

INCH-POUND

CR-PD-03-18F

15 September 2017

SUPERSEDING

CR/PD 03-18E

26 July 2017

## PURCHASE DESCRIPTION

### **SOCKS, BOOT, ANTIMICROBIAL**

This purchase description is approved for use by all Department and Agencies of the Department of Defense (DoD).

#### 1. SCOPE.

1.1 Scope. This purchase description covers the requirements for three (3) types of boot socks that contain antimicrobial properties.

1.2 Classification. The socks will be available in the following types and sizes:

##### 1.2.1 Types.

Type I – Green 490

Type II – Coyote 498

Type III – Black 3237

##### 1.2.2 Sizes.

XX-Small (Sizes 3 to 7)

X-Small (Sizes 7-1/2 to 8-1/2)

Small (Sizes 9 to 10)

Medium (Sizes 10-1/2 to 11-1/2)

Large (Sizes 12 to 13)

X-Large (Sizes 14 and over)

Comments, suggestions, or questions on the document should be addressed to: The contracting officer.

FSC 8440

## 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 or 4 of this specification. This section does not include documents cited in other sections of this specification 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 cited in sections 3 or 4 of this specification, whether or not they are listed.

### 2.2 Government documents.

2.2.1 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 solicitation or contract.

#### FEDERAL STANDARDS

FED-STD-4 - Glossary of Fabric Imperfections

#### DEPARTMENT OF DEFENSE SPECIFICATIONS

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

(Copies of these documents are available online at <https://assist.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 these documents are those cited in the solicitation or contract (see 6.2).

#### AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

AATCC Evaluation Procedure 1 - Gray Scale for Color Change

AATCC Evaluation Procedure 2 - Gray Scale for Staining

AATCC Evaluation Procedure 8 - AATCC 9-Step Chromatic Transference Scale Rating

AATCC Evaluation Procedure 9 - Visual Assessment of Color Difference of Textiles

AATCC Test Method 8 - Colorfastness to Crocking: AATCC Crockmeter Method

AATCC Test Method 15 - Colorfastness to Perspiration

AATCC Test Method 16.3 - Colorfastness to Light: Xenon

AATCC Test Method 20A - Fiber Analysis: Quantitative

AATCC Test Method 61 - Colorfastness to Laundering: Accelerated

AATCC Test Method 100 - Assessment of Antibacterial Finishes on Textile Materials

AATCC Test Method 150 - Dimensional Changes of Garments after Home laundering

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

AMERICAN SOCIETY FOR QUALITY (ASQ)

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

(Copies are available online at <http://www.asq.org>.)

ASTM INTERNATIONAL

- ASTM D629 - Standard Test Methods for Quantitative Analysis of Textiles
- ASTM D737 - Standard Test Method for Air Permeability of Textile Fabrics
- ASTM D1777 - Standard Test Method for Thickness of Textile Materials
- ASTM D1907/D1907M - Standard Test Method for Linear Density of Yarn (Yarn Number) by the Skein Method
- ASTM D3787 - Standard Test Method for Bursting Strength of Textiles- Constant-Rate-of-Traversal (CRT) Ball Burst Test
- ASTM D6797 - Standard Test Method for Bursting Strength of Fabrics Constant-Rate-of-Extension (CRE) Ball Burst Test
- ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials

(Copies of these documents are available online at <http://www.astm.org>.)

AMERICAN TYPE CULTURE COLLECTION (ATCC)

- ATCC – 6538 - Staphylococcus Aureus
- ATCC – 9027 - Pseudomonas Aeruginosa

(Copies are available online at <http://www.atcc.org>.)

OTHER PUBLICATIONS

Repeat Insult Patch Test – Modified Draize Procedure – Principles and Methods of Toxicology, A Wallace Hayes (editor)

(Copies are available online at <https://www.crcpress.com>.)

2.4 Order of precedence. Unless otherwise noted here or in the contract, 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 Inspections.

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

3.1.2 Conformance inspection. When specified (see 6.2), a sample shall be subjected to conformance inspection in accordance with 4.3.

3.2 Recycled, recovered, environmentally preferable, or biobased materials. Recycled, recovered, environmentally preferable, or biobased 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 Standard sample. The finished sock shall match the standard sample for shade and appearance and shall conform to the requirements in Table I when tested as specified in 4.6.3. The standard sample may be obtained from the contracting activity.

3.4 Materials.

3.4.1 Fiber Content. The total fiber percentages shall be a minimum of 10 percent nylon, minimum of 5 percent spandex/nylon, and the remaining fiber shall be cotton.

3.4.2 Basic material. The double welt shall be a 1 X 1 rib with an 8/1 ring spun cotton and a 140 denier spandex core covered with two (2) ends of textured, 70 denier, type 6,6-nylon. The leg portion of the sock shall be knit with a 1 X 1 rib construction of two (2) ends of 12/1 ring-spun cotton and a 140 denier spandex double covered with two (2) ends of textured 70 denier, type 6,6-nylon. When silver coated nylon yarn is used in the foot of the sock, the entire foot area shall be knit with one end of 10/1 ring-spun cotton and one (1) end of 70 denier, type 6.6 nylon plied with a 30 denier nylon plaited with 99.9 percent (%) pure silver and knit so that all three (3) yarns are incorporated into the terry loop. The plating yarn for the foot of the sock shall be a 20 denier spandex plied with a 1/70/34 type 6.6 nylon and knit to the outside of the sock fabric. When silver coated nylon yarns are NOT used in the foot of the sock, the entire foot area shall be knit with one (1) end of 10/1 ring-spun cotton and at least 100 denier, type 6,6-nylon knit to form the inside terry loop. The course counts ( $\pm 1$ ) apply.

Course count for Type I only							
SIZE	WELT	LEG	BOOT	HEEL	FOOT	RINGTOE	TOE
XXS	24	120	34	14/13	70	34	14/13
XS	24	134	34	14/13	82	34	14/13
SM	24	142	34	14/13	94	34	14/13
MED	24	154	34	14/13	140	34	14/13
LG	28	160	34	14/13	160	34	14/13
XLG	28	192	34	14/13	176	34	14/13

3.4.2.1 Antimicrobial capability. The socks shall have antimicrobial properties that are non-allergenic, and shall provide protection against bacteria and fungi. The antimicrobial properties shall contain silver and shall be incorporated by either silver coated yarns or an application containing silver. The antimicrobial technology used shall be an EPA-registered 99 percent (%) pure silver antimicrobial and shall meet the requirements in Table I when tested as specified in Table III.

TABLE I. – Physical requirements for basic material.

Characteristic	Requirement
Antimicrobial capability, percent reduction; (minimum)	
Initial (zero and 24 hr. contact time)	95
After 50 laundering cycles (zero and 24 hr. contact time)	90
Bursting strength (pounds) (minimum)	
Sole fabric	40
Dimensional stability (percent) (maximum)	
Leg length	6.0
Foot length	6.0
Thickness, (inches) (minimum)	
Sole area, double ply	0.20
Air permeability, (minimum)	40 cfm
Colorfastness to: (minimum)	
Laundering	2
Perspiration (Alkaline & Acid)	3-4
Crocking	
Wet	3.5
Dry	3.5
Light (40 AFU or 170 kJ/(m <sup>2</sup> nm)@ 420nm) <u>1/</u>	3-4
Moisture Vapor Transmission Rate (MVTR)	
Initial (minimum)	750 grams of water/ meter <sup>2</sup> /24 hours

1/ AFU: AATCC Fading Units

3.5 Label/marking. Each sock shall have a label containing size, fiber content and National Stock Number (NSN). For Type II only, the numeric sizes associated with the alpha sizes shall not apply. The label shall conform to Type IV, Class 1 of MIL-DTL-32075 and shall be applied just below the instep and centered between the ankle and toe. The contract number shall not be included in the stamped label. The color of the ink shall be white.

3.5.1 Pairing/banding. The socks shall be paired. The paired socks shall be the same size and shall be equal in length and width. Three (3) pairs of socks shall have a commercial type label band containing the following information:

SIZE CONTRACT NUMBER STYLE AND COLOR FIBER BLEND CARE INSTRUCTIONS: Recommend wash before wearing. Machine wash warm with like colors. Non-chlorine bleach as needed. Tumble dry medium heat. CONTRACTOR'S NAME COUNTRY OF ORIGIN
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NOTE: For Type III only, the numeric sizes associated with the alpha sizes shall not apply.

3.5.2 Bar code label. Each banded package shall be bar-coded. The bar code shall be clearly legible and readable by a scanner. The bar coding element shall be a thirteen (13) digit NSN. There shall be a twelve digit Universal Product Code (UPC) number assigned for all NSNs by the contracting activity. The initials "UPC" shall appear beneath the code. The bar code for NSN and UPC type shall be a medium to high density and shall be located so that it is completely visible on the item. This UPC code shall also be placed on all shipping cartons on which the NSN appears. The bar code may be combined with the size/care instructions on the banded package label.

3.6 Design. The socks shall be over-the-calf style with a double welt top having a double covered elastic yarn that is continuous in every course from the welt to the ankle area. The fully reciprocated heel, toe and foot area shall be padded with a half cushion terry. The entire ankle/heel, toe and foot area shall be knit 360 degrees circumferentially with a main body yarn (terry yarn). When silver fibers are used as the antimicrobial technology the silver fibers shall be knit into the heel and foot portion of the sock. If using an antimicrobial technology other than silver coated fibers, the entire sock shall have an antimicrobial treatment/application that is permanently bonded to the substrate yarns.

3.7 Figures. Figure 1 is furnished for information purposes only. To the extent of any inconsistencies between the written purchase description and the figures, the written purchase description shall govern.

3.8 Finished dimensions and weight. The socks shall conform to the finished measurements (given in inches) and weight as specified in Table II.

TABLE II. Finished measurements and weight.

SIZES	XX- Small (3-7)	X-Small (7-1/2- 8-1/2)	Small (9- 10)	Medium (10-1/2- 11-1/2)	Large (12-13)	X-Large (14 and over)	Tol.
(A) Leg length, inches.							
Type I	12	12-3/4	14-3/8	16-1/2	17 -1/4	18-1/4	± 1/2
Type II	--	11	11	12	13	14	+1/2, -0
Type III	11	11	11	12	13	14	± 1/2
(B) Welt length, inches.	1	1	1	1	1	1	± 1/4
(C) Foot length, inches.							
Type I	7-1/4	8-1/4	9-1/4	10-1/2	11-1/2	12-1/2	1/2
Type II	--	7	8-1/2	10	11-1/2	13	+1, -0
Type III	7-1/4	8-1/4	9 1/4	10 1/2	11 1/2	12 1/2	± 1/2
(D) Foot width, inches.	4	4	4	4	4	4	± 1/4
Conditioned weight, ounces/12 pairs							
Type I	25-1/2	29-1/2	33-1/2	37-1/2	41-1/2	45-1/2	± 1.0 oz
Types II & III	21-1/2	25-1/2	29-1/2	33-1/2	37-1/2	41-1/2	

3.9 Toxicity. The finished socks shall not present a health hazard and shall show compatibility with prolonged, direct skin contact when tested as specified in 4.7.

3.9.1 Toxicity documents. All antimicrobial treatments used to process the socks shall be identified and accompanied by the appropriate Material Safety Data Sheet (MSDS) information. The use of chemicals recognized by the Environmental Protection Agency (EPA) as known human carcinogens are prohibited.

3.10 Construction. The socks shall be constructed in accordance with 3.4.2. The toe seam shall not be twisted, pleated or puckered. Stitch tension shall not be tight or loose but shall be maintained evenly throughout the sock. Course count for Type I shall be in accordance with 3.4.2.

3.11 Workmanship. After completion of the sock and before pairing, the sock shall be thoroughly cleaned and all foreign matter shall be removed. The sock shall not contain any fabric defects. Before banding, each pair of socks shall be uniform in quality and shall be free from irregularities or defects which could affect performance, reliability or durability and the defects specified in Table IV. After banding the three (3) banded pairs of socks shall be uniform in quality and shall be free from irregularities or defects which could affect performance, reliability or durability and the defects specified in Table IV. Each pair of finished socks shall conform to the quality of product established by this specification.

#### 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. End item inspections (see 4.4.1)

4.2 First article inspection. A first article, submitted in accordance with 3.1.1, shall be inspected, examined for appearance, color and finished defects as specified in 4.4, 4.5, 4.6 and Table IV and tested for the characteristics as specified in Tables I, II and III.

4.3 Conformance inspection. Conformance inspection (see 3.1.2) shall include the examination of 4.4 and the tests of 4.4 through 4.7 as applicable. Unless otherwise specified, sampling for inspection shall be performed in accordance with ANSI/ASQ Z1.4 and with acceptance quality limits (AQL) as specified in the contract and/or order, except where otherwise indicated (see 6.2). The sample size shall be one (1) pair of socks. The lot size shall be expressed in units of pairs of socks.

4.4 Inspection conditions. Unless otherwise specified, all inspections shall be performed in accordance with all the requirements of referenced documents, unless otherwise excluded, amended, modified or qualified in this specification or applicable procurement documents (see 6.2).

4.4.1 In-process examination. Visual and dimensional examinations 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 the requirements specified in Section 3. Any in-process nonconformance remaining in the finished socks shall be classified as a defect in accordance with this document.

4.4.2 Components and material examinations and tests. In accordance with 4.3, components and materials shall be tested in accordance with all the requirements of referenced documents unless otherwise excluded, amended, modified or qualified in this document or applicable procurement documents. The Government reserves the right to inspect and test all components and end items to determine conformance to requirements.

4.5 Basic material. The basic material physical requirements shall be verified by the test methods specified in Table III.



TABLE III. Physical requirements for basic material.

Characteristic	Requirement Paragraph	Test Method
Fiber Content	3.4.1	ASTM D629 or AATCC 20A <u>1/</u>
Denier	3.4.2	ASTM D1907/D1907M
Antimicrobial capability Initial After 50 laundering cycles	3.4.2.1 & Table I	AATCC-100 <u>2/</u> , <u>3/</u> AATCC-150 <u>2/</u> , <u>3/</u> , <u>4/</u>
Bursting strength (minimum) Sole fabric	3.4.2.1 & Table I	ASTM D3787 or ASTM D6797
Dimensional stability (percent) (maximum) (5 laundering cycles) Leg length Foot length	3.4.2.1 & Table I	AATCC-150 <u>4/</u> AATCC-150 <u>4/</u>
Thickness, sole area, (minimum) double ply	3.4.2.1 & Table I	ASTM D1777
Air permeability, (minimum)	3.4.2.1 & Table I	ASTM D737
Colorfastness (minimum) to: Laundering (after 3 laundering cycles) Perspiration Crocking Wet Dry Light (40 AFU or 170 kJ/(m <sup>2</sup> nm)@420nm)	3.4.2.1 & Table I	AATCC-61 (1A), <u>5/</u> , <u>6/</u> , <u>7/</u> AATCC-15 <u>5/</u> , <u>6/</u> AATCC-8 <u>8/</u> AATCC-8 <u>8/</u> AATCC-16.3 <u>5/</u>
Moisture Vapor Transmission Rate (MVTR), initial (minimum)	3.4.2.1 & Table I	ASTM E96/E96M Procedure B
Conditioned weight, (minimum)	3.8 & Table II	<u>9/</u> , <u>10/</u>

1/ In case of dispute, the ASTM method prevails.

2/ The organisms used for testing shall be *Staphylococcus aureus* ATCC 6538 and *Pseudomonas aeruginosa* ATCC 9027. Samples shall be taken from the foot section of the sock. Antimicrobial testing shall be conducted on an annual basis.

3/ AATCC-100 shall be modified as follows:

- a) Grow test organisms *Staphylococcus aureus* ATCC 6538 and *Pseudomonas aeruginosa* ATCC 9027 in 1x nutrient broth (NB) overnight.
- b) Determine Optical Density at 600 nm (OD600). Dilute with 1x NB to OD600 = 1, yielding a cell concentration of approximately 10<sup>8</sup> CFU/ml.
- c) Spin out cells 3 minutes at 10,000g and remove supernatant. Wash 1 ml cells with 1 ml 0.125x (diluted 1:8) NB medium with 0.15 % (w/v) Triton X-100. Repeat spin and wash 2<sup>nd</sup> time. Re-suspend cells in 1 ml 0.125x NB/0.15% Triton. Recheck OD600.

- d) Dilute cells 1:10 with 0.125x NB/ 0.15 % (w/v) Triton X-100 to target concentration of  $1-2 \times 10^7$  CFU/ml. Serially dilute inoculum 10-fold for plating to determine concentration.
- e) For a single determination for each organism, two incubation times, 0, and 24 hour, shall be examined. Cut each specimen into 48 mm circles in triplicate for each time point. Do not sterilize; plating will be done on medium selective for the test organisms (see step k).
- f) Inoculate each single swatch specimen in a petri dish with the amount a single swatch specimen can absorb within 10 - 20 minutes. Avoid puddling of inoculum not in contact with the sample.
- g) For 0 and 24 h swatches, place the rolled swatch into a sterile 100 ml bottle and cap. Swatch rolled with tweezers when inserting into the bottle will minimize contaminating the neck with the organisms on the swatch (purpose is to reduce or prevent inoculum not in contact with the swatch).
- h) Process 0 hour contact time immediately. Incubate 24 hour inoculated swatch at  $37 (\pm 2^\circ\text{C})$ .
- i) Add Dey-Engley (D-E) broth to each of the replicates before doing 10-fold dilutions. Add D-E at 100 times the swatch inoculum volume (e.g., for an inoculation volume of 0.2 ml, neutralize with 20 ml D-E; dilution is  $10^{-2}$ ). Shake bottles 1 minute.
- j) Serially dilute D-E solution as needed 10-fold in PBS buffer to obtain valid counts.
- k) For manual plating, spread plate 0.1 ml of the  $10^{-3}$ ,  $10^{-4}$ ,  $10^{-5}$  dilutions in duplicate on selective media. For spiral plating, plate 0.05 ml of  $10^{-3}$ ,  $10^{-4}$  dilutions in duplicate on selective media.

These dilutions are usually suitable to obtain valid counts.

- i. *S. aureus* – BBL Mannitol salts agar (cat # 211407, BD Diagnostic Systems)
  - ii. *P. aeruginosa* – Cetrimide agar (cat # 7222, Neogen Corp)
- l) Incubate plates overnight at  $37 (\pm 2^\circ\text{C})$ .
  - m) Report the bacterial concentrations (CFU/ml) for each swatch at both contact times. Use average triplicate concentration for 0 and 24 hour contact times to calculate percent reduction for the treated swatches and untreated control. Also report starting inoculum concentration; minimum valid concentration is  $5 \times 10^6$  CFU/ml. Untreated control would not be expected to exhibit reduction.

4/ Laundering and drying conditions using AATCC-150, Table I, (3), (IV), (A), iii.

5/ Rated using the AATCC Evaluation Procedure 1, Gray Scale for Color Change

6/ Rated using the AATCC Evaluation Procedure 2, Gray Scale for Staining.

7/ Using 10 steel balls and three (3) laundering cycles with drying after each cycle. Only the stain on the nylon and cotton fibers of the color transfer cloth shall be evaluated.

8/ Rated using the AATCC Evaluation Procedure 8, AATCC 9-Step Chromatic Transference Scale

9/ Condition socks for a minimum of four (4) hours at 70 (± 2°) F and 65 (± 2) percent (%) Relative Humidity before weighing.

10/ Per 12 pair, oz., minimum, (to the nearest 1.0 oz.)

4.6 End item examination. Each pair of socks selected for end item examination shall be examined for shade, design, material components, construction and workmanship. All defects shall be scored in accordance with Table IV. Material defects are defined in Section 1 of FED-STD-4 and shall be scored when observed at a distance of 3 feet or more. The finished examination sample size, acceptance quality limits and acceptance criteria shall be specified in the solicitation or contract (see 6.2).

4.6.1 Visual examination. The socks shall be examined for the defects listed in Table IV.

TABLE IV. Defects.

Examination	Defect	Classification	
		Major	Minor
Material Defects and damages	Any hole, run, dropped stitch (including holes looping or seaming), cut, tear, or slubby yarn	101	
	Color not as specified	102	
Cleanliness	Any spot, streak, or stain of a permanent nature on any portion of sock which would be visible when the sock is worn.	103	
	Removable spot, streak, or stain on outside of sock		201
	Thread ends not trimmed throughout sock		202
Accuracy of seaming	Seam twisted, pleated, seaming or puckered <u>1/</u>	104	203
	Part of sock caught in any unrelated operation or stitching <u>1/</u>	105	204
	Any required operation omitted, or improperly performed <u>1/</u>	106	205
Stitch Tension	Loose tension in any area:		206
	- more than 1-inch but not more than 2-inches	107	
	- more than 2-inches	108	
Tight tension (stitches break when normal strain is applied to the seam or stitching)			
	Missing, broken, or skipped stitches <u>1/</u>	109	207
Course count	Less than minimum specified:		208
	- one (1) stitch		
	- two (2) or more stitches	110	
- More than maximum specified	111		
NOTE: To be scored only when the condition exists on major portion of the area, i.e. welt, leg, boot, heel, etc.			

TABLE IV. Defects. - Continued

Examination	Defect	Classification	
		Major	Minor
Shaded Part	Variation in shade within an outside part <u>1/</u>  NOTE: Parts suspected as being shaded shall be examined at a distance of 3-feet against the background of the other parts and colors of the garment. When the shade difference is readily discernible under these examining conditions, it shall be scored as a shaded part.	112	209
Construction	Construction not in accordance with purchase description Any dimension or weight not as specified Non-uniform in overall appearance, not well shaped	113 114	210
Label/barcode tag/markings	Missing, illegible, or incorrect Incorrectly placed or attached Barcode omitted or not readable by scanner Human-readable-interpretation (HRI) omitted or illegible Not attached to location specified Causes damage to the socks	115 116 117 118	211 212
Pairing/banding	Pair does not contain the same size sock Length and width of paired socks not equal - by 1/4-inch or less - more than 1/4-inch Banded socks do not contain three (3) pair of socks as specified. Banded socks not all of the same size Label information on banded socks not as specified, omitted, illegible or incomplete.	119 120 121 122 123	213

1/ Parts suspected of being shaded shall be examined at a distance of 3-feet against the background of the other parts and colors of the garment. When the shade difference is readily discernible under these conditions, it shall be scored as a shaded part.

4.6.2 Visual shade matching. The color and appearance of the finished sock shall match the standard sample when viewed using AATCC Evaluation Procedure 9, Option A, with sources stimulating artificial daylight D75 illuminant with a color temperature of 7500K ( $\pm 200$ ) illumination of 100 ( $\pm 20$ ) foot candles, and shall be a good match to the standard sample under incandescent A illuminant with a color temp of 2856K ( $\pm 200$ ).

4.6.3 Dimensional examination. Each sock in the pair selected for dimensional examination shall conform to the finished dimensions specified in 3.8 and Table II. Each sock shall be laid flat, without tension, on a smooth, flat surface and measured in accordance with Figure 1 and the instructions below. Any measurement deviating from the dimensions and tolerances specified in Table II shall be scored as a size measurement defect, Major defect 114.

- (A) Leg length. Measure from the very top of the sock to the bottom of the heel.
- (B) Welt length. Measure from the top of the sock welt to the bottom of the sock welt. The welt is the doubled fabric area at the top of the sock.
- (C) Foot length. Measure from the back of the heel to the tip of the toe.
- (D) Foot width. Measure from the bottom of heel along gore stitching as shown in the diagram.

4.7 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 socks 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 toxicity requirement (see 3.9) can be demonstrated with historical use data, toxicity testing may not be required (see 6.2).

## 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 requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Department 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 antimicrobial socks are intended for wear by members of the Department of Defense as part of the utility uniform.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this Purchase Description.
- b. Type and size required (see 1.2.1 and 1.2.2)
- c. The specific issue of individual documents referenced (see 2.2).
- d. When first article is required (see 3.1.1, 4.2 and 6.3).
- e. Conformance inspection acceptance quality limits (AQL) (see 3.1.2 and 4.3)
- f. When toxicity testing is required (see 3.9 and 4.7)
- g. Inspection conditions (see 4.4)
- h. Packaging (see 5.1).

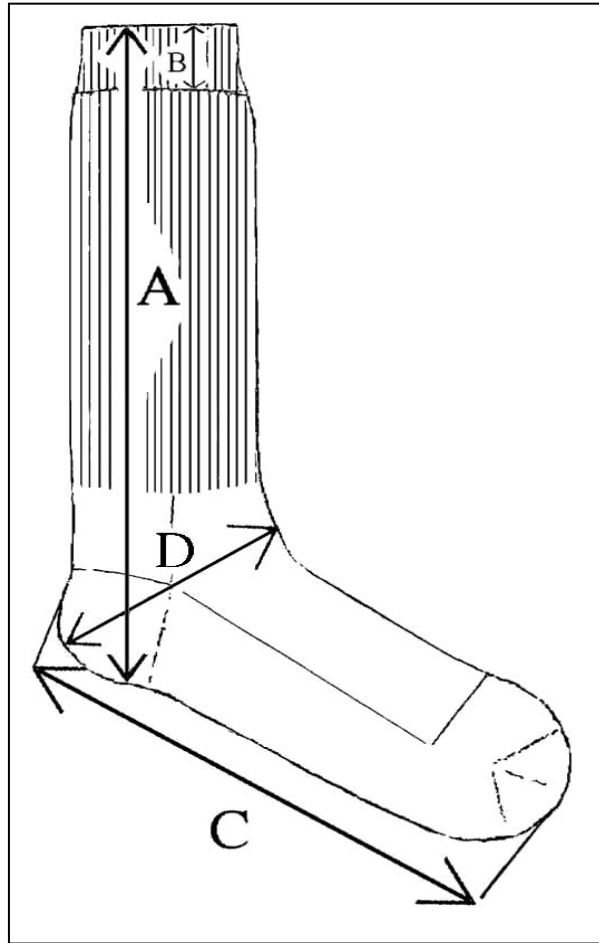


FIGURE 1. SIDE VIEW OF SOCK BOOT.

6.3 First article. When a first article inspection is required (see 3.1.1), it will be inspected and approved under the appropriate provisions of FAR 52.209-4. 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 Standard sample. For access to samples and pattern drawings, address the contracting activity issuing the invitation for bids or request for proposal.

6.5 Subject term (key word) listing.

Clothing  
Footwear

MILITARY INTERESTS:

CUSTODIAN  
Army - GL

REVIEW  
Navy - NU

PREPARING ACTIVITY:  
DLA - CT