PCR-T-008
16 August 2004
W/Change 07 25 May 11

SECTION C

This document covers tortillas packaged in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-T-008, TORTILLAS, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

Packages.

Package C – Meal, Ready-to-Eat (MRE)
Package E – Unitized Group Ration (UGR) – Heat & Serve
Package J - First Strike Ration (FSR)

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model inspection (PDM) as applicable, in accordance with the tests and inspections of Section E of this Performance-based Contract Requirements (PCR) 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 arrange for a new or alternate FA or PDM approval. In any event, all product produced must meet all requirements of this document including Product Standard comparability.

B. Shelf life. The packaged tortillas shall meet the minimum shelf life requirement of 36 months at 80^{o}F.

C. Appearance.

(1) General. For packages C and J, the finished product shall be two baked intact tortillas prepared from enriched flour. For package E, the finished product shall be 36 baked intact tortillas prepared from enriched flour. The packaged food shall be free from foreign materials and shall show no evidence of excessive baking (materially darkened or scorched).

(2) Tortillas. The tortillas shall be off white in color. The product shall have small tan to amber spots (less than one inch) randomly dispersed on the thin, round, wheat flour tortilla surface. The tortillas shall be easily separable.

D. Odor and flavor.

(1) General. The tortillas shall be free from foreign odors and flavors.

(2) Tortillas. The tortillas shall have a cooked wheat flour, slightly sweet, slightly sour odor and flavor. The tortillas may have a slightly uncooked wheat dough flavor.

E. Texture. The tortillas shall be soft, pliable and slightly chewy.

F. Size. The tortillas shall be thin and round and shall be not greater than 7.0 inches in diameter.

G. Weight.

(1) Package C and J. The average net weight shall be not less than 60 grams. No individual pouch (containing 2 tortillas) shall have a net weight of less than 54 grams.

(2) Package E. The average net weight shall be not less than 1120 grams. No individual pouch (containing 36 tortillas) shall have a net weight of less than 998 grams.

H. Analytical requirements.

(1) Moisture content. The moisture content shall be not greater than 26.0 percent.

(2) pH level. The pH level shall be not less than 4.8 and not greater than 5.7.

(3) Water activity. The water activity of the packaged product shall be not greater than 0.85 when measured at 25°C (77.0°F).

(4) Oxygen content. The oxygen content in an individual pouch shall be not greater than 0.30 percent after 48 hours from time of sealing.

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

J. Nutrient content. Two tortillas shall have not less than 220 calories.

C-3 PRODUCT INFORMATION

THE FOLLOWING LIST OF INGREDIENTS IS PROVIDED FOR INFORMATION ONLY. THIS IS NOT A MANDATORY CONTRACT REQUIREMENT.

A. Ingredients. The tortillas may contain: Enriched bleached wheat flour (flour, niacin, iron, thiamin mononitrate, riboflavin, folic acid), water, vegetable shortening (partially hydrogenated soybean and/or cottonseed oils with mono and diglycerides added), corn syrup solids, glycerine, contains 2 percent or less of the following: salt, sodium bicarbonate, sodium aluminum phosphate, fumaric acid, potassium sorbate and calcium propionate as preservatives, L-Cysteine. 1/

1/ Tortillas produced by Casa de Oro, a division of ConAgra, Omaha, Nebraska, were used in the development of this item.

SECTION D

D-1 PACKAGING

A. Packaging. For package C and J, two tortillas (folded in half) and oxygen scavenger packet(s) (see D,1,A,(3)) shall be packaged in a preformed or form-fill-seal barrier pouch as described below. For package E, 36 tortillas (packed flat in two stacks of 18 tortillas) and oxygen scavenger packet(s) (see D,1,A,(3)) shall be packaged in a preformed or form-fill-seal barrier pouch as described below.

(1) Preformed pouches.

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 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 surface of the pouch shall be uniformly colored with 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 style preformed pouch. Package C and J shall have maximum inside dimensions of 5 inches wide by 7-3/4 inches long. Package E shall have maximum inside dimensions of 9-1/2 inches wide by 15-3/4 inches long. The pouch shall be made by heat sealing three edges with 3/8 inch (±1/8 inch in any dimension) 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 as specified in E-6,A,(4),a. 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 as specified in E-6,A,(4),c. A tear nick or notch shall be provided on one or more edges of the pouch 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. For package C and J, two tortillas (folded in half) and oxygen scavenger packet(s) (see D-1,A,(3)) shall be inserted into the pouch in a manner so as to avoid contamination of the closure seal area. For package E, 36 tortillas (packed flat in two stacks of 18 tortillas) and oxygen scavenger packet(s) (see D-1,A,(3)) shall be inserted into the pouch in a manner so as to avoid contamination of the closure seal area. For package E only, the filled pouch shall be sealed under a vacuum level of 8 to 12 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 when tested as specified in E-6,A,(4),b. 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 as specified in E-6,A,(4),c.

(2) Horizontal form-fill-seal pouches.

a. Pouch material. The horizontal form-fill-seal pouch shall consist of a formed tray-shaped body with a flat sheet, heat sealable cover or a tray-shaped body with a tray-shaped heat sealable cover. The tray-shaped body and the tray-shaped cover shall be fabricated from a 3-ply flexible laminate barrier material consisting of, from outside to inside, 0.0009 inch thick oriented polypropylene bonded to 0.0007 inch thick aluminum foil with 10 pounds per ream pigmented polyethylene or adhesive and bonding the opposite side of the aluminum foil to 0.003 inch thick ionomer or a blend of not less than 50 percent linear low density polyethylene and polyethylene. The linear low density polyethylene portion of the blend shall be the copolymer of ethylene and octene-1 having a melt index range of 0.8 to 1.2 g/10 minutes in accordance with ASTM D1238-04, Standard Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer and a density range of 0.918 to 0.922 g/cc in accordance with ASTM D1505-03, Standard Test Method for Density of Plastics by Density-Gradient Technique. Alternatively, 0.0005 inch thick polyester may be used in place of the oriented polypropylene as the outer ply of the laminate. The flat sheet cover shall be made of the same 3-ply laminate as specified for the tray-shaped body except the aluminum foil thickness may be 0.00035 inch. Tolerances for thickness of plastic films shall be plus or minus 20 percent and tolerance for foil layer shall be plus or minus 10 percent. The color requirements of the exterior (oriented polypropylene or polyester side) of the laminate shall be as specified in D-1,A,(1),a. 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 any odor or flavor to the product.

b. Pouch construction. The tray-shaped body and the tray-shaped cover shall be formed by drawing the flexible laminate material into an appropriately shaped cavity. The flat cover shall be in the form of a flat sheet of the barrier material taken from roll stock. For packages C and J, two tortillas (folded in half) and oxygen scavenger packet(s) (see D-1,A,(3)) shall be placed into the tray-shaped body of the pouch. For package E, 36 tortillas (packed flat in two stacks of 18 tortillas) and oxygen scavenger packet(s) (see D-1,A,(3)) shall be inserted into the tray-shaped body of the pouch. For package E only, the filled pouch body shall be sealed under a vacuum level of 12 to 14 inches of mercury. Pouch closure shall be effected by heat sealing together the cover and body along the entire pouch perimeter. The closure seal width shall be a minimum of 1/8 inch. The closure seal 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 as specified in E-6,A,(4),b. 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 as specified in E-6,A,(4),c. For packages C and J, the maximum outside dimensions of the sealed pouch shall be 6 inches wide by 8-1/4 inches long. For package E, the maximum outside dimensions of the sealed pouch shall be 10 inches wide by 16-1/2 inches long. A tear nick, notch or serrations shall be provided on one or more edges of the pouch to facilitate opening of the filled and sealed pouch. The sealed pouch shall not show any evidence of material degradation, aluminum stress cracking, delamination or foreign odor. Heat seals shall be free of 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.

(3) Oxygen scavenger packet. The oxygen scavenger (absorber) 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 (absorber) shall be in compliance with all applicable FDA and USDA regulations.

D-2 LABELING

A. 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) Name of product (letters not less than 1/8 inch high).

(2) Ingredients.
(3) Date. 1/
(4) Net weight.
(5) Contractor's name and address.
(6) "Nutrition Facts" label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA/USDA regulations.

For Package E only:
Optional Heating Instructions:
Tortillas may be heated in the pouch in boiling water for 5-10 minutes.
Yield: **Serves 18 portions of 2 tortillas each.**

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, 02 August 2006 would be coded as 6214. The Julian day code shall represent the day the product was packaged into the pouch.

D-3 PACKING

A. ~~Packing for shipment to ration assembler. Not more than 40 pounds of pouched product shall be packed in a fiberboard shipping container constructed in accordance with style RSC-L, class domestic, variety SW, grade 200 of ASTM D5118/D5118M-95 (2001), Standard Practice for Fabrication of Fiberboard Shipping Boxes. Each container shall be securely closed in accordance with ASTM D1974-98 (2003), Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.~~
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 D 5118/D 5118M, 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 D 4727/D 4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

Comment [MTF1]: Natick ES11-082 (DSCP-SS-11-45317) change 07, 25 May 11 Section D-3, A., delete the current section entirely and insert the following new section:
"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 D 5118/D 5118M, 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 D 4727/D 4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes."

D-4 MARKING

A. Shipping containers. Shipping containers shall be marked in accordance with DSCP 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/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, Single Sampling Plans indicated in ANSI/ASQC Z1.4-1993 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 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 Research, Development and Engineering Command
Natick Soldier Center
AMSRD-NSC-CF-F
15 Kansas Street
Natick, MA 01760-5018

One lot shall be randomly selected during each calendar month of production. For package C and J, 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. For package E, two (2) sample units of each item produced shall be randomly selected from that one production lot. The two (2) 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 the characteristics of appearance, odor, flavor, texture and 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 Section C of the Performance-based Contract Requirements document utilizing the double sampling plans indicated in ANSI/ASQC Z1.4 - 1993. The lot size shall be expressed in pouches. For package C and J, the sample unit shall be the contents of one pouch. For package E, the sample unit shall consist of two tortillas from each pouch obtained as follows: Take each of the 2 stacks of 18 tortillas from each pouch and separate them into approximately equal halves. Take the right side tortilla from each half. 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/ 3/

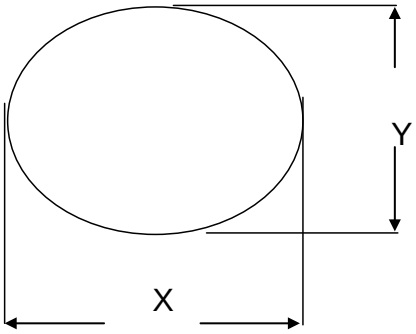
Category		Defect
Major	Minor	
101		Package C or J product not two baked intact tortillas, or Package E product not 36 baked intact tortillas.
102		Oxygen scavenger packet(s) missing.
		Appearance
	201	Product not thin, or not round wheat flour tortillas.
	202	Tortilla surface not an off white color with small tan to amber spots (less than one inch) randomly dispersed throughout.
	203	Tortillas greater than 7.0 inches in diameter. 4/
	204	Tortillas not easily separable.
		Odor and flavor
103		Tortillas not a cooked wheat flour, slightly sweet, slightly sour odor or flavor.
		Texture
104		Tortillas not soft, or not pliable or not slightly chewy.
		Weight
	205	Package C or J, net weight of an individual pouch less than 54 grams. 5/
	206	Package E, net weight of an individual pouch less than 998 grams. 6/

1/ Presence of any foreign materials such as but not limited to, dirt, insect parts, hair, wood, glass, metal, or mold, or 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 palatability and overall appearance shall be cause for rejection of the lot.

3/ The enriched wheat flour shall be verified with the statement of ingredients on the label.

4/ The difference (Delta) between the X and Y measurements of the diagram shall not be greater than 0.75 inches. If the difference (Delta) is less than 0.75 inches, these out of round tortillas shall be acceptable.



5/ Sample average net weight less than 60 grams shall be cause for rejection of the lot.

6/ Sample average net weight less than 1120 grams shall be cause for rejection of the lot.

B. Methods of inspection.

(1) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year shelf life when stored at 80°F. Government verification may include storage for 6 months at 100°F or 36 months at 80°F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(2) Net weight. The net weight shall be determined by weighing each sample unit on a suitable scale tared with a representative empty pouch and oxygen scavenger packet(s). Results shall be reported to the nearest gram.

(3) Moisture content and pH. For package C and J, the sample to be analyzed shall be a composite of eight filled and sealed pouches that have been selected at random from one

production lot regardless of lot size. For package E, the sample to be analyzed shall be a composite of three filled and sealed pouches that have been selected at random from one production lot. The product shall be analyzed for moisture content in accordance with the Official Methods of Analysis of the AOAC, method 925.09, and for pH concentration in accordance with the Official Methods of Analysis of AOAC, method 943.02. The sample unit shall be one filled and sealed pouch. Test results shall be reported to the nearest 0.1 percent for moisture and to the nearest 0.1 value for pH level. Verification will be conducted through actual testing by a Government laboratory. Any nonconforming result shall be cause for rejection of the lot.

(4) Water activity testing. For package C and J eight filled and sealed pouches shall be selected at random from the lot regardless of lot size. For package E three filled and sealed pouches shall be selected at random from the lot regardless of lot size. Water activity (Aw) shall be determined not less than 4 days but not more than 14 days after packaging the end item to allow moisture equilibration in the product. The pouched product shall be individually tested for water activity in accordance with the Official Methods of Analysis of the AOAC, method 978.18, using an electric hygrometer system self temperature controlled (at 25ºC) or an equivalent instrument. The sample unit for package C and J shall be a composite specimen made from the center of both tortillas in the pouch. For package E, the sample unit shall consist of two tortillas from each pouch obtained as follows: Take each of the 2 stacks of 18 tortillas from each pouch and separate them into approximately equal halves. Take the right side tortilla from each half. A composite specimen shall be made from the center of the two tortillas (one from each half) that were adjacent to each other. The results of each Aw determination shall be reported to the nearest 0.01. Any nonconforming result shall be cause for rejection of the lot.

(5) Nutrient content. The calorie content shall be verified by the NLEA "Nutrition Facts" label. Product not conforming to the calorie content as specified in Section C of this document shall be cause for rejection of the lot.

(6) Oxygen content testing. Eight filled and sealed pouches shall be randomly selected from one production lot and individually tested for oxygen content in accordance with any USDA approved test method. Testing shall be accomplished after the filled and sealed pouches have been allowed to equilibrate at room temperature for not less than 48 hours from the time of sealing. Test results shall be reported to the nearest 0.01 percent. Verification will be conducted through actual testing by a Government laboratory. Any individual result not conforming to the oxygen content requirement shall be cause for rejection of the lot.

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

A. Packaging.

(1) Pouch material certification. Material listed below may be accepted on the basis of a contractor's certification of conformance to the indicated requirements. In addition, compliance to the requirements for inside pouch dimensions and dimensions of manufacturer's seals may be verified by certificate of conformance.

Requirement	Requirement paragraph	Test procedure
Thickness of films for laminated material	D-1,A,(1),a and D-1,A,(2),a	As specified in ASTM D2103-03 1/
Aluminum foil thickness	D-1,A,(1),a and D-1,A,(2),a	As specified in ASTM B479-00 2/
Laminated material identification and construction	D-1,A,(1),a and D-1,A,(2),a	Laboratory evaluation
Color of laminated material	D-1,A,(1),a and D-1,A,(2),a	Visual evaluation by FED-STD-595 3/

1/ ASTM D2103-03 Standard Specification for Polyethylene Film and Sheeting

2/ ASTM B479-00 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 pouch certification. A certification of conformance may be accepted as evidence that unfilled pouches conform to the requirements specified in D-1,A,(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,A,(4),a.

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

Category		Defect
Major	Minor	
101		Tear, hole, or open seal.
102		Seal width less than 1/16 inch. 2/
103		Presence of delamination. 3/
104		Unclean pouch. 4/
105		Pouch has foreign odor.
106		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. 5/
107		Not packaged as specified.
108		Presence of stress cracks in the aluminum foil. 6/ 7/
	201	Label missing, 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 1/16 inch.
	204	Presence of delamination. 3/

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 pouch.

3/ 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.

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

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

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

c. Water spots.

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/ Applicable to form-fill-seal pouches only.

7/ The initial examination shall be a visual examination of the closed package. Any suspected visual evidence of stress cracks in the aluminum foil (streaks, breaks, or other disruptions in the laminated film) shall be verified by the following physical examination. To examine for stress cracks, the inside surface of both tray-shaped bodies shall be placed over a light source and the outside surface observed for the passage of light. Observation of light through the pouch material in the form of a curved or straight line greater than 2 mm in length shall be evidence of the presence of stress cracks. Observation of light through the pouch material in the form of a curved or straight line 2 mm in length or smaller or of a single pinpoint shall be considered a pinhole. Observation of ten or more pinholes per pouch shall be evidence of material degradation.

(4) 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 strength testing. The seals of the unfilled preformed pouch shall be tested for seal strength in accordance with ASTM F88-00, 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 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. Pouch closure seal testing. The closure seals of the pouches shall be tested for seal strength in accordance with ASTM F88-00. The lot size shall be expressed in pouches. The sample unit shall be one filled and sealed 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 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 side and bottom seals of the pouch. For testing the closure seal, the bottom seal 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.

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
Major	Minor	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
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.

SECTION J REFERENCE DOCUMENTS

DSCP FORMS

DSCP FORM 3556 Marking Instructions for Boxes, 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)

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

B 479-00 Standard Specification for Annealed Aluminum and Aluminum-Alloy Foil For Flexible Barrier, Food Contact, and Other Applications

D 1238-04 Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer

D 1505-03 Standard Test Method for Density of Plastics by the Density-Gradient Technique

D 1974-98(2003) Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes

D 2103-03 Standard Specification for Polyethylene Film and Sheeting

D 5118/D5118M-95 (2001) Standard Practice for Fabrication of Fiberboard Shipping Boxes

F 88-00 Standard Test Method for Seal Strength of Flexible Barrier Materials

AOAC INTERNATIONAL Official Methods of Analysis of the AOAC International

PCR-T-008
16 August 2004
W/Change 07 25 May 11

For DLA Troop Support - Subsistence Website Posting

RDNS-CFF 25 May 2011

TO: DLA Troop Support- Subsistence DSCP-FTRE

SUBJECT: ES11-082 (DSCP-SS-11-45317); Request for Document Changes to the D-3 Packing Requirements for the new Meal, Ready, to Eat™ (MRE™) Bakery Component, Solicitation SPM3S1-11-R-7076; MRE™ Bakery Components (cookies, ranger bars, tortillas, muffins, brownies, and pound cake); PCR-C-007D, Cakes, Brownies, and Muffin Tops, Packaged in a Flexible Pouch, Shelf Stable; PCR-R-008B, Ranger Bar, Packaged in a Flexible Pouch, Shelf Stable; PCR-T-008, Tortillas, Packaged in a Flexible Pouch, Shelf Stable; PCR-C-031 Cookies(s), with Pan Coated Chocolate Disks, Packaged in a Flexible Pouch; and Packaging Requirements and Quality Assurance Provisions (PKG & QAP) for CID A-A-20295C, Cookies, Packaged in a Flexible Pouch, Shelf Stable; Sterling Foods

1. Natick has reviewed and evaluated the subject request and concurs. The fiberboard industry has developed another grading system for fiberboard that cites the Edge Crush Test (ECT) value. Fiberboard produced with a burst grade of 200 or an ECT grade of 32 is equivalent. The cited ASTM standard D 4727/D 4727M is applicable to both the specified fiberboard material description (grade 200) and the proposed fiberboard material description (ECT grade 32) and makes no distinction as to performance between the two methods of evaluation in terms of performance of the end item. Both methods are acceptable for establishing performance of shipping container material for the intended purpose of the bakery components documents.

2. Natick submits the following changes to the subject documents for all current, pending and future procurements until the documents are formally amended or revised:

a. For PCR-C-007D, Cakes, Brownies, and Muffin Tops, Packaged in a Flexible Pouch, Shelf Stable make the following change:

(1) Section D-3, A., delete the current section entirely and insert the following new section:

"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 D 5118/D 5118M, 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 D 4727/D 4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes."

b. For PCR-R-008B, Ranger Bar, Packaged in a Flexible Pouch, Shelf Stable make the following change:

(1) Section D-3, A., delete the current section entirely and insert the following new section:

"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 D 5118/D 5118M, 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 D 4727/D 4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes."

c. For PCR-T-008, Tortillas, Packaged in a Flexible Pouch, Shelf Stable make the following change:

(1) Section D-3, A., delete the current section entirely and insert the following new section:

"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 D 5118/D 5118M, 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 D 4727/D 4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes."

d. For PCR-C-031 Cookies(s), with Pan Coated Chocolate Disks, Packaged in a Flexible Pouch make the following change:

(1) Section D-3, A. delete the current section entirely and insert the following new section:

"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 D 5118/D 5118M, 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 D 4727/D 4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes."

e. For PKG & QAP for CID A-A-20295C, Cookies, Packaged in a Flexible Pouch, Shelf Stable make the following change:

(1) Section D-3, A. delete the current section entirely and insert the following new section:

"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 D 5118/D 5118M, 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 D 4727/D 4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes."

3. Attached are the following documents with changes highlighted: PCR-C-007D, Cakes, Brownies, and Muffin Tops, Packaged in a Flexible Pouch, Shelf Stable dated 25 May 2011; PCR-R-008B, Ranger Bar, Packaged in a Flexible Pouch, Shelf Stable dated 25 May 2011; PCR-T-008, Tortillas, Packaged in a Flexible Pouch, Shelf Stable dated 25 May 2011; PCR-C-031 Cookies(s), with Pan Coated Chocolate Disks, Packaged in a Flexible Pouch dated 25 May 2011; and PKG & QAP for CID A-A-20295C, Cookies, Packaged in a Flexible Pouch, Shelf Stable dated 25 May 2011.