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SUPERSEDING
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5 February 2001
PKG&QAP A-A-20247A
12 September 2008

SECTION C

This survival ration is provided in life rafts in aircraft and ships for use by military personnel under worldwide environmental extremes.

C-1 ITEM DESCRIPTION

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

Types.

Type I - Consists of hard candy fruit tablets and chewing gum
Type II - Consists of carbohydrate food bars

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model (PDM) inspection as applicable, in accordance with the tests and inspections of Section E of this Packaging Requirements and Quality Assurance Provisions (PKG&QAP) document. The approved sample shall serve as the product standard. Should the contractor at any time plan to or actually produce the product using different raw material or process methodologies from the approved product standard, which result in a product non comparable to the product standard, the contractor shall submit a replacement FA or PDM for approval. In any event, all product produced must meet all requirements of this document including product standard comparability.

B. Type I fruit tablets. The hard candy tablets shall consist of various fruit flavors.

C. Instruction sheet. Instruction sheet for Type I shall be included as a separate sheet placed inside the laminated pouch or as instructions stamped on the outer packaging.

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

E. Analytical. The water-insoluble base, protein, sodium, and moisture requirements, procedures and testing shall be in accordance with A-A-20331A.

SECTION D

D-1 PACKAGING

A. Type I packaging. The survival packet shall contain two packages of hard candy fruit tablets, square or rectangular shaped and two packages of chewing gum tablets, one package of peppermint and one package of spearmint chewing gum, with each package of chewing gum containing two tablets. The Type I survival packet shall also contain an instruction sheet in or printed on a flat interlocking closure pouch.

(1) Flat interlocking closure pouch. The Type I survival food packet shall be filled into a flat interlocking closure pouch.

a. Pouch material. The pouch shall be fabricated from 0.002 inch thick ionomer or polyethylene film laminated or extrusion coated to 0.00035 inch thick aluminum foil which is then bonded to 0.0005 inch thick polyester. The three plies may be laminated with nylon on the exterior of the pouch. Tolerances for thickness of plastic films shall be plus or minus 20 percent and tolerance for the foil layer shall be plus or minus 10 percent. The material shall show no evidence of delamination, degradation, or foreign odor when heat sealed or fabricated into pouches. The material shall be suitably formulated for food packaging and shall not impart an odor or flavor to the product. The complete exterior of the pouch shall be uniformly colored in the range of 20219, 30219, 30227, 30279, 30313, 30324 or 30450 of FED-STD-595, Colors Used in Government Procurement.

b. Pouch construction. The pouch shall be a flat design preformed or vertical form-fill-seal pouch with an interlocking closure. The pouch shall be a flat style preformed pouch having maximum inside dimensions of 3-1/2 inches wide by 7 inches long. The pouch shall be made by heat sealing the sides and top of the pouch with 3/8 (+1/8, -1/4) inch wide seals. The pouch shall exhibit no rupture or seal separation greater than 1/16 inch when tested for internal pressure resistance. The interlocking closure of the pouch shall not leak more than 15 ml when tested. A tear nick or notch shall be provided on one or two opposite edges of the pouch above the interlocking closure to facilitate opening of the filled and sealed pouch. A 1/8 inch wide lip may be incorporated at the open end of the pouch.

c. Pouch filling and sealing. Product shall be inserted into the pouch and the filled pouch shall be sealed with a 1/8 to 1 inch wide heat seal. The closure seal shall be applied not

more than 1/2 inch from the open end of the pouch. The closure seals 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 when tested. Alternatively, the pouch shall exhibit no rupture or seal separation greater than 1/16 inch when tested for internal pressure resistance.

B. Type II packaging. The Type II survival food packet shall have equally shaped individually wrapped food portions and shall be packed in a preformed pouch as described below. The Type II survival food packet shall not exceed 36.6 cubic inches in volume and 20.0 ounces (567 grams) in weight.

(1) Preformed pouch.

a. Pouch material. The preformed pouch shall be fabricated from 0.002 inch thick ionomer or polyethylene film laminated or extrusion coated to 0.00035 inch thick aluminum foil which is then laminated to 0.0005 inch thick polyester. Tolerances for thickness of plastic films shall be plus or minus 20 percent and tolerance for the foil layer shall be plus or minus 10 percent. The material shall show no evidence of delamination, degradation, or foreign odor when heat sealed or fabricated into pouches. The material shall be suitably formulated for food packaging and shall not impart an odor or flavor to the product.

b. Pouch construction. The pouch shall be a flat style preformed pouch or a preformed, square bottom gusset style. 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 when tested. Alternatively, the pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal 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 pouch. A 1/8 inch wide lip may be incorporated at the open end of the pouch.

c. Pouch filling and sealing. As specified in D-1,A, components shall be inserted into the pouch. The filled pouch shall be sealed under a vacuum level of 27 inches of mercury. 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. Alternatively, the filled and sealed 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. The sealed packet shall show no loss of vacuum when examined.

D-2 LABELING

A. Type I pouches. Each pouch shall be correctly and legibly labeled. Printing ink shall be permanent black ink or other dark contrasting color which is free of carcinogenic elements. The label shall contain the following information:

(1) Food Packet, Survival, Type I
(2) Date 1/
(3) Name and address of packer

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, 14 February 2013 would be coded as 3045. The Julian day code shall represent the day the product was packaged into the bag.

B. Type I instructions. The following instructions shall be legibly printed on a sheet of paper and provided in each packet or shall be legibly stamped on the outer packaging:

> 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.

C. Type II pouches. Each pouch shall be correctly and legibly labeled. Printing ink shall be permanent black ink or other dark contrasting color which is free of carcinogenic elements. The label shall contain the following information:

(1) Food Packet, Survival, Type II
(2) Ingredients
(3) Date 1/

(4) Net weight
(5) Name and address of packer
(6) "Nutrition Facts" label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA regulations 2/

1/ Each 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 pouch.

2/ If nutrition facts are printed on commercial packaging of packaged product, the requirement for Nutrition Facts labeling on outer pouch is waived.

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-L 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, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

D-4 UNITIZATION

A. Unit Loads. Boxes shall be arranged in unit loads in accordance with DLA Troop Support Form 3507.

D-5 MARKING

A. Shipping containers. Shipping containers 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.

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 appearance, odor, flavor and texture. Any failure to conform to the product 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 Research, Development and Engineering Command
Natick Soldier Research, Development and Engineering Center
RDNS-CFF
15 Kansas Street
Natick, MA 01760-5056

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 five working days from the end of the production month and upon completion of all USDA inspection requirements. The sample units will be evaluated for overall quality.

(2) Conformance inspection. Conformance inspection shall include the examinations and the methods of inspection 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-20331A and Section C of this Packaging Requirements and Quality Assurance Provisions document utilizing the double sampling plans indicated in ANSI/ASQ Z1.4. 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, and shall be 1.5 for major defects and 4.0 for minor defects. Defects and defect classifications are listed in tables I and II.

TABLE I. Product defects for Type I 1/ 2/

Category		Defect
Major	Minor	
		General
101		Not type or not package type as specified.
102		Each package of chewing gum tablets does not contain two tablets.
103		Hard candy fruit tablets adhere to the wrapper.
	201	Hard candy fruit tablets not hard.

	202	Hard candy fruit tablets not individually wrapped.
	203	Individually wrapped hard candy fruit tablets not overwrapped in units of ten to form a bar.
		Appearance
	204	Chewing gum tablet candy coating incomplete or pitted or cracked or discolored.
		Odor and flavor
104		Chewing gum tablets not fresh.
	205	Chewing gum tablets not peppermint flavored and spearmint flavored.
105		Hard candy fruit tablets not a slightly sweet, fruity odor or not a sweet, fruity flavor.
	206	Hard candy fruit tablets not a variety of fruit flavors.
		Texture
	207	Chewing gum tablets sticky or grainy or flabby or stringy.

TABLE I. Product defects for Type I 1/ 2/ - Continued

Category		Defect
Major	Minor	
		Net weight
	208	Chewing gum tablet weighs less than 1.1 grams or more than 1.6 grams.
	209	Hard candy fruit tablet bar weighs less than 1.0 ounce (28 grams).

1/ Presence of any foreign materials such as, but not limited to dirt, insect parts, hair, glass, wood, or metal, or any foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, stale, musty or moldy 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.

TABLE II. Product defects for Type II 1/ 2/

Category		Defect
Major	Minor	
		General
101		Not a Survival Food Packet.
102		Not an equally shaped food bar. 3/
103		Food portions not individually wrapped.
		Appearance
	201	Food bars do not look dense or do not have flat surfaces.
	202	Food bars are not a light to darker golden color.
		Odor and flavor
104		Off odor or off flavor.

TABLE II. Product defects for Type II 1/ 2/ - Continued

Category		Defect
Major	Minor	
	203	Not a sweet, toasted grain or oily or buttery or slight dairy flavor.
		Texture
	204	Not firm and not dense.
	205	Not slightly crunchy or not slightly oily or not easy to bite or chew.
		Net weight
	206	Net weight of individual packet exceeds 20.0 ounces (567 grams).

1/ Presence of any foreign materials such as, but not limited to dirt, insect parts, hair, glass, wood, or metal, or any foreign odors or flavors such as, but not limited to burnt, scorched,

rancid, sour, stale, musty or moldy 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.

3/ More than 1/4 of portion crushed or more than 3 broken pieces per portion.

B. Methods of inspection for Type I.

(1) Shelf life. The contractor shall provide a Certificate of Conformance (CoC) that the product has a 5 year shelf life when stored at 80°F.

(2) Net weight. The net weight of the packet shall be determined by weighing each sample unit on a suitable scale tared with a representative pouch. Results shall be reported to the nearest 1 gram or to the nearest 0.1 ounce.

C. Methods of inspection for Type II.

(1) Shelf life. The contractor shall provide a Certificate of Conformance (CoC) that the product has a 5 year shelf life when stored at 80°F.

(2) Net weight. The net weight of the packet shall be determined by weighing each sample unit on a suitable scale tared with a representative pouch. Results shall be reported to the nearest 1 gram or to the nearest 0.1 ounce.

(3) Calorie content. The calorie content shall be verified by the NLEA "Nutrition Facts" label. Product not conforming to the minimum kilocalorie content of 2400 kilocalories (10,000 kJ) of which 45 percent of the kilocalories are from carbohydrates shall be cause for rejection of the lot.

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

A. Packaging.

(1) Pouch material certification for Type I and Type II. The pouch material may be tested for these characteristics. A CoC may be accepted as evidence that the characteristics

listed below conform to the specified requirements.

Characteristic	Requirement paragraph	Test procedure
Thickness of films for laminated material	D-1,A(1)a and D-1,B(1)a	ASTM D2103 1/
Aluminum foil thickness	D-1,A(1)a and D-1,B(1)a	ASTM B479 2/
Laminated material identification and construction	D-1,A(1)a and D-1,B(1)a	Laboratory evaluation
Color of laminated material	D-1,A(1)a	Visual evaluation by FED-STD-595 3/

1/ ASTM D2103 Standard Specification for Polyethylene Film and Sheeting

2/ ASTM B479 Standard Specification for Annealed Aluminum and Aluminum-Alloy Foil for Flexible Barrier, Food Contact, and Other Applications

3/ FED-STD-595 Colors Used in Government Procurement

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

(3) Filled and sealed packet examination for Type I and Type II. The filled and sealed packets shall be examined for the defects listed in tables III and IV. 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 III. Filled and sealed pouch defects for Type I 1/

Category		Defect
Major	Minor	
101		Tear or hole or open seal.

102	Unclean pouch. 2/
103	Pouch has foreign odor.
104	Seal width less than 1/16 inch. 3/
105	Presence of delamination. 4/
106	Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. 5/
107	Pouch contains less than two packages of square or regular shaped hard candy fruit tablets or less than one package of peppermint chewing gum or less than one package of spearmint gum, or instruction sheet is missing. 6/

TABLE III. Filled and sealed pouch defects for Type I 1/ - Continued

Category		Defect
Major	Minor	
108		Presence of foreign matter or wrinkles in the seams.
109		Instructions incorrect or illegible.
	201	Label missing or incorrect or illegible.
	202	Seal width less than 1/8 inch but greater than 1/16 inch.
	203	Tear nick or notch or serrations missing or does 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 ($\pm$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.

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/ If instructions are printed on the outer pouch, a missing instruction sheet shall not be scored as a defect.

TABLE IV. Filled and sealed pouch defects for Type II 1/

Category		Defect
Major	Minor	
101		Tear or hole or open seal.
102		Unclean pouch. 2/
103		Pouch has foreign odor.
104		Seal width less than 1/16 inch. 3/
105		Presence of delamination. 4/
106		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. 5/
107		Presence of foreign matter or wrinkles in the seams.
108		Pouch exceeds 36.6 cubic inches in volume.
	201	Label missing or incorrect or illegible.
	202	Presence of delamination. 4/

203	Seal width less than 1/8 inch but greater than 1/16 inch.
204	Tear nick or notch or serrations missing or does 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.

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.

B. Methods of inspection.

(1) Seal testing. The pouch seals shall be tested for seal strength as required in a, b, or c, 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 F88/F88M, Standard Test Method for Seal Strength of Flexible Barrier Materials. The lot size shall be expressed in pouches. The sample unit shall be one unfilled pouch. The sample size shall be the number of pouches indicated by inspection level S-1. Three adjacent 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 three specimens cut from that side. Any average seal strength 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. Pouch closure seal testing. The closure seals of the pouches shall be tested for seal strength in accordance with ASTM F88/F88M. The lot size shall be expressed in pouches. The sample unit shall be one pouch. 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. For the form-fill-seal pouches, three adjacent specimens shall be cut from each side and each end 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 classified as a major defect and shall be cause for rejection of the lot.

c. Internal pressure test. The internal pressure resistance shall be determined by pressurizing the pouches while they are restrained between two rigid plates. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. If a three seal tester (one that pressurizes the pouch through an open end) is used, the closure seal shall be cut off for testing the sides and end of the pouch. For design B pouch, when testing the closure seal, the top and interlocking closure shall be cut off. The pouches shall be emptied prior to testing. If a four-seal tester (designed to pressurize filled pouches by use of a hypodermic needle through the 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 pouches shall then be examined for separation or yield of the heat seals. Any rupture of the pouch or evidence of seal separation greater than 1/16 inch in the 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 II, 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.

d. Interlocking closure test for Type I. The interlocking closure of the pouch shall be tested. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-2. Open a filled and sealed interlocking pouch and add 118 ml of water (4 oz.) at 70°F (± 5°F). Close pouch. Invert pouch and suspend pouch for 15 seconds. Collect and measure any liquid that drips. Pouches that leak more than 15 ml shall be a major defect and shall be cause for rejection of

the lot.

(2) Leakage test for Type ~~II~~ I. The filled and sealed envelopes shall be tested by placing them in a dry desiccator, or similar apparatus, and subjecting them to a vacuum of 26 inches of mercury (atmospheric pressure is 29.9 inches of mercury) for 30 seconds. Any envelope that does not swell to form a tightly distended package having at least one distorted edge during the test shall be recorded as a leaker. After vacuum testing, the envelopes shall be visually inspected for evidence of delamination and for seal separation. Any leakage, any delamination, or any seal separation of more than 1/16 inch from the product edge of any seal shall be recorded as a defect.

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(3) Vacuum examination for Type II. Eight filled and sealed survival food packets shall be randomly selected from each lot and individually examined for retention of vacuum after they have been allowed to equilibrate at room temperature for not less than 96 hours from the time of sealing. The sealed packet shall continue to exhibit tight adherence to the surface contours of the contents when a pulling force is applied at the center of each side seal. This force shall be applied by holding each side seam between the thumb and forefinger of each hand, while simultaneously exerting a slight pull with both hands. Any evidence of loss of vacuum shall be classified as a major defect and shall be cause for rejection of the lot.

C. Packing.

(1) Shipping container and marking examination. The filled and closed shipping container shall be examined for the defects listed in Table III. 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 V. Shipping container and marking defects

Category		Defect
Major	Minor	
101		Marking missing or incorrect or illegible.
102		Inadequate workmanship. 1/
	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.

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

SECTION J REFERENCE DOCUMENTS

Unless otherwise specified, the issues of these documents are those active on the date of the solicitation or contract.

DLA Troop Support Forms

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

FEDERAL STANDARD

FED-STD-595	Colors Used in Government Procurement

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY CONTROL (ASQC) www.asq.org

ANSI/ASQ Z1.4	Sampling Procedures and Tables for Inspection by Attributes

ASTM INTERNATIONAL www.astm.org

B479	Standard Specification for Annealed Aluminum and Aluminum-Alloy Foil For Flexible Barrier, Food Contact, and Other Applications
D1238	Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer

D1505	Standard Test Method for Density of Plastics by Density-Gradient Technique
D1974	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D2103	Standard Specification for Polyethylene Film and Sheeting
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

PKG&QAP A-A-20331A
16 April 2012
W/Change 01 23 October 2014 (ES15-004 (DSCP-SS-15-00023)
SUPERSEDING
PKG&QAP A-A-20331
5 February 2001
PKG&QAP A-A-20247A
12 September 2008

For DLA Troop Support Website Posting

RDNS-SEC-F 23 October 2014

TO: DLA Troop Support - Subsistence

SUBJECT: ES15-004 (DSCP-SS-15-00023); Technical inquiry, test methods; Packaging Requirements and Quality Assurance Provisions (PKG&QAP) for Commercial Item Description (CID) A-A-20331A Food Packet, Survival, Type II, Carbohydrate Food Bars in a Preformed Pouch

Date received: 14 October 2014
Date due: 12 January 2015
Date replied: 23 October 2014

1. DLA has initiated an Engineering Support case to change the test method for Type II, Carbohydrate Food Bars in a Preformed Pouch in PKG&QAP A-A-20331A, Food Packet, Survival.

2. DLA recommends that paragraph E-6, B(2), Leakage test for Type II be removed as a conformance examination since paragraph E-6, B(3), Vacuum examination for Type II is sufficient for inspectors to determine if the package is vacuum packaged, retaining a vacuum and not leaking.

3. Natick recommends that paragraph E-6, B(2), be changed to Leakage test for Type I to coincide with Section D-1,A(1)c, Pouch filling and sealing (for Type I).

4. Natick submits the following change to the subject document for all future procurements until the document is formally amended or revised.

a. Page 18, Paragraph E-6, B(2), Leakage test for Type II. After “Type”, delete “II”, insert “I”.

5. Attached is Change 01, PKG&QAP for CID A-A-20331A, Food Packet, Survival dated 23 October 2014, with the change highlighted.