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Standards

Irish Standard  
I.S. EN 60507:2014

# Artificial pollution tests on high-voltage ceramic and glass insulators to be used on a.c. systems

**I.S. EN 60507:2014**

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EUROPEAN STANDARD

**EN 60507**

NORME EUROPÉENNE

March 2014

EUROPÄISCHE NORM

ICS 29.080.10

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English version

**Artificial pollution tests on high-voltage ceramic and glass insulators to be used on a.c. systems**  
(IEC 60507:2013)

Essais sous pollution artificielle des  
isolateurs haute tension en céramique et  
en verre destinés aux réseaux à courant  
alternatif  
(CEI 60507:2013)

Fremdschichtprüfungen an  
Hochspannungs-Isolatoren aus Keramik  
und Glas zur Anwendung in  
Wechselspannungssystemen  
(IEC 60507:2013)

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 36/337/FDIS, future edition 3 of IEC 60507, prepared by IEC/TC 36 "Insulators" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60507:2014.

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) 2014-10-17
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-01-17

This document supersedes EN 60507:1993.

EN 60507:2014 includes the following significant technical changes with respect to EN 60507:1993:

- a) Corrections and the addition of explanatory material;
- b) The addition of Clause 4.4.2 on atmospheric correction;
- c) The change of the upper limit of conductivity of water to 0.1 S/m; and
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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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60060-1	-	High-voltage test techniques - Part 1: General definitions and test requirements	EN 60060-1	-
IEC 60071-1	-	Insulation co-ordination - Part 1: Definitions, principles and rules	EN 60071-1	-
IEC/TS 60815-1	-	Selection and dimensioning of high-voltage insulators intended for use in polluted conditions - Part 1: Definitions, information and general principles	-	-
IEC/TS 60815-2	-	Selection and dimensioning of high-voltage insulators intended for use in polluted conditions - Part 2: Ceramic and glass insulators for a.c. systems	-	-

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**IEC 60507**

Edition 3.0 2013-12

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**

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**Artificial pollution tests on high-voltage ceramic and glass insulators to be used on a.c. systems**

**Essais sous pollution artificielle des isolateurs haute tension en céramique et en verre destinés aux réseaux à courant alternatif**





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**IEC 60507**

Edition 3.0 2013-12

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**

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**Artificial pollution tests on high-voltage ceramic and glass insulators to be used on a.c. systems**

**Essais sous pollution artificielle des isolateurs haute tension en céramique et en verre destinés aux réseaux à courant alternatif**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ARTIFICIAL POLLUTION TESTS ON HIGH-VOLTAGE CERAMIC  
AND GLASS INSULATORS TO BE USED ON A.C. SYSTEMS**

## FOREWORD

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International Standard IEC 60507 has been prepared by IEC technical committee 36: Insulators.

This third edition cancels and replaces the second edition published in 1991. This third edition constitutes a technical revision.

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

- a) Corrections and the addition of explanatory material;
- b) The addition of Clause 4.3.2 on atmospheric correction;
- c) The change of the upper limit of conductivity of water to 0.1 S/m; and
- d) The extension to UHV voltages.

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

FDIS	Report on voting
36/337/FDIS	36/342/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.

## ARTIFICIAL POLLUTION TESTS ON HIGH-VOLTAGE CERAMIC AND GLASS INSULATORS TO BE USED ON A.C. SYSTEMS

### 1 Scope

This International Standard is applicable for the determination of the power frequency withstand characteristics of ceramic and glass insulators to be used outdoors and exposed to polluted atmospheres, on a.c. systems with the highest voltage of the system greater than 1 000 V.

These tests are not directly applicable to polymeric insulators, to greased insulators or to special types of insulators (insulators with semiconducting glaze or covered with any organic insulating material).

The object of this International Standard is to prescribe procedures for artificial pollution tests applicable to insulators for overhead lines, substations and traction lines and to bushings

It may also be applied to hollow insulators with suitable precautions to avoid internal flashover. In applying these procedures to apparatus incorporating hollow insulators, the relevant technical committees should consider their effect on any internal equipment and the special precautions which may be necessary.

### 2 Normative references

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.

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

IEC/TS 60815-1, *Selection and dimensioning of high-voltage insulators intended for use in polluted conditions – Part 1: Definitions, information and general principles*

IEC/TS 60815-2, *Selection and dimensioning of high-voltage insulators intended for use in polluted conditions – Part 2: Ceramic and glass insulators for a.c. systems*

IEC 60060-1, *High-voltage test techniques – Part 1: General definitions and test requirements*

### 3 Terms and definitions

For the purpose of this standard, the following terms and definitions apply.

#### 3.1

##### **test voltage**

the r.m.s. value of the voltage with which the insulator is continuously energized throughout the test

#### 3.2

##### **short-circuit current ( $I_{sc}$ ) of the testing plant**

the r.m.s. value of the current delivered by the testing plant when the test object is short-circuited at the test voltage

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