

Svenska Elektriska Kommissionen, SEK

Fastställt	Utgåva	Sida	Ingår i
2003-12-15	1	1 (1+52)	SEK Område 36

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Isolatorer – Trycksatta och icke trycksatta ihåliga isolatorer av keramik eller glas för elektrisk utrustning med märkspänning över 1000 V

*Hollow pressurized and unpressurized ceramic and glass insulators
for use in electrical equipment with rated voltage greater than 1000 V*

Som svensk standard gäller europastandarden EN 62155:2003. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62155:2003.

Nationellt förord

Europastandarden EN 62155:2003

består av:

- europastandardens ikraftsättningsdokument, utarbetat inom CENELEC
- **IEC 62155, First edition, 2003 - Hollow pressurized and unpressurized ceramic and glass insulators for use in electrical equipment with rated voltage greater than 1000 V**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare utgiven svensk standard SS-IEC 233, utgåva 1, 1984 och SS-EN 61264, utgåva 1, 1999, gäller ej fr o m 2006-05-01.

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

Svenska Elektriska Kommissionen, SEK, svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

SEK

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EUROPEAN STANDARD

EN 62155

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2003

ICS 29.080.10

Supersedes HD 329 S1:1977 & EN 61264:1998

English version

**Hollow pressurized and unpressurized
ceramic and glass insulators
for use in electrical equipment
with rated voltages greater than 1 000 V
(IEC 62155:2003, modified)**

Isolateurs creux avec ou sans pression interne, en matière céramique ou en verre, pour utilisation dans des appareillages prévus pour des tensions nominales supérieures à 1 000 V (CEI 62155:2003, modifiée)

Druckbeanspruchte und drucklose Hohlisolatoren aus keramischem Werkstoff und Glas für Anwendungen in elektrischen Betriebsmitteln mit Nennspannungen über 1 000 V (IEC 62155:2003, modifiziert)

This European Standard was approved by CENELEC on 2003-05-01. 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, Hungary, Iceland, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, 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/143/FDIS, future edition 1 of IEC 62155, 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 62155 on 2003-05-01.

A draft amendment, prepared by Reporting Secretariat SR 36C, was submitted to the formal vote and was approved by CENELEC for inclusion into EN 62155 on 2003-05-01.

This European Standard supersedes HD 329 S1:1977, EN 61264:1998 and its corrigendum July 2000.

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) 2004-03-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-05-01

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 annexes A to D and ZB are informative.

Annexes ZA and ZB have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62155:2003 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

ISO 9001	NOTE	Harmonized as EN ISO 9001:1994, which is superseded by EN ISO 9001:2000 (ISO 9001:2000) (not modified)
ISO 9002	NOTE	Harmonized as EN ISO 9002:1994 (not modified)
ISO 9003	NOTE	Harmonized as EN ISO 9003:1994 (not modified)
IEC 60672-1	NOTE	Harmonized as EN 60672-1:1995 (not modified)
ISO 9004	NOTE	Harmonized as EN ISO 9004:2000 (not modified)
IEC 60273	NOTE	Harmonized as HD 578 S1:1992 (not modified)
IEC 60437	NOTE	Harmonized as EN 60437:1997 (not modified)
IEC 60507	NOTE	Harmonized as EN 60507:1993 (not modified)

Annex ZA (normative)

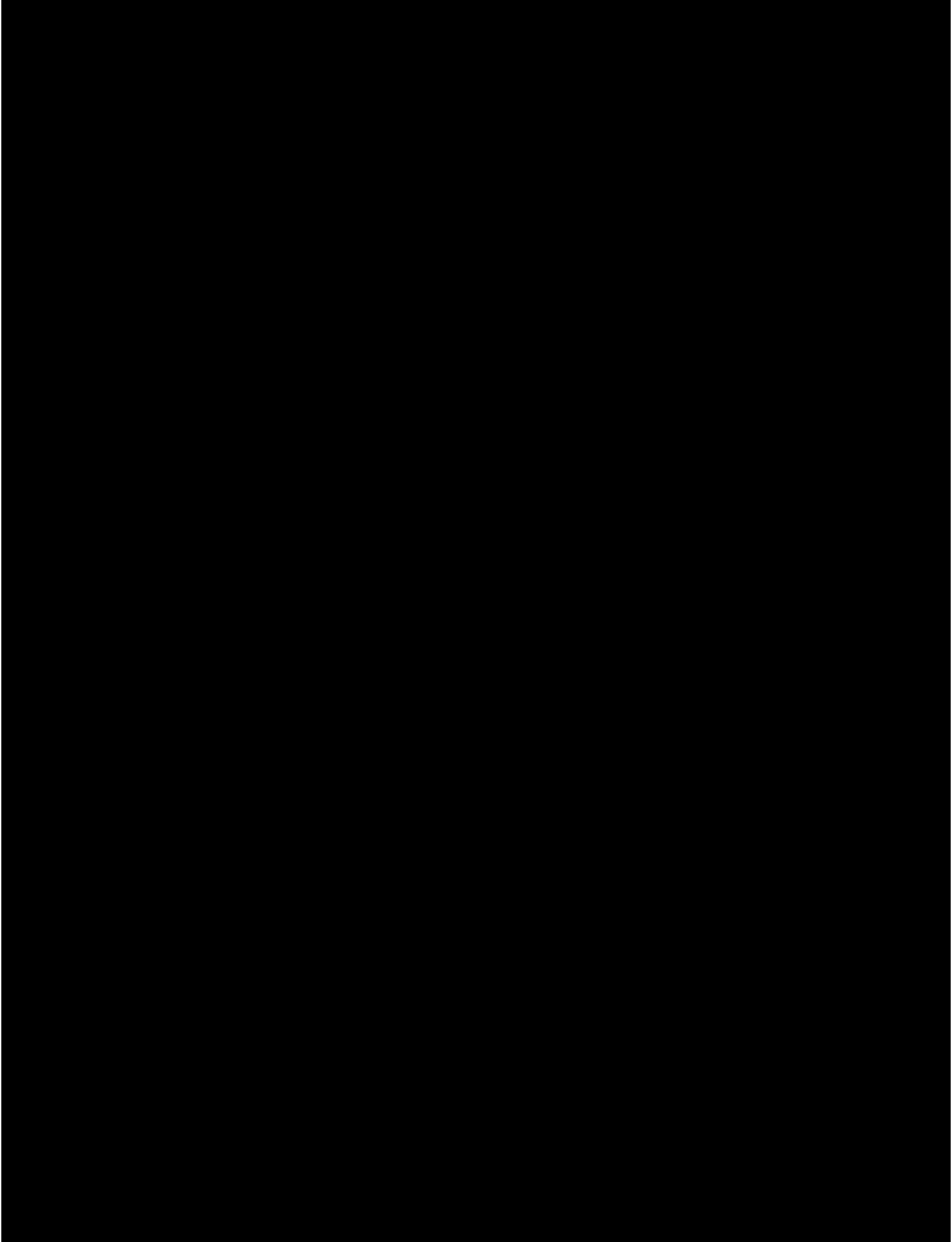
Normative references to international publications with their corresponding European publications

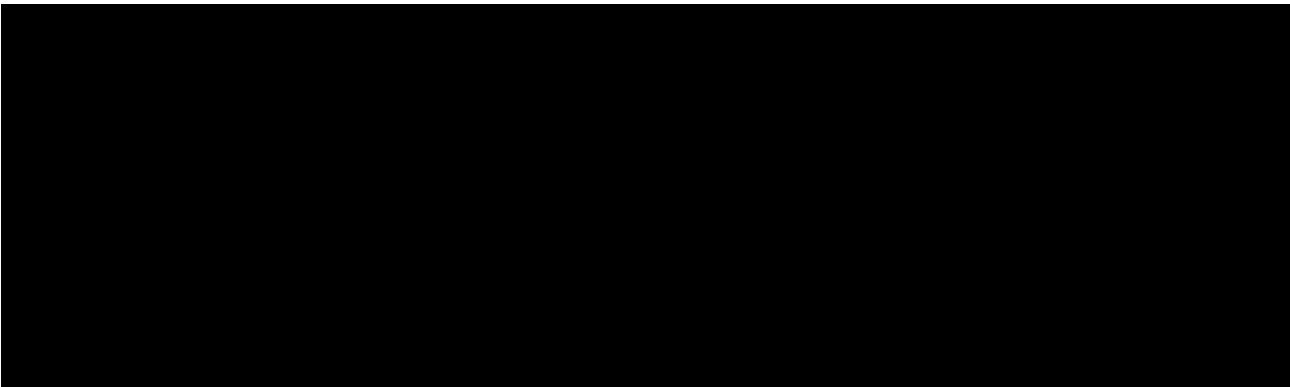
This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60672-3	1997	Ceramic and glass-insulating materials Part 3: Specifications for individual materials	EN 60672-3	1997
IEC 60694	1996	Common specifications for high-voltage switchgear and controlgear standards	EN 60694 + corr. May	1996 1999
IEC 60865-1	1993	Short-circuit currents - Calculation of effects Part 1: Definitions and calculation methods	EN 60865-1	1993
IEC 61166	1993	High-voltage alternating current circuit-breakers - Guide for seismic qualification of high-voltage alternating current circuit-breakers	EN 61166	1993
IEC 61463	1996	Bushings - Seismic qualification	-	-
IEC 62271-100	2001	High-voltage switchgear and controlgear Part 100: High-voltage alternating-current circuit-breakers	EN 62271-100	2001
ISO 1460	1992	Metallic coatings - Hot dip galvanized coatings on ferrous metals - Gravimetric determination of the mass per unit area	EN ISO 1460	1994
ISO 1461	1999	Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods	EN ISO 1461	1999
ISO 1463	1982	Metallic and oxide coatings - Measurement of coating thickness - Microscopical method	EN ISO 1463	1994
ISO 2064	1996	Metallic and other inorganic coatings - Definitions and conventions concerning the measurement of thickness	EN ISO 2064	2000
ISO 2178	1982	Non-magnetic coatings on magnetic substrates - Measurement of coating thickness - Magnetic method	EN ISO 2178	1995

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 4287	1997	Geometrical Product Specifications (GPS) - Surface texture: Profile method - Terms, definitions and surface texture parameters	EN ISO 4287	1998





CONTENTS

1	Scope and object	9
1.1	General	9
1.2	Hollow insulators or hollow insulator bodies intended for general use	9
1.3	Ceramic hollow insulators intended for use with permanent gas pressure	11
2	Normative references.....	11
3	Terms and definitions	13
4	Insulating materials.....	19
5	General recommendations for design.....	19
5.1	General recommendations for design of hollow insulators and hollow insulator bodies intended for general use.....	19
5.2	Design rules for hollow insulators and hollow insulator bodies for use with permanent gas pressure	19
6	Classification of the tests, sampling rules and procedures	25
6.1	Classification of the tests.....	25
6.2	Relevant tests for type, sample and routine tests.....	27
6.3	Hollow insulator or hollow insulator body selection	29
6.4	Retest procedure for sample tests	31
6.5	Quality assurance.....	31
7	General test procedures and requirements	33
7.1	Verification of the dimensions and roughness of ground surfaces	33
7.2	Mechanical failing load tests.....	43
7.3	Temperature cycle test	49
7.4	Porosity test	53
7.5	Galvanizing test.....	55
8	Type tests.....	57
8.1	Tests	57
8.2	Pressure test	59
8.3	Bending test	59
9	Sample tests.....	61
9.1	Tests for hollow insulators or hollow insulator bodies intended for general use	61
9.2	Tests for ceramic hollow insulators or hollow insulator bodies intended for use with permanent gas pressure	61
10	Routine tests	61
10.1	Tests for hollow insulators or hollow insulator bodies intended for general use	61
10.2	Tests for ceramic hollow insulators or hollow insulator bodies intended for use with permanent gas pressure	63
10.3	Routine visual inspection	63
10.4	Electrical routine test.....	65
10.5	Routine mechanical tests for hollow insulators or hollow insulator bodies intended for general use	67
10.6	Routine mechanical tests for ceramic hollow insulators or hollow insulator bodies intended for use with permanent gas pressure	69
10.7	Routine thermal shock test	71

11 Documentation.....	71
11.1 Marking	71
11.2 Records.....	71
Annex A (informative) Methods of testing for tolerances of parallelism, coaxiality, eccentricity, angular deviation, camber and shed angle of hollow insulators or hollow insulator bodies.....	73
Annex B (informative) Methods for bending tests of hollow insulator bodies	85
Annex C (informative) Alternative test method for the temperature-cycle test.....	91
Annex D (informative) Bending moment equivalent to the design pressure.....	93
Bibliography.....	95
Figure 1 – Bending moments.....	23
Figure 2 – Tolerance of wall thickness	35
Figure 3 – Deviation from roundness of inner or outer core diameter.....	37
Figure 4 – Effect of camber of the hollow insulator body.....	39
Figure 5 – Tolerance on height of sanding and porcelain chamfered end flange	41
Figure 6 – Definition of thickness ϕ mm for temperature-cycle test	49
Figure A.1 – Measuring of tolerances of form and position	75
Figure A.2 – Measuring of angular deviation of fixing holes	75
Figure A.3 – Method for measuring camber	77
Figure A.4 – Measuring shed angle	79
Figure A.5 – Centring with conical shank screws.....	79
Figure A.6 – Axial run-out	81
Figure A.7 – Parallelism and perpendicularity.....	81
Figure A.8 – Coaxiality and concentricity, evenness, alignment of fixing holes and proper sealing	83
Figure B.1 – Test ram for uniform distributed bending moment.....	85
Figure B.2 – Test ram for non-uniform distributed bending moment.....	87
Figure B.3 – Test method with bending load applied.....	89
Figure C.1 – Alternative test arrangement for the temperature-cycle test.....	91
Figure D.1 – Diameters for determining the equivalent bending moment to the design pressure.....	93
Table 1 – Typical examples of load combinations and weighting factors.....	23
Table 2 – Hollow insulators or hollow insulator bodies intended for general use – Relevant tests for type, sample and routine tests	27
Table 3 – Ceramic hollow insulators or hollow insulator bodies intended for use with permanent gas pressure – Relevant tests for type, sample and routine tests.....	29
Table 4 – Number of samples for sample tests	31
Table 5 – Selection of temperature difference for temperature cycle test.....	51
Table 6 – Selection of temperature difference for the alternative temperature-cycle test	51
Table 7 – Selection of temperature difference for insulators of annealed glass.....	53

HOLLOW PRESSURIZED AND UNPRESSURIZED CERAMIC AND GLASS INSULATORS FOR USE IN ELECTRICAL EQUIPMENT WITH RATED VOLTAGES GREATER THAN 1 000 V

1 Scope and object

1.1 General

This standard is applicable to

- ceramic and glass hollow insulators intended for general use in electrical equipment;
- ceramic hollow insulators intended for use with a permanent gas pressure in switchgear and controlgear.

These insulators are intended for indoor and outdoor 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 of greater than 1 500 V.

The hollow insulators are intended for use in electrical equipment, for example:

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

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

1.2 Hollow insulators or hollow insulator bodies intended for general use

Hollow insulators or insulator bodies of ceramic material or glass, intended for use

- without pressure;
- with permanent pressure ≤ 50 kPa gauge;
- with permanent gas pressure > 50 kPa gauge in combination with an internal volume < 1 l ($1\,000$ cm³);
- with permanent hydraulic pressure.

The object of this standard is to define

- the terms used;
- the mechanical and dimensional characteristics of hollow insulators and hollow insulator bodies;
- the electrical soundness of the wall;
- the conditions under which the specified values of these characteristics are verified;
- the methods of test;
- the acceptance criteria.

1.3 Ceramic hollow insulators intended for use with permanent gas pressure

Hollow insulators or hollow insulator bodies with their fixing devices, intended for use with permanent gas pressure: permanent gas pressure >50 kPa gauge in combination with an internal volume ≥ 1 l (1 000 cm³).

NOTE 1 The gas can be dry air, inert gases, for example, SF₆ or nitrogen or a mixture of such gases.

The object of this standard is to define

- the terms used;
- the mechanical and dimensional characteristics of hollow insulators and hollow insulator bodies;
- the electrical soundness of the wall;
- the conditions under which the specified values of these characteristics are verified;
- the methods of test;
- the acceptance criteria;
- design rules;
- test procedures and test values.

NOTE 2 Hollow insulators or hollow insulator bodies are usually integrated into electrical equipment which is electrically type tested as required by the equipment standard.

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 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*

IEC 61463:1996, *Bushings – Seismic qualification*