

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

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**Insulators for overhead lines with a nominal voltage above 1 000 V – Ceramic insulators for AC systems – Characteristics of insulator units of the long rod type**

**Isolateurs pour lignes aériennes de tension nominale supérieure a 1 000 V – Isolateurs en céramique pour réseaux à tension alternative – Caractéristiques des éléments d'isolateurs du type a long fût**



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## CONTENTS

FOREWORD .....	3
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	6
4 Characteristics, dimensions and type of long rod insulators .....	6
5 Designation and marking .....	6
Bibliography.....	11
Figure 1 – Long rod insulator with clevis couplings, type C .....	10
Figure 2 – Long rod insulator with socket couplings, type B .....	10
Table 1 – Specified values for long rod insulators .....	8

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**INSULATORS FOR OVERHEAD LINES  
WITH A NOMINAL VOLTAGE ABOVE 1 000 V –  
CERAMIC INSULATORS FOR AC SYSTEMS –  
CHARACTERISTICS OF INSULATOR UNITS OF THE LONG ROD TYPE**

## FOREWORD

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International Standard IEC 60433 has been prepared by IEC technical committee 36: Insulators.

This fourth edition cancels and replaces the third edition published in 1998. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) wording in Scope changed from "should" to "are intended to";
- b) new normative references added;
- c) title of Clause 4 amended, new Note 4 added;
- d) Table 1 expanded to include more specified mechanical failing loads.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
36/498/FDIS	36/500/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.

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- withdrawn,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.

# INSULATORS FOR OVERHEAD LINES WITH A NOMINAL VOLTAGE ABOVE 1 000 V – CERAMIC INSULATORS FOR AC SYSTEMS – CHARACTERISTICS OF INSULATOR UNITS OF THE LONG ROD TYPE

## 1 Scope

This International Standard is applicable to string insulator units of the long rod type with insulating parts of ceramic material intended for use in AC overhead power lines with a nominal voltage greater than 1 000 V and a frequency not greater than 100 Hz. It is also applicable to insulators of similar design, used in substations.

This document is applicable to ceramic string insulator units of the long rod type, either with a clevis end fitting at both ends for coupling with a tongue, or with a socket end fitting at both ends for coupling with a pin ball.

The object of this document is to prescribe specified values for electrical and mechanical characteristics, and for the principal dimensions of ceramic string insulator units of the long rod type.

This document is applicable to string insulator units for use on overhead lines situated in lightly polluted areas, and the creepage distances given in Table 1 have been established accordingly, using the IEC TS 60815-2 recommendation of 27,8 mm/kV for SPS class. However, shorter creepage distances are applicable for use in some non-polluted areas. If specific operating conditions require or allow non-standard (longer or shorter) creepage distances, the mechanical characteristics as well as the lengths  $L$  (see Clause 4) of this document are intended to be used unless the need for exceptionally long creepage distances requires values of  $L$  greater than those given in Table 1. In the case of special requirements, e.g. very heavy polluted areas and for other particular or extreme environmental conditions, it may be necessary for certain dimensions to be changed.

As far as reasonably applicable, this document is also applicable to be applied to similar insulator units outside the scope of this standard, such as insulators for electric traction lines. This document does not include tests on insulators and dimensions of end fittings.

Ball and socket couplings are covered by IEC 60120, clevis and tongue couplings by IEC 60471.

NOTE 1 For the definition of site pollution severity, see applicable part of IEC TS 60815.

NOTE 2 The term "ceramic" is used in this document to refer to porcelain materials and, contrary to North American practice, does not include glass.

## 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 60383-1, *Insulators for overhead lines with a nominal voltage above 1 000 V – Part 1: Ceramic or glass insulator units for AC systems – Definitions, test methods and acceptance criteria*