



Designation: A1030/A1030M – 21

Standard Practice for Measuring Flatness Characteristics of Steel Sheet Products¹

This standard is issued under the fixed designation A1030/A1030M; 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 practice covers definitions and procedures for measuring flatness characteristics of uncoated steel sheet and nonmetallic and metallic-coated steel sheet. The methods described are designed and intended to be used in mill situations and environments.

1.2 The sheet shall conform to all the requirements of the appropriate specifications as follows: Specifications [A568/A568M](#) or [A924/A924M](#).

1.3 Quantitative limits are not addressed and are established in the general requirements, or individual product specifications, or both; or when applicable, as agreed to between supplier and user.

1.4 *Units*—The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not necessarily exact equivalents; therefore, to ensure conformance with the standard, each system shall be used independently of the other, and values from the two systems shall not be combined.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

¹ This practice 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 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.

[A568/A568M Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for](#)
[A924/A924M Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process](#)

3. Significance and Use

3.1 This practice provides definitions and procedures commonly used for measuring flatness characteristics of steel sheet products under the jurisdiction of ASTM Committees A01 and A05 and their subcommittees as designated by a purchaser in a purchase order or contract.

3.2 Sheet flatness is affected by mill process factors plus the grade, thickness, and width of the material supplied. These measuring methods provide purchasers and suppliers with common definitions and procedures for flatness characteristics. The intention of these definitions and measuring methods is not to provide dimensional specifications for flatness characteristics, but rather common procedures for quantifying flatness anomalies. For determining compliance with flatness specifications, references are provided to appropriate ASTM standards.

3.3 This practice may be used by other ASTM Committees and other standards writing bodies for the purpose of measuring flatness characteristics of metal sheet products.

4. Interferences

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

4.1.1 Flat surfaces are required. Measurement of several anomalies requires laying of a cut sheet sample, or a sheet area still attached to a coil, on a recognized flat surface. In most cases, laying of a cut sheet sample, or a sheet area still attached to a coil, on a floor will produce satisfactory results, as long as the floor is recognized as being flat. The flatness of sheet areas still attached to a coil is also measured on the flat tables of coil processing lines, with the sheet line tension released. If the measuring surface is not recognized as being flat, a machined flat surface is recommended.

4.1.2 Stepblock gauges or tapered gauges should be checked regularly with a calibrated hand micrometer. Wear or dirt build up will affect accuracy.

*A Summary of Changes section appears at the end of this standard