

SECTION C

PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR CID A-A-20331, FOOD PACKET, SURVIVAL, AIRCRAFT LIFE RAFT

This survival food packet is provided in life rafts of naval aircraft and is used by combat personnel under worldwide environmental extremes.

C-1 ITEM DESCRIPTION

Type, style and class.

Type I. Two bars of fruit tablets, two packets of candy coated chewing gum tablets, twine, and an instruction sheet.

Style A. Packaged in a laminated bag.

Class 1. Regular.

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article or product demonstration model inspection, as applicable, in accordance with the tests and inspections of Section E of this Packaging Requirements and Quality Assurance Provisions document.

B. Twine. Twine shall be 8 - 8-1/2 inches long, constructed from 16 or 20 ply, No. 1-8 yarn.

C. Palatability and overall appearance. The finished product shall be equal to or better than the approved product standard in palatability and overall appearance.

SECTION D

D-1 PACKAGING

A. Component packaging. Two tablets of spearmint gum shall be packaged in a cellophane wrapper. Two tablets of peppermint gum shall be packaged in a cellophane wrapper. Each tablet of fruit candy shall be individually wrapped. Ten fruit tablets, of assorted flavors, shall be wrapped to create a bar weighing no less than 1 ounce.

B. Laminated bag. Components shall be packaged in a preformed laminated bag. The bag shall be constructed from heat-sealable barrier material, one layer of which shall be a minimum of 0.00035 inch thick aluminum foil. The bag shall be a flat style pouch having maximum inside dimensions of 3-1/2 inches wide by 7 inches long. The pouch shall be made by heat sealing three edges with 3/8 inch (-1/8 inch, +3/16 inch) wide seals. The side and bottom 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. A tear notch or serrations will be provided to facilitate opening of the pouch. A 1/8 inch wide lip may be incorporated at the open end of the pouch to facilitate opening and filling of the pouch. The exterior pouch color shall conform to number 20219, 30219, 30227, 30279, 30313, 30324 or 30450 of FED-STD-595, Colors Used in Government Procurement. Excess air shall be expelled and the bag closed by heat sealing. 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. 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. Seals shall be free of impression or design on the seal surface that would conceal or impair visual detection of seal defects.

D-2 LABELING

A. Packet. Each packet shall be printed or stamped on the bag, in a manner that does not damage the item, with permanent black ink or any other contrasting color that is free of carcinogenic elements. The information may be located anywhere on the bag (in one complete print), except the closure seal area. The label shall contain the following information:

FOOD PACKET, SURVIVAL, AIRCRAFT, LIFE RAFT
Date 1/
Contractor's name and address

1/ Each packet 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, 30 January 2001 would be coded as 1030. The Julian day code shall represent the day the product was packaged into the bag.

B. Instructions. The following instructions shall be printed on a sheet of paper and provided in each packet:

The food in this survival packet will be beneficial even when water supply is limited. When consumed in one day, these foods will maintain survival efficiency. Do not get items wet. Keep unused items in bag.

D-3 PACKING

A. Packing. Thirty-six packets shall be packed in a fiberboard shipping container constructed in accordance with style RSC, grade V3c of ASTM D 5118, Standard Practice for Fabrication of Fiberboard Shipping Boxes. Each container shall be securely closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers.

D-4 UNITIZATION

A. Unit loads. Boxes shall be arranged in unit loads in accordance with DSCP Form 3507.

D-5 MARKING

A. Shipping containers and unit loads. Shipping containers and unit loads shall be marked in accordance with DPSC Form 3556, Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence.

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. 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.

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) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this document and evaluated for overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure, shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

US Army Soldier & Biological Chemical Command
Soldiers System Ctr., Natick Soldier Center
Attn: AMSSB-RCF-F(N)
15 Kansas Street
Natick, MA 01760-5018

One lot shall be randomly selected during each calendar month of production. Six (6) sample units of each item produced shall be randomly selected from that one production lot. The six (6) sample units shall be shipped to Natick within two (2) working days upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality. Failure of samples to conform to all such characteristics may be cause for rejection.

(2) Conformance inspection. Conformance inspection shall include the product examination cited in this section.

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in A-A-20331 and Section C of this Packaging Requirements and Quality Assurance Provisions document utilizing the double sampling plans indicated in ANSI/ASQC Z1.4-1993. The lot size shall be expressed in packets. The sample unit shall be the contents of one packet. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 for major defects and 4.0 for minor defects. Defects and defect classifications are listed in Table I.

TABLE I. Product defects 1/ 2/

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Not type, style or class specified.
102		Missing or unserviceable component.
103		Not clean.
104		Instructions missing, incorrect or illegible.
105		Gum packet does not contain two tablets.
106		Candy tablets not individually wrapped.
	201	Twine not as specified.
	202	Gum tablets not packaged in cellophane.
	203	Gum not peppermint flavored and not spearmint flavored.
	204	Gum sticky, grainy, flabby or stringy.
	205	Gum weighs less than 1.3 grams.
	206	Gum coating incomplete, pitted, cracked or discolored.
	207	Candy not assorted flavors.
	208	Overwrapped bar does not contain 10 fruit tablets.
	209	Fruit tablet bar weighs less than one ounce.

1/ The presence of any foreign material such as but not limited to dirt, insect parts, hair, wood, glass, metal, or mold, or the presence of any foreign odors or flavors such as but not limited to burnt, scorched, rancid, sour, or stale shall be cause for rejection of the lot.

2/ Finished product not equal to or better than the approved product standard in overall appearance shall be cause for rejection of the lot.

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

A. Packaging.

(1) Unfilled preformed package certification. A certification of conformance may be accepted as evidence that unfilled packages conform to the requirements specified in D-1,B. When deemed necessary by the USDA, testing of the unfilled preformed pouches for seal strength shall be as specified in E-6,A,(3),a.

(2) Filled and sealed packet examination. The filled and sealed packets shall be examined for the defects listed in table II. The lot size shall be expressed in packets. The sample unit shall be one packet. 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 packet defects 1/

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Tear, hole, or open seal.
102		Unclean. <u>2/</u>
103		Bag has foreign odor.
104		Seal width less than 1/16 inch. <u>3/</u>
105		Presence of delamination. <u>4/</u>
106		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. <u>5/</u>
	201	Label missing, incorrect, or illegible.
	202	Presence of delamination. <u>4/</u>
	203	Tear notch or serrations missing or do not facilitate opening.

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

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

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

b. Localized dried product which affects less than 1/8 of the total surface area of one package face, or an aggregate of scattered dried product which affects less than 1/4 of the total surface area of one package face.

3/ 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 pouch.

4/ Delamination defect classification:

Major - Delamination of the outer ply in the pouch seal area that can be propagated to expose aluminum foil at the food product edge of the 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 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 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 pouch and remove the contents. Cut the pouch transversely not closer than 1/4 inch (+1/16 inch) from the delaminated area. The 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 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 pouch seal area or isolated spots of delamination in the body of the pouch that do not propagate when flexed as described above shall be classified as minor defects.

6/ 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.

(3) Seal testing. The pouch seals shall be tested for seal strength as required in a or b, as applicable.

a. Unfilled preformed pouch seal testing. The seals of the unfilled preformed pouch shall be tested for seal strength in accordance with ASTM F 88, Seal Strength of Flexible Barrier Materials. The lot size shall be expressed in pouches. The sample size shall be the number of pouches indicated by inspection level S-1. Three specimens shall be cut from each of the three sealed sides of each pouch in the sample. The average seal strength of any side shall be calculated by averaging the results of 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 cause for rejection of the lot.

b. Pouch closure seal testing. The closure seals of the pouches shall be tested for seal strength in accordance with ASTM F 88. The lot size shall be expressed in pouches. The sample size shall be the number of pouches indicated by inspection level S-1. For the closure seal on preformed pouches, three adjacent specimens shall be cut from the closure seal of each pouch in the sample. The average seal strength of any side, end or closure shall be calculated by averaging the three specimens cut from that side, end or closure. 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 cause for rejection of the lot.

B. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table III below. 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 III. Shipping container and marking defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. <u>1/</u>
	201	Contents more or less than specified.

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.

E. Unit load examination. The unit load shall be examined in accordance with the requirements of DSCP Form 3507. Any nonconformance shall be classified as a major defect and shall be cause for rejection of the lot.

SECTION J REFERENCE DOCUMENTS

DSCP FORMS

DSCP FORM 3507 - Loads, Unit: Preparation for Semiperishable Subsistence Items

DPSC FORM 3556 - Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY CONTROL (ASQC)

ANSI/ASQCZ1.4-1993 - Sampling Procedures and Tables for Inspection by Attributes

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 1974 - Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers

D 5118 - Practice for Fabrication of Fiberboard Shipping Boxes

F 88 - Test Method for Seal Strength of Flexible Barrier Materials

AMSRD-NSC-CF-F (Friel/4261)

3 December 2003

TO: DSCP- HRAC (D. Anthony/4477)

SUBJECT: ES04-019 (DSCP-SS-04-00818) Requirement change/waiver for Bell Jar Test; Food Packet, Survival, Aircraft Life Raft, CID A-A-20331 and Packaging Requirements and Quality Assurances Provisions for Food Packet, Survival, Aircraft Life Raft, CID A-A-20331; Contractor, Sopakco; SPO300-04-M-Z100, Quantity 50,400 units.

1. Date received: 19 November 2003
Date due: 24 November 2003
Date extended: 3 December 2003
Date replied: 3 December 2003
 2. Confirming information provided telephonically to Mr. Brian Lowery, DSCP on 20 Nov 03, by Mr. Peter Sherman, this Center, NSC concurs in elimination of the leakage test in the subject document.
 3. The concurrence is in accordance with precedence set when leakage testing was eliminated from MRE meal bag and accessory packet testing. Reliance of bag integrity is effectively established through visual examination of the pouch and with seal strength testing and this is the current norm. Experience has shown that conducting a leakage test for an item as described in the subject document neither adds value to the process nor assures pouch integrity.
 4. Natick recommends that DSCP implement the following changes to the Packaging Requirements and Quality Assurances Provisions for Food Packet, Survival, Aircraft Life Raft, CID A-A-20331, which are highlighted in the attached file for all current, pending and future procurements until subject documents are formally amended or revised.
 - a.
 - b. Pg 1, D-1B, delete last sentence " The filled and sealed pouch shall not leak."
 - c. Pg 5, Table II, delete defect "104, Bag leaks". Renumber current defects 105, 106, and 107 to new defects 104, 105 and 106 respectively.
 - c. Pg 6, E-6, A,(4) delete "Package leakage" paragraph in it's entirety.
- Justification: Table II includes a visual inspection for 'Tears, cuts and holes". This QA provision is adequate to ensure that assembled pouches of the subject item have required pouch integrity throughout the life cycle of the item. Visual inspection has reliably been used for examining all flexibly packaged components of the MRE for the past 23 years and is an acceptable method for this item. There is no measurable gain to the user in also conducting a separate leakage test.
5. The major user, the Navy, was contacted and no reply has been received as of this date.

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6. POC for this action is Mr. Peter Sherman, x4062.