



Standard Specification for Coatings of Cadmium-Tin Mechanically Deposited¹

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1. Scope

1.1 This specification covers the requirements for a coating that is a mixture of cadmium and tin mechanically deposited on metal products. The coating is provided in various thicknesses up to and including 12 μm .

1.2 Mechanical deposition greatly reduces the risk of hydrogen embrittlement and is suitable for coating bores and recesses in many parts that cannot be conveniently plated electrolytically. (See [Appendix X1](#).)

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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.* For specific hazards statements, see [Section 7](#).

2. Referenced Documents

2.1 ASTM Standards:²

- [B117 Practice for Operating Salt Spray \(Fog\) Apparatus](#)
- [B183 Practice for Preparation of Low-Carbon Steel for Electroplating](#)
- [B201 Practice for Testing Chromate Coatings on Zinc and Cadmium Surfaces](#)
- [B242 Guide for Preparation of High-Carbon Steel for Electroplating](#)
- [B322 Guide for Cleaning Metals Prior to Electroplating](#)
- [B487 Test Method for Measurement of Metal and Oxide Coating Thickness by Microscopical Examination of Cross Section](#)
- [B499 Test Method for Measurement of Coating Thicknesses](#)

¹ This specification is under the jurisdiction of ASTM Committee B08 on Metallic and Inorganic Coatings and is the direct responsibility of Subcommittee B08.06 on Soft Metals.

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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.

by the Magnetic Method: Nonmagnetic Coatings on Magnetic Basis Metals

[B567 Test Method for Measurement of Coating Thickness by the Beta Backscatter Method](#)

[B571 Practice for Qualitative Adhesion Testing of Metallic Coatings](#)

[B602 Test Method for Attribute Sampling of Metallic and Inorganic Coatings](#)

[B697 Guide for Selection of Sampling Plans for Inspection of Electrodeposited Metallic and Inorganic Coatings](#)

[B762 Test Method of Variables Sampling of Metallic and Inorganic Coatings](#)

[E87 Methods for Chemical Analysis of Lead, Tin, Antimony, and Their Alloys \(Photometric Methods\) \(Withdrawn 1983\)](#)³

[E396 Test Methods for Chemical Analysis of Cadmium](#)

[F1470 Practice for Fastener Sampling for Specified Mechanical Properties and Performance Inspection](#)

2.2 U.S. Federal Standard:

[FED-STD-141 Paint, Varnish, Lacquer, and Related Materials; Methods of Inspection, Sampling and Testing](#)⁴

2.3 U.S. Military Standard:

[MIL-L-7808J Lubricating Oil, Aircraft Turbine Engine, Synthetic Base](#)⁴

3. Classification

3.1 *Classes*—Cadmium-tin coatings are classified on the basis of thickness, as follows:

Class	Minimum Thickness, μm
12	12
8	8
5	5

3.2 *Types*—Cadmium-tin coatings are identified by types on the basis of supplementary treatment required, as follows:

3.2.1 *Type I*—As coated, without supplementary chromate treatment (see [X1.1](#)).

3.2.2 *Type II*—With supplementary chromate treatment (see [X1.2](#)).

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.