

# 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 Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://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](http://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 It also gives information on projects, replaced and withdrawn publications.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](http://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](http://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](mailto:sales@iec.ch).

**Electropedia - [www.electropedia.org](http://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 - [webstore.iec.ch/glossary](http://webstore.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.

# 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 codes .....	18
5 Line post insulator designation .....	22
6 Marking .....	23
Bibliography.....	32
Table 1 – Types of couplings .....	9
Table 2 – Types of base plates .....	19
Table 3 – Designation and characteristic of composite Line post insulators (IEC practice) for IEC 60815-3, Class b .....	24
Table 4 – Designation and characteristic of composite Line post insulators (ANSI practice) .....	28

## 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 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, accept 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.

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.

Currently in preview, click buy full version

## 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>1</sup> Numbers in square brackets refer to the bibliography.

# 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, where 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>