



Standard Method of Test for TWO-PARAMETER, 60-DEG SPECULAR GLOSS¹

This Standard is issued under the fixed designation D 1471; 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.

INTRODUCTION

This method gives results that agree well with estimates of gloss, while measurements taken in accordance with the 60-deg geometry of ASTM Method D 523, Test for Specular Gloss² do not always correlate with gloss appearance. A measurement obtained with a small receiver aperture supplements a measurement with the aperture of Method D 523 to give, by means of abridged goniophotometry, an indication of the geometric distribution of reflected flux and, consequently, of the appearance characteristics.

Appearance characteristics ascribable to gloss may be classified, in accord with appearance or with flux-scattering properties, into two extreme types. Appearance-wise these types are image-forming and non-image-forming. Goniophotometric curves of the image-forming type are characterized by sharp peaks near the specular angle with scattering at wide angles. Curves of the non-image-forming type are characterized by broad peaks near the specular angle, showing that scattering occurs at narrow angles. The former type may be called "wide-angle scatterers"; the latter, "narrow-angle scatterers." Types intermediate between these two extremes are found.

1. Scope

1.1 This method covers an evaluation of two parameters of 60-deg specular gloss of nonmetallic specimens (1, 2, 3, 4, 5, 6, 7, 8).³ Although this method was developed for clear finishes on wood, it may reasonably be used for other nonmetallic materials.

2. Definitions

2.1 *parameter of specular gloss*—a measurement of specular gloss dependent on glossmeter geometry.

2.2 *specular gloss*—the luminous fractional reflectance (6) of a specimen at the specular direction.

2.3 *luminous fractional reflectance*—The ratio of the luminous flux reflected from, to that incident on, a specimen for specified solid angles.

3. Summary of Method

3.1 Evaluations of two-parameter specular gloss are made by using a large and a small receptor aperture as described in Section 4. These evaluations are designated as G_L and G_S , respectively.

4. Apparatus

4.1 *Instrumental Components*—The apparatus shall consist of an incandescent light source furnishing an incident beam, means for locating the surface of the specimen, and a

¹ This method is under the jurisdiction of ASTM Committee D-1 on Paint, Varnish, Lacquer, and Related Products.

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² 1974 Annual Book of ASTM Standards, Part 27.

³ The boldface numbers in parentheses refer to references listed at the end of this method.