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Responsible committee: GEL/9/3 Railway Electrotechnical Applications - Fixed Equipment

Interested committees:

Title: Draft BS EN 50317 Railway applications - Current collection systems - Requirements for and validation of measurements of the dynamic interaction between pantograph and overhead contact line

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- iii) requires additional national guidance or information

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

April 2024

ICS 29.280; 45.060.10

Will supersede EN 50317:2012; EN
50317:2012/AC:2012; EN 50317:2012/A1:2022

English Version

**Railway applications - Current collection systems -
Requirements for and validation of measurements of the
dynamic interaction between pantograph and overhead contact
line**

Applications ferroviaires - Systèmes de captage de courant
- Prescriptions et validation des mesures de l'interaction
dynamique entre le pantographe et la caténaire

Bahnanwendungen - Stromabnahmesysteme -
Anforderungen und Validierung von Messungen des
dynamischen Zusammenwirkens zwischen Stromabnehmer
und Oberleitung

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2024-07-12.

It has been drawn up by CLC/SC 9XC.

If this draft becomes a European Standard, CENELEC 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.

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

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

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 50317:2024) has been prepared by CLC/SC 9XC, “Electric supply and earthing systems for public transport equipment and ancillary apparatus (Fixed installations)”, of CLC/TC 9X, “Electrical and electronic applications for railways”.

The following dates are proposed:

- latest date by which the existence of this document has to be announced at national level (doa) dor + 6 months
- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) dor + 12 months
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) dor + 36 months (to be confirmed or modified when voting)

This document will supersede EN 50317:2012 and all of its amendments and corrigenda (if any).

prEN 50317:2024 includes the following significant technical changes with respect to EN 50317:2012:

- changed definitions for “collector head” replaced by “pantograph head” (3.1);
- changed definitions for “total mean uplift force” replaced by “mean cord force” (3.1);
- new definition “expansion length” (3.1);
- changed definitions “arcing” (3.1);
- added definition for “nominal voltage”, “electrical clearance” (3.1);
- new definition “reference threshold”, “measurement threshold” and “reference distance” (3.1);
- updated abbreviation lists (now 3.2);
- minimum conditions recorded for measurements (Clause 4);
- more detailed explanation of measurement of cord forces (Clause 5);
- measurement of contact force (Clause 6);
- updated requirements for definitions of requirements;
- aerodynamic influence, Inertia correction force, Aerodynamic correction force;
- definition of Dynamic laboratory test of the instrumented pantograph;
- updated requirements for of measurement results, control section possible acceptable exceptions;
- measurement of displacement (Clause 7);
- uplift at the support how to achieve representative results;
- measurement of times during pantograph lowering (7.5);
- measurement of arcing (Clause 8);

- 67 — removed wavelength 323 nm – 329 nm;
- 68 — reference threshold values from note to normative;
- 69 — more detailed definition of control section and possible acceptable exceptions;
- 70 — more detailed definition of Adjustment of threshold for the measurement distance.

71 This document has been prepared under a standardization request addressed to CENELEC by the European
72 Commission. The Standing Committee of the EFTA States subsequently approves these requests for its
73 Member States.

1 Scope

This document specifies the functional requirements for output and accuracy of measurements of the dynamic interaction between pantograph and overhead contact line.

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.

EN 50318:2018, * *Railway applications - Current collection systems - Validation of simulation of the dynamic interaction between pantograph and overhead contact line*

EN 50206-1:2010, *Railway applications - Rolling stock - Pantographs: Characteristics and tests - Part 1: Pantographs for main line vehicles*

EN 50119:2020, *Railway applications - Fixed installations - Electric traction overhead contact lines*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

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

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

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>

3.1.1

pantograph head

pantograph pan

part of the pantograph comprising the contact strips and their mountings, horns and possibly a suspension

[SOURCE: IEC 60050-811:2017, 811-32-05]

3.1.2

working area of pantograph head

lateral and vertical range of possible contact points on the contact strips during normal operation

3.1.3

contact point

point of mechanical contact between a contact strip and a contact wire

3.1.4

contact force

<for a pantograph> vertical force applied by the pantograph to the contact wire(s)

Note 1 to entry: The contact force is the sum of forces of all contact points of a pantograph.

Note 2 to entry: The contact force is measured perpendicular to the contact plane.

* As impacted by EN 50318:2018/A1:2022