

**MEASUREMENT OF DRY HIDING POWER OF PAINTS
RED AND GRAY CHECKERBOARD**

Application

This procedure is used to establish the dry hiding power of paints by determining the film thickness required to completely hide red and gray squares of a standard checkerboard.

Apparatus Required

Checkerboard

Red and gray checkerboard. This is made up of standard color rectangles – the red to match Munsell color value 7.5R (yR) 3/2; the gray to match Munsell neutral color value N/6 medium gray. These hiding power charts are produced by:

Morest Company, Inc.
211 Centre Street
New York, New York

and are identified by the code number RGF-1.

Note: A stock of these charts is maintained by the Automotive Assembly Division, Technical Control Department, Paint and Sealer Section or the Glass and Chemical Products Division, Paint Plant, Quality Control Section. Local requirements can be obtained from one of these sources.

Masking Tape

1 inch wide.

Source: Minnesota Mining & Mfg. Co. (3M) No. 710 or equivalent.

Steel Panels

Clean steel panels 4 x 12 inches of the type described in FLTM BI 103-02 are used for this test.

Reference Test Methods

FLTM BI 103-02, Preparation of Panels for Paint Tests, describes the apparatus and procedure for spraying panels.

Date	Action	Revisions
2001 03 02	Revised	Editorial – no technical change A. Cockman
1992 06 08		

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Page 1 of 3

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FLTM BI 117-01, Thickness Measurement of Paint Films, describes the apparatus and procedure for determining paint film thickness.

FLTM BI 109-01, Color Matching with Artificial Light, describes the apparatus and procedure for viewing hiding power charts under the Macbeth light.

Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

1. Cut a section of checkerboard 2 inches wide and 10 inches long so that there are ten alternating 2 x 1 inch red and gray rectangles plus a 1/4 inch gray border at the upper and lower ends.
2. Position the checkerboard on the steel panel even with the right edge and 1/2 inch inboard from the upper and lower edge. Tape the cardboard to the panel, using 1 inch wide masking tape. The tape should cover only about 3/8 inch of the checkerboard at the top and bottom ends.
3. Reduce the paint under test with appropriate thinner to the viscosity designated in the Engineering specification.
4. Spray the entire panel and checkerboard with a uniform wet coating of the test color approximately .0005 inch thick.
5. Allow 1 minute flash-off, then spray the lower 3/4 of the panel with an additional .0005 inch coat of paint.
6. Allowing 1 minute flash-off between coats, progressively spray the remaining lower areas of the panel until complete hiding of the red and gray rectangles is obtained at the lower end of the panel.

Note: Some practice may be required to accomplish the object of this test. A gradual increase in film thickness from the top to bottom of the panel is desired with a dry film thickness gradient of .0005 inch - .0025 inch. A wedge type film thickness with complete hiding of the lower checkerboard rectangles is obtained when the panel is sprayed in increments with successive coats of paint.