



Designation: ~~B830 – 11~~ **B830 – 18**

Standard Specification for Uniform Test Methods and Frequency¹

This standard is issued under the fixed designation B830; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This specification covers a standard basis for uniform testing and frequency to determine physical and electrical compliance for aluminum and copper drawing stock, and aluminum and copper conductors.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.2.1 *Exception*—Resistivity is measured in SI units.

1.3 *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 The following documents, of the issue in effect on date of material purchase date issued, form a part of this specification to the extent referenced herein.

2.2 *ASTM Standards:*²

E29 [Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications](#)

2.3 *National Bureau of Standards:*³

[NBS Handbook 100 Handbook 100, Copper—Copper Wire Tables](#)

2.4 *Canadian Standards Association:*⁴

[CAN/CSA-ISO 9001-08 Quality Management Systems—Requirements](#)

[CAN/CSA Z299.3-85 \(R2006\) Quality Assurance Program—Category 3](#)

[ASTM B830-18](#)

<https://standards.iteh.ai/catalog/standards/sist/1bb78f88-2b42-4239-ba7c-8f8b9681c5b4/astm-b830-18>

¹ This specification is under the jurisdiction of ASTM Committee B01 on Electrical Conductors and is the direct responsibility of Subcommittee B01.02 on Methods of Test and Sampling Procedure.

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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 Available from National Technical Information Service (NTIS), 5301 Shawnee Rd., Alexandria, VA 22312, <http://www.ntis.gov>.

⁵ This ANSI standard is an identical adoption of ISO 9001:2015 and the text does not differ in any way from ISO 9001:2015.

2.4 *ANSI Standards:*⁴

- ~~ANSI/ISO/ASQ 9001-2015~~ ~~3534-1-2006~~ ~~Statistics-Vocabulary and Symbols Part 1-General Statistical Terms and Terms Used In Probability Quality Management Systems—Requirements~~
- ~~ANSI/ISO/ASQ 3534-2-2006~~ ~~Statistics-Vocabulary and Symbols Part 2-Applied Statistics~~
- ~~ANSI/ISO/ASQ Q9001-2008~~ ~~Quality Management Systems – Requirements~~
- ~~ANSI/ISO/ASQ Q9004-2009~~ ~~Q9004-1-2009~~ ~~Managing for the Sustained Success of an Organization—A Organization—A Quality Management Approach~~⁵
- ~~ANSI/ASQC C1-1996~~ ~~Specification of General Requirements for a Quality Program~~
- ~~ANSI/ASQC S1-1996~~ ~~S1-2012~~ ~~An Attribute Skip-Lot Sampling Program~~
- ~~ANSI/ASQ Z1.4-2003 (R2013)~~ ~~Z1.4-2008~~ ~~Sampling Procedures and Tables for Inspection by Attributes~~

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *acceptable quality level (AQL)*—the maximum percent nonconforming (or the maximum number of nonconformities per hundred units) that, for purposes of sampling inspection, can be considered as a process average.

3.1.2 *average outgoing quality (AOQ)*—the average quality of outgoing product, including all accepted lots or batches, plus all lots or batches not accepted after such lots or batches have been effectively 100 % inspected and all nonconforming units replaced by conforming units.

3.1.3 *CPK*—Process Performance Index.

Discussion:

Capability in Relation to Spec Mean:

USL	=	5.0
LSL	=	1.0
MEAN	=	2.0
Standard deviation (σ)	=	0.5

CPK tells the capability of a process based upon the worst case view of the data.
The equation is:

CPK = the lesser of:

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⁴ Available from Canadian Standards Association (CSA), 5060 Spectrum Way, Mississauga, ON L4W 5N6, Canada, <http://www.csa.ca>.

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.