



Standard Test Method for Wet-to-Dry Hiding Change¹

This standard is issued under the fixed designation D 5007; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers the determination of the change in hiding power of an architectural coating during drying, by visual evaluation of the wet and dry film.

1.2 This test method is not recommended for colors other than white and tints.

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

D 2805 Test Method for Hiding Power of Paints by Reflectometry

D 3924 Specification for Standard Environment for Conditioning and Testing Paint, Varnish, Lacquers, and Related Materials

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *hiding index, h_s* —the Spreading Index at a standard film opacity. In this test method the latter is a visual contrast standard prepared by applying a semi-opaque white coating on a black and white hiding-power chart to give a contrast ratio of 0.98 (98 %) which is just short of complete hiding, and is the conventional so-called *full hiding* end point in photometric hiding-power methods such as Test Method D 2805. Refer to the hiding indices of the wet and dry films as h_{sw} and h_{sd} respectively.

3.1.1.1 *Discussion*—Since this test method is intended to measure hiding-power difference rather than hiding power itself, a 0.98 (98 %) contrast ratio standard is not required. It is necessary only that the same standard be used for measuring both wet and dry films. See 3.1.8. For this purpose the standard needs to lie within the contrast range of both the wet and dry stripes, which is true of the 0.98 (98 %) contrast-ratio standard for most commercial paints. With paints of unusually low hiding, a lower contrast standard may be required, which can be simply one of the stripes taken from a drawdown of the test paint.

3.1.2 *hiding power*—the spreading rate of a paint applied uniformly on a standard black and white hiding power chart to give a standard degree of contrast just short of complete hiding.

3.1.2.1 *Discussion*—In reflectometry the standard contrast for hiding power measurements is generally accepted as the contrast ratio $C = 0.98$ (98 %), which with white and light tinted coatings is equivalent to a visual color difference of about 0.75 CIELAB units. That amount of color difference can reasonably be described as “just-short-of complete-hiding.” Since this is a visual method it employs a visual comparator as a standard, which is a hiding power chart with a white coating applied at a contrast ratio of 0.98 (98 %).

3.1.3 *logicator*—a multi-notch applicator with clearances, and corresponding wet film thicknesses and spreading rates, in equal percentage steps.

3.1.4 *logicator scale*—a scale with values directly related to the logarithms of corresponding spreading rates. A specified change in scale value represents the same percentage change in spreading rate over any part of such a scale.

3.1.5 *spreading index, h* —the spreading rate expressed in logicator scale units (LU) as described in 3.1.4 and 3.1.7.

3.1.6 *spreading rate, H* —the area covered per unit quantity of coating. (In this test method the quantity is volumetric).

3.1.7 *TG19 logicator*—a logicator designed for this test method with eight notches numbered at four-unit intervals on a scale from 20 to 48, the notch clearances ranging from 67 to 264 μm (2.65 to 10.4 mils) corresponding to wet film thicknesses from 37 to 145 μm (1.46 to 5.7 mils) and spreading rates from 6.9 to 27 m^2/L (280 to 1100 ft^2/gal), with one scale unit representing a change of 5 % and the four-unit interval between notches a cumulative change of 21.55 % in the clearance and

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.