



Standard Test Method for Coating Weight (Mass) of Metallic Coatings on Steel by X-Ray Fluorescence¹

This standard is issued under the fixed designation A754/A754M; 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 use of X-ray fluorescence (XRF) for determining the coating weight (mass) of metallic coatings on steel sheet. The test method is intended to be used for “on-line” measurements of coating on continuous production lines.

1.2 This test method is applicable to the coatings covered by the following ASTM specifications: **A599/A599M**, **A623**, **A623M**, **A653/A653M**, **A792/A792M**, **A875/A875M**, **A879/A879M**, **A918**, **A924/A924M**, **A1046/A1046M**, and **A1063/A1063M**. It may be applicable to other coatings, providing that the elemental nature of the coating and substrate are compatible with the technical aspects of XRF such as the absorption coefficient of the system, primary radiation, fluorescent radiation, type of detection.

1.3 This test method includes the procedure for developing a single standard determination of coating weight (mass).

1.4 This test method includes procedures for both X-ray tube and isotope coating weight (mass) measuring instruments.

1.5 The values stated in either inch-pound units or SI units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the specification.

1.6 *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.*

¹ This test method is under the jurisdiction of ASTM Committee **A05** on Metallic-Coated Iron and Steel Products and is the direct responsibility of Subcommittee **A05.07** on Methods of Testing.

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2. Referenced Documents

2.1 *ASTM Standards*:²

- A599/A599M** Specification for Tin Mill Products, Electrolytic Tin-Coated, Cold-Rolled Sheet
- A623** Specification for Tin Mill Products, General Requirements
- A623M** Specification for Tin Mill Products, General Requirements [Metric]
- A653/A653M** Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- A792/A792M** Specification for Steel Sheet, 55 % Aluminum-Zinc Alloy-Coated by the Hot-Dip Process
- A875/A875M** Specification for Steel Sheet, Zinc-5 % Aluminum Alloy-Coated by the Hot-Dip Process
- A879/A879M** Specification for Steel Sheet, Zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface
- A902** Terminology Relating to Metallic Coated Steel Products
- A918** Specification for Steel Sheet, Zinc-Nickel Alloy Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface
- A924/A924M** Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
- A1046/A1046M** Specification for Steel Sheet, Zinc-Aluminum-Magnesium Alloy-Coated by the Hot-Dip Process
- A1063/A1063M** Specification for Steel Sheet, Twin-Roll Cast, Zinc-Coated (Galvanized) by the Hot-Dip Process

3. Terminology

3.1 *Definitions*—For general definitions of terms relating to metallic-coated steel products, see Terminology **A902**.

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.