SLOVENSKI STANDARD
SIST EN 60322:2002

01-julij-2002

Nadomešča:
SIST HD 91 S1:1999

Železniške naprave – Električna oprema za vozna sredstva – Pravila za močnostne upore odprte konstrukcije (IEC 60322:2001)

Railway applications - Electric equipment for rolling stock - Rules for power resistors of open construction

Bahnanwendungen - Elektrische Ausrüstung für Bahnfahrzeuge - Regeln für Leistungswiderstände in offener Bauweise

Applications ferroviaires - Equipements électriques du matériel roulant - Règles relatives aux résistances de puissance de construction ouverte

Ta slovenski standard je istoveten z: **EN 60322:2001**

ICS:

31.040.01	Upori splošno	Resistors in general
45.060.01	Železniška vozila na splošno	Railway rolling stock in general

SIST EN 60322:2002 **en**

EUROPEAN STANDARD **EN 60322**

NORME EUROPÉENNE

EUROPÄISCHE NORM July 2001

ICS 29.280 Supersedes HD 91 S1:1977

English version

Railway applications - Electric equipment for rolling stock - Rules for power resistors of open construction
(IEC 60322:2001)

Applications ferroviaires - Equipements électriques du matériel roulant - Règles relatives aux résistances de puissance de construction ouverte (CEI 60322:2001)

Bahnanwendungen - Elektrische Ausrüstung für Bahnfahrzeuge - Regeln für Leistungswiderstände in offener Bauweise (IEC 60322:2001)

This European Standard was approved by CENELEC on 2001-05-01. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 60322:2001 E

Foreword

The text of document 9/607/FDIS, future edition 2 of IEC 60322, prepared by IEC TC 9, Electric railway equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60322 on 2001-05-01.

This European Standard supersedes HD 91 S1:1977.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2002-02-01

– latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2004-05-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annexes A and ZA are normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60322:2001 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-811	1991	International electrotechnical vocabulary - Chapter 811: Electric traction	-	-
IEC 60077-1	1999	Railway applications - Electric equipment for rolling stock Part 1: General service conditions and general rules	-	-
IEC 60364-4-41 (mod)	1992	Electrical installations of buildings Part 4: Protection for safety - Chapter 41: Protection against electric shock	HD 384.4.41 S2	1996
IEC 60943	1998	Guidance concerning the permissible temperature rise for parts of electrical equipment, in particular for terminals	-	-
IEC 61133	1992	Railway applications - Testing of rolling stock after completion of construction and before entry into service	-	-
IEC 61373	1999	Railway applications - Rolling stock equipment - Shock and vibration tests	EN 61373	1999

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
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Deuxième édition
Second edition
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Applications ferroviaires – Equipements électriques du matériel roulant – Règles relatives aux résistances de puissance de construction ouverte

Railway applications – Electric equipment for rolling stock – Rules for power resistors of open construction

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

RAILWAY APPLICATIONS – ELECTRIC EQUIPMENT FOR ROLLING STOCK – RULES FOR POWER RESISTORS OF OPEN CONSTRUCTION

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60322 has been prepared by IEC technical committee 9: Electric railway equipment.

This second edition cancels and replaces the first edition published in 1970, of which it constitutes a technical revision.

The text of this standard is based on the following documents:

FDIS	Report on voting
9/607/FDIS	9/611/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annex A forms an integral part of this standard.

The committee has decided that the contents of this publication will remain unchanged until 2010. At this date, the publication will be

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

RAILWAY APPLICATIONS – ELECTRIC EQUIPMENT FOR ROLLING STOCK – RULES FOR POWER RESISTORS OF OPEN CONSTRUCTION

1 Scope and object

This International Standard gives the rules for all power resistors (for example, braking, heating, snubber and filter) used in the power and auxiliary circuits on board rolling stock irrespective of the circuit and the type of vehicle where they are used.

These resistors are generally of open construction and are used in polluted areas. The construction consists of resistor elements of grids, plates, strips, ribbons or wires.

NOTE Certain of these rules may, after agreement between user and manufacturer, be used for electrical equipment installed on other vehicles such as mine locomotives, trolley buses, etc.

This standard states

– the characteristics of the resistors;

– the service conditions with which the power resistors have to comply;

– the tests intended for confirming that these conditions have been met and the methods to be adopted for these tests;

– the information to be marked on, or given with, the resistors.

This standard does not give requirements relating to general service conditions and general rules which are given in IEC 60077-1.

The object of this standard is to adapt the general rules given in IEC 60077-1 to power resistors for rolling stock in order to obtain uniformity of requirements and tests throughout the corresponding range of components and to avoid the need for testing to two different standards.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(811):1991, *International Electrotechnical Vocabulary (IEV) – Chapter 811: Electric traction*