

TT-P-31D
July 6, 1973
SUPERSEDING
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March 7, 1962

FEDERAL SPECIFICATION

PAINT, OIL: IRON-OXIDE, READY-MIXED, RED AND BROWN

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 ready-mixed, red and brown, iron-oxide paint (see 6.3).

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 Specifications:

TT-D-651 - Drier; Paint, Liquid.
TT-L-215 - Linseed Oil, Raw, (For Use in Organic Coatings).
TT-P-143 - Paint, Varnish, Lacquer, and Related Materials;
Packaging, Packing, and Marking of.
TT-V-121 - Varnish, Spar, Water-Resisting.

Federal Standards;

Fed. Test Method Std. No. 141/Gen. - Paint, Varnish, Lacquer, and
Related Materials; Methods of
Inspection, Sampling, and
Testing.
Fed. Std. No. 595 - Colors.

(Activities outside the Federal Government may obtain copies of Federal Specification 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, D. C. 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 Hand- <UT> in their agencies.)

Military Specifications:

MIL-P-15328 - Primer (Wash), Pretreatment, Blue (Formula No. 117-B for Metals).

(Copies of Military Specifications and Standards required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

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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 Society for Testing and Materials (ASTM) Standards:

- D 2088 - Determination of Low Concentrations of Lead in Paint.
- D 2206 - Determination of Low Quantities of Mercury in Paint.
- G 26 - Operating Light-and Water-Exposure Apparatus (Xenon-Arc Type for Exposure of Nonmetallic Materials

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

Air Pollution Control District

Rule 66

(Application for copies should be addressed to the Air Pollution Control District, County of Los Angeles, CA 90001).

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

3. REQUIREMENTS

3.1 Pigments. The pigment shall consist of finely ground iron oxide, zinc oxide, and siliceous materials, with or without the addition of a small amount of black pigment to produce the desired color.

3.1.1 Composition. The pigment composition shall be as specified in table I (see 6.4).

TABLE I. Pigment composition

Ingredients	Percent by weight	
	Minimum	Maximum
Total Iron oxide (calculated as Fe_2O_3)	60	-
Zinc oxide	12	15
Total calcium pigment (calculated as CaO), in any form soluble in acid	-	1.0
Total ferric oxide (Fe_2O_3), zinc oxide, insoluble siliceous material, and loss on ignition	90	-
Organic coloring matter (other than carbon pigments)	-	None

The paint shall not contain lead compounds in excess of one-half of 1 percent by weight of total nonvolatile, calculated as lead metal. The paint shall not have any added mercury compounds and its mercury metal content shall not exceed a trace quantity (see 6.10).

3.2 Vehicle. The vehicle shall consist of a mixture of 75 percent linseed oil, 15 percent nonreactive spar varnish and 10 percent combined drier and thinner by weight. The spar varnish shall conform to TT-V-121, the

linseed oil shall conform to TT-L-215, and the drier shall conform to TT-D-651, type II.

The thinner shall be turpentine, volatile mineral <UT> conforming to Air Pollution regulations is required, the supplier shall use "Rule 66" solvents (see 6.5), provided the paint conforms to all other requirements of this specification. The nonvolatile matter in the vehicle shall be not less than 82 percent by weight. The vehicle separated from the ready-mixed paint by means of a supercentrifuge shall conform to the following requirements.

3.2.1 Kauri reduction. Kauri reduction shall be not less than 200 percent based on the weight of nonvolatile matter in the vehicle.

3.2.2 Cold water resistance (18 hours). When tested as specified in 4.3.1.2, the film shall show no whitening and not more than slight dulling.

3.3 Quantitative requirements. The iron oxide paint shall meet the quantitative requirements specified in table II.

TABLE II. Quantitative requirements of iron oxide paint

Characteristics	Requirements	
	Minimum	Maximum
Pigment, percent by weight of paint	58	-
Nonvolatile vehicle, percent by weight of vehicle	82	-
Water, percent by weight of paint	-	1.0
Coarse particles and skins (residue retained on	-	3

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