

INCH-POUND

MIL-L-1497F

30 March 1989

SUPERSEDING

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28 December 1973

LABELING OF METAL CANS FOR SUBSISTENCE ITEMS

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers labeling of metal cans for subsistence items used by the Department of Defense.

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 document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.1).

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

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

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(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS)

Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder

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

U.S. DEPARTMENT OF AGRICULTURE (USDA)

Meat and Poultry Inspection Regulations

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

2.2 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 General.

3.1.1 Techniques of labeling. Unless otherwise specified herein, techniques of labeling shall refer to the usual commercial practices.

3.1.1.1 Stamping. Stamping as hereinafter referenced shall indicate any process of applying marking ink to cans other than lithography. The item nomenclature stampings on cans shall not exceed the use of 14 capital letters per line of stampings.

Examples:

<u>Item</u>	<u>Nomenclature stamping</u>
Apricots, freeze dehydrated	APRICOTS FRZ DHY
Beans, with pork, tomato sauce	PK AND BNS TOM
Spinach	SPINACH
Jam, peach	PEACH JAM
Tea, instant	TEA INST
Sardines, vegetable oil	SARD/VEG OIL
Maple syrup, imitation	MAPLE SYRUP IMIT

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3.1.1.2 Embossing or impressing. Embossing or impressing shall be carefully controlled to result in legible markings without impairing the cans. The raised portions of embossed characters shall have no sharp edges.

3.1.1.3 Non-contact printing. The use of ink-jet imprinting for date, lot code, and nomenclature marking is allowed on flat surfaces of can ends. Markings shall be permanent, be contrasting, and meet the requirements of 3.2.1.3.

3.1.2 Type. Lithography and stamping shall be in bold Gothic capital letters; no letter shall be less than 8 point in size. All characters shall be sharply outlined and legible. For cans with exterior coating the ink shall be black. When the lithography or stamping method is used for marking of uncoated cans (without exterior can coating), the ink used may be any color which reflects a definite contrast and conforms to all of the section 3 requirements.

3.1.3 Corrosion. Adhesive, pickup gums, marking inks, and label stocks shall contain no ingredients which will accelerate or increase corrosion of the can. When specified (see 6.1), a certificate of compliance indicating that the material has been used previously without complaint by using Military agencies will be accepted as complying with the requirements.

3.1.4 Volatile and carcinogenic materials. Materials applied to the can or cover shall be free of carcinogenic or volatile elements and shall impart no odor, taste, or migrate into or affect the contents of the can.

3.1.5 Other marking information. With exceptions noted in 3.2.1.2 and table I, cans may have state or locally required information, or canners identification embossed, impressed, or stamped on the end.

3.1.6 General labeling requirements. Unless otherwise specified, the labeling of all canned subsistence items shall conform in detail to the Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder.

3.2 Labeling of cans for overseas shipment. Labeling of cans for overseas shipment shall be in accordance with 3.2.1 or 3.2.2 as specified (see 6.1).

3.2.1 Method 1.

3.2.1.1 Cans supplied from stocks existing on date of award of contract. When cans are supplied from stocks existing on date of award of contract, the name of the product or the abbreviation thereof (see 3.1.1.1) shall be stamped on the body or one end of the can. However, cans which are coated after award of contract shall be stamped after coating. Should cans have the name of the product or abbreviation thereof in accordance with 3.1.1.1 embossed or impressed in the end of the can, no further labeling will be necessary.

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3.2.1.2 Cans processed subsequent to award of contract. When cans are processed (or filled and sealed) subsequent to award of contract, the label information specified in 3.2.1.2.1, 3.2.1.2.2, 3.2.1.2.3, 3.2.1.2.3.1 and 3.2.1.2.4, as applicable, shall be shown in accordance with table I on the body or one end of the can. However, should a standard of identity exist for the product, the ingredient statement may be omitted.

TABLE I. Method 1 marking

Category of product (canned)	Acceptable marking
Meats, meat products, poultry and poultry products	Lithographing, stamping <u>2/</u>
Citrus and pineapple fruits and juices, pickles, and relishes, mustard, salad dressing, sour cherries, and cranberries	Lithographing stamping <u>1/</u>
Baked products	Lithographing, stamping <u>1/</u>
Others	Lithographing, stamping <u>1/</u>

1/ The legend, date, and any special identification of lots the packer may wish to use, or other information required by state or local laws, may be embossed, impressed, or stamped on the body or on one end of the can provided the cans are carefully embossed or impressed.

2/ Stamping is not acceptable for canned meats, meat products, poultry, and poultry products, except date of pack (day, month, year) and net weight may be stamped on cans which are packed on a catch weight basis.

3.2.1.2.1 Canned meats and canned meat products. In addition to any special requirements contained in the commodity specifications and in this specification, the labeling of canned meats and meat products shall conform in detail to Regulations Governing the Meat Inspection of the U. S. Department of Agriculture. Stamping is not acceptable for canned meats, except date of pack (day, month, year) and net weight may be stamped on cans which are packed on a catch weight basis.

3.2.1.2.2 Canned poultry and canned poultry products. In addition to any special requirements in the commodity specification and in this specification, the labeling of canned poultry and canned poultry products shall conform in

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detail to Regulations Governing the Grading and Inspection of Poultry and Edible Products Thereof and the United States Specifications for Classes, Standards, and Grades with Respect Thereto of the U. S. Department of Agriculture. Stamping is not acceptable for canned poultry and poultry products, except date of pack (day, month, year) and net weight may be stamped on cans which are packed on a catch weight basis.

3.2.1.2.3 All other canned subsistence items. Except as otherwise specified (see 3.2.1.2.3.1), in addition to any special requirements contained in, and unless otherwise specified by the commodity specification and this specification, the labeling of all other canned subsistence items shall conform in detail to the Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder.

3.2.1.2.3.1 Seasonal packs of canned fruit and vegetable items. In addition to any special requirements contained in, and unless otherwise specified by the commodity specification and this specification, the labeling of seasonal packs of canned fruit and vegetable items shall conform to the requirements of 3.2.1.1. Where an item is processed in various forms, i.e., whole, halves, quarters, and slices, the particular form shall be a necessary part of the nomenclature stamping. In addition, when canned fruit items are intended for use as ration components, labeling shall include the contractor's name and address.

3.2.1.2.4 Date of pack (meat and meat products, poultry and poultry products, and canned components of combat operational rations only). The date of pack (day, month, year) shall be embossed, impressed, or stamped on the body or one end of the can. The date shall be indicated as specified in 3.2.1.2.4.1.

3.2.1.2.4.1 Date marking. The day of the month shall be the first figure or the first two digits shown; then the numerical equivalent of the month, or the abbreviation shall appear; then the last digit of the year of pack shall appear. If the date is applied by embossing, 5 characters, including spaces, if necessary, shall be used to indicate the date. If the dating results in 4 figures and one space, the space shall be left between the figure for the day and month. Stamped dates shall, in every case, have a space between the figure for the day, month, and year.

Examples:

4 Apr 88	Embossed 4 4 8
4 Apr 88	Stamped 4 4 8
8 Dec 89	Embossed 8 12 9
8 Dec 89	Stamped 8 12 9
25 Jul 90	Embossed 25 70
25 Jul 90	Stamped 25 7 0
27 Nov 91	Embossed 27111
27 Nov 91	Stamped 27 11 1

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Alternatively, the date of pack may be noted using the following code:

- (a) Day of the month - the letters (block capitals) of the alphabet, A through Z, shall be used to indicate the first through the 26th day, and 1 through 5 for the 27th through the 31st day.
- (b) Month - the letters (block capitals) of the alphabet, A through L, shall be used for the first through the 12th months.
- (c) The last digit of the year shall be used to indicate the year.

The code shall be on a line alone or shall be the first three characters of one of the lines.

Examples:

4 Apr 88	DD8
8 Dec 89	HL9
25 Jul 90	YG0
27 Jul 91	1G1

Alternatively, the date of pack may be noted by using the following "Julian" code. The first digit shall be the last digit of the year. The next three digits shall indicate the day of pack. The day of pack shall be the digits representing the day of the ordinary calendar year which consists of 365 days, with leap year containing 366 days.

Examples:

9 Jan 88	8009
4 Apr 89	9094
8 Dec 90	0343
25 Jul 91	1206

3.2.1.3 Marking fastness requirements. Markings shall meet the requirements of 3.2.1.3.1 through 3.2.1.3.5.

3.2.1.3.1 Smear resistance. The markings on the can or label shall not smear when tested by rubbing with moderate pressure with a dry finger after allowing the markings to dry for at least 12 hours.

3.2.1.3.2 Abrasion resistance. The markings on cans which have been stamped or lithographed shall be legible after 50 cycles of abrasion when tested as specified in 4.3.1.

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3.2.1.3.3 Water resistance. The markings on the can shall be legible after exposure to boiling water when tested as specified in 4.3.2 (not required for nonprocessed food cans, or cans which are marked or labeled after processing).

3.2.1.3.4 Salt water resistance. Markings on the can or label shall be legible after immersion in salt water as specified in 4.3.3. The tested specimens shall then be air dried for not less than 4 hours and shall withstand at least five abrasion cycles as specified in 4.3.1 without loss of legibility.

3.2.1.3.5 High temperature resistance (tray pack items). Markings on the can or label shall be legible when tested as specified in 4.3.4.

3.2.2 Method 2.

3.2.2.1 Commercial labeling. Commercial labeling other than paper labels will be acceptable.

3.2.2.2 Paper labels. When specified (see 6.1 and 6.2.2.1), commercial labels including paper labels will be acceptable.

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 requirements of this specification.

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

4.2.1 Can labeling examination. The filled and sealed cans shall be examined for the defects listed in table II. The lot size shall be expressed in cans. The sample unit shall be one filled and sealed can. The inspection level shall be I 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.

TABLE II. Can label defects

Defects	Category	
	Major	Minor
Not specified method	101	
Item nomenclature or directions for use (if specified) missing, incorrect, or illegible	102	
Additional information missing, incorrect, or illegible		201
Lithographed or stamped letters not required size		202

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TABLE II. Can label defects (cont'd)

Defects	Category	
	Major	Minor
Lithographed or stamped letters not black <u>1/</u>		203
Markings smear (see 3.2.1.3.1)		204
Embossing or impressing (when an acceptable method) causes can or tinplate fracture	103	
Paper label (when permitted):		
Label torn or scratched so as to obliterate any of the markings on the label	104	
Label not properly glued to can, i.e., label raised or peeling back from edges or corners		205

1/ For coated cans only (see 3.1.2).

4.2.2 End item testing. The end item (as applicable) shall be tested for the characteristics specified in 3.2.1.3.2, 3.2.1.3.3 and 3.2.1.3.4, and 3.2.1.3.5. The lot shall be expressed in units of cans and the sample unit shall be 4 square inches of labeled area cut from a can. The inspection level shall be S-1 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 for each test characteristic. Test requirements shall be unit requirements. Any test results not in conformance with requirements shall be considered a defect.

4.3 Methods of inspection.

4.3.1 Abrasion resistance. Abrasion resistance shall be determined as follows: Cut a test panel approximately 1 inch in width and 4 or more inches in length from a marked can with the line of lettering 1/4 inch from the end, except that when the can is less than 4 inches in length or diameter, the maximum possible length dimension shall be cut from the can for this test. The marking shall have dried at least 24 hours. Fill a container to a depth of 4 inches with Ottawa sand (100 to 150 mesh). The sand shall have been previously conditioned at 50 ± 2 percent relative humidity and $73^\circ \pm 3.5^\circ\text{F}$. Under the same conditions of temperature and relative humidity, the strip suitably marked shall be pushed endwise into the sand then withdrawn in such a way that the lettering under test passes through 3 inches of sand on each stroke. Each cycle of inserting and withdrawing shall take approximately 1 second. Legibility of markings shall be observed after 50 cycles of abrasion have been accomplished.

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4.3.2 Boiling water test. Test panels prepared as specified in 4.3.1 with suitable lettering shall be immersed in boiling water. The panel shall be exposed to this treatment for 1 hour. Legibility of the markings shall be observed after this treatment.

4.3.3 Salt water exposure. Test panels prepared as specified in 4.3.1 shall be immersed in a 5-percent solution of salt (NaCl) maintained at $77^{\circ} \pm 2^{\circ}\text{F}$. After exposure for one week, remove the strip and allow to dry.

4.3.4 Baking test (tray pack items). Test panels prepared as specified in 4.3.1 shall be baked in a 350°F oven for 60 minutes.

5. PACKAGING

There are no applicable requirements.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1).
- c. When a certificate of compliance is desired (see 3.1.3).
- d. Method of labeling required on cans for overseas shipment (see 3.2.1 and 3.2.2).
- e. Whether for domestic or overseas shipment, or for combat operational rations.
- f. When paper labels are acceptable (see 3.2.2.2).

6.2 Methods applicable to overseas labeling.

6.2.1 Method 1. Method 1 should be used when a high degree of water resistance is desired and when extreme handling and climatic conditions and extended outside storage are anticipated.

6.2.2 Method 2. Method 2 should be used when a moderate degree of water resistance is desired and when extreme handling and climatic conditions and extended outside storage are not anticipated.

6.2.2.1 Paper labels. Paper labels may be used when it is known that shipping and handling will be under cover and storage will be in warehouse or other structures providing equivalent protection from the weather.

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6.3 Subject term (key word) listing.

Marking
Stamping
Lithographing
Embossing

6.4 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the change.

Custodians:

Army - GL
Navy - SA
Air Force - 50

Preparing activity:

Army - GL
(Project 89GP-0129)

Review activities:

Army - MD, TS
Navy - MC
DP - SS

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