

Ceramic pressurized hollow insulators for high-voltage switchgear and controlgear

The European Standard EN 61264:1998 has the status of a
British Standard

ICS 29.080.10

National foreword

This British Standard is the English language version of EN 61264:1998, including corrigendum July 2000. It is identical with IEC 61264:1998. It supersedes BS EN 50062:1992, which will be withdrawn on 2001-07-01.

The UK participation in its preparation was entrusted by Technical Committee PEL/36, Insulators for power systems, to Subcommittee PEL/36/3, Substation insulators, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 22, an inside back cover and a back cover.

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This British Standard, having been prepared under the direction of the Electrotechnical Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 February 1999

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ISBN 0 580 32094 4

Amendments issued since publication

Amd. No.	Date	Comments
13012 Corr. No. 1	March 2001	Supersession details updated in national foreword
13142 Corrigendum No. 2	June 2001	Addition of Annex ZB

English version

Ceramic pressurized hollow insulators for high-voltage switchgear and controlgear

(IEC 61264:1998)

Enveloppes isolantes sous pression en matière
céramique pour l'appareillage haute tension
(CEI 61264:1998)

Druckbeanspruchte Hohlisolatoren aus
keramischem Werkstoff für
Hochspannungs- Schaltgeräte und Schaltanlagen
(IEC 61264:1998)

This European Standard was approved by CENELEC on 1998-10-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Foreword

The text of document 36C/94/FDIS, future edition 2 of IEC 61264, prepared by SC 36C, Insulators for substations, of IEC TC 36, Insulators, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61264 on 1998-10-01.

This European Standard supersedes EN 50062:1991.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1999-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2001-07-01

This European Standard supplements and modifies, if necessary, the corresponding clauses of HD 329 S1:1977, which applies to unpressurized hollow insulators.

Annexes designated “normative” are part of the body of the standard.

Annexes designated “informative” are given for information only.

In this standard, Annex ZA is normative and Annex A, Annex B, Annex C and Annex ZB are informative. Annex ZA and Annex ZB have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61264:1998 was approved by CENELEC as a European Standard without any modification.

In the official version, for Annex C, Bibliography, the following note has to be added for the standard indicated:

IEC 60672-1:1995

NOTE Harmonized as EN 60672-1:1995 (not modified).

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Introduction

Technical improvements to this International Standard have been made in the following areas:

- guidance for load combinations: it is made clear that other combinations might exist and that operating loads, if existent, should be considered;
- information on mechanical strength: this should be collected during testing for a possibility of statistical evaluation;
- geometrical tolerances.

1 Scope and object

This International Standard applies to hollow insulators made of ceramic material, with their fixing devices, intended for use with a **permanent gas pressure** greater than 50 kPa gauge having an internal volume equal to or greater than 1 l (1 000 cm³). They are intended for use in electrical equipment operating on alternating current with a rated voltage greater than 1 000 V and a frequency not greater than 100 Hz or for use in direct current equipment with a rated voltage greater than 1 500 V.

NOTE 1 The gas can be: dry air, inert gases, e.g. sulfur hexafluoride or nitrogen or a mixture of such gases.

NOTE 2 Hollow insulators are intended for use in electrical equipment with a permanent gas pressure, for example

- circuit-breakers;
- switch-disconnectors;
- disconnectors;
- earthing switches,
- instrument transformers;
- surge arresters;
- bushings;
- cable sealing ends.

The object of this standard is

- to define terms used;
- to prescribe design rules;
- to prescribe test procedures and test values

regarding pressure and bending stresses for hollow insulators.

It is not the object of this standard to prescribe dielectric tests, because the withstand voltages are not characteristics of the hollow insulator itself, but of the apparatus of which it ultimately forms a part.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEV 60050(471):1984, *International Electrotechnical Vocabulary (IEV) — Chapter 471: Insulators*.

IEC 60056:1987, *High-voltage alternating-current circuit-breakers*.

IEC 60168:1994, *Tests on indoor and outdoor post insulators of ceramic material or glass for systems with nominal voltages greater than 1 000 V*.

IEC 60233:1974, *Tests on hollow insulators for use in electrical equipment*.

IEC 60672-3:1997, *Ceramic and glass insulating materials — Part 3: Specifications for individual materials*.

IEC 60694:1996, *Common specifications for high-voltage switchgear and controlgear standards*.

IEC 60865-1:1993, *Short-circuit currents — Calculation of effects — Part 1: Definitions and calculation methods*.

IEC 61166:1993, *High-voltage alternating current circuit-breakers — Guide for seismic qualification of high-voltage alternating current circuit-breakers*.

ISO 4287:1997, *Geometrical Product Specification (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters*.

ISO 4287-2:1984, *Surface roughness — Terminology — Part 2: Measurement of surface roughness parameters*.

CENELEC EN 50062:1991, *Ceramic pressurized hollow insulators for high-voltage switchgear and controlgear*.

3 Definitions

For the purpose of this International Standard, the following definitions apply. The definitions given below are those which either do not appear or differ from those given in IEC 60050(471).

3.1

hollow insulator body

a hollow insulating part body, which is open from end to end, with or without sheds, not including the fixing devices or end fittings

3.2

hollow insulator

a hollow insulating part, which is open from end to end, with or without sheds, including the fixing devices or end fittings [IEV 471-01-17, modified]

NOTE This is a general term which also covers the definitions 3.4, 3.5 and 3.6.

3.3

fixing device or end fitting

a device forming part of a hollow insulator, intended to connect it to a supporting structure or to an item of equipment, or to another insulator

NOTE Where the fixing device is metallic, the term “metal fitting” is also used. [IEV 471-01-02, modified]

3.4

hollow post insulator

a hollow post insulator consists of one hollow post insulator unit or an assembly of more units and is intended to give support to a live part, which is to be insulated from earth or from another live part

3.5

hollow post insulator unit

a hollow post insulator unit consists of a permanent assembly of a hollow insulating body with fixing devices and is intended to give support

3.6

chamber insulator

a chamber insulator is a hollow insulator, which is used as a housing for example the arc extinction chamber of a circuit-breaker

3.7

bushing

a device that enables one or several conductors to pass through a partition such as a wall or tank and insulates the conductors from it

the means of attachment (flange or other fixing device) to the partition forms part of the bushing

[IEV 471-02-01, modified]

3.8

design pressure

it is at least the upper limit of differential pressure reached between the interior and exterior of the hollow insulator during operation at the design temperature