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.

Designation: A1058 – 19

An American National Standard

Standard Test Methods for Mechanical Testing of Steel Products—Metric[1]

This standard is issued under the fixed designation A1058; 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 These test methods cover mechanical tests described in ASTM, EN,[2] ISO,[3] and JIS[4] standards that utilize the SI system of units. The test methods in each system are not exact equivalents. Each standards system (ASTM, EN, ISO, and JIS) shall be used independently of the other. Combining requirements from any two or more systems may result in nonconformance with the purchase order.

1.2 These test methods cover procedures for the mechanical testing of steels, stainless steels, and related alloys. The various mechanical tests herein described are used to determine properties required in the product specifications. Variations in testing methods are to be avoided, and standard methods of testing are to be followed to obtain reproducible and comparable results. In those cases in which the testing requirements for certain products are unique or at variance with these general procedures, the product specification testing requirements shall control.

1.3 Only one of the testing procedure tracks shall be followed: ASTM, EN, ISO, or JIS. When a test method or practice is not available in one of the tracks then an appropriate test method or practice from an alternative track shall be used. The respective tests are listed in the column shown in Table 1.

NOTE 1—The test methods in each system are not exact equivalents.

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 Attention is directed to Practice ISO 17025 when there may be a need for information on criteria for evaluation of testing laboratories.

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

1.7 *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:*[5]

A833 Test Method for Indentation Hardness of Metallic Materials by Comparison Hardness Testers

A956/A956M Test Method for Leeb Hardness Testing of Steel Products

A1038 Test Method for Portable Hardness Testing by the Ultrasonic Contact Impedance Method

E8/E8M Test Methods for Tension Testing of Metallic Materials

E10 Test Method for Brinell Hardness of Metallic Materials

E18 Test Methods for Rockwell Hardness of Metallic Materials

E23 Test Methods for Notched Bar Impact Testing of Metallic Materials

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

E110 Test Method for Rockwell and Brinell Hardness of Metallic Materials by Portable Hardness Testers

E190 Test Method for Guided Bend Test for Ductility of Welds

[1] These test methods are under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and are the direct responsibility of Subcommittee A01.13 on Mechanical and Chemical Testing and Processing Methods of Steel Products and Processes.

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[2] Available from British Standards Institute (BSI), 389 Chiswick High Rd., London W4 4AL, U.K., http://www.bsi-global.com.

[3] Available from International Organization for Standardization, 1 rue de Varembé, Case postale, CH-1211, Genève 20, Switzerland, http://www.iso.org.

[4] Available from Japanese Standards Association, 4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440, Japan, http://www.jsa.or.jp.

[5] 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.

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