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SUPERSEDING
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MILITARY SPECIFICATION

SHIRT, MAN'S, (POLYESTER/COTTON, TROPICAL, SHORT SLEEVE)

This specification is approved for use by the Navy Clothing and Textile Research Facility, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for a polyester/cotton, short sleeve shirt.

1.2 Classification. The shirts shall be of one type only and of the following classes and sizes (see 6.2):

Class 1 - White (with shoulder loops)
Class 2 - Khaki (without shoulder loops)
Class 3 - White (without shoulder loops)

Schedule of sizes

Extra Small, Small, Medium, Large, and Extra Large

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. Unless otherwise specified, the following specifications, standards, and handbooks of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form a part of this specification to the extent specified.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Officer in Charge, Navy Clothing and Textile Research Facility, 21 Strathmore Road, Natick, MA 01760-2490 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC 8405

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*SPECIFICATIONS

FEDERAL

V-B-871	- Button, Sewing Hole and Button, Staple (Plastic)
NN-P-71	- Pallet, Material Handling, Wood Stringer Construction 2 Way and 4 Way Entry
DDD-L-20	- Label; For Clothing, Equipage and Tentage (General Use)
PPP-B-676	- Boxes, Setup

MILITARY

MIL-P-15011	- Pallet, Material Handling Wood Post Construction 4 Way Entry
MIL-B-17757	- Boxes, Shipping, Fiberboard (Modular Sizes)
MIL-C-21881	- Cloth, Poplin, Polyester and Cotton
MIL-T-43548	- Thread, Polyester, Cotton-Covered, and Rayon Covered
MIL-P-55010	- Plastic Sheet, Polyethylene Terephthalate

*STANDARDS

FEDERAL

FED-STD-751	- Stitches, Seams, and Stitchings
FED-STD-191	- Textile, Test Methods

MILITARY

MIL-STD-147	- Palletized Unit Loads
MIL-STD-129	- Marking for Shipment and Storage
MIL-STD-1492	- Provisions for Evaluating Quality of Shirts

(Copies of specifications, standards, drawings, and publications required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

* 2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein.

LAWS AND REGULATIONS

U.S. POSTAL SERVICE MANUAL

(Copies of the Manual may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

* 2.2 Other publications. The following document(s) form a part of this specification to the extent specified herein. The issues of documents which are indicated as DoD adopted shall be the issue listed in the current DoDISS and supplement thereto, if applicable.

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NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT

National Motor Freight Classification

(Applications for copies should be addressed to the American Trucking Association, ATTN: Traffic Department, 1616 P Street, N.W., Washington, DC 20036).

UNIFORM CLASSIFICATION COMMITTEE, AGENT

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago, Illinois 60606).

DEPARTMENT OF DEFENSE STANDARD COLOR CARD
OF OFFICIAL STANDARDIZED SHADES FOR SEWING THREAD

DEPARTMENT OF DEFENSE STANDARD SHADES FOR BUTTONS

(Application for copies may be obtained from the Color Association of the United States, Inc., 24 East 38th Street, NY, NY 10016).

3. REQUIREMENTS

3.1 Guide sample. Samples, when furnished, are solely for guidance and information to the contractor (see 6.3). Variations from this specification may appear in the sample in which case this specification shall govern.

3.2 First article. When specified, the contractor shall furnish sample unit(s) for first article inspection and approval (see 4.3 and 6.2).

3.3 Material. (See 6.4).

3.3.1 Cloth, poplin, polyester and cotton. The poplin for the class 1 and class 2 shirts shall conform to type II, class 2 of MIL-C-21881. The poplin for the class 2 shirt shall conform to type II, class 1 of MIL-C-21881.

* 3.3.2 Fusible interlining. The topcollar and pocket flaps shall be fused. A fused sample consisting of the fusible and basic material shall conform to the requirements specified below when tested as specified in 4.4.1. The color shall be white.

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Component testing requirements

Appearance of fused sample
Initial - no evidence of bubbling, color change, or bleed through.
After 25 washings - no evidence of bubbling or delamination.
Stiffness, inch lbs x 10^{-4} (Average of six samples; three tested fusible side up and three tested fusible side down).

Initial

Warp	Min	13.0	Max	38.0
Filling	Min	6.0	Max	22.0

After 25 washings - samples shall retain a minimum of 20% of the original stiffness.

Peel Strength

Initial	Min 24 oz.
After 25 washings	Min 16 oz.

In-process testing requirements

Appearance of fused sample
- no evidence of bubbling, color change or bleed through.

Peel Strength - Min 20 oz.

* 3.3.2.1 Thickness, fusible. The thickness of the fusible interlining should not measure greater than 0.030 inch, when tested as specified in 4.4.1.

* 3.3.3 Buttons. The buttons of Class 2 shirt shall be 20-line, and conform to type II, class D, style 24 of V-B-871. The buttons of Classes 1 and 3 shirts shall be 19-line, and conform to type II, Class K, Style 25 of V-B-871. The buttons for Classes 1 and 3 shirts shall be white, BA cable #62031 and for class 2 shirts, the buttons shall be khaki, AL cable #62026 to match the shade of the shirt.

* 3.3.4 Collar stay. The collar stays shall be made from polyethylene terephthalate plastic sheet conforming to MIL-P-55010, except the thickness shall be 0.010 ± 0.001 inch, the color shall be natural (clear or opaque), and the transparency and optical properties shall not apply. The stays shall measure from 1/4 to 3/8 inch wide and 3 inches long. Both ends shall be round, pointed, cut on an angle or any combination thereof. When other than round, points shall be rounded. Inspection shall be as specified in 4.4.1.

3.3.5 Thread. Unless otherwise indicated, the thread shall be a covered polyester, size 70, 2 ply conforming to MIL-T-43548.

3.3.5.1 Color. The thread shall be white AH, CA #66050 for class 1 and class 3 shirts and dyed khaki P-1, CA #66019 for class 2 shirts.

3.3.5.2 Colorfastness of thread. The dyed thread shall show fastness to laundering, perspiration, and light equal to or better than the standard sample when tested as specified in MIL-T-43548. When no standard sample is available, the dyed thread shall show good fastness to laundering, perspiration, and light when tested as specified in MIL-T-43548.

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3.3.6 Combination label. Each shirt shall have a combination label conforming to Type IV, classes 10 and 15 of DDD-L-20 and shall bear the following inscription:

Name:
Service No:
Name of Item: Shirt, Man's (65% Polyester/35% Cotton, Tropical Short Sleeve)
Contract Number: DLA-100-00-0-0000 (Example)
Name of Contractor:

LAUNDERING INSTRUCTIONS

Machine wash - warm water - no bleach
Tumble dry - medium heat - remove promptly
or
Follow NAVEDTRA 414-01-45-81 - Navy Formula II

3.3.6.1 Size label. The size label shall conform to type IV or VI, class 2 of DDD-L-20, and bear the following inscription:

Size: MEDIUM (Example)
Stock No.: 8405-00-000-0000 (Example)

3.4 Design.

3.4.1 Class 1. The class 1 shirt shall be white poplin of a sport style with turned back facings and notch collar. The collar and pocket flaps shall be fused. It shall have five buttons down the front, two patch pockets with flaps, single yoke (superimposed), short sleeves and two loops on each shoulder. The pocket on the left front shall contain a pen and pencil pocket. (See Figure 1).

3.4.2 Class 2. Class 2 shirt shall be of khaki poplin and of the same design as specified in 3.4.1, except that the shoulder loops shall be omitted.

3.4.3 Class 3. Class 3 shirt shall be the same material and design as specified in 3.4.1, except that the shoulder loops shall be omitted.

3.4.4 Figure. Figure 1 is furnished for information purposes only. When inconsistencies exist between the written specification and the figure, the written specification shall govern.

* 3.5 Patterns. Standard patterns will be furnished by the Government (see 6.3). The standard patterns shall not be altered in any way and are to be used for cutting the contractor's working patterns. The working patterns shall be identical to the standard patterns. The standard patterns provide an allowance of 1/4 inch for all seams. Unless otherwise indicated in Table I, seams shall be in accordance with this seam allowance.

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* 3.5.1 Pattern parts. The component parts of the shirt shall be cut from the material specified in accordance with the following pattern parts:

Materials	Nomenclature of Pattern Parts	Cut Parts
Cloth, poplin, polyester and cotton	Back	1
	Back yoke	1
	Front (left and right)	2
	Sleeve	2
	Collar	2
	Pocket	2
	Pocket flap	4
	Pen and pencil pocket	1
	Shoulder loop (for class 1 only)	No pattern
Fusible interlining	Collar interlining	1
	Pocket flap interlining	2
Template	Finished pocket shaper	-

3.6 Stitches, seams, and stitching. Stitches, seams and stitching types as specified in Table I, shall conform to FED-STD-751. Whenever two or more methods for seams or stitches are given for the same part of the operation, any one of them may be used. Where stitch type 401 is used, the looper (underthread) shall be on the inside of shirt. Unless otherwise specified, edgestitching shall be 1/16 inch and topstitching shall be not less than 3/16 inch nor more than 1/4 inch from folded edge.

3.6.1 Stitches per inch. The minimum and maximum number of stitches per inch shall be as specified in Table I.

3.6.2 Thread breaks and ends of seams. Ends of all seams and stitchings when not caught in other seams or stitchings shall be backtacked not less than 3/8 inch. The ends of a continuous line of stitching shall be overlapped not less than 1/2 inch. Thread breaks (all stitch types) shall be secured by stitching back of the break not less than 1/2 inch. Skipped stitches or 401 stitch type thread breaks may be repaired by using 301 stitch type.

3.6.3 Buttonholes. The buttonholes shall be straight style with both ends securely barred. The finished cut length shall be 5/8 (± 1/16) inch.

3.7 Manufacturing operations requirements. The shirt shall be constructed in accordance with operations listed in Table I. The contractor is not required to follow the exact sequence of operations as listed, provided the finished shirt is identical with that produced by following the exact sequence.

3.7.1 Shade and size marking. The component parts shall be marked or ticketed to insure a uniform shade and size throughout the shirt. Any method of shade and size marking may be used except:

1. Corrosive metal fastening devices
2. Sew on shade tickets.
3. Adhesive type tickets whose adhesive causes discoloration or whose adhesive mass adheres to the material upon removal of the tickets.

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NOTE: The use of ink pad numbering machine, rubber stamp or pencil is allowed, provided the numbering does not show on the outside of the shirt and wherever possible, is covered by the seam allowance.

3.7.2 Pressing. All pressing as required by Table I shall be performed with a heated pressing iron or machine at a suitable temperature for synthetics.

* 3.7.3 All fusing of the fusible to the basic material shall be on a single ply basis (no stacking allowed).

* 3.7.4 The statement "press fusible to various cut parts in accordance with the fusible manufacturer's recommendation" refers to time, temperature, and pressure.

3.7.5 Abbreviations in table of operations. The abbreviations used in table I are as follows:

Stch	-	Stitch
in	-	inch
Ndl	-	Needle
Bob	-	Bobbin
Lpr	-	Looper
Mchne	-	Machine
Brtck	-	Bartack
Comrcl	-	Commercial
smlr	-	similar
Btnhl	-	Buttonhole
incl	-	including
dbl	-	double

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TABLE I - CONSTRUCTION OF SHIRT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL	THREAD BOB/ LPR
1.	Cutting *a. The shirts shall be cut in strict accordance with patterns furnished which show size, shape, placement of pocket, directional line for cutting, and notches for the proper assembly of all parts. The fronts shall be cut with the edge of the grown-on facings on the selvage. When selvageless cloth is utilized, or when selvaged edge is cut or frayed the edge shall be serged.	502 or 503	SSa-1	6-8	70	70
	*b. All component parts shall be cut from one piece of material, except that the under ply of pocket flaps, pen and pencil pocket, and undercollar may be cut from ends.					
	c. Fusing of the fusible to the basic material shall not be performed prior to cutting of cut parts.					
2.	Replacement of defective components During the spreading, cutting and manufacturing process, components having material defects or damages that are classified as defects in MIL-STD-1492 shall be removed from production and replaced with nondefective and properly matched components.					
3.	Shade marking (see 3.7.1) Mark or ticket all parts except those cut from ends to insure a uniform shade and proper assembly of the shirt.					

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TABLE I - CONSTRUCTION OF SHIRT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL	THREAD BOB/ LPR
4.	Marking *The combination identification and instruction marking shall be legibly stamped on the outside of the left shirt tail. It shall be positioned so that the left edge of printing is 3 (± 1/4) inches from the left front turned edge and the top edge of printing is 5 (± 1/2) inches from bottom hemmed edge of shirt at left hand bottom corner of label. Measurements indicated are for a finished shirt.					
5.	*Make pocket flaps and attach pen and pencil pocket a. Center fusible interlining to backside of outer ply of pocket flap. Press fusible interlining to top ply of pocket flap in accordance with the directions of the fusible manufacturer.					
	b. Stitch the two plies of flap, face to face, around the ends and pointed edge 1/4 inch from the raw edges. Trim corners and point.	301	SSe-2(a)	12-14	70	70
	c. Turn flaps to finished position and topstitch 1/16 inch from folded edges.	301	SSe-2(b)	12-14	70	70
	OR					
	d. As an alternate to operations 5b and 5c, precrease the plies of the pocket flap 1/4 (± 1/16) inch from raw edge. Trim corners and point. Superimpose the plies of the flap, with the face of the fabric on the outside, and topstitch the sides and bottom 1/16 inch from folded edges.	301	SSc-1	12-14	70	70
	e. Position a flap on each shirt front by placing raw edge along marks on patterns. Stitch each flap to front 1/8 to 3/16 inch from raw edge.	301	LSbl-2(a)	12-14	70	70

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TABLE I - CONSTRUCTION OF SHIRT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL	THREAD BOB/ LPR
	f. Turn the flaps down and topstitch 3/16 to 1/4 inch from the folded edge enclosing raw edges.	301	LSbl-2(b)	12-14	70	70
	*g. The finished flap shall measure 5-1/4 (± 1/8) inches wide, 1-3/4 (± 1/8) inches deep at the sides and 2-1/2 (± 1/8 inches deep at the center.					
	h. Turn down the top edge of the pencil pocket 3/4 (± 1/4) inch and stitch 1/16 to 1/8 inch from the raw edge.	301	EFa-1	12-14	70	70
	i. Turn in the side edges of the pencil pocket 3/8 inch and stitch to the left front of the shirt as indicated on the patterns. Tack the ends of each seam by backstitching. The finished pencil pocket shall be 2 (± 1/8) inches wide.	301	LSd-1	12-14	70	70
	j. Form two compartments with a row of vertical stitching at the center (± 1/8 inch off center tolerance) through the shirt.	301	SSv-1	12-14	70	70
6.	Make patch pockets a. Form a hem at top of pocket according to pattern marks with raw edge folded under 3/16 to 1/4 inch with row of stitching 1/16 inch from folded edge.	301	EFb-1	12-14	70	70
	OR					

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TABLE I - CONSTRUCTION OF SHIRT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL	THREAD BOB/ LPR
	b. As an alternate, overedge top raw edge of pocket and fold hem as indicated by pattern marks.	503 504 or 505	EFd-1	12-14	70	70
	*c. Fold raw edges under 3/8 (± 1/16) inch and stitch pocket to each front with top of pocket 3/8 to 1/2 inch below topstitching of flap, with top corners of pockets tacked with a triangular stitching. The base of the triangle shall be at top corner of pocket and apex at lower corner of the hem. The base of the triangle shall measure 1/8 to 3/16 inch wide.	301	LSd-1	12-14	70	70
	OR					
	As an alternate, backtacking the ends of pocket stitching is permitted.					
	*d. The finished pocket shall measure 5-1/2 (± 1/8) inches long and 5 (± 1/8) inches wide for all sizes.					
	e. The finished pocket shall be checked for size and uniformity against the pocket template.					
	f. The pocket may be creased in an edge creasing machine to insure uniformity of shape and size.					
7.	Make shoulder loops (for class 1 shirt only)					
	a. Fold a strip of self fabric in half lengthwise; turn both raw edges to the inside, and stitch 1/16 inch from each edge.	301	EFp-2	12-14	70	70
	OR					

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TABLE I - CONSTRUCTION OF SHIRT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL	THREAD BOB/ LPR
	b. Abut raw edges of a self fabric strip and double stitch not less than 3/16 inch gauge, using a covering stitch on the underside.	402 or 406	EFh-1	8-10	70	70
	c. Finished shoulder loops shall measure 1/4 to 5/16 inch wide.					
8.	Attach yoke NOTE: Class 2 and class 3 shirts shall not include shoulder loops.					
	a. Stitch the yoke and back to front at the shoulder with stitching 1/4 to 5/16 inch from the raw edge simultaneously inserting two shoulder loops (class 1 only) in the seam as indicated by pattern marks.	301	SSq-2(a)	12-14	70	70
	b. Turn the yoke against the shirt back with the shirt front extended; edgestitch through all plies of material	301	SSq-2(b)	12-14	70	70
	OR					
	c. On class 2 or class 3 shirts, the following option may be used in place of operations 8a and 8b above: Fold inward the raw edges of yoke and back 1/4 to 5/16 inch. Insert raw edge of front between yoke and back 5/16 to 3/8 inch and stitch through all plies 1/16 inch from folded edge.	301	LSe-1	12-14	70	70
	d. Turn under the raw edge of the yoke 1/4 to 5/16 inch; stitch to shirt back 1/16 inch from the folded edge.	301	LSd-1	12-14	70	70
	e. Turn under (class 1 only) the free end of loops 1/4 to 5/16 inch; securely stitch or bartack to shirt through yoke and back 1/16 inch from the folded edge. The tack shall extend the width of the loop but not beyond.	301 or Bartack or auto-loop tacker		12-14 28 per bartack 24-28	70 70 70	70 70 70

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TABLE I - CONSTRUCTION OF SHIRT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL	THREAD BOB/ LPR
	f. (Class 1 only) - The loop nearest to the armhole seam shall have a free opening of 1-3/8 (± 1/8) inches and the loop nearest the collar shall have a free opening of 1 (± 1/8) inch.					
9.	Make collar *a. Center fusible interlining to back side of topcollar and press in accordance with the directions of the fusible manufacturer.					
	*b. The collar stays shall be positioned onto the undercollar according to marks on patterns with the tapered end placed so as to fit into the finished collar point. The construction shall be as follows:					
	(1) Spot laminate both tips of stay to undercollar. Spot lamination shall not extend more than 5/8 inch from either tip.					
	OR					
	(2) If slot type collar stays are used, stitch stays to undercollar. The stitching shall straddle the center bar of the stay and shall not penetrate the stay material.	101	Zig-zag	20-24	70	70
	OR					
	(3) If solid stays are used, the stay shall be stitched to the undercollar with the stitching centered down the middle of the stay.	301	SSaa-1	12-14	70	70
	c. Stitch the top collar to the undercollar, back to back, 1/4 to 5/16 inch from raw edges. Trim collar points.	301	SSe-2a	12-14	70	70
	d. Turn collar to finished position working out points and outer edges.					

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TABLE I - CONSTRUCTION OF SHIRT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL	THREAD BOB/ LPR
	e. Edge stitch 1/16 inch from sides and outer edges.	301	SSe-2b	12-14	70	70
	*f. The collar shall be pressed smooth and flat. The undercollar shall not be exposed beyond the edge of the top collar.					
*10.	Attach collar and size label a. Fold back the left and right fronts to the outside at the notch indicated on pattern to form a facing.					
	b. Position the collar between the front and the facing at the collar notches (1 inch from the folded edge) and stitch from the front edge to within 3/4 (± 1/8) inch from the inner edge of the facing, 1/4 inch from the raw edge. Notch through all plies of materials on neckline at the termination of the stitches.	301	SSa-1	12-14	70	70
	c. Stitch undercollar to back along neckline between the notches previously made on operation 10b, with stitching 1/4 inch from raw edge.	301	LScg-2(a)	12-14	70	70
	d. Turn the facings and work out steps. Stitch the collar between the notches 1/16 inch gauge turning the raw edges of collar under 3/16 to 1/4 inch, simultaneously catching the ends of the facing in the seam and the size label horizontally. The label shall be centered (± 1/2 inch) on the inside back of the shirt.	301	LScg-2(b)	12-14	70	70
	e. The finished collar shall measure 3-1/4 (± 1/8) inches deep at the center back and 3-1/4 (± 1/8) inches long at front points.					
	f. Type IV size label inscription shall be stamped on inside bottom edge of topcollar and centered ± 1/2 inch. There shall be no evidence of the printing visible on outside of finished collar as worn.					
	g. The pointed ends of the collar shall be uniform in shape and the ends equal distance from the shirt front edges and from the shoulder yoke seam line.					

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TABLE I - CONSTRUCTION OF SHIRT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL	THREAD BOB/ LPR
*11.	Attach sleeves Join sleeves to armholes by seaming and overedging the raw edges in one operation. The width of the overedge stitching shall be 1/8 to 3/16 inch.	515 or 516 or 519	SSa-2	12-14	70	70
*12.	Join sides and sleeve seams Join side seams and sleeve seams by seaming and overedging the raw edges in one operation. Ends of armhole seam shall not be staggered more than 3/8 inch at armpit. The width of the overedge stitching shall be 1/8 to 3/16 inch.	515 or 516 or 519	SSa-2	12-14	70	70
13.	Hem shirts a. Form a hem on the bottom of shirt with raw edge turned under 3/16 to 1/4 inch and the bottom edge of the facing caught in the hem. Hem stitching shall be 1/16 inch along the top of the hem from the folded edge. b. The finished hem shall measure 1/4 ± 1/16 inch wide and shall be backtacked (see 3.6.2).	301	EFb-1	12-14	70	70
14.	Hem bottom of sleeves *a. Form a hem on the bottom of the sleeves with raw edge turned under 1/4 to 3/8 inch. Turn hem up according to marks on patterns. Stitch hem 1/16 to 1/8 inch from inner folded edge. NOTE: The hemming of sleeve may be performed before or after joining of underarm seam. b. The finished hem shall measure 1 (± 1/8) inch wide.	301	EFb-1	12-14	70	70
	NOTE: When sleeve is hemmed prior to joining underarm seams, end of seam shall be backtacked not less than 3/8 inch, or a horizontal bartack shall be placed across seam allowance, at the end of the underarm seam 3/16 to 1/4 inch from bottom of sleeve.	301 Bar-tack	SSa-1	10-12 21-28 stchs/ bartack	70 70	70 70

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TABLE I - CONSTRUCTION OF SHIRT

NO.	OPERATION	STCH TYPE	SEAM/ STCH TYPE	STCH IN	THREAD NDL	THREAD BOB/ LPR
*15.	Make buttonholes All buttonholes shall be vertical, and shall be located as follows: One centered in each pocket flap 1/2 (± 1/8) inch above the center point, measured from lower inside end of buttonhole. Five on the left front placed 5/8 (± 1/8) inch from the folded edge. The buttonholes shall be spaced 3-1/2 (± 1/8) inches apart according to marks on pattern. Buttonholes shall be measured from center to center. The second buttonhole shall be horizontally in line with the buttonhole in each pocket flap.	Button-hole		42-46 per-button-hole includ-ing tacks	70	70
16.	Sew on buttons Sew seven 20-line buttons located as follows: Five on right front with center of buttons 5/8 (± 1/8) inch from the edge to correspond with the buttonhole on the left front. One centered on each pocket with the center of the button aligned with the center of the buttonhole on the pocket flap. Stitching shall be through pocket hem.	101 or 301		14-16 per button 14-16 per button	70 70	 70
17.	Cleaning a. All thread ends shall be trimmed and loose threads removed from shirt. b. Remove all spots and stains. c. Remove all shade tickets.					
18.	Press shirts Before buttoning the flaps and shirt front, press the collar, fronts, pocket flaps, pockets, yoke, back and sleeves. The sleeves shall be pressed flat with a crease along the top of the sleeve and the collar shall be pressed flat for its entire length.					

NOTE: The use of steam inflated bag type machine is prohibited for pressing.

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* 3.8 Sizes and measurements. Sizes and measurements of the finished shirts shall be as shown in Table II. All measurements and tolerances indicated in Table II are in inches.

Table II - Sizes and Measurements

Size	A Chest	B Back Length	C Yoke Width	D Sleeve Length	E Collar
Extra Small	37	30-1/2	16	6-3/8	14
Small	41	31	17	6-3/8	15
Medium	45	31-1/2	18	6-3/8	16
Large	49	32	19	6-3/8	17
Extra Large	53	32-1/2	20	6-3/8	18
Tolerance	± 1	± 1/2	± 1/2	± 1/4	± 1/4

NOTE: Measurements A, B, C, and D shall be taken with the shirt fully buttoned, laid flat, and in a relaxed condition. Measurement E shall be taken with the shirt unbuttoned.

A. Chest - Twice the measurement taken across the front at base of armholes from folded edge to folded edge.

B. Back Length - Measurement shall be taken along center of back from neckline to bottom of shirt.

C. Yoke Width - Measurement shall be taken across back along base of yoke from sleeve seam to sleeve seam.

D. Sleeve Length - Measurement shall be taken from base of armhole (junction of seams) along inseam to bottom of sleeve.

E. Collar - Measurement shall be taken along base of collar from collar edge to collar edge.

3.9 Workmanship. The finished shirt shall conform to the quality established by this specification. As a final step in the contractor's production control plan, before formation of a lot, each shirt shall be buttoned and examined for selected defects. A shirt containing a selected defect shall not be included in the end item lot. Selected defects are those defects listed in Table V of MIL-STD-1492. The occurrence of defects shall not exceed the applicable point or defect limit.

* 4. QUALITY ASSURANCE PROVISIONS

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4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the contractor may use his own or any other facilities suitable for performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Certificate of compliance. Where certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

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

1. First article inspection (see 4.3).
2. Quality conformance inspection (see 4.4).

   a. Component and material inspection (see 4.4.1).
   b. In process inspection (see 4.4.1.2)

4.3 First article inspection. The first article submitted in accordance with 3.2, shall be inspected as specified in 4.4.2 for compliance with design, construction, workmanship and dimensional requirements.

4.4 Quality conformance inspection. Sampling for inspection shall be performed in accordance with MIL-STD-1492, except where otherwise indicated.

4.4.1 Component and material inspection. In accordance with 4.1 above, components and materials shall be inspected and tested in accordance with all the requirements of referenced specifications, drawings, and standards unless otherwise excluded, amended, modified, or qualified in this specification or applicable procurement documents. In addition, testing shall be performed on the components listed in Table III for characteristics noted. The contractor shall furnish a certificate of compliance for the color and thickness requirements for the fusible as required in 3.3.2 and 3.3.2.1 and the collar stay requirements of 3.3.4. All requirements are applicable to the sample unit. Whenever applicable, tests shall be in accordance with methods prescribed in FED-STD-191. All test reports shall contain the individual values utilized in expressing the final results. The lot shall be unacceptable if one or more units fail to meet any test requirements specified. All fused samples for Table III testing shall be fused on the end item manufacturer's equipment. Two sample units shall be taken regardless of end item lot size. The sample unit shall be expressed as follows:

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Material	Sample unit for testing
Basic material and fusible interlining fused together	a 15 x 15 inch sample

Table III - Test methods

Component	Characteristic	Requirement paragraph	Test method
Fusible interlining	Stiffness	3.3.2	
	Initial		5206
	After 25 launderings		AATCC-124-1973 1/ and 5206
	Peel strength	3.3.2	
	Initial		5951
	After 25 launderings		AATCC-124-1973 1/ and 5951
	Appearance of fused Sample	3.3.2	
	Initial		Visual
	After 25 launderings		AATCC-124-1973 1/ and Visual

1/ One 15 by 15 inch specimen shall be laundered. Wash temperature shall be 140° ± 5°F (60° ± 3°C). Drying shall be performed only after the 25th washing. The evaluation portion of the AATCC test method is not applicable. Pressing of the sample prior to evaluation is prohibited.

4.4.1.2 In-process inspection.

4.4.1.2.1 Sample size. The size of the fused check sample shall correspond to the total area covered by the collars or pocket flaps which are fused at one time on the press.

4.4.1.2.2 Number of check samples. One check sample (see 4.4.1.2.1) shall be prepared following fusing of every 1000 collars or pocket flaps as applicable, and tested for the characteristics in 4.4.1.2.3 and 4.4.1.2.4.

4.4.1.2.3 Appearance of the fused check sample. Each check sample shall be visually inspected for color change, bleed through and bubbling. If there is any evidence of these conditions present, the previously fused 1000 collars or pocket flaps shall be inspected for the above conditions. Any collar or pocket flaps exhibiting any of these conditions shall be removed from the lot.

4.4.1.2.4 Peel strength. The method of testing shall be as specified in 4.4.1.2.4.1. If the check sample fails the peel strength test, the previously 1000 fused collars or pocket flaps and check sample shall be re-fused after the fault has been corrected. If the check sample fails a second time, the 1000 collars or pocket flaps shall be rejected.

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4.4.1.2.4.1 Apparatus and procedure for in-process peel strength testing. The apparatus to be used for this test shall be a commercial type spring scale accurate to 0.5 oz. The procedure to be followed in performing the test shall be as follows:

(1) Three 1 x 8 inch wide strips parallel to the warp direction shall be cut from right, middle and left side of the check sample for peel strength testing.

(2) Separate the fusible from the basic fabric at the end of the 1 inch wide strips for a distance of 2 inches.

(3) Secure the end of the basic fabric to a lightweight clamp like holder 1 inch or more in width and approximately 1.0 ounce in weight. Hang the clamp to the end of the spring scale.

(4) Position the fusible in another clamp 1 inch or more in width and approximately 1.0 ounce in weight and pull the fusible downwards in a vertical direction with a steady continuous motion (motion to be exerted by hand) until complete separation of the fusible from the samples. Minimum peel strength reading shall be taken visually from the spring scale. Failure of any individual strip shall indicate failure of the check sample.

NOTE: Care shall be taken not to jerk the fabric during testing.

4.4.2 End item examination. Sampling and examination of the end item shall be as specified for Dress Shirt ("D") in MIL-STD-1492.

4.4.3 Packaging inspection. Packaging inspection shall be in accordance with MIL-STD-1492, and in accordance with the list below:

Defect - Pocket(s)	D Point Value
a. Not uniform in size or shape - any measurement varying from pocket to pocket or pocket to template by:	
1. More than 1/4 inch	2
2. 1/8 inch up to 1/4 inch (inclusive)	1

*4.5 Palletization examination. An examination shall be made to determine that the palletization complies with the section 5 requirements. Defects shall be scored in accordance with the list below. The sample unit shall be one palletized unit load fully packaged. The lot size shall be the number of palletized unit loads in the end item inspection lot. The inspection level shall be S-1 and the AQL, expressed in terms of defects per hundred units,

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Examine	Defect
Finished dimensions	Length, width, or height exceeds specified maximum requirements.
Palletization	Pallet pattern not as specified. Interlocking of loads not as specified. Load not bonded with required straps as specified.
Weight	Exceeds maximum load limits.
Marking	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.

5. PACKAGING

5.1 Preservation-packaging. Preservation-packaging shall be level A or C as specified (see 6.2).

* 5.1.1 Level A. Each fully buttoned shirt shall be folded to approximately 14 by 11 inches and secured with noncorrosive metal pins, aluminum clips or plastic fasteners. Each folded shirt shall be inserted in a clear polyethylene bag fabricated from film of not less than 0.00125 (± 20 percent tolerance) thickness. All seams and closures shall be effected by heat sealing with final heat closure made as close as possible to the open end. A 1/4 inch maximum diameter hole shall be made at one corner of each polyethylene bag to allow excess air to escape.

5.1.1.1 Intermediate packaging. Five (5) shirts of one class and size only, packaged as specified in 5.1.1 and alternated top to bottom, shall be placed in a setup paperboard box conforming to type II, variety 1, class c, style 4 of PPP-B-676. Outside dimensions of the setup box, cover included, shall be 14-1/2 inches in length, 11-1/2 inches in width and 3-3/4 inches in depth. The depth of the cover shall be one inch.

5.1.2 Level C. The shirts shall be packaged to afford adequate protection against physical damage during shipment from the supply source to the first receiving activity. The package and the quantity per package shall be the same as that normally used by the contractor for retail distribution.

5.2 Packing. Packing shall be level A, B, or C as specified (see 6.2).

* 5.2.1 Level A. Eight (8) intermediate packages (40 shirts of one class and size only) shall be packed in a fiberboard shipping container, closed and reinforced conforming to class weather-resistant, grade V15c, type CF, size 3A of MIL-B-17757. The intermediate packages shall be arranged in the shipping container in two stacks, side-by-side and four high. Toward the end of the contract or when there are less than the required amount per container of the same size, mixed sizes may be packed within the same shipping container.

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* 5.2.2 Level B. Eight (8) intermediate packages (40 shirts of one class and size only) shall be packed in a fiberboard shipping container and closed conforming to class domestic, grade 275, type CF, size 3A of MIL-B-17757. The intermediate packages shall be arranged in the shipping container in two stacks, side-by-side and four high. Toward the end of the contract or when there are less than the required amount per container of the same size, mixed sizes may be packed within the same shipping container.

5.2.3 Level C. Shirts, packaged as specified in 5.1, shall be packed in a manner to insure carrier acceptance and safe delivery at destination at the lowest transportation rate for such supplies. The quantity per shipping container shall be the same as that used by the contractor for retail distribution. Containers shall comply with the US Postal Service Manual, Uniform Freight Classification Rules or National Motor Freight Classification Rules, as applicable.

5.3 Marking. In addition to any special marking required by the contract or order, shipping containers shall be marked in accordance with MIL-STD-129.

5.3.1 Polyethylene bagged packages. Polyethylene bagged packages shall have the required information legibly printed or stamped in black, bold letters 1/4 inch in height directly on the bag across the center face or on a white paper label inserted within the bag so as to permit ready identification. The bag or label shall indicate the following information:

STOCK NUMBER
SHIRT, MAN'S (POLYESTER/COTTON, TROPICAL, SHORT SLEEVE) (EXAMPLE)
SIZE

5.3.2 Labels, mixed sizes. Each shipping container, packed with mixed sizes, shall have securely attached to the end and side, directly under the printing or stenciling, a white paper label 5 by 4 inches with the words "MIXED SIZES" plainly stamped or printed thereon and under these words shall be legibly stamped or printed the correct quantity and sizes contained therein.

* 5.4 Palletization. When specified (see 6.2), (item), packed as specified in 5.2, shall be palletized in accordance with load type Ia of MIL-STD-147. Each prepared load shall be bonded with primary and secondary straps in accordance with the bonding means S, K and L or bonding means O or P. Pallet patterns shall be in accordance with the appendix of MIL-STD-147. The pallet shall be 4-way , Type III, Class 1, Style A, Size 2, wood group I, Grade A of NN-P-71, or 4-way, Style (1, 1A or 1B), Size A Type I, Class 1 of MIL-P-15011. Interlocking of loads shall be effected by reversing the pattern of each course. If the container is of a size which does not conform to any of the patterns specified in MIL-STD-147, the pallet pattern used shall first be approved by the contracting officer.

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6. NOTES

6.1 Intended use. The shirts covered by this specification are intended for use as part of the tropical uniform to be worn by male personnel of the various military services.

6.2 Ordering data. Procurement documents should specify the following:

a. Title, number and date of this specification
b. Sizes and classes required (see 1.2)
* c. When first article sample is required (see 3.2). The item will be tested and should be a first article sample. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations, quantity, and testing and approval of the first article.
d. Selection of applicable levels of packaging and packing (see 5.1 and 5.2)
* e. When palletization is required (see 5.4).

6.3 Samples and patterns. For access to samples and patterns, address the procuring activity issuing the invitation for bids.

6.4 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of this specification.

* 6.5 Changes from previous issue. The margins of this specification are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

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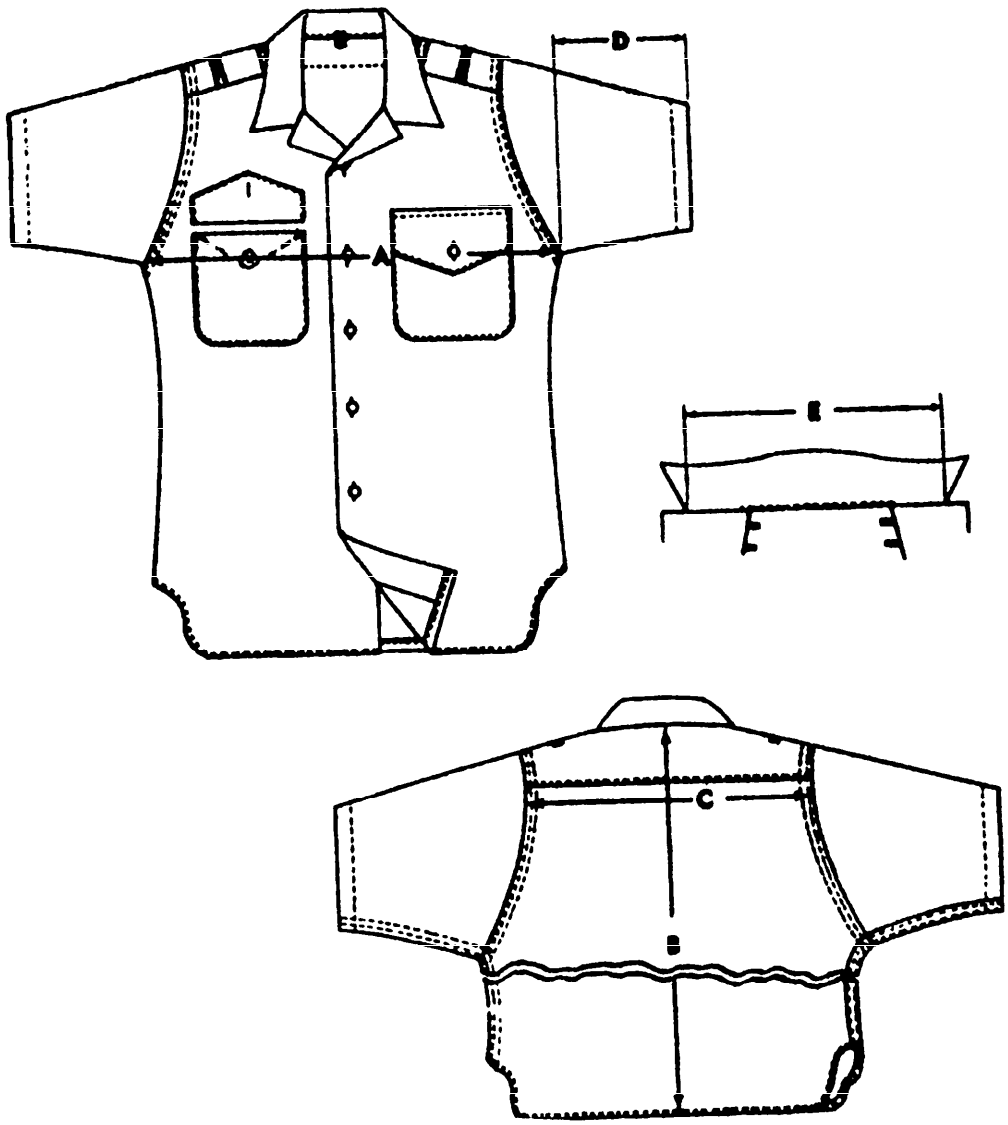

FIGURE 1-SHIRT, MAN'S (POLYESTER/COTTON, TROPICAL, SHORT SLEEVE (CLASSSS 1)

NOTE: The left front patch pocket shall contain a pen and pencil pocket not visible from the outside

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions – Reverse Side)

1. DOCUMENT NUMBER	2. DOCUMENT TITLE
MIL-S-17618G	SHIRT, MAN'S (POLYESTER/COTTON, TROPICAL, SHORT SLEEVE)

3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION *(Mark one)*
	☐ VENDOR
	☐ USER
b. ADDRESS *(Street, City, State, ZIP Code)*	☐ MANUFACTURER
	☐ OTHER *(Specify)*: _____

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional	b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional
c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional	8. DATE OF SUBMISSION *(YYMMDD)*

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