



Designation: D 4941 – 89 (Reapproved 1999)^{ε1}

Standard Practice for Preparing Drawdowns of Artists' Paste Paints¹

This standard is issued under the fixed designation D 4941; 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.

^{ε1} NOTE—Inch/pound unit of measurement statement was added to the scope and Footnote 4 changed editorially in December 1999.

1. Scope

1.1 This practice covers the production of uniform films of artists' tube paints and other nonflowing pigmented paints using paint applicators designed for less viscous paints.

1.2 Information on how to achieve opaque specimens from these paints is included.

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:

D 16 Terminology Relating to Paint, Varnish, Lacquer, and Related Products²

D 4838 Test Method for Determining the Relative Tinting Strength of Chromatic Paints³

E 1164 Practice for Obtaining Spectrophotometric Data for Object-Color Evaluation²

3. Terminology

3.1 *Definitions*—See Terminology D 16 for definitions of terms used in this practice.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *drawdown bar*—a metal applicator with a specified gap designed to deposit a wet paint film uniformly on a specified test panel (for example, an opacity chart) or other substrate.

3.2.2 *drawdown*—a layer of paint deposited on a substrate by use of a drawdown bar for the evaluation of paint characteristics.

4. Summary of Practice

4.1 The paint is spread over the area of the test panel to be covered by the drawdown and the bar is pulled down with pressure just sufficient to avoid lifting of the bar from the chart surface.

4.2 Test panels are allowed to dry in a dust-free environment.

4.3 If complete hiding (opacity) is needed and not produced by a single paint film, a second film is applied at a 90° angle to the first. If required, additional layers may be applied using a narrower drawdown bar.

5. Significance and Use

5.1 Quality standards for artists' paints require the evaluation of various appearance characteristics of paint films. Tinting strength determination (Test Method D 4838) specifically requires the preparation of drawdowns for colorimetric measurement. Other evaluations such as color designation, transparency, gloss, and color difference measurements also require drawdown samples.

5.2 Artists' tube paints have a paste consistency that makes the use of traditional film application methods difficult, especially for drying oil paints.

5.3 Artists' paints vary in two properties important to the preparation of films, that is, transparency and drying time. Colorimetric determination and some other types of evaluation require paint specimens that completely hide the substrate. Very transparent paints require such a thick film to produce complete hiding that drying times is excessively long or the specimen surface is blemished. When complete hiding is necessary, this practice is designed to provide opaque films without these defects through application of a series of thin films.

¹ This specification is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.57 on Artist Paints and Related Materials

Current edition approved April 28, 1989. Published June 1989.

² *Annual Book of ASTM Standards*, Vol 06.01.

³ *Annual Book of ASTM Standards*, Vol 06.02.