



NSAI
Standards

Irish Standard
I.S. EN 4875:2020

Aerospace series - Surface treatments - Test method for measurement of electrical contact resistance

I.S. EN 4875:2020

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN 4875:2020 is the adopted Irish version of the European Document EN 4875:2020, Aerospace series - Surface treatments - Test method for measurement of electrical contact resistance

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EUROPEAN STANDARD

EN 4875

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2020

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English Version

Aerospace series - Surface treatments - Test method for measurement of electrical contact resistance

Série aérospatiale - Traitements de surface - Méthode d'essai de mesure de la résistance électrique de contact

Luft- und Raumfahrt - Oberflächenbehandlungen - Prüfverfahren zur Messung von elektrischer Kontaktwiderstand

This European Standard was approved by CEN on 11 November 2019.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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European foreword

This document (EN 4875:2020) has been prepared by the Aerospace and Defence Industries Association of Europe — Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2020, and conflicting national standards shall be withdrawn at the latest by July 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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EN 4875:2020 (E)

1 Scope

This document describes the electrical contact resistance testing method applicable to conductive and non-conductive coatings applied on test specimens made of conductive materials (unless otherwise specified) for aerospace applications. An objective of this practice is to define and control many of the known variables in such a way that valid comparisons of the contact properties of materials can be made.

This test may be locally destructive depending on the process tested.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

contact resistance

resistance to current flow between two touching bodies, consisting of constriction resistance and film resistance

4 Principle

The principle of the method involves applying a known current I to the coating, measuring the voltage V , and calculating the resistance R_{measured} according to Ohm's law:

$$R_{\text{measured}} = \frac{V}{I}$$

NOTE Inner resistance of electrodes and cables is negligible.

5 Apparatus

5.1 Electrical equipment

Ohmmeters or multimeters with the ohmic measuring range at least corresponding to the expected value shall be used. The instruments shall be controlled and calibrated regularly.

5.2 Electrode equipment

Test equipment and electrical circuit as shown on Figure 1 shall be used for measuring the electrical resistance of test specimens.

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