Railway applications - Electric equipment for rolling stock - Part 2: Electrotechnical components - General rules

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NATIONAL FOREWORD

See Eesti standard EVS-EN 60077-2:2017 sisaldab Euroopa standardi EN 60077-2:2017 ingliskeelset teksti.	This Estonian standard EVS-EN 60077-2:2017 consists of the English text of the European standard EN 60077-2:2017.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 24.11.2017.	Date of Availability of the European standard is 24.11.2017.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Railway applications - Electric equipment for rolling stock - Part 2: Electrotechnical components - General rules (IEC 60077-2:2017)

Applications ferroviaires - Equipements électriques du matériel roulant - Partie 2: Composants électrotechniques - Règles générales
(IEC 60077-2:2017)

Bahnanwendungen - Elektrische Betriebsmittel auf Bahnfahrzeugen - Teil 2: Elektrotechnische Bauteile - Allgemeine Regeln
(IEC 60077-2:2017)

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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

European foreword

The text of document 9/2267/FDIS, future edition 2 of IEC 60077-2, prepared by IEC/TC 9 "Electrical equipment and systems for railways" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60077-2:2017.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2018-06-01
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2020-09-01

This document supersedes EN 60077-2:2002.

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

Endorsement notice

The text of the International Standard IEC 60077-2:2017 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60077-3	NOTE	Harmonized as EN 60077-3.
IEC 60077-4	NOTE	Harmonized as EN 60077-4.
IEC 60077-5	NOTE	Harmonized as EN 60077-5.
IEC 60947-1	NOTE	Harmonized as EN 60947-1.
IEC 60947-4-1	NOTE	Harmonized as EN 60947-4-1.
IEC 61140	NOTE	Harmonized as EN 61140.
IEC 61373	NOTE	Harmonized as EN 61373.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60050-811	2017	International Electrotechnical Vocabulary (IEV) - Chapter 811: Electric traction	-	-
IEC 60068-2-1	-	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	-
IEC 60068-2-2	-	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	-
IEC 60068-2-30	-	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	-
IEC 60068-2-52	-	Environmental testing - Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)	EN 60068-2-52	-
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60077-1	2017	Railway applications - Electric equipment for rolling stock - Part 1: General service conditions and general rules	EN 60077-1	2017
IEC 60417-DB	-	Graphical symbols for use on equipment	-	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	EN 60529	-
IEC/TR 60943	-	Guidance concerning the permissible temperature rise for parts of electrical equipment, in particular for terminals	-	-

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RAILWAY APPLICATIONS – ELECTRIC EQUIPMENT FOR ROLLING STOCK –

Part 2: Electrotechnical components – General rules

1 Scope

In addition to the rules given in IEC 60077-1, this part of IEC 60077 provides general rules for all electrotechnical components installed in power circuits, auxiliary circuits, control and indicating circuits, etc., on railway rolling stock.

The purpose of this document is to adapt the general rules given in IEC 60077-1 to all electrotechnical components for rolling stock, in order to obtain uniformity of requirements and tests for the corresponding range of components.

Electrotechnical components are mainly switchgear and controlgear, including also relays, valves, resistors, fuses, etc., irrespective of the nature of their control.

The incorporation of electronic components or electronic subassemblies into electrotechnical components is now common practice. Although this document is not applicable to electronic equipment, the presence of electronic components does not give grounds to exclude such electrotechnical components from the scope of this document.

Electronic subassemblies comply with the relevant standard.

Some of these rules, after agreement between the user and the manufacturer, are used for electrotechnical components installed on vehicles other than railway rolling stock, such as mine locomotives, trolleybuses, etc.

This document states:

a) the characteristics of the components;

b) the service conditions with which components have to comply;

c) the tests intended to confirm compliance of the components with these characteristics under these service conditions, and the methods to be adopted for these tests;

d) the information to be marked on, or given with, the apparatus.

This document does not cover industrial electrotechnical components which comply with their own product standard. In order to ensure satisfactory operation of these components for rolling stock, this document is used to specify only the particular requirements for railway application. In that case, a specific document would state the additional requirements with which the industrial components are to comply, e.g.:

– to be adapted (for example for control voltage, environmental conditions, etc.); or

– to be installed and used so as not to have to endure specific railway conditions; or

– to be additionally tested to prove that these components can satisfactorily withstand railway conditions.

In the event of there being a difference in requirements between this document and a railway rolling stock relevant product standard, then the product standard requirements take precedence.