INCH-POUND
MIL-DTL-32237
Dated 06 Feb 2007
SUPERSEDING
CR/PD 06-10
19 June 2006

DETAIL SPECIFICATION

BOOT, COMBAT, HOT WEATHER ARMY

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

1. SCOPE

1.1 Scope. This specification covers the requirements for a Desert Sand-colored Hot Weather Combat Boot for use in both hot weather wet and dry environments.

1.2 Classification. This specification covers the following sizes and widths see 6.2.

Size:	2 through 15 (whole and half sizes), 16 (whole size only)	
Widths:	Narrow	(B)
	Regular	(D)
	Wide	(EE)
	X-Wide	(EEEE)

Comments, suggestions, or questions on this document should be addressed to: Defense Supply Center Philadelphia, Clothing and Textiles Directorate, Attn: DSCP Standardization Team, 700 Robbins Ave., Philadelphia, PA 1911-5096. Since contact information can change, you may want to verify the currency of the address information using Acquisition Streamlining and Standardization Information System (ASSIST) online database http://assist.daps.dla.mil.

AMSC/NA FSC 8430

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 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, 4, or 5 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 (see 6.2).

FEDERAL SPECIFICATIONS

V-T-295 - Thread, Nylon

COMMERCIAL ITEM DESCRIPTIONS

A-A-52071 - Tape, Textile, Cotton, General Purpose
A-A-55093 - Laces, Nylon
A-A-55296 - Cloth, Twill, Cotton, 10.0 Ounces (339g)

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-C-41814 - Counter, Footwear
MIL-DTL-43734 - Cloth, Duck, Textured Nylon
MIL-DTL-32075 - Label: For Clothing, Equipage, and Tentage, (General Use)
MIL-PRF-3122 - Leather, Cattlehide, for Footwear Uppers, Gusset, Chrome Tanned, Fatliquored
MIL-PRF-5038 - Tape, Textile and Webbing, Textile, Reinforcing, Nylon
MIL-W-17337 - Webbing, Textile, Woven Nylon

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

2.2.2 Other Government documents, 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 shall be those cited in the solicitation or contract.

DRAWINGS

U.S. ARMY RESEARCH, DEVELOPMENT, AND ENGINEERING COMMAND

2-1-1635 - Speed Lace Assembly

(Copies of drawings are available through http://warfighter.dla.mil under tab "Vendor Info" then "Specifications/Pattern Request".)

FEDERAL ACQUISITION REGULATIONS (FAR)

52.209-4 – First Article Approval – Government Testing

(Copies are available online at http://acquisition.gov/far/index.html or by contacting the Superintendent of Documents at 202-512-1800.)

FEDERAL TRADE COMMISSION

Rules and Regulations Under the Textile Fiber Products Identification Act

(Copies are available online at www.ftc.gov or from the Federal Trade Commission, 600 Pennsylvania Avenue, N.W., Washington, DC 20580-0001.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents are those cited in the solicitation or contract (see 6.2).

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

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

(Copies are available on line at www.aatcc.org or from the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709-2215.)

AMERICAN SOCIETY FOR QUALITY

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

(Copies are available online at http://www.asq.org or from the American Society for Quality, 600 North Plankinton Avenue, Milwaukee, WI 53203.)

ASTM INTERNATIONAL

ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers -Tension
ASTM D 471 - Standard Test Method for Rubber Property-Effect of Liquids
ASTM D 624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
ASTM D 792 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
ASTM D 816 - Standard Test Methods for Rubber Cements
ASTM D 1052 - Standard Test Method for Measuring Rubber Deterioration-Cut Growth Using Ross Flexing Apparatus
ASTM D 1055 - Standard Specifications for Flexible Cellular Materials-Latex Foam
ASTM D 1630 - Standard Test Method for Rubber Property-Abrasion Resistance (Footwear Abrader)
ASTM D 1777 - Standard Test Method for Thickness of Textile Materials
ASTM D 2208 - Standard Test Method for Breaking Srenght of Leather by the Grab Method
ASTM D 2240 - Standard Test Method for Rubber Property-Durometer Hardness
ASTM D 3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
ASTM D 3574 - Standard Test Methods for Flexible Cellular Materials- Slab, Bonded, and Molded Urethane Foams
ASTM D 3575 - Standard Test Methods for Felxible Cellular Material Made from Olefin Polymers.
ASTM D 3767 - Standard Practice for Rubber – Measurement and Dimensions
ASTM D 3787 - Test Method for Bursting Strength of Textiles Constant-Rate-of-Traverse (CRT) Ball Burst Test
ASTM D 3886 - Standard Test Method for Abrasion Resistance of Textile Fabrics (Inflated Diaphragm Method)
ASTM D 4786 - Standard Test Method for Stitch Tear Strength, Single Hole
ASTM D 4966 - Standard Test Method for Abrasion Resistance of Textile Fabrics (Martindale Abrasion Tester Method)

(Copies of documents are available on line at www.astm.org or from the ASTM INTERNATIONAL, 100 Barr Harbor Drive, West Conshohocken, PA 19426-2959.)

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO 4915- Textiles – Stitch Types – Classification and Terminology

(Copies of this document are available online at http://www.iso.org or from International Organization for Standardization (ISO) 1, rue de Varembre, Case Postale 58, CH 1211 Geneva 20, Switzerland.)

SATRA GLOBAL TEST METHODS
FOOTWEAR TEST METHODS

SATRA MTM 2	- Tensile properites of insole materials
SATRA MTM 3	- Flexing index
SATRA MTM 14	- Resistance to scuffing by mild circular abrasion
SATRA MTM 31	- Abrasion resistance - Martindale method - to be used with STM 105/STM604 Inc. Ammendment no. 1 - to be used with new test equipment STM 650
SATRA MTM 33	- Strength perpendicular to needle perforations
SATRA MTM 64	- Compression set - constant stress method
SATRA MTM 80	- Transverse tensile strength of sheet materials
SATRA MTM 83	- Measurement of the area shape retention and collapsing load of formed toes puff and stiffener materials
SATRA MTM 98	- Dimensional stability with changes in atmospheric humidity
SATRA MTM 101	- Surface peel strength of insole materials
SATRA MTM 223	- Floor marking by solings or top pieces
SATRA MTM 404	- Rapid Sole Adhesion Test for Complete Footwear

(Copies of this document are SATRA Technology Center, SATRA House, Rockingham Road, Kettering, Northants, NN 16 9 JH, United Kingdom.)

(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.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

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

3.2 Standard sample. The finished leather shall match a swatch of cattlehide leather for shade and sueded flesh appearance and unless otherwise indicated, shall be equal to or better than the sample with respect to all characteristics for which the standard is referenced.

3.2.1 Visual shade matching (All components). The color and appearance of the components shall match the standard shade and appearance in 3.3 when viewed using AATCC Evaluation Procedure 9, Option A, with sources simulating artificial daylight D75 illuminant with a color temperature of 7500 $\pm$ 200 K, illumination of 100 $\pm$ 20 foot candles and shall be a good match to the standard sample under incandescent lamplight at 2856 $\pm$ 200 K.

3.3 Recycled, recovered, or environmentally preferable materials**.** Recycled recovered or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the requirements of this document and promotes economically advantageous life cycle costs.

3.4 Materials.

3.4.1 Upper Leather. The leather shall be flesh out drum dyed Desert Sand with color penetrating throughout the thickness of the hide. The chrome tannage shall not be visible. The leather for the vamps, inside counter pockets, outside counter pockets and eyelet stays shall conform to MIL-PRF-3122, Type I, Treatment A and B. The leather for the front edge eyelet stays shall conform to MIL-PRF-3122, Type II, Treatment A. The following exceptions to MIL-PRF-3122 shall be applicable for the upper leathers:

a. The flesh surface shall be suede to produce a fine uniform nap.
b. The grain surface shall be lightly buffed to remove the surface of the grain only.
c. The finish requirements for the leather shall not apply.
d. The tear strength requirements for the front edge stays, inside counter pockets and eyelet stays shall not apply.
e. The thickness shall be as specified for the cut parts in Table VIII.
f. As an option, the eyelet stays may conform to MIL-PRF-3122, Type I, Treatment A and Treatment B.

3.4.2 Insoles The insole shall meet the requirements specified in Table I when tested as specified in 4.4.2.

TABLE I. Insole Performance Requirements

Characteristics	**Physical Requirements**
Thickness (all constructions)	0.090 in (min.)
Fungal resistance	Level 10
Wet Tensile	70 kgf/cm^2 min.
Flexing Index	3.7 (5000 cycles) min.
Abrasion Resistance	
Cellulose board	50 mm^3 max.
Non-Woven board	25,600 revs dry/6400 wet (min.)
Transverse Tensile-Dry	8 kgf/cm^2 min.
Dimensional Stability	0.7% max.
Peel Strength	5 kgf/cm^2 min.

3.4.3 Counters. Counters shall conform to the requirements of MIL-C-41814. The counter shall conform to fit the last used and shall fill the counter pocket area. The physical requirement for single hole tear strength shall not apply.

3.4.3.1 Counters (alternate). As an alternate, counters manufactured from leather board need not meet the chemical requirements of MIL-C-41814 but shall meet the fungicide requirements of MIL-PRF-3122. An extruded thermoplastic film sandwiched between fusion bonded non-woven fabric made from a blend of synthetic fibers and impregnated with a styrene copalmer and coated on each side with a thermoplastic adhesive may be used. A Thermoplastic counter may be used and shall conform to the performance requirements of Table II when tested as specified in 4.4.2.

Table II. Thermoplastic Performance Requirements

Characteristics	Physical Requirements
Initial Collapsing Load (N)	>130 N
Resilience (%)	25% min
Moisture Resistance (%)	80% min
Area Shape Retention (%)	
Initial	85% min
10^{th} collapse	60% min

3.4.4 Fabrics and Other Materials.

3.4.4.1 Upper fabric.

3.4.4.1.1 Nylon duck. The cloth for the quarters and gussets shall be nylon duck conforming to class 1 of MIL-C-43734, except that the color shall be Desert Sand matching that of the standard sample (see 3.3), and the air permeability requirement shall not apply. The nylon duck cloth for the quarters and gussets may be treated with a non-fray finish to facilitate cutting and handling. The nylon duck cloth for the collar cover may be flame-combined to a 0.05 ± 0.008-inch thick layer of polyester foam having a density of 1.70 ± 0.05 pounds per cubic foot. Testing shall be as specified in 4.4.2.

3.4.4.1.2 Fabric liner for cushioned insert. The cloth for the fabric top cover on the cushioned inserts shall conform to the requirements in Table III. Testing shall be as specified in 4.4.2.

TABLE III. Laminated Cloth Performance Requirements

Characteristics	Requirement
Martindale Abrasion	
Fabric Only, Dry	153,600 revs/9,600 cycles (min)
Bursting Strength	
Fabric Only	125 (min)

3.4.4.1.3 Back seam tape. The tape shall conform to A-A-52071, type I, class 3, 1/2 or 17/32 inch wide. As an alternate, the tape shall conform to MIL-PRF-5038, type III, class 1, 1/2 inch wide. The color shall be Desert Sand matching that of the standard sample (see 3.3). Testing shall be as specified in 4.4.2

3.4.4.1.4 Vamp lining. The cloth for the vamp lining shall be cotton twill conforming to class 2 of A-A-55296. Testing shall be as specified in 4.4.2.

3.4.5 Box toe. The material for the box toe shall be a laminate of 0.020 ± 0.002-inch virgin ionomer resin (surlyn) sandwiched between two layers of non-woven polyester saturated with polystyrene. The total thickness shall be 0.056 ± 0.005 inches. The box toes shall be skived 3/8 ± 1/8 inch wide at the breast. Testing shall be as specified in 4.4.2. A Thermoplastic box toe may be used and shall conform to the performance requirements of Table II.

3.4.6 Binding tape The tape for binding the top edge of the gusset shall be nylon conforming to MIL-PRF-5038 type III, class 1 or 2, 3/4 inch. The color shall be Desert Sand matching that of the standard sample (see 3.3). Testing shall be as specified in 4.4.2.

3.4.7 Backstay and ankle reinforcement tape. The backstay tape shall be cut from 1-inch wide nylon webbing and the ankle reinforcing tape shall be cut from 3-inch wide nylon webbing. The webbing shall conform to MIL-W-17337, class 1 or 2. The color shall be Desert Sand matching that of the standard sample (see 3.3). Testing shall be as specified in 4.4.2.

3.4.8 Collar foam. The foam rubber for the padded collar shall be 1/4-inch thick latex foam having a density of 6.7 ± 2 pounds per cubic foot. One side only shall be covered with a cotton scrim cloth. Testing shall be as specified in 4.4.2.

3.4.9 Shanks. The steel or fiberglass shanks shall be bonded to the insole and shall conform to the shape of the last. The fiberglass shank (glass and resin area), when cured, shall be 5/8 ± 1/16 inch in width. The steel shank shall be constructed from 19 gauge, cold rolled carbon steel with a hardness ranging from 47 to 54 Rockwell C scale. The width of the steel shank shall be 5/8 ± 1/32 inch for boot sizes 2 through 6-1/2 (all widths), 7 through 8-1/2 N, and R widths. For all other sizes and widths, the steel shank width shall be 1 ± 1/32 inch. The shank shall be made with two ribs for the 5/8 inch width and three ribs for the 1 inch width. Testing shall be as specified in 4.4.2.

3.4.10 Speed lace assembly. The number of speed lace loops for sizes 2 through 11 shall be five and sizes 11.5 through 16 shall be six. The color of the speed lace assembly shall be Desert Sand matching that of the standard sample (see 3.3). The speed lace assembly shall be in accordance with drawing 2-1-1635 (see 2.2.2). Testing shall be as specified in 4.4.2.

3.4.11 Eyelets. The two bottom eyelets shall be brass, Size AA, with a coated Desert Sand finish. Testing shall be as specified in 4.4.2.

3.4.12 Drainage eyelets and washers

3.4.12.1 Drainage eyelets. The eyelets and boot construction shall allow water out, but shall not allow sand to get into the boot. Eyelets shall be permanently fixed to the boots for the life of the item, and shall have a subdued finish to blend with the color of the Desert Sand shade flesh-out

leather. Placement of the eyelets shall be in the inner arch of the boot, at a location that shall allow the greatest possible drainage of water from the boot. Internal components of the boot shall not interfere with the proper drainage from the eyelets. Drainage eyelets shall be placed at the same location relative to the solid midsole on all boots (with variation according to boot size). Testing shall be as specified in 4.4.2.

3.4.12.2 Washers. The washers shall be brass. The washers shall have an outside diameter of 0.463 ± 0.005 inch, and an inside diameter of 0.220 ± 0.005 inch, and a thickness of 0.009 ± 0.003 inch. Testing shall be as specified in 4.4.2.

3.4.13 Rubber compounds.

3.4.13.1 Solid midsole. The rubber midsole for use with welt, stitchdown and littleway constructions shall be 4 ± 1/2 iron, and oil resistant. The DMS construction rubber midsole (base sole) shall be 1/4 ± 1/16 inch, measured from the top of welt line to the bottom of the solid midsole. The midsole shall be Desert Sand in color matching the standard sample (see 3.3). Testing shall be as specified in 4.4.2

3.4.13.2 Rocker heel cushion midsole. The rocker heel cushion midsole shall be pure polyether polyurethane and shall meet the dimensions specified in Table IV. The cushion midsole shall be Desert Sand in color matching the standard sample (see 3.3). Testing shall be as specified in 4.4.2.

TABLE IV. Rocker Heel Cushion Midsole.

Characteristics	Inches 1/
Overall thickness at back of heel	0.50
Overall thickness at one inch forward from back of heel	0.81
Overall thickness at toe	0.22
Overall thickness at ball	0.22
Overall thickness at heel breast transition	0.70
Bottom length of heel from back of heel to beginning of radius 0.1877 on size 13	4.15
Radius of transition from bottom of heel to radius of heel breast	0.19
Radius of heel breast	3.11

1/ Tolerance for all measurements is ± 0.03 inches.

3.4.13.2.1 Polyether polyurethane requirements. The requirements for the pure polyether polyurethane are based on testing done on slabs (according to ASTM procedures) and are not actual soles. The requirements shall be as specified in Table V when tested as specified in 4.4.2.

TABLE V Polyether Polyurethane Requirements.

Characteristics	Minimum	Maximum
Density (gm/cc)	0.40	0.60
Hardness (shore A) 5/	50	75
Tensile strength (kgf/cm sq) 3/	25	-
Elongation (%) 3/	250	-
Tear strength		
Die T (kg/cm) 3/	3.7	-
Volume swell (%)		
w/ ASTM Oil #3 (at 24 hrs) 1/ 3/	-	10
Compression Set % 4/	-	20
Ross flex (1x6 inch) at -5°C 2/ 6/		900% @ 150,000 cycles

1/ Test conducted after 24 hours at Room Temperature with ASTM test slabs.
2/ Test method modified to include 2mm insole board glued onto the specimen and conducted at -5 degrees C.
3/ Thickness of test sample used shall equal 12.7mm (0.5 in) from test slabs or 6.0mm from actual cushioned midsoles. Actual cushioned midsoles shall be used for verification testing only. However, all test reports used for conformance purposes and submitted to the Government shall use test slabs.
4/ Thickness of test sample used shall equal 12.7mm (0.5 in) from test slabs or 19.0mm from actual cushioned midsoles. Actual cushioned midsoles shall be used for verification testing only. However, all test reports used for conformance purposes and submitted to the Government shall use test slabs.
5/ Thickness of test sample used shall equal 12.7mm (0.5 in) from test slabs.
6/ Thickness of test sample used shall equal 6.4mm (0.25 in) from test slabs or 6.0mm from actual cushioned midsoles. Actual cushioned midsoles shall be used for verification testing only. However, all test reports used for conformance purposes and submitted to the Government shall use test slabs.

3.4.13.3 Outersole. The outersole design shall be the Quabaug Vibram Sierra 1276 or Michelin Starfighter XSF051 design. The outsole shall be a minimum of 18-iron (9.5mm) in thickness of solid rubber at each of the lugs. The color of the outer sole including any corporate/company name identification plug shall be Desert Sand and match the standard (see 3.3).

3.4.13.3.1 Rubber compound requirements. The requirements for the rubber outersoles are based on the testing performed on 0.250 or 0.070 gauge inch test slabs (in accordance with ASTM procedures) and are not actual soles. There may be some deviation on actual outersoles or midsoles based on style thickness and curing parameters. The requirements shall be as specified in Table VI, when tested in accordance with 4.4.2.

TABLE VI. Rubber Compound Requirements.

Characteristics	Outsole	4-iron midsole
NBS abrasion	150 min.	1/
Hardness (shore A)	70-80 A	1/
Stitch Tear (dry)	180 lb. min	180 lb. min.
Stitch Tear (Fuel B)	50 lb min	50 lb. min.
Die C tear strength	300 lb. min.	1/
Ross flex, Oil #3	250% max. @ 50,000 flexes	1/
Volume swell, Fuel B(@ 46 hrs) 2/	30% max.	30% max.
Non-marking	Pass	1/
Tensile	2,100 lb. Min	1/
Elongation	400% min.	1/

1/ indicates that requirement is not applicable
2/ Test conducted at Room Temperature with ASTM test slabs.

3.4.13.4 Bond strength. The components of the three-layer soling system shall be layered in such a manner that the Bond Strengths specified in 3.4.13.4.1 through 3.4.13.4.1.2 shall be achieved.

3.4.13.4.1 Entire sole to upper (DMS only). The bond strength shall not be less than 130 pounds. Testing shall be as specified in 4.4.4.

3. 4.13.4.1.1 Solid midsole to cushion midsole bond strength. The solid rubber midsole or base sole to cushion midsole bond strength shall not be less than 100 pounds. Testing shall be as specified in 4.4.4.

3.4.13.4.1.2 Outersole to cushion midsole bond strength. The outersole to cushion midsole strength shall not be less than 100 pounds. Testing shall be as specified in 4.4.4.

3.4.13.4.2 Adhesion at toe (DMS only). The bond strength at the toe area of the sole shall not be less than 50 pounds, with the exception that one specimen out of the five tested may be below 50 pounds, but not less than 40 pounds. Testing shall be as specified in 4.4.4.

3.4.14 Thread, nylon. The thread shall be nylon, conforming to type I, II or III, class A or B, size E of V-T-295. The color of the thread shall be Desert Sand in color. Colorfastness requirements shall not apply. The maximum thread elongation for all thread shall be 32 percent. Testing shall be as specified in 4.4.2.

3.4.15 Removable cushion insert. The removable cushion insert shall be a low-density heel cup support made of a polyether polyurethane system, medium black in color, and molded to a fabric top cover meeting the requirements listed in Table VII. The fabric shall be black in color and conform to the requirements of the liner for cushioned insert in 3.4.4.1.2. The total thickness

of the insert shall be a minimum of 0.100 inch forward of the instep, and a minimum of 0.220 inch elsewhere. Testing shall be as specified in 4.4.2.

TABLE VII. Removable Cushion Insert Requirements

Characteristics	Requirement
Polyether Polyurethane	
Density	17 (+2, -1) lb/cu. ft.
Tensile strength	82 lb./sq. in. (min)
Compression set	25% @ 10.6 psi
@ 77 degrees F	50% @ 21.6 psi
Fabric Top Cover:	
Martindale Abrasion	
Fabric Only; Dry	153,600 revs/9,600 cycles (min)
Bursting Strength	
Fabric Only	125 min.

3.4.16 Laces. The laces shall conform to Type III, class 1 of A-A-55093. The color of the laces shall be Desert Sand matching that of the standard sample (see 3.3). The length of the laces shall be 66 inches for all sizes. Testing shall be as specified in 4.4.2.

3.5 Design. The color of the boot shall be Desert Sand in color and have a padded collar covered with a nylon cloth. The boot shall contain a partial speedlace closure system consisting of two eyelets with the remainder of the closures being speed loops. The boot shall contain a removable cushion insert. The outside leather areas shall be flesh-side out with two drainage eyelets located in the inner arch area of each boot. The quarter shall be nylon duck, the backstay, and ankle reinforcements shall be nylon webbing. The boot shall have a three-layer soling system consisting of a rubber midsole, polyether polyurethane cushioned midsole and rubber outsole. (See Figure 1)

3.5.1 Vamp Design. The vamp design shall be such as to allow for the leather Vamp to extend up the gusset to approximately the second eyelet of the boot. (See Figures 2a and 2b)

3.5.1 Boot height. The height of the finished boot, measured upward on the outside from tread area at the breast of heel to the top of the boot, shall be 10 ± 1/4 inch on size 10R and shall graduate up and down between sizes and widths as indicated by the patterns. Testing shall be as specified in 4.4.4.

3.5.2 Boot weight. The weight of a finished boot (size 10R) shall be less than or equal to 2 pounds per boot when tested as specified in 4.4.4.

3.6 Lasts. The boots shall be made on last JV 50592 (sizes 3-14 only), M6933 (all sizes), M6933-3 (sizes 2-2.5, 15-16 only), or RS-100 (all sizes), or equal based on government approval. The numerical size of the boot shall correspond with the numerical size of the last used to produce the boot (i.e. a size 10R boot shall be produced on a size 10R last).

3.7 Construction.
3.7.1 Uppers.

3.7.1.1 Cutting leather uppers. The leather parts shall conform to the thickness requirements specified in Table VIII. All leather for boot components, with the exception of the eyelet stays and inside counterpocket, shall be cut so as to be used flesh side out. Vamps shall be examined as specified in 4.4.2. Front edge stays shall not be split.

TABLE VIII. Thickness of leather uppers (ounces).

	If not split		For split parts	
Characteristics	**Min**	**Max**	**Min**	**Max**
Vamp	5	6	-	-
Outside counterpocket	4	6	4	6
Inside counterpocket	3	4	3-1/2	4
Front edge stays	3	4	-	-
Eyelet stays	3	4	3-1/2	4

3.7.1.2 Cutting fabric upper parts. The quarters shall be cut in the bias direction on a 15 ± 1-degree bias from the warp direction. The collar cover shall be cut in the bias direction.

3.7.1.3 Marking, permanent identification. With the exception of PDMs (Product Demonstration Models), the gusset of each boot shall be marked on the inside, 1 inch from the top center of the gusset, with the correct American and Mondopoint size and width, the contractor's identification symbol in block form, and the month and year (expressed numerically) of the date of contract. The case number shall be marked. The marking shall conform to type IV, class 9 of MIL-DTL-32075. Fastness of the class 9 marking shall be as specified for the class 5 marking. Figures shall be Arabic and the letters shall be Gothic. The figures and letters shall be a minimum of 9/32 inch and a maximum of 3/8 inch in height. The stamping shall be expressed as shown in the following example; alternate formats may be used provided all the data elements are included and requirements are met:

10 W AB 6----06

3.7.2 Skiving. The vamp shall be skived at the throat and wings. The outside counterpocket shall be skived at the stitch edge and top. Additional upper leather skiving shall be permitted.

3.7.3 Finishing leather parts. The leather shall be flesh out drum dyed Desert Sand matching that of the standard sample (see 3.3) with the color penetrating throughout the thickness of the hide so that the chrome tannage shall not be visible.

3.7.4.3 Backstay seam strength. The seam strength of the backstay shall be not less than 250 pounds per inch. Testing shall be as specified in 4.5.3.

3.8 Assembly.

3.8.1 Insole. The insole shall be as specified in 3.4.2 of the appropriate thickness (see Table I).

3.8.2 Three-piece combination outsole. The three-piece combination outsole shall consist of a solid midsole as specified in 3.4.13.1 attached to the boot upper, a cushion midsole as specified in 3.4.13.2, and a one-piece rubber outsole/heel as specified in 3.4.13.3.

3.8.3 Toe reinforcing stitching. The three-piece outsole and welt shall be stitched together, and they shall extend around the toe area for welt and stitchdown constructions only.

3.8.4 Boot finishing. No top finish or treatment shall be applied.

3.8.5 Pairing, lacing, and instruction tag. The boots shall be paired. A lace shall be inserted through the top speed lace loop of the outside quarter of each boot, and the two laces for each pair shall be tied firmly together. One instruction tag (see 3.9) shall be attached to each pair of boots by inserting a lace through the hole in the instruction tag.

3.9 Instruction and Hangtags.

3.9.1 Instruction tags. Instruction tags, to be tied to the finished boots, shall have a bar code located on the instruction tag of each pair of boots. The bar coding element shall be a 13 digit national stock number (NSN), and shall be a medium to high code density. The bar code shall be located so that it is completely visible on the item when it is folded and/or packaged as specified and so that it causes no damage to the item. The tags shall be printed on tag stock that is 5-1/4 by 6-1/2 inches and folded in the middle to form four printed pages in book form that are 5-1/4 by 3-1/4 inches. A punch hole shall be made in the top near the folded edge for insertion of the lace. The Use and Care Information (see Attachment 1) must be included on the instruction tags.

3.9.2 Labels. The contractor shall attach a small circular tag with the words: “This Item Is Not Authorized For Flight or Combat Vehicle Use”. Component and boot feature hangtags may be attached to the boots.

3.10 Workmanship. The finished boots shall conform to the quality of product established by this document. The occurrence of defects shall not exceed the contractor's own quality assurance standards and the quality assurance standards defined by the technical data in the bid package.

4. VERIFICATION

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

a. First article inspection (see paragraph 4.2).
b. Conformance inspection (see paragraph 4. 3).

4.2 First article inspection. First article inspection when required (see 3.1) shall be examined for the defects specified in 4.4.3 and tested for the characteristics in 4.4.4.

4.3 Conformance inspection. Conformance inspection shall include the examinations of 4.4.1 through 4.4.1.3 and 4.4.3 and the testing in 4.4.2 and 4.4.4. Unless otherwise specified sampling for inspection shall be performed in accordance with ANSI/ASQC Z1.4.

4.4 Component and material inspection.

4.4.1 In-process inspection. Inspection shall be made at any point or during any phase of manufacturing to determine whether the components are as specified or operations and/or assemblies are accomplished as specified. The Government reserves the right to exclude from consideration for acceptance any material or service for which in-process inspection has indicated nonconformance.

4.4.1.2 In-process examination. Examination shall be made for the component defects listed in 4.4.1.1 through 4.4.1.3 and classified as specified. The lot size shall be expressed in units of upper assemblies prepared for lasting. The sample unit shall be one completely fabricated upper assembly prepared for lasting.

4.4.1.3 Examination uppers after all fitting. The upper assemblies shall be examined for the defects listed in Table IX. The lot size shall be expressed in units of upper assemblies prepared for lasting. The sample unit shall be one completely fabricated upper assembly prepared for lasting.

TABLE IX. Examination of Upper After All Fitting Defects

Examine	Defect	Classification	
		Major	Minor
Construction and workmanship (general) affixed	Any component missing or not specified type	101	
	Any component misplaced or not as specified	1/	
	Vamp stitched more than 5/32 inch from edge at throat	102	
	Vamp stitched more than 3/32 inch from edge at throat, but not more than 5/32 inch		201
	Vamp throat or wings not skived	103	
	Counterpocket not skived as specified		202
Quality of Leather	Thickness more than 1/2 ounce less than minimum specified	104	

	Thickness less than specified minimum, but not exceeding 1/2 ounce less	203
	Thickness more than maximum specified	204
	Off-stretch cut	1/
	Slaughter cut	1/

1/ This defect shall be scored as major when seriously affecting serviceability, and as a minor when not seriously affecting serviceability, as determined by the government

4.4.1.4 Examination of boot before last pulling. The partially fabricated boots shall be examined for the defects listed in Table X. The lot size shall be expressed in units of partially fabricated boots. The sample unit shall be one partially constructed boot assembled to the point just prior to pulling off the last.

TABLE X. Examination of Boot Before Last Pulling Defects

Examine	Defect	Classification Major	Minor
Bottom of boot	Any component missing, sized wrong, malformed or not specified type	105	
	Upper damaged		1/
	Poor heel seat, side, or toe lasting		1
	Insole tack not removed	106	
Upper part of boot	Uppers not firmly pulled down to last		1/
	Lace openings less than 5/8 inch or more than 7/8 inch	107	

1/ This defect shall be scored as major when seriously affecting serviceability, and as a minor when not seriously affecting serviceability as determined by the government.

4.4.2 Component testing. The components shall be tested for the characteristics listed in Table IX. The methods of testing specified where applicable shall be used. The sampling plan shall be as follows:

Lot size (yards or units)	Sample size
Under 800	2
801 – 22,000	5
22,001 and above	8

TABLE XI. Component tests.

Component	Characteristic	Requirement Paragraph	Test Method
Upper leather	Physical Characteristics Shade Evaluation	3.4.1 3.4.1	MIL-PRF-3122 12/
Insole	Thickness Welt/Stitch down DMS Construction Fungal resistance Wet Tensile Flexing Index Abrasion Resistance Cellulose board Non-Woven board Transverse Tensile-Dry Dimensional Stability Peel Strength	 3.4.2 3.4.2 3.4.2 3.4.2 3.4.2 3.4.2 3.4.2 3.4.2 3.4.2 3.4.2	 ASTM D 1777 1/ ASTM D 1777 1/ ASTM D 3273 SATRA MTM-2 SATRA MTM-3 SATRA MTM-14 SATRA MTM-31 SATRA MTM-80 SATRA MTM-98 SATRA MTM-101
Box Toe & Heel Counters (alternate -Thermoplastic)	Initial Collapsing Load (N) Resilience (%) Moisture Resistance (%) Area Shape Retention (%)	3.4.3 & 3.4.5 3.4.3 & 3.4.5 3.4.3 & 3.4.5 3.4.3 & 3.4.5	SATRA MTM-83 SATRA MTM-83 5/ SATRA MTM-83 6/ SATRA MTM-83
Fabrics: Nylon duck fabric Laminated cloth Backstay and ankle reinforcement tape	 Shade Evaluation Martindale Abrasion Fabric Only, Dry Bursting Strength Fabric Only Shade Evaluation	 3.4.4.1.1 3.4.4.1.2 3.4.4.1.2 3.4.7	 12/ ASTM D 4966 3/ ASTM D 3787 12/
Speed Lace Assembly	Shade Evaluation	3.4.10	12/
Eyelets	Shade Evaluation	3.4.11	12/
Solid midsole	Shade Evaluation	3.4.13.1	12/

TABLE XI. Component tests cont'd.

Rocker Heel Cushion Midsole	Overall thickness at back of heel	3.4.13.2	ASTM D 3767
	Overall thickness at one inch forward from back of heel	3.4.13.2	ASTM D 3767
	Overall thickness at toe	3.4.13.2	ASTM D 3767
	Overall thickness at ball	3.4.13.2	ASTM D 3767
	Overall thickness at heel breast transition	3.4.13.2	ASTM D 3767
	Bottom length of heel from back of heel to beginning of radius 0.1877 on size 13	3.4.13.2	ASTM D 3767
	Radius of transition from bottom of heel to radius of heel breast	3.4.13.2	ASTM D 3767
	Radius of heel breast	3.4.13.2	ASTM D 3767
	Shade Evaluation	3.4.13.2	12/
Polyether Polyurethane	Density (gm/cc)	3.4.13.2.1	ASTM D 792
	Hardness (shore A)	3.4.13.2.1	ASTM D 2240 10/
	Tensile strength (kgf/cm sq)	3.4.13.2.1	ASTM D 3574 8/
	Elongation (%)	3.4.13.2.1	ASTM D 3574 8/
	Tear strength Die T (kg/cm)	3.4.13.2.1	ASTM D 3574 8/
	Volume swell (%) w/ ASTM Oil #3 (at 24 hrs)	3.4.13.2.1	ASTM D 471 1/ 8/
	Compression Set %	3.4.13.2.1	SATRA MTM-64 9/
	Ross flex (1x6 inch) at 5°C	3.4.13.2.1	ASTM D 1052 4/ 11/
Outersole	Thickness	3.4.13.3	1/
	Shade Evaluation		12/
Rubber Compound	NBS abrasion	3.4.13.3.1	ASTM D 1630
	Hardness (shore A)	3.4.13.3.1	ASTM D 2240
	Stitch Tear (dry)	3.4.13.3.1	ASTM D 4786
	Stitch Tear (Fuel B)	3.4.13.3.1	ASTM D 4786 7/
	Die C tear strength	3.4.13.3.1	ASTM D 624
	Ross flex, Oil #3	3.4.13.3.1	ASTM D 1052
	Volume swell, Fuel B (@ 46 hrs)	3.4.13.3.1	ASTM D 471
	Non-marking	3.4.13.3.1	SATRA MTM 223
	Tensile	3.4.13.3.1	ASTM D 412
	Elongation	3.4.13.3.1	ASTM D 412
Thread, nylon	Shade Evaluation	3.4.14	12/

TABLE XI. Component tests cont'd.

Removable cushion Inserts	Density	3.4.15	ASTM D 3574
	Foam hardness	3.4.15	ASTM D 2240
	Tensile strength	3.4.15	ASTM D 3574
	Compression set @ 25%	3.4.15	ASTM D 3574
	Compression set @ 50%	3.4.15	ASTM D 3574
Fabric Top Cover	Martindale Abrasion		
	Fabric Only; Dry	3.4.4.1.2	ASTM D 4966 2/
	Bursting Strength		
	Fabric Only	3.4.4.1.2	ASTM D 3787

1/ A thickness gauge of the dead-weight type equipped with a dial graduated to read directly to 0.001 inches shall be used. The presser foot shall be circular, with a diameter of 1.129 (+ 0.001) inches and with moving parts weighted to apply a total load of 0.60 (+/- 0.03) pounds per square inch (psi) to the specimen. The anvil shall be not less than 1.129 inches in diameter. The presser foot and anvil surface shall be paned to within 0.001 inches and shall be parallel to each other to within 0.001 inches.

2/ Testing shall be in accordance with the applicable methods specified in MIL-C-41814 and MIL-PRF-3122.

3/ Martindale Tester; Pressure applied: 12 kPa; visually examine specimens after each 3200 cycles; abradant changed after each 3200 cycles.

4/ Method modified to include 2mm insole board glued onto the specimens and conducted at -5 degrees C.

5/ Resilience is percentage retention of initial collapsing load after ten collapses.

6/ Moisture resistance is percentage retention of initial dry collapsing load after 1 hour immersion.

7/ Test conducted after 46 hours in Fuel B at Room Temperature.

8/ Thickness of test sample used shall equal 12.7mm (0.5 in) from test slabs or 6.0mm from actual cushioned midsoles. Actual cushioned midsoles shall be used for verification testing only. However, all test reports used for conformance purposes and submitted to the Government shall use test slabs.

9/ Thickness of test sample used shall equal 12.7mm (0.5 in) from test slabs or 19.0mm from actual cushioned midsoles. Actual cushioned midsoles shall be used for verification testing only. However, all test reports used for conformance purposes and submitted to the Government shall use test slabs.

10/ Thickness of test slab shall be as stated in the respective ASTM method.

11/ Thickness of test sample used shall equal 6.4mm (0.25 in) from test slabs or 6.0mm from actual cushioned midsoles. Actual cushioned midsoles shall be used for verification testing only. However, all test reports used for conformance purposes and submitted to the Government shall use test slabs.

12/ The color of the component shall be Desert Sand matching that of the standard sample (see 3.3) when tested in accordance with AATCC Evaluation Procedure 9 option A as described in Section 3.3.1 of this Specification.

4.4.3 End item visual examination. The end items shall be examined for the defects listed in Table XII below. The lot size shall be expressed in units of boots. The inspector shall check to see that insoles are inserted in the boots. For the pairing examination, and when determining possible differences in outersole thickness, the pair shall be examined together. During the inspection for the defects listed within the "End item visual examination." Defect Table, the minor defects or departures from specification requirements listed in the table shall be observed and recorded. Presence of these departures shall not result in the rejection of the lot, but the plant quality assurance and the Government personnel reserve the right to establish and impose lot rejection criteria when either the frequency or severity of the presence of these departures warrant. These additional rejection criteria may be invoked at any time during the life of the contract when the Government judges this action to be in their best interest. Defects of pairing shall be classified as a single defect.

Table XII. End item visual examination.

Examine	Defect	Classification Major	Minor
Pairing	Not properly mated; i.e, not right and left of same Size	109	
	Variation in color, or appearance	1/	
	Variation of more than ¼ inch in height of pair	110	
	Difference in Outersole thickness between left/right boot	1/	
	- more than 3/32inch	111	
	more than 1/16 inch but less than 3/32		205
Nylon quarter and Gusset	Mend or week spot	112	
	Two or more yarns missing	113	
	Quarter not cut on the bias	114	
	Abrasion, spot, stain or discoloration	1/	
Construction & Workmanship (general)	Cut, tear, hole, repair, or factory damage	1/	
	Wrinkled or bunched area at the back seam	1/	
	Component or assembly omitted or misplaced, operation omitted or not properly performed (unless otherwise classified herein	1/	
Webbing	Not firmly and tightly woven, edges frayed or scalloped	115	

Table XII. End item visual examination cont'd.

Seams & stitching (upper)	Open seam not repaired 2/	116		
	Quarter panel and gusset fabric not caught in second row of inside eyelet stay stitching			206
	One or more run-off stitches	117		
	Loose tension resulting in a loosely secured seam		1/	
	Tight tension resulting in puckering or cutting of leather		1/	
	Wrong stitch type	118		
	Row of stitching with less than 8 stitches per inch, but not less than 6 stitches per inch 3/			207
	Any row of stitching with less than 6 stitches per inch 3/	119		
	More than the specified maximum number of stitches 3/		1/	
	Gage of stitching not as specified or irregular		1/	208a
	Stitching omitted where required		1/	
	Thread ends not trimmed throughout boot 4/			208b
	Needle holes or needle chew		1/	
	Sand hole (i.e., tongue not properly caught in at throat)			209
Vamp or counter pocket stitching at outersole junction	One or more rows of defective stitching not repaired	120		
	Repaired, but first stitch more than 1/4 inch from outersole junction	121		
	Repaired with one stitch in lieu of two or more Stitches			210
Outersole & Soling System	Thickness not as specified	122		
	Flash edges not removed by scouring affecting appearance			211
	Edge scouring irregular affecting appearance			212
	Other defects in tread or edge area		1/	
	Incomplete or incorrect bonding of outersole to cushion midsole (i.e., not securely attached) 5/		1/	
	Incomplete or incorrect bonding of rubber midsole to cushion midsole (i.e., not securely attached) 5/		1/	
	Incomplete or incorrect bonding of rubber midsole to upper (i.e., rubber not securely attached) 5/		1/	

Table XII. End item visual examination cont'd.

Counters	Rolled or curled counter Soft counter	1/ 213
Speed laces	Number of speed lace loops not as specified, but each row has the same number Not the same number of loops in each row Loops not properly spaced within the row or misaligned between the rows to an extent interfering with proper lacing Loops not perpendicular to edge of quarters or parallel to each other Loops not securely riveted Distance from center of rivet to edge of quarter less than 7/32 or more than 9/32 inch	214 123 1/ 215 124 1/
Gusset	Binding omitted	125
Marking, instruction tag and bar code	Missing, incomplete, incorrect, not applied in the specified manner, misplaced, illegible, or not specified size or not readable by scanner not visible Causes damage to end item	216 126
Insole	Short or long Any protruding lasting staple or prong Any protruding shank prong on insole Any protruding point of lasting staple or point of tack forward of heel breast line found in the sample, shall cause rejection of the lot represented	1/ 127 128 129
Removable Cushion Inserts	Missing, wrong size	217
Heel finishing	Heel not finished square and smooth, affecting Appearance	218

Table XII. End item visual examination cont'd.

Eyelets, quarter	Number of eyelets, not as specified; but each row has the same number	219
	Not the same number of eyelets in each row	130
	Eyelets not properly spaced within the row or misalignment between the rows to an extent interfering with proper lacing	1/
	Edge of any eyelet more than 5/16 inch from the edge of the quarter	220
	Eyelet not securely clinched	221
Drainage Eyelets and Washers	Components omitted	131
	Not securely clinched, or not inserted as specified	1/

1/ This defect shall be scored as major when seriously affecting serviceability as determined by the government or appearance, and as minor when not seriously affecting serviceability.
2/ A seam shall be classified as open when one or more stitches joining a seam are broken or when two or more consecutive skipped or run-off stitches occur. On multiple stitched seams, a seam is considered open when either one or both sides of the seam are open. When the above conditions occur on the inside of the boot, it shall be scored as a footnote (1/) defect
3/ A plus tolerance of 3 stitches per inch will be allowed when stitching over heavy places or turning sharp corners.
4/ Upon occasion when some insignificant thread ends are noted during inspection (audit) they will not be cause for lot/shipment rejection. In-plant corrective action shall be made on current and future production.
5/ The term "bonding" in the "Outersole & Soling System" section of Table XII shall be interpreted as the respective attachment method used for the component (i.e. either DMS/vulcanization or stitched construction).

4.4.4 End item testing. The finished boot shall be tested for the characteristics listed in Table XIII. The sample unit for all tests shall be one boot. All test results shall contain the individual values utilized in expressing the final result. For all tests, the sample size shall be five boots regardless of lot size and the lot shall be unacceptable if one or more sample units fail to meet any requirement specified.

Table XIII. End item tests

Characteristic	Requirement Paragraph	Test Method
Bond strength		
Entire sole to upper DMS only	3.4.13.4.	ASTM D 816 and 4.5.1
Solid midsole to cushion midsole	3.4.13.4.1.1	ASTM D 816 and 4.5.1
Outersole to cushion midsole	3.4.13.4.1.2	ASTM D 816 and 4.5.1
Toe adhesion (DMS) only	3.4.13.4.2	ASTM D 816 and 4.5.2
Height	3.5.2	visual
Weight	3.5.3	visual
Backstay Seam Strength	3.7.4.3	ASTM D 2208 1/ and 4.5.3

1/ Except that the face jaw shall be 1 by 1 inch and the back jaw shall be 1 by 3 inches.

4.5 Methods of test.

4.5.1 Bond strength test. The test shall be used to measure the bond strength of: entire sole to boot upper, solid midsole to cushion midsole, and outersole to cushion midsole.

(Note: The components of the three-layer soling system shall be layered in such a manner that the specified bond strengths will be achieved. If test results find values to be less than specified due to material failure in regard to the bond between the layers, the test will be classified as a failure.)

4.5.1.1 Specimen. The specimen shall be one boot (size 10R) on which the sole has aged at least 2 days after bonding. The two layers of the surface being tested shall be separated for a distance of approximately 2.5 inches from the toe end of the specimen.

4.5.1.2 Apparatus. A power-driven portable adhesion machine, or an approved portable testing device of equal performance, shall be used. For the bond strength test of solid midsole to cushion midsole, and of outersole to cushion midsole, the rate of travel of the power-actuated grip shall be 2 inches per minute. For the bond strength test of the entire sole to the boot upper (DMS only), the rate of travel of the power-actuated grip shall be 10 inches per minute. The machine shall be operated with a device for indicating maximum load.

4.5.1.3 Procedure. The separate toe ends of the specimen shall be clamped in the jaws of the machine. The specimen shall extend outward at right angles to the direction of the application load. The machine shall be started, and the surface being tested (i.e. upper to base, base to midsole, or midsole to outsole) shall be pulled apart to a distance not more than 4.5 inches from the toe. Upon attaining that degree of separation, the maximum load indicated on the machine shall be read and recorded. If the required load is achieved (at any time during the pull test), the test shall be deemed as passing. The procedure shall be repeated for each surface tested.

4.5.2 Toe adhesion (DMS only).

4.5.2.1 Specimen. The test specimen shall be a single finished boot of any size.

4.5.2.2 Procedure. The apparatus shall be the SATRA Sole Adhesion tester STD 185/S or 185 equipped with toe piece 185/5 having a arc length of 22 mm, a radius of 1-1/4 inch and a toe piece length of 12.7 mm. A description of such apparatus may be found in SATRA Test Method MTM 404. Adjust the height of the anvil to suit the sole thickness using the packing pieces provided. The forepart of the sole should be approximately horizontal or sloping slightly downward towards the toe. Check the zero of the load gauge and correct if necessary. Place the test boot without a last on the anvil of the adhesion tester so that the toe piece of the instrument is inserted in the featherline groove between the sole and upper. Grasp the boot firmly and press down on the back so that the load increases steadily. If possible, apply the load at such a rate that the test is completed in about 3 seconds. Push the boot against the pressure block when applying the load to prevent the toe of the boot from slipping out of engagement with the toe piece of the instrument. However, avoid digging the toe piece into the upper material excessively as this may affect the result obtained. Slipping is less likely to occur if boots are tested before edge trimming. When the sole begins to separate from the upper (for a distance of approximately 1/8 inch in from the feather edge) read the load on the instrument. This is usually a maximum value; the load drops as further separation takes place.

4.5.3 Backstay seam strength test.

4.5.3.1 Specimen. The same boot used for the bond strength test may be used for this test. The test specimen shall be a single finished boot of any size prepared as follows: The fabric quarters shall be cut from the leather upper and edge stay and cut down the specimen to the seam, 1-1/2 to 2 inches above the bottom of the backseam.

4.5.3.2 Procedure. The apparatus for measuring backstay seam strength shall be as described in ASTM-D-2208, except that the face jaw shall be 1 by 1 inch and the back jaw shall be 1 by 3 inches. Insert the specimen marked as described in Section 4.5.3.1 in the clamps so that the seam is centered between the jaws with the line in the center of the jaw faces and set the machine in operation. The maximum value attained during separation shall be taken as the backstay seam strength.

5. PACKAGING.

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of material is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Department or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

6.1 Intended use. The boots are intended for wear by military personnel of the Department of Defense in Hot Weather Wet Environments, Hot Weather Dry Environments, Garrison Environment and during combat. As the combat environment is more severe than that seen during commercial wear and use, it is expected that the items procured by the US Government will be superior to those found commercially. Any item not meeting the performance(s) specified herein, or which does not meet commercial standards for retail production and purchasing will not be accepted by the US Government for use by its Military personnel.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number and date of this specification.
b. Sizes and widths required (see 1.2).
c. The specific issue of individual document referenced (see 2.2).
d. When first article is required, (see 3.1 and 4.2).
e. Inclusion of specific instructions regarding arrangement for examinations, quantity, testing and approval (see4.3).
f. Packaging requirements (see 5.1)

6.3 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of Federal Acquisition Regulation (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 also include specific instructions in acquisition documents regarding arrangements for selection, inspection, and approval of the first article (see 3.1 and 4.2).

6.4 Standard sample. For access to samples and pattern drawings, address the contracting activity issuing the invitation for bids or request for proposal. Standard samples are also available at DSCP through http://warfighter.dla.mil under tab "Vendor Info" then "Specifications/Pattern Request" under "Special Instructions" provide color shade, roll number and solicitation/contract number.

6.5 Title. This document (MIL-DTL-32237) is for the Army, Combat, Hot Weather boot, and supersedes CR/PD 06-10, dated 19 June 2006.

6.6. Subject term (key word) listing.

Desert
Footwear
Inserts
Jungle
Leather
Outsoles

Figure 1a. Army Combat Boot (Hot Weather)

Figure 2a. Close up view of Vamp/Gusset seam (front view).

Figure 2b. Close up view of Vamp/Gusset seam (lateral view).

Custodians:

Army – GL

Preparing Activity

DLA - CT

Project No. 8430-2006-002

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using ASSIST Online database at http://assist.daps.dla.mil/