Ford Motor Company

FORD LABORATORY TEST METHOD BI 001-05

MEASUREMENT OF DRY HIDING POWER OF PAINTS (RED AND GRAY STRAIGHT LINE HIDING CHART)

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 stripes of a standard hiding chart.

Apparatus Required

Straight Line Hiding Chart

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

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

and are identified by the code number RGF-2.

Masking Tape

One inch wide, Minnesota Mining and Manufacturing Company (3M) No. 710, (ESF-M3G48-A), or equivalent.

Steel Panels

Clean steel panels 10 x 30 cm 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.

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.

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

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Fri Aug 26 22:22:36 2016

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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 the hiding chart 5 cm wide and 28 cm long so that there is one gray and one red stripe the full 28 cm.

2. Position the chart on the steel panel even with the right edge and 1.25 cm inboard from the upper and lower edge. Tape the cardboard to the panel, using 25 mm wide masking tape. This tape should cover only about 1 cm of the chart at the top and bottom ends.

3. Reduce the paint under test with appropriate thinner to the viscosity designated in the Engineering Specification.

4. Hand spray the bottom 1/4 of the panel with approximately 12 micron coat of paint. Start the spraying from the bottom edge of panel.

5. Allow panel a one minute flash-off time. (See Note at bottom.)

6. Hand spray the bottom 1/2 of the panel with approximately 12 micron coat of paint by starting spraying from the bottom edge of panel.

7. Allow panel a one minute flash-off time. (See Note at bottom.)

8. Hand spray the bottom 3/4 of the panel with approximately 12 micron coat of paint by starting spraying from the bottom edge of panel.

9. Allow panel a one minute flash-off time. (See Note at bottom.)

10. Hand spray the entire panel with approximately 12 micron coat of paint.

11. Air dry, or after a three minute flash-off, bake the panel at one of the standard cycles designated by the Engineering Specification. Remove baked panel from oven after specified time, and cool to 23 +/- 2 °C.

12. Examine the painted chart under the North Sky Daylight of the Macbeth Unit. Observe the panel between 45 and 90° which will highlight the red and gray pattern through the paint coating. Starting at the bottom end or the area with the thinnest paint film, observe the red and gray pattern through the paint film. Note the point at which complete hiding is apparent, that is, where no red and gray design is visible.

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