

MIL-M-810H
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 SUPERSEDING
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MILITARY SPECIFICATION

MITTEN SHELLS, COLD WEATHER (TRIGGER FINGER M-1965)

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This document covers one type of mitten shells with trigger finger.

1.2 Classification. The mitten shells shall be furnished in the following sizes as specified (see 6.2):

Medium
 Large

2. APPLICABLE DOCUMENTS

2.1 Government documents.

- * 2.1.1 Documents. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

FEDERAL

A-A-203	- Paper, Kraft, Untreated
V-T-276	- Thread, Cotton

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5014, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 8415

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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- V-T-285 - Thread, Polyester
- V-T-295 - Thread, Nylon
- JJ-W-155 - Webbing, Textile, (Cotton, Elastic)
- KK-L-2004 - Leather, Cattlehide, Deerskin and Horsehide, Chrome Tanned
- DDD-L-20 - Label: For Clothing, Equipage, and Tentage, (General Use)
- PPP-B-636 - Boxes, Shipping, Fiberboard

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- MIL-B-371 - Braid, Textile, Tubular
- MIL-W-530 - Webbing, Textile, Cotton, General Purpose, Natural or in Colors
- MIL-B-543 - Buckles, Tongueless and Web Strap
- MIL-T-3530 - Thread and Twine; Mildew Resistant or Water Repellent Treated
- MIL-L-35078 - Loads, Unit: Preparation of Semiperishable Subsistence Items; Clothing, Personal Equipment and Equipage; General Specification For
- MIL-B-41826 - Batting, Synthetic Fibers: Polyester, (Unquilted and Quilted)
- MIL-C-43191 - Cloth, Wind Resistant Sateen, Cotton and Nylon
- MIL-T-43548 - Thread, Polyester Core; Cotton-, Rayon-, or Polyester-Covered
- MIL-T-43566 - Tape, Textile, Cotton, General Purpose, Natural or in Colors
- MIL-C-43637 - Cloth, Plain Weave, Ripstop, Nylon, for Liners

STANDARDS

FEDERAL

- FED-STD-311 - Leather, Methods of Sampling and Testing
- FED-STD-751 - Stitches, Seams, and Stitchings

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- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-147 - Palletized Unit Loads
- MIL-STD-731 - Quality of Wood Members for Containers and Pallets

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(Copies of documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

- * 2.2 Other publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted shall be those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issues of the nongovernment documents which are current on the date of the solicitation.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 3951 - Standard Practice for Commercial Packaging

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(Technical society and technical association documents are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

- * 2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document shall take precedence. Nothing in this document, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Guide sample. Guide samples are furnished solely for guidance and information to the contractor (see 6.4). Variations from this document may appear in the sample, in which case this document shall govern.

- * 3.2 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.3, 6.2, and 6.3).

3.3 Material. (See 6.5).

3.3.1 Leather. The leather used in the mitten shells shall be full grain, soft, flexible deerskin leather conforming to type VI of KK-L-2004.

3.3.1.1 Thickness. The thickness of the leather for the palm shall be not less than 2 1/2 ounces nor more than 4 ounces. For all other parts, the thickness shall be not less than 2 1/2 ounces nor more than 3 1/2 ounces (one ounce equals 1/64 inch). The thickness shall be measured as specified in 4.4.3.

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3.3.1.2 Color. The color of the leather shall be Saddle Brown 214 (see 6.4), and the fastness to crocking shall be equal to or better than the standard sample. When no standard sample is available, the color fastness to crocking shall conform to the requirements of type VI of KK-L-2004.

3.3.1.3 Welt strap and thumb welting. The welt strap for covering the fourchette stitching shall be one piece of deerskin 5/8 inch wide (see table II, operation 9 for length). The leather thumb welt for reinforcing the edge of the thumb shall be $6/32 \pm 1/32$ inch wide. The length of the thumb welt shall be governed by the seam (see table II, operation 7). A pieced thumb welt will be permitted, providing the ends of the pieces are properly skived to permit a 3/16-inch minimum overlap. The skived ends of the pieces shall be securely bonded together with adhesive. Not more than one piecing in each thumb welt will be permitted. The color of the welt strap and thumb welting shall match the color of the palm leather.

3.3.2 Textiles.

* 3.3.2.1 Cloth, wind-resistant sateen, cotton and nylon. The fabric for the back of hand, back of trigger finger, and all of gauntlet shall be dyed Olive Green 107 and shall conform to class 2 of MIL-C-43191.

3.3.2.2 Tape, cotton. The tape for the wrist strap and the gauntlet loop shall conform to type I, class 3, 5/8-inch width of MIL-T-43566. The color of the tape shall be Olive Drab 7 (see 6.4).

3.3.2.3 Webbing, cotton. The webbing for the gauntlet stay shall conform to type III, class 3, 1-inch width of MIL-W-530. The color of the webbing shall be Olive Drab 7 (see 6.4).

3.3.2.4 Webbing, cotton, elastic. The elastic webbing shall conform to type II, class 2, 3/8 inch, unbleached, of JJ-W-155.

3.3.2.5 Suspension cord. The braid for the suspension cord shall be cotton, tubular, solid, 1/8 inch, Olive Green 107 (see 6.4) and shall conform to type IV, class 1 of MIL-B-371. The finished length of each cord shall be 77 inches \pm 1 inch. The ends of each cord shall be impregnated with cellulose acetate or cellulose acetate butyrate.

3.3.3 Thread. The thread shall be in accordance with 3.3.3.1 through 3.3.3.4, as applicable. All thread shall be dyed to match shade S-1, Cable No. 66022, and shall show fastness to light, laundering, and perspiration equal to or better than the standard sample (see 6.4). When no standard sample is available, the thread shall show good fastness to light, laundering, and perspiration when tested as specified in the applicable document.

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- * 3.3.3.1 Thread for all operations except overedge stitching. The thread for all operations except for overedge stitching of quilted material shall be polyester thread conforming to type I, class 1, subclass B, size E of V-T-285; nylon thread conforming to type I, class B, size E of V-T-295, or nylon thread conforming to type II, with an approved class B nonwicking finish, size E of V-T-295. There shall be no lubrication of size E thread by any means prior to or during sewing (see 4.4.1.1).
- * 3.3.3.2 Thread for overedge stitching. The thread for overedge stitching of quilted material shall be polyester thread conforming to type I, class 1, subclass A, size A of V-T-285.
- * 3.3.3.3 Alternate thread for shirring. Cotton thread conforming to type IA3, ticket No. 30, 3 ply, or ticket No. 20, 4 ply, of V-T-276 may be used for shirring operations.
- * 3.3.3.4 Alternate thread for bartacking. Polyester, cotton, or rayon covered thread conforming to ticket No. 30, 2 or 3 ply of MIL-T-43548 and treated in accordance with type II, class 3 of MIL-T-3530 may be used for bartacking.
- * 3.3.4 Batting, polyester (quilted). The material for lining the back of hand, trigger finger, and thumb shall be a quilted polyester batting conforming to type VIII, class 8, cover A, style a of MIL-B-41826. As an alternative, one side of the quilted batting may be covered with nylon ripstop cloth conforming to class 2 (natural) of MIL-C-43637.
- 3.3.5 Buckle. The buckle shall be a double bar, tongueless, lip type, conforming to type II, style 3, class 1, 5/8 inch size of MIL-B-543.
- 3.4 Design. The mitten shall be a slip-on style with trigger finger. The gauntlet shall have an elastic webbing and a tape loop at the cuff opening. There shall be an adjustable wrist strap on the back of the mitten shell. The back of thumb, back of hand, and trigger finger down to beginning of gauntlet shall be lined with a quilted polyester batting. (See figure 1.)
- 3.5 Patterns. Standard patterns will be furnished by the Government. The standard patterns shall not be altered in any way and are to be used as a guide for making the contractor's working patterns or dies. The working patterns or dies shall be identical to the standard patterns. The pattern parts and materials for the pattern parts shall be as specified in table I.

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TABLE I. List of pattern parts for mitten shell

Material	Nomenclature of parts	Cut parts per mitten
Leather, deerskin	Palm, face of trigger-finger, and face of thumb	1
	Back of thumb	1
	Finger fourchette	1
Cloth, cotton and nylon, sateen	Back of mitten shell and gauntlet	1
	Front of gauntlet	1
Batting, polyester, quilted	Back of thumb	1
	Back of mitten shell and trigger finger to beginning of gauntlet	1

3.6 Labels.

3.6.1 Identification and size label. Each mitten shell shall have a combination identification and size label conforming to type VI, class 4 of DDD-L-20 and shall have fastness to laundering as stated therein.

* 3.6.2 Instruction label. Each right-hand mitten shell shall have an instruction label conforming to type VI, class 3 of DDD-L-20 and shall have fastness to laundering as indicated therein. The label shall measure approximately 3 1/2 by 4 1/2 inches. Information for the instruction label shall be as follows:

WEARING INSTRUCTIONS

Wear over mitten-inserts, trigger finger, Olive Green 208.

Mittens are warmer than gloves.

Keep forefinger in trigger finger only when actually needed.

Put thumb in with rest of hand if cold.

Keep your fingers together to keep them warm.

To keep hands warm, mittens must be -

Clean: Dirt, especially grease, makes them cold.

Dry: Take out woolen inserts before hands begin to sweat.

Wear shells without inserts in moderately cold weather.

Do not dry near extreme heat or open flame.

Dry them carefully every night.

Keep mittens attached to suspension cord to prevent loss.

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3.7 Construction.

3.7.1 Stitches, seams, and stitching. Stitch, seam, and stitching types specified in table II shall conform to FED-STD-751. The minimum and maximum number of stitches per inch shall be as specified in table II. Thread tension shall be maintained so that there will be no loose stitching resulting in a loose bobbin or top thread or no excessively tight stitching resulting in puckering of the materials sewn. The lock shall be embedded in the material sewn. Ends of all seams and stitchings, when not caught in other seams and stitching, shall be backtacked not less than 1/2 inch. The use of sewing machines with trimmer attachments is prohibited except for overedging operations.

3.7.1.1 Repairs of type 301 stitching. Repairs of type 301 stitching shall be as follows:

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

b. Thread breaks or two or more consecutive skipped or run-off stitches noted during inspection of the item (in-process or end item) shall be repaired by overstitching. The stitching shall start a minimum of 1/2 inch back of the defective area, continue over the defective area, and continue a minimum of 1/2 inch beyond the defective area onto the existing stitching. Loose or tight stitching shall be repaired by removing the defective stitching without damaging the material and restitching in the specified manner. When making these repairs, it is not essential that the ends of stitching be backstitched.

3.7.1.2 Repair of types 501, 502, and 503 stitching. All repairs shall be in accordance with 3.7.1.1, except substitute 3/4 inch for 1/2 inch wherever 1/2 inch appears.

3.8 Construction. The mitten shells shall be made by and with the use of all operations listed in table II. The contractor is not required to follow the exact sequence of operations as listed. A plus tolerance of a measurement in one component and a minus tolerance in a corresponding measurement of another component shall not be used if it prevents proper fitting of the components.

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TABLE II. Manufacturing operation requirements

No.	Manufacturing operation requirements	Stitch type	Seam and stitching type	Stitches per inch	Thread Bobbin or Needle looper
1.	<u>Preparation before cutting</u>				
	Before cutting, the leather shall be dampened and properly worked with all the stretch pulled out in the length direction (butt to head direction).				
2.	<u>Cutting</u>				
	a. All leather components shall be cut with their length direction (cuff to fingertip direction) in the length direction (butt to head direction) of the leather.				
	b. All components cut from the cloth (cotton and nylon sateen) shall be cut with their length direction in the direction of the warp.				
	c. All components cut from the quilted batting for the lining shall be cut with their length direction in the direction of the warp.				
	d. All tape components shall be cut from 5/8-inch width tape. The tape and webbing components shall not be pieced.				

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TABLE II. Manufacturing operation requirements - Continued

No.	Manufacturing operation requirements	Stitch type	Seam and stitching type	Stitches per inch	Thread	
					Bobbin or	Needle looper
* 3.	<u>Lining (quilted batting)</u> All the edges of the quilted batting lining components shall be overedged prior to placement in the mitten shell. Both sides of the cloth used to cover the batting must be caught in this operation (see 6.6).	502 or 503	EFd-1	8-14	A	A
* 4.	<u>Join back of leather thumb to back of thumb lining</u> Place flesh side of leather thumb back on thumb lining and stitch together 1/8 to 3/16 inch from edge around both sides and tip of thumb. The lining shall finish 1/8 to 1/4 inch from base of leather thumb and shall not be stitched across base (see operation 11).	301	SSa-1	6-8	E	E

NOTE: When quilted batting with the natural rip-stop nylon cloth on one side is used for the thumb lining, the side of the batting with the natural rip-stop cloth shall be facing toward the flesh side of the leather, so that the natural rip-stop cloth is concealed when the two pieces are stitched together.

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TABLE II. Manufacturing operation requirements - Continued

No.	Manufacturing operation requirements	Stitch type	Seam and stitching type	Stitches per inch	Thread Bobbin or Needle looper
*	<u>Join back of mitten shell to back lining</u> Place top edge of lining on back of mitten shell as indicated by the notches on the pattern and stitch together all around 1/8 to 3/16 inch from the edge.	301	SSa-1	6-8	E E E

NOTE: When quilted batting with the natural rip-stop nylon cloth on one side is used for the back lining, the side of the batting with the natural rip-stop cloth shall be facing toward the mitten shell so that the natural rip-stop cloth is concealed when the two pieces are stitched together.

6. Wrist strap.

The wrist strap shall consist of a 5/8-inch cotton tape adjusting strap with pull tab and a buckle strap.

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TABLE II. Manufacturing operation requirements - Continued

No.	Manufacturing operation requirements	Stitch type	Seam and stitching type	Stitches per inch	Thread	
					Bobbin or Needle looper	
6.	Wrist strap - Continued					
*	a. Adjusting strap: Thread end of adjusting strap through buckle as shown in figure 1. Fold end of strap under 2 inches \pm 1/16 inch to form the pull and turn under the raw edge of strap 1/4 \pm 1/16 inch and boxstitch, automatic line tack, or bartack 7/16 to 1/2 inch in length (see figure 1). The hemmed end of strap shall extend not less than 1 inch nor more than 1 1/2 inches beyond the point of the buckle when finished mitten shell is opened out to its full width.	301 (box) stitched) or 301 (line tacked) or bartack	EFb-1 (modified)	6-8 28 per line tack/bartack tack	E E or 30,2 or 3 ply	E E or 30,2 or 3 ply
*	b. Buckle strap: The finished buckle strap shall consist of a double piece of 5/8-inch cotton tape. Thread tape through and around other bar of buckle (see figure 1). The finished buckle strap shall measure not less than 1 inch nor more than 1 1/4 inches long when sewn into mitten.					
*	c. Release tab: Thread tape release tab around the lip end of buckle, turn raw edge under 1/4 \pm 1/16 inch and stitch down with a 1/2 inch bartack centered between edges of strap. The bartack shall be placed perpendicular to the length of strap. The finished tab shall measure 1 \pm 1/8 inch.	Bartack	SS1-1	28 per bartack	30-3	30-3

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TABLE II. Manufacturing operation requirements - Continued

No.	Manufacturing operation requirements	Stitch type	Seam and stitching type	Stitches per inch	Thread	
					Bobbin or	Needle looper
6.	<u>Wrist strap - Continued</u> d. The end of the adjusting strap and the ends of the buckle strap shall be seamed to the back of the mitten, as indicated by notches on the pattern, with $1/4 \pm 1/16$ inch gage (see figure 1).	301	SSa-1	6-8	E	E
7.	<u>Join thumb piece to palm</u> The thumb piece shall be inseam sewn to the palm with an inserted welting with $1/16$ to $3/16$ inch gage. The ends of the thumb welting shall extend to within $1/2$ inch of base of thumb and within $1/4$ inch of the thumb side seam as indicated by notches on the pattern.	301	SSJ-1	6-8	E	E
8.	<u>Join fourchette to palm</u> Join fourchette to palm with a lapped seam not less than $3/16$ nor more than $1/4$ inch wide. The leather palm shall be over the leather fourchette. Stitch $1/16$ to $3/16$ inch from edges.	301	LSa-1	6-8	E	E

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TABLE II. Manufacturing operation requirements - Continued

No.	Manufacturing operation requirements	Stitch type	Seam and stitching type	Stitches per inch	Thread	
					Bobbin or	Needle looper
* 9.	<u>Protective welt strap</u> The protective 5/8-inch welt strap shall be positioned flesh to grain over the entire length of the fourchette seam and stitched 1/16 to 1/8 inch from edge on each side.	301	SSau-2 (modified)	6-8	E	E
10.	<u>Make gauntlet</u> The front of gauntlet shall be reinforced with a gauntlet stay (1 inch width webbing), 6 3/4 inches \pm 1/4 inch long. The stay shall be centered on the inside of the front gauntlet with the length dimension parallel to the length of the mitten. The stay shall be sewn to the front gauntlet piece with a row of stitching along each edge of the stay, 1/16 to 1/8 inch from edge on each side. The webbing shall extend the entire length of the finished gauntlet. One end shall be caught in the two rows of stitching joining leather palm to gauntlet and the other end caught in the gauntlet cuff hem stitching.	301	SSau-2	6-8	E	E

TABLE II. Manufacturing operation requirements - Continued

No.	Manufacturing operation requirements	Stitch type	Seam and stitching type	Stitches per inch	Thread	
					Bobbin or	Needle looper
11.	<u>Join front gauntlet piece to palm</u> Top of leather palm and base of thumb lining shall be lapped over front gauntlet piece and double stitched to gauntlet, 3/16 to 1/4 inch gage.	301	LSa-2	6-8	E	E
12.	<u>Shirring of palm</u> Before closing, the palm shall be shirred by stitching between the notches as shown on the pattern. Sufficient thread tension shall be used so that the palm will be gathered to the same length as the back between notches.	501	EFD-1	6-8	E	E polyester, or 30, 3 ply or 20, 4 ply cotton
13.	<u>Shirring of back</u> Before closing, the back of the mitten shell shall be shirred by stitching between the notches as shown on the pattern. Sufficient thread tension shall be used so that the back of the mitten shell will be gathered to the same length as the palm between notches at mitten shell fingertips and top edge of gauntlet.	501	EFD-1	6-8	E	E polyester, or 30, 3 ply or 20, 4 ply cotton

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TABLE II. Manufacturing operation requirements - Continued

No.	Manufacturing operation requirements	Stitch type	Seam and stitching type	Stitches per inch	Thread		
					Bobbin or	Needle looper	
14.	<u>Closing mitten shell</u>						
	a. The mitten shell shall be inseam closed $1/4 \pm 1/16$ inch margin with inseaming. Care shall be taken to avoid distortion of thumb and trigger finger. The buckle strap and adjusting strap shall be caught in the seaming.	301	SSa-1	6-8	E	E	
	b. Edges of gauntlet pieces shall be inseamed, turned and stitched $1/16 (+1/32 \text{ and } -0)$ inch from edge. This seam shall end $1 \ 1/8$ inches ($\pm 1/8$ inch) from top of finished cuff of gauntlet.	301	SSe-2	6-8	E	E	
15.	<u>Hem gauntlet and attach suspension cord loop</u>						
	a. Overlap ends of elastic webbing a minimum of $3/8$ inch and tack ends together. The elastic webbing shall be sewn in a manner to comply with the dimensions specified in table III for measurements F and G. As an option, the ends may be bartacked with a $1/2 \pm 1/16$ inch bartack.	301 or bartack	LSa-2	6-8 or 28 per bartack	E or 30, 2 or 3 ply	E or 30, 2 or 3 ply	E or 30, 2 or 3 ply

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TABLE II. Manufacturing operation requirements - Continued

No.	Manufacturing operation requirements	Stitch type	Seam and stitching type	Stitches per inch	Thread	
					Bobbin or Needle looper	
15.	<u>Hem gauntlet and attach suspension cord loop - Continued</u>					
	b. The raw edge of the gauntlet shall be turned in $3/16 \pm 1/16$ inch and turned over the elastic webbing and the gauntlet stay webbing to form a $13/16 \pm 1/8$ inch hem. The ends of the folded tape loop shall be inserted $3/8 \pm 1/16$ inch into the hem, positioned as shown in figure 1. The hem shall be stitched $1/16 (+1/16 \text{ and } -0)$ inch margin from edge of hem.	301	EFb-1	6-8	E	E
	c. The elastic webbing shall not be caught in the stitching.		-			E or 30, 2 or 3 ply
	d. The tape loop shall be turned up and the two thicknesses of tape tacked through the top edge of the gauntlet with two rows of stitching $1/16$ inch gage extending $3/8$ to $1/2$ inch beyond each side edge of the looped tape. The finished loop shall measure not less than $1 \ 3/8$ inches nor more than $1 \ 5/8$ inches. As an option, the tape loop may be bartacked with a $1/2 \pm 1/16$ inch bartack, $1/8$ to $1/4$ inch below the top edge of the gauntlet.	301 or bartack		6-8 or 28 per bartack	E or 30, 2 or 3 ply	E or 30, 2 or 3 ply

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TABLE II. Manufacturing operation requirements - Continued

No.	Manufacturing operation requirements	Stitch type	Seam and stitching type	Stitches per inch	Thread	
					Bobbin or	Needle looper
16.	<u>Attach labels</u> a. The identification and size label shall be caught in the hem finishing seam at inside back of gauntlet adjacent to the tape loop. b. Sew instruction label in right-hand mitten shell, centered inside back of gauntlet about 1 1/4 inches from top of shell. Stitch all four sides of label not less than 1/8 inch from the edges of the label.	301	SSa-1	6-8	E	E
17.	<u>Forming</u> The mitten shell shall be properly formed on heated boards (forms) of correct size.					
18.	<u>Pairing and cleaning</u> The mitten shells shall be matched and paired. Each pair shall be secured together with the suspension cord. One end of the cord shall be tied to the tape loop on one mitten shell and the other end tied to the tape loop on the other mitten shell. The cord shall be wrapped around each pair of mitten shells. Thread ends shall be trimmed to 3/16 inch maximum length and all spots, stains, and loose threads removed.					

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3.9 Measurements. The finished dimensions shall conform to the measurements shown in table III.

TABLE III. Finished measurements

Point of measurement (see fig. 1)	Dimensions (inches)		Tolerance (inches), plus or minus
	Medium	Large	
A	9 3/4	10 1/4	1/4
B	6 1/4	6 1/4	1/4
C	5 3/4	6	1/4
D	3	3 1/8	3/16
E	2	2 1/8	1/8
F	6	6 1/2	3/8
G ^{1/}	9	9 1/2	3/8
H	5 1/2	6	1/4
J	2 3/4	3	3/16
K	1 3/4	2	1/8

^{1/} Measurement G shall be taken when the top of the gauntlet is stretched manually to its maximum limit.

3.10 Replacement of defective components. During the manufacturing process, components having material defects or damages that are classified as defects in 4.4.2 and 4.4.3 shall be removed from production and replaced with nondefective and properly matched components.

3.11 Workmanship. The finished mitten shells shall conform to the quality of product established by this document, and the occurrence of defects shall not exceed the applicable acceptable quality levels.

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4. QUALITY ASSURANCE PROVISIONS

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 purchase order, the contractor may use his own or any other facilities suitable for the 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 this document where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

* 4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this document shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirement in the document shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

* 4.1.2 Responsibility for dimensional requirements. Unless otherwise specified in the contract or purchase order, the contractor is responsible for assuring that all specified dimensions have been met. When dimensions cannot be examined on the end item, inspection shall be made at any point or at all points in the manufacturing process necessary to assure compliance with all dimensional requirements.

* 4.1.3 Certificates of compliance. When certificates of compliance are submitted, the Government reserves the right to inspect such items to determine the validity of the certification.

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

- a. First article inspection (see 4.3).
- b. Quality conformance inspection (see 4.4).

* 4.3 First article inspection. When a first article is required (see 6.2), it shall be examined for the defects specified in 4.4.2 and 4.4.3. The presence of any defect shall be cause for rejection of the first article.

4.4 Quality conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with MIL-STD-105.

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4.4.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced documents unless otherwise excluded, amended, modified, or qualified in this document or applicable purchase document.

4.4.1.1 Certification. The contractor shall furnish a certificate of compliance indicating the requirement specified in 3.3.3.1 prohibiting lubrication of size E thread was adhered to and that the ends of the suspension cords were impregnated with cellulose acetate or cellulose acetate butyrate as required by 3.3.2.5.

4.4.2 End item visual examination. The end item shall be examined for the defects listed in table IV. The lot size shall be expressed in units of mitten shells. The sample unit shall be one completely fabricated mitten shell and the selection shall be by pairs. Each defect for pairing shall be scored as a single defect. The inspection level shall be II and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 for major defects and 6.5 for total (major and minor combined) defects.

TABLE IV. End item visual defects

Examine	Defect	Classification	
		Major	Minor
Pairing	Not properly mated (i.e., not right and left of same size)	X	
	Wide variation in color or appearance within the pair		X
	Not secured together with suspension cord		X
	Cord missing	X	
Color and finish	Any component, except thread, not specified color or finish	X	
	Thread not specified color		X
	Color of like materials not uniform		X
Cleanness	Any spot, stain, or foreign matter clearly noticeable		X

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TABLE IV. End item visual defects - Continued

Examine	Defect	Classification	
		<u>Major</u>	<u>Minor</u>
Material			
Leather	Not full grain deerskin	X	
	Not soft and flexible	X	
	Hard or bony leather	X	
	Flanky or spongy seriously affecting serviceability	X	
	Flanky or spongy affecting serviceability but not seriously		X
	Flesh side not smooth or contains loose flesh in excess of one square inch in total area		X
	Cut, brand, or scar:		
	- seriously affecting serviceability	X	
	- affecting serviceability but not seriously		X
	Any through hole or open scratch	X	
	Deep wrinkle, seriously affecting serviceability	X	
	Wrinkle affecting serviceability but not seriously		X
	Grain damage:		
	- penetrating deeply into leather fiber	X	
	- not penetrating deeply into leather fiber		X
	Finish applied to grain surface	X	
Fabric: batting, tape, and webbing	Not type specified	X	
	Any hole, cut, or tear	X	
	Multiple of floats, smash, slub, or other form of misweave		X
Batting (quilted, polyester)	Broken, missing, or skipped stitching on batting for 1 inch or more		X

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TABLE IV. End item visual defects - Continued

Examine	Defect	Classification	
		Major	Minor
Construction and workmanship: general (applicable to all components unless otherwise indicated herein)	Any operation omitted	X	
	Any component missing, misplaced, or not securely affixed	X	
	Any mend or patch (not applicable to restricted seam repair)	X	
	Any workmanship damage (e.g., scissors or knife cut)	X	
Seams and stitching	Open seam: - on a single stitched seam or on both rows of a double stitched seam	X	
	- on one row of a double stitched seam		X
NOTE:	A seam shall be considered open when one or more stitches are broken or two or more consecutive skipped or run-off stitches occur.		
	Repair of seam not as specified		X
	Needle chews	X	
	Not specified seam type	X	
	Not specified stitch type	X	
	Any row of stitching omitted	X	
	Loose stitch tension resulting in a loosely secured seam	X	
	Tight stitch tension resulting in cutting of leather or breaking of stitches when normal pull is applied	X	
	Ends of stitching not backtacked as specified when not caught in another row of stitching		X

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TABLE IV. End item visual defects - Continued

Examine	Defect	Classification	
		<u>Major</u>	<u>Minor</u>
Seams and stitching - continued	Gage or margin of stitching irregular or not as specified:		
	- seriously affecting serviceability	X	
	- affecting serviceability but not seriously		X
	Any part caught in unrelated row of stitching	X	
	One or two stitches per inch less than specified		X
	Three or more stitches per inch less than specified	X	
	More than the specified maximum number of stitches per inch:		
- resulting in damage to assembly	X		
- not damaging assembly		X	
Hardware (buckle)	Broken, damaged, or malformed	X	
	Any sharp burr or metal sliver		X
	Any part missing, will not function as intended, reversed on assembly, or not properly set to a degree where it may become detached from assembly	X	
	Any part not properly set or attached but will adequately be retained on assembly and will function as intended		X
Assembly detail	Mitten not neatly laid off		X
	Thumb welt strip more than two pieces		X
	Poorly assembled: seriously affecting serviceability (e.g., thumb or trigger finger distorted or twisted causing discomfort to wearer)	X	

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TABLE IV. End item visual defects - Continued

Examine	Defect	Classification	
		<u>Major</u>	<u>Minor</u>
Assembly detail - continued	Affecting serviceability but not seriously (e.g., buckle and adjusting straps not in proper alignment causing malformation when strap is tightened)		X
	Ends of suspension cord not impregnated		X
	Thread ends not trimmed as specified		X
	Not properly trimmed or finished (e.g., lump or bulk in trigger finger inseam)	X	
	Natural color rip-stop cloth (when used on one side of batting) not concealed as specified	X	
Labels	Missing, incomplete, incorrect, not legible, not specified type or size, not in proper location, or not accomplished in the specified manner		X

4.4.3 End item dimensional examination. The end item shall be examined for the dimensions specified in table III and the thickness requirements of 3.3.1.1. Any dimension that is not within the established tolerance shall be classified as a defect. The palm, face of thumb, and face of trigger finger shall be checked for thickness of leather. Any of these parts that are not within the required thickness range shall constitute a defect. Thickness shall be determined in accordance with Method 1011 of FED-STD-311, except that two determinations shall be made on the face of thumb and two on the face of the trigger finger. The lot shall be expressed in units of mitten shells. The sample unit shall be one completely fabricated mitten shell and the selection shall be by pairs. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0.

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4.4.4 Packaging examination. The fully packaged end items shall be examined for the defects listed below. The lot size shall be expressed in units of shipping containers. The sample unit shall be one shipping container fully packaged. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 2.5.

<u>Examine</u>	<u>Defect</u>
Marking (exterior and interior)	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application
Materials	Any component missing, damaged, or not as specified
Workmanship	Inadequate application of components, such as incomplete sealing or closure of flap, improper taping, loose strapping, or inadequate stapling Bulged or distorted container
Content	Number per container is more or less than required

* 4.4.5 Palletization examination. The fully packaged and palletized end items shall be examined for the defects listed below. The lot size shall be expressed in units of palletized unit loads. The sample unit shall be one palletized unit load, fully packaged. The inspection level shall be S-1 and the AQL, expressed in terms of defects per hundred units, shall be 6.5.

<u>Examine</u>	<u>Defect</u>
Finished dimensions	Length, width, or height exceeds specified maximum requirement
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

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5. PACKAGING

5.1 Preservation. Preservation shall be level A or Commercial, as specified (see 6.2).

5.1.1 Level A. Five pairs of mitten shells of one size only shall be neatly stacked alternated end for end to form a unit pack. Each unit pack shall be secured with cotton tape or twine.

5.1.2 Commercial. Mitten shells shall be preserved in accordance with ASTM D 3951.

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

5.2.1 Level A packing. Sixty pairs of mitten shells of one size only, preserved as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC-L, grade V2s of PPP-B-636. The inside of each shipping container shall be fitted with a box liner conforming to type CF, class weather-resistant, variety DW, grade V15c of PPP-B-636. Level A unit packs shall be placed flat, four in length, one in width, and three in depth within a shipping container. Inside dimensions of the shipping container shall be approximately 23 1/2 inches in length, 15 inches in width, and 15 inches in depth. Approximate dimensions are furnished as a guide only. Each container shall have the contents completely covered on the top and bottom with a sheet of 30-pound minimum basis weight kraft paper conforming to A-A-203. Each shipping container shall be closed in accordance with method III, waterproofed in accordance with method V, and reinforced as specified in the appendix of PPP-B-636, except that inspection shall be in accordance with 4.4.4. 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. Shipping containers shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class specified (see 6.2). Strapping shall be limited to nonmetallic strapping, except for type II, class F loads.

5.2.2 Level B packing. Sixty pairs of mitten shells of one size only, preserved as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC-L, type CF (variety SW) or SF, class domestic, grade 275 of PPP-B-636. The inside of each shipping container shall be fitted with a box liner conforming to type CF, class domestic, variety DW, grade 275 of PPP-B-636. Level A unit packs shall be placed flat, four in length, one in width, and three in depth within a shipping container. Inside dimensions of the shipping container shall be approximately 23 1/2 inches in length, 15 inches in width, and 15 inches in depth. Approximate dimensions are furnished as a guide only. Each container shall have the contents

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completely covered on the top and bottom with a sheet of 30-pound minimum basis weight kraft paper conforming to A-A-203. Each shipping container shall be closed in accordance with method II as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.4. 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.

5.2.2.1 Weather-resistant fiberboard containers. When specified (see 6.2), the shipping container shall be a grade V3c, V3s, or V4s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with method III as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.4.

* 5.2.3 Commercial packing. Mitten shells, preserved as specified in 5.1, shall be packed in accordance with ASTM D 3951.

* 5.3 Palletization. When specified (see 6.2), mitten shells, packed as specified in 5.2.2 and 5.2.3, shall be palletized on a 4-way entry pallet in accordance with load type Ia of MIL-STD-147. Pallet type shall be type I (4-way entry), type IV or type V in accordance with MIL-STD-147. Pallets shall be fabricated from wood groups I, II, III, or IV of MIL-STD-731. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means K and L or film bonding means O or P. Pallet pattern shall be number 3 in accordance with appendix of MIL-STD-147. Interlocking of loads shall be effected by reversing the pattern of each course.

* 5.4 Marking. In addition to any special marking required by the contract or purchase order, unit packs, shipping containers, and palletized unit loads shall be marked in accordance with MIL-STD-129 or ASTM D 3951, as applicable. Each unit pack shall have attached a manila colored paper shipping tag for the identification marking.

* 5.4.1 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 NSN's" plainly stamped or printed thereon and under these words shall be legibly stamped or printed the correct quantity and NSN's contained therein.

6. NOTES

6.1 Intended use. The mitten shells are intended for use, with or without Mitten Inserts, Trigger Finger by military personnel of the Department of Defense.

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- 6.2 Ordering data. Acquisition documents should specify the following:
- a. Title, number, and date of this document.
 - b. Size required (see 1.2).
 - c. When a first article is required (see 3.2, 4.3, and 6.3).
 - d. Selection of applicable levels of preservation and packing (see 5.1 and 5.2).
 - e. Type and class of unit load required (see 5.2.1).
 - f. When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).
 - g. When palletization is required (see 5.3).

6.3 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of FAR 52.209. The first article should be a preproduction sample. The contracting officer should specify the appropriate type of first article and the number of units to be furnished. The contracting officer should include specific instructions in all acquisition instruments regarding arrangements for selection, inspection, and approval of the first article.

6.4 Sample. For access to samples, address the contracting activity issuing the invitation for bids.

6.5 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of this document (see 3.3).

6.6 Overedging. To avoid damaging of the quilted polyester batting in overedging, it is suggested that round needles be used.

6.7 Subject term (key word) listing.

Mitten, shells
Mitten, trigger finger

6.8 Changes from previous issue. The margins of this document 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, as written, irrespective of the marginal notations and relationship to the last previous issue.

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Navy - NU
Air Force - 99

Preparing activity:

Army - GL
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Review activities:

Army - MD
Air Force - 82
DLA - CT

User activities:

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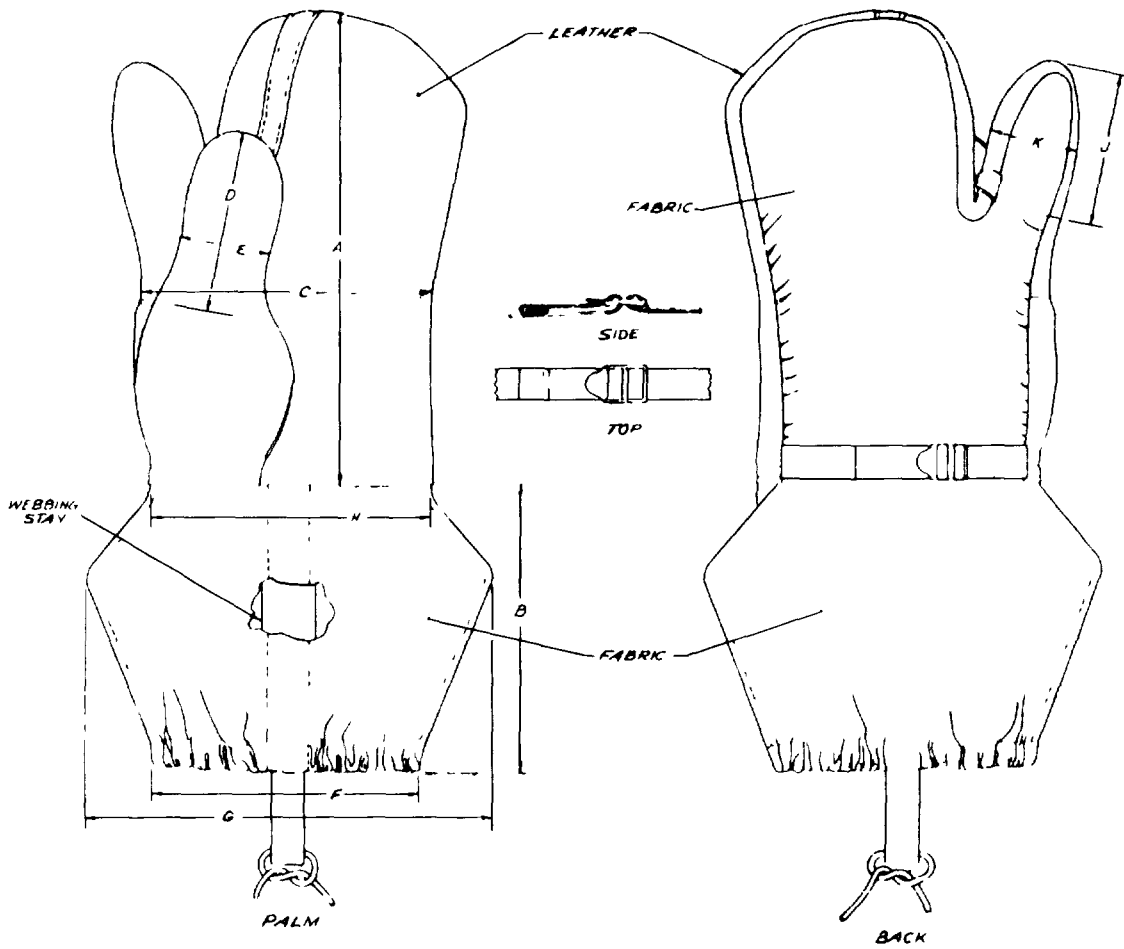


Figure 1. Mitten Shells, Cold Weather (Trigger Finger), M-1965

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