

SECTION C

This document covers product packaged in a boil-in-bag (BIB) for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR PRODUCT PACKAGED IN A BOIL-IN-BAG (BIB)

Classes and packages.

Class 1 - Small opening fitment and cap

Package K - Unitized Group Ration™-Express™ (UGR-E™)

Class 2 - Large opening fitment and cap

Package E - Unitized Group Ration™ (UGR™)-Heat & Serve™ (UGR-H&S™)

Types.

Type I - BIB with center seal

Type II - BIB with no center seal

SECTION D

D-1 PACKAGING

A. Packaging. The specified net weight of product (see section C of applicable product document) shall be packaged in a preformed BIB.

(1) BIB. The BIB shall be used as a rehydrating vessel and may be used as the cooking vessel for the product.

a. BIB material. The preformed BIB shall be fabricated from 0.0020 inch thick linear low density polyethylene/ethylene vinyl alcohol/linear low density polyethylene (LLDPE/EVOH/LLDPE) laminated or extrusion coated to 0.0006 inch thick biaxially oriented nylon (BON) which is then bonded with 0.0020 inch thick polyethylene. All tolerances for thickness of BIB material shall be plus or minus 20 percent. Alternative materials shall be acceptable if all performance requirements are met. The material shall show no evidence of delamination, degradation, or foreign odor when heat sealed or fabricated into BIBs. The material shall be suitably formulated for food packaging and shall

not impart an odor or flavor to the product. The material shall be clear or translucent so the water level is visible through the BIB.

b. BIB construction.

i. Type I. The BIB shall be a flat style preformed pouch having inside dimensions of 11-3/4 inches ($\pm 1/8$ inch) by 15-3/8 inches ($\pm 1/8$ inch). The BIB shall be fabricated by heat sealing three edges with 3/8 inch ($-1/8$, $+3/16$ inch) wide seals. A heat seal, minimum 4 inches long, shall be placed in the center of the BIB to create a partial left/right division. The heat seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width. The BIB shall show no material degradation and shall not damage the product when the rehydrated product in the BIB is placed in boiling water for two hours.

ii. Type II. The BIB shall be a flat style preformed pouch having inside dimensions of 11-3/4 inches ($\pm 1/8$ inch) by 15-3/8 inches ($\pm 1/8$ inch). The BIB shall be fabricated by heat sealing three edges with 3/8 inch ($-1/8$, $+3/16$ inch) wide seals. The heat seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width. The BIB shall show no material degradation and shall not damage the product when the rehydrated product in the BIB is placed in boiling water for two hours.

c. Fitment and cap.

i. Class 1. The small plastic threaded fitment shall be compatible with the rehydration pouch. The fitment shall have a minimum 3/4 inch opening. The fitment shall have an inner pre-cut covering to accommodate the spout of the rehydration pouch.

ii. Class 2. The large plastic threaded fitment shall have a minimum opening of 1-1/2 inches.

iii. Cap. The Class 1 or Class 2 cap, as applicable, shall thread onto the neck.

d. Venting. For Package E, the BIB shall be fitted with a one-way air venting system which allows air to escape and does not allow water to enter the BIB.

e. BIB filling and sealing. Product shall be inserted into the BIB and the filled BIB shall be sealed with a minimum 1/8 inch wide heat seal. The closure seal shall be free of foldover wrinkles or entrapped matter that reduces the effective closure seal width to less than 1/16 inch. Seals shall be free of impression or design on the seal surface that would conceal or impair visual detection of seal defects. The average seal strength shall be not less

than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width.

(2) Barrier pouch. The barrier pouch shall be made from a heat sealable barrier material. Note that material conforming to MIL-PRF-131 has been used. All four edges of the barrier pouch shall be heat sealed with seals not less than 1/8 inch wide. The BIB(s) and oxygen scavengers shall not be entrapped in the heat seals. The side, bottom and closure seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width. Alternatively, the filled and sealed barrier pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal width to less than 1/16 inch when tested for internal pressure resistance. A tear nick, notch or serrations shall be provided to facilitate opening of the filled and sealed barrier pouch.

a. Package E. The applicable number of BIBs as specified in the product document and oxygen scavenger(s) shall be placed in a barrier pouch having maximum outside dimensions of 18 by 18 inches.

b. Package K. One BIB and oxygen scavenger(s) shall be placed in a barrier pouch having maximum outside dimensions of 15 by 11 inches.

(3) Oxygen scavenger. The oxygen scavenger shall be constructed of materials that are safe for direct and indirect food contact, and shall be suitable for use with edible products. The oxygen scavenger shall be in compliance with all applicable FDA regulations.

(4) Oxygen. The oxygen content of the headspace gas in the barrier pouch shall not exceed 2.0 percent.

(5) Paperboard carton. For Package E, one barrier pouch with the applicable number of Class 2 BIBs shall be packed in a paperboard carton. The carton shall be style RSC, tray or telescoping design. The paperboard shall be minimum 0.028 inch thick and shall have a minimum basis weight of 100 pounds per square feet. The paperboard may be coated. The paperboard may be bleached. The use of materials composed of the highest percentage of recovered materials practicable is encouraged. The outside dimensions of the carton shall not exceed 13 by 12 by 9 inches.

D-2 LABELING

A. BIB. Each BIB shall be correctly and legibly labeled. Printing ink shall be permanent black ink or other dark contrasting color which is free of carcinogenic elements. A carcinogenic-free, pre-printed, self-adhering, clear polyester label printed with indelible contrasting ink may also be used. The label shall contain the following information:

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- (1) Name of product (letters not less than 1/4 inch high)
- (2) Ingredients
- (3) Date 1/
- (4) Net weight
- (5) Name and address of packer
- (6) USDA plant number as applicable
- (7) “Nutrition Facts” label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA/USDA regulations

NOTE: There shall be a black line, minimum 1/16 inch thick, indicating the fill level.

1/ Each BIB shall have the date of pack noted by using a four digit code beginning with the final digit of the current year followed by the three digit Julian day code. For example, 14 February 2013 would be coded as 3045. The Julian day code shall represent the day the product was packaged into the BIB.

(8) The instructions shall contain the following information as specified in the applicable product document:

YIELD: [Cite number of portions as specified in applicable product document.]

PREPARATION: Shake BIB to settle contents. Open cap. Support BIB on flat surface. Add [cite appropriate amount ounces (cups) as specified in applicable product document] of potable water to fill line. Replace cap. Shake BIB until contents are rehydrated. Knead if necessary. If level of product is below fill line, add more water.

WARNING: Do not heat BIB in oven.
[Any additional warnings as specified in applicable product]

COOKING/HEATING: [Cite methods as specified in applicable product document.]

TO TRANSPORT AFTER HEATING: Either insert BIB into an insulated food container or empty cooked product into an insulated food container to protect during transport.

CAUTION: Use care when opening as pressure may have been generated within the BIB.

TO OPEN: Cut bottom of BIB with clean knife.

Note: The font tested by Natick was Microsoft Helvetica. The font used shall be similarly clear/easy to read as Helvetica. The recommended font sizes are as follows: 22 for the product name, 14 for “YIELD” and “COOKING/HEATING”. If an additional note is

required on the label, such as “fluff before serving,” it should also be in font size 14. All other information should be in font size 9.

B. Barrier pouch. Each barrier pouch shall be correctly and legibly labeled. Printing ink shall be permanent black ink or other dark contrasting color and shall be FDA approved for indirect contact with food. The label shall contain the following information:

- (1) Name of product (letters not less than 1/4 inch high)
- (2) Contents
- (3) Date 1/
- (4) Name and address of packer

In addition, the label shall contain the following warnings:

DO NOT OPEN WITH KNIFE
USE IMMEDIATELY
DO NOT STORE REHYDRATED PRODUCT IN BOIL-IN-BAG

1/ Each barrier pouch shall have the date of pack noted by using a four digit code beginning with the final digit of the current year followed by the three digit Julian day code. For example, 14 February 2013 would be coded as 3045. The Julian day code shall represent the day the product was packaged into the BIB.

C. Paperboard carton. For Package E, each carton shall be correctly and legibly labeled. Printing ink shall be permanent black ink or other dark contrasting color and shall be FDA approved for indirect contact with food. The label shall contain the following information:

- (1) Name of product (letters not less than 1/4 inch high)
- (2) Contents
- (3) Date 1/
- (4) Name and address of packer

1/ Each carton shall have the date of pack noted by using a four digit code beginning with the final digit of the current year followed by the three digit Julian day code. For example, 14 February 2013 would be coded as 3045. The Julian day code shall represent the day the product was packaged into the BIB.

D-3 PACKING

A. Packing. Not more than 40 pounds of product shall be packed in a fiberboard shipping box constructed in accordance with style RSC of ASTM D5118/D5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The fiberboard shall conform to type CF, class

D, variety SW, burst grade 200 or ECT grade 32 of ASTM D4727/D4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D1974/D1974M, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes. When metal fasteners are used in the box manufacturer's joint or set-up, the fasteners on the inside of the box shall be covered with tape to protect the contents from mechanical damage.

D-4 UNITIZATION

A. Unit loads. Unit loads shall be as specified in DLA Troop Support Form 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items.

D-5 MARKING

A. Shipping containers and unit loads. Shipping containers and unit loads shall be marked in accordance with DLA Troop Support Form 3556, Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence.

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQ Z1.4, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, single sampling plans indicated in ANSI/ASQ Z1.4 will be utilized. When required, the manufacturer shall provide the Certificate(s) of Conformance to the appropriate inspection activity. Certificate(s) of Conformance not provided shall be cause for rejection of the lot.

E-6 QUALITY ASSURANCE PROVISIONS (PACKAGING AND PACKING MATERIALS)

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

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

(1) Conformance inspection. Conformance inspection shall include the examinations/tests and the methods of inspection cited in this section.

C. Packaging.

(1) BIB and barrier pouch material certification. The BIB and barrier pouch material shall be tested for these characteristics. A Certificate of Conformance (CoC) may be accepted as evidence that the characteristics conform to the specified requirements. In addition, compliance to the requirements for inside BIB and barrier pouch dimensions and dimensions of manufacturer's seals may be verified by CoC.

<u>Characteristic</u>	<u>Requirement paragraph</u>	<u>Test procedure</u>
Thickness of films for laminated material	D-1,A(1)a and D-1,A(2)	ASTM D2103 <u>1/</u>
Laminated material identification and construction	D-1,A(1)a and D-1,A(2)	Laboratory evaluation.
Color of BIB material	D-1,A(1)a	Fill the BIB with minimum 8 oz. of water. The water level in the BIB shall be easily discernible through the BIB material. Inability to discern the water level shall constitute a test failure.

1/ Standard Specification for Polyethylene Film and Sheeting

(2) Unfilled BIB and barrier preformed pouch certification. A CoC may be accepted as evidence that unfilled BIBs and barrier preformed pouches conform to the requirements specified in D-1,A(1)a and b. When deemed necessary by the USDA, testing of the unfilled BIBs and barrier preformed pouches for seal strength shall be as specified in E-6,D(1)a.

(3) Filled and sealed BIB examination. The filled and sealed BIBs shall be examined for the defects listed in table I. The lot size shall be expressed in BIBs. The sample unit shall be one BIB. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major defects and 2.5 for minor defects.

TABLE I. Filled and sealed BIB defects 1/

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Tear or hole or open seal.
102		Seal width less than 1/16 inch. <u>2/</u>
103		Presence of delamination. <u>3/</u>
104		Unclean BIB. <u>4/</u>
105		BIB has foreign odor.
106		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. <u>5/</u>
107		Not packaged as specified.
	201	Label missing or incorrect or illegible.
	202	Seal width less than 1/8 inch but greater than or equal to 1/16 inch.
	203	Presence of delamination. <u>3/</u>
	204	Type I center heat seal not in center of BIB.
	205	Type I center heat seal not minimum four inches long.
108		Package E venting system missing or not functional.
109		Class 1 fitment not compatible with rehydration pouch.

TABLE I. Filled and sealed BIB defects 1/ - Continued

Category		Defect
<u>Major</u>	<u>Minor</u>	
110		Class 1 fitment opening less than 3/4 inch.
111		Class 2 fitment not as specified.
112		Class 2 fitment opening less than 1-1/2 inches.
113		Cap missing or does not fit.
	206	Fill line missing or incorrect.
	207	When self-adhering label is used, label not adhered to BIB (for example, label raised or peeled back or presence of gaps along perimeter).
	208	When self-adhering label is used, label not clear as specified.

1/ Any evidence of rodent or insect infestation shall be cause for rejection of the lot.

2/ The effective closure seal is defined as any uncontaminated, fusion bonded, continuous path, minimum 1/16 inch wide, from side seal to side seal that produces a hermetically sealed BIB.

3/ Delamination defect classification:

Major - Delamination of the outer ply in the BIB seal area that can be propagated to expose inner barrier film at the food product edge of the BIB after manual flexing of the delaminated area. To flex, the delaminated area shall be held between the thumb and forefinger of each hand with both thumbs and forefingers touching each other. The delaminated area shall then be rapidly flexed 10 times by rotating both hands in alternating clockwise- counterclockwise directions. Care shall be exercised when flexing delaminated areas near the tear notches to avoid tearing the BIB material. After flexing, the separated outer ply shall be grasped between thumb and forefinger and gently lifted toward the food product edge of the seal or if the separated area is too small to be held between thumb and forefinger, a number two stylus shall be inserted into the delaminated area and a gentle lifting force applied against the outer ply. If separation of the outer ply can be made to extend to the product edge of the seal with no discernible resistance to the gentle lifting, the delamination shall be classified as a major defect. Additionally, spot delamination of the outer ply in the body of the BIB that is able to be propagated beyond its initial borders is also a major defect. To determine if the laminated area is a defect, use the following procedure: Mark the outside edges of the delaminated area using a bold permanent marking pen. Open the BIB and

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remove the contents. Cut the BIB transversely not closer than 1/4 inch ($\pm 1/16$ inch) from the delaminated area. The BIB shall be flexed in the area in question using the procedure described above. Any propagation of the delaminated area, as evidenced by the delaminated area exceeding the limits of the outlined borders, shall be classified as a major defect.

Minor - Minor delamination of the outer ply in the BIB seal area is acceptable and shall not be classified as a minor defect unless it extends to within 1/16 inch of the food product edge of the seal. All other minor outer ply delamination in the BIB seal area or isolated spots of delamination in the body of the BIB that do not propagate when flexed as described above shall be classified as minor defects.

4/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause BIB damage (for example, glass, metal filings) or generally detracts from the clean appearance of the BIB. The following examples shall not be classified as defects for unclean:

a. Foreign matter which presents no health hazard or potential BIB damage and which can be readily removed by gently shaking the package or by gently brushing the BIB with a clean dry cloth.

b. Dried product that affects less than 1/8 of the total surface area of one BIB face (localized and aggregate).

5/ If doubt exists as to whether or not the sealing equipment leaves an impression or design on the closure seal surface that could conceal or impair visual detection of seal defects, samples shall be furnished to the contracting officer for a determination as to acceptability.

(4) Filled and sealed barrier pouch examination. The filled and sealed barrier pouches shall be examined for the defects listed in table II. The lot size shall be expressed in barrier pouches. The sample unit shall be one barrier pouch. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major defects and 2.5 for minor defects.

TABLE II. Filled and sealed barrier pouch defects 1/

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Tear or hole or open seal.
102		Seal width less than 1/16 inch. <u>2/</u>
103		Presence of delamination. <u>3/</u>
104		Unclean barrier pouch. <u>4/</u>
105		Barrier pouch has foreign odor.
106		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. <u>5/</u>
107		Barrier pouch does not contain at least one intact oxygen scavenger. <u>6/</u>
	201	Label missing or incorrect or illegible.
	202	Tear nick or notch or serrations missing or does not facilitate opening.
	203	Seal width less than 1/8 inch but greater than or equal to 1/16 inch.
	204	Presence of delamination. <u>3/</u>
108		Package E number of BIBs in barrier pouch not as specified.
109		Package K not one BIB in barrier pouch.
110		BIB or oxygen scavenger entrapped in heat seal of barrier pouch.

1/ Any evidence of rodent or insect infestation shall be cause for rejection of the lot.

2/ The effective closure seal is defined as any uncontaminated, fusion bonded, continuous path, minimum 1/16 inch wide, from side seal to side seal that produces a hermetically sealed barrier pouch.

3/ Delamination defect classification:

Major - Delamination of the outer ply in the barrier pouch seal area that can be propagated to expose inner barrier film at the food product edge of the barrier pouch after

manual flexing of the delaminated area. To flex, the delaminated area shall be held between the thumb and forefinger of each hand with both thumbs and forefingers touching each other. The delaminated area shall then be rapidly flexed 10 times by rotating both hands in alternating clockwise - counterclockwise directions. Care shall be exercised when flexing delaminated areas near the tear notches to avoid tearing the barrier pouch material. After flexing, the separated outer ply shall be grasped between thumb and forefinger and gently lifted toward the food product edge of the seal or if the separated area is too small to be held between thumb and forefinger, a number two stylus shall be inserted into the delaminated area and a gentle lifting force applied against the outer ply. If separation of the outer ply can be made to extend to the product edge of the seal with no discernible resistance to the gentle lifting, the delamination shall be classified as a major defect. Additionally, spot delamination of the outer ply in the body of the barrier pouch that is able to be propagated beyond its initial borders is also a major defect. To determine if the laminated area is a defect, use the following procedure: Mark the outside edges of the delaminated area using a bold permanent marking pen. Open the barrier pouch and remove the contents. Cut the barrier pouch transversely not closer than 1/4 inch ($\pm 1/16$ inch) from the delaminated area. The barrier pouch shall be flexed in the area in question using the procedure described above. Any propagation of the delaminated area, as evidenced by the delaminated area exceeding the limits of the outlined borders, shall be classified as a major defect.

Minor - Minor delamination of the outer ply in the barrier pouch seal area is acceptable and shall not be classified as a minor defect unless it extends to within 1/16 inch of the food product edge of the seal. All other minor outer ply delamination in the barrier pouch seal area or isolated spots of delamination in the body of the barrier pouch that do not propagate when flexed as described above shall be classified as minor defects.

4/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause barrier pouch damage (for example, glass, metal filings) or generally detracts from the clean appearance of the barrier pouch. The following examples shall not be classified as defects for unclean:

a. Foreign matter which presents no health hazard or potential barrier pouch damage and which can be readily removed by gently shaking the package or by gently brushing the barrier pouch with a clean dry cloth.

b. Dried product which affects less than 1/8 of the total surface area of one barrier pouch face (localized and aggregate).

5/ If doubt exists as to whether or not the sealing equipment leaves an impression or design on the closure seal surface that could conceal or impair visual detection of seal defects, samples shall be furnished to the contracting officer for a determination as to acceptability.

6/ Construction of the oxygen scavenger and compliance with FDA regulations will be verified by CoC.

D. Methods of inspection.

(1) Seal testing. The BIB and barrier pouch seals shall be tested for seal strength as required in a, b or c, as applicable.

a. Unfilled preformed BIB and barrier pouch seal testing. The seals of the unfilled preformed BIB and barrier pouch shall be tested for seal strength in accordance with ASTM F88/F88M, Standard Test Method for Seal Strength of Flexible Barrier Materials. The lot size shall be expressed in BIBs or barrier pouches. The sample unit shall be one BIB or barrier pouch. The sample size shall be the number of BIBs or barrier pouches indicated by inspection level S-1. Three adjacent specimens shall be cut from each of the three sealed sides of each BIB or barrier pouch in the sample. The average seal strength of any side shall be calculated by averaging the three specimens cut from that side. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be classified as a major defect and shall be cause for rejection of the lot.

b. BIB and barrier pouch closure seal testing. The closure seals of the BIB and barrier pouch shall be tested for seal strength in accordance with ASTM F88/F88M. The lot size shall be expressed in BIBs or barrier pouches. The sample unit shall be one BIB or barrier pouch. The sample size shall be the number of BIBs or barrier pouches indicated by inspection level S-1. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be classified as a major defect and shall be cause for rejection of the lot.

c. Internal pressure test (for barrier pouch). The internal pressure resistance shall be determined by pressurizing the barrier pouches while they are restrained between two rigid plates. The lot size shall be expressed in barrier pouches. The sample unit shall be one barrier pouch. The sample size shall be the number of barrier pouches indicated by inspection level S-1. If a three seal tester (one that pressurizes the barrier pouch through an open end) is used, the closure seal shall be cut off for testing the side and bottom seals of the barrier pouch. For testing the closure seal, the bottom seal shall be cut off. The barrier pouches shall be emptied prior to testing. If a four-seal tester (designed to pressurize filled barrier pouches by use of a hypodermic needle through the barrier pouch wall) is used, all four seals can be tested simultaneously. The distance between rigid restraining plates on the four-seal tester shall be equal to the thickness of the product +1/16 inch. Pressure shall be applied at the approximate uniform rate of 1 pound per square inch gage (psig) per second until 14 psig pressure is reached. The 14 psig pressure shall be held constant for 30 seconds and then released. The barrier pouches shall then be examined for separation or yield of the heat seals. Any rupture

of the barrier pouch or evidence of seal separation greater than 1/16 inch in the barrier pouch manufacturer’s seal shall be considered a test failure. Any seal separation that reduces the effective closure seal width to less than 1/16 inch (see table I, footnote 2/) shall be considered a test failure. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

(2) Label adhesive examination. When self-adhering labels are used, the adhesive shall be tested in accordance with ASTM D3330/D3330M, Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape. In lieu of testing, a CoC may be provided.

(3) BIB in boiling water test. Rehydrated product in BIBs shall be tested for durability in boiling water. The lot size shall be expressed in BIBs. The inspection level shall be S-2. The rehydrated BIBs shall be placed in boiling water for two hours. After removal from the boiling water, the BIBs shall be inspected. Any delamination or degradation of the BIB or damage to the product shall be classified as a major defect and shall be cause for rejection of the lot.

(4) Oxygen content testing. Eight filled and sealed barrier pouches shall be randomly selected from one production lot and individually tested for oxygen content. Testing shall be accomplished after the filled and sealed barrier pouches have been allowed to equilibrate at room temperature for not less than 96 hours from the time of sealing. Test results shall be reported to the nearest 0.01 percent. Government verification will be conducted through actual testing by a Government laboratory. Any individual result not conforming to the oxygen content requirement shall be classified as a major defect and shall be cause for rejection of the lot.

E. Paperboard carton. When applicable, the filled and closed paperboard cartons shall be examined for the defects listed in table III. The lot size shall be expressed in paperboard cartons. The sample unit shall be one carton fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE III. Paperboard carton and label defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Labeling missing or incorrect or illegible.
102		Inadequate workmanship. <u>1/</u>
	201	Does not contain one filled and sealed barrier pouch.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, inadequate or improper closure, or bulged or distorted container.

F. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table IV. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE IV. Shipping container and marking defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Marking missing or incorrect or illegible.
102		Inadequate workmanship. <u>1/</u>
	201	More than 40 pounds of product.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

G. Unitization.

(1) Unit load examination. The unit load shall be examined in accordance with the requirements of DLA Troop Support Form 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items. Any nonconformance shall be classified as a major defect.

SECTION J REFERENCE DOCUMENTS

Unless otherwise specified, the applicable version of these documents is that which is active on the date of the solicitation or contract.

DLA Troop Support Forms

Form 3507	Loads, Unit: Preparation of Semiperishable Subsistence Items
Form 3556	Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-131	Barrier Materials, Watervaporproof, Greaseproof, Flexible, Heat-Sealable
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(Copies of these documents are available from <http://assist.daps.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Ave, Building 4D, Philadelphia, PA 19111-5094.)

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ) www.asq.org

ANSI/ASQ Z1.4	Sampling Procedures and Tables for Inspection by Attributes
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AOAC INTERNATIONAL www.aoac.org

Official Methods of Analysis (OMA) of the AOAC International

ASTM INTERNATIONAL www.astm.org

D1974/ D1974M	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D2103	Standard Specification for Polyethylene Film and Sheeting

D3330/D3330M	Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape
D4727/D4727M	Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes
D5118/D5118M	Standard Practice for Fabrication of Fiberboard Shipping Boxes
F88/F88M	Standard Test Method for Seal Strength of Flexible Barrier Materials