



Standard Test Methods for Assessing the Adhesion of Metallic and Inorganic Coatings by the Mechanized Tape Test¹

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1. Scope

1.1 These test methods describe procedures for assessing the adhesion of metallic and inorganic coatings and other thin films to metallic and nonmetallic substrates. Assessment is made by applying pressure-sensitive tape to a coated surface and then utilizing a mechanical device to remove the tape at a regulated, uniform rate and constant angle while simultaneously recording the removal force.

1.2 Four methods are described. Methods A1 and A2 are intended primarily for use on parts. Methods B1 and B2 are intended primarily for use in laboratory evaluations. Methods B1 and B2 are not recommended for testing coatings and films on polymer substrates.

1.3 These test methods may be used to establish whether the adhesion of a coating to a substrate is within a required range (between a quantified low and a quantified high level). Determination of actual adhesive forces requires more sophisticated methods of measurement. In multilayer systems adhesion failure may occur between intermediate coating layers so that the adhesion of the total coating system to the substrate may not necessarily be determined.

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

1.5 *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

- [B183 Practice for Preparation of Low-Carbon Steel for Electroplating](#)
- [B242 Guide for Preparation of High-Carbon Steel for Electroplating](#)
- [B252 Guide for Preparation of Zinc Alloy Die Castings for Electroplating and Conversion Coatings](#)
- [B253 Guide for Preparation of Aluminum Alloys for Electroplating](#)
- [B254 Practice for Preparation of and Electroplating on Stainless Steel](#)
- [B281 Practice for Preparation of Copper and Copper-Base Alloys for Electroplating and Conversion Coatings](#)
- [B320 Practice for Preparation of Iron Castings for Electroplating](#)
- [B343 Practice for Preparation of Nickel for Electroplating with Nickel](#)
- [B480 Guide for Preparation of Magnesium and Magnesium Alloys for Electroplating](#)
- [B481 Practice for Preparation of Titanium and Titanium Alloys for Electroplating](#)
- [B482 Practice for Preparation of Tungsten and Tungsten Alloys for Electroplating](#)
- [B537 Practice for Rating of Electroplated Panels Subjected to Atmospheric Exposure](#)
- [B538 Method of FACT \(Ford Anodized Aluminum Corrosion Test\) \(Withdrawn 1986\)³](#)
- [B629 Practice for Preparation of Molybdenum and Molybdenum Alloys for Electroplating](#)
- [B630 Practice for Preparation of Chromium for Electroplating with Chromium](#)
- [B727 Practice for Preparation of Plastics Materials for Electroplating](#)
- [D1730 Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting](#)

¹ These test methods are under the jurisdiction of ASTM Committee B08 on Metallic and Inorganic Coatings and are the direct responsibility of Subcommittee B08.10 on Test Methods.

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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.

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