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SUPERSEDING
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MILITARY SPECIFICATION

COATING COMPOUND, BITUMINOUS, EMULSION TYPE, COAL-TAR BASE

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

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers emulsified coal-tar coating compound to be used as a protective weather coat for bituminous systems coating metal surfaces.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. Unless otherwise specified, the following specifications, standards, and handbooks of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation, form a part of this specification to the extent specified herein.

SPECIFICATIONS

FEDERAL

PPP-P-1892 - Paint, Varnish, Lacquer, and Related Materials, Packaging, Packing, and Marking of.

MILITARY

MIL-L-2104 - Lubricating Oil, Internal Combustion Engine, Tactical Service.

STANDARDS

FEDERAL

FED TEST METHOD STD No. 141 - Paint, Varnish, Lacquer, and Related Materials; Methods of Inspection, Sampling, and Testing.

FED STD 313 - Material Safety Data Sheets, Preparation and the Submission of.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer (Code 156), Naval Construction Battalion Center, Port Hueneme, CA 93043, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC 8030

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

2.1.2 Other Government documents, drawings, and publications. The following other Government documents form a part of this specification to the extent specified herein.

LAWS AND REGULATIONS:

29 CFR 1900-1999 - Occupational Safety and Health Administration (OSHA), Department of Labor.

(The Code of Federal Regulations (CFR) and the Federal Register (FR) are for sale on a subscription basis by the Superintendent of Documents, US Government Printing Office, Washington, DC 20402. When indicated, reprints of certain regulations may be obtained from the Federal agency responsible for issuance thereof.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the current DODISS and the supplement thereto, if applicable.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D95 - Water in Petroleum Products and Bituminous Materials by Distillation.
D529 - Accelerated Weathering Test of Bituminous Materials.
D2939 - Emulsified Bitumens Used as Protective Coatings.
G23 - Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

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.

3. REQUIREMENTS

3.1 Material. The compound shall be an emulsified coke-oven coal tar of such consistency as to be readily applicable either by brush or spray. The compound may be formulated to contain mineral filler. The compound shall not contain asphalt or asbestos.

3.2 General performance requirements. The compound shall conform to the following:

a. Shall be homogeneous, other than for moderate water separation, without packing hard in the container. Any water that separates shall be readily incorporated upon stirring.
b. Shall be readily applicable to dried bituminous protective coatings.
c. When applied to vertical surfaces shall not sag, and upon drying shall not flow at any temperature.
d. Shall not have a pronounced or unduly objectionable odor.
e. When applied to dried bituminous protective coatings shall not soften, loosen, or delaminate upon being intermittently immersed in sea water or fresh water.

3.3 Physical requirements. The compound shall conform to the requirements given in table I.

TABLE I. Physical requirements.

Property	Characteristics Min	Max	ASTM Test Method	Test para
Residue by evaporation, weight %	45	...	Procedure described in D2939	4.3.1.1
Ash content of residue, weight %	25	40	D2939	4.3.1.1
Water content, weight %	...	50	D95, 16-18 gram sample, industrial grade xylene as solvent	4.3.1.1
Sag	No appreciable sag or flow while wet		...	4.3.1.2
Water absorption, weight %	... and no softening or signs of separation	10	... ...	4.3.1.3
Resistance to oil	No softening or evidence of solubility		...	4.3.1.4
Resistance to alligatoring	No disbonding, cracking, crazing, or alligatoring		...	4.3.1.5

3.4 Toxicity. The compound shall have no adverse effect on the health of personnel when used for its intended purpose. Questions pertinent to this effect shall be referred by the acquiring activity to the appropriate medical service who will act as adviser to the acquiring activity. The manufacturer's instructions shall provide personnel protection to meet OSHA requirements, including 29 CFR 1910.1000 and 1910.1002, as applicable. Material Safety Data Sheets (MSDS) shall be prepared in accordance with FED STD 313, and submitted as directed in the contract or order, at the time of acquisition award. Copies shall be forwarded to the designated Industrial Hygienist and the focal point of the activity that purchased the item, and the focal point of the using activity if different (see 6.2 and 6.3).

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Classification of inspection. Inspection shall be classified as follows:

a. Quality conformance (see 4.3).
b. Packaging inspection (see 4.4).

4.3 Quality conformance inspection. Quality assurance shall be provided in accordance with method 1031 of Fed. Test Method Std. No. 141. Failure of the compound to pass any test shall be cause for rejection of the lot.

4.3.1 Tests.

4.3.1.1 Physical requirements. Test the properties cited by the methods specified in table I.

4.3.1.2 Sag. At test conditions of 23 ± 1° Celsius (C) and 50 ± 4 percent relative humidity, apply the compound to a 12 by 12 by 1/8-inch thick clean, sandblasted mild steel plate, to a uniform wet film thickness of 30 ± 2 mils. Immediately suspend the plate vertically at test conditions for 24 hours. Then examine the coating for sag or flow while wet.

4.3.1.3 Water absorption. To three tared aluminum panels, each 6 by 6 inches by 1/32 inch thick, apply one coat of the compound to a uniform wet film thickness of 30 ± 2 mils. After the coating has dried for 96 hours, immerse the coated panels in distilled water maintained at 24 ± 6°C for 15 days, and determine the water absorption. The water absorption is the percentage gain in water based on the difference in the initial weight of the coating after 96 hours drying time (determined after dipping the panel momentarily in distilled water and wiping lightly with a paper towel) and the final weight of the coating after 15 days immersion.

4.3.1.4 Resistance to oil. Apply the compound to two wire-brushed, coal-tar naptha solvent-cleaned mild steel panels, each 6 by 6 inches by 1/8 inch thick, to a uniform wet film thickness of 30 ± 2 mils. After the coating has dried for 96 hours, immerse the coated panels in MIL-L-2104, grade 30 lubricating oil at 24 ± 3°C for 24 hours. Examine the coating for softening, loss of adhesion, or any other deterioration.

4.3.1.5 Resistance to alligatoring. To three aluminum panels, each 2-3/4 by 5-7/8 inches by 1/32 inch thick, apply two coats of the compound to produce a uniform dry film thickness of 30 ± 2 mils. Apply the two coats at right angles to each other, with a drying period of 24 hours at 25 ± 1°C and 50 ± 4 percent relative humidity between coats. After the second coat has dried for 96 hours, subject the coated panels to 15 days of accelerated

weathering in accordance with ASTM D529, Daily Cycle A, except that the apparatus may be either type A or D of ASTM G23. At the end of the fifteenth cycle, examine visually for disbonding, cracking, crazing, or alligatoring.

4.4 Packaging inspection. The inspection of the packaging, packing, and marking shall be in accordance with the requirements of section 4 of PPP-P-1892.

5. PACKAGING

5.1 Packaging, packing, and marking. The compound shall be packaged, packed, and marked in accordance with PPP-P-1892. The level of packaging shall be A, B, or C and the level of packing shall be A, B, or C, as specified (see 6.2). The compound shall be furnished in 1-gallon cans with multiple friction plug, in 5-gallon pails with lug cover, or in 55-gallon drums with full removable cover, as specified (see 6.2).

6. NOTES

6.1 Intended use. The compound is intended for use as a protective coating over bituminous corrosion mitigation systems subject to atmospheric exposures by protecting against the deleterious effects of oxidation and ultra violet radiation. The compound is generally used at an 8 to 15 mil dried film thickness, as a topcoat over MIL-C-18480 solvent-base coal-tar coating, or over coal-tar enamel, when applied to metal surfaces to be exposed to sunlight or weather.

6.2 Ordering data. Acquisition documents should specify the following:

a. Title, number, and date of this specification.
b. Addressees for submission of MSDS (see 3.4 and 6.3).
c. Level of packaging and level of packing required (see 5.1).
d. Size of container required (see 5.1).

6.3 MSDS submission and forwarding. After review and acceptance of MSDS by designated recipients, approved copies will be forwarded to arrive at destinations prior to material delivery (see 3.4).

Custodians:

Army - MR
Navy - YD
Air Force - 99

Preparing activity:

Navy - YD

Project No. 8030-N079

Review activities:

Army - CE
Navy - SH