



BSI Standards Publication

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

National foreword

This British Standard is the UK implementation of EN 62621:2016+A1:2016. It is identical to IEC 62621:2011. It supersedes BS EN 62621:2016 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee GEL/9, Railway Electrotechnical Applications, to Subcommittee GEL/9/3, Railway Electrotechnical Applications - Fixed Equipment.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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Amendments/corrigenda issued since publication

Date	Text affected
31 December 2016	Implementation of CENELEC amendment A1:2016: Annex ZZ replaced

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)

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

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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-12-21

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

Endorsement notice

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

Foreword to amendment A1

This document (EN 62621:2016/A1:2016) has been prepared by CLC/SC 9XC "Electric supply and earthing systems for public transport equipment and ancillary apparatus (Fixed installations)".

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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*.

<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	-	-

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)

Relationship 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 Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Annex III of the EC 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 given in Table ZZ.1 for “Energy” 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.

**Table ZZ.1 - Correspondence between this European Standard, the TSI “Energy”
(REGULATION (EU) No 1301/2014 of 18 November 2014) and Directive 2008/57/EC**

Clauses of this European Standard	Chapter / § / points / of ENE TSI	Essential Requirements (ER) of Directive 2008/57/EC	Comments
The whole standard is applicable, for aspects having influence on the basic parameters	4.2.9. Geometry of the overhead contact line 4.2.11. Mean contact force 4.2.12. Dynamic behaviour and quality of current collection 6.1.4. Particular assessment procedure for the interoperability constituent — overhead contact line	2. Requirements specific to each sub-subsystem 2.2 Energy 2.2.1 Safety 2.2.3. Technical compatibility	

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

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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.
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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.

INTRODUCTION

This standard specifies requirements for the design and testing of composite insulators used on railway electric traction overhead contact line systems. Such insulators, which are installed at relatively low heights in the harsh environment of railway infrastructures, require specific considerations during design to reduce the effects of vandalism and environmental pollution from railway operations, especially when combined with a lack of natural washing. Insulators may be included in arrangements in tunnels and over bridges or be in contact with traction unit pantographs where combined mechanical loading (tension, bending and torsion) may require special consideration.

The standard is intended to allow the manufacturer to comply with local working practices, to ensure compatibility with existing electric traction overhead contact line systems, and provide an insulator which will give reliable service over its target life span with minimum maintenance.

Insulators intended for overhead lines are predominately designed to resist tension and/or bending loads and are not designed to resist torsional loads. Mitigating measures to reduce torsional loading are generally introduced by the overhead contact lines design engineer. Some combined loading (tension, compression and torsion) can be experienced and this is represented in the testing procedure specified in this document.

The testing procedures given for railway applications in this standard are predominately referenced from IEC 61109, IEC 61952 and IEC 62217.