

INCH-POUND
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MIL-DTL-117H w/AMENDMENT 2 22 December 2009
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SUPERSEDING MIL-DTL-117H AMENDMENT 1 8 June 2007
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## DETAIL SPECIFICATION

### BAGS, HEAT-SEALABLE

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

#### 1. SCOPE

1.1 Scope. This document covers heat-sealable bags used in military preservation.

1.2 Classification. Bags are furnished in the following types, classes, and styles as specified (see 6.2):

1.2.1 Type. The type of bags is as follows:

Type I	-	Heavy duty
Type II	-	Medium duty
Type III	-	Light duty
Type IV	-	Extra-heavy duty

1.2.2 Class. The class of bags is as follows:

Class B	-	Waterproof
Class C	-	Waterproof, greaseproof

<p>Comments, suggestions, or questions on this document should be addressed to: Commander, Naval Air Warfare Center Aircraft Division, Code 4L8000B120-3, Highway 547, Lakehurst, NJ 08733-5100 or emailed to <a href="mailto:michael.sikora@navy.mil">michael.sikora@navy.mil</a>. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <a href="http://assist.daps.dla.mil">http://assist.daps.dla.mil</a>.</p>
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Class E	-	Watervaporproof, greaseproof
Class F	-	Watervaporproof, electrostatic protective, electrostatic and electromagnetic shielding
Class H	-	Waterproof, electrostatic protective, electrostatic shielding

1.2.3 Style. The style of bags is as follows:

Style 1	-	Opaque
Style 2	-	Transparent
Style 3	-	One side opaque, other side transparent

## 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 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 and 4 of this specification, whether or not they are listed.

### 2.2 Government documents.

2.2.1 Specifications and standards. The following specifications and standards 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.

#### COMMERCIAL ITEM DESCRIPTION

A-A-3174 - Plastic Sheet, Polyolefin.

#### DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-121	-	Barrier Materials, Greaseproof, Waterproof, Flexible, Heat-Sealable.
MIL-PRF-131	-	Barrier Materials, Watervaporproof, Greaseproof, Flexible, Heat-Sealable.
MIL-PRF-22191	-	Barrier Materials, Transparent, Flexible, Heat-Sealable.
MIL-PRF-81705	-	Barrier Materials, Flexible, Electrostatic Protective, Heat-Sealable.

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STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-3010 - Test Procedures for Packaging Materials.

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

2.3 Non-Government publications. The following documents 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.

AMERICAN SOCIETY FOR QUALITY (ASQ)

ASQ-Z1.4 - Sampling Procedures and Tables for Inspection by Attributes (DoD adopted)

(Copies of this document are available from <http://www.asq.org> or the American Society for Quality, 600 Plankinton Avenue, Milwaukee, WI 53203.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, 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), samples shall be subjected to first article inspection in accordance with 4.2.

3.2 Material. Materials shall meet the requirements of the types, classes, and styles specified in table I.

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TABLE I. Classification of materials.

MIL-DTL-117			Required Materials for Bag Fabrication		
Type	Class	Style	Document(s)	Type(s)	Class(es)
I	E	1	MIL-PRF-131	-	1
I	E	2	MIL-PRF-22191	I	1 or 2
I	E	3	MIL-PRF-131	-	1
			MIL-PRF-22191	I	1 or 2
I	F	1	MIL-PRF-81705	I	1 or 2
II	C	1	MIL-PRF-121	I	-
II	C	2	MIL-PRF-22191	II	1 or 2
II	C	3	MIL-PRF-121	I	-
			MIL-PRF-22191	II	1 or 2
II	E	1	MIL-PRF-131	-	2
II	H	2	MIL-PRF-81705	III	1 or 2
III	B	2	MIL-PRF-22191 or A-A-3174 <u>1/</u>	III I or II	1 or 2 1 <u>2/</u>
III	C	1	MIL-PRF-121	II	-
IV	E	1	MIL-PRF-131	-	3

1/ Unless otherwise specified (see 6.2), nominal thickness shall be 0.004 inch.

2/ Finish shall be No. 2 (treated).

3.3 Construction. Class B, C, and E 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 as required. 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 to the outer edges of the bag in all cases. The bottom fold shall be at right angles to the side seams. Class F and H bags shall be formed from one folded sheet of material and heat-sealed only along both sides. Bags fabricated from tubing shall have a bottom seam and do not require a lip.

3.3.1 Notched bags. When specified (see 6.2), bags shall have a tear, nick, or V-notch  $\frac{1}{8}$  inch deep with a tolerance of  $\pm \frac{1}{16}$  inch, in at least one edge located 1 to  $1\frac{1}{4}$  inches from the open (unsealed) end of the bag. 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 that shall be not less than  $\frac{1}{8}$  inch in height.

### 3.4 Dimensions and tolerances.

3.4.1 Bags. The length and width of bags shall be specified in the contract or purchase order (see 6.2). The width shall be measured from the inside edges of the side seams. The length shall be measured from the inside edge of the bottom seam or bottom fold to the edge of the opening. The tolerances for the length and width shall be as indicated in table II.

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TABLE II. Dimensions and tolerances for bags.

Bag area (one side)	Length and width tolerances (inches)
25 sq. in. or less	$-\frac{1}{16}, +\frac{1}{8}$
26 thru 200 sq. in.	$-\frac{1}{8}, +\frac{1}{4}$
201 thru 500 sq. in.	$-\frac{1}{4}, +\frac{3}{8}$
501 sq. in. or over	$-\frac{1}{4}, +\frac{1}{2}$

3.4.2 Seam widths. Seam widths and tolerances shall be as specified in table III, except that seams fabricated by the dielectric, impulse, or ultra-sonic process shall have a minimum  $\frac{1}{32}$ -inch heat-seal. Seams fabricated from unsupported plastic sheet such as polyethylene or polyolefin shall meet the heat-sealed seam strength test specified in 3.7 with no minimum seal width required.

TABLE III. Dimensions and tolerances for seam widths.

Bag area (one side)	Seam width (inches)	Maximum heat-seal width (inch)
25 sq. in. or less	$\frac{3}{8}$	$-\frac{1}{16}, +\frac{1}{8}$
26 thru 200 sq. in.	$\frac{1}{2}$	$-\frac{1}{16}, +\frac{1}{4}$
201 thru 500 sq. in.	$\frac{5}{8}$	$-\frac{1}{16}, +\frac{3}{8}$
501 sq. in. or over	$\frac{5}{8}$	$-\frac{1}{16}, +\frac{3}{8}$

3.5 Identification. Each bag shall be marked or printed in capital letters or numbers, using 10-point type, and shall contain the following information: This specification number and revision letter; type, class, and style; bag manufacturer's name and bag designation; month; and year of bag fabrication. Each bag shall contain this printing on at least one surface with the color and position of the printing being optional. When the marking is interrupted or incomplete due to the size of the bags, the individual bag need not be marked as specified, but shall be accompanied within the shipping container by an identification sheet marked or printed with the same information. When specified (see 6.2), a pressure sensitive label shall be applied to the outer surface of each bag in lieu of marking the bag.

3.6 Sealing recommendation. Each unit package of bags shall include a sheet legibly marked with the following heat-sealing information.

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

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3.7 Heat-seal seam strength. Heat seals shall exhibit no separation for the duration of the 5 minute test when tested as specified in 4.4.

3.8 Workmanship. Bags shall be free from any foreign matter, pinholes, tears, cuts, splits, slits, creases, wrinkles, or other imperfections.

#### 4. VERIFICATION

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

- a. First article inspection (see 4.2).
- b. Conformance inspection (see 4.3).

4.2 First article inspection. First article inspection shall consist of all the tests and examinations specified in this specification.

4.3 Conformance inspection. Conformance inspections shall consist of the heat seal seam strength test specified in 4.4 and the visual examinations specified in 4.3.2.

4.3.1 Sampling for conformance inspection. For the purpose of determining the sample size in accordance with ASQ-Z1.4, the lot size (see 6.3) shall be expressed in number of bags produced in one production run and shall use an inspection level of S-1 for testing and S-3 for visual examination. There shall be no failures.

4.3.2 Visual examination of end item for defects in materials, construction, notching, dimensions and tolerance, sealing recommendation. The sample unit for the end item visual inspection shall be one bag. The sample unit shall be visually inspected and measured to ensure it meets the requirements specified in 3.2, 3.3, 3.3.1, 3.4, 3.5, 3.6, and 3.8.

4.4 Heat-seal seam strength. Heat sealed seams shall be tested at room temperature in accordance with MIL-STD-3010, Method 2024 using the static load weights as specified in table IV. At least one specimen taken from each heat sealed seam shall be tested from each bag sampled. Specimens shall be 1 inch wide with length dependent upon bag size.

TABLE IV. Static load weights.

Static weight (ounces) <sup>1/</sup>	Specification
36 ± 2	MIL-PRF-121
50 ± 2	A-A-3174, MIL-PRF-131, MIL-PRF-22191
56 ± 2	MIL-PRF-81705

<sup>1/</sup> A five percent reduction in static load weight is permitted when the temperature in the test area exceeds 90° F.

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## 5. PACKAGING

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

## 6. NOTES

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

6.1 Intended use. Bags covered by this specification are intended for use in specialized military methods of preservation. The barrier materials, from which these bags are constructed of, are all approved and military unique and provide the necessary requirements for protection from exposure to the extremes of the navy/naval aviation environment. There are no commercial equivalents that meet the requirements necessary to protect materiel that is exposed to the operational naval aviation environment. Specifically, Methods of Preservation 31, 32, 33, 41, 42, 51, and 52 utilize these bags in order to provide the specialized military preservation required by MIL-STD-2073-1.

6.1.1 Class B bags. Class B bags are intended for preserving items that require waterproof protection as specified in MIL-STD-2073-1, Method 31 and Method 32.

6.1.2 Class C bags. Class C bags are intended for preserving items that require greaseproof protection in addition to waterproof protection as specified in MIL-STD-2073-1, Method 33.

6.1.3 Class E bags. Class E bags are intended for preserving items that require watervaporproof, waterproof, and greaseproof protection as specified in MIL-STD-2073-1, Method 41, 42, 51, and 52.

6.1.4 Class F bags. Class F bags are intended for preserving electrostatic discharge sensitive items. They also provide electromagnetic interference and electrostatic shielding protection. Additionally, these bags provide the watervaporproof protection as specified in MIL-STD-2073-1, Method 41 and Method 51.

6.1.5 Class H bags. Class H bags are intended for preserving electrostatic discharge sensitive items.

6.2 Acquisition requirements. Acquisition documents must specify the following:

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- a. Title, number, and date of this specification.
- b. Type, class, and style of bags (see 1.2).
- c. If nominal thickness of A-A-3174 material other than .004 inch is required (see table I).
- d. If tears, nicks, or V-notches are required (see 3.3.1).
- e. Size of bags (inside length and width dimensions) (see 3.4 and 6.1.6 )
- f. If pressure-sensitive labels should be applied (see 3.6).
- g. If first article inspection is required (see 4.2).
- h. Packaging requirements (see 5.1).

6.3 Bag size limitations. Although the size of bag is unrestricted, the following recommendations are provided:

- a. Type II, class E, style 1 – sum of bag inside dimensions should not exceed 42 inches and bag should not contain a double seam junction.
- b. Type III, class C, style 1 – maximum area (product of inside bag dimensions): 50 square inches.

6.4 Bag stock sizes. Commonly stocked bag sizes are listed in table V.

TABLE V. Common bag stock sizes.

Size designation	Inside dimensions (inches) (W x L)
1	2- <sup>1</sup> / <sub>2</sub> by 3
2	2- <sup>1</sup> / <sub>2</sub> by 6
3	3 by 5
4	4 by 6
5	4 by 8
6	4 by 12
7	6 by 6
8	6 by 8
9	8 by 12
10	10 by 10
11	10 by 13
12	10 by 12
13	12 by 12

6.5 Weight limitations. No weight limitations are imposed if any filled bag is further packed in a supporting container. When a bag is used without an additional supporting container, the net weight of contents should not exceed 10 pounds, with the following exceptions:

- a. Maximum weight of contents should be restricted to 5 pounds when A-A-3174 material is used for type III, class B, style 2 bags.



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b. No weight restrictions apply to type I, class E, style 1, 2, or 3 bags or to type I, class F, style 1 bags.

6.6 Lot size. Inspection lot should consist of all bags manufactured by the same process from the same raw material during one production run.

6.7 Subject term (key word) listing.

Container  
Electrostatic-protective  
Electromagnetic shielding  
Greaseproof  
Packaging material  
Preservation  
Waterproof  
Watervaporproof

6.8 Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

CONCLUDING MATERIAL

Custodians:

Army – SM  
Navy – AS  
Air Force – 11  
DLA – DH

Preparing activity:

Navy – AS

(Project 8105-2010-001)

Review activities:

Army – AR, AT, AV, EA, GL, MI  
Navy – MC, OS, SA, SH

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 the ASSIST Online database at <https://assist.daps.dla.mil>.