

SECTION C

This document covers thermostabilized New England-style clam chowder, packaged in a flexible pouch for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-C-045 CLAM CHOWDER, NEW ENGLAND-STYLE, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article or product demonstration model inspection as applicable, in accordance with the tests and inspections of Section E of this Performance-based Contract Requirements document.

B. Commercial sterility. The packaged food shall be processed until commercially sterile.

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

D. Appearance.

(1) General. The New England-style clam chowder shall be a uniform mixture of diced potatoes, chopped sea clams (fifty percent chopped sea clams and fifty percent ocean clams) (Quahogs), chopped onion and celery in a creamy sauce. The packaged food shall be free from foreign materials.

(2) Sea Clams. The sea clams shall be coarsely chopped and shall be practically free of shell or shell fragments. The clam pieces shall have a light tan color typical of cooked sea clams. Quahogs shall meet the same requirements as the sea clams.

(3) Potatoes. The potatoes shall be dice sizes typically produced by a 3/8 inch dicer setting. The potato dices shall have a cooked potato color.

(4) Sauce. The sauce shall be a cream color.

E. Odor and flavor. The packaged food shall have an odor and flavor of processed New England-style clam chowder. The packaged food shall be free from foreign odors and flavors.

F. Texture.

(1) Chopped clams. The cooked sea clam pieces shall be firm and slightly chewy.

(2) Potatoes. The potato dices shall be slightly soft to slightly firm.

(3) Sauce. The sauce shall be smooth and moderately thick.

G. Weight.

(1) Net weight. The average net weight shall be not less than 5.0 ounces. No individual pouch shall have a net weight of less than 4.5 ounces.

(2) Drained weight.

a. Diced potato, onion and celery. The average drained weight of potato, onion and celery shall be not less than 1.4 ounces. The drained weight of diced potato, onion and celery in an individual pouch shall be not less than 1.1 ounces.

b. Chopped clams. The average drained weight shall be not less than 0.7 ounces. The drained weight of the clam pieces in an individual pouch shall be not less than 0.5 ounces.

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

I. Analytical requirements.

(1) Fat content. The fat content shall be not greater than 5.0 percent.

(2) Salt content. The salt content shall be not less than 0.5 percent and not greater than 1.3 percent.

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. Ingredients/formulation. Ingredients and formulation percentages for the sauce may be as follows:

<u>Ingredients</u>	<u>Percent by weight</u>
Water and clam broth	84.27
Dry cream	4.91
Modified high opacity starch <u>1/</u>	4.25
Powdered vegetable shortening	2.90
Dehydrated chopped onion	2.20
Salt <u>2/</u>	0.67
Dehydrated chopped celery	0.67
Ground white pepper	0.13

1/ The total amount of starch in the sauce formula may be adjusted, if necessary, to ensure compliance with the finished product viscosity requirements.

2/ The total amount of salt in the sauce formula may be adjusted as necessary to produce a product that complies with the finished product salt requirement.

B. Product preparation. Percentages for product preparation may be as follows:

<u>Ingredients</u>	<u>Percent by weight</u>
Sauce	66.00
Dehydrofrozen diced (3/8 inch) potatoes, blanched	19.00
Drained chopped clams 	15.00

1/ See C-2, D, (1) &(2).

NOTES:

Powdered vegetable shortening used was Centenial IX supplied by Diehl, Inc.
Dry cream used was Melocreame 720M, supplied by Kerry Ingredients
Canned chopped sea clams used were supplied by HALLSMITH SYSCO, Norton, MA

Preparation.

Potatoes should be blanched to approximately 1.5 times the starting weight.

SECTION D

D-1 PACKAGING

Product shall be filled into pouches and each pouch shall be packed in a carton in accordance with MIL-PRF-44073, Packaging of Food in Flexible Pouches.

D-2 LABELING

A. Pouches. Each pouch shall be clearly printed or stamped, in a manner that does not damage the pouch, with permanent black ink or any other contrasting color, which is free of carcinogenic elements. Prior to thermal processing of the pouches, the product name, lot number and filling equipment number shall be applied. All other marking may be applied before or after thermal processing.

(1) Product name (not less than 1/8 inch high). Commonly used abbreviations may be used when authorized by the inspection agency.

(2) Pouch code includes: 1/

- Lot Number
- Filling equipment identification number
- Official establishment number (for example, EST-38)
- Retort identification number
- Retort cook number

1/ 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, 25 October 2001 would be coded as 1298). The Julian code shall represent the day the product was packaged into the pouch and processed. Sub-lotting (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. Cartons.

(1) The cartons shall be clearly printed on one of the largest panels with permanent black ink as follows:

- Product name (7/32 to 9/32 inch block letters)
- Ingredients
- Net weight
- Name and address of packer
- Code (same as pouch code, see pouches) 1/ 2/
- USDA official inspection legend for the packer's plant
- "Nutrition Facts" label in accordance with the Nutrition Labeling and Education Act (NLEA) and all applicable FDA/USDA regulations

1/ Code may be ink printed on any outside carton panel. Code may be embossed on any outside carton panel except the largest panels of the carton.

2/ Official establishment number not required in carton code.

(2) Military nutrition information entitled "Military Rations Are Good Performance Meals" shall be printed on the entrée cartons large panel opposite to the panel printed with the data in D-2, B,(1) above. The information, provided by the contracting officer, shall be clearly printed with permanent black ink in an area no smaller than 3-3/4 inches by 5-3/4 inches.

D-3 PACKING

A. Packing for shipment to ration assembler. Seventy-two pouches (of the same product) in cartons shall be packed flat or on edge in a snug-fitting fiberboard shipping container conforming to style RSC, type CF, class domestic, grade 200 of ASTM D 5118, Standard Practice for Fabrication of Fiberboard Shipping Boxes. Each container shall be securely closed in accordance with ASTM D 1974, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers.

D-4 MARKING

A. Shipping containers. Shipping containers shall be marked in accordance with DPSC Form 3556, Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence.

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. 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 Soldier & Biological Chemical Command
Soldiers System Ctr., Natick Soldier Center
Attn: AMSSB-RCF-F(N)
15 Kansas Street
Natick, MA 01760-5018

One lot shall be randomly selected during each calendar month of production. Six (6) sample units of each item produced shall be randomly selected from that one production lot. The six (6) 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/tests and methods of inspection cited in this section and in Section 4 of MIL-PRF-44073.

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/ASQC Z1.4 - 1993. The lot size shall be expressed in pouches. The sample unit shall be the contents of one pouch. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 for major defects and 4.0 for minor defects. Defects and defect classifications are listed in table I. For drained weight inspection, a separate set of pouches shall be selected from the lot using the same sampling criteria as above. The pouches shall be immersed in 140°F to 190°F water for 10 minutes prior to conducting the product examination and the drained weight inspection.

TABLE I. Product defects 1/ 2/ 3/

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Appearance</u>
101		Product not New England-style clam chowder consisting of a uniform mixture of diced potatoes, chopped sea clams (<u>See C-2, D, (1) &(2)</u>), chopped onion and celery in a creamy sauce.
102		Shell or shell fragment measuring more than 0.3 inch in any dimension.
	201	Clam pieces not cooked sea clam color.
	202	Potato dices do not have a cooked potato color.
	203	Sauce not a cream color.
		<u>Odor and flavor</u>
103		Odor or flavor not cooked New England-style clam chowder.
		<u>Texture</u>
	204	Clam pieces not firm or not slightly chewy.
	205	Potato dices not slightly soft to slightly firm.
	206	Sauce not smooth or not moderately thick.
		<u>Weight</u>
	207	Net weight of an individual pouch less than 4.5 ounces. <u>4/</u>
	208	Drained weight of diced potato, onion and celery in an individual pouch less than 1.1 ounces. <u>5/</u>
	209	Drained weight of clam pieces in an individual pouch less than 0.5 ounces. <u>6/</u>

1/ Presence of any foreign materials such as, but not limited to dirt, insect parts, hair, wood, glass, metal, or mold, or foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, or stale 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/ Machine setting requirement for potato dices shall be verified with the producer's certificate of conformance.

4/ Sample average net weight less than 5.0 ounces shall be cause for rejection of the lot.

5/ Sample average drained weight of diced potato, onion and celery less than 1.4 ounces shall be cause for rejection of the lot.

6/ Sample average drained weight of clam pieces less than 0.7 ounces shall be cause for rejection of the lot.

B. Methods of inspection.

(1) Commercial sterility. Testing for commercial sterility shall be in accordance with MIL-PRF-44073.

(2) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year 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.

(3) Net weight. The net weight of the filled and sealed pouches shall be determined by weighing each sample on a suitable scale tared with a representative empty pouch. Results shall be reported to the nearest 0.1 ounce.

(4) Drained weight. The pouch contents shall be poured into a flat-bottom container. A minimum of three times the volume of the pouch of 180°F to 190°F water shall be added to the container so as to cover the contents. The contents and water shall be gently agitated so as to liquefy rendered fat and to remove the sauce without breaking the potato dices. The contents shall then be poured into a U.S. Standard No. 7 sieve in a manner that will distribute the product over the sieve without breaking the potato dices. The sieve area shall be such that the distributed product does not completely cover all the openings of the sieve. The sieve shall be tilted at approximately a 45° angle and allowed to drain for 2 minutes before determining the drained weight by subtracting the sieve tare weight from the gross weight. The drained weight shall be reported to the nearest 0.1 ounce.

(5) Analytical. The sample to be analyzed shall be a composite of eight filled and sealed pouches that have been selected at random from one production lot. The composite sample shall be prepared and analyzed in accordance with the latest edition of the Official Methods of Analysis of AOAC International (OMA). Test results shall be reported to the nearest 0.1 percent. Verification will be conducted through actual testing by a Government laboratory. Any result not conforming to the analytical requirements shall be cause for rejection of the lot.

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

A. Packaging and labeling.

(1) Pouch material testing. The pouch material shall be examined for the characteristics listed in table I of MIL-PRF-44073. The lot size, sample unit, and inspection level criteria for each of the test characteristics are listed below. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

Characteristic	Lot size expressed in	Sample unit	Inspection level
Oxygen transmission rate	yards	1/2 yard	S-1
Water vapor transmission rate	yards	1/2 yard	S-1
Camouflage	yards	1/2 yard	S-1
Thermal processing	pouches	1 pouch	S-2
Environmental conditions	pouches	1 pouch	S-2

(2) Pouch examination. The pouches shall be examined for the defects listed in table II of MIL-PRF-44073. The lot size shall be expressed in pouches. The sample unit shall be one thermal processed pouch. 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. Two hundred sample units shall be

examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

(3) Examination of pouch and carton assembly. The completed pouch and carton assemblies shall be examined for the defects listed in table III of MIL-PRF-44073. The lot size shall be expressed in units of completed assemblies. The sample unit shall be one pouch and carton assembly. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major defects and 2.5 for minor defects. Fifty sample pouch and carton assemblies shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

B. Packing.

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

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. <u>1/</u>
	201	Contents more or less than 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.

SECTION J REFERENCE DOCUMENTS

DPSC FORMS

DPSC FORM 3556 Marking Instructions for Shipping Cases, Sacks and Palletized/Containerized Loads of Perishable and Semiperishable Subsistence

MILITARY SPECIFICATIONS

MIL-PRF-44073 Packaging of Food in Flexible Pouches

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ)

ANSI/ASQCZ1.4-1993 Sampling Procedures and Tables for Inspection by Attributes

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 1974 Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers

D 5118 Standard Practice for Fabrication of Fiberboard Shipping Boxes

AOAC INTERNATIONAL Official Methods of Analysis of the AOAC International

AMSSB-RCF—F (N) (Richards/5037)

25 July 2003

TO: DSCP-HROS (D. Arthur/7775)

SUBJECT: ES03-153, Recommended changes to PCRC-045, Clam Chowder, MRE.

The Natick Soldier Center (NSC) recommends the following changes to the subject PCR for use in all current, pending and future procurements until the document is formally amended or revised:

C-2, D, (1), line 2, after “clams” Insert (or fifty percent chopped sea clams and fifty percent ocean clams (Quahogs)

C-2, D, (2), at end of second sentence, Add “Quahogs shall meet the same requirements as the sea clams.”

C-3, B, After “Drained chopped clams” Insert 1/. After the formula; Insert Footnote 1/ See C-2, D, (1) &(2).

DONALD A. HAMLIN
Team Leader
DoD Food Engineering
Services Team

(ARichards)

CF: NSC:
Aylward
Arcidiacono
Friel
Hamlin
Hill
Richards
Sherman
Trottier
Valvano

CF: DSCP & SVCs:
Anthony
Beward
Ferrante
Galligan
Kavanagh
Kasa
Lowry
Malason
Richardson H
Salerno
Spencer