

C-1 NSN/ITEM DESCRIPTION

PCR-S-009 SNACK BREAD, FORTIFIED, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

Types.

- Type I - Wheat snack bread
- Type II - Plain snack bread

Unless otherwise specified the following applies to both types.

Each component is consumed by combat personnel under worldwide environmental extremes as part of an operational ration, and is a source of nutritional intake.

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 Performance-based Contract Requirements document.

B. Shelf life. The packaged, fortified, snack bread shall meet the minimum shelf life requirement of 36 months at 80°F.

C. Appearance.

(1) Type I. The fortified wheat snack bread shall be flat and shall be intact. The surface shall have dock holes and may be slightly uneven. The color shall be light tan to medium tan and shall have flecks of wheat bran. The interior crumb shall be a paler color than the surface and shall have flecks of wheat bran.

(2) Type II. The fortified plain snack bread shall be flat and shall be intact. The surface shall have dock holes and may be slightly uneven. The surface shall be a medium to light golden color. The interior crumb shall be an off white color.

(3) General. The fortified snack bread shall be from enriched flour and shall be fortified with calcium. The product shall show no evidence of excessive heating (materially darkened or scorched). The packaged food shall be free from foreign materials.

D. Odor and flavor.

(1) Type I. The fortified wheat snack bread shall have a slightly sweet, mild wheat flavor and may have a slight leavening aftertaste. The wheat snack bread shall have a mild wheat odor.

(2) Type II. The fortified plain snack bread shall have a bland, slightly sweet flavor and may have a slight leavening aftertaste. The plain snack bread shall have slightly sweet odor and may have a mild chemical odor.

(3) Foreign. The fortified snack bread shall be free from foreign odors and flavors.

E. Texture. The fortified snack bread shall be moist and shall have a short and biscuit-like crumb.

F. Size. The fortified, snack bread dimensions shall be not greater than 4-1/2 inches long and 4 inches wide and not greater than 1/2 inch in depth at any single point.

SECTION C CONTINUEDG. Weight.

(1) Net weight. The net weight shall be not less than 2.0 ounces.

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

I. Nutrient content.

(1) Moisture content. The moisture content shall be not greater than 25.0 percent

(2) Protein content. The protein content shall be not less than 5.0 percent.

(3) Fat content. The fat content shall be not greater than 12.0 percent.

(4) Calcium content. The calcium content shall be not less than 175 milligrams (mg) and not greater than 225 mg.

J. Analytical requirements.

(1) Water activity. The water activity (Aw) value shall be not greater than 0.85.

(2) Oxygen content. The oxygen content of the filled and sealed pouch shall not exceed 0.30 percent.

C-3 MISCELLANEOUS INFORMATION

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

A. Ingredients. Ingredients may be as follows:

(1) Type I. Enriched bleached flour (niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), malted barley flour, water, partially hydrogenated soybean and/or cottonseed oils, glycerol, sugar, salt, xanthan gum, gum arabic, extracts of malted barley and corn, wheat starch, silicon dioxide, hydroxylated lecithin, soy flour, calcium sulfate, enzymes, sodium sterol lactylate, leavening (sodium bicarbonate, sodium aluminum phosphate), sorbic acid, corn syrup, hydrated monoglycerides, polysorbate 60 (processing aid), acetic and propionic acids, yeast, wheat bran. Other ingredients common to the baking industry may be used.

(2) Type II. Enriched bleached flour (bleached flour, reduced iron, niacin, thiamine mononitrate, riboflavin, folic acid), water, partially hydrogenated soybean and/or cottonseed oils, glycerol, salt, xanthan gum, gum arabic, soy flour, calcium sulfate, enzymes, sodium sterol lactylate, leavening (sodium bicarbonate, sodium aluminum phosphate), sorbic acid, extracts of malted barley and corn, wheat starch, silicon dioxide (anti-caking agent), hydroxylated lecithin (processing aid), corn syrup, hydrated monoglycerides, polysorbate 60 (processing aid), acetic and propionic acids (preservatives), yeast. Other ingredients common to the baking industry may be used.

SECTION DD-1 PACKAGING

A. Packaging. The fortified, snack bread shall be packed 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. The three plies shall be laminated with the polyester on the exterior of the pouch. All tolerances for thickness of pouch materials shall be plus or minus 20 percent. The complete exterior surface of the pouch shall be uniformly colored in the range of 20219, 30219, 30279, 30313, 30324, or 30450 of FED-STD-595, Colors Used in Government Procurement. 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 having maximum inside dimensions of 5-1/2 inches wide by 6-3/4 inches long ($\pm 1/8$ inch in each dimension). The pouch shall be made by heating sealing three edges with 3/8 inch ($-1/8$ inch, $+3/16$ inch) wide seals. The heat seals shall be made in a manner that will assure hermetic 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-5,A,(4),a. 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-5,A,(4),c. A tear nick or tear notch shall be made in one or both side seals to facilitate easy opening of the filled and sealed pouch. A 1/8 inch ($+1/16$ inch) wide lip may be incorporated at the open end of the pouch to facilitate opening and filling of the pouch.

c. Pouch filling and sealing. One unit of baked, fortified snack bread and one oxygen scavenger packet shall be inserted into the pouch. The filled pouch shall be sealed. 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-5,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-5,A,(4),c.

SECTION D CONTINUED(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 D 1238, Flow Rates of Thermoplastics by Extrusion Plastometer and a density range of 0.918 to 0.922 g/cc in accordance with ASTM D 1505, 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. All tolerances for thickness of pouch materials shall be plus or minus 20 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. One unit of baked, fortified wheat snack bread and one oxygen scavenger packet shall be placed into the tray-shaped body of the pouch. The filled pouch body shall be hermetically sealed. 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-5,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-5,A,(4),c. The maximum outside dimensions of the sealed pouch shall be 6 inches wide by 6 inches long. The closure seal width shall be a minimum of 1/8 inch. A tear nick, a tear notch, or serrations shall be provided on one outside edge or two opposite outside edges of the pouch to facilitate easy 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 occluded matter. 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.

SECTION D CONTINUEDD-2 LABELING

A. Pouches. Each pouch shall be clearly printed or stamped, in a manner that does not damage the pouch, with permanent black ink or other, dark, contrasting color which is free of carcinogenic elements or ingredients. The information shall be located on the body of the pouch not closer than 1/16 inch to any seal. If a non-contact type printer is used, the information may be located anywhere on the pouch (in one complete print), except the closure seal area. The label shall contain the following information:

- (1) Product name (letters not less than 1/8 to 7/16 inch block letters)
- (2) Date 1/
- (3) Net Weight
- (4) Contractor's name and address
- (5) "Nutrition Facts" label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA/USDA regulations.

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, February 17, 1999 would be coded as 9048. 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 flat in layers in a fiberboard shipping container constructed in accordance with style RSC-L, class domestic, variety SW, grade 200 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 MARKING

A. Shipping containers. Shipping containers 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 ACCEPTANCEE-5 PACKAGING AND PACKING MATERIALSDefinitions.

(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.

Quality Assurance Provisions.

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

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.

<u>Requirement</u>	<u>Requirement paragraph</u>	<u>Test procedure</u>
Thickness of films for laminated material	D-1,A.(1)a. and D-1,A.(2)a.	As specified in A-A-3174 <u>1/</u> except that a machinists' micrometer may be used provided that its graduations and accuracy conform to the requirements of A-A-3174
Aluminum foil thickness	D-1,A.(1) a. and D-1,A.(2)a.	As specified in ASTM B, 479 <u>2/</u>
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 with FED-STD-595 <u>3/</u>

1/ FED A-A-3174 Plastic Sheet and Strip, Polyolefin

SECTION E CONTINUED

2/ ASTM B 479 Specification for Annealed Aluminum Foil For Flexible Barrier Application

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-5,A,(4),a.

(3) Filled and sealed pouch examination. The filled and sealed pouches shall be examined for the defects listed in table I. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The inspection level shall be I and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 0.65 for major defects and 4.0 for minor defects.

TABLE I. Filled and sealed pouch defects 1/

Category	Defect
<u>Major</u>	<u>Minor</u>
101	Tear, hole, or open seal.
102	Seal width less than 1/16 inch. <u>2/</u>
103	Presence of delamination. <u>3/</u>
104	Unclean pouch. <u>4/</u>
105	Pouch has foreign odor.
106	Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. <u>5/</u>
107	Not packed as specified.
108	Presence of stress cracks in the aluminum foil. <u>6/ 7/</u>
	201 Label smudges, is missing, incorrect, or illegible.
	202 Tear nick, notch, or serrations missing or does not facilitate easy opening.
	203 Seal width less than 1/8 inch, but greater than 1/16 inch.
	204 Presence of delamination. <u>3/</u>

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.

SECTION E CONTINUED3/ 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.

SECTION E CONTINUED

7/ 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 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 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 5 pounds per inch of width shall be cause 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. 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 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 I, footnote 2/) shall be considered a test failure. Any test failure shall be cause for rejection of the lot.

SECTION E CONTINUED

B. Packing.

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

Major: National stock number, item description, contract number, name and address of producer, or date of pack missing, incorrect or illegible
Container not properly closed
Components missing, damaged, or not as specified

Minor: Other required markings missing, incorrect, or illegible
More than 40 pounds of product

E-6 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. 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 Performance-based Contract Requirements 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.

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

B. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract Requirements document utilizing the sampling plans indicated in ANSI/ASQC Z1.4 - 1993. The lot size shall be expressed in pouches. The sample unit shall be the contents of one pouch. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 1.5 for major defects and 6.5 for minor defects. Defects and defect classifications are listed in Table II.

TABLE II. Product defects 1/ 2/

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
		<u>Appearance</u>
101		Evidence of excessive heating (materially darkened or scorched).
	201	Not flat or not intact.
	202	No evidence of docker holes.
	203	Type I exterior surface not a light tan to medium tan color.
	204	Type II exterior surface not a medium to light golden color.

SECTION E CONTINUEDTABLE II. Product defects 1/ 2/ (cont'd)

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
		<u>Appearance</u>
	205	Type I interior crumb not a paler color than the snack bread surface.
	206	Type II interior crumb not an off white color.
		<u>Odor and flavor</u>
102		Type I not a slightly sweet, mild wheat flavor.
103		Type II not a bland, slightly sweet flavor.
104		Type I not a mild wheat odor.
105		Type II not a slightly sweet odor.
		<u>Texture</u>
	207	Not moist.
	208	Not a short or biscuit-like crumb.
		<u>Size</u>
	209	Dimensions not as specified.
		<u>Weight</u>
	210	Net weight of an individual pouch less than 2.0 ounces.
		<u>Other</u>
106		Pouch does not contain one intact packet of oxygen scavenger.

1/ The presence of any foreign materials for example, dirt, insect parts, hair, wood, glass, metal, or foreign odors and 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.

C. Methods of inspection.

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

SECTION E CONTINUED

(2) 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.

(3) Nutrient content. The sample to be analyzed shall be a composite of the product from eight filled and sealed pouches which have been selected at random from the lot. The composited sample shall be prepared and analyzed for moisture, protein, fat, and calcium content in accordance with the following methods of the Official Methods of Analysis of AOAC International:

<u>Test</u>	<u>Method Number</u>
Moisture	925.45A
Protein	988.05, 992.15
Fat	920.85
Calcium	944.03

Test results shall be reported to the nearest 0.1 percent for moisture, protein and fat and to the nearest milligram for calcium. Any result not conforming to the requirements specified in C-2,I. of this Performance-based Contract Requirements document shall be cause for rejection of the lot.

(4) Water activity testing. Eight filled and sealed pouches of product 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 baking 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 25°C or an equivalent instrument. The sample unit shall be a specimen from the center of the bread. The results of each Aw determination shall be reported to the nearest 0.01. Any result failing to conform to the requirement in C-2,J. shall be cause for rejection of the lot.

(5) Oxygen content testing. Eight filled and sealed pouches shall be randomly selected from each 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. Results shall be reported to the nearest 0.01 percent. Any result failing to conform to the requirement in C-2,J. shall be cause for rejection of the lot.

SECTION J REFERENCE DOCUMENTS

DPSC FORM

DPSC FORM 3556 Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence, May 96

FEDERAL SPECIFICATION

A-A-3174 - Plastic Sheet and Strip, Polyolefin

FEDERAL STANDARD

FED-STD-595 - Colors Used in Government Procurement

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY CONTROL

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

B 479 - Specification for Annealed Aluminum Foil For Flexible Barrier Application

D 1238 - Flow Rates of Thermoplastics by Extrusion Plastometer

D 1505 - Density of Plastics by Density Gradient Technique

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

D 5118 - Standard Practice for Fabrication of Fiberboard Shipping Boxes

F 88 - Seal Strength of Flexible Barrier Materials

AOAC INTERNATIONAL

Official Methods of Analysis of the AOAC International

AMSSB-RCF-FN (Friel/4261)

8 November 2000

TO: DSCP-HSL (Woloszyn/4435)

Subject: Document changes; PCR-S-009, Snack Bread, Fortified, Packaged in a Flexible Pouch, Shelf Stable; Delete Protein Requirement (DDC01-021)

1. Based on recent inquiries, Natick and OTSG have determined that, on a case-by-case basis, the protein requirement in some operational ration components can be eliminated. In these instances, reliance on drained weight and other nutritional/analytical requirements was acceptable.

2. Natick requests that DSCP implement the following changes to the subject document for all MRE XXI and pending procurements until the document is formally amended or revised:

a. Section C-2, I., make the following changes:

- (1) Subpara (2), lines 4-5, delete entirely;
- (2) Renumber subparas "(3) and (4)" to "(2) and (3)"

b. Section E-6, C., (3), make the following changes:

- (1) line 4, delete "protein";
- (2) line 8, under Test, delete "Protein"; under Method Number, delete "988.05, 992.15"

DONALD A. HAMLIN
Team Leader
Food Engineering Services Team
Combat Feeding Program

ES REQUIRED

MFriel

CF:
Alyward
Richards
Valvano
Sherman
A. Konrady
M. Konrady
Hamlin
Hoffman
Beward
Wagner
H. Richardson
Salerno
M. Malason
D. Anthony
J. Lecollier
C. Galligan
D. Kavanagh
D. Arthur
A. Lowry