

TT-S-708A
AMENDMENT-2
June 23, 1977
SUPERSEDING
Amendment-1
November 6, 1972

FEDERAL SPECIFICATION

STAIN, OIL: SEMI-TRANSPARENT, WOOD, EXTERIOR

This amendment, which forms a part of Federal Specification TT-S-708A, dated April 27, 1962, was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

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Under Federal Specifications:

Change "TT-P-143" to "PPP-P-1892".

Delete "TT-P-435 - Pigment, Sienna, Raw and Burnt, Dry" and "TT-P-455 - Pigment, Umber, Raw and Burnt, Dry".

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Under "2.2 Other publications" add:

- "D 50 - Chemical Analysis of Yellow, Orange, Red and Brown Pigments Containing Iron and Manganese.
- D 185 - Test for Coarse Particles in Pigments, Pastes and Paints.
- D 358 - Specification for Wood to be Used as Panels in Weathering Tests of Paints and Varnishes.
- D 763 - Specification for Raw and Burnt Umber.
- D 765 - Specification for Raw and Burnt Sienna.
- D 1475 - Test for Density of Paint, Varnish, Lacquer and Related Products.
- D 1639 - Test for Acid Value of Organic Coating Materials.
- D 1692 - Test for Saponification Value of Drying Oils, Fatty Acids and Polymerized Fatty Acids.
- D 2369 - Test for Volatile Content of Paints.
- D 2698 - Determination of Pigment Content of Solvent-Type Paints by High Speed Centrifuging."

Paragraph 3.2.1, line 4. Delete "TT-P-435" and substitute "ASTM D 765", line 5. delete "TT-P-455" and substitute "ASTM D 763".

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Paragraph 3.2.2.4, lines 3 and 4. Change "TT-T-291, grade I" to "TT-T-291, type II, grade A". Add to the paragraph the following: "This remaining 15 percent of volatile thinner shall comply to Rule 66."^{1/}

Table II. At end of table, add, under characteristics, "Lead, percent nonvolatile", under both minimum columns, "---", under both maximum columns, "0.06".

Paragraph 4.3.1. Delete and substitute:

"4.3.1 The stain shall be tested as indicated in table III and as specified hereinafter."

^{1/} Information on Rule 66 should be obtained from Air Pollution Control District, Los Angeles, California 90013.

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Table III. Delete and substitute:

TABLE III. Sampling and tests

Item	Sampling and Tests	Fed. Test Method Std. No. 141	ASTM Method	Section of this specification giving requirements
1	Sampling	1021	----	-----
2	Weight per gallon	----	D 1475	Table II
3	Pigment content	4021	----	Table II
4	Analysis of pigment	7291	----	3.2.1.1
4a	Iron oxide	----	D 50	3.2.1.1
5	Water	4081	----	Table II
6	Volatile and nonvolatile content	----	D 2369	Table II
7	Vehicle solids	4051	----	Tables I, II
8	Vehicle isolation	----	D 2698	-----
9	Acid number of nonvolatile vehicle ^{1/}	----	D 1639	Table II
10	Saponification number of nonvolatile vehicle ^{1/}	----	D 1962	Table II
11	Coarse particles and skins	----	D 185, Sec 6	Table II
12	Condition in container	3011	----	3.1
13	Absorption	4421	----	Table II

^{1/} See 4.4 for modification of test.

Paragraph 4.4, line 5. Delete "Method 4032 of Fed. Test Method Std. No. 141" and substitute "ASTM Method D 2698".

Paragraph 4.5.1, lines 4 and 5. Delete "Fed. Test Method Std. No. 141, Method 2031", and substitute "ASTM Method D 358".

Paragraph 4.5.2, lines 2 and 3. Delete "Method 4032, of Fed. Test Method Std. No. 141" and substitute "ASTM Method D 2698".

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Paragraph 4.5.2, line 2. Delete "Method 5081 of Fed. Test Method Std. No. 141", and substitute "ASTM Method D 1962".

Add new paragraphs:

4.5.4 Lead content.

4.5.4.1 Sample preparation. Using a 0.006-inch film applicator and a mechanical applicator plate, duplicate drawdowns for each sample of well-mixed paint shall be made on a standard paint penetration chart and dried for 24 hours. The drawdown shall be at least 10 inches long on the sealed portion of the penetration chart. The drawdown shall be cut into discs of appropriate size to fit the sample holder of a fluorescence X-ray spectrometer.

4.5.4.2 Procedure. Lead content shall be determined using an X-ray fluorescence spectrometer capable of determining lead content at a minimum level of 0.03 percent by weight of the total nonvolatile. The settings for a wavelength dispersive fluorescence spectrometer shall be as follows: ⁽¹⁾

<u>Element</u>	<u>Analytical Line</u>	<u>Angle</u>	<u>Crystal</u>	<u>Detection</u>	<u>Collimeter</u>	<u>X-ray tube (MO)</u>
Pb	L	33.93	LiF(200)	Flow S.C.	Fine	60Kv 45Ma
(backgrd I) Pb		33.00	LiF(200)	Flow S.C.	Fine	60Kv 45Ma
(backgrd II) Mo	K	35.50	LiF(200)	Flow S.C.	Fine	60Kv 45Ma
		20.33	LiF(200)	Flow S.C.	Fine	60Kv 45Ma

(1) Energy dispersive fluorescence spectrometers shall be set up according to the manufacturer's manual.

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Pulse height selection shall be used in all measurements and counting time shall be 100 seconds. Place the sample disc in the wavelength dispersive unit. Measure the count rates of lead, lead background, and the Molybdenum Compton scattered background from the X-ray tube.

4.5.4.3 Calculation.

$$R = \frac{I_{Pb} - \frac{I_{Pb} \text{ (Background I)} + I_{Pb} \text{ (Background II)}}{2}}{I_{Mo}}$$

where I equals gross intensity. These results shall be compared to those obtained with a 0.06 percent lead standard made up from the same type of paint sample and evaluated for compliance with table I.

Paragraph 5.1, line 3. Delete "TT-P-143" and substitute "PPP-P-1892".