

F. S.P.M.A. PAINT SPECIFICATION

DIVISION 9 - FINISHES SECTION 09920 INTERIOR

FOR GENERAL EDUCATION FACILITIES USE

MP- 54

ACRYLIC-BASE EPOXY (SINGLE COMPONENT), INTERIOR, GLOSS ENAMEL, MULTI-SURFACES, WHITE & TINTS

I. SCOPE, USE AND CLASSIFICATION:

- A. SCOPE. This specification describes a high-grade pure acrylic modified epoxy type high-gloss enamel intended for use on prepared steel, aluminum and galvanized metal surfaces as well as concrete, masonry, drywall, and plaster. It will also produce excellent results when applied over properly primed wood substrates. It is chemical resistant and is characterized by excellent color and gloss retention, non-yellowing, good drying, freedom from aftertack, and good flexibility.
- B. USE. This product is intended for use in interior conditions on prepared steel, aluminum and galvanized metal surfaces as well as concrete, masonry, drywall, and plaster. It will also produce excellent results when applied over properly primed wood substrates. Containers shall have labels, meeting ANSI standards and giving adequate use instructions, firmly secured to each container. Labels shall meet all federal regulation requirements of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard in CFR 1910.1200.
- C. CLASSIFICATION. The enamel covered by this specification shall be of the following types:
Type I- White. Certification shall be for Type I only.
Type II- Tints. All tinted paints supplied to purchaser must meet all requirements of this specification, except pigment.

II. REQUIREMENTS:

- A. MATERIALS. The paint shall be formulated from materials as specified herein. Materials not specified shall be selected by the supplier and shall be subject to all the provisions of this specification. The paint shall be free from material which is known to be toxic to personnel under normal conditions of use.
1. PIGMENT. The pigments or any combination thereof, including extenders, shall be of good commercial quality provided the resulting enamel complies with all the requirements specified herein. The prime pigment shall consist of titanium dioxide conforming to ASTM D 476, Type II, and zinc oxide is permitted at the discretion of the supplier provided the enamel complies with all requirements. Tinting pigments may be used when necessary to match the color required provided these additional pigments have good color permanence.
 2. VEHICLE. The vehicle shall consist primarily of a pure cross-linking acrylic resin modified with epoxy that has been made by emulsion polymerization.
 3. RESTRICTED METALS. The paint shall comply with the latest requirements of the Federal, Florida State, City or Local Governments for maximum allowable restricted metals content.
 4. VOC COMPLIANCE. The paint shall comply with the latest requirements of the Federal, Florida State, City or Local Governments for the maximum allowable VOC content at the time of purchase.

B. QUANTITATIVE REQUIREMENTS. The paint shall conform to the quantitative requirements as specified in Tables I and II.

TABLE I. QUANTITATIVE REQUIREMENTS

CHARACTERISTICS	TOLERANCE REQUIREMENTS	
	MINIMUM	MAXIMUM
1. TiO ₂ (Type II, 92% purity) % by wt. of enamel*.	21.95	-
2. Nonvolatile vehicle, % by wt. of paint.	24.46	-
3. Consistency (Viscosity,K.U.)	95	125
4. Drying Time (hr):		
a. Drying time of enamel.	8	12
b. Set-to-touch.	1	2
c. Dry hard, hours.	6	8
5. Fineness of grind, N.S.	7.0	-
6. 60° Specular Gloss after 48 hours of air drying**.	70	-
7. Pencil Hardness (7 days)	2H	-
8. Hiding Power (contrast ratio), at 530 sq. ft./gal:		
a. White only	0.98	-
b. Tints	0.96 (See Table II)	-
9. Directional Reflectance, Directional reflectance, 45-0, White only, % at 530 sq. ft./gal.	84	-
10. Adhesion (psi)	100	-
11. Abrasion Resistance, (CS-10 Wheel, 1000 gram load, 1000 cycles), mg loss.	80	-
12. Sag Resistance	10	-
13. Chemical Resistance.	No objectionable alterations on surface when tested against chemicals named in III F.	

**In order to confirm compliance with this requirement(s) the vendor shall submit either a formal report from an independent laboratory or a confidential, notarized, legally-binding manufacturer's report indicating the method used and the laboratory results obtained for the specific brand submitted for certification.*

***Using 3 mil wet film thickness over plate glass backed with white paper.*

TABLE II. QUANTITATIVE REQUIREMENTS

MINIMUM DRY FILM CONTRAST RATIO FOR TINTS AT 530 SQ. FT./GAL.

APPARENT REFLECTIVITY	CONTRAST RATIO MINIMUM
75 - 85	0.97
70 - 75	0.97
65 - 70	0.98
50 - 65	0.99
50 and lower	1.00

C. QUALITATIVE REQUIREMENTS.

1. COLOR. The color of the paint specified in the contract or purchase order shall match that of the standard color chip. If a color other than white is required, the color shall match that of the standard color chip submitted by the purchaser with the bid.
2. CONDITION IN CONTAINER. The paint, when tested as specified in Table III, shall be free from grit, seeds, skins, lumps, and livering, and shall show no more pigment settling or caking than can be reincorporated into a smooth homogenous state. In a freshly opened container, there shall be no rusting of the container.
3. STORAGE STABILITY IN UNOPENED CONTAINER. All containers shall have sufficient preservatives to prevent spoilage for one year.
4. MATERIAL SAFETY DATA SHEET (MSDS). An MSDS clearly identifying this product, filled out completely according to the Florida Right-to-Know Law, Chapter 442, Florida Statutes, MUST BE submitted with each sample submitted for certification.
5. STORAGE STABILITY IN A PARTIALLY FULL CONTAINER. The paint shall show no skinning after 48 hours when tested as specified in III.D. After an additional 14 days, at 120F., the same sample shall show no skinning, livering, curdling, hard caking, or gummy sediment. It shall mix readily to a homogenous state and the viscosity change shall not be greater than ± 10 K.U.
6. ODOR. The odor shall not be putrid during or after application.
7. FLEXIBILITY. When tested as specified in III.B., there shall be no cracking, chipping, or flaking.
8. RECOATING. When tested as specified in III.E., there shall be no flashing, lifting, mottling, orange peeling, spotting or wrinkling.
9. FUNGUS PROPERTIES. The paint shall contain no mercury but shall contain fungicidal protection equivalent to 0.1% mercury as metal by total weight of paint. In order to confirm compliance with this requirement(s) the vendor shall submit either a formal report from an independent laboratory or a confidential, notarized, legally-binding manufacturer's report indicating the method used and the laboratory results obtained for the specific brand submitted for certification.
10. BRUSH PROPERTIES. The paint shall brush satisfactorily in all respects and shall dry to a smooth, glossy uniform film.
11. SAG RESISTANCE. The paint shall have a minimum anti-sag index of 10 when tested as in III.E. (ASTM D 4400).

III. TEST PROCEDURES FOR LABORATORY ANALYSIS:

The failure of any test in this section shall constitute a failure of the product to conform to the specification.

Unless otherwise noted, all test methods cited are the latest published revisions.

- A. PHYSICAL AND CHEMICAL PROPERTIES. The following tests shall be conducted in accordance with the methods as specified in Table III.

TABLE III. TESTS AND METHODS

TEST	METHODS
1. Analysis of TiO ₂ pigment*.	ASTM D 1394, Aluminum Reduction Method (Not currently tested by MDCPS).
2. Condition in container.	FTM Std. 141C, Meth. 3011.2
3. Nonvolatile vehicle, % by wt.	FTM Std. 141C, Meth. 4053.1
4. Drying time	ASTM D 1640
5. Skinning ⁴	FTM Std. 141C, Meth. 3021.1
6. Consistency, K.U.	ASTM D 562
7. Fineness of grind	ASTM D 1210
8. 60 Specular gloss	ASTM D 523
9. Directional reflectance, 45- 0	ASTM E 97
10. Hiding power, contrast ratio at 530 sq. ft./gallon	ASTM D 2805
11. Adhesion test ⁵	ASTM D 4541
12. Abrasion Resistance	ASTM D 4060
13. Chemical Resistance	ASTM D 1308
14. Pencil Hardness	ASTM D 3363
15. Sag Resistance	ASTM D 4400

**In order to confirm compliance with this requirement(s) the vendor shall submit either a formal report from an independent laboratory or a confidential, notarized, legally-binding manufacturer's report indicating the method used and the laboratory results obtained for the specific brand submitted for certification.*

⁴Except use a 3/4 filled 1/2 pint, multiple friction-top can.

⁵ADHESION TEST - 100 lbs./sq.in. minimum when tested on a film prepared according to MP-6.10, III, B, 2, with two weeks of curing time.

- B. **FLEXIBILITY.** Draw down a film of the enamel on a flat, tin-plated, 31 gauge steel panel with an applicator which produces dry film 0.003 inch thick. Air dry for 18 hours, bake for 5 hours at 105 C., cool for 1/2 hour at room temperature, and bend over a 1/8 inch mandrel. Examine the coating for cracks over the area of the bend in a strong light at 7X magnification.
- C. **STORAGE STABILITY IN PARTIALLY FULL CONTAINER.** Determine skinning after 48 hours in accordance with Federal Test Method Std. 141C, method 3021.1, except use a 3/4 filled 1 pint, multiple friction-top can. Then reseal and store for 14 days at 120 F. Check for compliance with II.C.5.
- D. **RECOATING.** Draw down the paint on a sealed chart with an applicator which produces a wet film 0.003 inches thick as in Method 4061.2 of Federal Test Method Std. No. 141C. Air dry for 24 hours under room conditions. Apply a second coat perpendicular to the first coat, and air dry as before. Examine for compliance with II.C.8.

- E. SAG RESISTANCE. (ASTM D 4400) Mount a sealed Morest or Leneta test chart on vacuum plate. Set the Leneta Anti-Sag Meter at the top of the test chart with the open side of the blade facing the operator. Place a suitable quantity of enamel directly in front of the blade and draw down the enamel. The completed draw down shall then be immediately removed from the vacuum plate and placed in a vertical position with the stripes horizontal, the thinnest stripe being at the top. Allow to dry at room temperature in this position, and then determine the Anti-Sag Index as follows:

The lowest (heaviest film thickness) stripe which does not touch the next lower stripe is the Index Stripe. Fractional values are obtained by adding to the index value a fractional value based on the degree to which the stripe below the index stripes has merged with the next stripe as follows:

DEGREE OF MERGER	ADD
Complete (intervening block is completely wetted)	0.0
Not complete, but definitely more than half	0.2
Approximately half	0.4
Appreciable, but definitely less than half	0.6
Slight, just touching	0.8

- F. CHEMICAL RESISTANCE. According to ASTM D 1308. The dried coating must resist the following chemical agents: 5% sodium hydroxide solution, ethyl alcohol, 5% sulfuric acid solution, 10% soap solution, vinegar (3% acetic acid) and 50/50 mix of xylene/mineral spirit.

IV. METHODS OF SAMPLING, INSPECTION, AND OTHER TESTS:

- A. SAMPLING. At the option of the purchaser, representative samples shall be taken from deliveries made under this invitation and submitted for quality control. If the purchaser's sample fails, the manufacturer shall pay for the actual cost of testing. Failure of any sample so taken to comply with the specification requirements shall invalidate any purchase contract made under this invitation unless the manufacturer requests a repeat quality control test. This second sample shall be from the same batch. The manufacturer shall pay for the second quality control test should the sample fail, and this invalidates any purchase contract made under this invalidates. If the second sample passes, the manufacturer is not responsible for paying the actual cost of the test, and results obtained from the second quality control test shall prevail.
- B. INSPECTION. Physical inspection of package, condition, quantity, and labeling shall be made at point of delivery by the purchaser. MSDS shall be submitted with each shipment in accordance with the Florida Right-to-Know Law, Chapter 442, Florida Statutes, and shall be identical to the MSDS supplied for initial certification.

NOTE: TESTING TO MEET THIS SPECIFICATION DOES NOT INCLUDE AN IN-USE PERFORMANCE TEST. ALL EDUCATIONAL AGENCIES SHOULD CONSIDER AN IN-USE PERFORMANCE TEST BEFORE PURCHASING THIS PRODUCE.

ORIGINAL MP-54 - APPROVED on September 26, 2006

PRESIDENT FLORIDA SCHOOL PLANT MANAGEMENT ASSOCIATION

CHAIR FSPMA PAINT SPECIFICATIONS COMMITTEE

