

DETAILED PERFORMANCE STANDARD

MPI #53 RC

Latex, Recycled (Consolidated), Interior (MPI Gloss Level 1)

White and Tints

1 SCOPE

- 1.1 This standard is for a near-white or colored flat latex based paint, produced by the collection and consolidation of post consumer latex paint. For purposes of this standard, consolidated post consumer latex paint must contain a minimum of 95% post consumer paint, with a maximum of 5% by volume secondary industrial materials, or virgin materials.
- 1.2 For recommended uses and substrates see Paragraph 6.
- 1.3 The tests specified in this standard may involve the use of materials or equipment that in their storage, handling, use, or disposal may pose a danger to the environment and/or testing personnel. Conformance to the pertinent national and regional safety and environmental requirements is the responsibility of the user of this document.

2 TOXIC ELEMENTS

- 2.1 This paint will be manufactured and labeled to conform to the current Federal, State/Provincial and Municipal safety and environmental regulations in regards to toxic elements.

3 REFERENCES

- 3.1 American Society for Testing Materials (ASTM) Volumes 6.01, 6.02, 6.03, 6.04
- 3.2 MPI Architectural Painting Specification Manual
- 3.3 MPI Maintenance Repainting Manual

4 REQUIREMENTS

- 4.1 The paint shall be suitable for application by brush, roller and spray equipment. If thinning is required, the manufacturer will display information about the recommended amounts in the directions for application. The paint shall be capable of curing at temperatures between 50°F (10°C) and 104°F (40°C) and a relative humidity of 30 - 80%.

<u>Test Name</u>	<u>Min</u>	<u>Max</u>	<u>Test Method</u>
Consistency, Kreb Units	80	----	ASTM D 562
Dry time, Dry hard	----	2 hrs	D 1640
Fineness of Grind, Hegman	3	----	D 1210
Gloss 60 degree	----	5	Para 7.8
Sheen 85 degree	----	10	Para 7.8

4.2 Hiding Power

A dried film of the un-tinted white paint when applied and tested according to the requirements of Paragraph 7.7 shall have a contrast ratio of 98 or higher. Colored paint shall comply with the requirements set out below (Reference ASTM D 2805).

<u>Reflectance</u>	<u>Contrast Ratio</u>
75 and above	96
70 – 75	97
65 – 69	98
64 and below	99

4.3 Reflectance

The average reflectance of a dried film of the un-tinted white paint shall not be less than 92% when prepared and tested according to the requirements of Paragraph 7.7.

4.4 Alkali Resistance

A dried film of the paint shall show no signs of lifting, wrinkling, disintegration or more than a slight color change when prepared and tested in accordance with the requirements of Paragraph 7.2.

4.5 Scrubability

The dried film will withstand 1000 scrub cycles without showing any breakthrough of the film, only a slight difference in appearance between the scrubbed and un-scrubbed areas of the panel, when prepared and tested in accordance with the requirements of Paragraph 7.3.

4.6 Package Stability

The paint shall not thicken, skin or show any coarse particles when stored at temperatures between 40 and 104°F (5 and 40°C) in unopened containers for 12 months. After 12 months, the paint shall show no hard settling and shall be readily stirrable and shall meet the requirements for grind, dry time and applicability.

4.7 Applicability and Appearance

When applied by brush and roller as described in Paragraph 7.4, the paint shall meet the following requirements:

4.7.1 It shall have suitable consistency for good brushing and rolling properties and shall be free of coarse particles and sagging.

4.7.2 There shall be no objectionable odor and it shall have a suitable re-coating and dry time. There shall be no lifting, wrinkling, lack of uniformity or other film defects.

- 4.7.3 There shall be no difference in color or gloss between the brushed and rolled sections of the panel. There will be a minimum of foam developed during the roller application. If foam is evident there shall be no cratering or bubbles visible from a distance of 0.5 meters in the dry film.

The dried finish coat shall be uniform in color, appearance and sheen. There shall be no flashing, or ghosting. There will be good flow and leveling properties indicated by the absence of significant brush marks or roller stipple in the dry film. The gray stripe shall only be slightly visible under the one-coat area and shall not be visible under the two-coat area.

4.8 **Flexibility**

The dried film, when prepared and tested in accordance with Paragraph 7.5, shall show no cracking, peeling or loss of adhesion when subjected to the mandrel test, using a 1/4" mandrel (Ref. ASTM D522).

4.9 **Sorting Protocol and Filtering**

The collection and sorting protocol for consolidated post consumer recycled paint shall comply with the requirements of the Green Seal Environmental standard for recycled latex paint GS-43. A sufficiently fine filtering method shall be employed to produce a final product free of coarse particles which complies with the requirement for fineness of grind as stated in paragraph 4.4.

5 **QUALITY ASSURANCE**

5.1 **Records**

It will be the manufacturer's responsibility to keep retained samples of each batch of qualified products for a minimum of 2 years. The minimum sample size for retained product is one quart. Quality control records of qualified products must be maintained for a minimum of 3 years. All records and samples must clearly show the batch number, product identifier and date produced.

The following quality control testing shall be performed and recorded for each batch of product:

Viscosity in Ku

Fineness of grind – Hegman

Gloss @60 degrees

Sheen @85 degrees

Hiding power by contrast ratio method

A draw bar application of each batch using a draw bar with a 7 mil gap shall be produced, thoroughly dried and retained for each batch of product produced.

A roller application demonstrating the foaming characteristics shall be prepared, thoroughly dried and retained for each batch of product produced.

5.1.1 **Confirmation Testing and Facility Audit**

A one quart sample of a batch of material produced during the week in which the sample is requested will be forwarded to MPI upon request. Alternatively MPI or its agent will obtain a sample on site by obtaining the retained sample from the last batch of material produced. The manufacturer of the consolidated product will be responsible for the cost of this testing. Frequency of confirmation testing will be 3 times annually for products produced from exclusively interior and dual purpose interior/exterior product consolidation and 4 times annually for products produced from the consolidation of any mixture of products containing exterior products.

A facility audit shall be performed on a yearly basis by MPI or their designated representative in which the quality control history, batch records, procedures and equipment will be reviewed. The audit will also be concerned with collection and sorting protocol, production procedures and all other factors which affect the consistency and quality of the produced product. At the time of the audit MPI may require certain retained

samples of previously produced batches of product for quality testing. Any testing performed on this basis will be performed at no additional cost. The cost of this audit will be included in the annual listing fee. Fees for travel costs and expenses for the auditor will be billed separately at the time of the audit.

5.2 **Formulation Changes**

To maintain product listings in the MPI Architectural Painting Specification Manual and the MPI Maintenance Repainting Manual, the manufacturer of a qualified product must notify, in writing, the MPI Testing Authority of any changes to the code number, label or line name, so that the listing in the manuals can be up-dated.

6 INTENDED USES

- 6.1 The paint complying with this specification is intended for use on new or previously painted interior wall and ceiling surfaces including gypsum wallboard, plaster, concrete or primed wood surfaces. This material is not intended for use on new woods prone to extractive bleeding (i.e. cedar) unless a stain blocking primer is applied first.
- 6.2 Glossy, previously painted surfaces should be dulled by sanding and primed with an appropriate primer prior to the application of this paint. Surfaces with repairs or other areas of varied porosity shall be primed with a qualified primer-sealer.
- 6.3 For details on uses, systems and surface preparation, refer to the MPI Architectural Painting Specification Manual, or the MPI Maintenance Repainting Manual.

7 TESTING DETAILS

7.1 **General**

Sample preparations for the following tests shall be carried out in a well-ventilated room, free from dust, direct drafts, combustive gasses and laboratory fumes. Maintain the temperature at 70 – 77° F (23 +/- 2°C) and humidity at 50 +/- 5% for the duration of the specified curing time. The paint dry film thickness shall be 2.0 mil unless otherwise specified in the test method (Ref. ASTM D 3924).

7.2 **Alkali Resistance**

Apply a film of the paint by use of a drawbar with a 7 mil gap (Note 1) to a Leneta plastic scrub panel (Form P-121-10N). Cure 48 hours under the conditions specified in Paragraph 7.1. At the end of the curing period apply a solution of 2% sodium hydroxide in distilled water to a small area of the panel and cover with a watch glass. After 30 minutes, remove the watch glass and examine the film for signs of disintegration or deterioration. Dry the panel by damping lightly with an absorbent cloth and examine the film for any lifting, wrinkling or other defects.

7.3 **Scrubability**

Apply a film of the paint to a black plastic panel (Leneta Panels Form P-121-10N) using a drawbar with a 7 mil gap (Note1) and cure 7 days under the conditions specified in Paragraph 7.1. ASTM Method D 2486 will be used with the following exceptions:

- a) There shall be no shim applied to the back of the panel.
- b) The scrub medium shall be a 2% nonyl phenoxy ethanol, non-ionic detergent in water applied drop-wise from a burette to the surface under test at a rate of 8 to 10 drops per minute.
- c) The test will be performed continuously, without interruption, and without the addition of extra solution or water, to the conclusion of the specified number of cycles.

7.4 **Applicability and Appearance**

Prepare a wallboard sample 48 inches by 48 inches by taping the exposed edges. Using a 15 mm pile synthetic roller, apply a coat of MPI primer-sealer to the entire face of the panel and dry for a minimum of 4 hours. Apply a 6 inch stripe of latex primer-sealer tinted to a gray with a reflectance of 50 +/- 3% through the horizontal center of the panel. Dry a minimum of 4 hours (for convenience, panels can be prepared in advance and stored in a clean, dry area).

Cut-in a coat of the test paint by brush to the face of the board from the edges inward 4 inches, feathering the edges with light brush strokes. Note the brush handling and leveling. Using a roller, apply a coat of the paint under test to the center of the panel leaving approximately 3 inches from the edge. Dry for 3 hours, then examine the film and note any non-uniformity at the laps, color and any foam or craters. Apply a second coat of paint by roller to one vertical half of the panel.

After drying 24 hours, evaluate the panel for appearance and hiding. Application and curing should be conducted in conditions as specified in Paragraph 7.1. The grey stripe should not be visible under the two-coat area and only slightly visible under the one-coat area.

7.5 **Flexibility**

Apply, by use of a drawbar with a 6 mil gap, a film of the coating under test to clean tin plate panels (note 2). Dry for 14 days under the conditions specified in Paragraph 7.1. Test in accordance with ASTM D522, method B. Immediately after bending the panels, examine the film for evidence of cracking, peeling, flaking or any loss of adhesion using a 10 X magnifying device.

7.6 **Hiding Power**

Apply a film of paint to a Leneta form 2C application chart using a drawbar with a 7 mil gap (Note 1). Cure for 7 days under the conditions specified in Paragraph 7.1. Measure the reflectance over the black and white areas of the chart with a Byk Gardner color guide spectrophotometer or equivalent instrument and determine the contrast ratio.

7.7 **Reflectance**

Apply a film of paint to a Leneta form WB plain white application chart using a drawbar with a 7 mil gap (Note 1). Cure for 7 days under the conditions specified in Paragraph 7.1. Measure the reflectance with a Byk Gardner color guide spectrophotometer or equivalent instrument.

7.8 **Gloss/Sheen**

Apply a film of paint to a Leneta form WB plain white application chart using a drawbar with a 7 mil gap (Note 1). Cure for 7 days under the conditions specified in Paragraph 7.1. Measure the gloss and sheen using a Byk Gardner Micro-Tri-gloss multi angle glossmeter or equivalent instrument.

Notes

1. The Dow film caster, available from Byk Gardner or Paul N. Gardner Co, Inc. meets this requirement.
2. Tin plated panels shall be 30-31 gage tinned steel, prepared by hand abrasion, lengthwise with no. 400 silicon carbide abrasive paper, until an even, dulled appearance is obtained. Before and after abrading, clean the panels by solvent washing as per ASTM D609, procedure D. Suitable panels can be obtained from Paul N. Gardner Co, Inc. (no. PP-TP3x5)

8 LABELING

8.1 Each container shall be labeled to show:

- i) The name of the material
- ii) The manufacturer's address
- iii) The manufacturer's batch number and product code number
- iv) The date of manufacture or packaging
- v) The color number
- vi) Application and thinning instructions
- vii) Storage requirements
- viii) MPI standard and code number for listing
- ix) Any safety information required by Federal, State or Provincial safety authority

9 CALL-UP TESTING AND LISTING REQUIREMENTS

9.1 Before initial qualification and approval for listing, products shall be tested by MPI to assure compliance with the specified requirements of the standard. An initial facility audit will be performed and any deficiencies corrected prior to approval or listing of products. A standard MPI Listing and Testing Agreement must be signed by a person authorized to sign on behalf of the manufacturer (Recycler). After listing, continued compliance with the specified requirements of the standard will be confirmed by periodic MPI confirmation testing and facility audits. Initial, confirmation testing and facility audits will be performed by MPI and the applicable costs billed to the manufacturer.

