

SECTION C

This document covers shelf stable bacon and poultry bacon, precooked, sliced, packaged in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR CID A-A-20081H, BACON AND POULTRY BACON, PRECOOKED, SLICED, SHELF STABLE

Species, curing agents, and package sizes.

Species I	-	Pork
Curing agents 2	-	Cured
Package size (3)	-	150 slices
Species II	-	Turkey
Curing agents 1	-	Uncured
Package size (4)	-	160 slices

C-2 PERFORMANCE REQUIREMENTS

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

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

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

D. Analytical requirements. The fat, salt, and water activity (a_w) requirements, procedures, and testing shall be in accordance with A-A-20081H.

SECTION D

D-1 PACKAGING

A. Packaging.

(1) Species I, package size (3) pork bacon. The pork bacon slices shall be placed layout style with edges abutting on sheets of parchment or commercial style food grade paper with ovenable, grease proof, wet strength characteristics. The pork bacon slices shall be packed in a pre-formed or form-fill-seal barrier Institutional Size Pouch (ISP) as described in MIL-PRF-44073, Packaging of Food in Flexible Pouches, Type II with approximate dimensions of 11 inches by 16 1/2 inches. Alternatively, a combination package consisting of an interior form-fill-seal pouch overwrapped in an exterior pre-formed barrier pouch and oxygen scavenger(s) is also acceptable. The filled pouch, or interior form-fill-seal pouch, (if a combination is used), shall be sealed under a vacuum of not less than 20 inches (50.8 cm) of mercury. The filled and sealed exterior pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal width to less than 1/16 inch when tested for internal pressure resistance. A tear nick, notch, or serrations shall be provided to facilitate opening of the filled and sealed barrier pouch. The slices of precooked bacon and parchment paper or commercial style food grade paper shall be stacked so as to allow the exterior pouch to be folded over to fit into the Unitized Group Ration (UGR) module shipping container cell (12 inches by 11-1/2 inches) without folding the bacon slices. The bacon shall be processed and packaged not more than 90 days prior to shipment.

(2) Species II, package size (4) turkey bacon. The turkey bacon shall be packed in a pre-formed or form-fill-seal barrier Institutional Size Pouch (ISP) as described in MIL-PRF-44073, Packaging of Food in Flexible Pouches, Type II with approximate dimensions of 11 inches by 16 1/2 inches. Alternatively, a combination package consisting of an interior form-fill-seal pouch overwrapped in an exterior pre-formed barrier pouch and oxygen scavenger(s) is also acceptable. The filled and sealed exterior pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal width to less than 1/16 inch when tested for internal pressure resistance. A tear nick, notch, or serrations shall be provided to facilitate opening of the filled and sealed barrier pouch. The bacon shall be processed and packaged not more than 90 days prior to shipment.

(3) Oxygen scavenger (Combination package only). The oxygen scavenger shall be constructed of materials that are safe for direct food contact. The oxygen scavenger shall be in compliance with all applicable Food and Drug Administration (FDA) regulations.

D-2 LABELING

A. Pouches. Each exterior 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. As an alternate method, a pre-printed self-adhering 0.002 inch thick clear polyester label printed with indelible contrasting color ink may be used. The label shall contain the following information:

Note: The font tested by DEVCOM Soldier Center 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 it should also be in font size 14. All other information should be in font size 9.

- (1) Product name
- (2) Ingredients
- (3) Date 1/ 2/
- (4) Number of slices
- (5) Name and address of packer
- (6) Official establishment number
- (7) USDA official inspection legend for the packer’s plant
- (8) “Nutrition Facts” label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable USDA regulations

1/ Each pouch shall have the date of pack noted by using 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.

2/ If the combination package is used, the interior form-fill-seal pouch shall be labeled with the date of pack noted by using 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

PKG&QAP A-A-20081H
20 October 2023
SUPERSEDING
PKG&QAP A-A-20081G
24 March 2020

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. The exterior pre-formed barrier pouch shall also be labeled using the Julian code to represent the day the product was packaged into the exterior pouch.

YIELD: Serves 50 portions of approximately 3 slices each.

TO HEAT IN WATER: Submerge unopened pouch in water. Bring water to a boil. Simmer for 30 minutes. Avoid overheating (pouch shows evidence of bulging).

TO GRILL OR BAKE: As applicable, invert each layer, peel off paper, place bacon on grill or baking sheet. Heat until bacon starts to crisp (350°F Grill or 375°F Oven).

WARNING: Do not heat pouch in oven.

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

TO OPEN: Open at tear notch or cut with a clean knife.

D-3 PACKING

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

D-4 UNIT LOADS

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

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 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. Two (2) sample units shall be randomly selected from that one production lot. The two (2) 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 A-A-20081H and Section C of the Packaging Requirements and Quality Assurance Provisions document utilizing the double sampling plans indicated in ANSI/ASQ Z1.4. The lot size shall be expressed in pouches. The sample unit shall be the contents of one pouch. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 4.0 for major defects and 6.5 for minor defects. Defects and defect classifications are listed in table I. The pouches shall be heated in water in accordance with pouch label instructions prior to conducting any portion of the product examination.

TABLE I. Product defects 1/ 2/

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Appearance</u>
101		Product not as specified.
102		Package size (3) contains less than 150 slices.
103		Package size (4) contains less than 160 slices.

TABLE I. Product defects 1/ 2/ - Continued

Category		Defect
<u>Major</u>	<u>Minor</u>	
104		Precooked, sliced bacon less than 5.0 inches (12.7 cm) or more than 8.0 inches (20.3 cm) in length or is less than 0.75 inches (1.9 cm) or is more than 1-1/2 inches (3.8 cm) in width.
105		Bone or bone fragment measuring 0.3 inch (7.6 mm) or more in any dimension.
	201	Species I, precooked, sliced pork bacon does not have a reddish-brown lean portion or does not have an off-white to yellow tan fat portion.
	202	Species II, precooked, sliced turkey bacon does not have a reddish-brown color or not with slight yellow to tan fat distributed throughout.
	203	Bacon contains cartilage or skin or bruise measuring 0.3 inch (7.6 mm) or more in any dimension.
	204	Bacon contains glandular tissue measuring 0.5 inch (12.7 mm) or more in any dimension.
	205	Bacon slice cut or torn more than one-half the width of the slice. <u>3/</u>
	206	Bacon slices have burnt edges or burnt areas measuring 0.3 inch (7.6 mm) or more in any dimension (a burnt edge is one in which the black color of carbonation is evident to the eye). <u>4/</u>
	207	Bacon slices break or crack when the ends are brought together. <u>5/</u>
	208	Individual bacon slice separates more than one half the length of the slice. <u>6/</u>
	209	Species I precooked, sliced pork bacon slices not placed layout style with edges abutting on sheets. <u>7/</u>

TABLE I. Product defects 1/ 2/ - Continued

Category		Defect
<u>Major</u>	<u>Minor</u>	
	210	Species I precooked, sliced pork bacon not placed on sheets of parchment or commercial style food grade paper, as specified.
		<u>Odor and flavor</u>
106		The packaged food does not have a smokey or not a salty or not a cooked bacon odor or flavor.
		<u>Texture</u>
	211	Bacon not tender or not slightly firm or not slightly moist or not slightly chewy.

1/ Presence of any foreign materials such as, but not limited to dirt, insect parts, hair, glass, wood, or metal, or any foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, stale, musty or moldy shall be cause for rejection of the lot.

2/ Finished product not equal to or better than the approved product standard in palatability and overall appearance shall be cause for rejection of the lot.

3/ More than 8 slices (5 percent) of the bacon cut or torn more than one-half of the width of the slice.

4/ More than 5 slices (3 percent) of the bacon exhibit burnt areas per pouch.

5/ More than 30 slices (20 percent) of the bacon break or crack when the ends are brought together.

6/ More than 8 slices (5 percent) of the individual bacon slice separates more than one half the length of the slice.

7/ More than 15 slices (10 percent) of the bacon with two or more slices overlapping on another slice.

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) Analytical tests. The following conditions apply for analytical testing:

a. For prepackaged product received from a supplier that is not further processed, USDA shall perform analytical testing on the first production lot and each subsequent replenishment PDM during a contract cycle. For all lots in between, the contractor will furnish a Certificate of Analysis (CoA) providing test results showing that the product meets all analytical requirements. The CoA shall cover no greater than a 24 hour production time frame.

b. For bulk product received that is to be repackaged, the contractor will furnish a CoA providing test results showing that the bulk product received meets all analytical and microbiological requirements. For fat, salt, and water activity testing, if the bulk and end item lot identities have been preserved, then skip lot testing may be implemented once an acceptable quality history, as determined by the contracting officer, has been established.

c. If the precooked bacon slices are received in bulk and the conditions in (b) above are not met, each end item lot must be sampled and tested by the USDA and skip lot is not applicable.

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

A. Packaging.

(1) Pouch material testing. The exterior pouch material shall be examined for the characteristics listed in table I of MIL-PRF-44073, Packaging of Food in Flexible Pouches for Type II. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

(2) Filled and sealed pouch testing. The filled and sealed and processed exterior 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 II and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major defects and 2.5 for minor defects. Two hundred sample units shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

TABLE II. Filled and sealed pouch defects 1/

Category		Defect
<u>Critical</u>	<u>Major</u>	<u>Minor</u>
1		Tear or hole or open seal. <u>2/</u>
2		Seal width less than 1/16 inch. <u>2/ 3/</u>
	101	Presence of delamination. <u>4/</u>
	102	Unclean pouch. <u>5/</u>
	103	Pouch has foreign odor.
	104	Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. <u>6/</u>
	105	Not packaged as specified.
	106	Presence of stress cracks in the aluminum foil. <u>7/ 8/</u>
	107	Oxygen scavenger(s) missing between interior and exterior pouches (combination package only).
	108	Filled and sealed exterior pouch exhibits rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal less than 1/16 inch when tested for internal pressure resistance.

TABLE II. Filled and sealed pouch defects 1/ - Continued

Category		Defect
<u>Critical</u>	<u>Major</u>	<u>Minor</u>
		201 Exterior barrier ISP pouch label missing or incorrect or illegible (combination package only).
		202 Tear nick or notch or serrations missing or does not facilitate opening. <u>2/</u>
		203 Seal width less than 1/8 inch but greater than or equal to 1/16 inch. <u>2/</u>
		204 Presence of delamination. <u>2/</u> <u>4/</u>

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

2/ Shall apply to both the interior and exterior barrier pouch, as applicable.

3/ 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.

4/ 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.

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.

5/ 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).

6/ 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.

7/ Applicable to form-fill-seal pouches only.

8/ The initial examination shall be a visual examination of the closed package. Any suspected visual evidence of stress cracks in the aluminum foil (streaks, breaks, or other disruptions in the laminated film) shall be verified by the following physical examination. To examine for stress cracks, the inside surface of both tray-shaped bodies shall be placed over a light source and the outside surface observed for the passage of light. Observation of light through the pouch material in the form of a curved or straight line greater than 2 mm in length shall be evidence of the presence of stress cracks. Observation of light through the pouch material in the form of a curved or straight line 2 mm in length or smaller or of a single pinpoint shall be

considered a pinhole. Observation of ten or more pinholes per pouch shall be evidence of material degradation.

(3) Pouch vacuum examination (as applicable). The filled and sealed exterior pouches (to include when a combination package with oxygen scavenger(s) are used) shall be visually examined for conformance to the vacuum requirement not less than 96 hours after filling and sealing. The sealed exterior pouch (non-combination pouch only) shall continue to exhibit tight adherence to the surface contours of the contents when a pulling force is applied at the center of each side seal. This force shall be applied by holding each side seal between thumb and forefinger of each hand, while simultaneously exerting a slight pull with both hands. Any evidence of loss of vacuum shall be classified as a critical defect and shall be cause for rejection of the lot. If evidence of vacuum cannot be readily determined when using a combination package, the exterior barrier ISP may be opened and the form-fill-seal interior pouch examined as described above. The lot size shall be expressed in pouches. The sample unit shall be one filled and sealed pouch. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65.

B. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table III. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE III. Shipping container and marking defects

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

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

SECTION J REFERENCE DOCUMENTS

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

DLA Troop Support Forms

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

DEPARTMENT OF DEFENSE SPECIFICATION

MIL-PRF-44073	Packaging of Food in Flexible Pouches
---------------	---------------------------------------

(Copies of this document are available from <https://quicksearch.dla.mil>)

NON-GOVERNMENTAL STANDARDS

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

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

ASTM INTERNATIONAL www.astm.org

D1974/D1974M	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
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