

SECTION C

This document covers cakes and brownies packaged in a polymeric tray for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-C-024B, CAKES AND BROWNIES, PACKAGED IN A POLYMERIC TRAY, SHELF STABLE

Types and flavors.

Type I - Cakes

- Flavor 1 - Yellow cake with chocolate crumb topping (Deleted)
- Flavor 2 - Chocolate cake with vanilla crumb topping (Deleted)
- Flavor 3 - Marble cake with toffee crumb topping (Deleted)
- Flavor 4 - Devil's fudge cake with white icing
- Flavor 5 - Spice cake with vanilla crumb topping (Deleted)
- Flavor 6 - Coffee cake with cinnamon crumb topping (Deleted)
- Flavor 7 - Walnut tea cake
- Flavor 8 - Lemon crumb cake (Deleted)
- Flavor 9 - Dulce de Leche cake with white icing
- Flavor 10 - Breakfast cake with maple flavored syrup
- Flavor 11 - Yellow cake with chocolate icing
- Flavor 12 - Yellow cake with white icing
- Flavor 13 - Devil's fudge cake with chocolate icing
- Flavor 14 - Spice cake with white icing
- Flavor 15 - Lemon cake with white icing
- Flavor 16 - Apple spice breakfast cake
- Flavor 17 - Blueberry breakfast cake with maple flavored syrup
- Flavor 18 - Red Velvet cake with white icing
- Flavor 19 - Banana nut cake with white icing
- Flavor 20 - Cranberry orange cake with white icing

Type II - Brownies

- Flavor 1 - Fudge brownie with chocolate icing
- Flavor 2 - Brownie with pan coated disks topping (Deleted)
- Flavor 3 - Brownie with Butterfinger™ pieces (Deleted)
- Flavor 4 - Blonde brownie (Deleted)

Type III - Mini loaves (Deleted)

Flavor 1 - Banana nut loaf (Deleted)

Flavor 2 - Banana nut loaf, frosted (Deleted)

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 non comparable to the Product Standard, the contractor shall arrange for a new or alternate FA or PDM approval. In any event, all product produced must meet all requirements of this document including Product Standard comparability.

B. Shelf life. The packaged product shall meet the minimum shelf life requirement of 36 months at 80°F.

C. Appearance.

(1) General. The product shall be fully baked, shall have a uniform cell (crumb) structure, and shall show no evidence of compression streaks. The product shall be free from foreign materials and shall show no evidence of excessive baking (materially darkened or scorched).

a. Type I. The cake height measured at its lowest point, excluding the icing, shall be not less than 1.0 inch. The cake height measured at its highest point, excluding the icing, shall be not less than 1-1/4 inches. For flavors 4, 9, 11 to 15, and 18 to 20, the icing is packaged separately. The flavors 10 and 17, maple flavored syrup is packaged separately.

b. Type II. The flavor 1 chocolate icing shall be packaged separately.

(2) Type I.

a. Flavor 4. The devil's fudge cake shall be deep, chocolate brown. The white icing shall be shiny, white.

b. Flavor 7. The walnut tea cake shall have a golden to tan surface and very light tan crumb with small pieces of walnuts distributed throughout.

c. Flavor 9. The Dulce de Leche cake shall have a medium golden brown surface and a pale, off-white crumb with small caramel drops distributed throughout. The white icing shall be shiny, white.

d. Flavor 10. The breakfast cake shall have a light golden brown surface and a pale, off-white crumb. The maple flavored syrup shall be light to medium golden brown.

e. Flavor 11. The yellow cake shall be pale, off-white. The chocolate icing shall be shiny, dark brown.

f. Flavor 12. The yellow cake shall be pale, off-white. The white icing shall be shiny, white.

g. Flavor 13. The devil's fudge cake shall be deep, chocolate brown. The chocolate icing shall be shiny, dark brown.

h. Flavor 14. The spice cake shall be medium beige with flecks of spices. The white icing shall be shiny, white.

i. Flavor 15. The lemon cake shall be yellow. The white icing shall be shiny, white.

j. Flavor 16. The apple spice breakfast cake shall have a tan to golden brown surface and a light tan to cream crumb with apple pieces and cinnamon drops distributed throughout.

k. Flavor 17. The blueberry breakfast cake shall have a light golden brown surface and a pale, off-white crumb with blueberry pieces distributed throughout. The maple flavored syrup shall be light to medium golden brown.

l. Flavor 18. The red velvet cake shall have a red brown surface and crumb. The white icing shall be shiny, white.

m. Flavor 19. The banana nut cake shall have a tan to golden brown surface and a light tan to cream crumb with small pieces of walnuts distributed throughout. The white icing shall be shiny, white.

n. Flavor 20. The cranberry orange cake shall have a tan to golden brown surface and a light tan to cream crumb with small cranberry pieces distributed throughout. The white icing shall be shiny, white.

(3) Type II.

a. Flavor 1. The fudge brownie shall have a very dark brown surface and crumb. The chocolate icing shall be shiny, dark brown.

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

(1) Type I.

a. Flavor 4. The devil's fudge cake shall have a medium sweet chocolate odor and flavor. The white icing shall have a sweet odor and flavor.

b. Flavor 7. The walnut tea cake shall have a sweet, mild vanilla walnut odor and flavor.

c. Flavor 9. The Dulce de Leche cake shall have a sweet, mild caramel odor and flavor. The white icing shall have a sweet odor and flavor.

d. Flavor 10. The breakfast cake shall have a sweet, mild maple odor and flavor. The maple flavored syrup shall have a sweet, maple odor and flavor.

e. Flavor 11. The yellow cake shall have a sweet, mild vanilla odor and flavor. The chocolate icing shall have a sweet chocolate odor and flavor.

f. Flavor 12. The yellow cake shall have a sweet, mild vanilla odor and flavor. The white icing shall have a sweet odor and flavor.

g. Flavor 13. The devil's fudge cake shall have a medium sweet chocolate odor and flavor. The chocolate icing shall have a sweet chocolate odor and flavor.

h. Flavor 14. The spice cake shall have a cinnamon and allspice odor and flavor. The white icing shall have a sweet odor and flavor.

i. Flavor 15. The lemon cake shall have a sweet lemon odor and flavor. The white icing shall have a sweet odor and flavor.

j. Flavor 16. The apple spice breakfast cake shall have a sweet, cinnamon and mild apple odor and flavor.

k. Flavor 17. The blueberry breakfast cake shall have a sweet, blueberry and mild vanilla odor and flavor. The maple flavored syrup shall have a sweet, maple odor and flavor.

l. Flavor 18. The red velvet cake shall have a sweet, chocolate odor and flavor. The white icing shall have a sweet odor and flavor.

m. Flavor 19. The banana nut cake shall have a sweet, banana odor and sweet, banana walnut flavor. The white icing shall have a sweet odor and flavor.

n. Flavor 20. The cranberry orange cake shall have a sweet, cranberry odor and flavor. The white icing shall have a sweet odor and flavor.

(2) Type II.

a. Flavor 1. The fudge brownie shall have a sweet, slightly bitter chocolate odor and flavor. The chocolate icing shall have a sweet chocolate odor and flavor.

E. Texture.

(1) Type I.

a. Cake. For flavors 4, 9 to 15, and 18, the cake shall have a dense, tender, moist, fine grain texture. For flavors 7 and 19, the cake shall have a dense, tender, moist, fine grain texture with walnut pieces. For flavor 16, the cake shall have a dense, tender, moist, fine grain texture with apple pieces and cinnamon drops. For flavor 17, the cake shall have a dense, tender, moist, fine grain texture with blueberry pieces. For flavor 20, the cake shall have a dense, tender, moist, fine grain texture with cranberry pieces.

b. Icing. For flavors 4, 9, 11 to 15, and 18 to 20, the icing shall be smooth and easily spreadable.

c. Syrup. For flavors 10 and 17, the maple flavored syrup shall be free flowing, moderately thick, and easily poured.

(2) Type II.

a. Flavor 1. The brownie shall have a dense, firm, moist texture. The chocolate icing shall be smooth and easily spreadable.

F. Net weight.

(1) Type I.

a. Flavors 4, 9 to 15, and 17 to 20. The average net weight for all flavors with icing or syrup shall be not less than 30 ounces (850 grams). The net weight of an individual polymeric tray shall be not less than 29 ounces (822 grams). The average net weight of the icing or syrup shall be not less than 6 ounces (170 grams).

b. Flavors 7 and 16. The average net weight shall be not less than 36 ounces (1020 grams). The net weight of an individual polymeric tray shall be not less than 35 ounces (992 grams).

(2) Type II.

a. Flavor 1. The average net weight of the fudge brownie without icing shall be not less than 42 ounces (1191 grams). The net weight of an individual polymeric tray shall be not less than 40 ounces (1134 grams). The average net weight of the chocolate icing shall be not less than 6 ounces (170 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) Type I fat content. The fat content for flavors 4 and 11 to 20 shall be not less than 14.0 percent. The fat content for flavors 7, 9, and 10 shall be not less than 16.0 percent.

(2) Type II fat content. The fat content for flavor 1 shall be not less than 12.0 percent.

(3) Type I moisture content. The moisture content for flavors 4, 7, 9, 11 to 15, and 18 to 20 shall be not less than 18.0 percent. The moisture content for flavors 10, 16 and 17 shall be not less than 16.0 percent.

(4) Type II moisture content. The moisture content for flavor 1 shall be not less than 14.0 percent.

(5) Type I and Type II water activity (A_w). The water activity of types I (without icing) and II (without icing), packaged product shall be not greater than 0.890.

I. Oxygen content. The oxygen content of the filled and sealed polymeric tray shall not exceed 0.3 percent after 72 hours.

C-3 MISCELLANEOUS INFORMATION

THE FOLLOWING IS INFORMATION ONLY TO PROVIDE THE BENEFIT OF PAST GOVERNMENT EXPERIENCE. THIS IS NOT A MANDATORY CONTRACT REQUIREMENT.

A. Cake ingredients and formulation. Ingredients 1/ and formulation percentages for cakes may be as follows:

<u>Ingredients</u>	<u>Percent by weight</u>		
	<u>11, 12</u>	<u>4, 13</u>	<u>14</u>
<u>Flavors</u>			
Sugar, white, granulated	30.24	26.62	29.53
Flour, cake	22.42	15.84	22.29
Water	14.80	18.55	14.71
Eggs, whole, frozen	13.91	15.32	13.83
Shortening, high ratio	12.54	11.09	12.47
Glycerol	3.14	3.23	3.12
Starch, instant, granular	1.00	1.00	1.00
Salt	0.85	0.73	0.85
Baking powder	0.68	0.38	0.68
Potassium sorbate	0.10	0.10	0.10
Guar gum	0.10	0.10	0.10
Xanthan gum	0.10	0.10	0.10
Flavoring, vanilla liquid	0.10	0.09	0.10
Flavoring, cream, artificial	0.02	-	0.02
Cocoa	-	5.00	-
Maltodextrin	-	1.48	-
Baking soda	-	0.09	-
Cinnamon	-	0.28	0.26
Allspice	-	-	0.28
Ginger	-	-	0.05
Sugar, light brown	-	-	0.51

1/ To be in compliance with the Food Allergen Labeling and Consumer Protection Act of 2004.

THE FOLLOWING INGREDIENTS ARE FOR INFORMATION ONLY. THIS IS NOT A MANDATORY CONTRACT REQUIREMENT.

B. Ingredients 2/:

(1) Ingredients for type I, flavor 7. Walnut tea cake may be as follows: sugar, enriched wheat flour, eggs, emulsified shortening, water, glycerol, walnuts, maltodextrin, sour cream flavor, starch, salt, baking powder, butter flavor, vanilla flavor, xanthan gum, guar gum, potassium sorbate.

(2) Ingredients for type I, flavor 9. Dulce de Leche cake may be as follows: enriched bleach wheat flour (bleached flour, reduced iron, niacin, thiamine mononitrate, riboflavin, folic acid), sugar, egg, partially hydrogenated soybean and cottonseed oils, caramel drops (sugar, partially hydrogenated palm kernel oil, nonfat milk powder, natural flavor, soy lecithin, mono and di-glycerides, caramel color, yellow 5 lake, yellow 6 lake, vanillin), water, glycerol, maltodextrin, contains 2 percent or less: modified corn starch, leavening (sodium acid pyrophosphate, sodium bicarbonate, monocalcium phosphate), xanthan gum, guar gum, artificial flavor, salt, potassium sorbate (preservative).

(3) Ingredients for type I, flavor 10. Breakfast cake may be as follows: sugar, margarine [partially hydrogenated soybean oil, water, partially hydrogenated palm oil, salt, mono & di-glycerides, annatto/turmeric (color), artificial flavor, vitamin A palmitate], enriched bleached wheat flour (bleached flour, reduced iron, niacin, thiamine mononitrate, riboflavin, folic acid), egg, contains 2 percent or less: glycerol, natural flavor, leavening (sodium acid pyrophosphate, sodium bicarbonate, monocalcium phosphate), nonfat dry milk.

(4) Ingredients for type I, flavor 15. Lemon cake may be as follows: sugar, enriched bleached flour (bleached flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), water, egg, partially hydrogenated soybean and cottonseed oils with mono and diglycerides, glycerol, contains 2 percent or less of the following: salt, leavening (sodium acid pyrophosphate, sodium bicarbonate, monocalcium phosphate), citric acid, modified food starch, guar gum, xanthan gum, lemon oil with other natural flavors, yellow color, (fractionated coconut oil, FD&C yellow #5 lake, hydroxylated lecithin), potassium sorbate (preservative) artificial flavor.

(5) Ingredients for type I, flavor 16. Apple spice breakfast cake may be as follows: Enriched bleached wheat flour (flour, reduced iron, niacin, thiamine mononitrate, riboflavin, folic acid), sugar, egg, water, dried apples (apples, sugar, sunflower oil, ascorbic acid, citric acid), cinnamon drops [sugar, partially hydrogenated vegetable oil (soybean and cottonseed), cinnamon, nonfat dry milk, soy lecithin], soybean oil, margarine [partially hydrogenated soybean oil, water, partially hydrogenated cottonseed oil, salt, mono- and diglycerides, annatto/turmeric (color), artificial flavor, Vitamin A palmitate, calcium disodium EDTA (preservative)], glycerol, contains 2 percent or less: modified corn starch, propylene glycol mono- and diesters of fats and fatty acids, leavening (sodium acid pyrophosphate, baking soda, monocalcium phosphate), natural flavor, cinnamon, potassium sorbate (preservative).

(6) Ingredients for type I, flavor 17. Blueberry breakfast cake may be as follows: Enriched bleached wheat flour (flour, reduced iron, niacin, thiamine mononitrate, riboflavin, folic acid), sugar, egg, water, blueberry flavored fruit pieces [sugar, blueberry juice solids (blueberry juice, blueberry extract), cranberries, sunflower oil], soybean oil, margarine [partially hydrogenated soybean oil, water, partially hydrogenated cottonseed oil, salt, mono- and diglycerides, annatto/turmeric (color), artificial flavor, Vitamin A palmitate, calcium disodium EDTA (preservative)], glycerol, contains 2 percent or less: nonfat dry milk, modified corn starch, propylene glycol mono- and diesters of fats and fatty acids, soy lecithin, leavening (sodium acid pyrophosphate, baking soda, monocalcium phosphate), natural flavor, potassium sorbate (preservative).

(7) Ingredients for type I, flavor 18. Cake mix [sugar, bleached enriched flour (wheat flour, niacin, iron, thiamine mononitrate, riboflavin, folic acid), dried whole egg, Dutch process cocoa with alkali, emulsifier (propylene glycol mono and diesters of fatty acids, mono and diglycerides, partially hydrogenated soybean oil and lecithin), partially

hydrogenated soybean and/or cottonseed oil, leavening (baking soda, sodium acid pyrophosphate, monocalcium phosphate), natural and artificial flavor, nonfat milk, salt, modified corn starch, xanthan gum, guar gum, sodium stearoyl lactylate, artificial color (including FD&C Red #40), water, soybean oil, glycerol, egg white, contains 2 percent or less: BHT, citric acid, potassium sorbate (preservative).

(8) Ingredients for type I, flavor 19. Sugar, enriched bleached flour (wheat flour, reduced iron, niacin, thiamine mononitrate, riboflavin, folic acid), egg, partially hydrogenated soybean and cottonseed oils with mono and diglycerides added, water, walnuts, glycerol, egg white, contains 2 percent or less: nonfat dry milk, leavening (sodium acid pyrophosphate, sodium bicarbonate, monocalcium phosphate), modified corn starch, propylene glycol mono- and diesters of fats and fatty acids, soy lecithin with BHT and citric acid to help protect flavor, guar gum, natural and artificial flavor, salt, potassium sorbate (preservative).

(9) Ingredients for type I, flavor 20. Sugar, enriched bleached flour (wheat flour, reduced iron, niacin, thiamine mononitrate, riboflavin, folic acid), water, egg, partially hydrogenated soybean and cottonseed oils with mono and diglycerides added, sweetened dried cranberries (sugar, cranberries, citric acid, sunflower oil), glycerol, egg white, contains 2 percent or less: nonfat dry milk, leavening (sodium acid pyrophosphate, sodium bicarbonate, monocalcium phosphate), modified corn starch, propylene glycol mono- and diesters of fats and fatty acids, soy lecithin with BHT to help protect flavor, natural and artificial flavor, vanilla extract, salt, potassium sorbate (preservative).

(10) Ingredients for white icing type I, flavors 4, 9, 12, 14, 15, and 18 to 20. White icing may be as follows: sugar, water, maltodextrin, partially hydrogenated soybean and cottonseed oil, liquid soybean oil, cream, nonfat milk, dextrose, monoglycerides, salt, natural and artificial flavors, citric acid, potassium sorbate and sodium benzoate (preservatives), titanium dioxide (color), agar, guar gum and lecithin.

(11) Ingredients for chocolate icing type I, flavors 11 and 13. Chocolate icing may be as follows: sugar, partially hydrogenated vegetable oil (soybean and cottonseed), water, high fructose corn syrup, corn syrup, cocoa (processed with alkali), mono and di-glycerides, polysorbate 60, salt, lecithin, potassium sorbate, natural and artificial flavor, citric acid.

(12) Ingredients for maple syrup type I, flavors 10 and 17. Maple flavored syrup may be as follows: corn syrup, high fructose corn syrup, water, potassium sorbate as a preservative, caramel color, natural and artificial maple flavor, citric acid.

(13) Ingredients for type II, flavor 1. Brownie may be as follows: sugar, corn syrup, oil, flour, egg white, whole eggs, cocoa, water, glycerol, milk, starch, salt, flavors, leavening, preservative, emulsifier, gum.

(14) Ingredients for chocolate icing type II, flavor 1. Chocolate icing may be as follows: sugar, partially hydrogenated vegetable oil (soybean and cottonseed), water, high

fructose corn syrup, corn syrup, cocoa (processed with alkali), mono and di-glycerides, polysorbate 60, salt, lecithin, potassium sorbate, natural and artificial flavor, citric acid.

2/ To be in compliance with the Food Allergen Labeling and Consumer Protection Act of 2004.

SECTION D

D-1 PACKAGING

A. Preservation. Product as specified plus the appropriate number of oxygen scavengers and ovenable tray insert, if applicable, shall be filled and sealed into polymeric trays within 4 hours of baking and the trays shall conform to the requirements of section 3 of MIL-PRF-32004, Packaging of Food in Polymeric Trays, Type II Oven-baked Products. Verification testing and inspection of trays and lids shall be in accordance with Section 4 of MIL-PRF-32004 and the Quality Assurance Provisions of Section E of this Performance-based Contract Requirements document. The requirement for protective sleeves shall not apply to Type II Oven-baked Products.

B. Polymeric tray closure. The filled and sealed tray shall be securely closed.

C. Component. For type I, flavors 10 and 17, one pouch containing maple flavored syrup shall be provided. For type I, flavors 4, 9, 12, 14, 15, and 18 to 20, one pouch containing white icing shall be provided. For type I, flavors 11, and 13, and for type II, flavor 1, one pouch containing chocolate icing shall be provided. The following materials and processing requirements are for the products in a pouch are required:

(1) Icing and syrup pouch.

a. Material and construction. The preformed pouch shall be fabricated from material suitably formulated for food packaging and shall be in compliance with all applicable FDA and USDA regulations. The material shall show no evidence of delamination, degradation, or foreign odor when heat-sealed or fabricated into pouches. The material shall not impart an odor or flavor to the product after filling and sealing. The pouch shall be made by heat sealing three edges with 3/8 inch (-1/8 inch, +3/16 inch) wide seals. The side and bottom seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when tested as specified in E-6,B(3)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 manufacturer's seals to less than 1/16 inch when tested as specified in E-6,B(3)c. A tear nick, notch or serrations shall be provided to facilitate opening of the filled and sealed pouch.

b. Filling and sealing. Icing and syrup shall be heat processed (pasteurized or hot filled). For type I, flavors 4, 9, 12, 14, 15, and 18 to 20, six ounces of white icing shall be

filled into the pouch and the filled pouch shall be heat sealed. For type I, flavors 10 and 17, six ounces of maple flavored syrup shall be filled into the pouch and the filled pouch shall be heat sealed. For type I, flavors 11 and 13 and for type II, flavor 1, six ounces of chocolate icing shall be filled into the pouch and the filled pouch shall be heat 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-6,B(3)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 as specified in E-6,B(3)c. Residual headspace in the filled and sealed pouch shall be minimized to facilitate packing.

c. Pouch size. The filled and sealed pouch shall be a size that fits within the void created between the tray lid material and fiberboard pad added during packing.

D. Oxygen scavenger. The oxygen scavenger shall be constructed of materials that are safe for direct or indirect food contact and shall be suitable for use with edible products. The oxygen scavenger shall be in compliance with all applicable FDA regulations.

E. Ovenable tray insert. The ovenable tray insert (if utilized) shall be constructed of materials that are safe for direct or indirect food contact and shall be suitable for use with edible products. The ovenable tray insert shall be in compliance with all applicable FDA and USDA regulations.

D-2 LABELING

A. Polymeric tray body. The polymeric tray body shall be clearly printed or stamped, in a manner that does not damage the tray, with permanent ink of any contrasting color, which is free of carcinogenic elements. One end of the polymeric tray (see figure 1 of MIL-PRF-32004) shall be marked with the product name and number of portions. If the tray body end markings are not readily legible in low light conditions, a small, easily legible label shall be applied, but not over any existing tray markings. All other markings may be applied along the tray body side. The product name, lot number and filling equipment number shall be applied at the time of tray sealing. 1/

Tray body markings shall include:

(1) Product name. Commonly used abbreviations may be used.

(2) Tray code includes: 2/
Lot Number

PCR-C-024B
20 October 2009
SUPERSEDING
PCR-C-024A
26 April 2006

1/ As an alternate method, tray body markings may be clearly printed or stamped onto the polymeric tray lid at the time of tray sealing, in a manner that does not damage the lid, with permanent ink of any contrasting color, which is free of carcinogenic elements, provided that the required markings are applied onto the tray body prior to packing for shipment to ration assembler.

2/ The lot number shall be expressed as a four digit Julian code. The first digit shall indicate the year of production and the next three digits shall indicate the day of the year (Example, 14 February 2010 would be coded as 0045). The Julian code shall represent the day the product was packaged into the tray and the tray sealed. Sublotting (when used) shall be represented by an alpha character immediately following the four digit Julian code. Following the four digit Julian code and the alpha character (when used), the other required code information shall be printed in the sequence as listed above.

B. Polymeric tray lid. The lid shall be clearly printed or stamped, in a manner that does not cause damage. Permanent ink of any contrasting color, which is free of carcinogenic elements, shall be used. As an alternate labeling method, a pre-printed self-adhering 0.002 inch thick clear polyester label printed with indelible contrasting color ink may be used.

Note: The font tested by Natick was Microsoft Helvetica. The font used shall be similarly clear/easy to read as Helvetica. The recommended font sizes are as follows: 22 for the product name, 14 for “yield” and “to heat in water.” If an additional note is required on the label, such as “fluff before serving,” it should also be in font size 14. All other information should be in font size 9.

(1) Lid labeling shall include:

Product name and flavor

Ingredients

Net weight

Name and address of packer

“Nutrition Facts” label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA regulations.

(2) Lid labeling shall also show the following statements:

a. For type I, flavors 7 and 16:

Yield: Serves 18 portions; cut 3 rows by 6 rows.

b. For type I, flavors 4, 9, 12, 14, 15, 18 to 20:

WHITE ICING: White icing is packaged in a separate pouch. Spread icing evenly on the cake surface using a spatula or knife, prior to cutting the cake.

Yield: Serves 18 portions; cut 3 rows by 6 rows.

c. For type I, flavors 10 and 17:

MAPLE FLAVORED SYRUP: Maple flavored syrup is packaged in a separate pouch. Prior to serving, cut cake into 18 portions and pour syrup evenly on the breakfast cake surface.

Yield: Serves 18 portions; cut 3 rows by 6 rows.

TO HEAT IN WATER: Submerge unopened tray and syrup pouch in water. Bring to a boil. Simmer gently 15 minutes. Avoid overheating (pouch or tray shows evidence of bulging).

WARNING: Do not heat pouch or tray in oven.

TO TRANSPORT AFTER HEATING: Stack trays with lids oriented upright and fiberboard pads in between.

CAUTION: Use care when opening as pressure may have been generated within pouch or tray.

TO OPEN: Open pouch at tear notch and cut tray lid with a clean knife.

d. For type I, flavors 11 and 13:

CHOCOLATE ICING: Chocolate icing is packaged in a separate pouch. Spread icing evenly on the cake surface using a spatula or knife, prior to cutting the cake.

Yield: Serves 18 portions; cut 3 rows by 6 rows.

e. For type II, flavor 1:

CHOCOLATE ICING: Chocolate icing is packaged in a separate pouch. Spread icing evenly on the brownie surface using a spatula or knife, prior to cutting the brownie.

Yield: Serves 18 portions; cut 3 rows by 6 rows.

C. Icing and syrup pouch. Each pouch shall be correctly and legibly labeled. Printing ink shall 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 FDA regulations.
- (7) The pouch labeling shall also show the following statements:

- a. For type I, flavors 10 and 17 Maple flavored syrup:

**CAREFULLY PEEL POUCH AWAY FROM TRAY LID PRIOR TO
SERVING**

Squeeze syrup evenly onto surface of breakfast cake.

- b. For type I, flavors 4, 9, 12, 14, 15, and 18 to 20 white icing and type I, flavors 11 and 13 and type II, flavor 1 chocolate icing:

**CAREFULLY PEEL ICING POUCH AWAY FROM TRAY LID
PRIOR TO SERVING**

Knead pouch to soften icing.

Squeeze icing onto surface of product and spread evenly using a spatula or knife.

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 2010 would be coded as 0045. The Julian day code shall represent the day the product was packaged into the pouch.

D-3 PACKING

A. Packing. One filled and sealed icing pouch shall be provided for each polymeric tray of specified product. The filled and sealed icing pouch shall be placed between the polymeric tray lid and fiberboard pad and secured to the tray lid using a food grade, peelable adhesive or alternate method of attachment. The icing pouch shall peel away easily from the tray lid. Four filled, sealed and processed polymeric trays shall be packed in a fiberboard box conforming to style RSC-L, of ASTM D 5118/D 5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The fiberboard shall conform to type CF, class D, variety SW, grade 275 of ASTM D 4727/D 4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. The trays shall be stacked with lids oriented upright. Fiberboard pads shall be placed between the trays and on the top and

bottom of the stacked trays. The pad dimensions shall be not less than 1/8 inch of the full length and width inside dimensions of the box and shall be fabricated of class domestic, grade 275 fiberboard. The box shall be closed in accordance with ASTM D 1974 Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

B. Packing of icing or flavored syrup pouches. In addition to the packing requirements in D-3,A, the following shall apply for all flavors that require an additional pouch of icing or flavored syrup. One filled and sealed icing or flavored syrup pouch shall be provided for each polymeric tray of specified product. The filled and sealed icing or flavored syrup pouch shall be placed between the polymeric tray lid and fiberboard pad and secured to the tray lid using a food grade, peelable adhesive or alternate method of attachment.

D-4 UNITIZATION

A. Unit loads. Unit loads shall be as specified in DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items.

D-5 MARKING

A. Shipping containers and unit loads. Marking of shipping containers and unit loads shall be as specified in DSCP FORM 3556, Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence.

D-6 MISCELLANEOUS INFORMATION

THE FOLLOWING IS FOR INFORMATION ONLY TO PROVIDE PAST GOVERNMENT EXPERIENCE. THIS IS NOT A MANDATORY CONTRACT REQUIREMENT.

A. Icing and syrup pouch material. It has been found that a pouch with minimum inside dimensions of 8-3/4 inches in length by 6-5/8 inches in width and fabricated from a 3-ply laminate constructed of, from inside to outside, 0.002 inch thick linear low density polyethylene, extrusion coated or laminated to 0.00035 inch thick aluminum foil, and extrusion coated or laminated to 0.0006 inch thick biaxially oriented nylon, meets the performance requirements of this document.

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 overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

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

One lot of each item produced shall be randomly selected during each calendar month of production. Two (2) sample units shall be randomly selected from that one production lot. The two (2) sample units shall be shipped to Natick within five working days from the end of the production month and upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality.

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

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract

PCR-C-024B
20 October 2009
SUPERSEDING
PCR-C-024A
26 April 2006

Requirements document utilizing the double sampling plans indicated in ANSI/ASQ Z1.4. The lot size shall be expressed in polymeric trays. The sample unit shall be the contents of one polymeric tray. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 4.0 for major defects and 6.5 for minor defects. Defects and defect classifications are listed in table I below. The filled and sealed polymeric trays shall be brought to room temperature (65°F to 75°F).

TABLE I. Product defects 1/ 2/ 3/

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>General</u>
101		Product not type or not flavor as specified.
102		Product not fully baked (gummy center or soggy areas or raw portions).
103		Product shows evidence of excessive baking (materially darkened or scorched).
104		Polymeric tray does not contain intact oxygen scavenger(s). <u>5/</u>
105		Icing or syrup pouch leaking, as applicable.
	201	Product does not have a uniform cell (crumb) structure.
	202	Product size not as specified. <u>4/</u>
	203	Evidence of compression streaks.
	204	Evidence of delamination by ovenable tray insert (if utilized).
	205	Icing or syrup pouch missing, as applicable.
	206	Icing or syrup pouch not adhered to tray lid.
	207	Icing or syrup pouch does not peel away easily from tray lid.
		<u>Type I – Cakes</u>
		<u>Type I, Flavor 4 – Devil’s fudge cake with white icing</u>
106		Cake odor or flavor not medium sweet chocolate.
	208	Cake not deep, chocolate brown.
	209	White icing not shiny, white.
	210	White icing odor or flavor not sweet.
	211	Cake texture not dense or not tender or not moist or not fine grain.

TABLE I. Product defects 1/ 2/ 3/ continued

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
	212	White icing not smooth or not easily spreadable.
		<u>Type I, Flavor 7 – Walnut tea cake</u>
107		Cake odor or flavor not sweet, mild vanilla-walnut.
	213	Cake surface not golden to tan.
	214	Cake crumb not very light tan with small pieces of walnuts distributed throughout.
	215	Cake texture not dense or not tender or not moist or not fine grain or without walnut pieces.
		<u>Type I, Flavor 9 – Dulce de Leche cake with white icing</u>
108		Cake odor or flavor not sweet, mild caramel.
	216	Cake surface not medium golden brown.
	217	Cake crumb not pale, off-white with small caramel drops distributed throughout.
	218	White icing not shiny, white.
	219	White icing odor or flavor not sweet.
	220	Cake texture not dense or not tender or not moist or not fine grain.
	221	White icing not smooth or not easily spreadable.
		<u>Type I, Flavor 10 – Breakfast cake with maple flavored syrup</u>
109		Breakfast cake odor or flavor not sweet, mild maple.
	222	Breakfast cake surface not light golden brown.
	223	Breakfast cake crumb not pale, off-white.
	224	Maple flavored syrup not light to medium golden brown.

TABLE I. Product defects 1/ 2/ 3/ continued

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
	225	Maple flavored syrup odor or flavor not sweet, maple.
	226	Breakfast cake texture not dense or not tender or not moist or not fine grain.
	227	Maple flavored syrup not free flowing or not moderately thick or not easily poured.
		<u>Type I, Flavor 11 – Yellow cake with chocolate icing</u>
110		Cake odor or flavor not a sweet, mild vanilla.
	228	Cake not pale, off-white.
	229	Chocolate icing not shiny, dark brown.
	230	Chocolate icing odor or flavor not a sweet chocolate.
	231	Cake texture not dense or not tender or not moist or not fine grain.
	232	Chocolate icing not smooth or not easily spreadable.
		<u>Type I, Flavor 12 – Yellow cake with white icing</u>
111		Cake odor or flavor not a sweet, mild vanilla.
	233	Cake not pale, off-white.
	234	White icing not shiny, white.
	235	White icing odor or flavor not sweet.
	236	Cake texture not dense or not tender or not moist or not fine grain.
	237	White icing not smooth or not easily spreadable.
		<u>Type I, Flavor 13 – Devil’s fudge cake with chocolate icing</u>
112		Cake odor or flavor not medium sweet chocolate.
	238	Cake not deep, chocolate brown.

TABLE I. Product defects 1/ 2/ 3/ continued

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
	239	Chocolate icing not shiny, dark brown.
	240	Chocolate icing odor or flavor not a sweet chocolate.
	241	Cake texture not dense or not tender or not moist or not fine grain.
	242	Chocolate icing not smooth or not easily spreadable.
		<u>Type I, Flavor 14 – Spice cake with white icing</u>
113		Cake odor or flavor not cinnamon or not allspice.
	243	Cake not medium beige with flecks of spices.
	244	White icing not shiny, white.
	245	White icing odor or flavor not sweet.
	246	Cake texture not dense or not tender or not moist or not fine grain.
	247	White icing not smooth or not easily spreadable.
		<u>Type I, Flavor 15 – Lemon cake with white icing</u>
114		Cake odor or flavor not sweet lemon.
	248	Cake not yellow.
	249	White icing not shiny, white.
	250	White icing odor or flavor not sweet.
	251	Cake texture not dense or not tender or not moist or not fine grain.
	252	White icing not smooth or not easily spreadable.
		<u>Type I, Flavor 16 – Apple spice breakfast cake</u>
115		Cake odor or flavor not sweet cinnamon or not mild apple.
	253	Cake not tan to golden brown surface.

TABLE I. Product defects 1/ 2/ 3/ continued

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
	254	Cake does not have light tan to cream crumb.
	255	Cake does not have apple pieces or cinnamon drops distributed throughout.
	256	Cake texture not dense or not tender or not moist or not fine grain with apple pieces and cinnamon drops.
		<u>Type I, Flavor 17 – Blueberry breakfast cake with maple flavored syrup</u>
116		Blueberry breakfast cake odor or flavor not sweet, blueberry or not mild vanilla.
	257	Blueberry breakfast cake surface not light golden brown.
	258	Blueberry breakfast cake crumb not pale, off-white.
	259	Blueberry breakfast cake does not have blueberry pieces distributed throughout.
	260	Maple flavored syrup not light to medium golden brown.
	261	Maple flavored syrup odor or flavor not sweet, maple.
	262	Blueberry breakfast cake texture not dense or not tender or not moist or not fine grain with blueberry pieces.
	263	Maple flavored syrup not free flowing or not moderately thick or not easily poured.
		<u>Type I, Flavor 18 – Red Velvet cake with white icing</u>
117		Cake odor or flavor not a sweet chocolate.
	264	Cake not red brown surface or crumb.
	265	White icing not shiny, white.
	266	White icing odor or flavor not sweet.
	267	Cake texture not dense or not tender or not moist or not fine grain.

TABLE I. Product defects 1/ 2/ 3/ continued

<u>Category</u>		<u>Defect</u>
<u>Major</u>	<u>Minor</u>	
	268	White icing not smooth or not easily spreadable.
		<u>Type I, Flavor 19 – Banana nut cake with white icing</u>
118		Cake odor not sweet banana or cake flavor not sweet banana walnut.
	269	Cake not tan to golden brown surface or not light tan to cream crumb with small pieces of walnuts distributed throughout.
	270	White icing not shiny, white.
	271	White icing odor or flavor not sweet.
	272	Cake texture not dense or not tender or not moist or not fine grain or without walnut pieces.
	273	White icing not smooth or not easily spreadable.
		<u>Type I, Flavor 20 – Cranberry orange cake with white icing</u>
119		Cake odor or flavor not sweet cranberry.
	274	Cake not tan to golden brown surface or not light tan to cream crumb with small cranberry pieces distributed throughout.
	275	White icing not shiny, white.
	276	White icing odor or flavor not sweet.
	277	Cake texture not dense or not tender or not moist or not fine grain or without cranberry pieces.
	278	White icing not smooth or not easily spreadable.
		<u>Type II – Brownies</u>
		<u>Type II, Flavor 1 – Fudge brownie with chocolate icing</u>
120		Brownie odor or flavor not sweet, slightly bitter chocolate.
	279	Brownie surface or crumb not very dark brown.

TABLE I. Product defects 1/ 2/ 3/ continued

<u>Category</u>	<u>Defect</u>
<u>Major</u>	<u>Minor</u>
	280 Chocolate icing not shiny, dark brown.
	281 Chocolate icing odor or flavor not sweet chocolate.
	282 Brownie texture not dense or not firm or not moist.
	283 Chocolate icing not smooth or not easily spreadable.
	<u>Net weight</u>
	284 Type I, flavors 7 and 16, net weight of an individual polymeric tray less than 35 ounces (992 grams). <u>6/</u>
	285 Type I, flavors 4, 9 to 15, and 17 to 20, net weight of an individual polymeric tray less than 29 ounces (822 grams). <u>7/</u>
	286 Type II, flavor 1, net weight of an individual polymeric tray less than 40 ounces (1134 grams). <u>8/</u>
	287 Net weight of icing or syrup pouch less than 6 ounces (170 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, or 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/ As applicable, bisect cake or brownie vertically in the center with a sharp knife to inspect for defects.

4/ As applicable, cake or brownie heights, excluding icings, shall be measured at the lowest and highest point along the vertical cut.

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

6/ Cake flavors 7 and 16, sample average net weight less than 36 ounces (1020 grams) shall be cause for rejection of the lot.

7/ Cake flavors 4, 9 to 15, and 17 to 20, sample average net weight less than 30 ounces (850 grams) shall be cause for rejection of the lot.

8/ Brownie flavor 1, sample average net weight less than 42 ounces (1191 grams) shall be cause for rejection of the lot.

B. Methods of Inspection.

(1) Shelf life. The contractor shall provide a Certificate of Conformance that the product has a 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 hedonic scale to be considered acceptable.

(2) Net weight.

a. Types I and II. The net weight of the filled and sealed polymeric tray shall be determined by weighing each sample unit on a suitable scale tared with a representative empty tray, ovenable tray insert (if utilized), appropriate number of oxygen scavengers, and lid. Results shall be reported to the nearest 1 ounce or to the nearest 1 gram.

b. White icing or chocolate icing or maple flavored syrup. The net weight of the filled and sealed pouch 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 0.1 ounce or to the nearest 1 gram.

(3) Analytical. The sample to be analyzed shall be a composite of three filled and sealed polymeric trays which have been selected at random from one production lot. For type I, flavors 4, 9 to 15, and 17 to 20 cakes and for type II, flavor 1 brownies, the sample to be analyzed shall not include the icing or syrup. The composite sample shall be prepared and analyzed in accordance with the following methods of the Official Methods of Analysis (OMA) of AOAC International:

<u>Test</u>	<u>Method Number</u>
Fat	922.06, 985.15
Moisture	925.45, 985.14

Test results shall be reported to the nearest 0.1 percent. Government verification will be conducted through actual testing by a Government laboratory. Any nonconforming result shall be cause for rejection of the lot.

(4) Water activity. Eight filled and sealed polymeric trays shall be selected at random from one production lot. Water activity (A_w) shall be determined not less than 4 days but not more than 14 days after baking to allow moisture equilibration in the product. The 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 product. The results of each Aw determination shall be reported to the nearest 0.001. Any nonconforming result shall be cause for rejection of the lot. For type I, flavors 4, 9 to 15, and 17 to 20 cakes and for type II, flavor 1 brownies, the sample to be analyzed shall not include the icing or syrup.

(5) Oxygen content testing. Eight filled and sealed polymeric trays shall be randomly selected from one production lot and individually tested for oxygen content. Testing shall be accomplished after the filled and sealed polymeric trays have been allowed to equilibrate at room temperature for not less than 72 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.

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

A. Packaging and labeling.

(1) Polymeric tray testing. For purposes of clarification, the polymeric tray without the lid will be referred to as the “tray” and the polymeric tray with the lid shall be referred to as the “container”. The container and container materials shall be examined for the characteristics listed in table I of MIL-PRF-32004, Packaging of Food in Polymeric Trays. The lot size, sample unit, and inspection level criteria are provided in table II below for each of the test characteristics. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot. For rough handling survivability at frozen temperature, polymeric tray survival rate shall be at least 85 percent.

TABLE II. Polymeric tray quality assurance criteria

<u>Prior to processing</u>			
<u>Characteristic</u>	<u>Lot size expressed in</u>	<u>Sample unit</u>	<u>Inspection level</u>
Tray configurations and dimensions	Trays	1 tray	S-1
Oxygen gas transmission rate of tray	Trays	1 tray	S-1
Oxygen gas transmission rate of lid	Yards	1/2 yard	S-1
Water vapor transmission rate of tray	Trays	1 tray	S-1
Water vapor transmission rate of lid	Yards	1/2 yard	S-1
Camouflage	Containers	1 container	S-1
<u>After processing</u>			
<u>Characteristic</u>	<u>Lot size expressed in</u>	<u>Sample unit</u>	<u>Inspection level</u>
Processing	Trays	1 tray	S-2
Rough handling survivability	Test containers	1 container	S-2
Headspace (vacuum) <u>1/</u>	Containers	1 container	S-1
Closure seal	Containers	1 container	S-1
Internal pressure	Containers	1 container	S-1
Lid opening	Containers	1 container	S-1

1/ Lack of visible gap between straight edge and lidding material along entire length of lidding and/or lack of tautness by the lidding shall not be scored as defects.

(2) Examination of container. The container shall be examined for the defects listed in table II of MIL-PRF-32004 and the labeling defects listed in table III below. The lot size shall be expressed in containers. The sample unit shall be one processed and labeled container. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major A defects, 2.5 for major B defects and 4.0 for minor defects. Fifty sample units shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

TABLE III. Container labeling defects

Category	Defect
<u>Major A</u> 101	<u>Minor</u> Polymeric tray lid or body labeling missing, incorrect or illegible.
201	When a pre-printed self adhering label is used, the label not adhering to tray lid (for example, label raised or peeled back from edge to corner) or presence of any areas of gaps along the perimeter of the label where the label is not properly adhered.

(3) Label adhesive examination. When self-adhering labels are used, the adhesive shall be tested in accordance with ASTM D 3330/D 3330M Standard Test Method for Peel Adhesion of Pressure Sensitive Tape. In lieu of testing, a Certificate of Conformance (CoC) shall be provided.

B. Component. Inspection for icing and syrup pouch shall be as follows:

(1) Unfilled preformed icing and syrup pouch certification. A CoC may be accepted as evidence that unfilled pouches conform to the requirements specified in D-1,C(1)a. 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.

(2) Filled and sealed icing and syrup pouch examination. The filled and sealed pouches shall be examined for the defects listed in table IV. The lot size shall be expressed in pouches. The sample unit shall be one pouch. 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 6.5 for minor defects.

TABLE IV. Filled and sealed icing and syrup 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>
	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 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.

3/ Delamination defect classification:

Major - Delamination of the outer ply in the pouch seal area that can be propagated to expose aluminum foil at the food product edge of the pouch after manual flexing of the delaminated area. To flex, the delaminated area shall be held between the thumb and forefinger of each hand with both thumbs and forefingers touching each other. The delaminated area shall then be rapidly flexed 10 times by rotating both hands in alternating clockwise-counterclockwise directions. Care shall be exercised when flexing delaminated areas near the tear notches to avoid tearing the pouch material. After flexing, the separated outer ply shall be grasped between thumb and forefinger and gently lifted toward the food product edge of the seal or if the separated area is too small to be held between thumb and forefinger, a number two stylus shall be inserted into the delaminated area and a gentle lifting force applied against the outer ply. If separation of the outer ply can be made to extend to the

product edge of the seal with no discernible resistance to the gentle lifting, the delamination shall be classified as a major defect. Additionally, spot delamination of the outer ply in the body of the pouch that is able to be propagated beyond its initial borders is also a major defect. To determine if the laminated area is a defect, use the following procedure: Mark the outside edges of the delaminated area using a bold permanent marking pen. Open the pouch and remove the contents. Cut the pouch transversely not closer than 1/4 inch ($\pm 1/16$ 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 and shall be cause for rejection of the lot.

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.

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

a. Unfilled preformed icing and syrup pouch seal testing. The seals of the unfilled preformed pouch shall be tested for seal strength in accordance with ASTM F 88 Standard Test Method for Seal Strength of Flexible Barrier Materials. The lot 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. Icing and syrup pouch closure seal testing. The closure seals of the pouches shall be tested for seal strength in accordance ASTM F 88. 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. For the closure seal on preformed pouches, three adjacent specimens shall be cut from the closure seal of each pouch in the sample. The average seal strength shall be calculated by averaging the three specimens cut from the 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 unfilled 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 IV, footnote 2/) shall be considered a test failure and 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 V below. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE V. 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	Arrangement or number of polymeric trays not as specified.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

D. Unitization.

(1) Unit load examination. The unit load shall be examined in accordance with the requirements of DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items. Any nonconformance shall be classified as a major defect.

SECTION J REFERENCE DOCUMENTS

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

DSCP FORMS

- DSCP FORM 3507 Loads, Unit: Preparation of Semiperishable Subsistence Items
- DSCP FORM 3556 Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence

MILITARY SPECIFICATIONS

- MIL-PRF-32004 Packaging of Food in Polymeric Trays

GOVERNMENT PUBLICATIONS

- Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder (21 CFR Parts 1-199) and (9 CFR Parts 1-391)

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ) www.asq.org

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

PCR-C-024B
20 October 2009
SUPERSEDING
PCR-C-024A
26 April 2006

ASTM INTERNATIONAL www.astm.org

D 1974	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D 3330/D 3330M	Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape
D 4727/D 4727M	Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes
D 5118/D 5118M	Standard Practice for Fabrication of Fiberboard Shipping Boxes
F 88	Standard Test Method for Seal Strength of Flexible Barrier Materials

AOAC INTERNATIONAL www.aoac.org

Official Methods of Analysis (OMA) of AOAC International