



# TECHNICAL SPECIFICATION

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**Selection and dimensioning of high-voltage insulators intended for use in  
polluted conditions –  
Part 3: Polymer insulators for a.c. systems**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

PRICE CODE

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SELECTION AND DIMENSIONING OF HIGH-VOLTAGE INSULATORS  
INTENDED FOR USE IN POLLUTED CONDITIONS –****Part 3: Polymer insulators for a.c. systems****FOREWORD**

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC/TS 60815-3, which is a technical specification, has been prepared by technical committee 36: Insulators.

The text of this technical specification is based on the following documents:

|               |                  |
|---------------|------------------|
| Enquiry draft | Report on voting |
| 36/266/DTS    | 36/272A/RVC      |

Full information on the voting for the approval of this technical specification 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.

A list of all the parts in the future IEC 60815 series, under the general title *Selection and dimensioning of high-voltage insulators intended for use in polluted conditions*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

## SELECTION AND DIMENSIONING OF HIGH-VOLTAGE INSULATORS INTENDED FOR USE IN POLLUTED CONDITIONS –

### Part 3: Polymer insulators for a.c. systems

#### 1 Scope and object

IEC/TS 60815-3, which is a technical specification, is applicable to the selection of polymer insulators for a.c. systems, and the determination of their relevant dimensions, to be used in high voltage systems with respect to pollution.

This part of IEC/TS 60815 gives specific guidelines and principles to arrive at an informed judgement on the probable behaviour of a given insulator in certain pollution environments.

The contents of this technical specification are based on CIGRE 33.13 TF 01 documents [1], [2]<sup>1</sup>, which form a useful complement to this technical specification for those wishing to study in greater depth the performance of insulators under pollution.

This technical specification does not deal with the effects of snow or ice on polluted insulators. Although this subject is dealt with by CIGRE [3], current knowledge is very limited and practice is too diverse.

The object of this technical specification is to give the user means to

- determine the reference unified specific creepage distance (USCD) from site pollution severity (SPS) class,
- choose appropriate profiles,
- apply correction factors for altitude, insulator shape, size and position, etc. to the reference USCD.

#### 2 Normative references

The following referenced documents are indispensable for the application 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/TS 60815-1, *Selection and dimensioning of high-voltage insulators for polluted conditions – Part 1: Definitions, information and general principles*

IEC/TR 62039, *Selection guide for polymeric materials for outdoor use under HV stress*

IEC/TS 62073, *Guidance on the measurement of wettability of insulator surfaces*

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