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MILITARY SPECIFICATION

# BAGS, TRANSPARENT, FLEXIBLE, SEALABLE, VOLATILE CORROSION INHIBITOR TREATED

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 requirements for flexible sealable transparent bags treated with volatile corrosion inhibitor. The treated bags shall be used in accordance with Specification MIL-I-8574 (see 6.1).

1.2 Classification - The treated bags shall be furnished in the following classes, as specified (see 6.1.1 and 6.1.2).

Class 1 - Heat sealable
Class 2 - Pressure (cold) sealable

## 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

| | |
|---|---|
| PPP-B-621 | Box, Wood, Nailed and Lock Corner |
| PPP-B-636 | Box, Shipping, Fiberboard |
| PPP-B-640 | Boxes, Fiberboard, Corrugated Triple-Wall |
| PPP-F-320 | Fiberboard, Corrugated And Solid, Sheet Stock (Container Grade) and Cut Shapes |
| PPP-T-60 | Tape Packaging Waterproof |

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SPECIFICATIONS (Cont'd)

Military

| | |
|---|---|
| MIL-B-131 | Barrier Materials, Water Vaporproof Flexible, Heat Sealable |
| MIL-I-8574 | Inhibitors, Corrosion, Volatile, Utilization of |
| MIL-B-22019 | Barrier Materials, Transparent, Flexible, Sealable, Volatile Corrosion Inhibitor Treated |

STANDARDS

Federal

| | |
|---|---|
| Fed. Std. 101 | Preservation, Packaging, and Packing Materials, Test Procedure |

Military

| | |
|---|---|
| MIL-STD-105 | Sampling Procedures and Tables for Inspection by Attributes |
| MIL-STD-129 | Marking for Shipment and Storage |

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

2.2 Other publications. The following documents form a part of this specification to the extent indicated herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply:

Uniform Classification Committee

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Room 202, Union Station, 516 West Jackson Boulevard, Chicago, Illinois 60606.)

3. REQUIREMENTS

3.1 Material - The bags shall be fabricated from barrier material qualified under Specification MIL-B-22019.

3.1.1 Class 1 - Class 1 bags shall be fabricated from Type I material of MIL-B-22019.

3.1.2 Class 2 - Class 2 bags shall be fabricated from Type II material of MIL-B-22019.

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3.2 Construction -

3.2.1 Class 1 bags - Class 1 bags shall be formed, using two sheets or folding one sheet, by placing heat sealable surfaces of the specified material together and then heat sealing seams along the two side and bottom edges. Bags fabricated from tubing shall consist of a bottom seam and do not require a lip. 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. Bags twelve (12) inches or less in length, with a mouth opening of ten (10) inches or less shall be provided with a lip by extending one edge of the mouth 1/8 inch, plus or minus 1/16 inch tolerance, beyond and parallel to the outer edge. The length of the lip shall not be included in the dimensions of the bag.

3.2.2 Class 2 - Class 2 bags shall be furnished with a non-blocking interleaf in the bag. After the item to be packaged is placed in the bag, the interleaf shall be withdrawn from the bag and the final seal made. Cold seal bag seams shall be a minimum of 1/2 inch wide and shall be effected on a sealer (see 6.4) having two sets of rubber coated pull-wheels and opposing jaws, using the sealing conditions recommended by the manufacturer. The upper sealing condition limit on this type sealer which is considered reasonable for production line sealing operations with respect to commonly available sealing equipment and commercially practical fabrication time is a pressure of 40 pounds per square inch.

3.3 Dimensions and tolerances - The dimensions specified shall apply to the inside width and length. 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). Dimensions and tolerances for seal widths exclusive of side weld, dielectric, impulse or ultra-sonic processes (see note on Table I), for bags shall be as indicated in Table I. For the purpose of permitting the maintenance of stocks of bags for quick shipment, common stock sizes are listed in Section 6.

TABLE I - BAGS

| Area of Bag (one side) | *Seal Width | Tolerance - Width & Length of Bag |
|---|---|---|
| 25 sq in or less | 1/4 + 1/8-0 | -1/16 + 1/8 |
| 26 thru 200 sq in | 3/8 + 1/8-0 | -1/8 + 1/4 |
| 201 thru 500 sq in | 1/2 + 1/8-1/8 | -1/4 + 3/8 |
| 501 sq in or over | 1/2 + 1/8-1/8 | -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 homogeneous plastic sheets (i.e., polyethylene) shall be required to meet the seam strength test specified in 3.5, with no minimum seam width required.

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3.4 Identification -

3.4.1 Material - Each bag shall be marked or printed on one surface only in capital letters or numbers, with the following information: Bag Specification number and class; bag fabricator's name or trademark; material designation; month and year of fabrication.

3.4.2 Identification sheets - Identification sheets shall accompany each unit package and shall contain the following markings: Specification number, class, lot number, manufacturer's name, manufacturer's product designation, manufacturer's sealing conditions, and month and year of manufacture. Identification sheets of class 2 bags shall contain detailed information regarding the packaging of items in cold sealed bags.

3.5 Continuity of seam and sealed seam strength - The manufacturer's seams shall not leak, and seam strength specimens shall withstand a static load of 3-1/2 pounds without separation of the seal faces when tested as specified in 4.5.1 and 4.5.2.

3.6 Workmanship - Bags shall be uniformly constructed, free from pinholes, tears, cuts, sharp creases, wrinkles, or other imperfections which might impair their usefulness. There shall be no blocking to the extent that will cause tearing of material to the surface when opened. The terms "pin holes, tears, cuts, sharp creases and wrinkles" shall be considered defects only if the area in question fails the test specified in 4.5.1. The finished product shall conform to the levels of quality established herein.

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 Lot - The term lot shall mean "inspection lot", a collection of units of product from which a sample is to be drawn and inspected to determine conformance with the acceptability criteria. Each lot shall, as far as is practicable, consist of units of product of a single class manufactured under essentially the same conditions, and at essentially the same time.

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4.3 Sampling - Sampling shall be performed in accordance with the provisions set forth in MIL-STD-105.

4.4 Quality conformance inspection -

4.4.1 Examination - The end item shall be examined in accordance with the classification of defects, inspection levels and acceptance quality levels (AQL's) as specified in 4.4.1.5. A random sample of bags, shall be drawn from each lot of bags, offered for acceptance for visual and dimensional characteristics. The lot size, for purposes of determining sample size in accordance with MIL-STD-105, shall be expressed in units of bags for examination under 4.4.1.1 and 4.4.1.2, in units of packages for 4.4.1.3, and in units of shipping containers for 4.4.1.4.

4.4.1.1 Examination of the end item for defects in appearance, construction, workmanship and marking - The sample unit for this examination shall be one bag and the sample for examination shall be drawn from the lot in accordance with 4.4.1 and 4.4.1.5.

DEFECTS

Material - Bags not fabricated from material specified.

Workmanship - Not uniformly constructed. Tear, cut, split, slit, holes (including pinholes) sharp creases, wrinkles or folds; bags stick together to the extent that opening causes tearing or injury to any surface.

Construction - Required manufacturer's seams not sealed along the two sides and bottom of bags or not sealed the entire length of both sides of sleeves; seams not completely sealed throughout their respective lengths; edges of bag side seams not parallel to each other and outer edge of bag or the bottom seam not at right angle to side seam.

Identification marking - Marking of bags, pertaining to the applicable information illegible, incorrect, incomplete, omitted or does not comply with the specified contract requirements. Color not as specified in material specification.

4.4.1.2 Examination of the end item for dimensional defects - The sample unit for this examination shall be one bag and the sample shall be drawn from the lot in accordance with 4.4.1 and 4.4.1.5.

DEFECTS

Size of bags - Inside width or length varies more than tolerances specified in Table I as applicable.

Size of seams - Seam width less than specified in Table I.

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4.4.1.3 Examination of the end item for count per package - The sample unit for this examination shall be one unit package. The number of sample units drawn for the examination shall be as for level I and AQL 4.0. The average count of bags per unit package in the sample thus drawn shall be not less than the specified quantity (6.2(c)).

4.4.1.4 Examination of preparation for delivery - An examination shall be made to determine that packaging, packing and marking comply with the requirements of Section 5 of this specification. The sample unit shall be one shipping container, fully packed, selected just prior to the closing operation. Shipping containers fully prepared for delivery shall be examined for closure defects.

Packaging - Packaging level not as specified.

Not packaged in units of multiples specified.

Unit packages not packaged as specified.

Mixed classes or sizes in same unit package.

Unit containers when required not snugly packed; contain fillers or waste space.

Packaging material not as specified; closures not accomplished by specified or required methods or materials.

Packing - Packing levels not as specified.

Shipping containers have excess weight or cube of applicable specification.

Mixed classes or sizes packed in same container.

Container not as specified; closure not in accordance with the appendix to the applicable container specification.

Tension too great, i.e., strapping tears or cuts through facings of container.

Markings - Unit packages do not contain identification for use sheet (see 3.4.2).

Unit and exterior container markings (as applicable) illegible, incorrect, incomplete, omitted, or not as specified (see 5.3).

Precautionary markings omitted or not as specified (see 5.3.1).

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4.4.1.5 Inspection levels and acceptable quality levels (AQL's) for examinations - The inspection levels, for determining the sample size, and the acceptable quality levels (AQL's) expressed as percent defective, shall be as indicated in Table II.

TABLE II

| Examination Paragraph | Inspection Levels | AQL's |
|---|---|---|
| 4.4.1.1 | I | 4.0 |
| 4.4.1.2 | I | 4.0 |
| 4.4.1.3 | See paragraph 4.4.1.3 | - |
| 4.4.1.4 | I | 4.0 |

4.5 Test methods -

4.5.1 Continuity of seam - A sufficient quantity of a solution of isopropyl alcohol containing an alcohol soluble dye such as methyl violet shall be poured into the bag in order that the alcohol solution will cover the entire side when the bag is laid on its side. The bag shall be sealed and laid on its side for a period of 2 minutes and checked for leakage as evidenced by the transfer of dye. The bag shall be turned over and checked for leakage as described above. Any evidence of leakage through or at the manufacturer's seams shall be considered cause for rejection.

4.5.2 Sealed seam test - Heat and cold sealed seam tests shall be conducted in accordance with Method 2024 of Fed. Test Method Std. 101, except that cold sealed seams shall be made in accordance with paragraph 3.2.2.

5. PREPARATION FOR DELIVERY

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

5.1.1 Level A - Bags of the same class and size shall be unit packaged in increments of 50 up to 500. The bags in the quantities specified shall be bundled by sandwiching between two fiberboard pads conforming to PPP-F-320 and overwrapped with at least one thickness of MIL-B-131 Class 1 material with all seams and joints sealed with PPP-T-60 tape. Unless otherwise specified, bundles shall be individually packaged in fiberboard boxes conforming to PPP-B-636 Type SF, Class weather resistant. An identification sheet shall accompany each bundle with the information contained in paragraph 3.4.2.

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5.1.2 Level C - Preservation and packaging shall be such as to afford the minimum degree of protection necessary to prevent deterioration or damage during shipment under normal environmental conditions and commercial modes of transportation.

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

5.2.1 Level A - Bags packaged as specified in 5.1.1 or 5.1.2 shall be packed in containers conforming to PPP-B-636, Class WR or PPP-B-640 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.

Weight of contents shall not exceed 65 lbs for boxes conforming to PPP-B-636 and 150 lbs for boxes conforming to PPP-B-640.

Level B - Bags 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, or 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.

Weight of contents shall not exceed 65 lbs for boxes conforming to PPP-B-636 and 150 lbs for boxes conforming to PPP-B-640.

Level C - Bags packaged as specified in 5.1.1 or 5.1.2 shall be packed in exterior shipping containers in a manner that will insure safe transportation at the lowest rate to the point of delivery. Containers shall conform to Uniform Freight Classification Rules or to rules of other common carriers applicable to the mode of transportation.

5.3 Marking. In addition to any special markings required by the contract or order, unit packages and shipping containers shall be marked in accordance with Military Standard MIL-STD-129 and as follows:

Bags, Transparent, Sealable, Volatile
Corrosion Inhibitor Treated
Specification MIL-B-22020
Class
Size _____
Month and Year
of Fabrication _____

5.3.1 Precautionary marking - The following marking shall appear on at least one side and, wherever practicable on two opposite sides of each exterior container in letters not less than 3/4 inch in height:

KEEP COOL AND DRY
CAUTION: DO NOT OPEN UNTIL READY FOR USE

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5.3.1.1 Handling marking - By a separate set of markings include the following on containers.

HANDLING PRECAUTIONS

DO NOT RUB OR WIPE EYES WHILE HANDLING THIS PRODUCT. AFTER HANDLING WASH HANDS THOROUGHLY WITH SOAP AND WATER. (This product contains materials which may be an irritant to eyes and skin).

6. NOTES

6.1 Intended use - The VCI-treated bags covered by this specification are intended primarily for use in packaging items that are adaptable to protection by volatile corrosion inhibitor treated materials where transparency or heat or cold pressure sealability is desired. Transparency may be desired to facilitate inspection of the item without disturbing the package.

6.1.1 Class 1 - Class 1 bags are intended for use where heat sealable, transparent, VCI-treated bags are required.

6.1.2 Class 2 - Class 2 bags are intended for use where pressure cold sealable, transparent, VCI-treated bags are required.

6.2 Ordering data - Requests, requisitions, schedules, contracts, or orders should specify:

(a) Title, number, and date of this specification.

(b) Class of bag (see 1.2).

(c) Total quantity and quantity per unit package.

(d) Size of bag (inside dimensions) (see 3.3).

(e) Level of packaging and level of packing desired (see 5.1 and 5.2).

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6.3 Common size bags -

| 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 |

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

6.4 Equipment source - The sealer for accomplishing the seals of Class 2 bags (para. 3.2.2) may be obtained from:

L.C. Gess, Inc.
5235 Tractor Rd.
Toledo, Ohio 43612

Custodians:
Army - GL
Navy - AS
Air Force - 69

Review Activities:
Army - MU, ME, AT, EL, SM
Navy - SH, YD, SA,
Air Force - 71, 84

User Activities:
Navy - MC, CG

DSA - CS

Preparing Activity
Navy - AS
(Project No. 8105-0244)