MIL-B-117E

17 June 1974
SUPERSEDING
MIL-B-117D
30 June 1967
MIL-B-81847A
8 June 1973

MILITARY SPECIFICATION

BAGS, SLEEVES AND TUBING - INTERIOR PACKAGING

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

1. SCOPE

1.1 Scope. This specification covers heat sealable, interior packaging bags, sleeves and tubing required by the Military Services for the protection of supplies during transportation and storage under all climatic conditions.

1.2 Classification. Bags, sleeves and tubing shall be of the following types, classes and styles.

Type I	- Heavy Duty
Type II	- Medium Duty
Type III	- Light Duty
Class B	- Waterproof
Class C	- Waterproof, Greaseproof
Class E	- Watervaporproof, Greaseproof
Class F	- Watervaporproof, Greaseproof, Electrostatic-Free
Class G	- Watervaporproof, Greaseproof, Flame Resistant
Style 1	- Opaque
Style 2	- Transparent
Style 3	- One side opaque, other side transparent

1.2.1 Sizes. Bags, sleeves and tubing shall be of the size specified in the contract or order (see 6.2).

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

Federal

L-P-378	- Plastic Sheet and Strip, Thin Gauge, Polyolefin
PPP-B-566	- Box, Folding, Paperboard
PPP-B-601	- Box, Wood, Cleated-Plywood
PPP-B-621	- Box, Wood, Nailed and Lock-Corner
PPP-B-636	- Boxes, Shipping, Fiberboard
PPP-B-640	- Box, Fiberboard, Corrugated Triple-Wall
PPP-B-665	- Box, Paperboard, Metal Edged and Components
PPP-B-1055	- Barrier Material, Waterproofed, Flexible
PPP-T-60	- Tape, Packaging, Waterproof

Military

MIL-B-116	- Preservation-Packaging, Methods of
MIL-B-121	- Barrier Material, Greaseproofed, Waterproofed, Flexible
MIL-B-131	- Barrier Material, Watervaporproof, Flexible, HeatSealable
MIL-B-13239	- Barrier Material, Waterproofed, Flexible, All Temperatures, Heat Sealable
MIL-B-22191	- Barrier Materials, Transparent, Flexible, Heat Sealable
MIL-B-81705	- Barrier Materials, Flexible, Electrostatic-Free, Watervaporproof, Heat Sealable
MIL-B-81916	- Barrier Material, Watervaporproof, Flexible, Heat Sealable, Flame Resistant.

STANDARDS

Military

MIL-STD-105	- Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-109	- Quality Assurance Terms and Definitions.
MIL-STD-129	- Marking for Shipment and Storage.

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3. REQUIREMENTS

3.1 Material. Materials shall conform to the types, grades and classes specified in Table 1.

TABLE I

Classification (MIL-B-117)			Classification (Material Specification)			
Type	Class	Style	Specification	Type	Grade	Class
I	B	1	MIL-B-13239	B-2 or B-3	A	-
II	B	1	MIL-B-13239	B-2 or B-3	B	-
III	B	1	MIL-B-13239	B-2 or B-3	C	-
I	B	2	MIL-B-22191 L-P-378	III I or II	- A	- 1*
I	B	3	MIL-B-13239 MIL-B-22191	B-2 or B-3 III	A -	- -
I	C	1	MIL-B-121	I	A	1
II	C	1	MIL-B-121	II	A	1
I	C	2	MIL-B-22191	II	-	-
I	C	3	MIL-B-121 MIL-B-22191	I II	A -	1 -

TABLE I (Cont)

Classification (MIL-B-117)			Classification (Material Specification)			
Type	Class	Style	Specification	Type	Grade	Class
I	E	1	MIL-B-131	-	-	1
I	E	2	MIL-B-22191	I	-	-
II	E	1	MIL-B-131	-	-	3
III	E	1	MIL-B-131	-	-	2
I	E	3	MIL-B-131 MIL-B-22191	- I	- -	1 -
II	E	3	MIL-B-131 MIL-B-22191	- I	- -	3 -
I	F	1	MIL-B-81705	-	-	-
I	G	1	MIL-B-81916	-	-	-

* Finish shall be No. 2 (treated)

3.2 Construction

3.2.1 Bags. Bags shall be formed using two sheets or by folding one sheet of material. Heat sealable surfaces of the specified material shall be placed face to face, heat sealing along both sides and the bottom edge. Transparent bags fabricated by the side weld process shall be folded and have two side seams. The side seams shall be parallel to each other and the outer edge of the bag. The bottom seam shall be at right angle to the side seam. When specified (see 6.2), bags 12 inches or less in length, with a mouth opening of 10 inches or less, shall be provided with a lip by extending one edge of the mouth 1/8 inch (± 1/16 inch) beyond and parallel to the outer edge. The length of the lip shall not be included in the dimensions of the bag. Bags fabricated from sleeves or tubing shall consist of a bottom seam and do not require a lip.

3.2.1.1 Class E bags When specified (see 6.2), Class E bags shall have a tear, nick or V-notch, 1/8 inch deep (± 1/16 inch) in one edge 1 to 1 1/4 inch from the open (unsealed) end of the bag. The tear, nick or V-notch shall not reduce the heat seal width. The legend "TEAR HERE TO OPEN" with an arrow pointing to the tear, nick or V-notch shall be printed on the bag with lettering a minimum of 1/8 inch in height.

3.2.2 Sleeves or tubing. Sleeves fabricated from either transparent plastic sheet, opaque materials or a combination of both, shall be formed by bonding two continuous sheets or folding one continuous sheet, placing the heat sealable surfaces of the specified material together and heat sealing a seam along the entire length of both edges. The side seams shall be parallel to each other and the outer edge of the sleeve. Tubing fabricated from transparent plastic sheet by the extruding process, requires no seams.

3.3 Dimensions and tolerances. The dimensions specified shall apply to the inside width and length for bags, sleeves and tubing. Seams, seals or lips shall be excluded for bags and sleeves. Width of the bags shall be measured between the inside edges of the side seams and the length shall be measured from the inside edge of the bottom seam to the edge of the opening (exclusive of lip). Width of sleeves shall be measured the same as for bags. Width of tubing shall be measured between the inside creased edges. Dimensions for the heat seal widths, exclusive of side weld, dielectric, impulse or ultra-sonic processes (see note on Table II) for bags and sleeves shall be as indicated in Tables II and III. Dimensional tolerances for inside width and length of sleeves and tubing shall be as indicated in Table III.

TABLE II BAGS

Area of Bag (one side)	*Heat Seal Width Maximum	Tolerance - Width & Length of Bag
25 sq in or less	3/8	-1/16 + 1/8
26 thru 200 sq in	1/2	-1/8 + 1/4
201 thru 500 sq in	5/8	-1/4 + 3/8
501 sq in or over	5/8	-1/4 + 1/2

*Seams fabricated by the dielectric, impulse, or ultra-sonic process shall have a minimum 1/32 inch heat seal. Seams of bags fabricated from unsupported plastic sheet (i.e. polyethylene, polyolefin) shall be required to meet the seam strength test specified in 3.4 with no minimum seam width required.

TABLE III SLEEVES AND TUBING

Dimensions	*Heat Seal Width (Sleeves only) Maximum	Tolerance - Width and Length	
		Width	Length
Under 4 in wide	5/8	-1/8 + 1/8	-0
4 in thru 10 in wide	5/8	-1/4 + 1/4	-0
Over 10 in wide	5/8	-1/4 + 3/8	-0

*Seams fabricated by the dielectric, impulse, or ultra-sonic process shall have a minimum 1/32 inch heat seal. Seams of sleeves or tubing fabricated from unsupported plastic sheet (i.e. polyethylene, polyolefin) shall be required to meet the seam strength requirement specified in 3.4 with no minimum seam width required.

3.4 Seam requirements. All classes of bags and sleeves shall be capable of passing the vacuum chamber or submersion leakage tests and the heat sealed seam test of MIL-P-116.

3.5 Identification.

3.5.1 Bags, Sleeves and Tubing. Each bag shall be marked or printed with an arrow pointing to the unsealed edge as an indication that the final closure is to be made at this edge. Sleeves shall be marked or printed in a manner to indicate the edges where final closures are to be made. In addition, each bag, sleeve or roll of tubing shall be marked or printed in capital letters or numbers, approximately 10-point type, with the following information: bag specification number and revision letter; type, class and style; bag fabricator's name or trade mark; material designation; month and year of fabrication. For bags, sleeves and tubing the material designation shall consist of the barrier material manufacturer's code designation, as listed in the applicable Qualified Products List. The color and position of this printing shall be optional, except that it shall appear at least once on one surface only for bags and at least once in every (12) inch length of sleeve or tubing material on one side only.

3.5.2 Unit package. Each unit package or individual roll of sleeve or tubing material (see 5.1.1.1 and 5.1.1.2) shall be identified for use by means of a slip sheet with the following information legibly marked thereon:

a. Jaw type sealer (temperature, pressure and dwell).
b. Band type sealer (temperature, pressure and dwell).
c. Rotary type sealer (preheat, pressure and speed).

3.6 Workmanship. Bags, sleeves, and tubing shall be uniformly constructed, free from pinholes, tears, cuts, splits, slits, creases, wrinkles, folds or other imperfections which might impair their usefulness. There shall be no blocking to the extent that will cause tearing of material or injury to the surface when opened.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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 the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Quality assurance terms and definitions. Quality assurance terms and definitions used herein are in accordance with MIL-STD-109.

4.3 Quality conformance inspection.

4.3.1 Inspection lot. Unless otherwise specified (see 6.2), the formation, size and presentation of inspection lots shall be in accordance with MIL-STD-105.

4.3.2 Examination.

4.3.2.1 Sampling.

4.3.2.1.1 Bags, sleeves and tubing. A random sample of each classification of bags, sleeves and tubing shall be taken from each lot in accordance with MIL-STD-105, Inspection Level I.

4.3.2.1.2 Packaging and packing. Sampling for preservation, packaging and packing shall be in accordance with the applicable inspection levels of MIL-STD-105, as specified in MIL-P-116.

4.3.2.2 Classification of defects. Classification of defects shall be as specified herein:

4.3.2.2.1 Bags, sleeves and tubing.

Categories	Defects	Method of Inspection
Major:	AQL - 2.5% defective	
101	Material (see Table I)	Certification
102	Construction (3.2) and dimensions (3.3)	Measure
103	Seams (heat seal) Table II and III	Measure
Minor:	AQL - 4.0% defective	
201	Marking (3.5.1)	Visual
202	Workmanship	Visual

4.3.2.2.2 Packaging, packing and marking.

Categories	Defects
	AQL - 4.0% Defective
Packaging:	
101	Packaging level not as specified (5.1).
102	Not packaged in units of multiples specified (5.1.1.1 or 5.1.1.2).
103	Sleeve material not wound on substantial core (5.1.1.2).
104	Unit packages not packed as specified (5.1.1 or 5.1.2).
105	Mixed types, classes, styles or sizes in same unit package (5.1.1.1).
106	Unit containers, when required, not snugly packed; contain fillers or waste space.
107	Packaging material not as specified; closures not accomplished by specified or required methods or materials (5.1.1.1 or 5.1.1.2).
Packing:	
201	Packing levels not as specified (5.2).
202	Shipping containers have excess weight or cube of applicable specification (5.2.1, 5.2.2 or 5.2.3).
203	Mixed types, classes, styles or sizes packed in same container.
204	Container not as specified; closure not in accordance with the appendix to the applicable container specification.
205	Tension to great, i.e., strapping tears or cuts through facing of containers.
Marking:	
301	Unit packages do not contain identification sheet (3.5.2).
302	Unit and exterior container markings (as applicable) illegible, incorrect, incomplete, omitted, or not as specified (5.3).
303	Precautionary markings omitted or not as specified (5.3).

4.3.3 Testing. (Bags and Sleeves)

4.3.3.1 Sampling. A random sample of each classification of bags and sleeves shall be taken from each lot in accordance with MIL-STD-105, Inspection Level S-4, and a double sampling plan. When the bag material samples are of such size as to prohibit conducting the specified tests satisfactorily, the following procedures shall prevail. Cut a 6 x 8 inch section from the sample to be tested in such a manner that at least two of the fabricator's seals shall be included. The remaining open unsealed edges shall be heat sealed in accordance with recommended procedures. The heat seal seam shall be uniform and continuous, of 3/8 inch width, and shall be free of pipes or channels. This procedure also applies to sleeves in which case at least one of the fabricators seals shall be included. An optional method for sleeves is be fabricating from the sleeve material a bag equal in length to the width of the sleeve. The sealed bag or sleeve shall contain shredded paper or other material to provide for entrapment of air.

4.3.3.2 Procedure. The samples shall be tested for seam requirements (see 3.4) in accordance with the vacuum chamber or submersion leakage tests and the heat sealed seam test of MIL-P-116 and an AQL of 2.5 percent defective. If failure is indicated, report either description or numerical point of failure, as applicable.

5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A or C as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Bags. Bags of the same type, class, style, and size shall be unit packaged Method III of MIL-P-116, in increments of 50 not to exceed 500, (see 6.2) in a PPP-B-636, Class WR fiberboard box. Unless otherwise specified, bags shall be packaged flat. Bags of extra large size may be folded, provided dunnage material is placed at the line of folds to prevent damage. The identification for use sheet (see 3.5.2) shall be inserted in each unit package. Container closure shall be in accordance with the appendix to PPP-B-636.

5.1.1.2 Sleeves and tubing. Unless otherwise specified, sleeve or tubing material shall be unit packaged as specified in 5.1.1.1 or wound on a substantial core, with a minimum inside diameter of 3 inches, into rolls of the length and width specified (see 6.2) but not exceeding 200 yards in length. The rolls may be packaged singly or the smaller rolls in multiples of two, on edge, in a PPP-B-636, Class WR fiberboard box. Closure shall be in accordance with the Appendix to PPP-B-636.

Rolls of sleeve or tubing material exceeding 40 pounds shall be wrapped in paper, conforming to PPP-B-1055, Class C-1, and all seams and joints sealed with pressure sensitive tape conforming to PPP-T-60, Type III. The identification for use sheet (see 3.5.2) shall be inserted in each unit package.

5.1.2 Level C. Unless otherwise specified, bags, sleeves and tubing shall be unit packaged as specified in 5.1.1.1 or 5.1.1.2 with the following exception: The unit package shall be made in one of the following ways; by placing the bags, sleeves or tubing in a box conforming to PPP-B-566, PPP-B-665, PPP-B-636, Class Domestic, or by wrapping or banding the bags securely.

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

5.2.1 Level A. Bags, sleeves and tubing, packaged as specified in 5.1.1 or 5.1.2 shall be packed in containers conforming to PPP-B-601, Overseas Type or PPP-B-621, Class 2. Closure shall be in accordance with the appendix to the applicable specification. Insofar as practicable, containers shall be of uniform shape and size, of minimum cube and tare and containing identical quantities.

5.2.2 Level B. Bags, sleeves and tubing, packaged as specified in 5.1.1 or 5.1.2 shall be packed in containers conforming to PPP-B-636, Class WR, PPP-B-640, Class 2, or PPP-B-621 Class 1. Closure shall be in accordance with the appendix to the applicable specification. Insofar as practicable, containers shall be of uniform shape, and size, of minimum cube and tare and containing identical quantities.

5.2.3 Level C. Unless otherwise specified, Level C shipping containers shall conform to PPP-B-636 (Domestic) or PPP-B-640, Class 1. Commercial containers may be used when packed to meet carrier acceptance and safe delivery to destination at lowest rates in compliance with requirements of carrier rules and regulation.

5.3 Marking. In addition to any special marking required by the contract (see 6.2), unit packages and exterior shipping containers shall be marked in accordance with MIL-STD-129 and as follows:

Specification MIL-B-117
(including latest revision and amendment)

Type, class and style (as applicable)

Size

Month and year of fabrication

6. NOTES

6.1 Intended use. The bags, sleeves and tubing covered by this specification are intended for use as containers to provide various degrees of protection to the contents. Transparent bags are intended for use where transparency is desired to facilitate visual inspection of the enclosed product. For the purpose of permitting the maintenance of stocks of bags for quick shipment, common stock sizes are listed in Table VI.

TABLE VI

Size Designation	Inside dimension in inches 1
1	2-1/2 x 3
2	2-1/2 x 6
3	3 x 5
4	4 x 6
5	4 x 8
6	4 x 12
7	6 x 6
8	6 x 8
9	8 x 12
10	10 x 10
11	10 x 13
12	10 x 12
13	12 x 12

[1] Dimensions are expressed in inches and fractions thereof with width first, length second, as follows: 6 x 6 inches.

6.1.1 Class B bags and sleeves. Class B bags and sleeves are designed as unit packages for items requiring waterproof protection and are equivalent to the protection offered by submethod IC-3 of MIL-P-116.

6.1.2 Class C bags and sleeves. Class C bags and sleeves are designed as unit packages for items that require greaseproof protection in addition to waterproof protection and are equivalent to the protection offered by Submethod IC-1 of MIL-P-116.

6.1.3 Class E bags and sleeves. Class E bags and sleeves are designed as unit packages for critical items that require general protection against water vapor penetration in addition to waterproof and greaseproof protection and are equivalent to the protection offered by Submethods IA-8 and IIC of MIL-P-116.

6.1.4 Class F bags and sleeves. Class F bags and sleeves are designed for critical items that require electrostatic field force protection in addition to protection against water, water vapor and grease penetration and are equivalent to the protection offered by submethods IA-8 and II C of MIL-P-116.

6.1.5 Class G bags and sleeves. Class G bags and sleeves are designed for critical items that require flame resistance in addition to protection aginst water, water vapor and grease penetration and are equivalent to the protection offered by submethods IA-8 and II C of MIL-P-116.

6.1.6 Size limitations. Size of bags are unrestricted with the following exceptions:

a. Type III, class E, style 1 - 450 square inches; maximum product of inside width times inside depth.
b. Type II, class C, style 1 - 50 square inches; maximum product of inside width times inside depth.

6.1.7 Weight limitations. Net weight of contents should not exceed 10 pounds except that there are no weight restrictions for the following bags:

Type	Class	Style
II	B	2*
I	C	2
I	E	1,2,3
I	F	1
I	G	1

* When using L-P-378 the following applies:

Nominal Thickness Inches Min.	Weight Limitation
.004	up to 5 lbs.
.006	over 5 lbs.

6.2 Ordering data. Procurement documents should specify the following:

a. Title, number, and date of this specification.
b. Size of bags, sleeves or tubing (inside dimensions) (see 1.2.1 and 3.3).
c. Type, class and style of bags, sleeves or tubing (as applicable) (see 1.2.1).

d. Lip requirement, when required (see 3.2.1).
e. Tear, nick or V notch, when required (see 3.2.1.1).
f. Inspection lot, if different (see 4.3.1).
g. Level of packaging and packing required (see 5.1 and 5.2).
h. Quantity of bags, sleeves and tubing per unit package (see 5.1.1.1 and 5.1.1.2).
i. Special markings as applicable (see 5.3).

6.3 MIL-B-22205B; Bag, Transparent, Flexible, Heat Sealable, For Packaging Applications was cancelled 10 June 1969 and reference made to MIL-B-117 as a superseding document. The following is a comparison of MIL-B-22205 Types and MIL-B-117 Classes for informational purposes.

MIL-B-22205B	MIL-B-117	Characteristic
Type I	Class E	Watervaporproof, waterproof, greaseproof
Type II	Class C	Waterproof, greaseproof
Type III	Class B	Waterproof

Custodians:
Army - WC
Navy - SA
Air Force - 69

Review activities:
Army - AT, EL, GL, MI, MU, SM, EA
Navy - AS, OS, SA, SH YD
Air Force - 69, 82, 84
DSA - GS

User activities:
Army - AV
Navy - MC

Preparing activity:
Army - WC

Project number:
8105-0238

(TO DETACH THIS FORM, CUT ALONG THIS LINE.)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions – Reverse Side)

1. DOCUMENT NUMBER

2. DOCUMENT TITLE

3a. NAME OF SUBMITTING ORGANIZATION

4. TYPE OF ORGANIZATION *(Mark one)*

- ☐ VENDOR
- ☐ USER
- ☐ MANUFACTURER
- ☐ OTHER *(Specify)*: _____

b. ADDRESS *(Street, City, State, ZIP Code)*

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)*

DD FORM 82 MAR 1426

PREVIOUS EDITION IS OBSOLETE.