

SECTION C

This document covers product packaged in a brickpack 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 PRODUCT PACKAGED IN A BRICKPACK POUCH

SECTION D

D-1 PACKAGING

A. Packaging. The specified net weight of product (see section C of applicable product document) shall be packed in a barrier pouch.

(1) Pouches. The pouch is to be used as a unit pack and as a rehydrating pouch for consumption of the product.

a. Pouch material. The pouch shall be fabricated from 0.0035 inch thick linear low density polyethylene (LLDPE) sealant layer laminated or extrusion coated to 0.00035 inch thick aluminum foil which is then bonded with 10 pound per ream low density polyethylene (LDPE) to 0.0006 inch thick biaxially oriented nylon (BON). The three plies may be laminated with the nylon on the exterior of the pouch. Alternatively, pouches may be fabricated from 0.0035 inch thick LLDPE sealant layer laminated or extrusion coated to 0.0006 inch thick (BON), which is laminated to 0.00035 inch thick aluminum foil which is then bonded to 0.0005 inch thick polyester. The LLDPE sealant film shall be heat sealable and capable of producing a fusion seal or shall be heat sealable and peelable. Tolerances for thickness of plastic films shall be plus or minus 20 percent and tolerance for the foil layer shall be plus or minus 10 percent. The material shall show no evidence of delamination, degradation, or foreign odor when heat sealed or fabricated into pouches. The material shall be suitably formulated for food packaging and shall not impart an odor or flavor to the product. The material shall be approved for addition of hot water (less than or equal to 212°F). The complete exterior surface of the pouch shall be uniformly colored in the range of 20219, 30219, 30227, 30279, 30313, 30324, or 30450 of FED-STD-595, Colors used in Government Procurement.

b. Pouch construction. The pouch shall be a prefabricated, square bottom gusset style bag having inside dimensions of 3-3/8 inches (\pm 1/8 inch) for the face width, 2-9/16

PKG&QAP BRICKPACK
21 September 2012
SUPERSEDING
PKG&QAP
9 November 2000

inches ($\pm 1/8$ inch) for the gusset width, and 10 inches ($\pm 1/8$ inch) in length. The pouch shall be fabricated by heat sealing a fin seal down the length of the pouch and a bottom seal along the face of the pouch. Heat seals shall have a minimum width of $1/4$ inch. The fusion heat seal shall have an average seal strength of not less than 7 pounds per linear inch and no individual specimen shall have a seal strength of less than 6 pounds per linear inch. The peelable heat seal shall have an average seal strength of not less than 6 pounds per linear inch with no individual sample less than 5 pounds per linear inch and no individual sample greater than 14 pounds per linear inch. Fusion heat sealed pouches shall be provided with appropriate tear nick, notch or serrations to facilitate opening of the filled and sealed pouch. Suggested tear notch locations are provided in figure 1.

c. Pouch filling and sealing. The product shall be inserted into the pouch. The filled pouch shall be sealed under a minimum vacuum level of 23 inches of mercury. The sealed pouch shall show no evidence of material degradation or delamination. 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 fusion heat seal strength shall be not less than 7 pounds per linear inch of width and no individual specimen shall have a seal strength of less than 6 pounds per linear inch of width. The average peelable heat seal strength shall be not less than 6 pounds per linear inch and no individual sample less than 5 pounds per linear inch and no individual sample greater than 14 pounds per linear inch. The filled and sealed pouch shall have a minimum $1/8$ inch width heat seal.

D-2 LABELING

A. Pouches. Each pouch shall be correctly and legibly labeled. Printing ink shall be permanent black ink or other dark contrasting color which is free of carcinogenic elements. The information shall be located on the body of the pouch opposite the fin seal, and not closer than $1/16$ inch to any seal. If a non-contact type printer is used, the information may be located anywhere on the pouch (in one complete print), except the fin seal face and the closure seal area. The label shall contain the following information:

PKG&QAP BRICKPACK
21 September 2012
SUPERSEDING
PKG&QAP
9 November 2000

- (1) Name 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/USDA regulations
- (7) Directions:

a. For Entrée Items: Add 16 ounces of hot water (about 3/4 canteen cup) to pouch. Stir, wait approximately 10 minutes. Hot water may be added in stages to keep food hot.

b. For Breakfast Items: Add 8 ounces of hot water (about 1/3 canteen cup) to pouch. Stir, wait approximately 5-10 minutes. Hot water may be added in stages to keep food hot.

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

B. Pouches with peelable seals. Each pouch shall be clearly printed, not more than 1-1/2 inches from the top of the unfilled pouch as follows:

PEELABLE SEAL (letters not less than 1/8 to 7/16 inch block letters)

D-3 PACKING

A. Packing. Not more than 40 pounds of product shall be packed in a fiberboard shipping box constructed in accordance with style RSC-L of ASTM D5118/D5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The fiberboard shall conform to type CF, class D, variety SW, burst grade 200 or ECT grade 32 of ASTM D4727/D4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. Each box shall be closed in accordance with ASTM D1974/D1974M, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes. When metal fasteners are used in the box manufacturer's joint or set-up, the fasteners on the inside of the box shall be covered with tape to protect the contents from mechanical damage.

D-5 MARKING

A. Shipping containers. Shipping containers shall be marked in accordance with DLA Troop Support Form 3556, Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence.

SECTION E INSPECTION AND ACCEPTANCE

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

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

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

C. 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. Compliance to 21 CFR substances in contact with near boiling water (< 212°F) may be verified by CoC. In addition, compliance to the requirements for inside pouch dimensions and dimensions of manufacturer's seals may be verified by CoC.

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

1/ Standard Specification for Polyethylene Film and Sheeting

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

3/ Colors Used in Government Procurement

(2) Unfilled preformed pouch certification. A CoC may be accepted as evidence that unfilled pouches conform to the requirements specified in D-1,A(1) a and b. When deemed necessary by the USDA, testing of the unfilled preformed pouches for seal strength shall be as specified in E-6,D(1)a.

(3) Filled and sealed pouch examination. The filled and sealed pouches shall be examined for the defects listed in table I. 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 I. Filled and sealed pouch defects 1/

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Tear or hole or open seal.
102		Seal width less than 1/16 inch. <u>2/</u>
103		Presence of delamination. <u>3/</u>
104		Unclean pouch. <u>4/</u>
105		Pouch has foreign odor.
106		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. <u>5/</u>
107		Not packaged as specified.
108		Any evidence of loss of vacuum. <u>6/</u>
109		Peelable pouch does not open where indicated.
	201	Label missing or incorrect or illegible.
	202	Tear nick or notch or serrations missing or does not facilitate opening (applicable to fusion sealed pouches only).
	203	Seal width less than 1/8 inch but greater than or equal to 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:

PKG&QAP BRICKPACK
21 September 2012
SUPERSEDING
PKG&QAP
9 November 2000

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 - 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).

PKG&QAP BRICKPACK
21 September 2012
SUPERSEDING
PKG&QAP
9 November 2000

5/ If doubt exists as to whether or not the sealing equipment leaves an impression or design on the closure seal surface that could conceal or impair visual detection of seal defects, samples shall be furnished to the contracting officer for a determination as to acceptability.

6/ The filled and vacuum sealed pouches shall be visually examined for conformance to the vacuum requirement in section D-1,A(1)c not less than 96 hours after filling and sealing. The sealed pouch shall continue to exhibit tight adherence to the surface contours of the contents when a pulling force is applied at the top and bottom seal. This force shall be applied by holding the top and bottom seal between the 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 major defect .

D. Methods of inspection.

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

a. Unfilled preformed pouch seal testing. The seals of the unfilled preformed pouch shall be tested for seal strength in accordance with ASTM F88/F88M, Standard Test Method for Seal Strength of Flexible Barrier Materials. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. Three adjacent specimens shall be cut from the sealed side or end of each pouch in the sample. The average seal strength shall be calculated by averaging the three specimens cut from that side or end. When testing the end seal of the pouch, one of the three specimens shall be cut from the center of the seal incorporating the folded fin seal juncture of the heat seal. For fusion heat seals, any average seal strength of less than 7 pounds per linear inch of width or any test specimen with a seal strength of less than 6 pounds per linear inch of width shall be classified as a major defect and shall be cause for rejection of the lot. For peelable heat seals, any average seal strength of less than 6 pounds per linear inch or any test specimen with a seal strength of less than 5 pounds per linear inch or greater than 14 pounds per linear inch shall be classified as a major defect and shall be cause for rejection of the lot.

b. Pouch closure seal testing. The closure seals of the pouches shall be tested for seal strength in accordance with ASTM F88/F88M. The lot size shall be expressed in pouches. The sample unit shall be one 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. One of the specimens shall be cut from the center of the seal incorporating the folded fin seal juncture of the heat seal. The average seal strength of any side, end or closure shall be calculated by

PKG&QAP BRICKPACK
21 September 2012
SUPERSEDING
PKG&QAP
9 November 2000

averaging the three specimens cut from that side, end or closure. For fusion heat seals, any average seal strength of less than 7 pounds per linear inch of width or any test specimen with a seal strength of less than 6 pounds per linear inch of width shall be classified as a major defect and shall be cause for rejection of the lot. For peelable heat seals, any average seal strength of less than 6 pounds per linear inch or any test specimen with seal strength of less than 5 pounds per linear inch or greater than 14 pounds per linear inch shall be classified as a major defect and shall be cause for rejection of the lot.

E. Packing.

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

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

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

SECTION J REFERENCE DOCUMENTS

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

DLA Troop Support Forms

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

FEDERAL STANDARD

PKG&QAP BRICKPACK
21 September 2012
SUPERSEDING
PKG&QAP
9 November 2000

FED-STD-595 Colors Used in Government Procurement

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

PKG&QAP BRICKPACK
21 September 2012
SUPERSEDING
PKG&QAP
9 November 2000

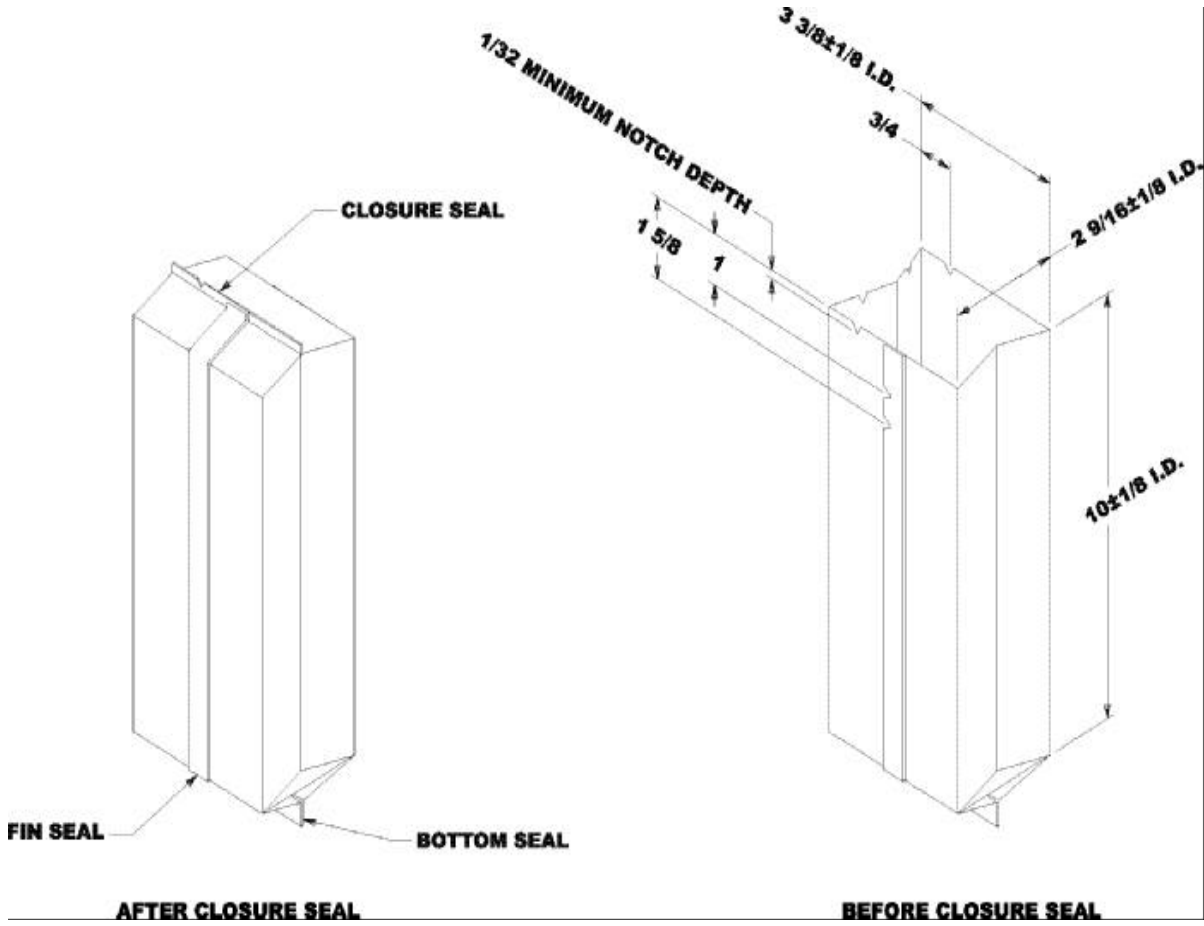


FIGURE 1. Brickpack Pouch