



Standard Practice for Contact Performance Classification of Electrical Connection Systems¹

This standard is issued under the fixed designation B 868; 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 provides a uniform method of specifying performance requirements for (or reporting test results of) electrical contact and connection systems. Both conductor and connector system performance may be specified by this practice, separately or in combination.

1.2 This practice may be used for separable or permanent contacts employing metallic conductors and contacts.

1.3 This practice provides methods for both signal and power applications.

1.4 This practice does not specify the sample preparation or test sequences required for determining contact performance. It is the responsibility of the user of this practice to determine the applied test sequence(s) appropriate for the application.

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

2. Referenced Documents

2.1 ASTM Standards:

B 539 Test Methods for Measuring Contact Resistance of Electrical Connections (Static Contacts)²

B 542 Terminology Relating to Electrical Contacts and Their Use²

B 812 Test Method for Resistance to Environmental Degradation of Electrical Pressure Connections Involving Aluminum and Intended for Residential Applications²

2.2 UL Standard:

UL 486B Wire Connectors for Use with Aluminum Conductors, Third Edition, 1991³

2.3 EEI-NEMA Standard:

EEI-NEMA Standard TDJ-162 (ANSI C119.4), "Connectors for Use Between Aluminum-to-Aluminum or

Aluminum-to-Copper Bare Overhead Conductors"⁴

3. Terminology

3.1 Terms used in this practice are defined in Terminology B 542 except as noted in 3.2.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *conductor, n*—electrically conductive member carrying current to a contact interface. Examples are wire and cable, busbar, and conductive paths on an etched printed circuit board.

3.2.2 *contact performance, n*—contact interface behavior as indicated by initial electrical resistance and resistance change under the applied test conditions.

4. Summary of Practices

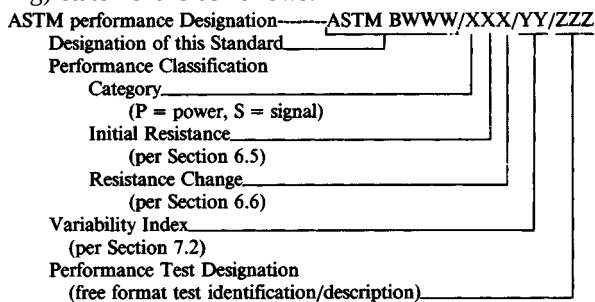
4.1 The prescribed performance specification (or reporting) statement consists of three sections, as follows:

4.1.1 *Performance Classification*, in accordance with this practice (Section 6).

4.1.2 *Variability Index*, determined by sample size and distribution of resistance values measured at end of test, in accordance with this practice (Section 7).

4.1.3 Statement of test method employed to determine performance classification.

4.2 The format for the performance specification (or reporting) statement is as follows:



5. Significance and Use

5.1 This practice is based on the use of electrical resistance as an indicator of contact performance.

5.2 Existing standards, such as those referenced in Section 2 as representative examples, provide the basis for applied test

¹ This practice is under the jurisdiction of ASTM Committee B-4 on Materials for Thermostats, Electrical Heating and Resistance, Contacts, and Connectors and is the direct responsibility of Subcommittee B04.07 on Electrical Contact Test Methods.

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² *Annual Book of ASTM Standards*, Vol 03.04.

³ Available from Underwriters Laboratory, 333 Pfingsten Rd., Northbrook, IL 60062.

⁴ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.