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TT-W-550G
April 22, 1976
SUPERSEDING
Fed. Spec. TT-W-550F
April 16, 1974

FEDERAL SPECIFICATION

WOOD PRESERVATIVE: CHROMATED COPPER ARSENATE MIXTURE

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

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers the composition and methods of analysis of chromated copper arsenate, of a waterborne solution used for the preservative treatment of wood in accordance with TT-W-571 (see 6.1), and also of a strong solution suitable for the brush treatment of the cut ends of treated wood products.

1.2 Classification.

1.2.1 Composition. Chromated copper arsenate may be either of three compositions, namely, types I, II, or III, as specified herein (see 3.1 and 6.2).

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issues in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

Federal Specification:

TT-W-571 - Wood Preservation: Treating Practices.

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Laws and Regulations:

40 CFR 162 - Federal Insecticide, Fungicide, and Rodenticide Act.

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

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2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply.

American Wood-Preservers' Association (AWPA) Standard:

A2 - Standard Methods for Analysis of Water-Borne Preservatives and Fire-Retardant Formulations.

(Application for copies should be addressed to the American Wood-Preservers' Association, 1625 Eye Street, N.W., Washington, D.C. 20006.)

National Motor Freight Traffic Association, Inc., Agent:

National Motor Freight Classification.

(Application for copies should be addressed to the American Trucking Associations, Inc., Tariff Order Section, 1616 P Street, N.W., Washington, DC 20036.)

Uniform Classification Committee, Agent:

Uniform Freight Classification.

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza., Chicago, IL 60606.)

3. REQUIREMENTS

3.1 Properties.

3.1.1 Type I. Type I treating solution shall contain the following ingredients in the proportions given, subject to the tolerances specified in 3.1.1.1:

Hexavalent chromium 1/, as CrO_3	61 parts by weight.
Divalent copper 2/, as CuO	17 parts by weight.
Pentavalent arsenic 3/, as As_2O_5	22 parts by weight.

3.1.1.1 The composition of the preservative present in the treating solution may vary within the following limits:

	Minimum	Maximum
Hexavalent chromium, as CrO_3	55 percent	67 percent
Divalent copper, as CuO	15 percent	19 percent
Pentavalent arsenic, as As_2O_5	19 percent	25 percent

3.1.2 Type II. Type II treating solution shall contain the following ingredients in the proportions given, subject to the tolerances specified in 3.1.2.1:

Hexavalent chromium 1/, as CrO_3	35.3 parts by weight.
Divalent copper 2/, as CuO	19.6 parts by weight.
Pentavalent arsenic 3/, as As_2O_5	45.1 parts by weight.

3.1.2.1 The composition of the preservative present in the treating solution may vary within the following limits:

	Minimum	Maximum
Hexavalent chromium, as CrO_3	33 percent	38 percent
Divalent copper, as CuO	18 percent	22 percent
Pentavalent arsenic, as As_2O_5	42 percent	48 percent

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3.1.3 Type III. Type III treating solution shall contain the following ingredients in the proportions given, subject to the tolerances specified in 3.1.3.1:

Hexavalent chromium 1/, as CrO_3.....	47 parts by weight.
Divalent copper 2/, as CuO.....	19 parts by weight.
Pentavalent arsenic 3/, as As_2O_5.....	34 parts by weight.

3.1.3.1 The composition of the preservative present in the treating solution may vary within the following limits:

	Minimum	Maximum
Hexavalent chromium, as CrO_3.....	44 percent	50 percent
Divalent copper, as CuO.....	17 percent	21 percent
Pentavalent arsenic, as As_2O_5.....	30 percent	38 percent

1/ Equivalent amounts of sodium dichromate dihydrate ($Na_2Cr_2O_7 \cdot 2H_2O$) or potassium dichromate ($K_2Cr_2O_7$) may be used in place of chromium trioxide (CrO_3).

2/ Equivalent amounts of cupric sulfate pentahydrate, ($CuSO_4 \cdot 5H_2O$), cupric hydroxide ($Cu(OH)_2$), or basic cupric carbonate ($CuCO_3 \cdot Cu(OH)_2$) may be used as a source of cupric oxide (CuO).

3/ Equivalent amounts of arsenic acid (H_3AsO_4) may be used as a source of arsenic pentoxide (As_2O_5).

3.1.4 The pH of the treating solution shall be maintained between 1.6 and 3.0.

3.1.5 The concentration of a treating solution shall be adjusted so as to result in a retention as specified for the product. The concentration of the strong solution, composed of CrO_3, CuO, and As_2O_5, shall be a minimum of 5 percent.

3.1.6 When type I, II, or III solution is used, the net retention of the preservative shall be calculated as net pounds of CrO_3 plus CuO plus As_2O_5 deposited in the wood within the proportions as limited by 3.1.1.1 for type I, 3.1.2.1 for type II, or 3.1.3.1 for type III.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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 that supplies and services conform to prescribed requirements.

4.2 Sampling. The treating solution shall be thoroughly agitated, after which a 1-quart sample shall be taken for inspection and test purposes. The contractor shall supply such samples and containers as may be required at no cost to the Government.

4.3 Tests. Tests to determine the properties of chromated copper arsenate treating solution shall be made in accordance with AWPA Standard A2, and the results shall be evaluated for compliance with the requirements in 3.1.

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5. PREPARATION FOR DELIVERY

5.1 This specification covers material used in the processing of wood. Packaging and packing data are not applicable. It the material is procured, it shall be packaged and packed in accordance with National Motor Freight Classification or Uniform Freight Classification rules, as applicable, and shall be marked in accordance with Federal Insecticide, Fungicide, and Rodenticide Act.

6. NOTES

6.1 Intended use. Chromated copper arsenate may be used for the preservative treatment of lumber, structural timbers, posts, and utility and building poles in accordance with the conditions outlined in TT-W-571, Wood Preservation: Treating Practices. A strong solution (see 3.1.5) may be used for brush applications to cut surfaces of treated products.

6.2 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) Type required (see 1.2.1).

6.3 Normally, only treated materials will be procured by the Government, and there are no Government plants using the bulk preservative.

6.4 This specification was developed by the Forest Products Laboratory, Forest Service, U.S. Department of Agriculture, Madison, WI, 53705. Further information concerning this specification should be directed to the above address.

MILITARY CUSTODIANS:

Army - ME
Navy - YD
Air Force - 84

Coordinating activity:

Army - ME

Preparing Activity:

AGR - AFS

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