

11 Dec 08

Changes to Retention System, Advanced Combat Helmet Purchase Description (GL-PD-07-19)
dated 27 Aug 07

Insert para 1.2:

1.2 Classification. The retention systems shall be of the following Types.

Type I – Foliage Green 504

Type II – Coyote 498

Para 3.4.1, line 3: After “Foliage Green 504”, insert “Coyote 498”

Para 3.4.3, line 2: After “Foliage Green 504”, insert “Coyote 498”

Para 3.4.4, line 6: After “Foliage Green 504”, insert “Coyote 498”

Para 3.4.5, line 2: After “Foliage Green 504”, insert “Coyote 498”

Para 3.4.6, line 2: After “Foliage Green 504”, insert “Coyote 498”

Para 3.4.8, line 3: After “Foliage Green 504”, insert “Coyote 498”

Para 3.4.10, line 2: After “Foliage Green 504”, insert “Coyote 498”

Para 3.4.11, line 3: After “Foliage Green 504”, insert “Coyote 498”

Para 3.7, Table I, row 2: After “Foliage Green 504”, insert “Coyote 498”

Para 3.10, line 4: After “Foliage Green 504”, insert “Coyote 498”

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Changes to Retention System, Advanced Combat Helmet Purchase Description (GL-PD-07-19)
dated 27 Aug 07

Para 3.4.7, line 2: delete "0.25" and insert "0.255".

Para 4.3.6, Table IV, row 2, insert "Testing Option 1" after "ASTM D-1777".

01 Dec 08

Changes to Retention System, Advanced Combat Helmet Purchase Description (GL-PD-07-19)
dated 27 Aug 07

Paragraph 3.4.7: Line 2: Delete "closed" and insert "open".

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Changes to Retention System, Advanced Combat Helmet Purchase Description (GL-PD-07-19)
dated 27 Aug 07

Paragraph 3.4.1: Line 2: After "A-A-50199" insert ", Type I or II. An alternative thread is V-T-295, Type I or II, Class A, size E."

28 May 08

Changes to Retention System, Advanced Combat Helmet Purchase Description (GL-PD-07-19)
dated 27 Aug 07 and associated Drawings

GL-PD-07-19 Retention System, Advanced Combat Helmet:

- Paragraph 3.4.9, line 2: delete "anodized" and insert "oxide finished"
- Paragraph 4.10.4, line 2: delete "4.10.14" and insert "4.10.13"
- Paragraph 4.4.3, subparagraph c, line 1: delete "3.6.3" and insert "3.5.2.1"
- Paragraph 3.10, line 8: delete 4.5" and insert "4.3.4"
- Paragraph 3.4.9, line 7: after "CO/PD-05-04" insert "(paragraph 4.10.11.4.3)"

Drawing 2-1-2510, Sheet 1:

- Note 2: delete "42 to 48 SPI" and insert "28 stitches minimum".
- Note 6: For the tolerance for 2 inches or more but less than 10 inches, delete "1/8" and insert "3/16"
- Change dimensions on screws. See attached markup.
- Add tolerances for screws. See attached markup.

Drawing 2-1-2510, Sheet 2:

- The nape pad (called the middle assembly) is shown in the lower left half of the drawing. The top view of the nape pad is in zone C7 of the drawing. The elastic webbing is dimensioned such that the inner edge of the webbing is 2-inch from the end of the pad. That dimension should be deleted and a new dimension inserted. The new dimension should show the dimension such that the outer edge of the webbing (left edge) is 1-inch from the end of the pad. See attached markup.
- Bartacks are specified in several locations. At each location, delete "9/16" and insert "1/2". See attached markup. Also, locations of bartacks are adjusted. See attached markup.
- Section B-B is redrawn. See attached markup.

Parts List PL2-1-2510:

- Find number 5, last column: delete '1/8"
- Find number 16, last column: delete 'size 2" x 5 1/4"' and insert "as required to meet finished dimensions"
- Find number 17, last column: delete '2"' and insert "as required to meet finished dimensions"

INCH-POUND

GL-PD-07-19

27 August 2007

PURCHASE DESCRIPTION

RETENTION SYSTEM, ADVANCED COMBAT HELMET (ACH)

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

1. SCOPE

1.1 Scope. This document covers the requirements for the retention system to be used with the Advanced Combat Helmet (ACH).

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4 and 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 documents cited in sections 3, 4 and 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)

COMMERCIAL ITEM DESCRIPTION

A-A-55126	- Fastener Tape, Hook and Loop, Synthetic
A-A-55301	- Webbing, Textile, Textured or Multifilament Nylon
A-A-50199	- Thread, Polyester Core, Cotton or Polyester Covered

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-W-5665	- Webbing, Textile, Cotton Warp
MIL-DTL-32075	- Label: For Clothing, Equipage and Tentage (General Use)

Comments, suggestions, or questions on this document should be address to: Defense Supply Center Philadelphia, Clothing and Textiles Directorate, Attn: DSCP Standardization Team, 700 Robbins Ave., Philadelphia, PA 19111-5096. Since contact information can change, you may want to verify the currency of this address information using Acquisition Streamlining and Standardization Information System (ASSIST) online database at <http://assist.daps.dla.mil>.

(Copies of documents are available online at <http://assist.daps.dla.mil> or from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, 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 are those cited in the solicitation or contract. (see 6.2)

DEFENSE SUPPLY CENTER PHILADELPHIA

CO/PD-05-04 - Helmet, Advanced Combat

(Copies of this document are available from; Defense Supply Center Philadelphia, ATTN: DSCP-FQSE, 700 Robbins Ave, Philadelphia, PA 19111, or by contacting the Contracting Officer.)

DRAWINGS

U.S. ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND

2-1-2510 - Retention System Assembly, Advanced Combat Helmet
2-1-2565 - Chinstrap Tab Assembly

(Copies of drawings are available from Defense Supply Center Philadelphia through the website <http://warfighter.dla.mil> under the tab "Vendor Info" then "General Vendor Info" then "Specification/Pattern/Drawing Requests" under "Special Instructions" provide color shade, roll number and solicitation/contract number.)

2.3 Non-Government publications. The following document forms 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 Test Method 8 - Colorfastness to Crocking: AATCC Crockmeter Method
AATCC Test Method 15 - Colorfastness to Perspiration
AATCC Test Method 61 - Colorfastness to Laundering, Home and Commercial: Accelerated
AATCC Test Method 107 - Colorfastness to Water
AATCC Test Method 143 - Appearance of Apparel and Other Textile End Products after Repeated Home Laundering
AATCC Evaluation Procedure 1 - Gray Scale for Color Change
AATCC Evaluation Procedure 2 - Gray Scale for Staining
AATCC Evaluation Procedure 8 - AATCC 9-Step Chromatic Transference Scale
AATCC Evaluation Procedure 9 - Visual Assessment of Color Difference of Textiles

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

AMERICAN SOCIETY FOR QUALITY

ASQC Z1.4 - Sampling Procedures and Tables for Inspection by Attributes

(Applications for copies should be addressed to American Society for Quality Control, 611 East Wisconsin Avenue, Milwaukee, WI 53202, <http://www.asq.org>.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) INTERNATIONAL

ASTM-D-1777 - Standard Test Method for Thickness of Textile Materials
ASTM-E-4 - Practices for Force Verification of Testing Machines

(Applications for copies of referenced documents should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19426-2959, or online at www.astm.org.)

DEPARTMENT OF TRANSPORTATION FEDERAL MOTOR VEHICLE SAFETY

DOT FMVSS 218 - Department of Transportation Federal Motor Vehicle Safety Standard No. 218 Motorcycle Helmets

(Copies of documents are available on line at <http://www.nhtsa.dot.gov/cars/rules/standards/safstan2.htm>. The complete text of all Federal Motor Vehicle Safety Standards and other NHTSA regulations can be found in Title 49 of the Code of Federal Regulations (CFR). Title 49 of the CFR is published in seven volumes, the fifth volume (Parts 400-999) is where these regulations can be found. Copies of this volume can be obtained for a cost from the U. S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328.)

OTHER PUBLICATIONS

Repeat Insult Patch Test - Modified Draize Procedure
Principles and Methods of Toxicology (Fourth Edition), A Wallace Hayes (editor), pp 1057 - 1060, 2001.

(Copies are available at <http://www.taylorandfrancis.co.uk/> or from Taylor and Francis, 325 Chestnut Street, Philadelphia, PA 19106.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other information services.)

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

3.2 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 specification and promotes economically advantageous life cycle costs.

3.3 Design. The retention system shall consist of a 4-point chinstrap with a nape pad, tab assemblies and hardware (screws and screw posts). The retention system shall be one size. The chinstrap and hardware shall be compatible with all sizes and manufactures of the Advanced Combat Helmet (ACH) shell in accordance with Defense Supply Center Philadelphia, Purchase Description, Advanced Combat Helmet, CO/PD-05-04. The chinstrap shall use an open cup for the chin. The chinstrap shall use a side release buckle to secure the chinstrap to the user.

3.4 Components.

3.4.1 Thread. The thread used to fabricate all components of the retention system shall conform to Tex size 61-70, 2 or 3 ply in accordance with A-A-50199. The color shall be Foliage Green 504. (see 6.5.1)

3.4.2 Plastic stiffener. The stiffener material sewn between the 3/4-inch webbing for the attachment tab shall be high-density polyethylene, 0.047-inch thick by 11/16-inch wide, natural color. (see 6.5.2)

3.4.3 Nylon webbing. The nylon webbing shall conform to Type IV of A-A-55301. Alternate construction is not allowed. The color shall be Foliage Green 504 and shall conform to the requirements in Table I when tested in accordance with the test methods in Table IV. (see 6.5.3)

3.4.4 Elastic webbing. The elastic webbing shall have a width of 3/4-inch ($\pm 1/16$), shall be made from polyester and shall have the following characteristics: 0.070 - 0.090-inch thickness, 0.53-oz weight per linear yard, 72 full width (minimum) ground wrap yarns, 13 full width (minimum) elastic strand yarns, 48 yds/inch filling minimum, 2/150 (± 2) counts/ply wrap yarn size, 2/150 (± 2) counts/ply filling yarn size and 30 gauge elastic stands (per inch maximum fineness). The color shall be Foliage Green 504 and shall conform to the requirements in Table I when tested in accordance with the test methods in Table IV. (see 6.5.4)

3.4.5 Cotton webbing, 5/8-inch. The 5/8-inch cotton webbing shall conform to Class 2A, Type XX, in accordance with MIL-W-5665. The color shall be Foliage Green 504 and shall conform to the requirements in Table I when tested in accordance with the test methods in Table IV. (see 6.5.3)

3.4.6 Cotton webbing, 13/16-inch. The 13/16-inch cotton webbing shall have a tolerance of $\pm 1/16$ of an inch, shall be made from cotton, twill weave, and have the following characteristics: 0.035 - 0.060-inch thickness, 0.42-oz weight per linear yard, 110 full width (minimum) ground wrap yarns, 25 yds/inch filling minimum, 12/2 (± 2) counts/ply wrap yarn size and 12/2 (± 2) counts/ply filling yarn size. The color shall be Foliage Green 504 and shall conform to the requirements in Table I when tested in accordance with the test methods in Table IV. (see 6.5.3)

3.4.7 Laminated foam. The 3 layer laminate shall consist of an inner and outer warp knit loop fabric with an inner closed cell clickable foam. The 3 layers shall be laminated and shall have a maximum thickness of 0.25 inches when tested in accordance with the test methods in Table IV. (see 6.5.5)

3.4.8 Nylon fastener tape, synthetic, loop. The nylon hook and loop tape shall be 5/8-inch in width and shall conform to Type II, Class I, in accordance with A-A-55126. The color shall be Foliage Green 504. (see 6.5.6)

3.4.9 Hardware. The hardware (screws and screw posts) shall be replaceable (i.e. not permanently part of the shell) and black anodized. The hardware shall interface with the webbing and firmly hold it in place when installed in any size Advanced Combat Helmet (ACH) from any manufacturer. There shall be no exposed sharp edges on the hardware, either on the inside or outside of the shell. The hardware shall resist the impact of a 9mm projectile when tested in accordance with Defense Supply Center Philadelphia, Purchase Description, Advanced Combat Helmet, CO/PD-05-04.

3.4.10 Side release buckle set, 3/4-inch. The side release buckle set shall be an acetal buckle set, male and female, and shall conform to drawing 2-1-2510 and shall be Foliage Green 504 in color. (see 6.5.7)

3.4.11 Ladderlock buckle, 20mm. The ladderlock buckle set shall be an acetal ladderlock buckle for each leg of the chinstrap and shall conform to drawing 2-1-2565 and shall be Foliage Green 504 in color. (see 6.5.8)

3.5 Performance.

3.5.1 Function. The retention system shall allow the user to easily don and remove the helmet and provide adjustment to allow for proper fit of the helmet in accordance with Defense Supply Center Philadelphia, Purchase Description, Advanced Combat Helmet, CO/PD-05-04.

3.5.2 Strength. The retention system must meet the following strength requirements stated below when installed in an ACH and tested in accordance with Defense Supply Center Philadelphia, Purchase Description, Advanced Combat Helmet, CO/PD-05-04.

3.5.2.1 Static pull strength. No component of the retention system shall fail, the retention system closure device shall not release (open), and the webbing shall not slip when subjected to a load of 150 lb when tested in accordance with paragraph 4.4.3.

3.5.2.2 Dynamic pull strength. No component of the retention system shall fail when subjected to a 25 ft/sec drop when tested in accordance with paragraph 4.4.4.

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

3.7 Colorfastness. The material components specified above, shall conform to the minimum colorfastness requirements listed in Table I when tested as specified in Table VI.

Table I – Colorfastness requirements.

Color evaluation	Laundrying (4 cycles) 1/ (min.)	Water 1/	Perspiration (acid & alkaline) 1/ (min.)	Crocking 2/ (min)
Foliage Green 504	3-4	3-4	3-4	3.5

- 1/ Rated using the AATCC Evaluation Procedure 1, Gray Scale for Color Change and AATCC Evaluation Procedure 2, Gray Scale for Staining.
- 2/ Rated using the AATCC Evaluation Procedure 8, AATCC 9-Step Chromatic Transference Scale.

3.8 Washability. The retention system shall be washable in accordance with AATCC Test Method 143. All other components shall be hand washable. This includes using a nylon brush and water at a temperature of $41 (\pm 3) ^\circ \text{C}$ ($105 \pm ^\circ \text{F}$). No component shall show any signs of structural, visible or operational degradation or physical damage as a result of 20 washings (laundering). Testing shall be conducted in accordance with paragraph 4.4.1.

3.9 Toxicity. The retention system shall not present a health hazard and shall show compatibility with prolonged, direct skin contact when tested as specified in 4.4.2. Chemicals recognized by the Environmental Protection Agency (EPA) as human carcinogens shall not be used.

3.10 Identification and marking. The retention system shall be clearly marked with a sewn label conforming to Type VI, Class 4 of MIL-DTL-32075 indicating item nomenclature, contract number, national stock number (NSN), contractor's name, lot number and size. The color of the label shall be Foliage Green 504 and the lettering on the label shall be black in color. The label shall be located on the inside of the retention system at the location shown on drawing 2-1-2510. The retention system shall be permanently marked for identification regardless of use, maintenance or storage and shall be located or manufactured so as to prevent obliteration. Testing shall be conducted in accordance with paragraph 4.5.

3.10.1 Barcode/label. The retention system shall be individually bar-coded with a pressure sensitive label in accordance with Type VII, Class 17, of MIL-DTL-32075, when packaged in accordance with the contract or purchase order. The bar-coding element shall be the 13 digit national stock number (NSN). There shall be a 12-digit Universal Product Code (UPC) number assigned for the NSN by the Government. The initials "UPC" must appear beneath the Universal Product Code (UPC) code. The label shall be located so that it is completely visible on the item when it is folded and/or packaged as specified (see 5.1) and shall cause no damage to the item.

3.11 Workmanship. The finished retention system shall conform to the quality of product established by this document and the occurrence of defects shall not exceed the specified quality levels.

4. VERIFICATION

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

1. First article inspection (see 4.2)
2. Quality conformance inspection (see 4.3)

4.2 First article inspection. A first article, submitted in accordance with 3.1, shall consist of examinations and tests as specified in 4.3.2, 4.3.3, 4.3.4 and the tests in 4.3.5.

4.2.1 First article samples. Unless otherwise specified in the procurement document, first article samples shall be provided. The sample unit shall be one retention system.

4.3 Conformance inspection. Conformance inspection shall include the examinations of 4.3.2, 4.3.3, 4.3.4 and the tests in 4.3.5. Sampling for inspection shall be performed in accordance with ANSI/ASQC Z1.4, as defined by contract, except where otherwise indicated.

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

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

4.3.3 In-process examination. Visual and dimensional examinations shall be made at any point or during any phase of the manufacturing process to determine whether construction details which cannot be examined in the finished product are in accordance with requirements specified in Section 3. Materials and components, classified, as a defect in accordance with Table IV shall be removed from production.

4.3.4 Visual examination. The retention system shall be visually examined for compliance to all of the requirements of referenced documents unless otherwise specified. The retention system shall be examined for the defects listed in Table II.

TABLE II - End item visual defects

Examine	Defect	Classification	
		Major	Minor
Retention system	Any component incorrectly installed on helmet (e.g., wrong side or backwards).	101	
	Any required component omitted.	102	
	Any sharp edge or burr. 1/	103	
	Any hardware not secured in the orientation specified.	104	
	Any hardware component not finished as specified.	105	
	Any hole, cut, tear, or smash in webbing.	106	
	Webbing not firmly or tightly woven, edges frayed or scalloped.	107	
	Webbing possessing multiple floats.	108	
	Webbing possessing abrasion mark, broken or missing yarns, slub, or broken end or pick.	109	
	Any hole, cut, tear, or smash.	110	
	Any mend, yarn, or patch.	111	
	Any raw edge (note that raw edge not securely caught in stitching shall be classified as open seams).		201
	Any open seam (note that a seam shall be classified as an open seam when one or more stitches joining a seam are broken or when two or more consecutive or runoff stitches occur).		202
	Stitch tension loose, resulting in loose bobbin or top thread.		203

TABLE II - End item visual defects (cont.)

Examine	Defect	Classification	
		Major	Minor
Retention system (cont.)	Stitch tension excessively tight, resulting in puckering material.		204
	Stitching ends not secured.	112	
	Thread breaks, skipped stitches, or run-offs not overstitched.	113	
	Bartack or box-x, if any, omitted.	114	
	Bartack or box-x, if any, not as specified or not in specified location.	115	
Marking	Retention System: omitted, incorrect, illegible, or not as specified.	116	
Barcode	Omitted or not readable by scanner.		205
	Human readable interpretation (HRI) omitted.		206
	Not visible on packaged item.		207
	Causes damage to the end item	117	
Stitch margin or gage	Not within specified tolerance.		208
Box, box-x and stitching	Dimensions not within specified tolerance.		209

1/ A sharp edge shall be defined as something likely to cut skin if contracted.

4.3.5 Dimensional examination. The completed retention system or individual components shall be examined for the defects listed in Table III.

TABLE III - End item dimensional examination.

Examine	Defect	Classification	
		Major	Minor
Dimensions	Smaller than nominal dimensions less applicable minus tolerance indicated on drawings, but not smaller than nominal dimensions less twice the applicable minus tolerance.	118	
	Smaller than nominal dimensions less twice the applicable minus tolerance.		210
	Larger than nominal dimensions and applicable plus tolerance.	119	

4.3.6 Component and end item inspection. In accordance with 4.1, components and end item shall be tested for the characteristics listed in Table IV. The methods of testing as specified wherever applicable and as listed in Table IV shall be followed. The government reserves the right to inspect all components and end items to determine conformance to requirements.

TABLE IV – Component/End item tests.

Characteristic	Required paragraph	Test method
Laminated foam	3.4.7	ASTM D-1777
Visual shade matching	3.6	AATCC Evaluation Procedure 9, Option A
Colorfastness:		
Laundering, after 4 cycles	3.7	AATCC 61 Test 2A
Crocking	3.7	AATCC 8
Perspiration (acid & Alkaline)	3.7	AATCC 15
Water	3.7	AATCC 107
Static pull strength test	3.5.2.1	See 4.4.3
Dynamic pull strength test	3.5.2.2	See 4.4.4
Launderability	3.8	See 4.4.1
Toxicity	3.9	See 4.4.2

4.4 Methods of inspection.

4.4.1 Washability. Each component of the retention system, except screws and posts, shall be subjected to 20 washings (laundryings) in accordance with AATCC Test Method 143. All other components shall be hand washed using a nylon brush and water at a temperature of $41 (\pm 3) ^\circ \text{C}$ ($105 \pm ^\circ \text{F}$). Each component shall be allowed to air dry between washings (laundryings), each component shall be visibly inspected for the requirements of 3.8. Any non-conformance with the requirements of 3.8 shall constitute a failure.

4.4.2 Toxicity test. When required (see 6.2), an acute dermal irritation study and a skin sensitization study shall be conducted on laboratory animals. When the results of these studies indicate the neckerchief is not a sensitizer or irritant, a Repeat Insult Patch Test shall be performed in accordance with the Modified Draize Procedure (see 2.3). If the toxicity requirements (see 3.9) can be demonstrated with historical use data, toxicity testing may not be required (see 6.2).

4.4.3 Static pull strength test. The retention system pull test shall be tested with a testing machine that is in conformance with ASTM E 4, "Practices for Force Verification of Testing Machines" or that specified in DOT FMVSS 218 (see 2.3). The helmet shall be rigidly attached to the testing machine base with either a clamp or headform device. The retention system shall be attached to a grip that simulates the jaw. The grip shall consist of freely-moving cylindrical rollers, each 0.25 inch radius, and rigidly spaced 3.0 inch apart (center-to-center) with a length of approximately 1.50-inch to accommodate the retention system chin-up (see DOT FMVSS 218, Figure 4, for set-up).

The retention system pull test shall be tested as follows:

- a. Mount the helmet in the test fixture. Use a suitable means to mark the retention system webbing ends at the attachment hardware points.
- b. Apply a load at the rate of $1.0 (\pm 0.10)$ -inch/minute until a minimum 150-lb load is achieved. Hold the 150-lb for a minimum of 1 minute.
- c. Inspect the retention system for failure as specified in 3.6.3 within 5 minutes of completing the 150 lb load for 1 minute. Use the marks on the webbing (see step a) to determine slippage. It should be noted that the chinstrap is allowed to stretch, but not slip (loosen). Failure to meet the requirements of 3.5.2.1 shall constitute test failure.

- d. For information purposes only, continue applying a load to the chinstrap at a rate of 1.0 inch/minute until the retention system fails. Record the peak load as the pull strength and the mode of failure.

4.4.4 Dynamic pull strength test. Mount the finished helmet on the apparatus in accordance with 4.10.14 of Defense Supply Center Philadelphia, Purchase Description, Advanced Combat Helmet., CO/PD-05-04. The helmet shall be dropped at 25 ft/sec onto a hemispherical anvil once on each of the locations in accordance with 4.10.14 of Defense Supply Center Philadelphia, Purchase Description, Advanced Combat Helmet., CO/PD-05-04. Separate helmets, pads, and retention systems may be used for each impact. The helmet shall then be inspected. Failure to meet the requirements of paragraph 3.5.2.2 shall constitute failure of the test.

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 materiel is to be performed by DoD 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 activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

6.1 Intended use. The retention system is intended for use in the Advanced Combat Helmet (ACH) by ground troops and parachutists to provide helmet retention and stability of the ACH.

6.2 Acquisition requirements. Acquisition documents must specify the following:

1. Title, number and date of this specification.
2. Issue of DODISS to be cited in the solicitation and, if required, the specific issue of individual documents referenced (see 2.2 and 2.3).
3. When first article inspection is required, (see 3.1), the item will be tested and should be a first article sample (pre-production sample). The first article shall be inspected and approved under the appropriate provisions of FAR 52.209-4. The contracting officer should include specific instructions in acquisition documents regarding arrangements for quantity, selection, inspection, examination, testing and approval of the first article.
4. Toxicity requirements (see 3.9 and 4.4.2).
5. Acceptance criteria shall be as specified in the contract or purchase order.
6. Packaging requirements. (see 5.1)

6.3 First article. When a first article inspection is required (see 3.1), it will be inspected and approved under the appropriate provisions of FAR 52.209-4. The first article should be a preproduction sample. The contracting officer should specify the appropriate type of first article and the number of the units to be furnished. The contracting officer should include specific instructions in acquisition documents regarding arrangements for selection, inspection and approval of the first article.

6.4 Standard samples. For access to samples, 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 "General Vendor Info" then

“Specifications/Pattern/Drawing Requests” under “Special Instructions” provide color, shade, roll number and solicitation/contract number.

6.5 Suggested sources

6.5.1 Component thread. Coats American, 4135 South Stream Blvd, Charlotte, NC 28217
Phone (610) 927-1571. (see 3.4.1)

6.5.2 Plastic stiffener. Penn Fiber PO Box 160 Church & Snider, Greenwood, DE. 19950
Phone 302-349-4505. Commercial Plastics and Supply, 352 McGrath Highway, Somerville, MA
02143, phone (617) 623-2100. (see 3.4.2)

6.5.3 Webbing. Narricot Industries, 931 Noble St. Suite 801, Anniston, AL. 36201 Phone (256)
322-3918. (see 3.4.3, 3.4.5 and 3.4.6)

6.5.4 Elastic webbing. K & W Webbing Co. 403 Roosevelt Ave. Central Falls, RI. 02863
Phone (401) 725-4441. (see 3.4.4)

6.5.5 Laminated foam. UFP Technologies, 172 E. Main Street, Georgetown, MA 01833,
Phone 1-800-372-3172. (see 3.4.7)

6.5.6 Fastener tape, synthetic, nylon hook and loop, 5/8-inch. Velcro USA Inc., 406 Brown
Ave, Manchester, NH 03103, phone (603) 626-6463. (see 3.4.8)

6.5.7 Side release buckle set, 3/4-inch. National Molding, 5 Dubon Court, Farmingdale, NY
11735, (631) 293-8696. (see 3.4.10)

6.5.8 Ladderlock buckle, 20mm. ITW Nexus 195 Algonquin Ave, Des Plaines, IL 60016.
Military Sales (401) 454-4817, or (847) 375-6709. (see 3.4.11)

6.6 National Stock Number:

8470-01-530-0868

6.7 Subject term (key word) listing.

Chinstrap
Webbing

MILITARY INTERESTS:

Custodians:
Army - GL

Preparing activity:
DLA-CT

(Project)

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 www.dodssp.daps.mil.