

MEASUREMENT OF DRY HIDING POWER OF PAINTS

Application

This method is used to determine the dry hiding power of paints by measuring the film thickness required to completely hide black and gray stripes of a standard hiding chart.

Apparatus and Materials Required

Straight Line Hiding Chart

Black and gray hiding chart. This is made up of standard color lines, the gray to match Munsell neutral color value N/6 medium gray.

Source: Erichsen GmbH
587 Hemer Sundwig
W. Germany

Munsell Color Co.
2441 N. Calvert St.
Baltimore, MD 21218

Masking Tape

High temperature masking tape, 25 mm nominal width.

Test Panels

Body skin steel panels, dimensions 100 x 300 mm. Surface roughness 0.9 - 1.8 micrometre Ra, or as otherwise specified in the relevant Engineering Materials Specification.

Color Matching Device

Macbeth Color Matching Booth, or equivalent with North Sky Daylight according to FLTM BI 109-01.

Film Thickness Measuring Device

According to FLTM BI 117-01.

Source: Fischer Instruments
Stuttgart
W. Germany

Fischer Instrumentation (G.B.), Ltd.
Arnhem Industrial Estate
Arnhem Road, Newbury, Berkshire

Date	Action	Revisions
2000 08 31	Revised	Editorial – no technical change A. Cockman
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Page 1 of 4

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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. Position the chart on the panel (see Page 4) even with the left edge and about 15 mm inboard from the upper and lower edge. Tape the cardboard to the panel using high temperature masking tape. The tape should cover only about 10 mm of the chart at the top and bottom ends.
2. The paint should be thinned to the viscosity required by the relevant Engineering Materials Specification with the solvent specified. Viscosity to be determined in accordance with FLTM BI 111-01.
3. Spray the entire panel and chart with a uniform, wet coating of the test color approximately 12 micrometre thick.
4. Allow 1 minute flash-off, then spray the lower 3/4 of the panel with an additional 12 micrometer coat of paint.
5. Allowing 1 minute flash-off between coats, progressively spray the remaining lower areas of the panel until complete hiding of black and gray stripes 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 the bottom of the panel is desired with a dry film thickness gradient of 12 - 60 micrometres. A wedge type film thickness with complete hiding of the lower chart stripes is obtained when the panel is sprayed in increments with successive coats of paint.

6. Flash-off for 3 minutes after final coat, then bake the panel at one of the standard cycles designated by the relevant Engineering Materials Specification. Remove the baked panel from the oven and cool to room temperature.