

PPP-C-29G

May 3, 1989

SUPERSEDING

PPP-C-29F

September 14, 1981

FEDERAL SPECIFICATION

CANNED SUBSISTENCE ITEMS, PACKAGING OF

This specification is approved by the Commissioner, Federal Supply Service, General Services Administration, for use by all Federal agencies.

1. SCOPE.

1.1 Scope. This specification covers the unit packing of subsistence items in round, sanitary-style, metal cans, and the packing of such cans into shipping containers for shipment and storage.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

Federal Specifications

L-P-378	- Plastic Sheet and Strip, Thin Gauge, Polyolefin
TT-C-495	- Coatings, Exterior, for Tinned Food Cans
PPP-B-636	- Boxes, Shipping, Fiberboard
PPP-C-96	- Cans, Metal, 28 Gage and Lighter

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5014 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 89GP

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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Federal Standard

FED-STD-123 - Marking for Domestic Shipment (Civil Agencies)

(Application for copies shall be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.)

Military Specifications

MIL-L-1497 - Labeling of Metal Cans for Subsistence Items
MIL-L-35078 - Loads, Unit: Preparation of Semiperishable
Subsistence Items; Clothing, Personal Equipment
and Equipage; General Specifications For

Military Standards

MIL-STD-105 - Sampling Procedures and Tables for Inspection
by Attributes
MIL-STD-129 - Marking for Shipment and Storage

(Copies of specifications, standards, and handbooks required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

Federal Regulations

U.S. Department of Health and Human Services

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

Animals and Animal Products (9 CFR Parts 1-390)

(Copies may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.)

U.S. Department of Agriculture

U.S. Standards for Condition of Food Containers

(Copies may be obtained from the Chairman, Condition of Food Container Committee, Agricultural Marketing Service, U.S. Department of Agriculture, Room 0608, South Building, P.O. Box 96456, Washington, DC 20090-6456.)

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(Copies of drawings, publications, and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted shall be those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issues of the nongovernment documents which are current on the date of the solicitation.

National Motor Freight Traffic Association, Inc., Agent

National Motor Freight Classification

(Copies should be obtained from the American Trucking Associations, Inc., Traffic Department, 2200 Mill Road, Alexandria, VA 22314.)

Uniform Classification Committee, Agent

Uniform Freight Classification

(Copies should be obtained from the Uniform Classification Committee, Suite 1120, 222 South Riverside Plaza, Chicago, IL 60606.)

American Society for Testing and Materials (ASTM)

- A 624 - Tin Mill Products
- A 626 - Electrolytic Tin Plate
- A 657 - Specification for Single and Double-Reduced
Black Plate Electrolytic Chromium-Coated Steel
- E 112 - Methods for Determining Average Grain Size
- E 380 - Metric Practice

(Copies should be obtained from the American Society for Testing and Materials, 1916 Race St., Philadelphia, PA 19103-1187.)

(Non-Government standards and other publications are normally available from the organizations which prepare or which distribute the documents. These documents also may be available in or through libraries or other informational services.)

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2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 General. Canned subsistence items, as listed in Tables II through VII, shall be prepared for shipment in accordance with the requirements of this specification. Related items of canned subsistence not specifically covered herein shall be prepared for shipment in accordance with the provisions of the governing specifications for those items. When the provisions of a commodity specification and this specification conflict, the specification of latest date shall take precedence. The canned items are grouped into tables as follows (see 6.3 for can trade name and common nomenclature):

Table:

II	Fruits and berries
III	Vegetables
IV	Seafoods
V	Meat items
VI	Dehydrated items
VII	Miscellaneous items

3.2 Can materials. All materials shall conform with 21 CFR or 9 CFR, as amended, and regulations promulgated thereunder (see 6.5).

3.2.1 Base plate. Cans shall be made from plate having a base box weight of not less than that in common commercial use for the specific product, style, and size of can.

3.2.2 Tinplate. The base plate shall be tinplated, as specified, for the respective product in the tinplate/electrolytic chromium-coated steel (ECCS) plate column of Tables II through VII. When multiple tinplate weights are listed in Tables II through VII for a product that may be unit packed in multiple can sizes, any specified tinplate weight is acceptable. Tin coating weights that are followed by the letter K indicates tinplate which has increased resistance against electrochemical corrosion of plain tinplate container components and shall meet the requirements of 3.2.2.1. Heavier tin coating weights are acceptable as a substitute for any tin coating weight specified. The minimum average coating weight for each nominal weight shall be in accordance with Table I.

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TABLE I. Tinplating weights (lbs./base box)

Type	<u>Nominal plate weight</u>	<u>Minimum average plate weight</u> <u>1/</u>
Electrolytic	1.00	0.88
	0.75	0.67
	0.50	0.44
	0.25	0.20
Differential electrolytic (heavier weight is on inside of can and is listed first)	1.35/0.25	1.16/0.18
	1.00/0.25	0.88/0.18
	0.75/0.25	0.67/0.18
	0.50/0.25	0.44/0.18

1/ Tinplating weights shall be reported separately for bodies and ends of cans.

3.2.2.1 K-Plate. K-Plating must meet the following requirements (see 6.1):

- | | |
|----------------------------------|---|
| (a) Pickle lag | Maximum 10 seconds |
| (b) Iron solution value | Maximum 20 micrograms |
| (c) Alloy-tin-couple (ATC) value | Maximum 0.12 microamperes/cm ²
(Average 0.05 microamperes/cm ²) |
| (d) Tin crystal size | ASTM No. 9 or larger crystals (see ASTM Designation E112, Table 2, for micrograin size) |

3.2.2.2 Electrolytic chromium coated steel (ECCS) plate. The base plate shall be ECCS as specified for the respective product in the tinplate/ECCS plate column of Tables II through VII. The nominal metallic chromium thickness shall be equivalent to 5 mg/ft² of surface, covered by a chromium oxide film containing 0.7 mg/ft² to 2.5 mg/ft² of metallic chromium (see 6.1 and 6.4).

3.2.3 Interior coating of cans. Interior coating of cans shall be in accordance with the legend designations specified in the body and ends subcolumns under the inside enamel column, in Tables II through VII, as applicable, for the product being canned (NOTE: In this specification, the terms "interior coating" and "inside enamel" shall be used interchangeably). The legends used are defined as follows:

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- P - Plain interiors
- E - Enameled interiors
- EE - Double enameled interiors
- * - An asterisk following the legends E or EE in the body column indicates side seam striped

The interior coating shall conform with 21 CFR, Part 175.300. The coating shall cover the entire area. Scratches or fractures shall not penetrate through the interior can coating. The coating shall not peel or blister. The coating shall neither affect nor be affected by the packaged product. A certificate of conformance shall be furnished to certify compliance with the interior can coating requirements.

3.2.4 Exterior coating of cans. The exterior coating of cans shall be as specified in 3.5.

3.2.5 Flux, solder, and seaming compounds. These materials shall be those in common commercial use for the specific product.

3.3 Can fabrication and design. The cans shall be fabricated using methods that reflect good standards of workmanship and quality in the finished product.

TABLE II. Can sizes and can requirements for fruits and berries

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Apples, U.S. Standards for Grades	303 x 406	1/	0.50/0.25	0.25	P	E	A vacuum
	307 x 409		0.50/0.25K	0.25	P	E	
	401 x 411						
	603 x 700						
Apple juice, single strength, Style I, U.S. Standards for Grades	202 x 314 2/	1/	0.25	0.25	EE*4/	EE	A vacuum
	307 x 409		0.50/0.25	0.25	EE*	EE	
	401 x 411		1.00/0.25	1.00/0.25	EE*	EE	
	404 x 414						
	404 x 700						
	603 x 700						
Apple juice, single strength, Style II, U.S. Standards for Grades	202 x 314 2/	1/	1.00/0.25	0.25	P	E	A vacuum
	307 x 409		0.50/0.25K	0.25	P	E	
	401 x 411						
	404 x 414						
	404 x 700						
	603 x 700						
Applesauce, U.S. Standards for Grades	211 x 304	8-1/2 oz.	0.50/0.25	0.25	P	E	A vacuum
	300 x 200	6 oz.	0.50/0.25K	0.25	P	E	
	303 x 406	1 lb.					
	307 x 409	1 lb. 4 oz.					
	401 x 411	1 lb. 13 oz.					
	603 x 700	6 lb. 12 oz.					

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TABLE II. Can sizes and can requirements for fruits and berries (cont'd)

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Apricots, U.S. Standards for Grades	211 x 304	1/	0.50/0.25	0.25	P	E	A vacuum
	300 x 200		0.50/0.25K	0.25	P	E	
	303 x 406						
	307 x 409						
	401 x 411						
	603 x 700						
Blackberries, Blueberries other similar berries, (sirup packed and water packed) U.S. Standards for Grades	211 x 304	1/	0.75/0.25	0.75/0.25	E*	E	A vacuum
	303 x 406		0.75/0.25K	0.75/0.25K	E*	E	
	307 x 409						
	401 x 411						
	603 x 700						
Cherries, sweet, dark, (sirup packed and water packed) U.S. Standards for Grades	301 x 411	1/	0.50/0.25	0.50/0.25	E*	E	A vacuum
	211 x 304						
	303 x 406						
	307 x 409						
	401 x 411						
	603 x 700						
Cherries, sweet, light, (sirup packed and water packed) U.S. Standards for Grades	211 x 304	1/	1.00/0.25	0.25	P	E	A vacuum
	301 x 411		0.75/0.25K	0.75/0.25K	E*	E	
	303 x 406		0.50/0.25	0.50/0.25	E*	E	
	307 x 409						
	401 x 411						
	603 x 700						
Cherries, red, tart, pitted, (sirup packed and water packed) U.S. Standards for Grades	303 x 406	1/	0.75/0.25K	0.75/0.25K	E*	E	A vacuum
	307 x 409		0.50/0.25	0.50/0.25	E*	E	
	603 x 700						

TABLE II. Can sizes and can requirements for fruits and berries (cont'd)

Product and related specification	Can size	Net contents Qt./pt./lb./oz.	Tinplate/ECCS plate				Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	Body	Ends	
Cranberry sauce, U.S. Standards for Grades	300 x 407	1/	0.50/0.25K	0.50/0.25K	E*	E	E*	E	A vacuum
	307 x 409	1/	0.50/0.25	0.50/0.25	E*	E	E*	E	
	603 x 700								
Figs, (sirup packed and of water packed) U.S. Standards for Grades	211 x 304	1/	0.50/0.25K	0.25	P	E	P	E	A vacuum
	301 x 411	1/	0.50/0.25	0.25	P	E	P	E	
	303 x 406								
	307 x 409								
	401 x 411								
	603 x 700								
Fruit cocktail, U.S. Standards for Grades	300 x 200	3/	0.50/0.25	0.25	P	E	P	E	A vacuum
	300 x 407	1/	0.50/0.25	0.25	P	E	P	E	
	211 x 304								
	303 x 406								
	307 x 409								
	401 x 411								
	603 x 700								
Grapefruit, U.S. Standards for Grades	301 x 411								
	300 x 200	1/	1.00/0.25K	1.00/0.25K	P	P	P	P	A vacuum
	211 x 304	1/	1.00/0.25	0.25	P	E	P	E	
	303 x 406								
	307 x 409								
Grapefruit and orange juice, blended, U.S. Standards for Grades	404 x 700								
	202 x 314	2/	0.75/0.25K	0.75/0.25K	P	P	P	P	A vacuum
	307 x 409	1/	0.75/0.25K	0.25	P	E	P	E	
	404 x 700								
	603 x 700								

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TABLE II. Can sizes and can requirements for fruits and berries (cont'd)

Product and related specification	Can size	Net contents Qt./pt./lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Grape juice, U.S. Standards for Grades	202 x 314 2/	1/	0.25	0.25	EE*4/	EE	A vacuum
	307 x 409						
	404 x 700						
	603 x 700						
Grapefruit juice, U.S. Standards for Grades	202 x 314 2/	1/	0.75/0.25K	0.75/0.25K	P	P	A vacuum
	307 x 409		0.75/0.25K	0.25	P	E	
	404 x 700						
	603 x 700						
Orange juice, U.S. Standards for Grades	202 x 314 2/	1/	0.75/0.25K	0.25	P	E	A vacuum
	307 x 409		0.75/0.25K	0.75/0.25	P	P	
	404 x 700						
	603 x 700						
Olives, U.S. Standards for Grades	300 x 407	1/	0.25	0.25	E*	E	A vacuum
	301 x 411						
	307 x 704						
	603 x 700						
Peaches (sirup packed and water packed), U.S. Standards for Grades	300 x 200 3/ 5/	1/	0.50/0.25	0.25	P	E	A vacuum
	211 x 304 5/		0.50/0.25K	0.25	P	E	
	303 x 406		0.75/0.25	0.75/0.25	P	P	
	307 x 409		0.75/0.25	0.25	P	E	
	401 x 411						
	603 x 700						

TABLE II. Can sizes and can requirements for fruits and berries (cont'd)

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Pears (sirup packed and water packed), U.S. Standards for Grades	300 x 200	3/ 5/	1/				
	211 x 304	5/					
	303 x 406						
	307 x 409						
	401 x 411						
	603 x 700						
Pineapple, U.S. Standards for Grades	300 x 200	3/ 5/	1/				
	211 x 304						
	307 x 409						
	401 x 411						
	603 x 700						
Pineapple juice, U.S. Standards for Grades	202 x 314	2/					
	211 x 304	6 (f1) oz. 7-1/2 (f1) oz.	0.75/0.25	0.75/0.25	P	P	A vacuum
	307 x 409	1 pt 2 (f1) oz.	0.75/0.25K	0.75/0.25K	P	P	
	404 x 700	1 qt 14 (f1) oz.					
	603 x 700	3 qt 2 (f1) oz.					
Plums, varietal type (a) (sirup packed and water packed), U.S. Standards for Grades	300 x 200	5/	1/				
	211 x 304						
	303 x 406						
	307 x 409						
	401 x 411						
	603 x 700						
Plums, varietal type (b) (sirup packed and water packed) U.S. Standards for Grades	300 x 200	5/	1/				
	211 x 304						
	303 x 406						
	307 x 409						
	401 x 411						
	603 x 700						

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TABLE II. Can sizes and can requirements for fruits and berries (cont'd)

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Prunes, U.S. Standards for Grades	603 x 700	1/	1.00/0.25K	1.00/0.25K	E*	E	Not applicable
			0.75/0.25	0.75/0.25	E*	E	
Raisins, U.S. Standards for Grades	603 x 700	1/	1.00/0.25	0.25	E	E	Not applicable

1/ See 7 CFR for individual product requirement indicated (see 3.4).

2/ When specified (see 6.1) Type c may be used.

3/ Drained weight of 3.4 ounces.

4/ Spray top coat enamel must be used for bodies.

5/ Sirup packed only.

TABLE III. Can sizes and can requirements for vegetables

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Asparagus, U.S. Standards for Grades	300 x 407	1/	0.25	2/	E	E	A vacuum
	303 x 406		1.35	0.25	P	E	
	307 x 409						
	401 x 411						
	603 x 700						
Beans, green and wax, U.S. Standards for Grades	303 x 406	1/	1.00	0.25	P	E	A vacuum
	307 x 409		0.50	0.25	E*	E	
	401 x 411		0.50	0.25K	E*	E	
	603 x 700						
Beans, lima, U.S. Standards for Grades	303 x 406	1/	0.25	0.25	E	E	A vacuum
	307 x 409						
	603 x 700						
Beans, dried with or without pork in sweetened (plain) sauce, JJJ-B-101	300 x 200	3/	0.25	0.25	E	E	5 inch vacuum
	300 x 308		0.50	0.25K	P	E	
	307 x 409						
	401 x 411						
	404 x 700						
	603 x 700						
Beans, dried with or without pork in tomato sauce, JJJ-B-101	300 x 200	3/	0.75	0.25K	P	E	5 inch vacuum
	300 x 308		0.25	0.25	E	E	
	307 x 409		0.75	0.25	P	E	
	401 x 411						
	404 x 700						

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TABLE III. Can sizes and can requirements for vegetables (cont'd)

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Inplate/ECCS plate		Inside enamel		Vacuum reqmts.
			Body	Ends	Body	Ends	
Beets (except Gulf states), U.S. Standards for Grades	211 x 304	1/	50/0.25K	0.50/0.25K	E*	E	A vacuum
	303 x 406		25	0.25	E*	E	
	307 x 409						
	401 x 411						
	603 x 700						
Beets (Gulf states), U.S. Standards for Grades	211 x 304	1/	00/0.25	1.00/0.25	E*	E	A vacuum
	303 x 406		75/0.25K	0.75/0.25K	E*	E	
	307 x 409						
	401 x 411						
	603 x 700						
Carrots, U.S. Standards for Grades	303 x 406	1/	75/0.25K	0.25	P	E	A vacuum
	603 x 700		75/0.25	0.25	P	E	
			25	0.25	E*	E	
			50/0.25K	0.50/0.25K	E*	E	
Corn, sweet, cream style and whole kernel, U.S. Standards for Grades	303 x 406	1/	25	0.25	E	E	A vacuum
	307 x 306 4/						
	307 x 409						
	603 x 700						
Hominy, whole, U.S. Standards for Grades	303 x 406	1/	25	0.25	E	E	A vacuum
	307 x 409						
	401 x 411						
	603 x 700						
Juice, tomato, Type I, U.S. Standards for Grades	202 x 308 5/	1/	75/0.25K	0.25	P	E	5 inch vacuum
	202 x 314 5/		50/0.25K	0.25	EE*	EE	
	307 x 409		50/0.25	0.50/0.25	E	E	
	404 x 700		25	0.25	EE*6/	EE	
			25 2/	0.25	E	E	

TABLE III. Can sizes and can requirements for vegetables (cont'd)

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Juice, tomato, Types II and III, U.S. Standards for Grades	404 x 500	1/	0.75/0.25	0.75/0.25	E	E	5 inch vacuum
	404 x 700		0.25	0.25	EE*6/	EE	
			0.75/0.25K	0.75/0.25K	E	E	
			0.25 2/	0.25	E	E	
Mushrooms, U.S. Standards for Grades	202 x 204	1/	0.75/0.25	0.75/0.25	P	P	A vacuum
	211 x 212		0.50/0.25K	0.25	P	E	
	300 x 400		0.50/0.25K	0.50/0.25K	P	P	
	307 x 510						
	603 x 700						
Okra, U.S. Standards for Grades	211 x 304	1/	1.00/0.25K	0.25	P	E	A vacuum
	211 x 400		0.50/0.25	0.50/0.25	E*	E	
	301 x 411						
	303 x 406						
	307 x 409						
	401 x 411						
Onions, U.S. Standards for Grades	603 x 700						
	211 x 304	1/	1.00/0.25	1.00/0.25	E*	E	A vacuum
	603 x 700		0.75/0.25K	0.75/0.25K	E*	E	
	303 x 406						
Peas, U.S. Standards for Grades	303 x 406	1/	0.25	0.25	E	E	A vacuum
	307 x 409						
	404 x 700						
	603 x 700						

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TABLE III. Can sizes and can requirements for vegetables (cont'd)

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Peas, blackeye, and field, U.S. Standards for Grades	300 x 407	1/	0.25	0.25	E	E	A vacuum
	303 x 406						
	307 x 409						
	603 x 700						
Pimientos, U.S. Standards for Grades	211 x 200	1/	0.50/0.25K 0.75/0.25	0.25 0.25	P P	E E	A vacuum
	300 x 206						
	300 x 407						
	303 x 406						
	307 x 409						
	401 x 411						
Potatoes, sweet, U.S. Standards for Grades	603 x 700						
	404 x 307	1/	1.00/0.25 0.50/0.25K 0.50/0.25	0.25 0.50/0.25K 0.50/0.25	P E*	E E E	3 inch vacuum (lot average)
	401 x 411						
	603 x 700						
Potatoes, white, U.S. Standards for Grades	303 x 406	1/	0.50/0.25 0.25	0.50/0.25 0.25	E E	E E	A vacuum
	307 x 409						
	401 x 411						
	603 x 700						
Pumpkin, U.S. Standards for Grades	303 x 406	1 lb. 1 lb. 13 oz. 6 lb. 10 oz.	0.25 0.50/0.25K	0.25 0.50/0.25K	E* E	E E	A vacuum
	401 x 411						
	603 x 700						
Sauerkraut, U.S. Standards for Grades	303 x 406	1/	1.00/0.25K 1.00/0.25K 0.25	1.00/0.25K 0.25 0.25	P P E*	P E E	A vacuum
	401 x 411						
	603 x 700						

TABLE III. Can sizes and can requirements for vegetables (cont'd)

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Spinach, U.S. Standards for Grades	303 x 406	1/	0.25	0.25	E	E	A vacuum
	401 x 411						
	603 x 700						
Tomatoes, U.S. Standards for Grades	300 x 407	1/	0.75/0.25K 0.50/0.25 0.25 2/	0.25/0.25K 0.50/0.25 0.25	E*	E	3 inch vacuum (lot average)
	303 x 406						
	307 x 409						
	401 x 411						
	603 x 700						
Tomato paste (28 percent salt free solids, Sp. Gr. 1.12), U.S. Standards for Grades	202 x 308 401 x 411 603 x 700	Sp.Gr. 1.12 6 oz. 1 lb. 14 oz. 7 lb.	0.50/0.25K 0.75/0.25 0.25 2/	0.50/0.25K 0.75/0.25 0.25	E*	E	A vacuum
(32 percent salt free solids, Sp. Gr. 1.14)	401 x 411 603 x 700	Sp.Gr. 1.14 1 lb. 15 oz. 7 lb. 2 oz.	0.75/0.25K 1.00/0.25 0.25 2/	0.75/0.25K 1.00/0.25 0.25	E*	E	A vacuum
Tomato puree, Concentration - medium, U.S. Standards for Grades	211 x 400 303 x 406 401 x 411 603 x 700	10-1/2 oz. 1 lb. 1 lb. 13 oz. 6 lb. 9 oz.	0.75/0.25 0.75/0.25K 0.50/0.25 2/ 0.25 2/	0.75/0.25 0.75/0.25K 0.50/0.25 2/ 0.25	E	E	A vacuum

1/ See 7 or 21 CFR for requirement indicated (see 3.4).

2/ Body side seam shall have a high tin fillet.

3/ See referenced product specification for requirement indicated (see 3.4).

4/ Corn, whole kernel, only.

5/ When specified (see 6.1) Type c may be used.

6/ Spray top coat enamel must be used for bodies.

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TABLE IV. Can sizes and can requirements for seafoods

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Clams, PP-C-400 Type I - whole Type II - minced	211 x 400	1/	0.25	0.25	E	E	1/
	300 x 407						
	307 x 113						
	307 x 202						
	307 x 409						
	404 x 700						
Clams, shucked (frozen), PP-C-401	502 x 510	1/ 2/	0.25	0.25	E	E	Not applicable
	603 x 700						
	603 x 812						
	208 x 109						
	307 x 113						
	307 x 201.25-202						
Crab meat, U.S. Standards for Grades	307 x 400	3/	0.25	0.25	EE*	EE	3/
	401 x 411						
	603 x 812						
	301 x 408						
	301 x 411						
	603 x 408						
Oysters, shucked (frozen), PP-O-956	15-1/2 oz. 64 oz.	1/ 2/	0.25	0.25	E	E	Not applicable
	301 x 408						
	301 x 411						
	603 x 408						
	15-1/2 oz. 64 oz.						
	301 x 408						
Salmon, PP-S-31 Style 1 - with skin and bones Style 2 - without skin and bones	405 x 301 x 014.5	1/	0.25	0.25	E	E	1/
	405 x 301 x 014.5						
	405 x 301 x 014.5						
	405 x 301 x 014.5						
	405 x 301 x 014.5						
	405 x 301 x 014.5						
Sardines, PP-S-51	405 x 301 x 014.5	1/	0.25	0.25	E	E	1/
	405 x 301 x 014.5						
	405 x 301 x 014.5						
	405 x 301 x 014.5						
	405 x 301 x 014.5						
	405 x 301 x 014.5						

TABLE IV. Can sizes and can requirements for seafoods (cont'd)

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Shrimp, PP-S-311 Type I - wet pack Type II - dry pack	<u>Types I & II</u>	<u>1/</u>		<u>Type I</u>			<u>1/</u>
	211 x 300		0.50	1.00	EE*	EE	
	211 x 400						
	307 x 113			<u>Type II</u>			
	307 x 400		0.25	0.25	E*	E	
	<u>Type I only</u>						
	202 x 214						
	307 x 409						
	502 x 510						
Tuna, PP-T-771 Form a - solid pack Form b - chunks Form c - flakes Form d - grated	<u>Forms a, b, c&d</u>	<u>1/</u>					<u>1/</u>
	307 x 113		0.25	0.25	E	E	
	401 x 206						
	<u>Form a only</u>						
	211 x 109						

1/ See referenced product specification for requirement indicated (see 3.4).

2/ Unless otherwise specified in the solicitation, contract, or purchase order (see 6.1), friction top recloseable cans shall be used.

3/ See 21 CFR for requirement indicated (see 3.4).

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TABLE V. Can sizes and can requirements for meat items

Product and related specification	Can size	Net contents Qt./pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Bacon, sliced, precooked, MIL-B-44158	401 x 411 603 x 700	1/	0.25	0.25	E	E	1/
Beef chunks, MIL-B-723	401 x 411	1/	0.50/0.25	0.50/0.25	E	E	1/
Chicken or turkey, canned, boned, PP-C-1802 Type I - chicken Type II - turkey	401 x 411	1/	0.50/0.25	0.50/0.25	EE	EE	1/
Chili con carne, EE-C-281	603 x 700	1/	0.25	0.25	E	E	1/
Hamburgers, without gravity, MIL-H-1048	300 x 407	1/	0.25	0.25	E	E	1/
Ham chunks, with juices, MIL-H-44159	401 x 411	1/	0.25	0.25	E	E	1/

1/ See referenced product specification for requirement indicated (see 3.4).

TABLE VI. Can sizes and can requirements for dehydrated items

Product and related specification	Can size	Net contents Qt./pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Applesauce, instant, MIL-A-35045	401 x 411	1/	0.25	0.25	P	P	Gas packed 2/
Beans, green, dehydrated MIL-B-35011	603 x 700	1/	0.25	0.25	P	P	Gas packed 2/
Beans, green, dehydrated, compressed, MIL-B-43930	401 x 411	1/	0.25	0.25	P	P	27 inch vacuum or gas packed 2/
Beef, diced, dehydrated, uncooked, MIL-B-43311	603 x 700	1/	0.25	0.25	P	P	Gas packed 2/
Beef, patties, dehydrated, uncooked, MIL-B-43143	603 x 700	1/	0.25	0.25	P	P	Gas packed 2/
Beefsteak, dehydrated, uncooked, MIL-B-43143	603 x 700	1/	0.25	0.25	P	P	Gas packed 2/
Cabbage, dehydrated, MIL-C-826	401 x 411	1/	0.25	0.25	P	P	Gas packed 2/
Cabbage, dehydrated, compressed, MIL-C-44122	401 x 411	1/	0.25	0.25	P	P	27 inch vacuum or gas packed 2/
Celery, dehydrated, MIL-C-44088	401 x 411	1/	0.25	0.25	P	P	Gas packed 2/
Chili, con carne, dehydrated, cooked, MIL-C-43287	603 x 700	1/	0.25	0.25	P	P	Gas packed 2/

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TABLE VI. Can sizes and can requirements for dehydrated items (cont'd)

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Onions, dehydrated, compressed, MIL-O-43901	401 x 411	1/	0.25	0.25	P	P	27 inch vacuum or gas packed 2/
Parsley, dehydrated, MIL-P-35090	401 x 411	1/	0.25	0.25	P	P	Gas packed 2/
Peas, dehydrated, compressed, MIL-P-43873	401 x 411	1/	0.25	0.25	P	P	27 inch vacuum or gas packed 2/
Potatoes, white, dehydrated, JJJ-P-630	603 x 700	1/	0.25	0.25	P	P	Gas packed 2/
Shrimp, dehydrated, cooked, MIL-S-43145	603 x 700	i/	0.25	0.25	P	P	Gas packed 2/
Soup, dehydrated, beef flavored with noodles and vegetables, MIL-S-43931	401 x 411	1/	0.25	0.25	P	P	27 inch vacuum or gas packed 2/
Soup, dehydrated, chicken and noodles, MIL-S-1049	401 x 411	1/	0.25	0.25	P	P	Gas packed 2/
Soup, dehydrated, cream of potato and cream of onion, MIL-S-35056	401 x 411	1/	0.25	0.25	P	P	Gas packed 2/

TABLE VI. Can sizes and can requirements for dehydrated items (cont'd)

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Soup, dehydrated, green pea, MIL-S-3059	401 x 411 404 x 700	1/	0.25	0.25	P	P	Gas packed 2/
Soup, dehydrated, onion, MIL-S-35046	401 x 411	1/	0.25	0.25	P	P	Gas packed 2/
Soup, dehydrated, tomato-vegetable with noodles, MIL-S-35051	401 x 411	1/	0.25	0.25	P	P	27 inch vacuum or gas packed 2/
Vegetables, mixed, dehydrated, compressed, MIL-V-44145	401 x 411	1/	0.25	0.25	P	P	Gas packed 2/

1/ See referenced product specification for requirement indicated (see 3.4).

2/ Shall have an oxygen content of 2% or less when tested in accordance with the oxygen content test in product specification.

TABLE VII. Can sizes and can requirements for miscellaneous items

Product and related specification	Can size	Net contents Qt./pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Bakery mixes, prepared, MIL-B-44275	603 x 700	1/	0.25	0.25	P	E	Not applicable
Bouillon (soup and gravy base), EE-B-575	401 x 411	1/	0.25	0.25	E	E	Not applicable
Catsup, tomato, U.S. Standards for Grades	300 x 200 303 x 406 307 x 409 401 x 411 603 x 700 603 x 812	2/	0.75/0.25K 0.75/0.25 0.25 3/	0.75/0.25K 0.75/0.25 0.25	E E E	E E E	A vacuum
Chocolate sirup: beverage and topping (cold), MIL-C-35041	603 x 700	1/	0.25	0.25	E	E	Not applicable
Coconut, Z-C-571	401 x 411 404 x 700	11 oz. 1 lb. 3 oz.	0.25	0.25	E*	E	Not applicable
Coffee, HHH-C-571	502 x 308-400 Style 1 or 1b 502 x 602-612 603 x 700	1 lb. 2 lb. 3 lb.	0.25	0.25	P	P	27 inches 4/ 27 inches 4/ 26 inches 4/
Cookie mix, dry, MIL-C-43205	603 x 700	1/	0.25	0.25	P	E	Not applicable

TABLE VII. Can sizes and can requirements for miscellaneous items (cont'd)

Product and related specification	Can size	Net contents Qt./pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Cookie mix, oatmeal chocolate chip, dry, MIL-C-1029	603 x 700	1/	0.25	0.25	P	P	Not applicable
Dessert powder, starch, instant, MIL-D-35033	603 x 700 401 x 411	5 lb.	0.25	0.25	P	P	Not applicable
Juice, grapefruit, instant, MIL-J-35050	401 x 411 401 x 602	1/	0.25	0.25	P	P	15 inch vacuum
Juice, grape, instant, sweetened, MIL-J-43904	401 x 411 401 x 602	1/	0.25	0.25	P	P	15 inch vacuum
Juice, orange, instant, MIL-J-35049	401 x 411 401 x 602	1/	0.25	0.25	P	P	15 inch vacuum
Margarine, canned, MIL-M-10958	603 x 700	1/	0.25	0.25	E*	E	Not applicable
Mayonnaise and salad dressings, Types I and II, EE-M-131	401 x 411	1/	1.00/0.25 0.75/0.25K	1.00/0.25 0.75/0.25K	E* EE*	E EE	Not applicable
Mincement, PP-M-351	603 x 700	1/	1.00/0.25 0.75/0.25K	1.00/0.25 0.75/0.25K	E E*	E E	A vacuum

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TABLE VII. Can sizes and can requirements for miscellaneous items (cont'd)

Product and related specification	Can size	Net contents Qt/pt/lb/oz	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Molasses, U.S. Standards for Grades	401 x 411	2 lb. 5 oz.	0.25	0.25	E	E	Not applicable
	404 x 700	3 lb. 14 oz.					
	502 x 510	4 lb. 8 oz.					
	603 x 700	8 lb. 6 oz.					
Peanut butter, U.S. Standards for Grades	300 x 200	2/	0.25	0.25	P	P	Not applicable
	401 x 411						
Pickles, U.S. Standards for Grades	303 x 406	2/	1.35/0.25	1.35/0.25	E	E	A vacuum
	401 x 411		1.00/0.25	1.00/0.25	E*	E	
	603 x 700						
	603 x 812						
Pie crust mix, prepared, N-P-361	603 x 700	1/	0.25	0.25	P	P	Not applicable
Pie filling, mix, lemon, MIL-P-44019	603 x 700	1/	0.50/0.25K 1.35/0.25	0.50/0.25K 1.35/0.25	EE E	EE E	7 inch vacuum
Pie filling, prepared, lemon, MIL-P-43950	307 x 409	1/	1.00/0.25	1.00/0.25	E*	E	3 inch vacuum
	603 x 700		1.35/0.25	1.35/0.25	E	E	
			0.50/0.25K	0.50/0.25K	EE*	EE	
Relish, pickle, U.S. Standards for Grades	603 x 700	2/	1.00/0.25	1.00/0.25	E*	E	A vacuum
Sauce and gravy mix, MIL-S-43919	401 x 411	1/	0.25	0.25	P	P	Not applicable
			0.20	0.20	E	E	

TABLE VII. Can sizes and can requirements for miscellaneous items (cont'd)

Product and related specification	Can size	Net contents Qt./pt/lb/oz.	Tinplate/ECCS plate		Inside enamel		Vacuum rqmts.
			Body	Ends	Body	Ends	
Syrup, Types I, VI, and VII, JJJ-S-351	401 x 411	2 lb. 6 oz.	0.25	0.25	E	E	Not applicable
	404 x 700	4 lb.					
	502 x 510	4 lb. 10 oz.					
	603 x 700	8 lb. 8 oz.					
Syrup, Types II, III, V, and VIII, JJJ-S-351	401 x 411	2 lb. 4 oz.	0.25	0.25	E	E	Not applicable
	603 x 700	8 lb. 3 oz.					
Topping, dessert and bakery products, frozen or dehydrated, MIL-T-43856	401 x 411	1/	0.25	0.25	P	P	Not applicable
	401 x 509						
	603 x 700						
Water, drinking, canned, emergency, MIL-W-15117	211 x 414	1/	1.00/0.25	1.00/0.25	E	E	25 inch vacuum

1/ See referenced product specification for requirement indicated (see 3.4).

2/ See 21 CFR for requirement indicated (see 3.4).

3/ Body side seam shall have a high tin fillet.

4/ The vacuum determination for coffee shall be performed immediately after packaging.

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3.3.1 Style 1. Style 1 cans shall be round, hermetically sealed, open-top style, with soldered or welded side seam and compound-lined, double-seamed ends. All welded cans with enameled bodies and ends should have interior side seam stripes, unless otherwise specified.

3.3.2 Style 2. The Style 2 can shall be round, open-top style with a one-piece drawn body, and with a hermetically sealed, compound-lined, double-seamed end.

3.3.3 Can opening types.

3.3.3.1 Type b. Type b cans shall be as specified in 3.3.1 except that the body shall have a suitably scored, key-opening band near the top. The scoring shall be carefully controlled so as to insure a score which is deep enough to permit proper opening of the can (removal of tear strip in one continuous band) without impairing the serviceability of the can. Key scoring shall be on the inside of the can. A suitable corrosion-resistant key shall be attached to the can. When specified (see 6.1), Type b can shall be provided with a tight fitting reclosure device.

3.3.3.2 Type c. Type c cans shall be as specified in 3.3.1 or 3.3.2 except that the top shall have a pull tab and suitable scoring for complete removal of the tab to provide a liquid pour opening. A corrosion resistant hand or finger grip shall be affixed to one end of the pull tab. Scoring shall be carefully controlled to permit hand opening without impairing the serviceability of the can. Alternatively, the can may be prepunched, liquid-pour opening completely sealed with a strip of peelable, pressure-sensitive, foil laminated polymeric tape normally used for the product.

3.3.3.3 Type d. Type d cans shall be as specified in 3.3.1 or 3.3.2 except that the top shall have a pull tab and suitable scoring for complete removal of the tab and top panel to form a full panel opening. A corrosion resistant hand or finger grip shall be affixed to one edge of the top panel. The scoring shall be carefully controlled to permit hand opening without impairing the serviceability of the can.

3.3.3.4 Type e. Type e cans shall be as specified in 3.3.1 and 3.3.2 except the top shall have a nondetachable tab and suitable scoring to provide a liquid pour opening when the tab is lifted.

3.4 Can filling and closing. Cans shall be filled and hermetically sealed to comply with the net weight and type of pack requirements specified for the respective product in Tables II through VII. When the product specification is referenced, the specified fill (headspace, percent fill, net weight, and drained weight) and the specified vacuum shall conform to the referenced specification. Products with no vacuum requirement shall be tested for leakage in accordance with 4.3.1. Products with a vacuum requirement shall be

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tested in accordance with 4.3.2. The filled and sealed cans shall be clean, free from rust, dents, paneling, and cable cuts. They shall show no visual evidence of improper closure, improper seams, leakage, or swelling. Side seams shall not show excessive removal of tin coating. Traces of slight removal of coating at the edge of the solder line shall not be considered excessive.

3.5 Preservation. Preservation shall be level A or C as specified (see 6.1).

3.5.1 Level A. The can size, tinplate, and inside enamel shall be as specified in Tables II through VII. Alternatively, wherever the can requirements in Tables II through VII specify 0.25 pound tinplate, and inside enamel for ends, the ends may be fabricated from ECCS plate and fully enameled both inside and outside. For tomatoes and tomato products, listed in Tables III, V, and VII, can ends may be fabricated from ECCS plate which has been fully enameled both inside and outside. Net weight of product and vacuum shall be in accordance with the requirements in the product specifications when provided therein, or in accordance with Tables II through VII. All products, with or without vacuum requirements, shall be tested for leakage and vacuum as specified in 3.4. Can liners, discs, and other interior packaging materials in cans shall be as specified in the applicable commodity specifications. The cans shall be coated on the outside with a coating conforming to Type I or II or when specified, to Type III of TT-C-495 (see 6.1).

3.5.2 Level C. Same as specified in 3.5.1, except that commercial tinplate or electrolytic chromium coated steel ends or ECCS 2-piece cans normally used for the product are acceptable. Tinplated cans do not require commercial exterior coating. The ECCS ends and ECCS 2-piece cans require commercial exterior coating.

3.6 Packing. Packing shall be Level A, B, or C, as specified (see 6.1).

3.6.1 Level A packing. The product, in the quantity and arrangement specified in Table VIII for each can size, as applicable, shall be packed into a snug-fitting fiberboard box, constructed, closed, and reinforced in accordance with Style RSC, V2s of PPP-B-636. Style RSC boxes may be top-opening or end-opening. Each shipping container shall be reinforced with nonmetallic strapping or pressure-sensitive adhesive filament reinforced tape in accordance with the appendix of PPP-B-636. Shipping containers shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class of load specified (see 6.1). When unit loads are strapped, strapping shall be limited to nonmetallic strapping, except for Type II, Class F loads.

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TABLE VIII. Packing requirements for quantity and arrangement of cans per pack (see 3.6.1, 3.6.2, and 3.6.3)

Cans size	No. per case	Length	Number of cans	
			Width	Depth <u>4/</u>
202 x 204	48	4	4	3
202 x 214	48	6	4	2
202 x 308	48	6	4	2
202 x 314	48	6	4	2
208 x 109	96	6	4	4
211 x 109	96	6	4	4
211 x 200	96	6	4	4
211 x 212	24	4	3	2
211 x 300	48	6	4	2
211 x 304	48	6	4	2
211 x 400	48	6	4	2
211 x 414	48	6	4	2
300 x 200	96	6	4	4
300 x 206	48	6	4	2
300 x 308	48	6	4	2
300 x 400	24	4	3	2
300 x 407	24	4	3	2
301 x 411	24	4	3	2
303 x 406	24	4	3	2
307 x 113	48	4	3	4
307 x 201.25	48	4	3	4
307 x 202	48	4	3	4
307 x 306	24	4	3	2
307 x 400	24	4	3	2
307 x 409	24	4	3	2
307 x 510	24	4	3	2
307 x 704	12	4	3	1
401 x 206	24	4	3	2
401 x 206	48	4	3	4
401 x 411	24	4	3	2
401 x 509-510	12	4	3	1
401 x 509-510	24	4	3	2
401 x 602	24	4	3	2
401 x 602	12	4	3	1
404 x 307	24	4	3	2
404 x 414	24	4	3	2
404 x 700	12	4	3	1
502 x 308-400	24 <u>1/</u>	4	3	2
502 x 510	24	4	3	2
502 x 510	6	3	2	1
502 x 602-612	12 <u>2/</u>	4	3	1

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TABLE VIII. Packing requirements for quantity and arrangement of cans per pack (see 3.6.1, 3.6.2, and 3.6.3) (cont'd)

Cans size	No. per case	Length	Number of cans	
			Width	Depth <u>4/</u>
603 x 408	6	3	2	1
603 x 700	6	3	2	1
603 x 700	12 <u>3/</u>	3	2	2
603 x 812	6	3	2	1

1/ Alternatively, arrangement of cans may be 3 in length, 2 in width, and 4 in depth.

2/ Alternatively, arrangement of cans may be 3 in length, 2 in width, and 2 in depth.

3/ Arrangement for 3-lb. coffee cans only.

4/ For Level A and B, when cans are packed in tiers, a full length and width fiberboard pad made of the same material as the box shall be placed between the tiers.

3.6.2 Level B packing. The product, in the quantity and arrangement specified in Table VIII for each can size, as applicable, shall be packed into a snug-fitting fiberboard box, constructed, closed and reinforced in accordance with Style RSC, V3c, V3s, or V4s of PPP-B-636. When the weight of the box and contents are 40 pounds or less, Grade W5s or W5c fiberboard boxes may be used. Style RSC boxes may be top-opening or end-opening. Reinforcement shall be limited to nonmetallic strapping or pressure-sensitive adhesive reinforced tape.

3.6.2.1 Alternate method of packing for Level B. The product, in the quantity and arrangement specified in Table VIII for each can size, as applicable, shall be packed into a snug-fitting fiberboard box constructed and closed in accordance with Style RSC, Type CF (Variety SW) or SF, Class Domestic, Grade 200 of PPP-B-636. The box shall be completely enclosed in a minimum 0.004-inch thick clear polyethylene film conforming to Type IV, Class 4, Grade A, Finish 1 of L-P-378. The polyethylene film may be in the form of a bag, tubing or sheets. The polyethylene wrap shall be heat-shrunk and sealed. Seals shall be effected by means of a mechanical heat weld continuous to the edges of the wrap.

3.6.3 Level C packing. The product, in the quantity and arrangement specified in Table VIII for each can size, as applicable, shall be packed in accordance with the Uniform Freight Classification Rules or National Motor Freight Classification Rules, as applicable, except that the closure of fiberboard boxes shall be in accordance with Method II as specified in the appendix of PPP-B-636.

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3.7 Unit loads (Military agencies). When specified (see 6.1), the product, packed as specified in 3.6.2 and 3.6.3, shall be arranged in unit loads in accordance with MIL-L-35078 for the Type and Class of load specified. When unit loads are strapped, strapping shall be limited to nonmetallic strapping, except for Type II, Class F loads.

3.8 Labeling and marking.

3.8.1 Civil agencies.

3.8.1.1 Unit containers. Any commercial labeling and additional labeling, as specified, that complies with the Federal Food, Drug, and Cosmetic Act and Regulations Promulgated Thereunder is acceptable.

3.8.1.2 Shipping containers. Shipping containers shall be marked in accordance with the requirements of FED-STD-123 and such other information, as specified, by individual agencies. Marking of end-opening boxes shall have the same relationship to the contents as for top-opening boxes.

3.8.2 Military agencies.

3.8.2.1 Cans. Cans shall be labeled in accordance with MIL-L-1497.

3.8.2.2 Shipping containers. Shipping containers shall be marked in accordance with MIL-STD-129. Marking of end-opening boxes shall have the same relationship to the contents as for top-opening boxes.

3.8.2.3 Unit loads. Unit loads shall be marked in accordance with MIL-L-35078.

3.9 Plant qualification. The product shall be prepared, processed, and packaged in establishments meeting the requirements of Title 21, Code of Federal Regulations, Part 110, "Current Good Manufacturing Practice in Manufacturing, Processing, Packaging or Holding of Human Foods," and the plant sanitation requirements of the appropriate Government inspection agency.

4. QUALITY ASSURANCE PROVISIONS

4.1 Contractor's responsibility. Inspection and acceptance by the USDA shall not relieve the contractor of obligation and responsibility to deliver a product complying with all the requirements of this specification. The contractor shall assure product compliance prior to submitting the product to the USDA for any inspection.

4.1.1 Certificate of compliance. Where certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

4.2 Quality conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with MIL-STD-105.

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4.2.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced documents and standards unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document.

4.2.2 Can interior enamel coating examination. The can interior enamel coating shall be examined for the defects listed in Table IX. The lot size shall be expressed in cans. The sample unit shall be one can. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 1.5 for major defects and 6.5 for minor defects.

TABLE IX. Can interior enamel coating defects (when applicable)

Category		Defects
Major	Minor	
101		Missing
102		Blistered or softened areas which can be peeled by fingertip (not fingernail abrasion)
	201	Bare areas (other than scratches) <u>1/</u>
	202	Inside side seam not striped (when designated by asterisk in canned item table)
	203	Dirty, stained or smeared with foreign material
103		Internal rust stains

1/ A line of solder along the side seam shall not be considered a defect.

4.2.3 Can condition examination. Examination of filled and sealed cans shall be in accordance with U.S. Standards for Condition of Food Containers, except that inspection for labeling for Military agencies shall be in accordance with MIL-L-1497.

4.2.4 Can closure examination. Can closure shall be examined visually and by teardowns in accordance with the can manufacturer's requirement and CFR 21, Part 113, Subpart D, or CFR 9, Part 318, Subpart G, as applicable.

4.2.5 Can opening examination. Can openings shall be examined for the defects listed in Table X. The lot size shall be expressed in cans. The sample unit shall be one filled and sealed can. The inspection level shall be S-2 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.

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TABLE X. Can opening defects

Category Major	Minor	Examine	Defects
101		Type b	Scored band does not permit can to be opened in one continuous strip
102			Key does not fit tab
103			Tab of opening band insufficient to provide accessibility to key
	201		Reclosure (when specified) fits loosely
104		Type c	Scoring does not permit tab to be removed completely
105		Type d	Scoring does not permit top panel to be removed completely
106		Type c or d	Hand or finger grip lifted and hermetic seal broken
107		Type e	Scoring not adequate to provide pour opening when tab is lifted
108			Tab detaches from can

4.2.6 Can leakage examination. Cans shall be examined for leakage in accordance with 4.3.1. Examination is applicable only to cans not required to have a vacuum in Tables II through VII. The sample unit shall be one filled and sealed can. The lot size shall be expressed in units of cans. 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.

4.2.7 Can vacuum examination. Can vacuum shall be examined for the defects listed in Table XI. The lot size shall be expressed in cans. The sample unit shall be one filled and sealed can. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 1.5.

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TABLE XI. Can vacuum defects

Category Major	Defect
101	Vacuum less than specified (for cans having a numerical vacuum requirement) <u>1/</u> <u>2/</u>
102	No vacuum (for cans required only to have "A vacuum") <u>1/</u>

1/ Cans shall be tested as specified in 4.3.2 for conformance to the vacuum requirements in Tables II through VII.

2/ When the vacuum is specified as a lot average requirement, any lot average less than specified shall be cause for rejection of the lot.

4.2.8 Shipping container examination.

4.2.8.1 Level A and B packing. Shipping containers shall be examined for defects in construction, packing, closure, and reinforcement (when applicable) in accordance with the appendix of PPP-B-636. In addition, the following defects shall be classified as follows:

Major: National stock number, item description, contract number, or date of pack markings missing, incorrect, or illegible;
Reinforcement with other than nonmetallic strapping or tape;
Dimensions of pads not as specified;
Interior packing with fiberboard liner or pads not as specified;
Film does not completely enclose container or is not shrunk or sealed as prescribed;

Minor: Other required markings missing, incorrect, or illegible;
Arrangement or number of cans not as specified.

4.2.8.2 Level C packing. Shipping containers shall be examined for the marking, and reinforcement (when applicable) defects listed in 4.2.8.1. The lot size shall be expressed in shipping containers. The sample unit shall be one filled and sealed shipping container. 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 minor defects.

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4.2.9 Unit load inspection. Inspection of unit loads shall be in accordance with the quality assurance provisions of MIL-L-35078.

4.3 Methods of inspection.

4.3.1 Leakage test. The seams of the filled and closed cans shall be examined as follows: Submerge can in water contained in a vacuum desiccator, Mead tester, or equivalent device, and draw a vacuum of 10 inches of mercury (atmospheric pressure of 29.9 inches) for thirty seconds and observe for leakage. A leak consists of steady progression of bubbles. Isolated bubbles that can be caused by the release of air entrapped in the double seam are not considered as signs of leaks.

4.3.2 Vacuum test. After processing, sample cans shall be selected which are free of dents or other visible damage. The cans and contents shall be allowed to reach a temperature of $75^{\circ} \pm 5^{\circ}\text{F}$ (exception: Coffee, Roasted and Ground, which shall be examined for vacuum within 1 minute after closure subsequent tests for hermetic seals on Coffee, Roasted and Ground shall be conducted in accordance with 4.3.1). The vacuum readings shall then be taken with a puncture-type vacuum gauge, making the puncture as near as possible to the double seam to minimize error due to distortion of the end. Vacuum shall mean that there is a perceptible movement of the indicator needle of the vacuum gauge. For normal inspection purposes, a correction of 1 inch of mercury vacuum shall be added to the gauge reading for each 1,000 feet above sea level at which the determination is made. If greater accuracy is considered necessary, sample cans shall be submitted to a laboratory for vacuum determination corrected to standard conditions (68°F and 29.9 inches of mercury). Correction for gauge and headspace errors shall be included. When reporting results for cans with a numerical vacuum requirement, the vacuum shall be reported to the nearest inch.

4.3.3 Tin coating weight test. Tin coating weights shall be determined by any method specified in PPP-C-96.

5. PACKAGING

This section is not applicable to this specification.

6. NOTES

6.1 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

- a. Title, number, and date of this specification.
- b. When other than a certificate of compliance is required for K plate or ECCS plate (see 3.2.2, 3.2.2.1, and 3.2.2.2).
- c. When Type c cans may be used (see Tables II and III).

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- d. When other than friction tape recloseable cans are required (see Footnote 2/ of Table IV).
- e. When Type b cans require reclosure device (see 3.3.3.1).
- f. Selection of applicable levels of preservation and packing (see 3.5 and 3.6).
- g. When Type III exterior coating for cans is required (see 3.5.1).
- h. Type and class of unit load when unit loading is specified (see 3.6.1 and 3.7).

6.2 Appropriate level of pack. Based on the conditions known or expected to be encountered during shipment, handling, and storage of the specific item being procured, the procuring activity should select the appropriate level of pack in accordance with the criteria established in AR 700-15/NAVSUPINST 4030.28/AFR-71-6/MCO 4030.33A/DLAR 4145.7.

6.3 Trade name (common nomenclature). Trade names when applicable for can sizes specified in Tables II through VII are as follows:

<u>Can size</u>	<u>Trade name</u>
202 x 204	2Z Mushroom
202 x 214	5Z Baby Food
202 x 308	6Z Jitney
202 x 314	6-1/2Z
211 x 109	1/4 lb. Tuna
211 x 210	211 Baby Food
211 x 200	4Z Pimiento
211 x 212	4Z Mushroom
211 x 300	8Z Short
211 x 304	8Z Tall
211 x 400	No. 1 Picnic
300 x 206	7Z Pimientos
300 x 400	8Z Mushroom
300 x 407	No. 300
301 x 411	No. 1 Tall
303 x 406	No. 303
307 x 113	1/2 lb. Tuna
307 x 306	No. 2 Vac.
307 x 400	No. 95
307 x 409	No. 2
307 x 510	Jumbo
307 x 704	Quart Olive
307 x 710	32Z (Quart)
401 x 206	No. 1-1/4 (Veg.)
401 x 411	No. 2-1/2
404 x 307	No. 3 Vac.
404 x 414	No. 3
404 x 700	No. 3 Cyl (46Z)

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<u>Can size</u>	<u>Trade name</u> (cont'd)
502 x 510	No. 5
603 x 408	No. 5 Squat
603 x 700	No. 10
603 x 812	No. 12 (Gal.)

6.4 Determination of metallic weights. A typical method for determining metallic chromium and chromium oxide weights for ECCS plate is described in the annexes of ASTM Designation A657-74.

6.5 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of the specification or regulation (see 3.2).

MILITARY INTERESTS:

Custodians:

Army - GL
Navy - SA
Air Force - 50

Review Activities:

Army - MD, TS
Navy - MC
DP - SS

CIVIL AGENCY COORDINATING ACTIVITIES:

USDA-FV

PREPARING ACTIVITY:

Army - GL

Project No. 89GP-0124

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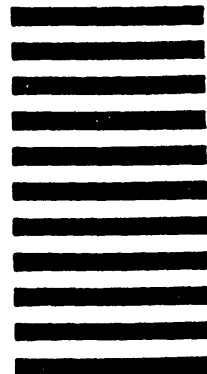
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3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
		<input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> OTHER (Specify): _____	
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7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
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