

Irish Standard I.S. EN IEC 61952-1:2019

Insulators for overhead lines - Composite line post insulators for AC systems with a nominal voltage greater than 1 000 V -Part 1: definitions, end fittings and designations

 $\ensuremath{\mathbb C}$  CENELEC 2019 No copying without NSAI permission except as permitted by copyright law.

### I.S. EN IEC 61952-1:2019

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWIFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

*NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.* 

*This document is based on:* EN IEC 61952-1:2019 *Published:* 2019-06-07

<i>This document was published</i> under the authority of the NSAI		ICS numbe	r:		
and comes into effect on:		29.080.	10		
		29.240.2	20		
2019-06-25					
		NOTE: If blank see CEN/CEI	NELEC cover page		
NSAI	T +353 1	807 3800 Sales:			
1 Swift Square,	F +353 1	807 3838 T +353	1 857 6730		
Northwood, Santry	E standa	rds@nsai.ie F +353	1 857 6729		
Dublin 9	W NSAI.i	e W stan	dards.ie		
Údarás um Chaighdeáin Náisiúnta na hÉireann					

# **National Foreword**

I.S. EN IEC 61952-1:2019 is the adopted Irish version of the European Document EN IEC 61952-1:2019, Insulators for overhead lines - Composite line post insulators for AC systems with a nominal voltage greater than 1 000 V - Part 1: definitions, end fittings and designations

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

### Compliance with this document does not of itself confer immunity from legal obligations.

*In line with international standards practice the decimal point is shown as a comma (,) throughout this document.* 

This is a free page sample. Access the full version online.

This page is intentionally left blank

# EUROPEAN STANDARD

# EN IEC 61952-1

# NORME EUROPÉENNE

**EUROPÄISCHE NORM** 

June 2019

ICS 29.080.10; 29.240.20

**English Version** 

# Insulators for overhead lines - Composite line post insulators for AC systems with a nominal voltage greater than 1 000 V - Part 1: definitions, end fittings and designations (IEC 61952-1:2019)

Isolateurs pour lignes aériennes - Isolateurs composites rigides à socle pour systèmes à courant alternatif de tension nominale supérieure à 1 000 V - Partie 1 : définitions, des armatures d'extrémité et désignations (IEC 61952-1:2019) Isolatoren für Freileitungen - Verbund-Freileitungsstützer für Wechselstromsysteme mit einer Nennspannung über 1 000 V - Teil 1: Begriffe, Endarmaturen und Bezeichnungen (IEC 61952-1:2019)

This European Standard was approved by CENELEC on 2019-05-09. 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, Serbia, 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: Rue de la Science 23, B-1040 Brussels

© 2019 CENELEC All rights of exploitation in any form and by any means reserved worldwide for CENELEC Members.

#### This is a free page sample. Access the full version online. I.S. EN IEC 61952-1:2019

## EN IEC 61952-1:2019 (E)

# European foreword

The text of document 36/435/FDIS, future edition 1 of IEC 61952-1, prepared by IEC/TC 36 "Insulators" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61952-1:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2020-02-09 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2022-05-09 document have to be withdrawn

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 61952-1:2019 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 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: <a href="http://www.cenelec.eu">www.cenelec.eu</a>.

Publication	Year	Title	<u>EN/HD</u>	Year
IEC 60050-471	-	International Electrotechnical Vocabulary - Part 471: Insulators	-	-
IEC 60071-1	-	Insulation co-ordination - Part 1: Definitions, principles and rules	EN 60071-1	-
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

This is a free page sample. Access the full version online.

This page is intentionally left blank



# IEC 61952-1

Edition 1.0 2019-04

# INTERNATIONAL STANDARD

Insulators for overhead lines – Composite line post insulators for AC systems with a nominal voltage greater than 1 000 V – Part 1: definitions, end fittings and designations





# THIS PUBLICATION IS COPYRIGHT PROTECTED Copyright © 2019 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

**IEC Central Office** 3, rue de Varembé CH-1211 Geneva 20 Switzerland

Tel.: +41 22 919 02 11 info@iec.ch www.iec.ch

#### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

#### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

#### IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

#### IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

#### Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

#### IEC Glossary - std.iec.ch/glossary

67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.



# IEC 61952-1

Edition 1.0 2019-04

# INTERNATIONAL STANDARD

Insulators for overhead lines – Composite line post insulators for AC systems with a nominal voltage greater than 1 000 V – Part 1: definitions, end fittings and designations

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 29.080.10; 29.240.20

ISBN 978-2-8322-6511-6

Warning! Make sure that you obtained this publication from an authorized distributor.

# CONTENTS

FOREWORD	3
INTRODUCTION	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Mechanical, dimensional and electrical characteristics	7
4.1 Characteristics	7
4.2 Maximum design cantilever load (MDCL) and specified cantilever load (SCL)	8
4.3 Minimum lightning impulse withstand voltage class (BIL)	8
4.4 Standard coupling codes	8
4.5 Standard base-plate codes18	8
5 Line post insulator designation	2
6 Marking	3
Bibliography	2
Table 1 – Types of couplings	9
Table 2 – Types of base plates	9
Table 3 – Designation and characteristic of composite Line post insulators (IEC practice) for IEC 60815-3, Class b   24	4
Table 4 – Designation and characteristic of composite line post insulators (ANSI practice)   20	8

IEC 61952-1:2019 © IEC 2019

- 3 -

# INTERNATIONAL ELECTROTECHNICAL COMMISSION

# INSULATORS FOR OVERHEAD LINES – COMPOSITE LINE POST INSULATORS FOR AC SYSTEMS WITH A NOMINAL VOLTAGE GREATER THAN 1 000 V –

# Part 1: Definitions, end fittings and designations

# 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 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 61952-1 has been prepared by IEC technical committee 36: Insulators.

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

FDIS	Report on voting
36/435/FDIS	36/441/RVD

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61952 series, published under the general title *Insulators for* overhead lines – Composite line post insulators for AC systems with a nominal voltage greater than 1 000 V, can be found on the IEC website.

### – 4 –

# IEC 61952-1:2019 © IEC 2019

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

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

A bilingual version of this publication may be issued at a later date.

IEC 61952-1:2019 © IEC 2019

- 5 -

# INTRODUCTION

This part of IEC 61952 is intended to give the main mechanical and dimensional characteristics of composite line post insulators and their fittings in order to ensure their interchangeability. Since line post insulators are usually subjected to combined loads (for example vertical due to the conductor plus compressive and lateral due to the pole being at a line corner or turn), only the MDCL is given as a specified characteristic for the mechanical strength of the insulator.

Furthermore, composite line post insulators are often used in a braced configuration for higher voltages and mechanical loads. In these configurations the overall strength depends on the components and geometry of the whole assembly – including notably the buckling strength of the line post component which depends more on the core dimensions and flexibility than on ultimate flexural strength.

In order to address the matter of the strength of composite line post insulators under combined or complex loads some information is already given in Annex B of IEC 61952:2008 and by the IEEE [2]<sup>1</sup>. It is intended to expand on this information in a second part of IEC 61952 which will give application guidelines and examples for common line post usage scenarios.

<sup>&</sup>lt;sup>1</sup> Numbers in square brackets refer to the bibliography.

- 6 -

IEC 61952-1:2019 © IEC 2019

# INSULATORS FOR OVERHEAD LINES – COMPOSITE LINE POST INSULATORS FOR AC SYSTEMS WITH A NOMINAL VOLTAGE GREATER THAN 1 000 V –

# Part 1: Definitions, end fittings and designations

# 1 Scope

This part of IEC 61952 is applicable to composite line post insulators for AC overhead lines with a nominal voltage greater than 1 000 V and a frequency not greater than 100 Hz.

It also applies to line post insulators of similar design used in substations or on electric traction lines.

This document applies to line post insulators of composite type, generally with metallic couplings, with and without a base plate. It also applies to such insulators when used in complex structures. It does not apply to hollow insulators adapted for use as line post insulators.

The object of this document is to specify the main dimensions of the couplings to be used on the composite line post insulators in order to permit the assembly of insulators or fittings supplied by different manufacturers and to allow, whenever practical, interchangeability with existing installations.

It also specifies a standard designation system for composite line post insulators.

### 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.

IEC 60050-471, International Electrotechnical Vocabulary – Part 471: Insulators

IEC 60071-1, Insulation co-ordination – Part 1: Definitions, principles and rules

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

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-471 and IEC 61952 and the following apply.

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp



This is a free preview. Purchase the entire publication at the link below:

**Product Page** 

S Looking for additional Standards? Visit Intertek Inform Infostore

> Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation