



Standard Test Method for Measuring Shape Characteristics of Tin Mill Products¹

This standard is issued under the fixed designation A 987; 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 Shape is a significant quality characteristic for tin mill products. Plate-shape is affected by mill process factors plus the temper, thickness and width of the material supplied. It is the purpose of this test method to define accurately the different plate shape characteristics and to describe the method(s) most commonly used to measure particular characteristics.

1.2 Quantitative limits are not addressed and should be established on an individual producer and user basis, where appropriate.

1.3 *This standard does not purport to address 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 to determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

A 599/A 599M Specification for Tin Mill Products, Electrolytic Tin Coated, Cold-Rolled Sheet²

A 623 Specification for Tin Mill Products, General Requirements²

A 623M Specification for Tin Mill Products, General Requirements [Metric]²

A 624/A 624M Specification for Tin Mill Products, Electrolytic Tin Plate, Single Reduced²

A 625/A 625M Specification for Tin Mill Products, Black Plate, Single Reduced²

A 626/A 626M Specification for Tin Mill Products, Electrolytic Tin Plate Double Reduced²

A 650/A 650M Specification for Tin Mill Products, Black Plate, Double Reduced²

A 657/A 657M Specification for Tin Mill Products, Black Plate Electrolytic Chromium-Coated, Single and Double Reduced²

¹ This test method is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel, and Related Alloys and is the direct responsibility of Subcommittee A01.20 on Tin Mill Products.

Current edition approved Oct. 10, 2000. Published November 2000. Originally published as A 987-98. Last previous edition A 987-98.

² *Annual Book of ASTM Standards*, Vol 01.06.

3. Classification

3.1 The substrate shall conform to all the requirements of the appropriate specifications as follows: Specifications A 623, A 623M, A 599/A 599M, A 624/A 624M, A 625/A 625M, A 626/A 626M, A 650/A 650M, and A 657.

4. Significance and Use

4.1 The definitions and procedures for measuring shape characteristics of tin mill products are provided so that purchasers and suppliers have common measuring procedures and definitions of shape characteristics. These procedures provide definitions and measuring techniques of shape characteristics. The intention of these definitions and measuring methods is not to provide a dimensional specification for shape characteristics, but rather common procedure(s) for quantifying shape anomalies.

5. Interferences

5.1 Measurement of shape often has been subjective, at best. Successful measurement of various shape anomalies on quantitative terms requires recognition of several factors that can interfere with accurate measurements.

5.1.1 Flat surfaces are required. Measurement of several anomalies require laying of the sample on a flat surface. A machined flat surface is recommended. Laying a sample on a floor may introduce error due to areas on a floor that are not flat.

5.1.2 Several anomalies are measured by hanging the sheet. Hanging by holding the sample with a hand can introduce error from pressures exerted by fingers. A mechanical single device clamp to help hold these samples is recommended.

5.1.3 Stepblock gages or tapered gages should be checked regularly with a calibrated hand micrometer. Wear or dirt build up could affect accuracy.

5.1.4 The Shapemaster^{®3} table must be clean and the sensors must be in good condition. The sheet sample must be damage free.

³ A contact or noncontact flatness measuring instrument, manufactured by SP&C Computer Systems, Inc., 7292 Park Drive, Bath, PA 18014. See Figs. 1 and 2 of the noncontact, laser sensor, Shapemaster TL 1000 shape gage in use. Other instruments of appropriate design also may be used.