IEC 62499

Edition 2.0 2021-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Railway applications – Current collection systems – Pantographs, testing methods for contact strips

Applications ferroviaires – Systèmes de captage de courant – Méthodes d'essai des bandes de frottement des pantographes

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RAILWAY APPLICATIONS – CURRENT COLLECTION SYSTEMS – PANTOGRAPHS, TESTING METHODS FOR CONTACT STRIPS

FOREWORD

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IEC 62499 has been prepared by IEC technical committee 9: Electrical equipment and systems for railways. It is an International Standard.

It is based on EN 50405:2015.

This second edition cancels and replaces the first edition published in 2008. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) Title modified;
b) The scope of this standard is changed from carbon contact strips to contact strips;
c) Replacement of several reference standards;
d) Several terms and abbreviated terms are introduced;
   - The definitions of metalized contact strip and metal contact strip are introduced according to the metal or carbon content by weight;
   - The definitions of contact strip structures and types are introduced;

e) Requirements for data sheets are introduced;

f) Table 1: Schedule of tests and Table 2: Sequence of tests are introduced;

g) The requirements for certain test methods and test acceptance criteria are updated;

h) Test of metal content for metalized contact strip, test of the coefficient of friction, optional test of the impact resistance of the carbon material and optional test of wear properties are added;

i) Annex A and Annex B are introduced.

The text of this International Standard is based on the following documents:

Draft	Report on voting
9/2762/FDIS	9/2773/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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RAILWAY APPLICATIONS – CURRENT COLLECTION SYSTEMS – PANTOGRAPHS, TESTING METHODS FOR CONTACT STRIPS

1 Scope

This document gives rules for testing methods for newly manufactured pantographs contact strips. Not all tests may be relevant to some designs of contact strips. This document excludes tests using a particular pantograph. Additional supplementary tests, out of the scope of this document, may be necessary to determine suitability for a particular application and are by prior agreement between customer and manufacturer.

NOTE The customer can, among others, be the system integrator, the manufacturer, the purchaser, the operator of the vehicle or the purchaser of the pantograph or a supervisory authority.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60413:1972, *Test procedures for determining physical properties of brush materials for electrical machines*

IEC 60773:2021, *Rotating electrical machines – Test methods and apparatus for the measurement of the operational characteristics of brushes*

ISO 148-1:2016, *Metallic materials – Charpy pendulum impact test – Part 1: Test method*

ISO 179-1:2010, *Plastics – Determination of Charpy impact properties – Part 1: Non-instrumented impact test*

ISO 180:2019, *Plastics – Determination of Izod impact strength*

ISO 6508-1: *Metallic materials – Rockwell hardness test – Part 1: Test method*

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:

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

3.1 General

3.1.1
air flow continuity
uninterrupted flow of air