

INCH-POUND

MIL-S-43292D
23 August 1989
SUPERSEDING
MIL-S-43292C
10 November 1981

MILITARY SPECIFICATION
STATIC LINES, CARGO PARACHUTES,
GENERAL SPECIFICATION FOR

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 general requirements for four types of airdrop cargo static lines.

1.2 Classification. The static lines shall be of the following types, as specified (see 6.2):

- | | |
|----------|--|
| Type I | - G-14 Cargo Parachute |
| Type II | - G-12 Cargo Parachute |
| Type III | - Load Transfer, Cargo Platform, Break-Away Type |
| Type IV | - Ringslot Cargo Parachutes |

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

AMSC N/A

FSC 1670

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

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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).

SPECIFICATIONS

FEDERAL

- | | |
|-----------|-----------------------------------|
| PPP-B-26 | - Bag, Plastic, (General Purpose) |
| PPP-B-601 | - Boxes, Wood, Cleated-Plywood |
| PPP-B-636 | - Boxes, Shipping, Fiberboard |
| T-T-871 | - Twine, Cotton, Wrapping |

STANDARDS

FEDERAL

- | | |
|-------------|-----------------------------------|
| FED-STD-751 | - Stitches, Seams, and Stitchings |
|-------------|-----------------------------------|

MILITARY

- | | |
|-------------|--|
| MIL-STD-105 | - Sampling Procedures and Tables for Inspection
by Attributes |
| MIL-STD-129 | - Marking for Shipment. and Storage |
| MIL-STD-147 | - Palletized Unit Loads |

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

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.

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DRAWINGS

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

- 11-1-134 - Static Line, Load Transfer, Cargo Platform,
Break-Away Type; Assembly Complete
- 11-1-219 - Static Line; Cargo Parachute

AIR FORCE

- 59J6171 - Static Line - Pilot Chute, G-12 Parachute

(Copies of drawings are available from the U.S. Army Natick Research, Development, and Engineering Center, ATTN: STRNC-EMSS, Natick, MA 01760-5014.)

2.2 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 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. Materials and hardware requirements shall be in accordance with this document and with subsidiary documents cited on the applicable drawings. It is encouraged that recycled material be used when practical as long as it meets the requirements of this specification.

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3.3 Constructions and assembly. The end item shall conform to the requirements of this document and to the designs, details, and dimensions shown or specified on the applicable drawings.

3.3.1 Stitching. Stitching shall conform to FED-STD-751. Stitch types shall be as specified on the applicable drawing. Thread breaks, bobbin runouts, or two or more consecutive skipped stitches shall be overstitched not less than 1/2 inch each end, except for type 308 stitching, which shall be overstitched two or three stitches. Runoffs shall be restitched to conform to the required stitch pattern. Backstitching is not required when ends of type 301 stitching are turned under in a hem or held down by other stitching. Thread tension shall be maintained so that there will be no loose stitching resulting in a loose bobbin or top thread or excessively tight stitching resulting in puckering of the materials sewed. The lock will be imbedded in the materials sewed. All thread ends shall be trimmed.

3.3.1.1 Automatic stitching. Automatic stitching machines may be used to perform any of the required stitch patterns provided the requirements for stitch pattern, stitches per inch, and size and type of thread are met, and at least three or more tying, overlapping, or backstitches are used to secure the ends the stitching.

3.4 Workmanship. The end item shall conform to the quality of product established by this specification.

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 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.

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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 6.3), it shall be examined for the defects specified in 4.4.2 and 4.4.3.

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 End item visual examination. The end items shall be examined for the defects listed in table I. The lot size shall be expressed in units of static lines or connector web assemblies, as applicable. The sample unit shall be one static line or one connector web assembly, as applicable. The inspection level shall be II (see 6.5).

TABLE I. End item visual defects

<u>Examine</u>	<u>Defect</u>	<u>Classification</u>	
		<u>Major</u>	<u>Minor</u>
Materials	Not specified type, class, or size	101	
Webbing, duck and tape	Color not as specified		201
	Cut, hole, tear, abrasion, or weak area	102	
	Ends not seared or wax dipped as specified		202
	Edge beaded or corded		203

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

Examine	Defect	Classification	
		Major	Minor
Thread	Not specified type or size	103	
	Not specified color		204
Cord	Any splice, or not continuous (type I or III static line)		205
	Any splice, or not continuous (type II static line)	104	
	Ends not seared where specified		206
	Core not removed (type II static line)	105	
	Knots insecure, not as specified, or not located as shown on the drawing		207
	Any cut or break	106	
Hardware (as applicable)	Not type or size specified	107	
	Sharp, burred, or split edges		208
	Component fractured, malformed, or bent	108	
	Any area of rust or corrosion	109	
	Coating blistered, peeling flaking, or otherwise not adherent	110	
	Screw not seated	111	
	Not material specified		209
	Knife blade does not pivot freely as specified	112	
Construction and workmanship	Any component missing, mis- aligned, or not joined as specified	113	
	Grease, oil dirt, or other foreign matter on surface of webbing		210
Stitches and stitching	Wrong type	114	
	Any open seam	115	

NOTE: A seam shall be classified as open when one or more stitches joining a seam are broken or two or more consecutive skipped stitches occur. Repairs of open seams shall not be scored as defects.

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

Examine	Defect	Classification	
		Major	Minor
Stitches and stitching (cont'd)	One stitch per inch less than or more than the minimum or maximum specified		211
	Two or more stitches per inch less than or more than the minimum or maximum specified	116	
NOTE: Variation in number of stitches per inch caused by the operator speeding up the machine and pulling the fabric to sew over heavy places, heavy seams, or in turning corners shall be classified as follows:			
a. Within the major defect classification - Minor defect			
b. With the minor defect classification - No defect			
	Stitching ends backstitched less than 1/2 inch (except where ends are turned under in a hem or held down by other stitchings)	117	
	Needle chews or holes		212
	Thread ends not trimmed	118	
	Any missing or incomplete row of stitching	119	
	Tension loose resulting in a loose top or bobbin thread, or tension tight resulting in puckering		213
	Runoff at edge and not restitched		214
	Thread breaks and skips not over-stitched as specified	120	
	Missing, incorrect, or illegible	121	
Identification marking	Improper location, wrong color or otherwise not as specified		215

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4.4.3 End item dimensional examination. The end items shall be examined for conformance with overall length, loop length and locator dimensions, bridle length, and locator dimensions and location of the rigging markings of the static lines specified on the drawings. Any dimension not within the specified tolerance shall be classified as a defect. The lot size shall be expressed in units of static lines or connector web assemblies, as applicable. The sample unit shall be one static line or one connector web assembly, as applicable. The inspection level shall be S-3 (see 6.5).

4.4.4 Packaging examination. The fully packaged end items shall be examined for the defects listed below. The lot size shall be expressed in units of shipping containers. The sample unit shall be one shipping container fully packaged. The inspection level shall be S-2 (see 6.5).

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

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

<u>Examine</u>	<u>Defect</u>
Finished dimensions	Length, width, or height exceeds specified maximum requirement
Palletization	Pallet pattern not as specified Interlocking of loads not as specified Load not bonded as specified

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<u>Examine</u>	<u>Defect</u>
Weight	Exceeds maximum load limits
Marking	omitted; incorrect; illegible; of improper size, location, sequence, or method of application

PACKAGING

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

5.1.1 Level A preservation.5.1.1.1 Static lines.

5.1.1.1.7 Type I static lines. Each static line shall be lap folded to form a compact bundle measuring approximately 11-1/2 by 3-1/2 by 2-1/2 inches. The bundle shall be securely tied at each end with twine conforming to type I or II, 8-ply of T-T-871. Each static line shall be unit packed in a close-fitting, 0.003 inch minimum thickness polyethylene bag conforming to type I or II, grade A, style 1 of PPP-B-26. Prior to or during the final closure operation, excess air within the bag shall be expelled.

5.1.1.1.2 Type II static lines. Each static line's pilot chute panel portion shall be laid out flat with the outer loops facing up. The braided line shall be placed within the panel pockets. The panel shall then be folded over the webbing. Starting with the folded panel portion, the static line shall be lap folded in approximately 16-inch increments. The completely folded static line, measuring approximately 16 by 3 by 2-1/2 inches, shall be securely tied at each end with the twine specified in 5.1.1.1.1. One of the ties shall immobilize the clevis assembly. Each static line shall be unit packed as specified in 5.1.1.1.1.

5.1.1.1.3 Type III static lines. Each static line's release line shall be tightly coiled back to the sleeve and secured with twine specified in 5.1.7.1.1. Each static line shall then be completely coiled or lap folded, starting from the release knife end. The static line shall then be securely tied at each end and in the center with the specified twine to form a bundle measuring approximately 14-inches in length, 5-1/2 inches in width, and 2-1/4 inches in depth. Each static line shall be unit packed as specified in 5.1.1.1.1.

5.1.1.1.4 Type IV static lines. Each static line shall be tightly coiled with the clevis assembly positioned on the top to form a bundle measuring approximately 6-1/2 by 2-3/4 by 1-3/4 inches. The bundle shall be securely

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tied with twine conforming to type I or II, 8 ply of T-T-871. The tie shall immobilize the clevis assembly. Each static line shall be unit packed as specified in 5.1.1.1.1.

5.1.1.2 Connector web assembly.

5.1.1.2.1 Unit pack. Each connector web assembly shall have the connector link and clevis folded down flat onto the same side of the connector web.

5.1.1.2.2 Intermediate pack. Fifteen connector web assemblies, unit packed as specified in 5.1.1.2.1 shall be packed in an intermediate fiberboard box conforming to style RSC, grade 200 of PPP-B-636. Inside dimensions of each intermediate box shall approximate 8-1/4 inches in length, 7-3/4 inches in width, and 6 inches in depth. The box shall be closed in accordance with Method I as specified in the appendix of PPP-B-636.

5.1.2 Commercial preservation. Static lines and connector web assemblies shall be preserved in accordance with ASTM D 3951.

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

5.2.1 Level A packing.

5.2.1.1 Static lines. Static lines of one type only, preserved as specified in 5.1, shall be packed in quantities as specified in table I within a shipping container conforming to overseas type, style A or I, type 2 load of PPP-B-601. Level A unit pack arrangement within a shipping container, and approximate shipping container inside dimensions, shall be as specified in table I. Each shipping container shall be closed and reinforced in accordance with the appendix of PPP-B-601.

5.2.1.2 Connector web assembly. One hundred and twenty connector web assemblies, preserved as specified in 5.1, shall be packed in a shipping container conforming to overseas type, style A or I, type 2 load of PPP-B-601. Level A intermediate packs shall be packed flat, two in length, two in width, and two in depth within a shipping container. Inside dimensions of each container shall be approximately 17 inches in length, 16 inches in width and 12 1/2 inches in depth. Approximate dimensions are furnished as a guide only. Each shipping container shall be closed and reinforced in accordance with the appendix of PPP-B-601.

5.2.2 Level B packing.

5.2.2.1 Static lines. Static lines of one type only, preserved as specified in 5.1, shall be packed in quantities as specified in table I within a shipping container conforming to style RSC-L, type CF (variety SW) or SF, class domestic, grade 275 of PPP-B-636. The inside of each fiberboard

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shipping container shall be fitted with a box liner conforming to class domestic, variety DW, grade 275 of PPP-B-636. Level A unit pack arrangement within a shipping container, and approximate shipping container inside dimensions, shall be as specified in table I. Each shipping container shall be closed in accordance with method II as specified in the appendix of PPP-B-636.

TABLE I. Quantity, packing arrangement, approximate inside dimensions of shipping containers 1/

Type of static line	Quantity per shipping container (each)	Unit pack arrangement	Approximate inside dimensions 1/ (inches)	Pallet pattern number
Type I	50	Packed flat, 2 in length, 5 in width, and 5 in depth	23 x 17-1/2 x 12-1/2	6
Type II	50	Packed on side, 10 in length, 1 in width, and 5 in depth	25-1/2 x 16-1/2 x 15	90
Type III	24	Packed on end, 4 in length, 6 in width, and 1 in depth	22-1/2 x 14 x 14	3
Type IV	108	Packed flat, 3 in length, 6 in width, and 6 in depth	20 x 17 x 11	95

1/ Furnished as a guide only.

5.2.2.2 Connector web assembly. One hundred and twenty connector web assemblies, preserved as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC, type CF (variety SW or SF), class domestic, grade 275 of PPP-B-636. Level A intermediate packs shall be packed flat, two in length, two in width, and two in depth within a shipping container. Inside dimensions of each container shall be approximately 17 inches in length, 16 inches in width and 12 1/2 inches in depth. Approximate dimensions are furnished as a guide only. Each shipping container shall be closed in accordance with method II as specified in the appendix of PPP-B-636.

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

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5.2.3 Commercial packing. Static lines or web assemblies, preserved as specified in 5.1, shall be packed in accordance ASTM D 3951.

5.3 Palletization. When specified (see 6.2), static lines of one type only or web assemblies, packed as specified in 5.2.2 and 5.2.3, shall be palletized on a 4-way entry pallet in accordance with load type Ia of MIL-STD-147. Pallet types shall be type I (4-way entry), type IV or type V in accordance with MIL-STD-731. Each prepared load shall be bonded with straps in accordance with bonding means C and D or film bonding means F or G. Pallet patterns shall be number 95 for the connector web assembly, and as stated in table I for static lines, in accordance with appendix of MIL-STD-147.

5.4 Marking. In addition to any special marking required by the contract, unit packs, interior packs, shipping containers, and palletized unit loads shall be marked in accordance with MIL-STD-129 or ASTM D 3951, as applicable.

5.4.1 Polyethylene bagged unit packs. Polyethylene bagged unit packs shall have the required identification information legibly printed or stamped in black directly on the bag across the center face or on a white paper label inserted within the bag so as to permit ready identification.

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 static lines and web assemblies are intended for use as cargo parachute deployment or platform load transfer devices.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Type required (see 1.2).
- c. Issue of DODISS to be cited in the solicitation and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- d. When a first article is required (see 3.1, 4.3, and 6.3).
- e. Levels of preservation and packing (see 5.1 and 5.2).
- f. When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.3).
- g. When palletization is required (see 5.3).
- h. Acceptance criteria required (see 6.5).

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6.3 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of FAR 52.209. The first article should be a preproduction sample. The contracting officer should specify the appropriate type of first article and the number of units to be furnished. The contracting officer should also 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 procuring activity issuing the invitation for bids.

6.5 Acceptance criteria. The acceptance criteria recommended below is furnished only for guidance to the procuring activity. The acceptance criteria as specified in the contract or purchase order shall be binding. Unless otherwise specified, the following acceptance criteria are in accordance with MIL-STD-105.

6.5.1 For end item visual examination. An acceptable quality level (AQL), expressed in terms of defects per hundred units, of 0.65 for major defects and 6.5 for total (major and minor combined) defects is recommended.

6.5.2 For end item dimensional examination. An AQL, expressed in terms of defects per hundred units of 4.0 is recommended.

6.5.3 For packaging examination. An AQL, expressed in terms of defects per hundred units, of 2.5 is recommended.

6.5.4 For palletization examination. An AQL, expressed in terms of defects per hundred units, of 6.5 is recommended.

6.6 Subject term (key word) listing.

Load transfer
Break-away

6.7 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:

Army - GL
Navy - AS
Air Force 99

Preparing activity:

Army - GL
(Project 1670-0768)

Review activities:

Army - AV
Air Force - 11, 82

User activity:

Navy - MC

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-S-43292D		2. DOCUMENT TITLE Static Lines, Cargo Parachutes, General Specification For	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
3b. ADDRESS (Street, City, State, ZIP Code)		<input type="checkbox"/> VENDOR	
		<input type="checkbox"/> USER	
		<input type="checkbox"/> MANUFACTURER	
		<input type="checkbox"/> OTHER (Specify): _____	
5. PROBLEM AREAS			
a. Paragraph Number and Wording:			
b. Recommended Wording:			
c. Reason/Rationale for Recommendation:			
6. REMARKS			
7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional		8. DATE OF SUBMISSION (YYMMDD)	

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NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification 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.

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