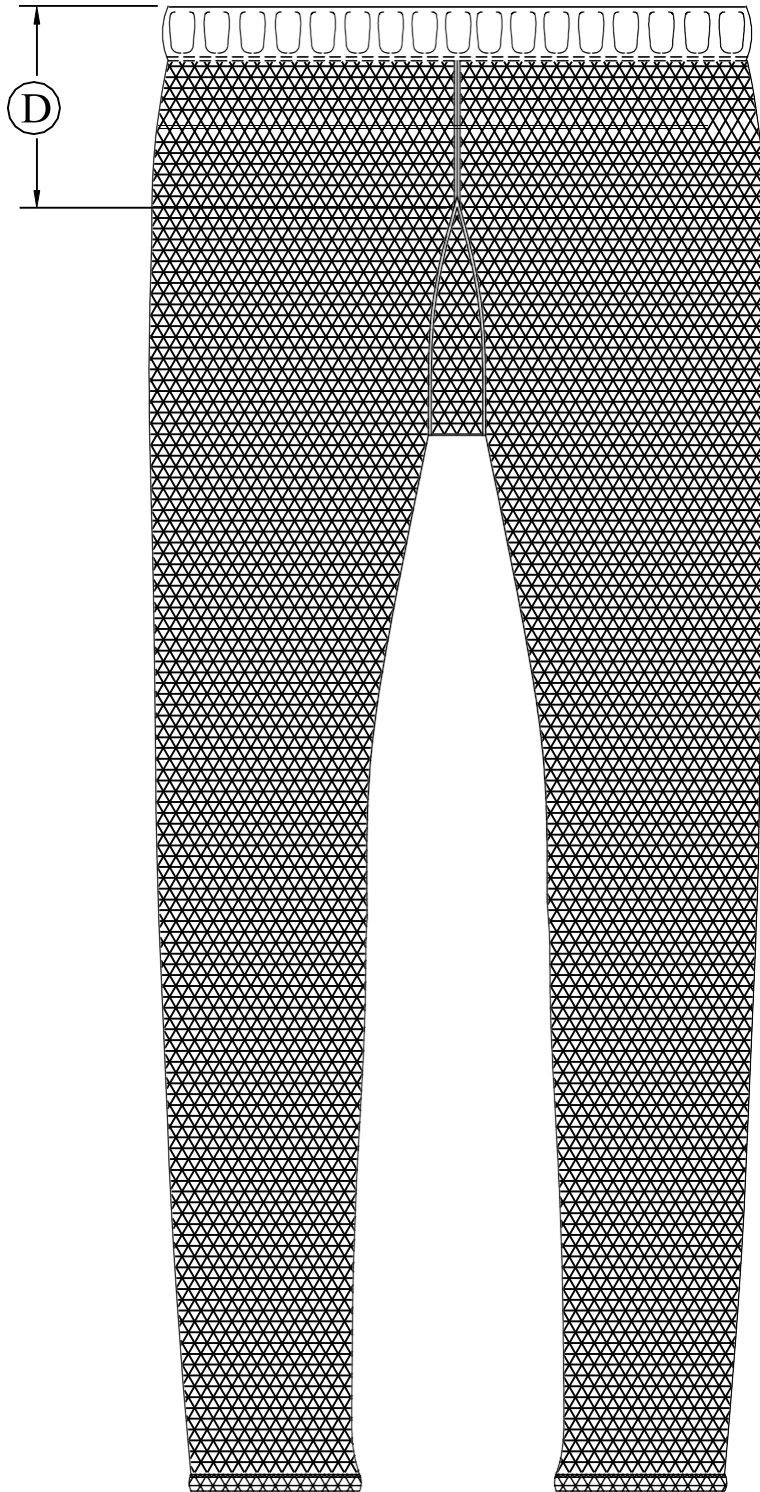


FIG. 2

SILK-WEIGHT DRAWERS  
(OUTSIDE BACK)

FIG. 2  
SILK-WEIGHT DRAWERS  
(OUTSIDE BACK)

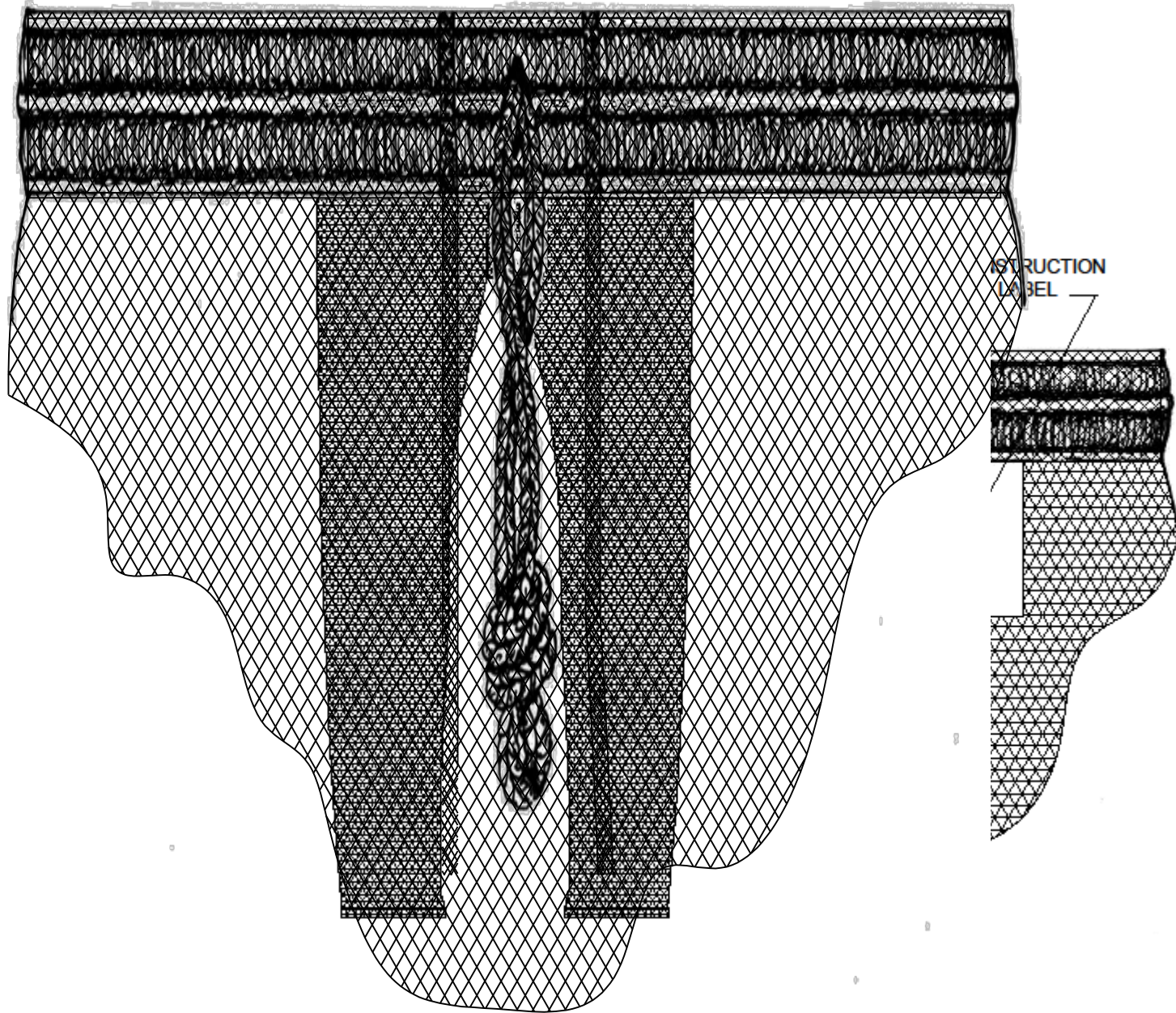


FIG. 3  
SILK-WEIGHT DRAWERS  
(INSIDE FRONT WAISTBAND WITH DRAW CORD)

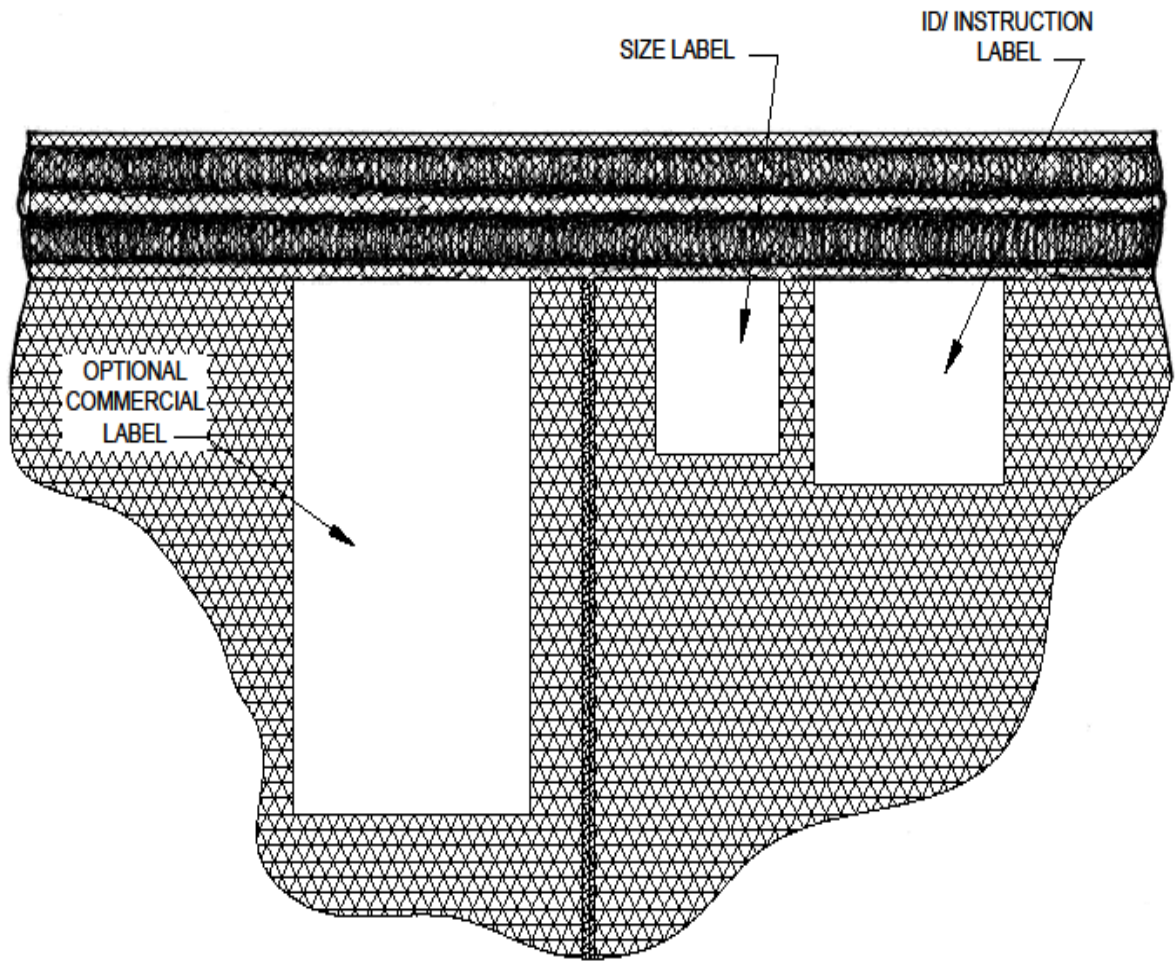


FIG. 4  
SILKWEIGHT DRAWERS  
(WAISTBAND INSIDE BACK)