SECTION C

This document covers shelf stable peanut butter bites, dehydrated, packaged in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-P-052, PEANUT BUTTER BITES, DEHYDRATED, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

Flavor.

Flavor 1 - Cocoa

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 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 noncomparable 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. Shelf life. The packaged product shall meet the minimum shelf life requirement of 36 months at 80ºF.

C. Appearance.

(1) General. The dehydrated peanut butter bites shall be intact pieces and shall be approximately 1/2 inch in length by 7/16 inch in width and height. The finished product shall be free from foreign materials.

a. Flavor 1. The cocoa peanut butter bites shall be a light to medium brown color.

D. Odor and flavor. The packaged food shall be free from foreign or rancid odors and flavors.

(1) Flavor 1. The packaged food shall have a slightly sweet dairy, cocoa, and a moderate to strong peanut butter odor and flavor.

E. Texture. The peanut butter bites shall have a firm bite that break apart easily in the mouth and shall be dry, crunchy, and granular.

F. Net weight. The net weight of an individual pouch shall be not less than 39 grams.

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

H. Analytical requirements.

(1) Calories. The calories shall be not less than 200 calories per serving.

(2) Protein. The protein content shall be not less than 10 grams per serving.

(3) Moisture. The moisture content shall be not greater than 3.0 percent.

(4) Aflatoxin. The aflatoxin content shall be negative. Negative aflatoxin content is 15 parts per billion (ppb) or less.

I. Microbiological requirements.

(1) Aerobic plate count. The aerobic plate count shall be not greater than 25,000 Colony Forming Units (CFU) per gram in four of five samples and not greater than 50,000 CFU per gram in any individual sample.

(2) *Coliforms*. The total *Coliform* count shall not exceed 1000 CFU per gram.

(3) *Escherichia coli* (*E. coli)* count. *E. coli* shall have less than 10 CFU per gram or less than 3 Most Probable Number (MPN) per gram, where findings indicate zero colonies CFU per plate or zero tubes producing gas for MPN.

(4) *Salmonella*. The product shall be *Salmonella* negative.

SECTION D

D-1 PACKAGING

A. Packaging. Product shall be packaged in a preformed pouch or form-fill-seal barrier pouch.

(1) Preformed pouch.

a. Pouch material. The preformed pouch shall be fabricated from 0.002 inch thick ionomer or polyolefin 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 having maximum outside dimensions of 4-1/2 inches wide by 5-3/4 inches long. The pouch shall be made by heat sealing three edges with 3/8 inch (-1/8 inch, +3/16 inch) wide seals. The seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width. A tear 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. The product shall be inserted into the pouch. The filled pouch shall be sealed. The closure seal width shall be a minimum of 1/8 inch. The closure seal shall be free of foldover wrinkles or entrapped matter that reduces the effective closure seal width to less than 1/16 inch. Seals shall be free of impression or design on the seal surface that would conceal or impair visual detection of seal defects. The average seal strength shall be not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width.

~~(2) Vertical form-fill-seal pouch.~~

~~a. Pouch material. The vertical form-fill-seal pouch shall be fabricated from 0.002 inch thick ionomer or polyolefin 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. As applicable, the polyolefin layer of bag material shall be suitably formulated for hot-fill or post-fill processing. The material shall show no evidence of delamination, degradation, or foreign odor. 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 or envelope pouch having maximum outside dimensions of 4-1/2 inches wide by 5-3/4 inches long. The pouch shall be made by either heat sealing three edges with 1/4 inch (-1/8 inch, +1/4 inch) wide seals or on two edges with the third edge being formed by folding the material prior to filling. The seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width. A tear~~

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. The product shall be filled into the pouch and sealed. The closure seal 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. 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.

(3) Horizontal form-fill-seal pouch.

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, Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer and a density range of 0.918 to 0.922 g/cc in accordance with ASTM D1505, Standard Test Method for Density of Plastics by the 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 material shall show no evidence of delamination, degradation, or foreign odor. 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. The product shall be placed into the tray-shaped body of the pouch. 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 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. The maximum outside dimensions of the sealed pouch shall be 4-1/2 inches wide by 5-3/4 inches long. A tear nick, notch, or serrations shall be provided 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.~~

(2) Form-fill-seal pouch.

a. Pouch material. 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. As applicable, the polyolefin layer of pouch material shall be suitably formulated for hot-fill or post-fill processing. The material shall show no evidence of delamination, degradation, or foreign odor. The material shall be suitably formulated for food packaging and shall not impart an odor or flavor to the product.

1. The flat style or envelope form-fill-seal pouch shall be fabricated from 0.002 inch thick ionomer or polyolefin film laminated or extrusion coated to 0.00035 inch thick aluminum foil which is then laminated to 0.0005 inch thick polyester.

2. The vacuum-formed pouch shall be fabricated from 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, Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer and a density range of 0.918 to 0.922 g/cc in accordance with ASTM D1505, Standard Test Method for Density of Plastics by the 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 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.

b. Pouch construction. The pouch shall have maximum outside dimensions of 4-1/2 inches wide by 5-3/4 inches long. The seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width. A tear nick, notch, or serrations shall be provided to facilitate opening of the filled and sealed pouch. As applicable, a 1/8 inch wide lip may be incorporated at the open end of the 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. The closure seal width of the pouch shall be a minimum of 1/8 inch.

1. The flat style or envelope pouch shall be made by either heat sealing three edges with 1/4 inch (-1/8 inch, +1/4 inch) wide seals or on two edges with the third edge being formed by folding the material prior to filling. The product shall be filled into the pouch and sealed.

2. The vacuum-formed pouch shall be formed by drawing the flexible laminate material into an appropriately shaped cavity. The cover shall be in the form of a flat sheet of the barrier material taken from roll stock. The product shall be placed into the tray-shaped body of the pouch. Pouch closure shall be effected by heat sealing together the cover and body along the entire pouch perimeter.

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 and flavor of product (letters not less than 1/8 inch high)
(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 Food and Drug Administration (FDA) regulations

1/ Each pouch shall have the date of pack noted by using either a four-digit code or five-digit code. When using the four-digit code, begin with the final digit of the current year followed by the three-digit Julian code. For example, 14 February 2050 would be coded as 0045. When using the five-digit code, begin with the decade digit of the current year followed by the three-digit Julian code. For example, 14 February 2050 would be coded as 50045. The Julian code shall represent the day the product was packaged into the pouch.

NOTE: Commercial pouch graphics (colors, design and labeling) shall be submitted to the Contracting Officer for review and approval and to the Combat Capabilities Development Command (DEVCOM) Soldier Center (FCDD-SCD-SCR) for review.

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, minimum burst grade 200 or ECT 32 of ASTM D4727/D4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade)

and Cut Shapes. Each box shall be closed in accordance with ASTM D1974/D1974M, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

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 performance requirements or any appearance or palatability failure shall be cause for rejection of the lot.

(2) Periodic review evaluation. 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 U.S. Department of Agriculture (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:

COMBAT CAPABILITIES DEVELOPMENT COMMAND (DEVCOM) SOLDIER CENTER
FCDD-SCD-SCR
10 GENERAL GREENE AVENUE
NATICK, MA 01760-5000

One lot shall be randomly selected during each calendar month of production or as otherwise specified in the contract. Three (3) sample units shall be randomly selected from that one production lot. The three (3) sample units shall be shipped to DEVCOM Soldier Center within five (5) working days from the end of the production month from which they are randomly selected and upon completion of all USDA inspection requirements. The sample units will be evaluated for overall quality against the current first article or product demonstration model.

(3) Conformance inspection. Conformance inspection shall include the examinations/tests and 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 this Performance-based Contract Requirements document utilizing the double sampling plans indicated in ANSI/ASQ Z1.4. The lot size shall be expressed in pouches. The sample unit shall be the contents of one pouch. 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	
		General
101		Product not dehydrated peanut butter bites or not flavor as specified.
	201	Peanut butter bites not intact pieces or not approximately 1/2 inch in length by 7/16 inch in width or height. 4/
		Appearance
	202	Flavor 1 cocoa peanut butter bites not a light to medium brown color.
		Odor and flavor
102		Flavor 1 packaged food does not have a slightly sweet dairy or not cocoa or not a moderate to strong peanut butter odor or flavor.

TABLE I. Product defects 1/ 2/ 3/ - Continued

Category		Defect
Major	Minor	
		Texture
	203	Peanut butter bites do not have a firm bite or do not break apart easily in the mouth or not dry or not crunchy or not granular.
		Net weight
	204	Net weight of an individual pouch less than 39 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 palatability and overall appearance shall be cause for rejection of the lot.

3/ The producer shall provide a current USDA certificate that the peanut butter ingredient used to produce the peanut butter bites have a negative aflatoxin content in accordance with 7 CFR 996.

4/ Intact is defined as not more than 10 percent broken pieces by weight of the peanut butter bites in an individual pouch that pass through a 1/4 inch mesh screen and shall be verified by USDA on the first production lot of a contract cycle and each subsequent replenishment PDM during a contract cycle or in the case of a new formula or supplier. A Certificate of Conformance (CoC) for intact product shall be provided on all future lots produced using the same formula and supplier.

B. Methods of inspection.

(1) Shelf life. The contractor shall provide a Certificate of Conformance that the product has a 36 month shelf life when stored at 80ºF. Government verification may include storage for 6 months at 100ºF or 36 months at 80ºF. 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 quality scale to be considered acceptable.

(2) Net weight. The net weight of the filled and sealed pouches shall be determined by weighing each sample unit on a suitable scale tared with a representative empty pouch. Results shall be reported to the nearest 1 gram.

(3) Analytical.

a. Calories and protein. The calories and protein content shall be verified by the NLEA "Nutrition Facts" label. Product not conforming to the calorie or protein content as specified in Section C of this document shall be cause for rejection of the lot.

b. Moisture testing. The moisture content shall be determined in accordance with the Official Methods of Analysis (OMA) of AOAC International method 925.45A 1/ except that the temperature-time cycle for moisture analysis shall be modified by using a temperature of 70°C (158°F) for 16 hours at a pressure of not more than 100 mm of mercury. The contents of each pouch shall be blended to uniformity using a blender or food processor. Results shall be reported to the nearest 0.1 percent. The lot size shall be expressed in pouches. The sample unit shall be one filled and sealed pouch. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 2.5. Any result not conforming to the analytical requirement shall be cause for rejection of the lot.

1/ Moisture determination may also be performed on a calibrated Brookfield Ametek Computrac Moisture Analyzer after the method has been validated against the standard moisture method 925.45A using a temperature-time cycle of 70°C (158°F) for 16 hours. Moisture analysis on a Computrac Moisture Analyzer shall be performed at 100°C.

c. Aflatoxin testing. The finished product sample to be analyzed shall be a composite of eight filled and sealed pouches which have been selected at random from the lot. The composited sample shall be prepared and analyzed in accordance with the OMA of AOAC International method 991.31 A-F, H, with preparation of the sample performed according to AOAC method 977.16. Test results shall be reported to the nearest whole number. Government verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the requirement shall be cause for rejection of the lot.

NOTE: The following conditions apply for aflatoxin testing:

a. For prepackaged peanut butter bites product received from a supplier and is not further processed, the contractor will furnish a CoA that the aflatoxin in the peanut butter bites is not greater than 15 ppb. No additional testing is required. Results shall be reported to the nearest whole number.

(4) Microbiological testing. The finished product shall be tested for microbiological activity. Five filled and sealed pouches shall be randomly selected from one lot regardless of lot size. The pouched product shall be individually tested for microbiological levels in accordance with the latest edition of the OMA of AOAC International or the FDA Bacteriological Analytical Manual (BAM). Government verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the

requirements specified in Section C of this Performance-based Contract Requirements document shall be cause for rejection of the lot.

Test	Method Number
Aerobic plate count	966.23, 990.12, or BAM Ch. 3
Coliforms	991.14 or 2018.13
E.coli	991.14 or 2005.03
Salmonella	967.26, 967.28, 986.35, 2000.06, 2003.09, 2004.03, 2011.03, or 2013.09

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

A. Packaging.

(1) Pouch material certification. The pouch material shall be tested for these characteristics. A CoC may be accepted as evidence that the characteristics conform to the specified requirements.

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

1/ Standard Specification for Polyethylene Film and Sheeting

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

(2) Unfilled preformed pouch certification. A CoC 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,B(1)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 or 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 or incorrect or illegible.
	202	Tear nick or notch or serrations missing or does not facilitate opening.
	203	Seal width less than 1/8 inch but greater than or equal to 1/16 inch.
	204	Presence of delamination. 3/

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

2/ Effective seals are defined as any uncontaminated, fusion bonded, continuous path, minimum 1/16 inch wide, 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 in the body of the pouch 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 - 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. 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).

5/ If doubt exists as to whether or not the sealing equipment leaves an impression or design on the seal surface that could conceal or impair visual detection of seal defects, score the impression and/or design as a major defect, retain the sample, and contact the Government agency supervisor or the contracting officer for instruction. 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~~ the pouch 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.

B. Methods of inspection.

(1) Seal testing. The pouch integrity shall be tested as required in a or b, as applicable. The lot 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.

a. Seal strength test. The seals of the pouches shall be tested for seal strength in accordance with ASTM F88/F88M, Standard Test Method for Seal Strength of Flexible Barrier Materials. 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 or end shall be calculated by averaging the three specimens cut from that side or end. 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. Internal pressure test. The internal pressure resistance shall be determined by pressurizing the pouches while they are restrained between two rigid plates. If a three-seal tester (one that pressurizes the pouch through an open end) is used, either the closure seal or the bottom fold of an envelope pouch shall be cut off for testing the remaining seals, and the distance between restraining plates shall be 1/2 inch. For testing the closure seal, the bottom 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 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 rate of 1-2 pounds 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. Any test failing to reach and maintain 14 psig for 30 seconds during testing shall be considered a test failure. The pouches shall then be examined for separation or yield of the heat seals. Any evidence of seal separation greater than 1/16 inch in the seal shall be considered a test failure. Any seal separation that reduces the effective seal width to less than 1/16 inch shall be considered a test failure. Any test failure shall be cause for rejection of the lot.

C. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers 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 III. 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.

SECTION J REFERENCE DOCUMENTS

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

DLA Troop Support Form

Form 3556 — Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence

GOVERNMENT PUBLICATIONS

7 CFR 996 — Minimum Quality and Handling Standards for Domestic and Imported Peanuts Marketed in the United States

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ) 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 the Density-Gradient Technique
D1974/1974M	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 Shape
D5118/D5118M	Standard Practice for Fabrication of Fiberboard Shipping Boxes
F88/F88M	Standard Test Method for Seal Strength of Flexible Barrier Materials

AOAC INTERNATIONAL www.aoac.org

Official Methods of Analysis (OMA) of AOAC International