PCR-J-002B
18 November 2024
SUPERSEDING
PCR-J-002A
10 January 2014

SECTION C

This document covers shelf stable powdered fruit juice, packaged in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-J-002B, JUICE, FRUIT, POWDERED, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

Flavors and designs.

Flavors.

Flavor 1 - Grape, sweetened
Flavor 2 - Orange, unsweetened

Designs.

Design B - Flat interlocking closure pouch
Design G - Group serving pouch

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model (PDM) inspection as applicable, in accordance with the tests and inspections of Section E of this Performance-based Contract Requirements (PCR) document. The approved sample shall serve as the product standard. Should the contractor at any time plan to or actually produce the product using different raw material or process methodologies from the approved product standard, which result in a product noncomparable to the product standard, the contractor shall submit a replacement FA or PDM for approval. In any event, all product produced must meet all requirements of this document including product standard comparability.

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

C. Powdered product.

(1) Appearance. The fruit juice powder shall be a uniform, free-flowing, dry mixture. The finished product shall be free from foreign materials.

a. Flavor 1. The grape juice powder shall be a purple color.

b. Flavor 2. The orange juice powder shall be a yellowish-orange color. Prior to dehydration, the orange juice shall meet the requirements for U.S. Grade A of the United States Standards for Grades of Orange Juice.

(2) Odor. The packaged food shall have an odor typical of the flavor specified. The packaged food shall be free from foreign odors.

(3) Texture. The fruit juice powder shall be free from hard lumps.

D. Net weight.

a. Flavor 1, design B. The net weight of the flat interlocking closure pouch of grape juice shall be not less than 34 grams.

b. Flavor 2, design B. The net weight of the flat interlocking closure pouch of orange juice shall be not less than 31 grams.

c. Flavor 1, design G. The net weight of the group serving pouch of grape juice shall be not less than 19.0 ounces (540 grams).

d. Flavor 2, design G. The net weight of the group serving pouch of orange juice shall be not less than 16.6 ounces (470 grams).

E. Hydrated product. The fruit juice, when hydrated according to directions for use, shall dissolve within 2 minutes of constant stirring or shaking.

(1) Appearance.

a. Flavor 1. The grape juice shall be a purple color.

b. Flavor 2. The orange juice shall be an orange color.

(2) Odor and flavor. The packaged food shall be free from foreign odors or flavors.

a. Flavor 1. The grape juice shall have a moderately sweet grape juice odor and flavor.

b. Flavor 2. The orange juice shall have a slightly sweet orange juice odor and flavor.

(3) Texture. The fruit juice shall have no discernible lumps and shall be sediment free.

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

G. Analytical requirements.

(1) Moisture.

a. Design B. The moisture content shall be not greater than 2.0 percent.

b. Design G. The moisture content shall be not greater than 3.0 percent.

SECTION D

D-1 PACKAGING

A. Packaging.

(1) Design B, Flat interlocking closure pouch. For flavor 1, 34 grams or for flavor 2, 31 grams of fruit juice powder shall be filled into a pouch. The pouch is to be used as a package and a hydrating pouch for the juice powder.

a. Pouch material. The 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 bonded to 0.0005 inch thick polyester. Tolerances for thickness of plastic films shall be plus or minus 20 percent and tolerance for the foil layer shall be plus or minus 10 percent. The material shall show no evidence of delamination, degradation, or foreign odor. 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

and shall conform to number 20219, 30219, 30227, 30279, 30313, 30324, or 30450 of SAE AMS-STD-595, Colors Used in Government Procurement.

b. Pouch construction. The pouch shall be a flat design preformed or form-fill-seal pouch with an interlocking closure. The design and dimensions shall be as specified in figure 1. The pouch shall be made by heat sealing the sides and top of the pouch with 3/8 (+1/8, -1/4) inch wide seals. 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. The interlocking closure of the pouch shall not leak more than 15 ml. A tear nick or notch shall be provided on one or two opposite edges of the pouch above the interlocking closure to facilitate opening of the filled and sealed pouch. A 1/8 inch wide lip may be incorporated at the open end of the pouch.

c. Pouch filling and sealing. The product shall be inserted into the pouch. The filled pouch shall be sealed with a 1/8 to 1 inch wide heat seal. The closure seal shall be applied not more than 1/2 inch from the open end of the pouch. The closure seal shall be free of foldover wrinkles or entrapped matter that reduces the effective closure seal width to less than 1/16 inch. Seals shall be free of impression or design on the seal surface that would conceal or impair visual detection of seal defects. The average seal strength shall be not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width.

(2) Design G, Group serving pouch . For flavor 1, 19.0 ounces (540 grams) or for flavor 2, 16.6 ounces (470 grams) of fruit juice powder shall be filled into a group serving pouch. A desiccant pack shall be used.

a. Pouch material. The pouch shall be fabricated from 0.00048 inch thick polyethylene terephthalate (PET), 0.00026 inch thick aluminum foil, 0.00048 inch thick nylon, and 0.0034 cast polypropylene (CPP) film. Tolerances for thickness of plastic films shall be plus or minus 20 percent and tolerance for the foil layer shall be plus or minus 10 percent. The material shall show no evidence of delamination, degradation, or foreign odor. 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 and shall conform to number 17178, 20219, 30219, 30227, 30279, 30313, 30324, or 30450 of SAE AMS-STD-595, Colors Used in Government Procurement.

b. Pouch construction. The pouch shall be a flat design preformed or form-fill-seal pouch with rounded corners. The maximum outside dimensions of the sealed pouch shall be 8-1/4 inches wide by 11 inches long. The pouch shall be made by heat sealing the sides with

3/8 to 1/2 (±1/8) inch wide seals and bottom with 5/8 to 3/4 (±1/8) inch wide seal. 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. A tear notch shall be provided on both sides of the pouch to facilitate opening of the filled and sealed pouch. Tear notches shall be placed 1 to 1-1/2 inch from the top of the pouch.

c. Pouch filling and sealing. The product and one desiccant pack shall be inserted into the pouch. The filled pouch shall be top sealed with a 1/2 to 3/4 (±1/8) inch wide heat seal. The closure seal shall be applied not more than 1/8 inch from the open end of the pouch and shall be not closer than 1/16 inch to the tear notches. The closure seal shall be free of foldover wrinkles or entrapped matter that reduces the effective closure seal width to less than 3/8 inch. Seals shall be free of impression or design on the seal surface that would conceal or impair visual detection of seal defects. The average seal strength shall be not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width.

(3) Desiccant pack (Design G only). The desiccant pack shall be constructed of materials that are safe for direct food contact and shall be in compliance with all applicable Food and Drug Administration (FDA) regulations. Desiccant dimensions shall be not less than 1 by 2-1/2 by 1/4 inches and shall be rated to protect no less than 200 cubic inches.

(4) Inner carton (Design G only). Four group serving pouches of the product shall be packed in an inner carton. The inner carton shall be style RSC and the corrugated fiberboard shall be BC double wall. The outside dimensions of the carton shall not exceed 10-7/8 by 7-7/8 by 4-3/4 inches.

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. A carcinogenic-free pre-printed self-adhering clear polyester label printed with indelible contrasting color ink may also be used for Design G pouch. The label shall contain the following information:

(1) Name and flavor of product (letters not less than 1/8 inch high) 1/
(2) Ingredients
(3) Date 2/
(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) Directions for Design B flat interlocking closure pouch:
Allow water just chemically purified to stand 30 minutes before adding to juice powder. Tear pouch at notch. Open zipper, add 8 ounces of cold water (1/3 canteen cup) to fill line. Close zipper, shake to mix. *Single use only.*

Fill line for Design B flat interlocking closure pouch: A fill line (not less than 1/32 inch thick, not less than 2 inches long and centered) shall be placed on the pouch/label for 8 ounce fill at 4-1/2 ± 1/4 inches from the inside edge of the closure seal.

(8) Directions for Design G group serving pouch, flavor 1 grape, sweetened:
DISCARD DESICCANT. Place contents of pouch in a gallon measure and add 1-7/8 quarts of water while stirring. Makes 1/2 gallon (sixteen 4-fluid ounce servings) of concentrated grape juice.
To make grape juice drink, add an additional 1/2 gallon of water and stir. Makes 1 gallon (sixteen 8-fluid ounce servings) of grape juice drink.

(9) Directions for Design G group serving pouch, flavor 2 orange, unsweetened:
DISCARD DESICCANT. Pour approximately a quart of cold water into a gallon measure. While briskly stirring water, gradually add product. When product has dissolved, add water to make one gallon of juice and stir. If desired, 1/4 cup of sugar may be added. Makes sixteen 8-fluid ounce servings of orange juice.

1/ Product name shall include percent fruit juice.

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

B. Inner carton (Design G only). Each inner carton shall be correctly and legibly labeled. Printing ink shall be permanent black ink or other dark contrasting color. The label shall contain the following information:

(1) Name of product (letters not less than 1/4 inch high)
(2) Contents
(3) Date 1/
(4) Contractor's name and address

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

D-3 PACKING

A. Packing.

(1) Design B, Flat interlocking closure pouch. Not more than 40 pounds of product shall be packed in a fiberboard shipping box constructed in accordance with style RSC-L of ASTM D5118/D5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The fiberboard shall conform to type CF, class D, variety SW, minimum burst grade 200 or ECT 32 of ASTM D4727/D4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D1974/D1974M, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

(2) Design G, Group serving pouch. Not more than 40 pounds of product shall be packed in a fiberboard shipping box constructed in accordance with style RSC of ASTM D5118/D5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The fiberboard shall conform to type CF, class D, variety BC DW, a minimum ECT 51 of ASTM D4727/D4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Six inner cartons, each containing four filled and sealed group serving pouches shall be packed in a shipping box. The total quantity of pouches contained in each shipping box shall be twenty-four. The outside dimensions of the shipping box shall not exceed 17 by 11-7/8 by 16-3/8 and the box shall be closed in accordance with

ASTM D1974/D1974M, Standard Practice for Methods of Closing, Sealing, and Reinforcing fiberboard boxes.

D-4 UNITIZATION

A. Unit loads. Unit loads shall be specified in accordance with DLA Troop Support Form 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items.

D-5 MARKING

A. Shipping containers and unit loads. Shipping containers and unit loads shall be marked in accordance with DLA Troop Support Form 3556, Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence. In addition, the following markings shall appear upon the top of each shipping container in letters not less than 1 inch high:

STORE IN COOL, DRY PLACE
PRODUCT DETERIORATES
RAPIDLY ABOVE 80ºF

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQ Z1.4, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, single sampling plans indicated in ANSI/ASQ Z1.4 will be utilized. When required, the manufacturer shall provide the Certificate(s) of Conformance to the appropriate inspection activity. Certificate(s) of Conformance not provided shall be cause for rejection of the lot.

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this document and evaluated for appearance, odor, flavor, and texture. Any failure to conform to the performance requirements or any appearance or palatability failure shall be cause for rejection of the lot.

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

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

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

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

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract Requirements document utilizing the double sampling plans indicated in ANSI/ASQ Z1.4. The lot size shall be expressed in pouches. The sample unit shall be the contents of one

pouch. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 major defects and 4.0 for minor defects. Defects and defect classifications are listed in table I.

TABLE I. Product defects 1/ 2/

Category		Defect
Major	Minor	
		General
101		Product not flavor or not design as specified.
102		Desiccant pack missing or damaged (Design G only). 3/
		Powdered product 4/
		Appearance
	201	Fruit juice powder not uniform or not free-flowing or not a dry mixture.
	202	Flavor 1 grape juice powder not a purple color.
	203	Flavor 2 orange juice powder not a yellowish-orange color.
		Odor
103		Packaged food odor not typical of flavor specified.
		Texture
	204	Presence of hard lumps. 5/
		Net weight
	205	Flavor 1, design B net weight of an individual flat interlocking closure pouch less than 34 grams.
	206	Flavor 2, design B net weight of an individual flat interlocking closure pouch less than 31 grams.

TABLE I. Product defects 1/ 2/ - Continued

Category		Defect
Major	Minor	
	207	Flavor 1, design G net weight of a group serving pouch less than 19.0 ounces (540 grams).
	208	Flavor 2, design G net weight of a group serving pouch less than 16.6 ounces (470 grams).
		Hydrated product 6/
		Appearance
	209	Flavor 1 grape juice not a purple color.
	210	Flavor 2 orange juice not an orange color.
		Odor and flavor
104		Flavor 1 packaged food does not have a moderately sweet or not a grape juice odor or flavor.
105		Flavor 2 packaged food does not have a slightly sweet or not an orange juice odor or flavor.
		Texture
106		Fruit juice has discernible lumps or is not sediment free.

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. Foreign flavors not applicable to powdered product.

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. Palatability not applicable to powdered product.

3/ Construction and size of the desiccant pack and compliance with FDA regulations, will be verified by a Certificate of Conformance (CoC).

4/ Failure of the fruit juice ingredient for flavor 2 orange to meet the U.S. Grade A requirements verified with a USDA Grade Certificate, shall be cause for rejection of the lot.

5/ Lumps that do not fall apart under light pressure shall be scored as a minor defect.

6/ Prior to conducting the hydrated product examination, the powdered fruit juice shall be reconstituted per label instructions. Product that does not fully dissolve within 2 minutes with constant stirring or shaking 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 quality scale to be considered acceptable.

(2) Net weight. 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 and one desiccant pack, as applicable. Results shall be reported to the nearest 0.1 ounce or 1 gram.

(3) Analytical. The sample to be analyzed shall be a composite of eight filled and sealed pouches which have been selected at random from one lot. The composite sample shall be prepared and analyzed in accordance with the following methods of the Official Methods of Analysis (OMA) of AOAC International:

Test	Method Number
Moisture	925.45A or 934.06

Test results for moisture shall be reported to the nearest 0.1 percent. Government verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the analytical requirement shall be cause for rejection of the lot.

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

A. Packaging.

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

Characteristic	Requirement paragraph	Test procedure
Thickness of films for laminated material	D-1,A(1)a and D-1,A(2)a	ASTM D2103 1/
Aluminum foil thickness	D-1,A(1)a and D-1,A(2)a	ASTM B479 2/
Laminated material identification and construction	D-1,A(1)a and D-1,A(2)a	Laboratory evaluation
Color of laminated material	D-1,A(1)a	SAE AMS-STD-595 3/

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.

TABLE II. Filled and sealed pouch defects 1/

Category		Defect
Major	Minor	
101		Tear or hole or open seal.
102		Presence of delamination. 2/
103		Unclean pouch. 3/
104		Pouch has foreign odor.
105		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. 4/
106		Not packaged as specified.
	201	Label missing or incorrect or illegible.
	202	Tear nick or notch missing or does not facilitate opening.
	203	Presence of delamination. 2/
		Design B only
107		Seal width less than 1/16 inch. 5/
108		Fill line missing or does not measure within ± 1/4 inch of 4-1/2 inches from the inside edge of the closure seal.
	204	Fill line on pouch not required thickness or length.
	205	Seal width less than 1/8 inch but greater than or equal to 1/16 inch.
	206	Pouch does not meet design or dimensions cited in figure 1.
	207	Closure seal more than 1/2 inch from the open end of the pouch.

Design G only

109		Closure seal width less than 3/8 inch. 5/
110		Side seal width less than 1/4 inch. 5/
111		Bottom seal width less than 1/2 inch. 5/
	208	Seal width less than 1/2 inch but greater than or equal to 3/8 inch.
	209	Closure seal more than 1/8 inch from the open end of the pouch.

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

2/ Delamination defect classification:

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

edge of the seal. Isolated spots of delamination in the body of the pouch that do not propagate when flexed as described above shall be classified as minor defects.

3/ 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).

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

5/ Effective seals are defined as any uncontaminated, fusion bonded, continuous path, that produces a hermetically sealed pouch.

B. Methods of inspection.

(1) Seal testing. The pouch integrity shall be tested as required in a or b, as applicable. The lot shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1.

a. Seal strength test. The seals of the pouches shall be tested for seal strength in accordance with ASTM F88/F88M, Standard Test Method for Seal Strength of Flexible Barrier Materials. Three adjacent specimens shall be cut from each side and each end of each pouch in the sample. The average seal strength of any side or end shall be calculated by averaging the three specimens cut from that side or end. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be classified as a major defect and shall be cause for rejection of the lot.

b. Internal pressure test. The internal pressure resistance shall be determined by pressurizing the pouches while they are restrained between two rigid plates. If a three-seal tester (one that pressurizes the pouch through an open end) is used, the closure seal shall be cut off for testing the sides and bottom of the pouch and the distance between restraining plates shall be 1/2 inch. For testing the closure seal of Design B pouch, the interlocking closure end shall be cut off. For testing the closure seal of Design G pouch, 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. Any test failing to reach and maintain 14 psig for 30 seconds during testing shall be considered a test failure. The pouches shall then be examined for separation or yield of the heat seals. Any evidence of seal separation greater than 1/16 inch in the seal shall be considered a test failure. Any seal separation that reduces the effective seal width to less than 1/16 inch shall be considered a test failure. Any test failure shall be cause for rejection of the lot.

(2) Interlocking closure test (Design B only). The interlocking closure of the pouch shall be tested. 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-2. Open a filled and sealed interlocking closure pouch and prepare beverage in accordance with instructions using 70°F (± 5°F) water. Close pouch. Invert pouch and suspend pouch for 15 seconds. Collect and measure any liquid that drips. Pouches that leak more than 15 ml shall be classified as a major defect and shall be cause for rejection of the lot.

C. Packing.

(1) Inner carton and label examination (Design G only). The filled and closed inner cartons shall be examined for the defects listed in table III. The lot size shall be expressed in inner cartons. The sample unit shall be one inner carton fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE III. Inner carton and label defects

Category		Defect
Major	Minor	
101		Marking missing or incorrect or illegible.
102		Inadequate workmanship. 1/
	201	Inner carton material and dimensions not as specified.
	202	Does not contain four filled and sealed group serving pouches.

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

(2) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table IV. 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 IV. Shipping container and marking defects

Category		Defect
Major	Minor	
101		Marking missing or incorrect or illegible.
102		Inadequate workmanship. 1/
	201	More than 40 pounds of product.

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

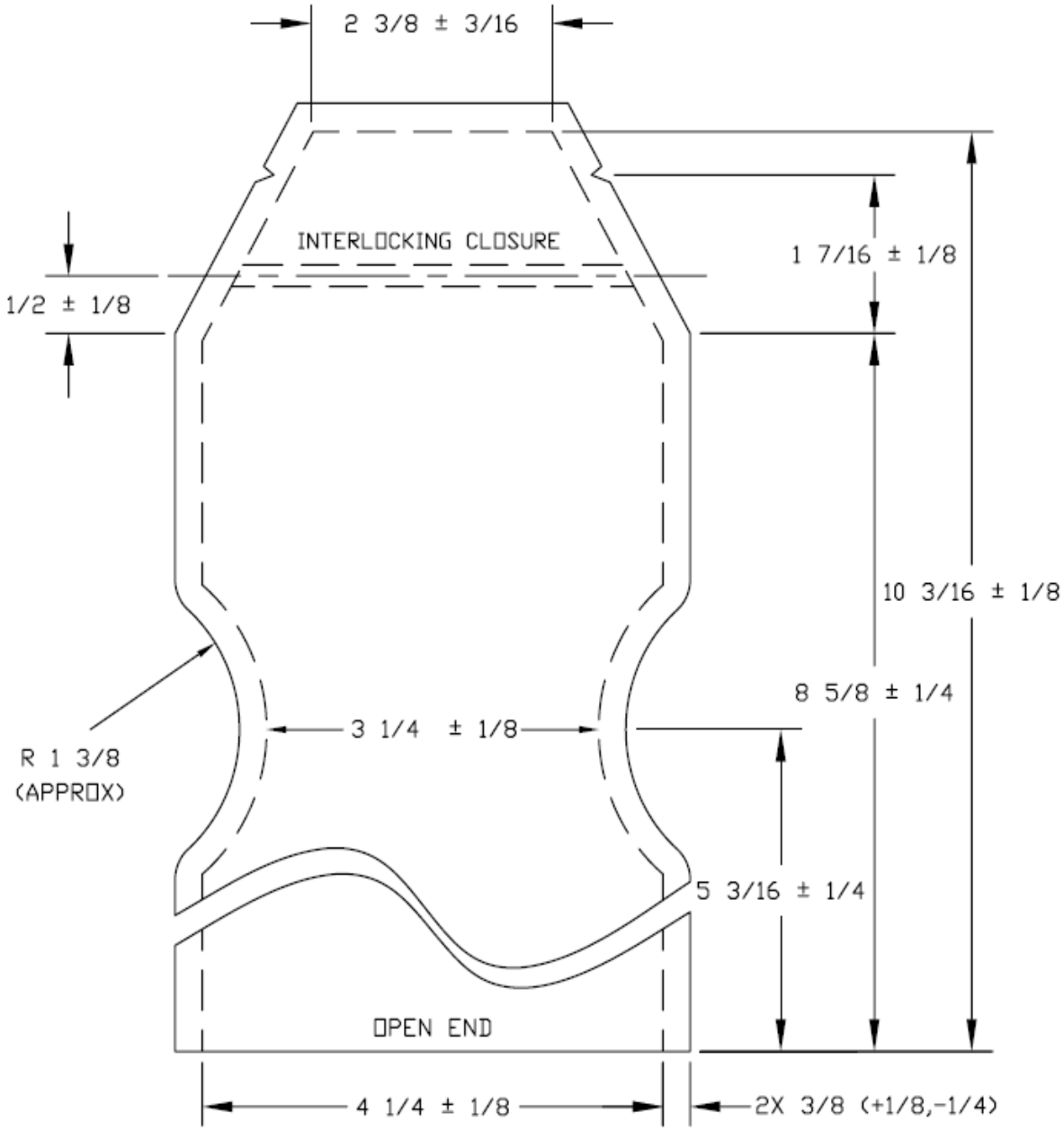

FIGURE 1. Design B, Flat Interlocking Closure Pouch
(Not actual size)

SECTION J REFERENCE DOCUMENTS

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

DLA Troop Support Form

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

GOVERNMENT PUBLICATIONS

U.S. STANDARDS FOR GRADES

U.S. Standards for Grades of Orange Juice

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

U.S. Standards for Condition of Food Containers

NON-GOVERNMENTAL STANDARDS

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

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

AOAC INTERNATIONAL www.aoac.org

Official Methods of Analysis (OMA) of AOAC International

ASTM INTERNATIONAL www.astm.org

B479	Standard Specification for Annealed Aluminum and Aluminum-Alloy Foil for Flexible Barrier, Food Contact, and Other Applications
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

SAE INTERNATIONAL www.sae.org

SAE AMS-STD-595	Colors Used in Government Procurement