

INCH-POUND
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7 July 2021
SUPERSEDING
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1 September 2020

PURCHASE DESCRIPTION

TROUSERS, IMPROVED HOT WEATHER COMBAT UNIFORM

This Purchase Description is approved for use by DLA Troop Support and is available for use by all Departments and Agencies of the Department of Defense (DoD).

1. SCOPE

1.1 Scope. This Purchase Description covers the requirements for improved hot weather combat uniform trousers to be worn by Service personnel in hot weather environments.

1.2 Classification. The trousers for the Improved Hot Weather Combat Uniform (IHWCU) is treated for insect repellency and will be available in the following types, class and sizes.

1.2.1 Types.

Type I. Unisex
Type II. Female

1.2.2 Classes.

Class 1 Deleted
Class 2 Operational Camouflage Pattern (OCP)

Comments, suggestions, or questions on this document should be addressed to: Department of the U.S. Army, DEVCOM - Soldier Center, ATTN: FCDD-SCD-PE, 10 General Greene Avenue, Natick, MA 01760-5019.

AMSC N/A

FSC 8415

DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.

1.2.3 Sizes. The trousers unisex sizes will be as follows:

SCHEDULE OF SIZES TYPE I UNISEX					
X-Small (XS)	Small (S)	Medium (M)	Large (L)	X-Large (XL)	XX-Large (2XL)
X-Short (XS)	X-Short	X-Short	X-Short	X-Short	X-Short
Short (S)	Short	Short	Short	Short	Short
Regular (R)	Regular	Regular	Regular	Regular	Regular
Long (L)	Long	Long	Long	Long	Long
X-Long (XL)	X-Long	X-Long	X-Long	X-Long	X-Long
XX-Long (XXL)	XX-Long	XX-Long	XX-Long	XX-Long	XX-Long

FEMALE SCHEDULE OF SIZES TYPE II FEMALE			
25	28	31	35
X-Short	X-Short	X-Short	----
Short	Short	Short	Short
Regular	Regular	Regular	Regular
----	Long	Long	Long
----	----	X-Long	X-Long

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 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 of documents cited in sections 3 and 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 cited in the solicitation or contract.

COMMERCIAL ITEM DESCRIPTIONS

- | | |
|-----------|---|
| A-A-50198 | - Thread, Gimp, Cotton, Buttonhole |
| A-A-50199 | - Thread, Polyester Core, Cotton or Polyester Covered |
| A-A-59994 | - Button, Sewing, Hole and Button Staple (plastic) |

DEPARTMENT OF DEFENSE SPECIFICATIONS

- MIL-DTL-5038 - Tape, Textile and Webbing, Textile, Reinforcing Nylon
- MIL-W-5664 - Webbing, Textile, Elastic
- MIL-DTL-32075 - Label: For Clothing, Equipment, and Tentage (General Use)
- MIL-DTL-32439 - Cloth, Duck, Textured Nylon
- MIL-PRF-32659 - Textiles: Vector Protection Treatment of

(Copies of these documents are available online at <https://quicksearch.dla.mil>.)

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those specified in the solicitation or contract.

DRAWINGS

U.S. ARMY COMBAT CAPABILITIES DEVELOPMENT COMMAND SOLDIER CENTER

2-1-2592 Operational Camouflage Pattern (OCP)

(Copies of drawings are available from the U.S. Army, DEVCOM – Soldier Center, ATTN: FCDD-SCD-PE, 10 General Greene Avenue, Natick, MA 01760-5019.)

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 specified in the solicitation or contract.

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

- AATCC EP1 - Evaluation Procedure for Gray Scale for Color Change
- AATCC EP2 - Evaluation Procedure for Gray Scale for Staining
- AATCC EP8 - Evaluation Procedure for AATCC 9-Step Chromatic Transference Scale
- AATCC EP9 - Evaluation Procedure for Visual Assessment of Color Difference in Textiles
- AATCC TM8 - Test Method for Colorfastness to Crocking: Crockmeter
- AATCC TM15 - Test Method for Colorfastness to Perspiration
- AATCC TM16.3 - Test Method for Colorfastness to Light: Xenon Arc
- AATCC TM20A - Test Method for Fiber Analysis: Quantitative
- AATCC TM61 - Test Method for Colorfastness to Laundering: Accelerated
- AATCC TM81 - Test Method for pH of the Water-Extract from Wet Processed Textiles
- AATCC TM135 - Test Method for Dimensional Changes of Fabrics After Home Laundering

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

AMERICAN SOCIETY FOR QUALITY (ASQ)

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

(Copies of this document are available online at <https://asq.org>.)

ASTM INTERNATIONAL

ASTM D737	- Standard Test Method for Air Permeability of Textile Fabrics
ASTM D1424	- Standard Test Method for Tearing Strength of Fabrics by Falling - Pendulum (Elmendorf Type) Apparatus
ASTM D3775	- Standard Test Method for Warp (End) and Filling (Pick) Fabric Count of Woven Fabric
ASTM D3776/D3776M	- Standard Test Methods for Mass Per Unit Area (Weight) of Fabric
ASTM D3990	- Standard Terminology Relating to Fabric Defects
ASTM D5034	- Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)
ASTM D6193	- Standard Practice for Stitches and Seams

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

OTHER PUBLICATIONS

Fabric Defect Replica Scales

(For Information on obtaining copies of the Fabric Defect Replica Scales please contact the U.S. Army, DEVCOM - Soldier Center, ATTN: FCDD-SCD-PE, 10 General Greene Avenue, Natick, MA 01760-5019.)

INFORMA HEALTHCARE

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 herein 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 Design. The Type I trousers design shall have the following characteristics; a covered fly with a four (4) button/ buttonhole closure, or three (3) button/buttonhole closure, depending on size (see Table VII), seven (7) belt loops, two (2) front side hanging pockets, two (2) cargo pockets with side pleated bellow on each side, and one (1) centered inverted box pleat with two (2) button/ two (2) buttonhole closure flaps, and two (2) lower leg side pockets with one (1) button/ one (1) buttonhole closure flaps, two (2) back single welt hip pockets with two (2) button closure flaps (see Figure 5). All pockets shall have sewn in eyelets, see pattern for placement, the eyelets on the cargo pockets and lower leg pockets shall be completely hidden by the bellows. The trousers shall have a double needle seat patch and a pleated knee reinforcement incorporated into the pant leg at the knee and one (1) pleat at each thigh. The trousers have a one (1) piece single gusset (see 3.8.8). The bottom of the trousers leg hems shall have drawstrings (see 3.8.7.3). The Type II Trousers shall have the same design features as Type I, four (4), three (3) or two (2) buttons at the waistband/fly (see Table VII-A), and shall have sewn in elastic centered on the back of the waistband.

3.4 Materials.

3.4.1 Basic material. The basic material for the trousers shall meet the requirements of Table I when tested as specified in 4.5. The color of the cloth shall be OCP for Class 2.

TABLE I. Physical requirements, basic material.

Characteristic	Requirements
Fiber identification quantitative, percent	57% HT420 High Tenacity Nylon 43% Cotton
Weave	Ripstop
Weight, oz./square yard	5.0 - 6.0
Construction, yarns per inch, (min.)	
Warp	75
Filling	45
Breaking strength, pounds, (min.)	
Warp	175
Filling	100
Tearing strength, pounds, (min.)	
Warp	18
Filling	14

TABLE I. Physical requirements, basic material. - Continued

Characteristic	Requirements
Dimensional stability, percent, (max):	
Warp direction	3
Filling direction	3
Air Permeability, cu. ft./min./sq. ft. (min.)	60
Toxicity	See 3.14

3.4.1.1 Operational Camouflage Pattern (OCP), Class 2. The cloth(s) shall be dyed to a ground shade matching Dark Cream 559 and then shall be overprinted with the camouflage pattern matching Drawing 2-1-2592. When the ground shade is dyed to match Dark Cream 559, the remaining six (6) colors shall be printed as appropriate, for the Tan 525, Light Sage 560, Olive 527, Dark Green 528, Brown 529 and Bark Brown 561 areas of the pattern. When the ground shade is not dyed Dark Cream 559 all seven (7) colors of the camouflage pattern shall be printed to match all seven (7) colors of the pattern.

3.4.1.2 Pattern execution The pattern on the printed finished cloth(s) shall reproduce the standard sample in respect to design, colors and registration of the respective areas. The pattern repeat shall be 25.255 (+1.25, -2.50) inches in the warp direction. The various areas of the pattern shall be properly registered in relation to each other and shall present definite sharp demarcations with a minimum of feathering or spew. Each pattern area shall show solid coverage; skitteriness exceeding that shown on the standard sample in any of the printed areas will not be acceptable. When the standard sample is not referenced for pattern execution, a pattern drawing shall be provided.

3.4.1.2.1 Pattern width (filling direction). The maximum camouflage printed area shall be 68-inches in the filling direction.

3.4.1.3 Labile sulfur. Dyes and compounds containing elementary sulfur capable of oxidation to sulfuric acid shall not be used.

3.4.1.4 Visual shade matching (all Classes). The color and appearance of the cloth(s) shall match the standard sample (see 6.4) when tested as specified in 4.5.

3.4.1.5 Color. The cloth for the trousers shall meet the colorfastness requirements of Table II when tested as specified in 4.5.

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TABLE II. Colorfastness requirements.

Colors Evaluation	Laundering (3 cycles) Color Change and Staining (min.)	Light (40 AFU or 170kJ/ (m ² nm) @ 420 nm) (min.) <u>1/</u>	Perspiration (acid & alkaline) Color Change and Staining (min.)	Crocking (Dry and Wet) (min.)
Dk. Green 528, Brown 529, Bark Brown 561	3-4	3-4	3-4	3.5
Tan 525, Olive 527, Dark Cream 559, Light Sage 560	3-4	3	3-4	3.5

1/ AATCC Fading Units (AFU)

3.4.1.6 Spectral reflectance.

3.4.1.6.1 Operational Camouflage Pattern (OCP), Class 2. The reflectance values for the Class 2 cloth shall conform to the requirements listed in Table III, when tested as specified in 4.5.

TABLE III. Spectral reflectance requirements, Class 2.

Reflectance values (percent): Operational Camouflage Pattern (OCP)						
Wavelength, Nanometers (nm)	Dark Cream 559 & Tan 525		Olive 527, Brown 529 & Light Sage 560		Dark Green 528 & Bark Brown 561	
	Min.	Max.	Min.	Max.	Min.	Max.
600	22	44	12	30	3	11
620	24	45	12	30	3	12
640	24	45	12	32	4	13
660	25	45	12	32	4	14
680	28	45	14	34	4	17
700	28	48	14	36	6	23
720	30	52	16	39	6	23
740	32	55	18	41	10	25
760	36	56	20	43	14	30
780	38	57	22	45	18	35
800	40	57	22	45	21	40
820	44	58	24	46	24	42
840	46	59	26	47	26	43
860	48	60	28	48	28	45

3.4.2 Cloth, side and hip hanging pockets, and waistband lining. The cloth for waistband lining, side and hip hanging pockets, shall be basic printed material (3.4.1) or basic material seconds, military misprint or, unprinted but finished, grade nylon/cotton (NYCO) fabric that is consistently weighting 6 ounces per square yard or less, to a minimum of 5 ounces per square yard. First/second fabrics in the ground shade or white may be used for pocketing materials only, that are not visible on the outside of the garment. Seconds shall be basic material which has been rejected only for defects pertaining to shade, infrared reflectance, or camouflage printed pattern as outlined in the appropriate material specification.

3.4.2.1 Waistband lining reinforcement. The waistband lining shall be reinforced with a medium weight sewn or fusible interlining.

3.4.3 Reinforcement and patch cloth. The cloth for the seat patch and knee reinforcement outer layer shall conform to MIL-DTL-32439 Type IV, Class 1, Style H (OCP).

3.4.4 Knit fabric. The knit fabric for the inner knee lining shall meet the requirements of Table IV when tested as specified in 4.5. The color of the cloth for Class 2 shall match Tan 499.

TABLE IV. Physical requirements, knit fabric.

Characteristic	Requirements
Fiber identification quantitative, percent	65% Tencel ® Lyocell/ 35% Cocona® Polyester
Knit Construction	Jersey
Weight, oz./square yard	4.80 – 5.30
Toxicity	See 3.14

3.5 Insect bite protection (all types and classes). The finished garments with insect repellent treatment shall provide the minimum mosquito bite protection specified in 3.5.1 and the treatment shall be strictly limited to the levels specified in contract and is active ingredient dependent.

3.5.1 Percent (%) bite protection. Finished insect repellent treated garments shall provide the minimum bite protection specified below when assessed by the biting protection testing specified in 4.6. Government approval shall be required initially, and any time there is a change in the insect repellent treatment formulation or processing conditions.

<u>Condition</u>	<u>% Mosquito Bite Protection (min)</u>
Initial	≥ 85%
After 20 launderings	≥ 80%
After 50 launderings	≥ 70%

3.5.1.1 DELETED

3.5.1.2 Insect repellent garment application, finished measurements. Manufacturers shall comply with the finished measurement requirements in 3.13.1 and compensate for actual fabric shrinkage or growth after the application of garment treatment in accordance with the requirements in MIL-PRF-32659.

3.5.2 Insect repellent treatment. Insect repellent treatment process shall be in accordance with MIL-PRF-32659. The treated items shall be labeled in accordance with 3.9.3 and 3.9.4. The insect repellent finish shall be uniformly applied across the treated item at an initial target level as specified in the EPA registered label. The treatment level shall provide the percent (%) bite protection specified in 3.5.1. The finished insect repellent treatment shall not degrade any performance characteristics or present any latent defects to the treated item.

3.6 pH (Class 2). The pH value of the water extract of all the finished cloth and garments shall be no lower than 5.0 or higher than 8.5 when tested as specified in 4.5 and 4.6.

3.7 Component materials and shade (all classes). The component materials for the trousers shall be made in accordance to paragraphs 3.4 and 3.7 - 3.7.3 and the color shall match Tan 499 for OCP uniforms unless otherwise noted.

3.7.1 Thread. The thread for all seaming and stitching shall conform to Table V. All thread shall be non-staining and the requirements in each Commercial Item Description (CID) shall apply.

TABLE V. Thread requirements.

Component area	Thread specification	Needle thread 1/ (Tex size)	Bobbin/Looper thread 1/ (Tex size)
All seaming, stitching and bar-tacking	A-A-50199, Type II	36-45 or 46-60	36-45 or 46-60
Button attachment	A-A-50199, Type II	71-105	71-105
Crotch seam and seat patch	A-A-50199, Type II	46-60	46-60
Overedge stitching (raw edges)	A-A-50199, Type II	31-35	31-35

1/ Needle & Bobbin/Looper shall use same Tex size thread.

3.7.2 Gimp. The cotton gimp for reinforcing buttonholes shall conform to A-A-50198, soft or glazed finish, Tex Size 180 or 210.

3.7.3 Buttons. Buttons shall be dull finish, four (4) holes, 30 ligne conforming to A-A-59994, Type I, Class 1, Style 26. When attached to the trousers, the button and thread shall withstand a pull/break of 40 pounds (minimum) when tested as specified in 4.6. The button count, including the waistband, shall be as specified in Table VI for Type I and Table VI-A for Type II.

TABLE VI. Button count (including waistband), Type I.

Length	Sizes Type I - UNISEX					
	X-Small (XS)	Small (S)	Medium (M)	Large (L)	X-Large (XL)	2X-Large (2XL)
X Short (XS)	3	3	3	3	3	3
Short (S)	3	3	3	3	3	4
Regular (R)	3	3	3	3	4	4
Long (L)	3	3	3	4	4	4
X Long (XL)	3	3	4	4	4	4
XX Long (XXL)	3	4	4	4	4	4

TABLE VI-A. Button count (including waistband), Type II.

Sizes Type II - FEMALE				
Length	25	28	31	35
X-Short (XS)	2	2	3	--
Short (S)	2	2	3	3
Regular (R)	3	3	3	3
Long (L)	--	3	3	3
X-Long (XL)	--	--	3	4

3.8 Construction. The construction shall be made in accordance to paragraphs 3.8.1 - 3.13.11 unless otherwise noted. All garment material edges shall be clean finished, either, turned-in turned-under or serged, unless otherwise indicated. All components with a grain line shall follow the grain line of the basic garment material or as indicated on pattern.

3.8.1 Waistband (all types). The waistband shall have clean finished ends, measuring 1-1/2 (+3/8, -1/8) inches wide (finished) for Type I and for Type II it should be 1-5/8 (+3/8, -1/8) inches wide (finished) when measured from inside of band from top edge to the bottom folded edge. The waistband shall be single needle stitched at top and bottom for Type I and Type II. The waistband buttonhole shall be centered on the waistband 5/8 ($\pm$ 1/16) - inch from inside cut of the buttonhole. The four (4), three (3), or two (2), buttons, of the waistband and fly (see Table VI), shall be aligned with the keyhole of the buttonholes when fly is closed.

3.8.1.1 Waistband (Type II). The waistband shall have one (1) section of elastic (see 3.8.1.2) which is located at the center back waist inside of the waistband, and will be attached by bar tack or box X under the back belt loops. If box X is chosen it shall be 3/8-inch wide, 3/4-inch tall and be stitched with 301 stitch.

3.8.1.2 Elastic (Type II only). The elastic for the waistband shall be 1-inch wide in cut lengths by size, conforming to MIL-W-5664, Type I or Type II is acceptable.

Size	Cut elastic (inches) ($\pm 1/8$ -inch)
25	5
28	6.5
31	8
35	10

3.8.2 Belt loops (all types). The seven (7) trousers belt loops shall measure 1 (+1/16, -1/8) inch in width and finish 2-5/8 ($\pm 1/8$) inches between bar-tacks in the length. The belt loop seam allowance/ exposed raw edge shall be no more than 1/4-inch. The belt loop placement shall be as follows: one (1) loop on each side seam, one (1) on back seam, and one (1) on each front centered between side seam and waistband end, and one (1) on each back side centered between side seam and back seam. Belt loops may be positioned immediately adjacent to felled seams to reduce bulk in sewing. When positioning belt loops adjacent to side seam, the belt loop shall be placed toward the front.

3.8.3 Front fly. The fly shall be a covered fly with a three (3) button/ buttonhole closure, two (2) button/buttonhole closure or a one (1) button/ buttonhole, depending on the type and size (see Tables VI and VI-A). The buttonholes shall be horizontal and placed as indicated on the pattern. The fly shall have “J” stitching 2 ($\pm 1/8$) inches from fly edge. The top fly shall be edge stitched 1/16 to 1/8-inch.

3.8.4 Seat patch. The trousers shall have a double-needle seat patch (see pattern for placement).

3.8.5 Knee reinforcement. The trousers shall have a knee reinforcement on the outside of each leg which incorporates four (4) pleats on Type I, and two (2) pleats on Type II, and is stitched into the pant leg on all four (4) sides (see pattern for placement).

3.8.6 Pockets and flaps.

3.8.6.1 Front side pockets. The trousers shall have two (2) front side hanging pockets with pocket openings measuring 6-3/4 ($\pm 1/2$) inches between bar-tacks. Each front side pocket shall have a drainhole/eyelet as marked on the patterns. Pocket openings shall match each other within 1/4-inch. Any raw edge shall be overedge stitched.

3.8.6.2 Hip pockets and flaps. The trouser shall have back left and right single welt hip pockets with a two (2) button/buttonhole closure per pocket. The finished welt shall measure 1/4 ($\pm 1/16$) inch. Each hip pocket shall have a drainhole/eyelet as marked on the patterns. The buttons shall be sewn onto the outside of the pocket and the buttonholes shall be vertical and sewn into the underside of the flap as indicated on patterns (see Figures 4 and 5).

3.8.6.3 Cargo pockets and flaps. The trousers shall have two (2) cargo pockets with two (2) side pleated bellows and one (1) centered inverted box pleat and flaps (see pattern for placement). The cargo pockets shall have a sewn-in eyelet, hidden at the bottom side edge of bellow as indicated on the patterns. The top of the folded finished pocket flaps shall finish 3/4-inch from the folded edge of pocket top (see pattern for placement). The side pleated bellows and the inverted box pleat shall be edge stitched to secure pleat stability. The cargo pockets and flaps shall close with a two (2) button, two (2) buttonhole closure per pocket. The buttons shall be sewn onto the outside of the pocket and the buttonholes shall be vertical and sewn onto the underside of the flap as indicated on patterns (see Figure 5).

3.8.6.4 Lower leg pockets and flaps. The trousers shall have two (2) lower leg pockets with flaps (see pattern for placement). The top of the finished pocket flaps shall finish 3/4-inch from the folded edge of pocket top (see pattern for placement). The lower leg pockets and flaps shall close with a one (1) button, one (1) buttonhole closure per pocket. The buttons shall be sewn onto the outside of the pocket and the buttonholes shall be vertical and sewn onto the underside of the flap as indicated on patterns. One (1) button shall be added to the underside of the left lower leg pocket flap so as to not interfere with the buttoning of the pocket as an extra replacement button for all button locations (see Figure 5).

3.8.7 Leg and bottom hem. The finished hem shall measure 1-1/8 ($\pm 1/8$) inch wide. and shall not interfere with the drawstring.

3.8.7.1 Bottom hem. The trousers leg bottoms shall be hemmed and shall have a drawstring (see 3.8.7.3) inserted through two (2) sewn-in eyelets (see 3.8.11) 3/8 ($\pm 1/8$) inch in diameter, or two (2) 1/2-inch horizontal straight cut buttonholes as indicated on the patterns with a self-reinforcement piece.

3.8.7.2 DELETED

3.8.7.3 Hem tape (drawstrings). The tape for the leg bottom hem shall conform to MIL-DTL-5038, Type III, 3/8-inch wide. The drawstring tape for the leg bottom hem shall be cut 28 (± 1) inches in length for all sizes. The drawstring tape shall overlap (cross) between holes when threaded through the hem casing. The tape ends shall be heat cut to prevent raveling.

3.8.8 Gussets. The trousers shall have a one (1) piece single gusset toward the front of the trouser with the same cloth as the basic material.

3.8.9 Buttonholes. The buttonholes for the fly and hip pockets shall be eyelet-end tapered bar type worked over gimp with not less than four (4) tacking stitches at bar end catching the gimp ends (not counting the crossover stitch). The purling shall be on the outside surface. The buttonholes for the cargo and lower leg pockets shall be bar type without gimp, or eyelet and tapered type with gimp. All buttonholes shall be reinforced with sewn, fused or self-fabric interfacing to stabilize the buttonholes or shall be reinforced with gimp. The cut lengths shall be 3/4-inch to 7/8-inch. The buttonholes shall be clean cut with the stitching securely caught in fabric.

3.8.10 Lining, knee. The trousers shall have a knit inner lining at the knees (see 3.4.4) (see pattern for placement).

3.8.11 Eyelets. The sewn-in eyelets for all pockets shall have a minimum of 16 stitches and a 1/4 ($\pm$ 1/16) inch diameter finished opening. When sewn-in eyelets are used for the leg bottom they shall measure 3/8 ($\pm$ 1/8) inch in diameter. The eyelet stitching shall have at least four (4) overlapping stitches with the purling on the outside. See pattern for placement.

3.9 Labels. All garments shall have a size label and a combination identification/care label sewn into the trousers. All trousers shall have an additional insect protection/identification/care label sewn into the trousers and a hang tag. The printing for all labels shall be black. The font size for the inscription of the size label shall be 10 points. The inscription shall have a minimum font size of 8 points for identification/care label and insect protection/identification/care label only. Inscription shall be legible.

3.9.1 Size label. The size label shall conform to Type VI, Class 2 of MIL-DTL-32075 and shall be sewn and caught in the bottom of the inside waistband seam between the back belt loops on the wear's right side. The stitching shall not cover the printing. The color of the size labels shall be white. The size label shall include the information in Table VII for Type I and Table VII-A for Type II for the applicable size:

TABLE VII. Size label - Type I (Unisex).

X-Small – X-Short Inseam: 23-1/2 to 26-1/2 in. Waist: 23 to 27 in. NSN No. NATO Size: 6067/5869	X-Small – Short Inseam: 26-1/2 to 29-1/2 in. Waist: 23 to 27 in. NSN No. NATO Size: 6775/5869	X-Small – Regular Inseam: 29-1/2 to 32-1/2 in. Waist: 23 to 27 in. NSN No. NATO Size: 7583/5869
X-Small – Long Inseam: 32-1/2 to 35-1/2 in. Waist: 23 to 27 in. NSN No. NATO Size: 8390/5869	X-Small – X-Long Inseam: 35-1/2 to 38-1/2 in. Waist: 23 to 27 in. NSN No. NATO Size: 9098/5869	X-Small – XX-Long Inseam: Over 38-1/2 in. Waist: 23 to 27 in. NSN No. NATO Size: 9805/5869
Small – X-Short Inseam: 23-1/2 to 26-1/2 in. Waist: 27 to 31 in. NSN No. NATO Size: 6067/6979	Small – Short Inseam: 26-1/2 to 29-1/2 in. Waist: 27 to 31 in. NSN No. NATO Size: 6775/6979	Small – Regular Inseam: 29-1/2 to 32-1/2 in. Waist: 27 to 31 in. NSN No. NATO Size: 7583/6979
Small – Long Inseam: 32-1/2 to 35-1/2 in. Waist: 27 to 31 in. NSN No. NATO Size: 8390/6979	Small – X-Long Inseam: 35-1/2 to 38-1/2 in. Waist: 27 to 31 in. NSN No. NATO Size: 9098/6979	Small – XX-Long Inseam: Over 38-1/2 in. Waist: 27 to 31 in. NSN No. NATO Size: 9805/6979

TABLE VII. Size label - Type I (Unisex). - Continued

Medium – X-Short Inseam: 23-1/2 to 26-1/2 in. Waist: 31 to 35 in. NSN No. NATO Size: 6067/7989	Medium – Short Inseam: 26-1/2 to 29-1/2 in. Waist: 31 to 35 in. NSN No. NATO Size: 6775/7989	Medium – Regular Inseam: 29-1/2 to 32-1/2 in. Waist: 31 to 35 in. NSN No. NATO Size: 7583/7989
Medium – Long Inseam: 32-1/2 to 35-1/2 in. Waist: 31 to 35 in. NSN No. NATO Size: 8390/7989	Medium - X-Long Inseam: 35-1/2 to 38-1/2 in. Waist: 31 to 35 in. NSN No. NATO Size: 9098/7989	Medium - XX-Long Inseam: 38-1/2 to 41-1/2 in. Waist: 31 to 35 in. NSN No. NATO Size: 9805/7989
Large - X-Short Inseam: 23-1/2 to 26-1/2 in. Waist: 35 to 39 in. NSN No. NATO Size: 6067/8999	Large – Short Inseam: 26-1/2 to 29-1/2 in. Waist: 35 to 39 in. NSN No. NATO Size: 6775/8999	Large – Regular Inseam: 29-1/2 to 32-1/2 in. Waist: 35 to 39 in. NSN No. NATO Size: 7583/8999
Large – Long Inseam: 32-1/2 to 35-1/2 in. Waist: 35 to 39 in. NSN No. NATO Size: 8390/8999	Large - X-Long Inseam: 35-1/2 to 38-1/2 in. Waist: 35 to 39 in. NSN No. NATO Size: 9098/8999	Large - XX-Long Inseam: 38-1/2 to 41-1/2 in. Waist: 35 to 39 in. NSN No. NATO Size: 9805/8999
X-Large - X-Short Inseam: 23-1/2 to 26-1/2 in. Waist: 39 to 43 in. NSN No. NATO Size: 6067/9909	X-Large - Short Inseam: 26-1/2 to 29-1/2 in. Waist: 39 to 43 in. NSN No. NATO Size: 6775/9909	X-Large - Regular Inseam: 29-1/2 to 32-1/2 in. Waist: 39 to 43 in. NSN No. NATO Size: 7583/9909
X-Large - Long Inseam: 32-1/2 to 35-1/2 in. Waist: 39 to 43 in. NSN No. NATO Size: 8390/9909	X-Large - X-Long Inseam: 35-1/2 to 38-1/2 in. Waist: 39 to 43 in. NSN No. NATO Size: 9098/9909	X-Large - XX-Long Inseam: 38-1/2 to 41-1/2 in. Waist: 39 to 43 in. NSN No. NATO Size: 9805/9909
XX-Large - X-Short Inseam: 23-1/2 to 26-1/2 in. Waist: 43 to 47 in. NSN No. NATO Size: 6067/0919	XX-Large – Short Inseam: 26-1/2 to 29-1/2 in. Waist: 43 to 47 in. NSN No. NATO Size: 6775/0919	XX-Large – Regular Inseam: 29-1/2 to 32-1/2 in. Waist: 43 to 47 in. NSN No. NATO Size: 7583/0919
XX-Large – Long Inseam: 32-1/2 to 35-1/2 in. Waist: 43 to 47 in. NSN No. NATO Size: 8390/0919	XX-Large - X- Long Inseam: 35-1/2 to 38-1/2 in. Waist: 43 to 47 in. NSN No. NATO Size: 9098/0919	XX-Large - XX-Long Inseam: 38-1/2 to 41-1/2 in. Waist: 43 to 47 in. NSN No. NATO Size: 9805/0919

TABLE VII-A. Size label - Type II (Female).

25 – X Short Waist: 25 to 28 in. Inseam: 24 to 26 in. NSN No. NATO Size:6067/5869	28 – X Short Waist: 28 to 31 in. Inseam: 24 to 26 in. NSN No. NATO Size:6067/6979	31 – X Short Waist: 31 to 35 in. Inseam: 24 to 26 in. NSN No. NATO Size:6067/7989	-----
25 – Short Waist: 25 to 28 in. Inseam: 26 to 28 in. NSN No. NATO Size:6775/5869	28 – Short Waist: 28 to 31 in. Inseam: 26 to 28 in. NSN No. NATO Size:6775/6979	31 – Short Waist: 31 to 35 in. Inseam: 26 to 28 in. NSN No. NATO Size:6775/7989	35 – Short Waist: 35 to 39 in. Inseam: 26 to 28 in. NSN No. NATO Size:6775/8999
25 – Regular Waist: 25 to 28 in. Inseam: 28 to 30 in. NSN No. NATO Size:7583/5869	28 – Regular Waist: 28 to 31 in. Inseam: 28 to 30 in. NSN No. NATO Size:7583/6979	31 – Regular Waist: 31 to 35 in. Inseam: 28 to 30 in. NSN No. NATO Size:7583/7989	35 – Regular Waist: 35 to 39 in. Inseam: 28 to 30 in. NSN No. NATO Size:7583/8999
-----	28 – Long Waist: 28 to 31 in. Inseam: 30 to 32 in. NSN No. NATO Size:7583/6979	31 – Long Waist: 31 to 35 in. Inseam: 30 to 32 in. NSN No. NATO Size:7583/7989	35 – Long Waist: 35 to 39 in. Inseam: 30 to 32 in. NSN No. NATO Size:7583/8999
-----	-----	31 – X Long Waist: 31 to 35 in. Inseam: 32 to 34 in. NSN No. NATO Size:8390/7989	35 – X Long Waist: 35 to 39 in. Inseam: 32 to 34 in. NSN No. NATO Size:8390/8999

3.9.2 Identification and care label. The combination identification/care label shall conform to Type VI, Class 15 of MIL-DTL-32075 and shall be placed on the left back hip pocket as worn, so that on the finished trousers the label shall be on the pocket bag facing the garment and away from the wearer. The label shall be stitched on all four (4) sides. The stitching shall not cover the printing. The color of the combination identification and care label shall be white. The label shall include the information in Figure 1.

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Trousers, Improved Hot Weather Combat Uniform – Unisex or Trousers, Improved Hot Weather Combat Uniform – Female Contract Number: Fiber Content: Basic Material: 57% Nylon/ 43% Cotton Reinforcement Material: 100% Nylon Knit Material: 65% Tencel ® Lyocell/ 35% Cocona® Polyester Contractor Name: Lot Number <u>1</u>/
<u>USE AND CARE</u> <u>PRIOR TO LAUNDERING:</u> Empty pockets. Pre-treat stains with commercially available pre-treatments. <u>HOME LAUNDERING:</u> Use cold water detergent. Wash in cold water using permanent press cycle. Rinse in cold water. Tumble dry low. <u>WASHING BY HAND:</u> Use cold water detergent. Wash in cold water. Rinse completely. Never twist or wring dry. Hang dry on a rust-proof hanger. Do not hang dry in direct sunlight. <u>NOTE:</u> Wash garment separate from other garments. In military field operations, garment may be washed with other garments. <u>CAUTION:</u> DO NOT USE BLEACH, BLEACH ALTERNATIVES, FABRIC SOFTENER, OR STARCH. DO NOT DRY CLEAN OR COMMERCIALY HOT PRESS. DO NOT REMOVE THIS LABEL

1/ Lot number shall be stamped with indelible black ink prior to shipment.

FIGURE 1. Combination identification, use and care label.

3.9.3 Insect repellent protection label. The insect repellent protection label shall conform to Type VI, Class 15 of MIL-DTL-32075. The label placement shall be as specified in 3.9.3.1. The label shall be the approved EPA Label in accordance with MIL-PRF-32659. The top of the label (above the line) shall include the information in Figure 2. The color for the insect repellent protection label shall be white.

3.9.3.1 Label placement. The label shall be placed on the right back hip pocket as worn, so that on the finished trousers the label shall be on the pocket bag facing the garment and away from the wearer. The label shall be stitched on all four (4) sides. The stitching shall not cover the printing.

INSECT REPELLENT APPAREL Refer to hangtag for more information Treater Name: XXXXXXXX <u>1</u>/ EPA REG. NO.: EPA EST. NO.:
THIS SECTION SHALL BE AS SPECIFIED IN MIL-PRF-32659 DO NOT REMOVE THIS LABEL

1/ Fill in appropriate vendor that has treated this item

FIGURE 2. Insect repellent label (example) (all types).

3.9.4 Hangtag, Mosquito bite protection. Each trousers shall have an individual paper tag attached in accordance with MIL-PRF-32659. The top portion of the hang tag, above the line, shall include the information specified in Figure 3. The color for the hang tag shall be white. The paper tag shall be Swift tacked in the side seam approximately 2-inches below the belt loop.

INSECT REPELLENT APPAREL Treater Name: XXXX <u>1</u>/ Contractor Address: EPA REG. NO.: EPA EST. NO.:
THIS SECTION SHALL BE AS SPECIFIED IN MIL-PRF-32659 THIS TAG NOT TO BE REMOVED EXCEPT BY CUSTOMER

1/ Fill in appropriate vendor that has treated this garment

FIGURE 3. Insect repellent hang tag (example) (all types).

3.9.5 Barcode hang tag. Each trousers shall have a white paper barcode hang tag conforming to Type VIII, Class 17 of MIL-DTL-32075. The hang tag shall be Swift tacked in the side seam approximately 2-inches below the belt loop and shall be completely visible on the trousers when it is folded and/or packaged as specified and so it causes no damage to the trousers. The bar coding element shall be a 13 digit National Stock Number (NSN) or Management Control Number (MCN) There shall be a 12 digit Universal Product Code (UPC) number assigned for all MCNs by the contracting activity. The initials "UPC" must appear beneath the code.

NOTE: The hang tag for insect protection and barcode may be applied jointly with the use of one (1) Swift tack.

3.10 Figures. Figures 4A through 6C in this document are furnished for informational purposes only. To the extent of any inconsistencies between the written document and the figures, the written document shall govern.

3.11 List of pattern parts. The Government shall furnish patterns, which show directional line markings for proper cutting and assembly, and are to be used as a guide for cutting contractor's working patterns. The Government patterns provide a seam allowance of 1/2-inch for outseams, seat seams, 1/4-inch allowance for pocket flaps, and 3/8-inch allowance for the joining of crotch pieces and all other seams, except where otherwise specified. Minor modifications to the pattern are permitted where necessary to accommodate manufacture's processes to include garment treatments and use of automatic equipment. These modifications shall not alter the final design, serviceability, appearance or final finished measurements. The pattern lists in Table VIII and VIII-A are provided to insure that the pattern sets are complete (see 6.2).

TABLE VIII. List of pattern parts - Type I (Unisex).

Material	Nomenclature	Pattern Abbreviation	Cut Number
Basic Material (see 3.4.1)	Back Lower	PD15_05C-BACK-LOWER	2
	Back Upper	PD15_05C-BACK-UPPER	2
	Front Lower	PD15_05C-FRONT-LOWER	2
	Front	PD15_05C-FRONT	2
	Front Pocket	PD15_05C-FR-POCKET	2
	Front Pocket Facing	PD15_05C-FR-PKT-FAC	2
	Front Pocket Bearer	PD15_05C-FRT-PKT-BER	2
	Cargo Pocket	PD15_05C-CARGO-PKT	2
	Cargo Pocket Facing	PD15_05C-CRG-PKT-FAC	2
	Cargo Pocket Flap	PD15_05C-CRG-PKT-FLP	2
	Lower Leg Pocket	PD15_05C-LOW-LEG-PKT	2
	Lower Leg Pocket Flap	PD15_05C-LOW-LEG-FLP	2
	Hip Pocket	PD15_05C-HIP-POCKET	2
	Hip Pocket Flaps	PD15_05C-HIP-PKT-FLP	2
	Hip Pocket Bearer	PD15_05C-HIP-PCKT-BR	2
	Hip Pocket Facing	PD15_05C-HIP-PK-FCNG	2
	Gusset	PD15_05C-GUSSET	1
	Waistband	PD15_05C-WAISTBAND	1
	Fly Left Bottom	PD15_05C-FLY-LFT-BTM	1
	Fly Left Top	PD15_05C-FLY-LFT-TOP	1
	Fly Right	PD15_05C-FLY-RIGHT	1

TABLE VIII. List of pattern parts - Type I (Unisex). - Continued

Material	Nomenclature	Pattern Abbreviation	Cut Number
Basic Material (see 3.4.1)	ALTERNATE PIECES		
	Waistband Alternate	PD15_05C-WAISTBAND-ALT2	2
	Back Upper Alternate	PD15_05C-BACK-UPPER-ALT	2
	Front Alternate	PD15_05C-FRONT-ALT	2
	Front Pocket Alternate	PD15_05C-FR-POCKET-ALT	2
	Front Pocket Bearer Alternate	PD15_05C-FR-PKT-BER-ALT	2
	Front Pocket Facing Alternate	PD15_05C-FR-PKT-FAC-ALT	2
	Cargo Pocket Flap Alternate	PD15_05C-CRG-PKT-FLP-ALT	2
	Cargo Pocket Flap Tab Alternate	PD15_05C-CRG-PKT-FLP-TAB-ALT	2
	Hip Pocket Flap Tab Alternate	PD15_05C-HIP-PKT-FLP-TAB-ALT	2
	Hip Pocket Flap Alternate	PD15_05C-HIP-PKT-FLP-ALT	2
	Low Leg Pocket Flap Tab Alternate	PD15_05C-LOW-LEG-FLP-TAB-ALT	2
	Low Leg Pocket Flap Alternate	PD15_05C-LOW-LEG-FLP-ALT	2
	Fly Left Bottom Alternate	PD15_05C-FLY-LFT-BTM-ALT	1
	Fly Left Top Alternate	PD15_05C-FLY-LFT-TOP-ALT	1
Interfacing (see 3.4.2.1)	Low Leg Pocket Flap Interfacing	PD15_05C-LOW-LEG-FLP-INTR	2
	Hip Pocket Flaps Interfacing	PD15_05C-HIP-PKT-FLP-INTR	2
	Cargo Pocket Flap Interfacing	PD15_05C-CRG-PKT-FLP-INTR	2
	Waistband Interfacing	PD15_05C-WSTBND-INTR	1
	Fly Left Top Interfacing	PD15_05C-FLY-LFT-INT	1
	ALTERNATE PIECES		
	Waistband Interfacing Alternate	PD15_05C-WAISTBAND-INTR-ALT	1
	Fly Left Top Interfacing Alternate	PD15_05C-FLY-LFT-INT-ALT	1
Reinforcement Material (see 3.4.3)	Knee Patch Outer	PD15_05C-KNE-PTCH-OT	2
	Knee Patch Side	PD15_05C-KNE-PTCH-SD	4
	Seat Patch	PD15_05C-SEAT-PATCH	2
Knit (see 3.4.5)	Knee Patch Inner	PD15_05C-KNE-PTCH-IN	2

TABLE VIII-A. List of pattern parts - Type II (Female).

Material	Nomenclature	Pattern Abbreviation	Cut Number
Basic Material (see 3.4.1)	Back Lower	PD15_05F-BACK-LOWER	2
	Back Upper	PD15_05F-BACK-UPPER	2
	Front Lower	PD15_05F-FRONT-LOWER	2
	Front Upper	PD15_05F-FRONT	2
	Side Hanging Pocket	PD15_05F-FR-POCKET	2
	Side Hanging Pocket Facing	PD15_05F-FR-PKT-FAC	2
	Cargo Pocket	PD15_05F-CARGO-PKT	2
	Cargo Pocket Facing	PD15_05F-CRG-PKT-FAC	2
	Cargo Pocket Flap	PD15_05F-CRG-PKT-FLP	2
	Lower Leg Pocket	PD15_05F-LOW-LEG-PKT	2
	Lower Leg Pocket Flap	PD15_05F-LOW-LEG-FLP	2
	Hip Pocket	PD15_05F-HIP-POCKET	2
	Hip Pocket Flaps	PD15_05F-HIP-PKT-FLP	2
	Hip Pocket Bearer	PD15_05F-HIP-PCKT-BR	2
	Hip Pocket Facing	PD15_05F-HIP-PK-FCNG	2
	Gusset	PD15_05F-GUSSET	1
	Waistband	PD15_05F-WAISTBAND	1
	Fly Left Bottom	PD15_05F-FLY-LFT-BTM	1
	Fly Left Top	PD15_05F-FLY-LFT-TOP	1
	Fly Right	PD15_05F-FLY-RIGHT	1
	Front Pocket Bearer	PD15_05F-FRT-PKT-BER	2
	ALTERNATE PIECES		
	Back Upper-Alternate	PD15_05F-BACK-UPPER-ALT	2
	Front-Alternate	PD15_05F-FRONT-ALT	2
	Side Hanging Pocket-Alternate	PD15_05F-FR-POCKET-ALT	2
	Front Pocket Bearer-Alternate	PD15_05F-FR-PKT-BER-ALT	2
	Side Hanging Pocket Facing-Alternate	PD15_05F-FR-PKT-FAC-ALT	2
	Cargo Pocket Flap Alternate	PD15_05F-CRG-PKT-FLP-ALT	2
	Cargo Pocket Flap Tab Alternate	PD15_05F-CRG-PKT-FLP-TAB-ALT	2
	Low Leg Pocket Flap Alternate	PD15_05F-LOW-LEG-FLP-ALT	2
	Low Leg Pocket Flap Tab Alternate	PD15_05F-LOW-LEG-FLP-TAB-ALT	2
	Hip Pocket Flap Alternate	PD15_05F-HIP-PKT-FLP-ALT	2
	Hip Pocket Flap Tab Alternate	PD15_05F-HIP-PKT-FLP-TAB-ALT	2
	Waistband Alternate	PD15_05F-WAISTBAND-ALT	2

TABLE VIII-A. List of pattern parts - Type II (Female). - Continued

Material	Nomenclature	Pattern Abbreviation	Cut Number
Interfacing (see 3.4.2.1)	Waistband Interfacing	PD15_05F-WSTBND-INTR	1
	Fly left top Interfacing	PD15_05F-FLY-LT-INTR	1
	Cargo Pocket Flap Interfacing	PD15_05F-CRG-PKT-FLP-INTR	2
	Hip Pocket Flaps Interfacing	PD15_05F-HIP-PKT-FLP-INTR	2
	Low Leg Pocket Flap Interfacing	PD15_05F-LOW-LEG-FLP-INTR	2
	ALTERNATE PIECES		
	Waistband Interfacing Alternate	PD15_05F-WAISTBAND-INTR-ALT	1
Reinforcement Material (see 3.4.3)	Knee Patch Outer	PD15_05F-KNE-PTCH-OT	2
	Knee Patch Side	PD15_05F-KNE-PTCH-SD	4
	Seat Patch	PD15_05F-SEAT-PATCH	2
Knit (see 3.4.5)	Knee Patch Inner	PD15_05F-KNE-PTCH-IN	2

3.12 Configuration. Each pair of trousers shall conform to design, appearance (see Figures 4A through 6C), the finished measurements in Table XI and Table XI-A and the construction methods specified in 3.12.1 through 3.13.1.1 and Tables VI, VI-A, VII, VII-A, VIII, VIII-A, IX, and X in order to maintain configuration compliance.

3.12.1 Seams and stitching. All seams shall be consistent and exhibit a uniform appearance and conform to the ASTM D6193 seam and stitch types listed in Table IX. The backside of seams (inside garment) shall be flat with no protruding seam allowance to create irritation or discomfort. All material edges shall be clean finished, either, turned-in, turned-under or serged. The garment shall have no raw edges including inside pockets. All pockets and pocket flaps, if raw edge would be visible when flap is up, shall be serged prior to setting. Needle and bobbin thread tension shall be balanced such that neither is too tight nor too loose relative to each other. The seams for all outside visible stitching shall be sewn with 11 (± 1) stitches per inch. Overedge or pre-hemming shall be 10 (± 2) stitches per inch. Buttons shall be attached with 16 (± 1) stitches per button. Buttonholes shall be 54 (± 2) stitches per inch including tack. The eyelet stitching shall have at least four (4) overlapping stitches with the purling on the outside. All stitches per inch and gauges shall be met prior to any applicable garment treatments.

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3.12.1.1 Repair of stitch.3.12.1.2 Repairs of stitching. Repairs of stitching shall be as follows:

- a. When thread breaks or bobbin run-outs occur during stitching, the stitching shall be repaired by restarting the stitching a minimum of 1/2-inch in back of the end of the stitching.
- b. Thread breaks or two (2) or more consecutive skipped or run-off stitches noted during end item inspection shall be repaired by overstitching. The stitching shall start at a minimum of 1/2-inch in back of the defective area and continue a minimum of 1/2-inch beyond the defective area onto the existing stitching. Loose or excessively tight stitching shall be repaired by removing the defective stitching, without damaging the materials, and restitching in the required manner.

NOTE. When making the above repairs, the ends of the stitching are not required to be backstitched. The loose ends shall be trimmed with scissors. **Caution:** Pulling or breaking the loose ends is not allowed.

3.12.1.3 Repairs of type 401 stitching only. All repairs shall be in accordance with 3.12.1.1, and 3.12.1.2, except substitute 3/4-inch for 1/2-inch wherever 1/2-inch appears. Repairs to stitch Type 401 may be accomplished by use of stitching Type 301.

3.12.2 Fly seaming and stitching. The fly construction stitching of front center crotch seam shall end at J-stitch. There shall be a horizontal bar-tack superimposed on the bottom point of the J-stitch.

TABLE IX. Seam and stitching types.

Seam placement	Seam type	Gauge	Stitch type
Side seams, back seam, and inseam	LSc-2 Or Ssa2-2 and LSq-3	3/16 to 1/4-inch gauge (double lap seam)	301 or 401
Front gusset seam	LSq-3	Join front crotch with single needle, then double needle topstitch	301
Inseam	Ssa-2 LSq-3	Over-edge 3/16 to 9/32-inch gauge, then turn and topstitch 3/16 to 1/4-inch gauge	516 301 or 401
Gusset	Ssa-2 LSq-3	Over-edge 3/16 to 9/32-inch gauge, then turn and topstitch 3/16 to 1/4-inch gauge	516 301 or 401

TABLE IX. Seam and stitching types. - Continued

Seam placement	Seam type	Gauge	Stitch type
Top stitching of side pockets	OSf-1	3/16 to 1/4-inch from edge	301
Attachment of pockets (Cargo and lower leg)	LSd-1	1/16 to 1/8-inch from edge and 1/4-inch gauge	301
Raw edges of pocket flaps, pocket bagging, cargo pockets, bearer or facings	SSa-2	1/4 to 3/8-inch gauge	516, 519
Setting of lower leg and cargo pocket flaps Top stitch OR Top stitch	LSba-2 LSb1-2	Two (2) rows 3/16 to 1/4-inch apart 3/16 to 1/4-inch from serged edge, then turn flap burying raw edge and top stitch one (1) row 1/4 to 5/16-inches from turned edge	301 301
Pocket edge stitching	Ssa-1	1/4 to 5/16-inch from edge	502, 503 or 504
Top stitching of cargo pocket flaps and lower leg flaps	OSF-1	3/16 to 1/4-inch from folded edge	301
Edge stitch all cargo bellows and pleats	OSf-1	1/16 to 1/8-inch from edge	301
Attachment of knee reinforcements and knee lining	LSd-2	Two (2) rows 3/16 to 1/4-inch apart	301
Waistband attachment options (Type I and Type II: Grown-on lining Attachment)			
Top stitch Sewn-on 1-piece	LSct-3		301 or 401
Alternative Waistband Attachment (Type I and Type II Unisex)			
Top stitch OR Sewn-on 2-piece	BSo-3 LSbc-2	Along top edge 1/16 to 1/8-inch from top and	301 or 401 301 or 401
Bottom hem	Efb-1	1 to 1-1/4-inch wide hem	301
Belt loops	Efh-1	1/4-inch gauge between needle	402 or 406

TABLE IX. Seam and stitching types. - Continued

Seam placement	Seam type	Gauge	Stitch type
Seat patch	LSd-2	Two (2) rows 3/16 to 1/4-inch apart. First row of stitching shall be 1/16 to 1/8-inch from folded edge	301
Buttonhole fly – join pieces along front edge; turned in edge	SSe-2 or SSc-1	1/16 to 1/8-inch from turned in edge	301
Join left front and left fly lining along front edge; turned in edge	SSe-2 or SSc-1	1/16 to 1/8-inch from turned in edge	301
Overedge back edges of left fly lining and buttonhole fly	EFd-1	3/16 to 1/4-inch gauge	502, 503 or 504
J-stitch	LSbj-1	2 ($\pm$ 1/8) inch from edge	301
Join right front and right fly lining along front edge	SSe-2 or SSc-1	1/16 to 1/8-inch from turned in edge	301
Overedge right fly raw edges	EFd-1	3/16 to 1/4-inch gauge	502, 503 or 504
Labels	LSbj-1	1/8 to 3/16-inch from edge	301

3.12.3 Bar-tacks. To maintain garment durability and functionality, bar-tacks shall be placed as specified in Table X. Bar-tacks shall be 1/8 to 3/16-inch wide.

TABLE X. Bar-tack placement (all types).

Bar-tack placement	Size of tack (inches)	Stitches per tack <u>1</u> /	# of Bar-tacks per garment	Horizontal	Vertical
Belt loops (set 1/8-inch from top and bottom edge)					
a. Top	7/8 or 1	55	7	X	----
b. Bottom	7/8 or 1	55	7	X	----

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TABLE X. Bar-tack placement. - Continued

Bar-tack placement	Size of tack (inches)	Stitches per tack <u>1</u> /	# of Bar-tacks per garment	Horizontal	Vertical
Fly (see Figure 6)					
a. J-stitching, superimposed on outside bottom point (through all layers)	5/8	36	1	X	----
b. Positioned approximately 1/4-inch from bottom right edge and 1/2-inch from front right edge (through all fly layers not visible from front)	5/8	36	1	----	X, <u>2</u> /
c. J-stitching curve, superimposed on outside (through all layers) at upper edge of the curve	5/8	36	1	----	X, <u>3</u> /
Fly - left front lining Between the three (3), two (2), or one (1) buttonholes (not visible from front of fly)	5/8	36	3, 2 or 1	X	----
Cargo pockets					
a. Top, (left and right side)	5/8	36	4	----	X
b. Top, Centered on facing, thru all layers	5/8	36	4	----	X
Cargo pocket pleats					
a. Top (on facing stitching)	5/8	36	2	X	----
b. Bottom	5/8	36	6	X	----
Cargo pocket flaps Top, (left and right side)	5/8	36	4	X	----
Lower leg pockets					
a. Top, (left and right side)	5/8	36	4	----	X
b. Bottom	5/8	36	2	----	X
Lower leg pocket flaps Top, (left and right side)	5/8	36	4	X	----
Front hanging pocket openings, (meeting or overlapping pocket edge)					
a. Top opening, 1/4 - 3/8-inch below waistband	5/8	36	2	X	----
b. Bottom opening, perpendicular to front edge	5/8	36	2	X	----
Back hip pockets (at welt ends along stitchline)	5/8	36	4	----	X

TABLE X. Bar-tack placement. - Continued

Bar-tack placement	Size of tack (inches)	Stitches per tack <u>1/</u>	# of Bar-tacks per garment	Horizontal	Vertical
Gusset (see Figure 6)					
a. Superimposed on outside points (through all seams). Positioned approximately 1/2-inch on each end of gusset.	5/8	36	2	----	X
b. Superimposed on outside points (through all seams). Positioned approximately 1/2-inch on each end of gusset at center crotch seam.	5/8	36	2	X	----
Leg hem Center back leg hem (through all layers including drawstring)	5/8	36	2	—	X
Type II only: Placement of waistband elastic <u>4/</u>	7/8 or 1	55	2	----	X
Hanging pockets only					
a. At bottom of pocket 3/8-inch from edge	3/8	28	2	----	X
b. At each end of pockets (to reinforce bottom (2 per pocket)	3/8	28	4	X	----

1/ The tolerance shall be (± 2) stitches per tack.

2/ Bar-tack can be angled.

3/ Along stitch line.

4/ One (1) bar-tack at each end of elastic or box X at each end (see Figure 6C).

3.13 Measurements. All measurements referenced in this document, shall be made after treatment.

3.13.1 Finished measurements. The trousers shall conform to the finished measurements specified in Table XI for Type I (Unisex) and Table XI-A for Type II (Female).

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TABLE XI. Finished measurements (inches) Type I (Unisex).

Size	X-Small	Small	Medium	Large	X-Large	XX-Large	Tol.
Half Waist, <u>1/</u>	13-3/4	15-3/4	17-3/4	19-3/4	21-3/4	23-3/4	± 1/2
Inseam, <u>2/</u>							
X-Short	28	28	28	28	28	28	± 3/4
Short	30	30	30	30	30	30	
Regular	32	32	32	32	32	32	
Long	34	34	34	34	34	34	
X-Long	36	36	36	36	36	36	
XX-Long	38	38	38	38	38	38	
Outseam, <u>3/</u>							
X-Short	37	37-1/2	38	38-1/2	39	39-1/2	± 3/4
Short	39-1/2	40	40-1/2	41	41-1/2	42	
Regular	42	42-1/2	43	43-1/2	44	44-1/2	
Long	44-1/2	45	45-1/2	46	46-1/2	47	
X-Long	47	47-1/2	48	48-1/2	49	49-1/2	
XX-Long	49-1/2	50	50-1/2	51	51-1/2	52	
Half Leg Opening, <u>4/</u>							
X-Short	8-1/2	8-1/2	8-7/8	8-7/8	9-1/4	9-1/4	± 1/2
Short	8-1/2	8-1/2	8-7/8	8-7/8	9-1/4	9-1/4	
Regular	8-1/2	8-1/2	8-7/8	8-7/8	9-1/4	9-1/4	
Long	8-1/2	8-1/2	8-7/8	8-7/8	9-1/4	9-1/4	
X-Long	8-1/2	8-1/2	8-7/8	8-7/8	9-1/4	9-1/4	
XX-Long	8-1/2	8-1/2	8-7/8	8-7/8	9-1/4	9-1/4	

1/ Half waist - Measure along center of waistband from outside folded edge to folded edge.

2/ Inseam - Measure inseam of trousers from center back of crotch seam to bottom edge of trouser along the inseam.

3/ Outseam - Measure from top edge of waistband to bottom of leg along outseam.

4/ Half leg opening - Measure across bottom of leg from outside folded edge to folded edge on the outer cuff.

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TABLE XI-A. Finished measurements (inches) Type II (Female).

Size		25	28	31	35	Tolerance
Half Waist, Relaxed <u>1/</u>		14	15-1/2	17	18-1/2	± 1/2
Half Waist, Fully Stretched <u>2/</u>		16	17-1/2	19	20-1/2	± 1/2
Inseam <u>3/</u>	X-Short	25	25	25	25	± 3/4
	Short	27	27	27	27	
	Regular	29	29	29	29	
	Long	31	31	31	31	
	X-Long	33	33	33	33	
Outseam <u>4/</u>	X-Short	33-7/8	34-1/4	34-5/8	35	± 3/4
	Short	36-3/8	36-3/4	37-1/8	37-1/2	
	Regular	38-7/8	39-1/4	39-5/8	40	
	Long	41-3/8	41-3/4	42-1/8	42-1/2	
	X-Long	43-7/8	44-1/4	44-5/8	45	
Half Leg Opening <u>5/</u>		8.75	8.75	9	9-1/8	± 1/2
Half Hip <u>6/</u>		19.5	21	22.5	24	± 1/2

1/ Half waist, Relaxed. Measure along center of waistband from outside folded edge to folded edge. The elastic shall be relaxed.

2/ Half waist, Fully stretched. Stretch waist until fully extended without excessive force, measure along center of waistband from outside folded edge to folded edge.

3/ Inseam - Measure inseam of trousers from center back of crotch seam to bottom edge of trouser along the inseam.

4/ Outseam - Measure from top edge of waistband to bottom of leg along outseam.

5/ Half leg opening - Measure across bottom of leg from outside folded edge to folded edge on the outer cuff.

6/ Half Hip, - At the hanging hip pocket bottom bar-tack, measure from folded edge of garment to folded edge of garment.

3.13.1.1 Methods of measurement. The measurements in Table XI and Table XI-A shall be taken in accordance with the footnotes. The trousers waist shall be buttoned and placed flat upon a table for measuring. The trousers inseam shall be placed flat upon a table for measuring. Measurement should be taken along the seam that runs along back trousers leg. Measure each leg to center back trousers seam.

3.14 Toxicity. The finished trousers and its components shall not present a health hazard and shall show compatibility with prolonged, direct skin contact when tested as specified in 4.6. Chemicals recognized by the Environmental Protection Agency (EPA) as human carcinogens shall not be used.

3.14.1 Toxicity documents. Finishes/chemicals used in the process of this garment shall be identified and accompanied by the appropriate Safety Data Sheet (SDS) information.

3.15 Workmanship. After completion of the final assembly, the trousers shall be thoroughly cleaned and all thread scraps, lint and foreign matter shall be removed and all closures engaged prior to packaging. The trousers shall be uniform in quality and shall be free from irregularities or defects which could adversely affect fit, performance, reliability or durability. The trousers shall conform to the quality established by this specification.

4. VERIFICATION

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

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

4.2 First article inspection. First article, submitted in accordance with 3.1 shall be inspected for design, configuration in Tables V thru X and overall workmanship. The first article shall also include the finished measurements in Tables XI and XI-A, examination for defects in Table XII, and testing in Table XIII and Table XIV. The presence of excessive defects, as defined in the contract (see 6.2) or failure of any testing shall be cause for rejection of the first article.

4.3 Conformance inspection. Conformance inspection shall include shade and appearance of all components, finished measurements in Tables XI and XI-A, examination for defects in Table XII and testing in Table XIII and Table XIV. Sampling for inspection shall be performed in accordance with ASQ/ANSI Z1.4, as defined by contract, except where otherwise indicated.

4.4 Component and end item inspections. In accordance with 4.3, components and materials in the end items 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 all components and end items to determine conformance to requirements.

4.4.1 End item visual examination. Each trousers shall be subjected to visual examination. All fabric and garment defects shall be scored in accordance with Table XII, which are clearly noticeable at normal viewing distance (3-feet) and affect serviceability and appearance of the garment. Material defects are defined in ASTM D3990. If needed, closer inspection will be performed to verify compliance to specification requirements.

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TABLE XII. Trousers visual examination (all types).

Examination	Defect	Classification	
		Major	Minor
Materials	Incorrect, not as specified (see 3.4.1 through 3.4.5)	101	
	Hole, cut, tear, smash, burn, needle chew, exposed drill hole, run, thin place, dye streak, color not as specified, misweave, visible mend or otherwise damaged	102	
	Knots greater than Fabric Defect Scale Level C		201
	Slubs greater than Fabric Defect Scale Level D		202
Shade	Shade variation within part or between parts of trousers, affecting appearance or serviceability	103	
Components			
Thread and gimp	Color or type not as specified		203
Buttons and drawstrings	Omitted, damaged or ragged	104	
	Not specified type, size or color		204
Labels, hangtags, bar code, UPC/HRI codes	Omitted, illegible	105	
	Color or type not as specified Human readable interpretation (HRI) illegible	106	205
Construction			
Waistband	Incorrect design, not as specified in patterns, not secured, not specified width	107	
	Waistband grainlines not matching to trousers	108	
	Waistband button/buttonhole alignment uneven by more than 1/4-inch when buttoned	109	
Belt loops	Belt loops omitted, not secured, not specified size, opening not as specified or incorrect placement	110	
Fly	Incorrect design not specified in patterns, not secured, missing or skewed J stitch line	111	
Seat and knee Reinforcement and knee lining	Omitted	112	
	Not attached as specified,	113	
	Not aligned at top more than 1/4-inch (seat only)	114	
Pocket and flaps (all)	Pocket construction and openings not as specified	115	
	Pocket companions and openings not uniform in size or shape by 1/4-inch	116	
	Pocket flaps or openings not as specified	117	
	Pocket flaps twisted, curled or puckered, not stitched as specified or not well formed	118	
	Pocket flaps not completely covering pocket opening left to right, positioned or grain line not as specified	119	
	Pocket flap finished uneven from left to right more than 1/4-inch	120	

TABLE XII. Trousers visual examination (all types). - Continued

Examination	Defect	Classification	
		Major	Minor
Construction - Continued			
All pockets	Raw edge not overedged	121	
Cargo pockets	Omitted or incorrect size	122	206
	Missing edge stitch on pleats		
	Missing or incorrect placement of eyelets, buttons or buttonholes	123	
Hem/bottom opening/inseam outseam and drawstrings	Hem not as specified	124	207
	Bottom openings varying more than 1/2-inch in width	125	
	Inseam and outseam lengths varying by more than 1/2-inch	126	
	Drawstrings not as specified		
Eyelets	Omitted, misplaced or incorrect size	127	208 209
	Loose stitching, incorrect number of stitches		
	Eyelet hole not cut through		
Bar-tacks, back-tacks	Omitted, misplaced or incorrect size	128	210
	Loose stitching, incorrect number of stitches		
Buttonholes	Omitted, misplaced or incorrect size	129	211
	Buttonholes not in specified direction	130	
	Loose buttonhole thread, purling on wrong side, not clean cut or securely caught in fabric	131	
	Alignment of buttonholes and buttons causing bulge, twist or distortion when engaged	132	
	Buttonholes not cleanly cut to required opening size		
Labels, Hangtags, UPC/HRI codes	Size, combination identification/care labels not placed correctly		212
	Hangtags/UPC labels not placed securely attached in correct position		213
	Barcode/UPC code not visible on folded, packaged item		214
	Any label or tag having incorrect printed content	133	
	Any label, hangtag, or barcode attachment causing damage to item	134	

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TABLE XII. Trousers visual examination (all types). - Continued

Examination	Defect	Classification	
		Major	Minor
Construction - Continued			
Seams and stitching	Open seams, puckered, distorted, wavy, twisted, or irregular	135	215
	Loose or tight stitch tension		
	Less than 1/2-inch in length		
	Greater than 1/2-inch in length	136	216
	Missing stitches greater than 1/4-inch length	137	
	Edge or raised stitching sewn too close to the edge or needle chew resulting in damage to fabric over 1/4-inch in length	138	
	Seam allowance not as required by stitch type		
	Visible raw edge on outside of trousers (inside raw edge greater than 1-inch)	139	
	Stitching not as specified	140	
	Double needle intersecting seams staggered by more than 1/4-inch	141	
	Run off of stitching more than 1/2-inch for edge or raised stitching	142	
	Stitching caught in components or fabric causing unwanted permanent folds, pleats or fullness in the garment	143	
Seams and stitching Continued	Free floating stitching not secured in a seam or other stitching by less than 1/4-inch or ends of a continuous line of stitching not overlapped over 1/2-inch (except label stitching)	144	217
	Stitching of seams incorrectly repaired	145	
	Missing stitches less than 1/4-inch length		
	Cleanness and workmanship	Spot/Stain affecting appearance or serviceability	146
Odor		147	
Excessive thread ends (more than three (3) Between 1/4 to 1-1/2-inch			
Excessive thread ends (more than three (3) Over 1-1/2-inches		148	219
All closures on trousers not engaged			
Internal repair tags or tickets not removed from finished garment			220
Packaging		Any trousers not package in accordance with contract or purchase order	

4.4.2 Finished measurements. The trousers shall conform to the finished measurements specified in Tables XI and Table XI-A.

4.5 Basic material and component testing. The basic material specified in 3.4 through 3.4.5 and the components of 3.7.1, 3.7.3, and 3.8.7.3, shall be tested for the characteristics listed in Table XIII in accordance with the test methods cited.

TABLE XIII. Basic material and component testing.

Characteristic	Reference paragraph	Test method
Basic Material 3.4.1 & 3.4.2		
Fiber identification, <u>1/</u>	3.4.1 & Table I	AATCC TM20A
Weave	3.4.1 & Table I	Visual
Weight	3.4.1 & Table I	ASTM D3776/D3776M Option C
Construction/ fabric count	3.4.1 & Table I	ASTM D3775
Break strength	3.4.1 & Table I	ASTM D5034 (GE or GT)
Tearing strength	3.4.1 & Table I	ASTM D1424
Dimensional stability After 5 laundering cycles	3.4.1 & Table I	AATCC TM135, 3,V, Aiii
Air Permeability	3.4.1 & Table I	ASTM D737
Pattern execution	3.4.1.1-3.4.1.2.1	Visual
Labile Sulfur	3.4.1.3	4.5.1
Visual shade matching	3.4.1.4	<u>2/</u>
Colorfastness to: Laundering (after three (3) cycles) Light (40 AFU or 170kJ/(m ² nm) @ 420 nm) Perspiration (acid & alkaline) Crocking (Dry and Wet)	3.4.1.5 & Table II	4.5
		AATCC TM61 Test 3A <u>3/</u>
		AATCC TM16.3 <u>4/</u>
		AATCC TM15 <u>3/</u>
		AATCC TM8 <u>5/</u>
Spectral reflectance, Initial	3.4.1.6 - 3.4.1.6.1 & Table III	4.5.2
pH	3.6	AATCC TM81
Toxicity	Table I & 3.14	4.6.2
Knit Fabric 3.4.4		
Color matching	3.4.5	Visual
Fiber Content	3.4.5 and Table IV	AATCC TM20A
Knit Construction		Visual
Weight		ASTM D3776/D3776M Option C
Toxicity		4.6.2
Thread 3.7.1 , Gimp 3.7.2, Buttons 3.7.3 and Drawstring 3.8.7.3		
Characteristic	Reference paragraph	Test method
Color Matching	3.7	Visual
Toxicity	3.14	4.6.2

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

2/ The color and appearance of the cloth shall match the standard sample when viewed using the AATCC EP9, Option C (see 6.5), with sources simulating artificial daylight D₇₅ illuminant with a color temperature of 7500 (± 200)K illumination of 100 (± 20) foot candles, and shall be a good match to the standard sample under incandescent A illuminant with a color temperature of 2856 (± 200)K.

3/ Rated using the AATCC EP1 and AATCC EP2.

4/ Rated using the AATCC EP1.

5/ Rated using the AATCC EP8.

4.5.1 Presence of labile sulfur test. In the determination of presence of labile sulfur in textile materials with lead acetate, two (2) 1.50 (± 0.01) gram samples from each material submitted for evaluation shall be tested. Each of the two (2) samples shall be cut into very small pieces and placed into separate test tubes. The samples shall be submersed in a stannous chloride solution that contains 100 grams of stannous chloride crystals ACS in 100 milliliters of hydrochloric acid ACS (35 percent concentration) and 50 milliliters of distilled water. A filter paper wet out with a 5.0 percent lead acetate solution shall be placed over top of the test tube. The lead acetate solution contains 5.0 grams of lead acetate CP reagent grade and enough distilled water to make up a 100 milliliter solution; if the solution is not clear, add a few drops (one at a time) of glacial acetic acid until the solution is clear. The test tube containing the textile sample, stannous chloride and wet filter paper shall be heated over a low flame until the solution is boiling. The solution should not be heated for more than 15 seconds. A brown to black stain on the filter paper should be evaluated as follows:

- Free - The filter paper shows no discoloration or staining of any kind.
- Slight - The filter paper shows a light tan to light brown discoloration stain.
- Moderate - The filter paper shows a dark brown discoloration stain.
- Severe - The filter paper shows a black color stain.

4.5.2 Spectral reflectance test. Spectral reflectance data shall be obtained from 600 to 860 nanometers (nm) at 20 nm intervals on a spectrophotometer relative to the polytetrafluoroethylene (PTFE) family of compounds, the preferred white standard. Other white reference materials may be used provided they are calibrated to absolute white or vitrolite tiles. The spectral band width shall be less than 20 nm at 860 nm. Reflectance measurements shall be made by either the monochromatic or polychromatic mode of operation. When the polychromatic mode of operation is used, the spectrophotometer shall operate with the specimen diffusely illuminated with the full emission of a continuous source that simulates either CIE Source A or CIE Source D65. Measurements shall be taken on a minimum of two (2) different areas and the data averaged. The measured areas should be at least 6-inches away from the selvage. The specimen shall be measured as a single layer backed with four (4) layers of the same fabric and shade. The specimen shall be viewed at an angle no greater than 10° from normal, with the specular component included. Measurements shall be taken on a minimum of two (2) different areas. Specimens shall be oriented in different directions during testing. When possible, the specimens tested shall not contain the same Warp or filling yarns/ Wales or courses when presented to the sample port. Photometric accuracy of the spectrophotometer shall be within 1-percent and wavelength accuracy within 2-nanometers. Camouflage materials should be measured with the appropriate

aperture size to ensure that only one (1) color is measured at a time. Always try to use the largest aperture possible. Any color having spectral reflectance values falling outside the limits at four (4) or more of the wavelengths specified shall be considered a test failure.

4.6 End item testing. The finished trousers shall be tested for the characteristics as specified in 3.4 and 3.5 and Table XIV. The test methods shall be as specified in Table XIV. All test reports shall contain the individual values utilized in expressing the final results. The testing requirements and test sampling plan shall be as specified in the contract or purchase order.

TABLE XIV. End item testing.

Characteristic	Requirement paragraph	Test method
% Mosquito bite protection	3.5.1	MIL-PRF-32659
Insect repellent content	3.5.2	MIL-PRF-32659
pH	3.6	AATCC TM81
Button pull/break prior to treatment)	3.7.3	ASTM D5034
Toxicity	3.14 and 3.14.1	4.6.3

4.6.1 Insect repellent content analysis. The insect repellent content of treated fabric or garments shall be in accordance with MIL-PRF-32659.

4.6.2 Toxicity test. When required, (see 6.2), an acute dermal irritation study and a skin sensitization study shall be conducted. When the results of these studies indicate the finished trousers 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 3.14) 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 packaging of material is to be performed by DoD or in-house personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system command. 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.

5.2 Insect repellent packaging. Every roll/box containing insect repellent treated fabric/uniforms must be labeled according to MIL-PRF-32659.

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 trousers are for wear by military personnel in the United States Army as an improved hot weather combat uniform in garrison and combat missions in hot weather environments.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number and date of this Purchase Description document.
- b. Types, classes and sizes required (see 1.2).
- c. The specific issue of individual documents referenced (see 2.2).
- d. When first article sample is required (see 3.1.1, 4.2 and 6.3).
- e. Conformance inspection acceptance quality limits (see 3.1.2 and 4.3).
- f. Camouflage pattern required (see 3.4.1, 3.4.1.1)
- g. Target dose levels based on active ingredient for vector protection (3.5.2)
- h. Pattern required (see 3.11)
- i. When toxicity testing is required (see 3.14 and 4.6.2)
- j. Inspection conditions (see 4.4).
- k. Packaging requirements (see 5.1 and 5.2).

6.3 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of FAR 52.209-4. The first article should be a pre-production 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 all acquisitions 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 Visual shade matching. In 2017, Option A of AATCC EP9, 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 Subject term (key word) listing.

Bite
Clothing
Etofenprox
Insect protection
Jungle
Mosquito
Operational Camouflage Pattern (OCP)
Pants
Permethrin
Vector protection

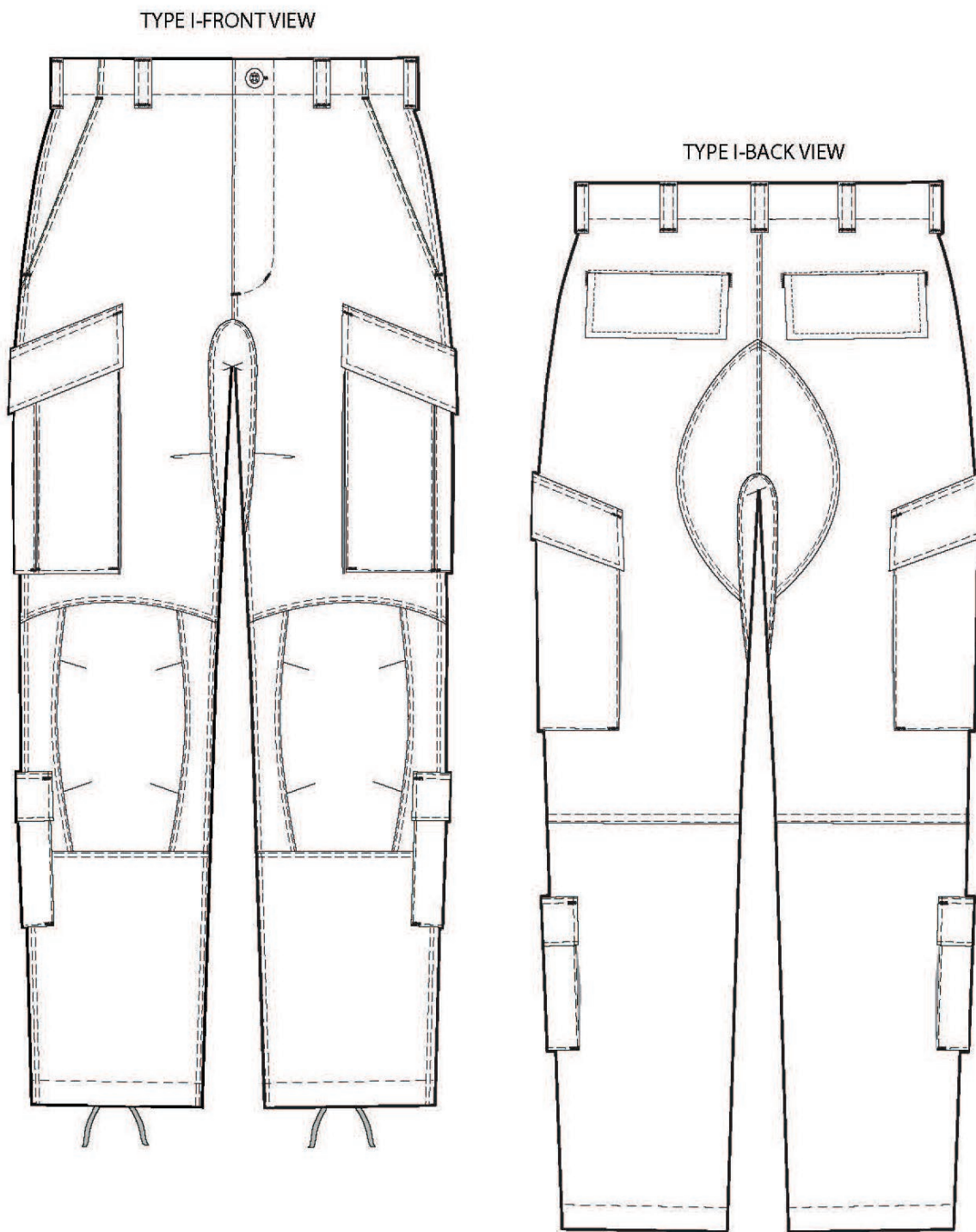
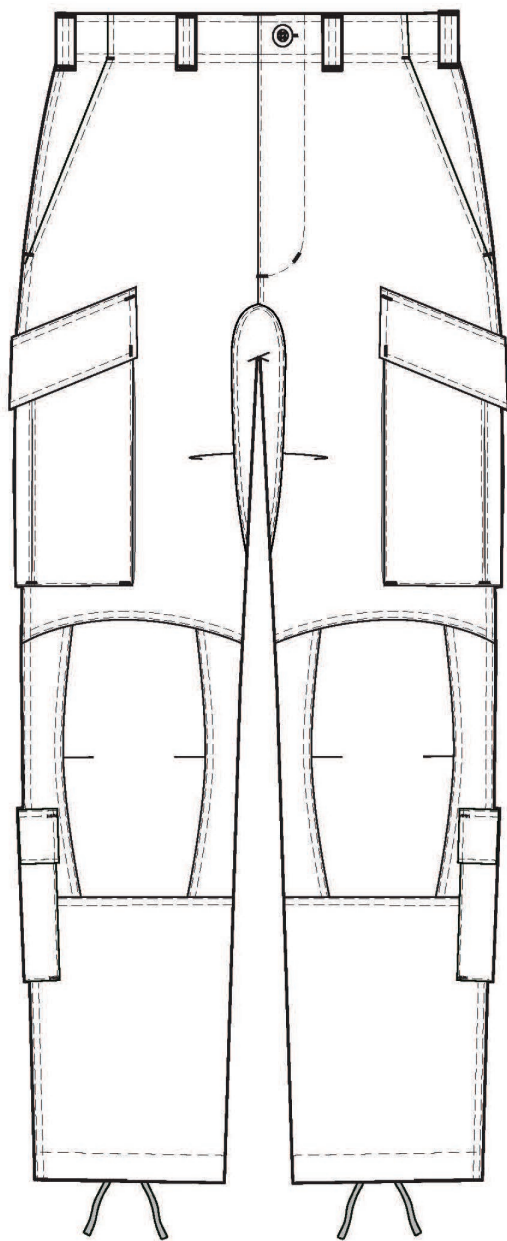


FIGURE 4A. Trousers Front and Back View, Improved Hot Weather Combat Uniform, Type I.

TYPE II-FRONT VIEW



TYPE II-BACK VIEW

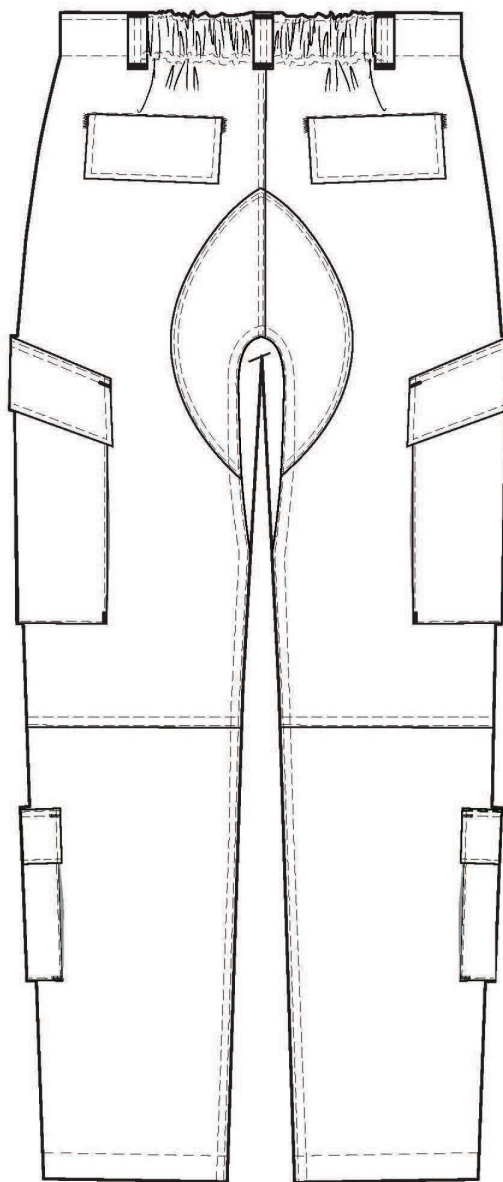


FIGURE 4B. Trousers Front and Back View, Improved Hot Weather Combat Uniform, Type II.

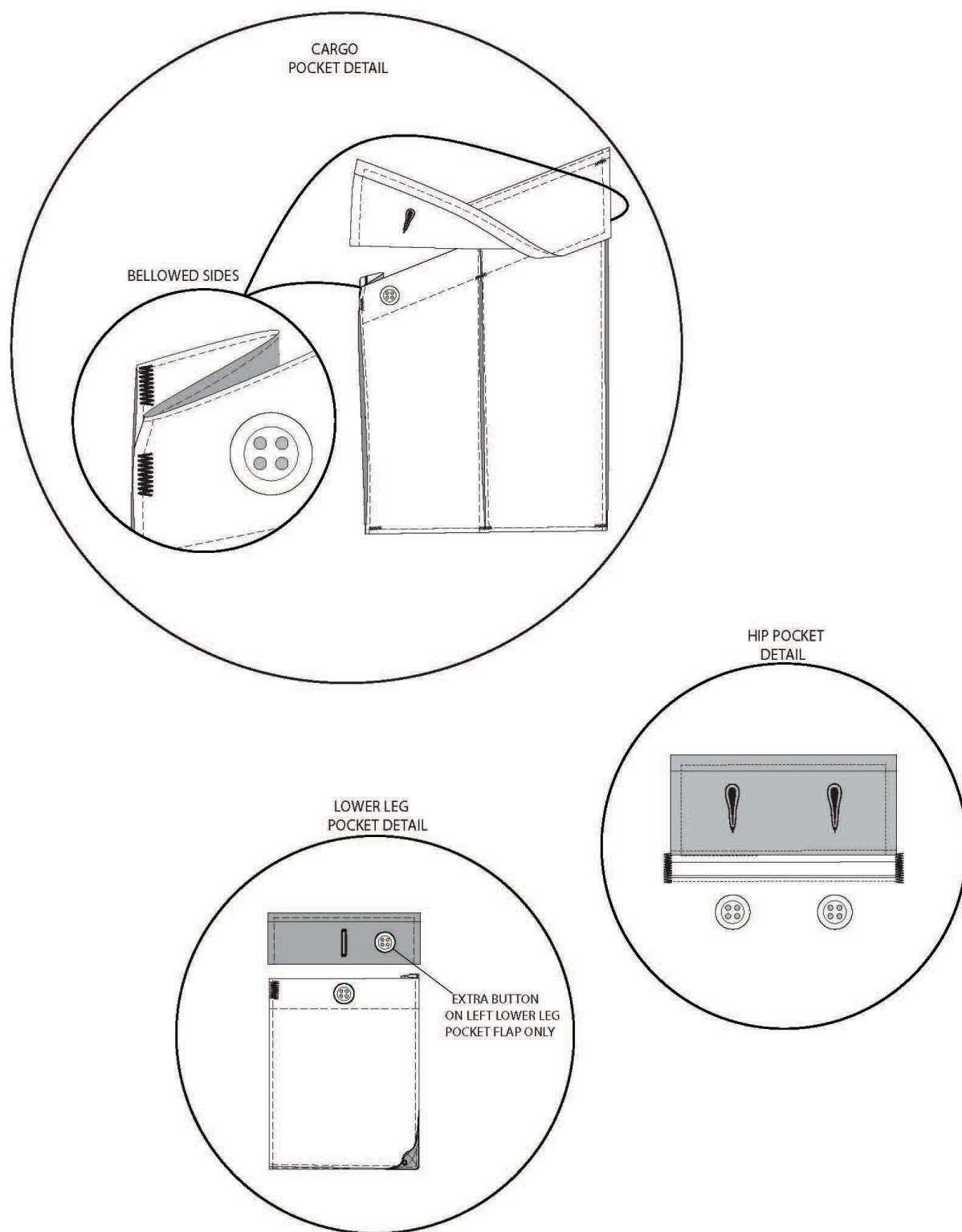
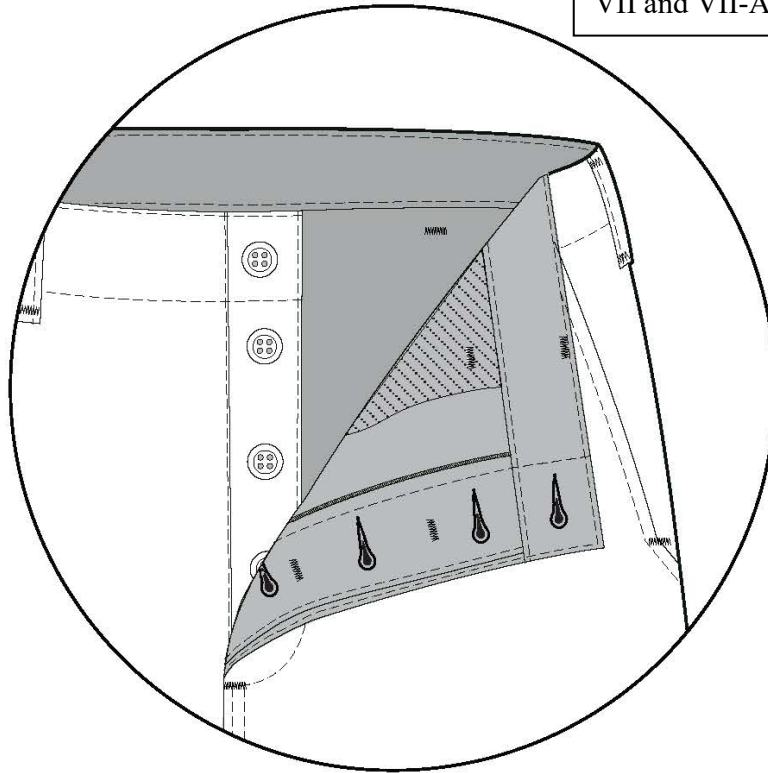


FIGURE 5. Trousers Improved Hot Weather Combat Uniform, Pocket Details, Type I and Type II.

NOTE: Number of buttons,
including the waistband, varies
by size and length (see Tables
VII and VII-A)

FLY DETAIL



GUSSET DETAIL

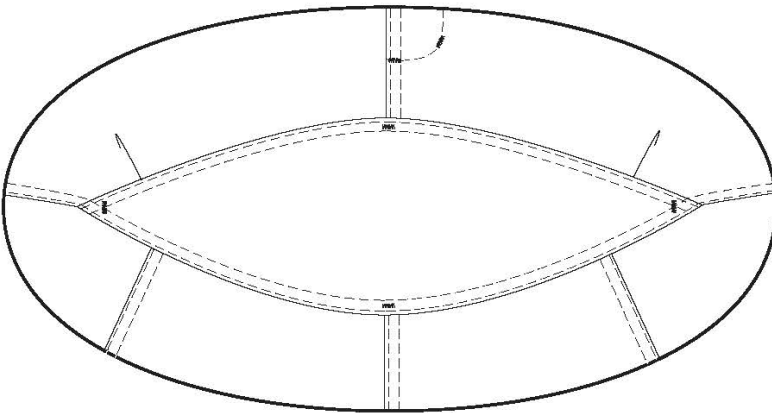


FIGURE 6A. Trousers, Improved Hot Weather Combat Uniform, Fly and Gusset details
(All types.)

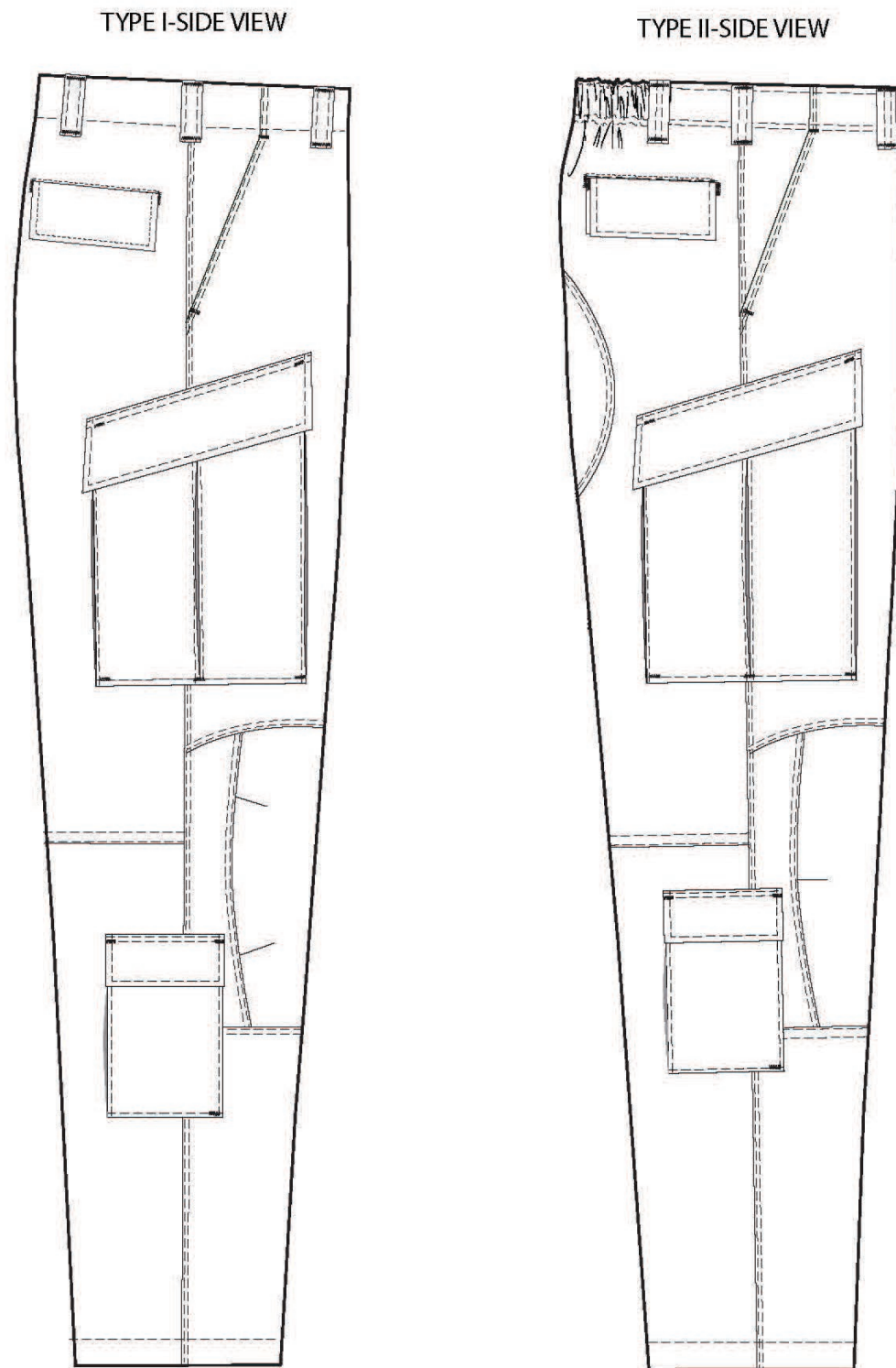


FIGURE 6B. Trousers, Improved Hot Weather Combat Uniform, Side View of Type I and II.

TYPE II DETAIL

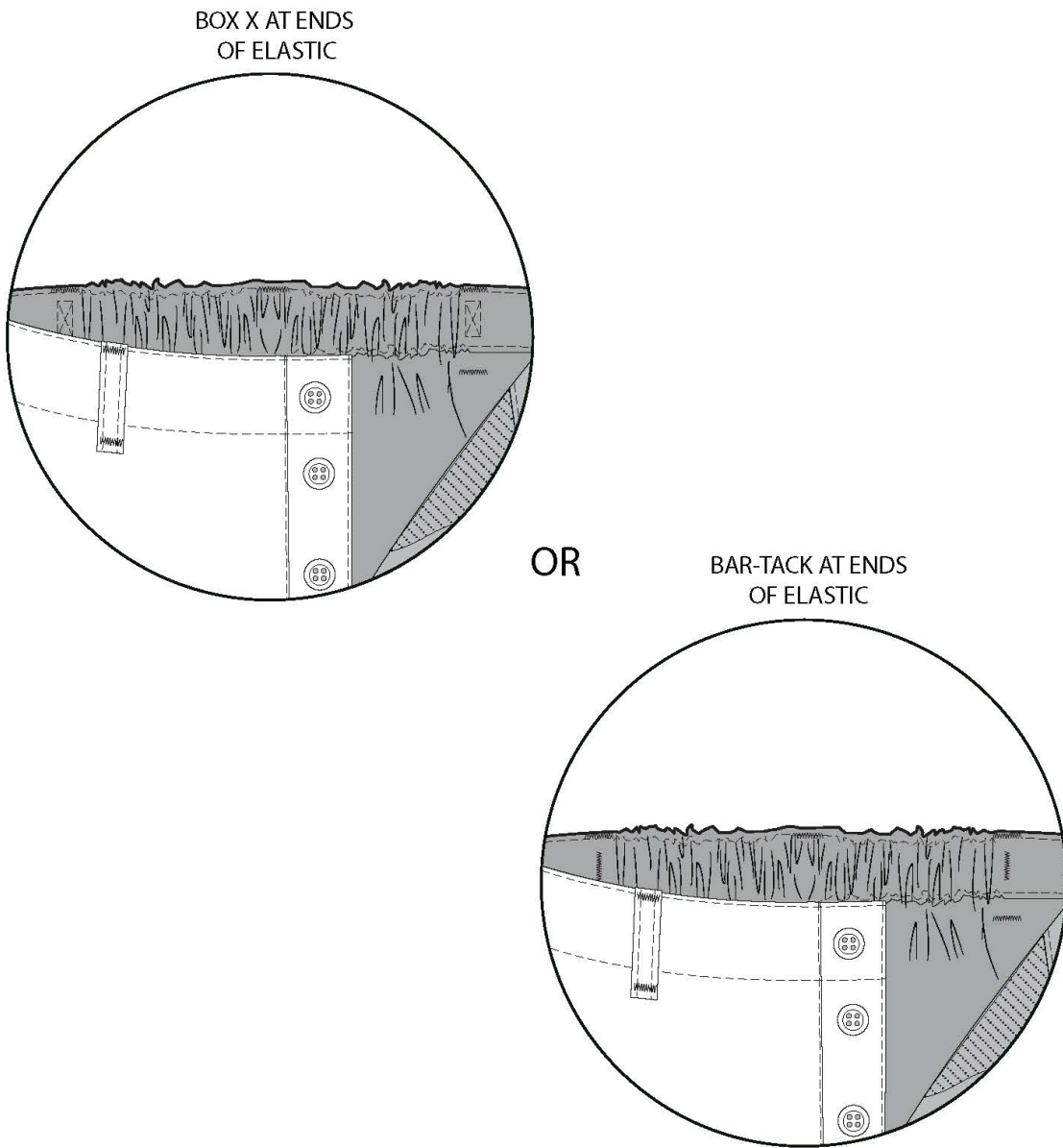


FIGURE 6C. Trousers, Improved Hot Weather Combat Uniform, Waistband details Type II.

CUSTODIAN:
Army – GL

PREPARING ACTIVITY:
Army– GL