



Designation: B1004 – 16 (Reapproved 2022)

# Standard Practice for Contact Performance Classification of Electrical Connection Systems<sup>1</sup>

This standard is issued under the fixed designation B1004; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This practice provides a 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 conducting components.

1.3 This practice is applicable to both signal and power applications.

1.4 This practice is intended to be used for specifying performance of connectors and connection systems that are marketed for general public and trade application, as for instance for use in building wiring, electronics, and vehicles.

1.5 This practice is not intended to be used to specifying the performance of connection systems for specialized applications, such as military, industrial, aircraft, power distribution, and medical apparatus.

1.6 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.

1.7 *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 become familiar with all hazards including those identified in the appropriate Safety Data Sheet (SDS) for this product/material as provide by the manufacturer; to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.8 *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 Recom-*

*mendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

**B539** Test Methods for Measuring Resistance of Electrical Connections (Static Contacts)

**B542** Terminology Relating to Electrical Contacts and Their Use

**B812** Test Method for Resistance to Environmental Degradation of Electrical Pressure Connections Involving Aluminum and Intended for Residential Applications

## 3. Terminology

3.1 Terms used in this practice are defined in Terminology **B542** 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 *connection performance, n*—the condition and behavior of the contact interface(s) within the connection as indicated by electrical resistance and resistance change with time under the applied conditions.

3.2.3 *connection system, n*—the completed electrical contact interface and all associated parts, assembled as prescribed by the manufacturer(s) for the intended service.

3.2.4 *intended conditions of use, n*—any combination of applied electrical, environmental, and other conditions associated with the intended and rated application.

3.2.5 *nonincreasing, adj*—as applied to connection resistance values, mathematically, a series of numbers that are bounded above.

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee B02 on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee B02.11 on Electrical Contact Test Methods.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.