



SLOVENSKI STANDARD SIST EN 62621:2016

01-julij-2016

Nadomešča:
SIST EN 50151:2004

Železniške naprave - Stabilne naprave električne vleke - Posebne zahteve za kompozitne izolatorje za vozne vode omrežij

Railway applications - Fixed installations - Electric traction - Specific requirements for composite insulators used for overhead contact line systems

Bahnanwendungen - Ortsfeste Anlagen - Zugförderung - Besondere Anforderungen an Verbundisolatoren für Oberleitungssysteme

Applications ferroviaires - Installations fixes - Traction électrique - Exigences particulières pour les isolateurs composites destinés aux réseaux de lignes aériennes de contact

Ta slovenski standard je istoveten z: EN 62621:2016

ICS:

29.080.10	Izolatorji	Insulators
29.280	Električna vlečna oprema	Electric traction equipment

SIST EN 62621:2016 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 62621:2016

<https://standards.iteh.ai/catalog/standards/sist/93215e64-940a-4928-b898-194fd2961c74/sist-en-62621-2016>

EUROPEAN STANDARD

EN 62621

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2016

ICS 45.060

Supersedes EN 50151:2003

English Version

Railway applications - Fixed installations - Electric traction -
Specific requirements for composite insulators used for
overhead contact line systems
(IEC 62621:2011)

Applications ferroviaires - Installations fixes - Traction
électrique - Exigences particulières pour les isolateurs
composites destinés aux réseaux de lignes aériennes
de contact
(IEC 62621:2011)

Bahnanwendungen - Ortsfeste Anlagen - Zugförderung -
Besondere Anforderungen an Verbundisolatoren für
Oberleitungssysteme
(IEC 62621:2011)

This European Standard was approved by CENELEC on 2015-12-21. 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 CEN-CENELEC Management Centre 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 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

EN 62621:2016**Foreword**

This document (EN 62621:2016) consists of the text of IEC 62621:2011 prepared by IEC/TC 9 "Electrical equipment and systems for railways".

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) 2016-12-21
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-12-21

This document supersedes EN 50151:2003.

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

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

[SIST EN 62621:2016
https://standards.iteh.ai/catalog/standards/sist/93215e64-940a-4928-b898-194fd2961c74/sist-en-62621-2016](https://standards.iteh.ai/catalog/standards/sist/93215e64-940a-4928-b898-194fd2961c74/sist-en-62621-2016)

Endorsement notice

The text of the International Standard IEC 62621:2011 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60587	-	Electrical insulating materials used under severe ambient conditions - Test methods for evaluating resistance to tracking and erosion	EN 60587	-
IEC/TS 60815-1	2008	Selection and dimensioning of high-voltage insulators intended for use in polluted conditions - Part 1: Definitions, information and general principles	-	-
IEC/TS 60815-3	2008	Selection and dimensioning of high-voltage insulators intended for use in polluted conditions - Part 3: Polymer insulators for a.c. systems	-	-
IEC 60826	-	Design criteria of overhead transmission lines	-	-
IEC 60850	2007 ¹⁾	Railway applications - Supply voltages of traction systems	EN 50163	2004
-	-		+ corr. May	2010
-	-		+ AC	2013
-	-		+ A1	2007
IEC 60913	-	Railway applications - Fixed installations - Electric traction overhead contact lines	EN 50119	-
IEC 61109	2008	Insulators for overhead lines - Composite suspension and tension insulators for a.c. systems with a nominal voltage greater than 1 000 V - Definitions, test methods and acceptance criteria	EN 61109	2008

1) IEC 60850:2007 is replaced by IEC 60850:2014, *Railway applications - Supply voltages of traction systems*.

EN 62621:2016

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61467	2008	Insulators for overhead lines - Insulator strings and sets for lines with a nominal voltage greater than 1 000 V - AC power arc tests	EN 61467	2008
IEC 61952	2008	Insulators for overhead lines - Composite line post insulators for A.C. systems with a nominal voltage greater than 1 000 V - Definitions, test methods and acceptance criteria	EN 61952	2008
IEC 62217	2005 ²⁾	Polymeric insulators for indoor and outdoor use with a nominal voltage > 1 000 V - General definitions, test methods and acceptance criteria	EN 62217	2006 ³⁾
-	-		+ corr. December	2006
IEC 62497-1	2010	Railway applications - Insulation coordination -	EN 50124-1	2001
-	-	Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment	+ corr. December	2007
-	-		+ corr. May	2010
-	-		+ A1	2003
-	-		+ A2	2005
ISO 34-1	-	Rubber, vulcanized or thermoplastic - Determination of tear strength - Part 1: Trouser, angle and crescent test pieces	-	-
ISO 37	-	Rubber, vulcanized or thermoplastic - Determination of tensile stress-strain properties	-	-

iTech STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 62621:2016
<https://standards.iteh.ai/catalog/standards/sist/93215e64-940a-4928-b898-194fd2961c74/sist-en-62621-2016>

-
- 2) IEC 62217:2005 is replaced by IEC 62217:2012, *Polymeric HV insulators for indoor and outdoor use - General definitions, test methods and acceptance criteria*.
- 3) EN 62217:2006 is replaced by EN 62217:2013, *Polymeric HV insulators for indoor and outdoor use - General definitions, test methods and acceptance criteria* (IEC 62217:2012).

Annex ZZ
(informative)

**Correspondence between this European Standard and
the Essential Requirements of EU Directive 2008/57/EC**

This European Standard has been prepared under a mandate given to CENELEC by the European Union and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Annex III of the EU Directive 2008/57/EC (also named as New Approach Directive 2008/57/EC Rail Systems: Interoperability).

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

WARNING: Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 62621:2016](https://standards.iteh.ai/catalog/standards/sist/93215e64-940a-4928-b898-194fd2961c74/sist-en-62621-2016)

<https://standards.iteh.ai/catalog/standards/sist/93215e64-940a-4928-b898-194fd2961c74/sist-en-62621-2016>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 62621:2016

<https://standards.iteh.ai/catalog/standards/sist/93215e64-940a-4928-b898-194fd2961c74/sist-en-62621-2016>



IEC 62621

Edition 1.0 2011-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Railway applications – Fixed installations – Electric traction – Specific requirements for composite insulators used for overhead contact line systems

Applications ferroviaires – Installations fixes – Traction électrique – Exigences particulières pour les isolateurs composites destinés aux réseaux de lignes aériennes de contact

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE
CODE PRIX

U

ICS 45.060

ISBN 978-2-88912-569-2

CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions.....	7
4 Characteristics of composite insulators for overhead contact line systems.....	8
4.1 General.....	8
4.2 Environmental conditions.....	8
4.3 System voltages and frequencies.....	9
4.4 Creepage distance.....	9
4.5 Mechanical requirements.....	10
4.6 Corrosion.....	11
4.7 Fire safety.....	11
4.8 Tracking and erosion.....	11
4.9 Arc protection.....	11
4.10 In-running insulators.....	12
5 Testing.....	12
5.1 General.....	12
5.2 Design tests.....	12
5.3 Type tests.....	14
5.3.1 General.....	14
5.3.2 Electrical tests.....	14
5.3.3 Mechanical tests.....	14
5.3.4 Verification of dimensions.....	14
5.4 Sample tests.....	15
5.5 Routine tests.....	15
6 Identification.....	15
7 Transport, storage, installation and maintenance.....	15
Annex A (informative) Purchaser requirements.....	16
Annex B (informative) Principles of the damage limit, load coordination and testing.....	17
Annex C (informative) Guidance on non-standard mechanical stresses and dynamic mechanical loading.....	21
Annex D (informative) Determination of the equivalent bending moment caused by combined loads.....	23
Bibliography.....	26
Figure B.1 – Load-time strength and damage limit of a core assembled with fittings.....	18
Figure B.2 – Graphical representation of the relationship of the damage limit to the mechanical characteristics and service loads of an insulator with a 16 mm diameter core.....	19
Figure B.3 – Test loads.....	20
Figure D.1 – Combined loads applied to unbraced insulators.....	24
Table 1 – Definition of relevant mechanical characteristics according to insulator type.....	10
Table 2 – Design tests.....	13

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RAILWAY APPLICATIONS –
FIXED INSTALLATIONS –
ELECTRIC TRACTION –
SPECIFIC REQUIREMENTS FOR COMPOSITE INSULATORS
USED FOR OVERHEAD CONTACT LINE SYSTEMS**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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 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 IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62621 has been prepared by IEC technical committee 9: Electrical equipment and systems for railways.

This standard is based on EN 50151:2003.

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

FDIS	Report on voting
9/1539/FDIS	9/1560/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 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 62621:2016](#)

<https://standards.iteh.ai/catalog/standards/sist/93215e64-940a-4928-b898-194fd2961c74/sist-en-62621-2016>