



Standard Specification for Decorative Electroplated Coatings of Copper Plus Nickel Plus Chromium on Plastics¹

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1. Scope

1.1 This specification covers the requirements for several grades and types of electrodeposited copper plus nickel plus chromium coatings on plateable plastic substrates where appearance, durability and resistance to thermal cycling are important to service performance. Five grades of coatings are provided to correlate with the service conditions under which each is expected to provide satisfactory performance.

1.2 This specification covers the requirements for coatings applied subsequent to the application of metal film by autocatalytic deposition or subsequent to the application of any strike coatings after autocatalytic deposition.

1.3 The following caveat pertains only to the test method portions of Section 6, Annex A1, and Appendix X2, Appendix X3, and Appendix X4 of this specification. *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

- B368 Test Method for Copper-Accelerated Acetic Acid-Salt Spray (Fog) Testing (CASS Test)
- B487 Test Method for Measurement of Metal and Oxide Coating Thickness by Microscopical Examination of Cross Section
- B489 Practice for Bend Test for Ductility of Electrodeposited and Autocatalytically Deposited Metal Coatings on Metals
- B504 Test Method for Measurement of Thickness of Metal-

lic Coatings by the Coulometric Method

- B530 Test Method for Measurement of Coating Thicknesses by the Magnetic Method: Electrodeposited Nickel Coatings on Magnetic and Nonmagnetic Substrates
- B532 Specification for Appearance of Electroplated Plastic Surfaces
- B533 Test Method for Peel Strength of Metal Electroplated Plastics
- B556 Guide for Measurement of Thin Chromium Coatings by Spot Test
- B567 Test Method for Measurement of Coating Thickness by the Beta Backscatter Method
- B568 Test Method for Measurement of Coating Thickness by X-Ray Spectrometry
- B602 Test Method for Attribute Sampling of Metallic and Inorganic Coatings
- B659 Guide for Measuring Thickness of Metallic and Inorganic Coatings
- B727 Practice for Preparation of Plastics Materials for Electroplating
- B764 Test Method for Simultaneous Thickness and Electrode Potential Determination of Individual Layers in Multilayer Nickel Deposit (STEP Test)
- D1193 Specification for Reagent Water
- E50 Practices for Apparatus, Reagents, and Safety Considerations for Chemical Analysis of Metals, Ores, and Related Materials

3. Terminology

3.1 Definitions:

3.1.1 *significant surfaces*—those surfaces normally visible (directly or by reflection) that are essential to the appearance or serviceability of the article when assembled in normal position or that can be the source of corrosion products that deface visible surfaces on the assembled article.

4. Classification

4.1 Five grades of coatings designated by service condition numbers and several types of coatings defined by classification numbers are covered by this specification.

4.2 Service Condition Number:

4.2.1 The service condition number indicates the severity of exposure for which the grade of coating is intended, in

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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.