

**PKG&QAP A-A-20295C (Flexible Pouch)**  
**27 July 2012**  
**W/Change 01 23 January 15 ES15-020 (DSCP-SS-15-00447)**  
**SUPERSEDING**  
**PKG&QAP A-A-20295C (Flexible Pouch)**  
**30 September 2009**

## **SECTION C**

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

### **C-1 ITEM DESCRIPTION**

#### **PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR CID A-A-20295C COOKIES, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE**

Class, type, bake types, styles, shape, and flavors.

Class 1 Individual serving package

Type I - Regular

Bake type a - Crisp

Style A - Shortbread cookies

Flavor 1 - Plain

Style D - Sugar cookies

Shape (b) - Patriotic (American themes, such as, but not limited to; Uncle Sam, Bald Eagle, Torch of Liberty, letters "USA", American flag, Statue of Liberty face, etc.)

Style I - Oatmeal cookies

Flavor 1 - Plain

Flavor 6 - Chocolate chunk

Style J - Chocolate chip cookies (regular, chunk, or mini chips)

Flavor 1 Plain

Style K - Kremsicle cookies

Style L - Toffee crunch cookies

Style Q - White chocolate chip cookies

Flavor 1 - Raspberry

Bake type b - Soft and chewy

Style P - Fig bar

Packages.

- Package A - Meal, Cold Weather (MCW)
- Package B - Food Packet, Long Range Patrol (LRP)
- Package C - Meal, Ready-to-Eat™ (MRE™)

**C-2 PERFORMANCE REQUIREMENTS**

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model (PDM) inspection as applicable, in accordance with the tests and inspections of Section E of this Packaging Requirements and Quality Assurance Provisions 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 80°F.

C. Appearance.

(1) Class 1, type I, bake type a, style D, shape (b) – Sugar cookies, Patriotic. The patriotic sugar cookies shall have at least three different patriotic shapes in each package.

(2) Class 1, type I, bake type b, style p – Fig bar. The fig bar filling shall be a dark golden brown color.

D. Odor and flavor. The packaged cookies shall be free from foreign odors and flavors.

(1) Class 1, type I, bake type a, style I, flavor 1 – Oatmeal cookies, Plain. The plain oatmeal cookies shall have a distinct sweet baked oatmeal odor and flavor.

(2) Class 1, type I, bake type a, style J, flavor 1 – Chocolate chip cookies, Plain. The plain chocolate chip cookies shall have a distinct chocolate odor.

(3) Class 1, type I, bake type a, style K – Kreamsicle cookies. The kreamsicle cookies shall have a sweet, buttery, mild orange odor.

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(4) Class 1, type I, bake type a, style L – Toffee crunch cookies. The toffee crunch cookies shall have a sweet, buttery, toffee/vanilla odor.

(5) Class 1, type I, bake type b, style P – Fig bar. The fig bar shall have a sweet, baked fig odor and flavor.

E. Texture.

(1) Class 1, type I, bake type a, style A, flavor 1 – Shortbread cookies, plain. The plain shortbread cookies shall have a dense, tender texture.

F. Net weight. The net weight of one serving shall be as follows:

<u>Cookie type</u>	<u>Net weight not less than</u>
<u>Class 1 – Individual serving package</u>	
<u>Type I - Regular</u>	
<u>Bake type a – Crisp</u>	
Style A, flavor 1, Shortbread cookies, Plain	43 grams
Style D, shape (b), Sugar cookies, Patriotic	56 grams
Style I, flavor 1, Oatmeal cookies, Plain	56 grams
Style I, flavor 6, Oatmeal cookies, Chocolate chunk	56 grams
Style J, flavor 1, Chocolate chip cookies, Plain	60 grams
Style K, Kreamsicle cookies	56 grams
Style L, Toffee crunch cookies	56 grams
Style Q, flavor 1, White chocolate chip cookies, Raspberry	56 grams
<u>Bake type b – Soft and chewy</u>	
Style P, Fig bar	54 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 calorie content of one serving shall be as follows:

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Cookie type	Calorie content not less than
<u>Class 1 – Individual serving package</u>	
<u>Type I - Regular</u>	
<u>Bake type a – Crisp</u>	
Style A, flavor 1, Shortbread cookies, Plain	210 calories
Style D, shape (b), Sugar cookies, Patriotic	240 calories
Style I, flavor 1, Oatmeal cookies, Plain	280 calories
Style I, flavor 6, Oatmeal cookies, Chocolate chunk	280 calories
Style J, flavor 1, Chocolate chip cookies, Plain	280 calories
Style K, Kreamsicle cookies	250 calories
Style L, Toffee crunch cookies	250 calories
Style Q, flavor 1, White chocolate chip cookies, Raspberry	250 calories
<u>Bake type b- Soft and chewy</u>	
Style P, Fig bar	200 calories

(2) Oxygen (not applicable to vacuum packed pouches). The oxygen content of the filled and sealed pouch shall not exceed 0.30 percent.

(3) Moisture. The moisture content for cookies shall be as specified in A-A-20295C unless listed below.

Cookie type	Moisture content not greater than
Class 1, type I, bake type a, style D, shape (b), Sugar cookies, Patriotic	3.5 percent
Class 1, type I, bake type a, style J, flavor 1, Chocolate chip cookies, Plain	6.0 percent

(4) Trans fat. The *trans* fat content shall be not greater than 0 grams per serving.

## **SECTION D**

### **D-1 PACKAGING**

A. Packaging. When specified, the cookie(s) with or without commercial wrapping and labeling shall be packed in a preformed or form-fill-seal barrier pouch as described below in accordance with the packaging conditions specified.

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<u>Cookie type</u>	<u>Packaging conditions</u>	<u>Oxygen scavenger</u>	<u>Vacuum packed</u>
<u>Class 1 – Individual serving package</u>			
<u>Type I – Regular</u>			
<u>Bake type a – Crisp</u>			
Style A, flavor 1, Shortbread cookies, Plain		X	
Style D, shape (b), Sugar cookies, Patriotic		X	
Style I, flavor 1, Oatmeal cookies, Plain			X
Style I, flavor 6, Oatmeal cookies, Chocolate chunk			X
Style J, flavor 1, Chocolate chip cookies, Plain			X
Style K, Kreamsicle cookies			X
Style L, Toffee crunch cookies			X
Style Q, flavor 1, White chocolate chip cookies, Raspberry		X	
<u>Bake type b – Soft and chewy</u>			
Style P, Fig bar 1/			X

1/ For the fig bars that are vacuum packed: one or more fig bars shall be inserted into the pouch in a two-high stack or positioned side by side prior to sealing.

(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 in the range of 20219, 30219, 30227, 30279, 30313, 30324, or 30450 of FED-STD-595, Colors Used in Government Procurement.

b. Pouch construction. The pouch shall be a flat style preformed pouch having maximum inside dimensions of 5 inches wide by 7 inches long. The pouch shall be made by heat sealing three edges with 3/8 inch (- 1/8, + 3/16 inch) wide seals. The side and bottom seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width. Alternatively, the pouch shall exhibit no rupture or seal separation greater than 1/16 inch or

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seal separation that reduces the effective closure seal width to less than 1/16 inch when tested for internal pressure resistance. A tear nick, notch, or serrations shall be provided to facilitate opening of the filled and sealed pouch. A 1/8 inch wide lip may be incorporated at the open end of the pouch.

c. Pouch filling and sealing. When specified in D-1,A, product shall be inserted into the pouch and the filled pouch shall be sealed under a vacuum level of 8 to 12 inches of mercury with a minimum 1/8 inch wide heat seal. When specified in D-1,A, the commercially wrapped and labeled package of cookie(s) and one oxygen scavenger 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. 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.

(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, 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 color requirements of the exterior of the pouch 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

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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. When specified, the cookie(s) shall be placed in the tray-shaped body of the pouch. The filled pouch body shall be hermetically sealed with a vacuum level of 12 to 14 inches of mercury. For pouches with three or more cookies, the filled pouch body shall be hermetically sealed with a vacuum level of 8 to 12 inches of mercury. When specified, the unit of commercially wrapped and labeled package of cookie(s) and one oxygen scavenger 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 closure seal shall be free of entrapped material (bread crumbs, moisture, etc.) that reduces the effective closure seal to less than 1/16 inch wide. 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. Alternatively, the filled and sealed pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal width to less than 1/16 inch when tested for internal pressure resistance. The maximum outside dimensions of the sealed pouch shall be 6 inches wide by 8-5/8 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. Seals shall be free of impression or design on the seal surface that would conceal or impair visual detection of seal defects.

B. Oxygen scavenger. The oxygen scavenger 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 shall be in compliance with all applicable FDA 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 and flavor of product (letters not less than 1/8 inch high)
- (2) Ingredients
- (3) Date 1/

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

1/ Each pouch shall have the date of pack noted by using a four digit code beginning with the final digit of the current year followed by the three digit Julian day code. For example, 14 February 2013 would be coded as 3045. The Julian day code shall represent the day the product was packaged into the pouch.

### **D-3 PACKING**

A. Packing. Not more than 40 pounds of product shall be packed in a fiberboard shipping box constructed in accordance with style RSC-L of ASTM D5118/D5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The fiberboard shall conform to type CF, class D, variety SW, burst grade 200 or ECT grade 32 of ASTM D4727/D4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D1974/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



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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. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

US Army Research, Development and Engineering Command  
Natick Soldier Research, Development and Engineering Center  
RDNS-CFF  
15 Kansas Street  
Natick, MA 01760-5056

One lot shall be randomly selected during each calendar month of production 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 Natick 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.

(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 in A-A-20295C and specified in Section C of this Packaging Requirements and Quality Assurance Provisions document utilizing the double sampling plans indicated in ANSI/ASQ Z1.4. The lot size shall be expressed in 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
<u>Major</u>	<u>Minor</u>	
101		Product not type or not bake type or not style or not shape or not flavor as specified.
102		Pouch does not contain one intact oxygen scavenger if specified. <u>3/ 4/ 5/</u>
103		Crushed cookie(s). <u>56/</u>
	201	Broken cookie(s). <u>67/</u>
		<u>Net weight</u>
	202	Net weight of an individual pouch not as specified.  <u>Class 1, type I, bake type a, style A, flavor 1 – Shortbread cookies, plain</u>
104		Not a sweet or not a buttery odor or flavor.
105		Not a dense or not a tender texture.
	203	Surface color not light tan to medium brown.
	204	Interior crumb not a lighter color than the surface.

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

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Class 1, type I, bake type a, style D, shape (b) – Sugar cookies, Patriotic</u>
106		Not sweet or not buttery or not mild vanilla odor or flavor.
107		Not crisp or not tender.
	205	Not a uniform pale gold to tan color.
	206	Patriotic sugar cookies package does not contain at least three different patriotic shapes.
		<u>Class 1, type I, bake type a, style I, flavor 1 – Oatmeal cookies, Plain</u>
108		Not a distinct sweet baked oatmeal odor or flavor.
109		Not crispy or not crunchy or not slightly crumbly or not with a firm bite.
	207	Exterior or interior crumb color not light tan to medium brown.
		<u>Class 1, type 1, bake type a, style I, flavor 6 – Oatmeal cookies, Chocolate chunk</u>
110		Not a sweet baked oatmeal and chocolate odor or flavor.
111		Not crisp or not dense or not a slightly crumbly texture.
	208	Exterior or interior crumb color not light tan to medium brown.
	209	Do not have distinct chocolate chunks and oats distributed throughout the surface and interior.
112		Not a distinct chocolate odor or flavor.

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

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Class 1, type I, bake type a, style J, flavor 1 – Chocolate chip cookies, Plain</u>
113		Not crispy or not crunchy or not slightly crumbly or not with a firm bite.
	210	Not tan to medium brown color.
	211	Do not have a uniform distribution of chocolate chips.
		<u>Class 1, type I, bake type a, style K – Kreamsicle cookies</u>
114		Not a sweet or not a buttery or not a mild orange odor or flavor cookie or not with orange flavored chips.
115		Not firm or not crisp.
	212	Exterior color not uneven pale to medium golden brown or not with some surface cracking.
	213	Interior crumb not pale gold with evenly distributed orange colored chips.
		<u>Class 1, type I, bake type a, style L – Toffee crunch cookies</u>
116		Not sweet or not buttery or not toffee/vanilla odor or flavor with toffee chips.
117		Not firm or not crisp.
	214	Not uneven pale to medium golden brown exterior or crumb not with evenly distributed pieces of melted toffee candy bits or not with some surface cracking.

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

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Class 1, type I, bake type b, style P – Fig bar</u>
118		Bakery covering not uniform or soggy.
119		Does not contain at least 50 percent, by weight, of fig filling. <u>78/</u>
120		Not a sweet, baked fig odor or flavor.
	215	Filling not uniform or not a dark golden brown color. <u>89/</u>
	216	Bakery covering not golden brown color.
	217	Not soft.
		<u>Class 1, type I, bake type a, style Q, flavor 1 – White chocolate chip cookies, Raspberry</u>
121		Not sweet raspberry or not white chocolate odor or flavor.
122		Not crispy or not crunchy or not slightly crumbly or not with a firm bite.
	218	Not a light tan to medium brown exterior or crumb.
	219	White chocolate chips not a soft bite or not distributed throughout surface and interior.

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 *trans* fat content shall be verified by the NLEA “Nutrition Facts” label. Product not conforming to the *trans* fat content as specified in Section C of this document shall be cause for rejection of the lot.

34/ Construction of the oxygen scavenger and compliance with FDA regulations will be verified by Certificate of Conformance (CoC).

45/ The oxygen scavenger requirement is applicable to the following cookies:

Class 1, type I, bake type a, style A, flavor 1 – Shortbread cookies, Plain

Class 1, type I, bake type a, style D, shape (b) – Sugar cookies, Patriotic

Class 1, type I, bake type a, style Q, flavor 1 – White chocolate chip cookies, Raspberry

56/ Ten grams of cookie crumbs, i.e., not discernible pieces, per pouch. For fig bar cookie(s) more than 1/4 of cookie(s) is crushed.

67/ For a pouch with one or two cookies, more than three broken pieces per cookie. For pouches with three or more cookies, more than half of the cookies are broken into three or more pieces. For fig bar cookie(s), more than 1/4 of cookie(s) is broken.

78/ Weight of filling for the cookie shall be verified with a Certificate of Conformance (CoC).

89/ Exposed fig filling that extends more than 1/4 the length of the cookie shall be scored a defect. A hairline crack that may or may not expose the fig filling shall not be scored a defect.

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 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 quality scale to be considered acceptable.

(2) Net weight.

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a. Commercially wrapped product with oxygen scavenger. The net weight shall be verified with the label on the commercial package. Product not conforming to the net weight requirement in Section C of this Packaging Requirements and Quality Assurance Provisions document shall be cause for rejection of the lot.

b. Vacuum packed pouch. 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.

c. Commercially wrapped vacuum packed product pouch. The net weight shall be verified with the label on the vacuum packed commercial package. Product not conforming to the net weight requirement in Section C of this Packaging Requirements and Quality Assurance Provisions document shall be cause for rejection of the lot.

d. Filled pouch with oxygen scavenger. The net weight shall be determined by weighing each sample unit on a suitable scale tared with a representative empty pouch and an oxygen scavenger. Results shall be reported the nearest 1 gram.

(3) Calorie 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.

(4) Oxygen content testing (not applicable to vacuum packed pouches). Eight filled and sealed pouches shall be randomly selected from one production lot and individually tested for oxygen content. 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. Government 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.

(5) Moisture content testing. Moisture content testing shall be in accordance with A-A-20295C.

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

A. Packaging.

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

<u>Characteristic</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	ASTM D2103 <u>1/</u>
Aluminum foil thickness	D-1,A(1)a and D-1,A(2)a	ASTM B479 <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	FED-STD-595 <u>3/</u>

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

3/ Colors Used in Government Procurement

(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.



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TABLE II. Filled and sealed pouch defects 1/

Category	Defect
<u>Major</u>	<u>Minor</u>
101	Tear or 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 packaged as specified.
108	Presence of stress cracks in the aluminum foil. <u>6/ 7/</u>
	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. <u>2/</u>
	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.

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

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forefinger of each hand with both thumbs and forefingers touching each other. The delaminated area shall then be rapidly flexed 10 times by rotating both hands in alternating clockwise- counterclockwise directions. Care shall be exercised when flexing delaminated areas near the tear notches to avoid tearing the pouch material. After flexing, the separated outer ply shall be grasped between thumb and forefinger and gently lifted toward the food product edge of the seal or if the separated area is too small to be held between thumb and forefinger, a number two stylus shall be inserted into the delaminated area and a gentle lifting force applied against the outer ply. If separation of the outer ply can be made to extend to the product edge of the seal with no discernible resistance to the gentle lifting, the delamination shall be classified as a major defect. Additionally, spot delamination of the outer ply in the body of the pouch that is able to be propagated beyond its initial borders is also a major defect. To determine if the laminated area is a defect, use the following procedure: Mark the outside edges of the delaminated area using a bold permanent marking pen. Open the pouch and remove the contents. Cut the pouch transversely not closer than 1/4 inch ( $\pm 1/16$  inch) from the delaminated area. The pouch shall be flexed in the area in question using the procedure described above. Any propagation of the delaminated area, as evidenced by the delaminated area exceeding the limits of the outlined borders, shall be classified as a major defect.

Minor - Minor delamination of the outer ply in the pouch seal area is acceptable and shall not be classified as a minor defect unless it extends to within 1/16 inch of the food product edge of the seal. All other minor outer ply delamination in the pouch seal area or isolated spots of delamination in the body of the pouch that do not propagate when flexed as described above shall be classified as minor defects.

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).

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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.

**B. Methods of inspection.**

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

a. Unfilled preformed pouch seal testing. The seals of the unfilled preformed pouch shall be tested for seal strength in accordance with ASTM F88/F88M, Standard Test Method for Seal Strength of Flexible Barrier Materials. The lot size shall be expressed in pouches. The sample unit shall be one unfilled pouch. The sample size shall be the number of pouches indicated by inspection level S-1. Three adjacent specimens shall be cut from each of the three sealed sides of each pouch in the sample. The average seal strength of any side shall be calculated by averaging the three specimens cut from that side. Any average seal strength 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/F88M. 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

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and each end of each pouch in the sample. The average seal strength of any side, end or closure shall be calculated by averaging the three specimens cut from that side, end or closure. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be classified as a major defect and shall be cause for rejection of the lot.

c. Internal pressure test. The internal pressure resistance shall be determined by pressurizing the pouches while they are restrained between two rigid plates. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. If a three seal tester (one that pressurizes the pouch through an open end) is used, the closure seal shall be cut off for testing the 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.

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.

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TABLE III. Shipping container and marking defects

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

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 (ASQ) [www.asq.org](http://www.asq.org)

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

ASTM INTERNATIONAL [www.astm.org](http://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

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D1505	Standard Test Method for Density of Plastics by the Density-Gradient Technique
D1974/D1974M	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D2103	Standard Specification for Polyethylene Film and Sheeting
D4727/D4727M	Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes.
D5118/D5118M	Standard Practice for Fabrication of Fiberboard Shipping Boxes
F88/F88M	Standard Test Method for Seal Strength of Flexible Barrier Materials

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## For DLA Troop Support Website Posting

RDNS-SEC-F

23 January 2015

TO: DLA Troop Support - Subsistence

SUBJECT: ES15-020 (DSCP-SS-15-00447); Request change to Fat content requirements for Packaging Requirements and Quality Assurance Provisions (PKG&QAP) A-A-20295C, Cookies, Packaged in a Flexible Pouch, Shelf Stable, to incorporate a new *Trans* Fat Free requirement

1. Natick has initiated an Engineering Support change to incorporate a new requirement for *Trans* Fat Free in PKG&QAP A-A-20295C, Cookies, Packaged in a Flexible Pouch, Shelf Stable.
2. Research indicates that there may be a correlation between dietary intake of Trans Fatty Acid (TFA) and coronary heart disease (CHD), weight control, inflammatory response and immune dysfunction.
3. TFAs are formed when liquid oils are made into solid fats like shortening and hard margarine. However, a small amount of TFAs are found naturally, primarily in animal-based foods, including beef, butter and milk, although most TFAs in the diet come from partially hydrogenated oils.
4. TFAs have many functional benefits in food processing, particularly for baked products, including: increased oxidative stability; improved texture; and extended shelf life; all of which are extremely important to combat ration components.
5. CFD initiated research to assess the occurrence and reduction of TFAs in combat ration components. Newly formulated TFA free products were produced and subjected to accelerated storage studies (6 months at 100°F) to determine the effect of the new formulation on quality, acceptability, and shelf life.
6. Samples for bakery items that had been stored for 6 months at 100°F were evaluated by trained sensory panelists and results indicated the TFA free samples met shelf life performance requirements.

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7. Based on these findings, Natick recommends the addition of a requirement for Cookies to have a *trans* fat content not greater than 0 grams per serving. The recommended change will not impact other standards related to product and performance, which will continue to be required to be met satisfactorily.

8. Natick submits the following changes to the subject document for all current, pending, and future procurements until the document is formally amended or revised.

a. page 4, Paragraph C-2, after “H(3)” insert the following new requirement “(4) Trans fat. The *trans* fat content shall be not greater than 0 grams per serving.”

b. page 10, Paragraph E-5, Table I Header, insert a new footnote “3/”.

c. page 10, Paragraph E-5, Table I, major defect 102, delete footnote “3/”, after footnote “4/” insert footnote “5/”.

d. page 10, Paragraph E-5, Table I, major defect 103, delete footnote “5/” insert footnote “6/”.

e. page 10, Paragraph E-5, Table I, minor defect 201, delete footnote “6/” insert footnote “7/”.

f. page 13, Paragraph E-5, Table I, major defect 119, delete footnote “7/” insert footnote “8/”.

g. page 13, Paragraph E-5, Table I, minor defect 215, delete footnote “8/” insert footnote “9/”.

h. page 14, Paragraph E-5, Table I, Footnotes, after footnote 2/ insert the following new footnote “3/ The *trans* fat content shall be verified by the NLEA “Nutrition Facts” label. Product not conforming to the *trans* fat content as specified in Section C of this document shall be cause for rejection of the lot.” Renumber footnotes 3/ through 8/ accordingly.

9. Attached is Change 01, PKG&QAP A-A-20295C, Cookies, Packaged in a Flexible Pouch, Shelf Stable, dated 23 January 2015, with the changes highlighted.