

DRAWERS, FLYER'S, MEN'S, MIDWEIGHT, CWU-94/P

This purchase description is approved for use by the Department of the Navy.

1. SCOPE

1.1 Scope. This purchase description covers the requirements for one type of men's midweight aramid fleece drawers.

1.2 Classification.

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

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

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

Class 1: Black 3239
Class 2: Olive Green 3400
Class 3: Tan 3700

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.

2.2 Government documents.

2.2.1 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).

FEDERAL SPECIFICATIONS

JJ-W-155 - Webbing, Textile, Cotton, Elastic

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)

(Copies of these documents are available online at <http://assist.daps.dla.mil/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 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.

NAVAL AIR SYSTEMS COMMAND

NAWCPD 4631-04-01 - Cloth, Knitted, Velour, Stretch, Flame Resistant
NAWCPD 4621-04-08 - Cloth, Knitted, Aramid, Silk Weight, Flame Resistant

(Copies of these documents are available from Defense Supply Center Philadelphia, Clothing and Textiles Directorate, Attn: DSCP-FQSAB, (Bldg 6), 700 Robbins Avenue, Philadelphia, PA 19111-5092 or through the online technical data request system, <http://warfighter.dla.mil/>.)

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

ASQ-Z1.4 - Procedures, Sampling and Tables for Inspection by Attributes

(Copies of this document are available from www.asq.org or the American Society for Quality, 600 North Plankinton Avenue, Milwaukee, WI 53203.)

ASTM INTERNATIONAL

ASTM-D6193 - Standard Practices for Stitches and Seams

ASTM-D3776 - Standard Test Method for Mass per Unit Area (Weight) of Fabric

(Copies of this document are available from www.astm.org or ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

AATCC

AATCC Test Method 20A - Fiber Analysis: Quantitative

(Copies of this document are available from www.aatcc.org or AATCC, P.O. Box 12215, Research Triangle Park, North Carolina 27709-2215.)

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. 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 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 Materials and components.

3.3.1 Basic material. The material for the drawers shall be flame resistant knitted powerstretch velour conforming to NAWC PD 4631-04-01. The color shall be as specified in the solicitation or contract (see 6.2).

3.3.2 Drawers fly material. The drawers fly and inset material shall be a mesh knit conforming to NAWCPD 4631-04-08 (see 6.4.2) and shall match the standard sample specified in NAWC 4631-08 for the color specified in 6.2.

3.3.3 Webbing.

3.3.3.1 Waistband. The webbing for the waistband shall be 1 – ¼ inch wide cotton elastic conforming to type I, class 8 of JJ-W-155. The color shall be a good approximation of the basic material (see 6.2).

3.3.3.2 Stirrups. The webbing for the stirrups shall be ¾ inch wide cotton elastic conforming to type I, class 3 of JJ-W-155. The color shall be a good approximation of the basic material (see 6.2).

3.3.4 Thread. The thread for stitching the drawers shall be size Tex 45 conforming to type II of A-A-55217 and shall be a good approximation of the basic material (see 6.2).

3.3.5 Labels.

3.3.5.1 Identification/instruction label. Each drawer shall have a combination identification/instruction label conforming to type IV or VI, class 15 of MIL-DTL-32075. 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, MIDWEIGHT, CWU-94/P

PD NUMBER: NAWC PD 4631-04-05

FIBER CONTENT: 100% COTTON (EXAMPLE)

CONTRACT NUMBER: SP0100-00-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

3.3.5.2 Size label. Each drawer shall have a size label conforming to type IV or VI, class 2 of MIL-DTL-32075. When type IV is used, the printing shall be black and the label background shall be white. The inscription shall be as stated below:

S-SH (Example)
NSN 8405-00-000-0000 (Example)

3.3.5.3 Warning label. Each drawer shall have an embroidered warning label. The inscription shall be 3/16 inches from the edge of the label. The label shall be 1-3/4 X 2-3/4 (+ 0, -1/8)

inches. The label background shall approximate the basic material of the garment. The label shall contain the following:

WARNING

This undergarment must be worn underneath a flame resistant garment that fully covers the undergarment. The inside fleece layer is flame resistant and will not melt. The outer layer of the garment is made from fibers that will ignite and melt if not covered by a flame resistant. Safety of the garment will be compromised if the outside of this garment is directly exposed to flame.

3.3.5.4 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" must 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.

3.3.5.5 Commercial manufacturer labels. Sewn in manufacturer and attached labels shall be allowed to identify brands of materials and the product manufacturer (see Figure 1 and 2).

3.3.6 Hanger tape. The hanger tape shall be a good approximation of the basic material color and conform to Table I (see 6.4.1).

TABLE I: Tape requirements

Characteristic	Requirement
Width	½ (± 1/16) inch
Fiber Content	100% Spun Polyester
Weight	6 (min) lbs/ 1000 linear yards

3.4 Design. The drawers shall be a velour fleece pull-on style with elastic waistband and silkweight brief style fly. The legs shall be one-piece straight legs with hems turned out and elastic stirrups. The fleece side of the garment shall be to the inside. See Figures 1 and 2.

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

3.6 Patterns. Standard patterns will be furnished by the government to the contractor for use in cutting working patterns (see 6.2 and 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.

3.61 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 ¹	Cut Parts
Cloth, Fleece	Leg	MMD-LEG	2
Cloth, Mesh Knit	Fly	MMD-FLY	2

¹ MMD stands for Men's Midweight Drawers

3.7 Construction.

3.7.1 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 inches. 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.

3.7.2 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 restitching in the required manner. The ends of stitching are not required to be backstitched when making the above repairs.

3.7.3 Bartacking. Bartacking shall be 3/8 (\pm 1/8) inch long, 1/8 (\pm 1/32) inch wide and shall contain 16 stitches minimal. Bartacks shall be free from thread breaks and loose stitching.

3.8 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
1.	<u>Cut drawers.</u>		
	The drawers shall be cut in strict accordance with the patterns. All component parts shall be cut in accordance with the directional lines.		
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>		
	Mark or bundle cut parts of the drawers to insure a uniform size, uniformity of shade, and proper assembly throughout fabrication.		
4.	<u>Make fly.</u>		
	a. Hem edge of fly opening according to notches.	605	EFa-2
	b. Set fly pieces to front of body leaving a 7 inch ($\pm 1/16$) opening.	607	FSa-1
5.	<u>Sew waistband.</u>		
	a. Set waistband webbing flat starting and stopping at the center back seat seam. The waistband shall overlap the drawer's $\frac{1}{4}$ to $\frac{3}{8}$ inch.	604	LSa-1
6.	<u>Sew inseam and seat seam.</u>		
	a. Stitch inseams.	607	FSa-1
	b. Stitch seat seam catching ends of waistband webbing.	607	FSa-1
7.	<u>Hem legs.</u>		
	a. Hem legs with a 1 inch ($\pm 1/16$) hem rolled to the outside.	605	EFa-2

TABLE III: Manufacturing operations continued

No	<u>Manufacturing Operations Requirements</u>	Stitch Type	Seam Type
8.	<u>Attach stirrups.</u>		
	a. Cut 2 pieces of elastic webbing 13 inches long ($\pm 1/8$) for stirrups.		
	b. Fold under one inch of each end of stirrup and place 1 ($\pm 1/16$) inch above the bottom of the cuff. The side edge of the elastic shall be even with the middle of the inseam on the outside of the leg. The other end of the folded stirrup shall be placed on the direct opposite side of the cuff in the middle of the leg opening on the outside of the leg.		
	c. Attach stirrups to bottoms of each leg with a cross boxstitch 5/8 by 7/8 inch ($\pm 1/16$).	301	Cross Box Stitch
9.	<u>Attach labels and hanger tape.</u>		
	a. Attach warning label to outside front right leg 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
	b. Fold and coverstitch thread tail to inside of drawers at waist. Sew identification/instruction label on all four sides to the center back catching the top of size label in the top row of stitching. Stitches shall be 1/16 to 1/8 inches from the edge.	301	SSa-1
	c. Attach hanger tape on outside back center horizontally over the center back seam and 1/2 ($\pm 1/16$) inch below waistband. Fold ends under and bar tack each end. The finished length shall be 3 -1/4 inches ($\pm 1/8$).	Bar tack	Bar tack
10.	<u>Clean drawers.</u>		
	a. All thread ends shall be trimmed and loose threads removed. Remove all spots and stains.		

3.9 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>
	All lengths	Short	Regular	Long	All lengths	All lengths
XSmall	12	22-1/2	24-1/2	26-1/2	4-3/4	10-1/4
Small	14	23-1/8	25-1/8	27-1/8	5	10-1/2
Medium	16	23-3/4	25-3/4	27-3/4	5-1/4	10-3/4
Large	18	24-1/2	26-1/2	28-1/2	5-1/2	11
XLarge	20	25-1/4	27-1/4	29-1/4	5-3/4	11-1/4
Tolerance	± 1/4	± 1	± 1	± 1	± 1/8	± 1/2

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

4. VERIFICATION

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

- a. First article inspection (see 4.2).
- b. Conformance inspection (see 4.3)

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 drawer for each sized ordered. The sample unit shall be one drawer and the lot size shall be expressed in units of drawers.

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

4.3.1 Conformance inspection samples. Sampling for inspection shall be performed in accordance with ASQ-Z1.4. The sample unit shall be one drawer 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
Fleece	Material identification	3.3.1	All examinations and tests specified in NAWC PD 4631-04-01
Mesh knit	Material identification	3.3.2	All examinations and tests specified in NAWC PD 4631-04-08
Webbing	Material identification	3.3.3	All examinations and tests specified in JJ-W-155
Thread	Material identification	3.3.4	All examinations and tests specified in A-A-55217
Label	Material identification	3.3.5	All examinations and tests specified in MIL-DTL-32075
Hanger Tape	Fiber identification Weight Width	3.3.6	AATCC Test Method 20A ASTM 3776 (Option D) Dimensional ¹

¹ One test specimen 12 inches long shall be examined for dimensional conformance. One measurement shall be taken. Any suitable measuring device shall be acceptable. The results shall be recorded as pass or fail.

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	101	
	Any spot or stain (compound, oil, dirt, including marks) clearly visible		201
	Color of any component not as specified		202

	Any thread not trimmed to 1/16 inch or thread scraps not removed		203
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TABLE VI: Classification of end item defects continued

Examine	Defect	Classification	
		Major	Minor
Components and assembly	Any defective component or defect that will affect the form, fit or function of the assembly	102	
	Any component part not as specified or required operation improperly performed	103	
	Any component part not cut in accordance with the patterns	104	
Seams and stitching	Any open seam	105	
	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.	106	
	End of stitching not securely backstitched for at least 1/2 inch when not caught in other seams or stitching.	107	
	Thread breaks, skips and run-offs not securely overstitched for at least 1/2 inch.	108	
	Any stitching irregular or unevenly gauged (greater than 50% of the seam length or 4 inches, whichever is less).	109	
	Not specified seam or stitch type.	110	
	Loose tension resulting in a loose seam or tight tension resulting in breaking of stitches when normal pull is applied.	111	
Identification or size	Identification missing	112	
	Marking missing, incorrect or illegible	113	
Dimensional	Any finished garment dimensions not within the specified tolerance	114	

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 midweight drawer shall be placed relaxed flat upon a table and measured as follows (see Figures 1 & 2):

A/ The 1/2 waist measurement shall be taken flat across the front, from folded edge to folded edge of the waistband elastic.

B/ The inseam measurement shall be taken from the bottom of the hem to the center of the fly seam.

C/ The 1/2 leg opening shall be taken from inside edge to inside edge at the bottom of the leg.

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

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. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2.1, 2.2.2 and 2.3).
- c. Size, quantity and class desired (see 1.2).
- d. National stock number.
- e. Applicable Government patterns, including revisions.
- f. Whether first article and conformance inspection is required (see 4.2 and 4.3).
- 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. Number of first article samples required (see 4.2.1).

6.3 Pattern/Information requests. For access to information such as patterns, drawings, standard samples, etc. visit Defense Supply Center Philadelphia's Warfighter website, <http://warfighter.dla.mil>. Choose Contracting> Specification/Pattern Request. 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 Sources.

6.4.1 Hanger Tape. Lea and Sachs, Inc., ½ inch 4056 polyester tape, has been known to meet the requirements of paragraph 3.3.6. Lea and Sachs can be reached at P.O. Box 1667, Des Plaines, IL 60017-1667, www.leasachs.com.

6.4.2 Mesh Knit. 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, www.deercreekfabrics.com.

6.5 Subject terms (key word) listing.

Aramid

Fleece Midweight

Multi Climate Protection

CONCLUDING MATERIAL

Custodian

Navy-AS

Preparing Activity:

Navy – AS

Review Activity

Navy-NU

DLA-CT

AF

CG

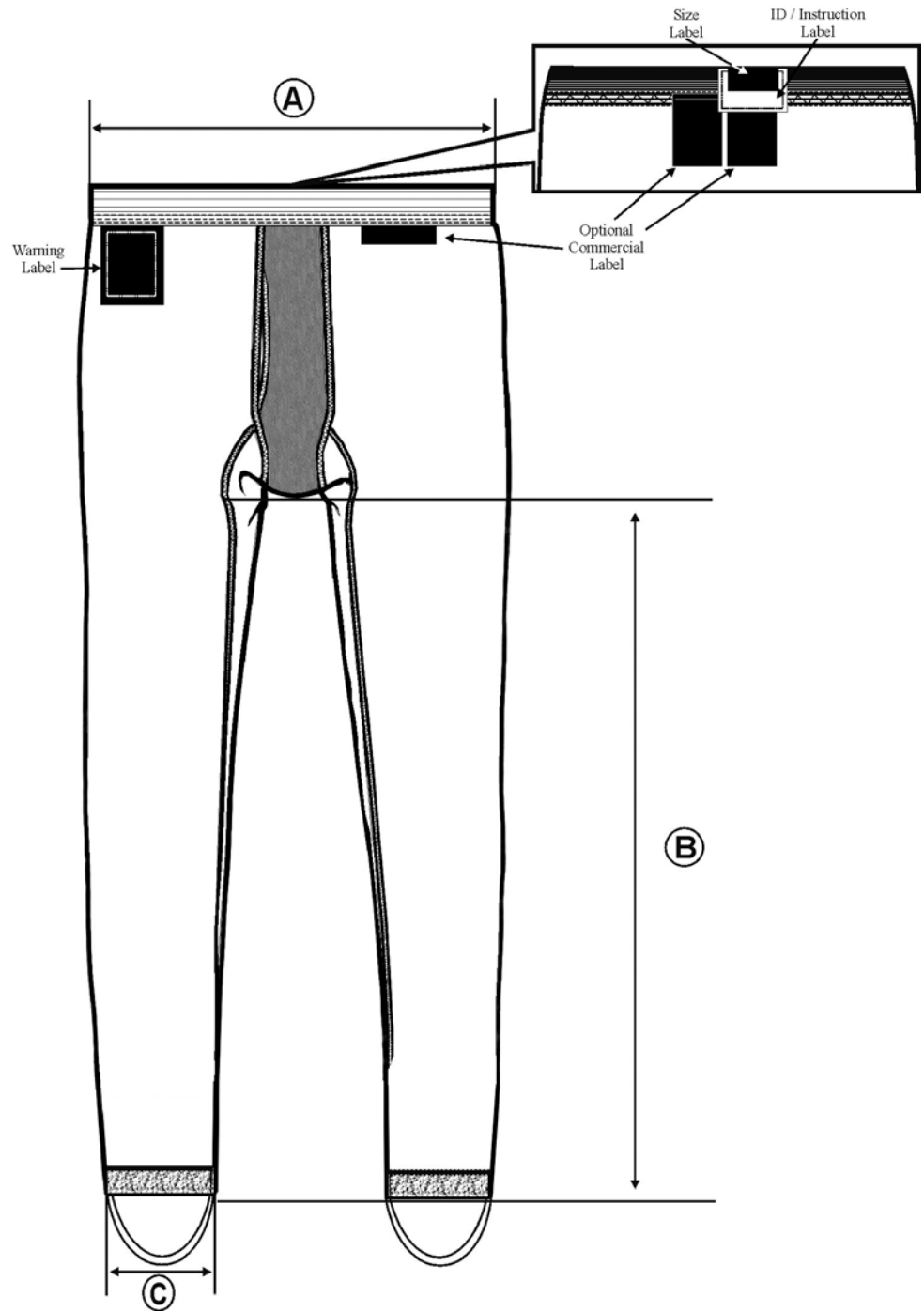


Figure 1. Undergarment Drawers Front

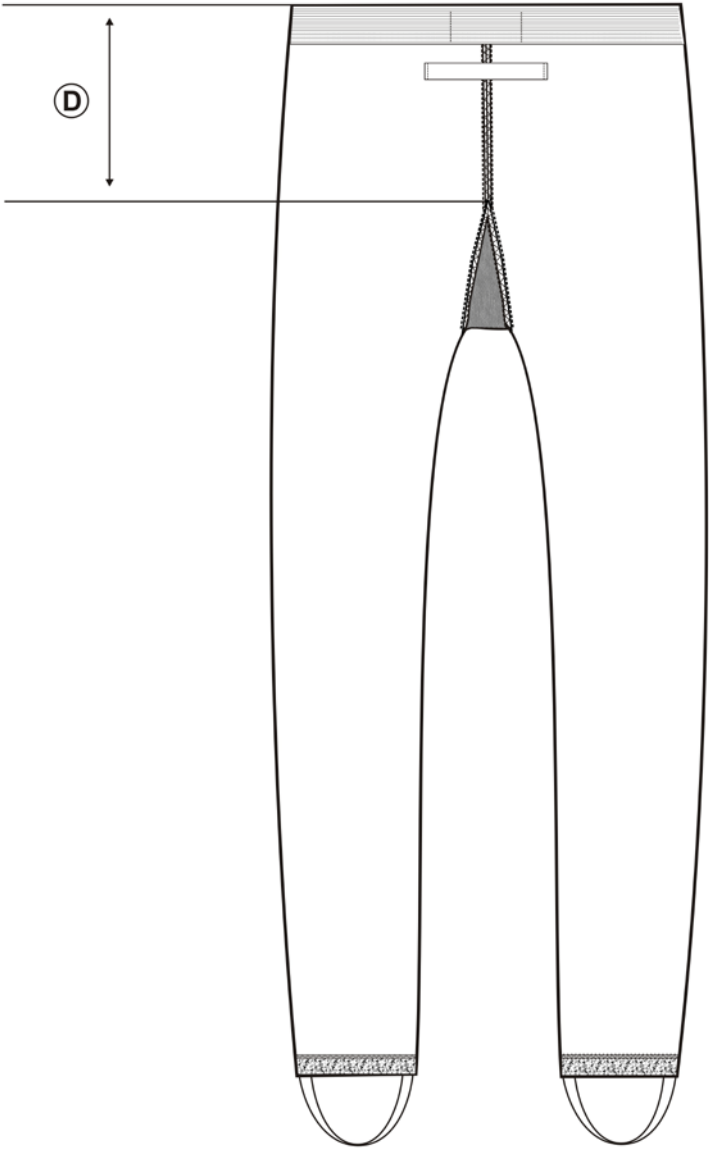


Figure 2. Undergarment Drawers Back