



Designation: D 3214 – 96

Standard Test Methods for Coating Powders and Their Coatings Used for Electrical Insulation¹

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1. Scope

1.1 These test methods cover the evaluation of the properties of organic resinous powders and their fused coatings used for electrical insulation.

NOTE 1—These test methods do not apply to ceramic, glass, or metal powder.

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

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.* For specific hazard statements, see Section 5.

2. Referenced Documents

2.1 ASTM Standards:

- D 149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies²
- D 150 Test Methods for AC Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulating Materials²
- D 257 Test Methods for D-C Resistance or Conductance of Insulating Materials²
- D 522 Test Methods for Mandrel Bend Test of Attached Organic Coatings³
- D 523 Test Method for Specular Gloss³
- D 609 Practice for Preparation of Cold-Rolled Steel Panels for Testing Paint, Varnish, Conversion Coatings, and Related Coating Products³
- D 618 Practice for Conditioning Plastics and Electrical Insulating Materials for Testing⁴

- D 621 Test Methods for Deformation of Plastics Under Load⁴
- D 792 Test Methods for Specific Gravity (Relative Density) and Density of Plastics by Displacement⁴
- D 1040 Specification for Uninhibited Mineral Oil for Use in Transformers and in Oil Circuit Breakers⁵
- D 1895 Test Methods for Apparent Density, Bulk Factor, and Pourability of Plastic Materials⁶
- D 1898 Practice for Sampling of Plastics⁶
- D 1921 Test Methods for Particle Size (Sieve Analysis) of Plastic Materials⁶
- D 2240 Test Method for Rubber Property—Durometer Hardness⁷
- D 2304 Test Method for Thermal Evaluation of Rigid Electrical Insulating Materials²
- D 2967 Test Method for Edge Coverage of Coating Powders⁸
- D 4217 Test Method for Gel Time of Thermosetting Coating Powder⁸
- D 4242 Test Method for Glass Plate Flow for Thermosetting Coating Powders⁸
- 2.2 *National Fire Protection Association Bulletins:*
 - No. 33 Spray Finishing⁹
 - No. 654 Dust Explosion Prevention Plastics Industry⁹

3. Terminology

3.1 Definitions:

3.1.1 *coating powder, n*—a heat-fusible, finely divided, solid, resinous material to form electrical insulating coatings.

3.1.1.1 *Discussion*—The coating powder may contain fillers, colorants, curing agents, etc., consistent with producing the desired coatings. The powder is applied by various methods such as spraying, sprinkling, or dipping. Usually hot parts are used. Heat causes the powder to melt and flow into a dense coating.

3.1.2 *powder coating, n*—a coating produced by the use of a heat-fusible coating powder.

¹ These test methods are under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and are the direct responsibility of Subcommittee D01.51 on Powder Coatings.

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² *Annual Book of ASTM Standards*, Vol 10.01.

³ *Annual Book of ASTM Standards*, Vol 06.01.

⁴ *Annual Book of ASTM Standards*, Vol 08.01.

⁵ Discontinued, see 1979 *Annual Book of ASTM Standards*, Part 40.

⁶ *Annual Book of ASTM Standards*, Vol 08.02.

⁷ *Annual Book of ASTM Standards*, Vol 09.01.

⁸ *Annual Book of ASTM Standards*, Vol 10.02.

⁹ Available from the National Fire Protection Assn., International, 60 Battery-march St., Boston, MA 02110.