

INCH-POUND

MIL-R-44475 (GL)
8 November 1993

MILITARY SPECIFICATION

RELEASE, PARACHUTIST'S INDIVIDUAL EQUIPMENT

This specification is approved for use by the Natick Research, Development, and Engineering Center, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers one type of a fabric release assembly.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 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 listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection
by Attributes

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be used in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5017 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 1670

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

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- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-147 - Palletized Unit Loads
- MIL-STD-2073-1 - DoD Materiel Procedures for Development and Application of Packaging Requirements (Part 1 of 2 Parts)

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 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.

DRAWINGS

U.S. ARMY NATICK RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER

- 11-1-6860 - Release, Parachutist's Individual Equipment

(Copies of drawings are available from the U.S. Army Natick Research, Development, and Engineering Center, ATTN: SATNC-IMD, Natick, MA 01760-5017.)

2.2 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 which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

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 19103-1187.)

(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 informational services.)

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 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 (see 6.3) in accordance with 4.3.

3.2 Materials and components. Materials and components shall conform to the requirements on the applicable drawings, to subsidiary specifications and standards applicable thereto and as specified herein. It is encouraged that recycled material be used when practical as long as it meets the requirements of this specification.

3.3 Construction. The construction shall conform in all respects to the drawings listed in Section 2 and as specified herein.

3.3.1 Type 301 and 308 stitching. Ends of all type 301 stitching shall be backstitched or overstitched not less than 1/2 inch past ends of the defect in accordance with the required stitch pattern. Ends of type 308 stitching shall be secured by crowding a minimum of three stitches (accomplished by not allowing the materials to move) at the beginning and end of the stitching. Thread tension shall be maintained so that there will be no loose stitching resulting in the puckering of the material sewn. The lock shall be embedded in the materials sewn.

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

a. When thread breaks or bobbin run-outs occur during the stitching, the stitching shall be repaired by restarting the stitching a minimum of 1 inch (1/2 inch for box-x and W-W stitching) from the end of the stitching. 1/

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 inch from the defective area, (1/2 inch for box-x and W-W stitching), continue over the defective area, and continue a minimum of 1 inch (1/2 inch for box-x and W-W stitching) beyond the defective area onto the existing stitching. Loose or excessively tight stitching shall be repaired by removing the defective stitching, without damaging the materials, and restitching in the required manner. 1/

1/ When making the above repairs, the ends of the stitching are not required to be backstitched.

3.3.1.2 Repair of 308 stitching. Repairs of type 308 stitching shall be in accordance with 3.3.1.1.a and 3.3.1.1.b, except that the stitching shall overstitch the defective area a minimum of three stitches onto the existing stitches.

3.3.1.3 Automatic stitching. Automatic stitching machines may be used to perform any of the required stitch patterns provided the requirements for the

stitch pattern, stitches per inch, and size and type of thread are met; and at least three or more tying, overlapping, or back stitches are used to secure the ends of stitching.

3.4 Thread ends. All thread ends shall be trimmed to a maximum length of 1/4 inch.

3.5 Setting of grommets. Holes shall be prepunched to receive the grommets. Holes prepunched to receive the grommets shall be smaller than the outside diameter of the grommet barrel so that the barrel must be forced through the hole. The grommet shall be securely clinched without cutting the adjacent material.

3.6 Finishing of the jacketed wire rope ends. All wire rope ends shall be finished by either the melt method specified in 3.6.1 or by the dip method specified in 3.6.2 such that the ends are completely enclosed with the melted coating flush with the unmelted nylon jacket.

3.6.1 Melt method. Heat the wire rope end nylon jacket with a suitable electrical heating element so as to melt the nylon over the end to form a smooth round surface. Remove any melted residue on the jacket surface with a fine abrasive material such that the surface is not damaged and is finished smooth.

3.6.2 Dip method. Coat the wire rope end with a nylon II or nylon 6/6 powder. Heat the coated end for 10 seconds at $405 \pm 15^{\circ}\text{F}$ using either an induction coil (2 to 4-inch) with an automatic timer control or an electric melting pot with an automatic temperature control (see 6.4).

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

3.8 Workmanship. The finished and assembled release shall conform to the quality of product established by this specification and the occurrence of defects shall not exceed the applicable acceptable quality levels.

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 (examinations and tests) 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 specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Responsibility for dimensional requirements. Unless otherwise specified in the contract or purchase order, the contractor is responsible for ensuring 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 ensure compliance with all dimensional requirements.

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 3.1 and 6.2), it shall be examined for the defects specified in 4.4.3 and 4.4.4. 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.

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 specification or applicable purchase document.

4.4.2 In-process inspection. Inspection of subassemblies shall be made to ascertain that construction details which cannot be examined in the finished product are in accordance with specified requirements. The Government reserves the right to exclude from consideration for acceptance, any material or service for which in-process inspection has indicated nonconformance.

4.4.3 End item visual examination. The end item shall be examined for the defects listed in table I. The lot size shall be expressed in units of releases. The sample unit shall be one release. The inspection level shall be II and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 for major defects and 6.5 for total (major and minor combined) defects.

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TABLE I. End item visual defects

Examine	Defect	Classification	
		Major	Minor
Webbing or tape	Not specified type or class	101	
	Color not as specified		201
	Any hole, cut, or tear	102	
	Edge frayed, beaded, corded, or torn		202
	Ends not seared as specified	103	
Fastener tape	Cut or tear	104	
	Hooks crushed affecting closure	105	
	Any fastener tape reversed, i.e., pile tape attached where hook tape is required or visa versa	106	
	Not specified type and color		203
Cord	Not specified type and color		204
Hardware	Fractured, malformed, or bent	107	
	Burrs or sharp edges	108	
	Protective finish omitted or not as specified, any corroded area	109	
	Not specified type, size or style	110	
	Adapter attached with friction grip facing wrong direction	111	
	Jacketed wire rope	Not specified type or size	112
Ends not nylon coated or wire material not completely enclosed		113	
Surface of nylon coated end not smooth or flush with unmelted jacketed surface		114	
Swaged wire rope sleeve	Missing	115	
	Not specified type or size	116	
	Not swaged as specified		205
	One sleeve swage omitted		206
	Two sleeve swages omitted	117	
	Swaged excessively tight, cutting wire rope material	118	
Swaged loosely, permitting sleeve to rotate freely	119		
Brass grommets	Clinched excessively tight, cutting adjacent material	120	
	Insecurely clinched to a degree that grommet may be detached from material	121	

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TABLE I. End item visual defects (cont'd)

Examine	Defect	Classification	
		Major	Minor
Brass grommets (cont'd)	Washer installed on incorrect side of material		207
	Barrel split		208
	Loosely clinched, permitting grommet to rotate freely within the hole		209
	Washer omitted	122	
Thread	Not specified type, class, or size	123	
	Not specified color		210
Open seams	1/2 inch or less		211
	More than 1/2 inch	124	
	NOTE: 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 runoff stitches occur.		
Stitch type	Wrong seam or stitch type	125	
Stitches and stitching	Stitching pattern not as specified	126	
	Any row of stitching missing	127	
	One stitch per inch under or over minimum and maximum specified		212
	Two or more stitches per inch under or over minimum and maximum specified	128	
	Thread breaks, bobbin runouts, or two or more consecutive skipped or run-off stitches not overstitched or restitched as specified	129	
	Ends of stitching not backstitched or secured as specified		213
	Tension loose resulting in loose top or bottom thread, or tight tension causing puckering of material at stitch line	130	
	Needle chews or bunched stitching	131	
Components and assembly	Any component part omitted or not as specified or required operation omitted (unless otherwise classified herein)		132
	Any component misplaced or not assembled as specified	133	

TABLE I. End item visual defects (cont'd)

Examine	Defect	Classification	
		Major	Minor
Identification marking	Omitted, illegible, incorrect, misplaced, or size of characters not as specified	134	
	Color not as specified		214
Cleanness	Dirt, grease or oil or foreign matter clearly noticeable		215
	Thread ends not trimmed to 1/4 inch or less		216
Construction and assembly	Any component missing, or not assembled or joined as specified	135	

4.4.4 End item dimensional examination. The end items shall be examined for conformance to the dimensions specified on the drawings. Only those dimensions that can be evaluated without damaging or disassembling the end items shall be examined. Any dimension not within the specified tolerance shall be classified as a defect. The lot size shall be expressed in units of releases. The sample unit shall be one release. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 4.0.

4.4.5 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
Content	Number per container is more or less than required

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4.4.6 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 Load not bonded as specified
Weight	Exceeds maximum load limits
Marking	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application

5. PACKAGING

5.1 Preservation and packing. Levels of preservation and packing shall be in accordance with the procurement order/contract, or in accordance with MIL-STD-2073-1 and ASTM D 3951 (see 6.2).

5.2 Palletization. When specified (see 6.2), palletization shall be in accordance with the procurement order/contract, or MIL-STD-147.

5.3 Marking. Marking shall be in accordance with the procurement order/contract, or MIL-STD-129.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The fabric release assembly is used by airborne personnel to release a container assembly during a parachute descent.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 2.2).
- c. When first article is required (see 3.1, 4.3 and 6.3).
- d. Levels of preservation and packing (see 5.1).
- e. When palletization is required (see 5.2).

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) 52.209-3 or 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 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.

6.4 Source for heat sealing equipment. A source for the heat sealing equipment for forming the ends of the nylon jacketed wire rope (see 3.6.2 - induction coil dip method) is Boyd Coatings Research Co., Inc., 51 Parmenter Road, Hudson, MA 01749.

6.5 Subject term (key word) listing.

Airborne jump operations

Custodian:

Army - GL

Review activity:

Army - AV

Preparing activity:

Army - GL

(Project 1670-A814)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

1. RECOMMEND A CHANGE:		1. DOCUMENT NUMBER MIL-R-44475 (GL)	2. DOCUMENT DATE (YYMMDD) 931108
3. DOCUMENT TITLE Release, Parachutist's Individual Equipment			
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)			
5. REASON FOR RECOMMENDATION			
6. SUBMITTER			
a. NAME (Last, First, Middle Initial)		b. ORGANIZATION	
c. ADDRESS (Include Zip Code)		d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (If applicable)	7. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY			
a. NAME		b. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON/DSN	
U.S. Army Natick RD&E Center		508-651-4531	256-4531
c. ADDRESS (Include Zip Code)		IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:	
Commander, U.S. Army Natick RD&E Center ATTN: STRNC-UC Natick, MA 01760-5017		Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	