



Designation: ~~D3928 – 00a (Reapproved 2010)~~ D3928 – 00a (Reapproved 2014)

Standard Test Method for Evaluation of Gloss or Sheen Uniformity¹

This standard is issued under the fixed designation D3928; 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 uniformity of gloss or sheen of a paint applied by brush to a test panel simulating an interior wall section. Variations in gloss or sheen that may be caused by short wet edge time, poor leveling, and pigment orientation or flotation during and after application are evaluated visually.

1.2 Because both the application and the panel evaluation are very subjective, this test method should be used only for comparative testing within one laboratory as the ratings assigned by different laboratories do not usually agree (see 8.1).

1.3 The values given 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. Summary of Test Method

2.1 Paint is brush applied to a test panel using procedures and conditions that are most likely to cause nonuniformity of gloss or sheen. The dry film is then viewed under conditions that accentuate variations in gloss or sheen and the overall appearance is evaluated.

3. Significance and Use

3.1 When coatings are applied to large flat surfaces such as walls, the film thickness may vary or there may be small areas missed entirely (holidays) when the color of the fresh material and the previous film are very similar. It is much less costly if these areas can be touched up instead of having to repaint the entire surface.

3.2 Thickness is also affected in the locations where an area coated a short time before is joined with the area currently being coated (laps). An application technique that may affect the final appearance of the film is brushing or rolling the material in different directions in adjacent areas.

3.3 Both buyers and sellers are interested in determining whether a coating can be applied without exhibiting areas that differ in appearance because of laps and brush or roller marks, and whether it can be readily touched up to provide a uniform appearance in regard to gloss or sheen and all other aspects.

4. Apparatus

4.1 *Paint Brush*², 50 mm (2 in.) wide with polyester filaments 70 mm (2¾ in.) long, chisel tip 15 mm (⅝ in.) thick. Previously used brushes are preferred.

4.2 *Paint Brush*, 25 mm (1 in.) wide with polyester filaments 57 mm (2¼ in.) long, chisel tip 10 mm (⅞ in.) thick. Previously used brushes are preferred.

¹ This test method is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.42 on Architectural Coatings.

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² The sole source of supply of a polyester brush No. B-20CS, known to the committee at this time is The Leneta Co., 15 Whitney Rd., Mahwah, NJ 07430. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,¹ which you may attend.

5. Reagents and Materials

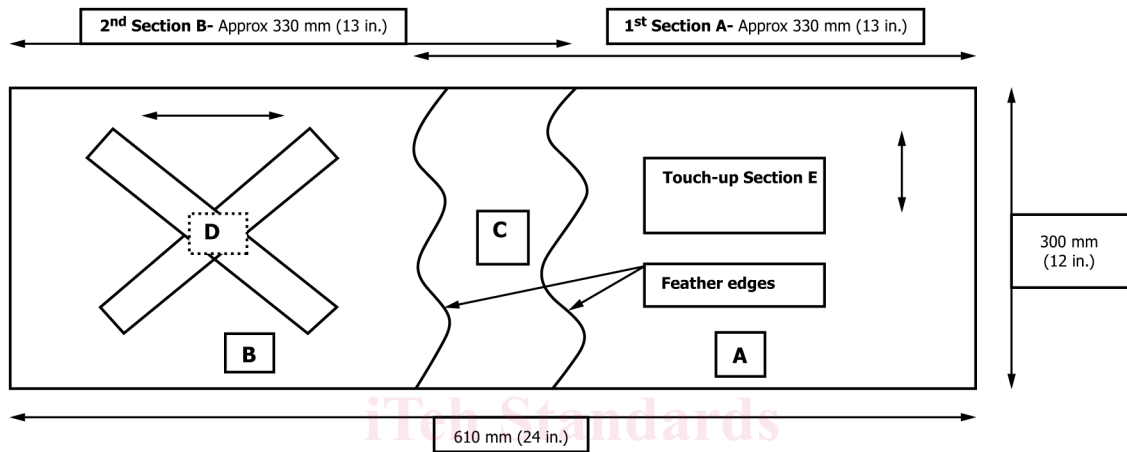
5.1 Laminated Fiber Board, 610 by 300 mm (24 by 12 in.) with at least one smooth side.

5.2 Latex-Base Primer.³

5.3 Control Paint (optional)—Since there are no standard panels, photographs, or paints for this test method, an agreed-upon paint of known uniformity of appearance should be included with the test paints as a control, unless the paints are only ranked.

6. Procedure

6.1 Apply the latex primer by spray to the entire face of a smooth side of the test panel so as to coat it uniformly at a spreading rate of about 11 m²/gal/L (450 ft²).



* Direction of finishing brush strokes

FIG. 1 Test Panel

6.2 Air dry at least 18 h under standard conditions of 23 ± 2°C (73.5 ± 3.5°F) and 50 ± 5 % relative humidity and examine the panel for uniformity of primer application. If this appears satisfactory, divide the coated area into sections A and B as shown in Fig. 1.

6.3 Mount the panel vertically and position it as shown in Fig. 1 with Section A to the right and Section B to the left of the operator. Before painting, wet the brush with water if latex paints are to be tested or VM & P naphtha if the test paints are solvent reducible. Shake out as much liquid as possible before using. Apply the paint under test to Section A with the 50–mm (2-in.) brush (Note 1) at a spreading rate of 11 ± 0.5 m²/L (450 ± 25 ft²/gal). About 13 g are required to cover this area, but the exact amount can be determined from the following inch/pound equation:

$$g = [(A \times W) / S] \times 3.15 \tag{1}$$

where:

Area (A) = number of in.²,
 Weight per gallon (W) = number of lb/gal, and
 Spread rate (S) = number of ft²/gal,

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 Weight per gallon (W) = number of lb/gal, and
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or the following metric equation:

$$g = [(A_m \times D) / S_m] \times 1000 \tag{2}$$

where:

Area (A_m) = number of m²,
 Density (D) = number of g/mL or number of kg/L, and
 Spread rate (S_m) = number of m²/L.

³ Similar to U.S. Federal Specification TT-P-650c Primer Coating Latex Base, White (for Gypsum Wallboard).