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BSI Standards Publication

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

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National foreword

This British Standard is the UK implementation of EN 60507:2014. It is identical to IEC 60507:2013, incorporating corrigendum August 2018. It supersedes BS EN 60507:1993, which is withdrawn.

The start and finish of text introduced or altered by corrigendum is indicated in the text by tags. Text altered by IEC corrigendum August 2018 is indicated in the text by $\overline{AC1}$ $\langle AC1 \rangle$.

The UK participation in its preparation was entrusted to Technical Committee PEL/36, Insulators for power systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

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

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Date	Text affected
30 September 2018	Implementation of IEC corrigendum August 2018

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NORME EUROPÉENNE
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March 2014

ICS 29.080.10

Supersedes EN 60507:1993

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)

This European Standard was approved by CENELEC on 2014-01-17. 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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

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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
- d) The extension to UHV voltages.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 60507:2013 was approved by CENELEC as a European Standard without any modification.

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(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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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.

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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.

The contents of the corrigendum of August 2018 have been included in this copy.

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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