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JOINT ARMY-NAVY SPECIFICATION

COATING, EXTERIOR, CAMOUFLAGE AND RUST-INHIBITING (FOR PROCESSED AND NONPROCESSED FOOD CANS)

Army Number 3-209

Navy Number 42C32

This specification was approved by the War Department and the Navy Department for use of procurement services of the Army and the Navy.

A. APPLICABLE SPECIFICATIONS

A-1. The following specifications, of the issue in effect on date of invitation for bids, form a part of this specification.

U. S. ARMY SPECIFICATION

3-1—Paints and Related Materials, General Specification for Inspection and Test, Including Color Card Supplement

NAVY DEPARTMENT SPECIFICATION

General Specifications for Inspection of Material[1]

FEDERAL SPECIFICATION

TT-P-141—Paint, Varnish, Lacquer, and Related Materials General Specifications for Sampling and Test Methods.

B. TYPES

B-1. Exterior coatings, covered by this specification, shall be suitable for use as a rust-inhibiting and camouflage coating on the exterior of food cans, and shall be of the following types as specified in the contract or order (see par. H-2):

Type I.—For application on processed food cans made of 0.50-pound fused electrolytic tin plate or commercial 1.25-pound hot-dipped tin plate.

Type II.—For application on nonprocessed food cans made of 0.50-pound fused electrolytic tin plate, commercial 1.25-pound hot-dipped tin plate, or chemically-treated steel.

C. MATERIAL AND WORKMANSHIP

C-1. *Material.*—The manufacturer is given latitude in the selection of material hereinafter specified. The final product shall meet the requirements of this specification.

C-2. *Workmanship.*—The coating on the cans shall be smooth and free from defects which may affect the serviceability or general appearance of the cans.

[1] Applicable only to Navy purchases.

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D. GENERAL REQUIREMENTS

D-1. Before the coating may be applied to the cans, approval of the formulations shall be obtained from the Office of The Quartermaster General, Washington 25, D. C., for the Army; Bureau of Supplies and Accounts, Navy Department, Washington 25, D. C., for the Navy.

D-2. *Color.*—The color shall be olive drab and shall approximate color No. 319 of color card supplement to U. S. Army Specification 3-1.

D-3. *Printing.*—The printing shall be clear and legible. When printing is required on chemically-treated steel parts, it shall be applied on the coated surface. Ink used for printing shall adhere firmly to the surface and shall withstand all tests incorporated in this specification.

D-4. *Consistency.*—The coating shall have such a consistency that when thinned as recommended by the manufacturer it shall be suitable for roller-coating on thin-gaged tin plate as commonly used in the manufacture of food cans.

D-5. *Appearance.*—The coating on the can shall level out to a smooth continuous film and shall be free of blisters, orange peel, or pebble, and other film irregularities. However, mottling of the coating caused by the roller coating machine due to the small percentage of pigment present, will be allowed.

D-6. *Application and drying.*—The coating when reduced for roller-coating shall be applied at dry film weight of not less than 1.5 mg. per square inch except for chemically-treated steel parts on which the coating shall not be less than 3.0 mg. per square inch. The coating shall dry to a hard film when baked at the high temperature commonly used by the can companies in the preparation of their roller-coated stock for the fabrication of food cans.

D-7. *Gloss.*—The gloss of the coating should be within range of 15-50 when measured on a 60° Gardner glossmeter. Coated containers having a gloss range of up to 80 shall not be cause for rejection. Continuous effort shall be made to obtain as low gloss rating as possible.

D-8. *Composition.*—

D-8a. *Volatile content.*—The volatile content of the coatings shall contain no benzol (benzene), chlorinated compounds nor any hydrolizable or toxic compounds.

D-8b. *Nonvolatile content.*—

D-8b(1). *Vehicle.*—The nonvolatile vehicle of the coatings shall be composed of a heat-convertible phenolic resin combined with suitable oils or plasticizing material.

D-8b(2). *Pigmentation.*—The pigmentation shall be opaque enough to eliminate the bright tinned surface of the can, but shall be translucent enough so that the printing describing the contents of the can, shall show through the coating clearly and legibly. Where chemically-treated parts are used, an opaque coating shall be applied to give complete hiding.

D-9. *Flexibility.*—The coating shall withstand the forming procedure used in the fabrication of food cans, without damage.

D-10. *Adhesion.*—The coating as used on a processed or nonprocessed food can when baked according to methods used by the can manufacturer, shall show good adhesion to the base plate, when tested at a temperature ranging from 65° to 100° F. A ribbon cut in accordance with the requirements of U. S. Army Specification 3-1, shall not show chipping nor flaking.

D-11. *Salt-spray resistance.*—When tested as described in paragraph F-3c, the coated surface shall be at least 90 percent free from corrosion.

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D–12. *Accelerated weathering.*—When tested as specified in paragraph F–3d, the coating shall show no chalking. Slight fading of the coating will be permitted.

E. DETAIL REQUIREMENTS

E–1. *Canning operation conditions.*—

E–1a. *Type I.*—The coated cans, during the canning operations, shall not be subjected to any handling or processing procedure which will appreciably reduce their corrosion resistance, but the coating shall withstand processing for at least four hours at a temperature of not less than 250° F, without showing appreciable softening or other failures when examined at room temperature.

E–1b. *Type II.*—The coated cans, during the filling operation, shall not be subjected to any handling or filling procedure which will appreciably reduce their corrosion resistance.

F. METHODS OF SAMPLING, INSPECTION, AND TESTS

F–1. *Sampling.*—Samples of the coating materials may be selected at any time by the Government inspector and either tested or reserved for testing to determine conformance with the requirements of this specification. Sufficient and representative samples of the coated cans shall be taken to represent the lot to be tested.

F–2. *Inspection.*—The finished coated cans shall be inspected to determine compliance with the requirements of this specification. Scratches, resulting from normal handling and double seaming operation will not be cause for rejection.

F–3. *Tests.*—

F–3a. *Preparation of test panels.*—Panels shall be cut from coated cans, made of 0.50-pound fused electrolytic tin plate, commercial 1.25-pound hot-dipped tin plate, or chemically-treated steel. When preparing panels from coated cans, care should be taken that the coated surface is free from visible scratches and nicks. The panels used for salt spray or accelerated weathering test shall be waxed around the edges as described in U. S. Army Specification 3–1.

F–3b. Gloss and adhesion shall be tested as described in U. S. Army Specification 3–1.

F–3c. *Salt spray.*—Panels cut from coated cans and prepared as described in paragraph F–3a, shall be subjected to 200 hours exposure in a standard salt-spray machine in accordance with Method 606 of Federal Specification TT–P–141.

F–3d. *Accelerated weathering.*—Panels cut from coated cans and prepared as described in paragraph F–3a, shall be subjected to 200 hours exposure when tested in accordance with Method 615.1 or 615.2 of Federal Specification TT–P–141.

G. PACKAGING, PACKING, AND MARKING FOR SHIPMENT

G–1. There are no packaging, packing or marking requirements applicable to this specification.

H. NOTES

H–1. Requests, requisitions, schedules, and contracts or orders should contain the title of the specification, the number and the date.

H–2. Requests, requisitions, schedules, and contracts or orders should specify the type of coating required (see par. B–1).

H–3. To obtain approval of coating formulations, manufacturers should submit sample cans coated on production type equipment, as well as cans tested in accordance with this specification, together

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with a laboratory report indicating that coatings on the tested cans are equal to or better than the requirements of this specification; and in addition, a copy of formula break-down and bill of materials stating the necessary raw materials and quantities required, for formulating 1,000 gallons of coating. All sample cans, tested and submitted, should have a film thickness as specified in paragraph D–6. Approval of formulation will be based on the performance requirements of this specification as well as the type of materials utilized in the formulation.

H–4. Copies of Joint Army-Navy specifications, and Federal specifications (required for Army purchases) and U. S. Army specifications may be obtained as indicated in the "Index of the United States Army, Joint Army-Navy and Federal Specifications Used by the War Department." Copies of this index may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Agencies within the War Department will obtain copies of Joint Army-Navy, United States Army and Federal specifications through established War Department channels. Both the title and identifying symbol number should be stipulated when requesting copies of specifications.

H–5. Copies of Joint Army-Navy specification and Federal specification (required for Navy purchases) and Navy Department specifications may be obtained upon application to the Bureau of Supplies and Accounts, Navy Department, Washington 25, D. C., except that Naval activities should make application to the Supply Officer in Command, Naval Supply Depot, Bayonne, N. J. Both the title and identifying symbol number should be stipulated when requesting copies of specifications.

H–6. Copies of this Joint Army-Navy specification (for Army purchases) may be obtained from the following points:

Jersey City Quartermaster Depot, 31 Exchange Pl., Jersey City 2, N. J.
Chicago Quartermaster Depot, 1819 West Pershing Rd., Chicago 9, Ill.
California Quartermaster Depot, Clay and 15th Sts., Oakland 4, Calif.
San Antonio Army Service Forces Depot, Grayson St. Station, San Antonio, Tex.
Kansas City Quartermaster Depot, Kansas City 1, Mo.
Philadelphia Quartermaster Depot, 2800 South 20th St., Philadelphia 45, Pa.
Jeffersonville Quartermaster Depot, Jeffersonville, Ind.

H–7. Copies of this Joint Army-Navy specification (for Navy purchases) may be obtained as indicated in paragraph H–5.

CANCELLED

Notice.—When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

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NOTE:

Copies of this specification may be obtained from Commanding General, Aberdeen Proving Ground, Aberdeen,

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