



Standard Practice for Establishing Color and Gloss Tolerances¹

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INTRODUCTION

Permissible color and gloss deviations from a standard are generally dependent upon the color discrimination of the observer, on the lighting and surround in which the material is viewed, and on special considerations related to the design, manufacture, and practical usage of the colored material or object. The tolerances, therefore, may be influenced by economic, technical, psychological, and practical requirements. In many circumstances, acceptability of color and gloss deviations from a standard may differ appreciably from perceptibility for many reasons. With proper allowances, perceptibility data can be used as an aid to develop permissible tolerances. Finally, these considerations should result in a specification acceptable to both buyer and seller.

1. Scope

1.1 This practice describes a procedure for establishing tolerances and evaluating the color and gloss of specimens with respect to specified standards. This practice is appropriate for nonfluorescent opaque specimens.

1.2 This practice does not indicate the extent of tolerances, but gives guidance on how they can be set. For product specification, the tolerances between specimens and the specified standard should be agreed upon between the purchaser and the seller.

1.3 *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

D523 Test Method for Specular Gloss

D1535 Practice for Specifying Color by the Munsell System

D1729 Practice for Visual Appraisal of Colors and Color Differences of Diffusely-Illuminated Opaque Materials

D2244 Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates

D3964 Practice for Selection of Coating Specimens for Appearance Measurements

D4449 Test Method for Visual Evaluation of Gloss Differences Between Surfaces of Similar Appearance

D5531 Guide for Preparation, Maintenance, and Distribution of Physical Product Standards for Color and Geometric Appearance of Coatings

E284 Terminology of Appearance

E308 Practice for Computing the Colors of Objects by Using the CIE System

E312 Practice for Description and Selection of Conditions for Photographing Specimens Using Analog (Film) Cameras and Digital Still Cameras (DSC)

E805 Practice for Identification of Instrumental Methods of Color or Color-Difference Measurement of Materials

E1164 Practice for Obtaining Spectrometric Data for Object-Color Evaluation

E1331 Test Method for Reflectance Factor and Color by Spectrophotometry Using Hemispherical Geometry

E1345 Practice for Reducing the Effect of Variability of Color Measurement by Use of Multiple Measurements

E1349 Test Method for Reflectance Factor and Color by Spectrophotometry Using Bidirectional (45°:0° or 0°:45°) Geometry

E1360 Practice for Specifying Color by Using the Optical Society of America Uniform Color Scales System

¹ This practice is under the jurisdiction of ASTM Committee E12 on Color and Appearance and is the direct responsibility of Subcommittee E12.11 on Visual Methods.

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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.