

## **Cast resin partitions for metal enclosed gas-filled high voltage switchgear and controlgear**

Cast resin partitions for metal enclosed gas-filled  
high voltage switchgear and controlgear

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 50089:2002 sisaldab Euroopa standardi EN 50089:1992+A1:1994 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.12.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 50089:2002 consists of the English text of the European standard EN 50089:1992+A1:1994.</p> <p>This document is endorsed on 18.12.2002 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This standard applies to cast resin partitions pressurized with inert gasses, for example sulphur hexafluoride or a mixture of gases such as sulphur hexafluoride and nitrogen used in indoor or outdoor installations of highvoltage switchgear and controlgear, where the gas is used principally for its dielectric and/or arc-quenching properties, with rated voltages.</p>	<p><b>Scope:</b></p> <p>This standard applies to cast resin partitions pressurized with inert gasses, for example sulphur hexafluoride or a mixture of gases such as sulphur hexafluoride and nitrogen used in indoor or outdoor installations of highvoltage switchgear and controlgear, where the gas is used principally for its dielectric and/or arc-quenching properties, with rated voltages.</p>
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**Võtmesõnad:** electric enclosur, high voltage switchgear, high-voltage switchgears, insulators, marking, materials, metal enclosures, parting walls, production, shielding, specification (approval), specifications, strength of materials, switchgear, switchgears, testing, treatment

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Descriptors: Enclosure, high-voltage switching device, H. V. metal-enclosed switchgear and controlgear, pressurized enclosure, cast resin partitions

## ENGLISH VERSION

Cast resin partitions for metal enclosed gas-filled  
high voltage switchgear and controlgearCloisons en résine moulée pour  
l'appareillage sous enveloppe  
métallique à haute tension sous  
pression de gazGiessharz-Zwischenwände für  
metallgekapselte gasgefüllte  
Hochspannungs-Schaltgeräte  
und -Schaltanlagen

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This European Standard was approved by CENELEC on 24th March 1992. CENELEC members are bound to comply with the requirements of 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 list 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, 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

This European Standard has been prepared by CENELEC Technical Committee TC17C: High-voltage enclosed switchgear and controlgear. It was approved by CENELEC on 24th March 1992.

The following dates are applicable:

- latest date of publication of an identical national standard (dop) 1993-03-01
- latest date of withdrawal of conflicting national standards (dow) 1993-03-01

The document forms a supplement to

EN 50052:1986, Cast aluminium alloy enclosures for gas-filled high-voltage switchgear and controlgear,  
EN 50064:1989, Wrought aluminium and aluminium alloy enclosures for gas-filled high-voltage switchgear and controlgear,  
EN 50068:1990, Wrought steel enclosures for gas-filled high-voltage switchgear and controlgear and  
EN 50069:1990, Welded composite enclosures of cast and wrought aluminium alloys for gas-filled high-voltage switchgear and controlgear.

The specifications are appropriate for pressurized switchgear enclosures allowing an economic production without sacrificing aspects of safety. For unusual shapes dictated by electrical conditions they permit the verification of sound design by proof tests instead of calculations.

The present EN has been established as an international specification for the design, construction, testing, inspection and certification of pressurized enclosures used in high-voltage switchgear and controlgear. This standard follows to that extent also Article 2 of the Directive 76/767/EEC.

List of standards referred to in this standard:

HD 358 S3:1992 (IEC 517:1990) Gas-insulated metal-enclosed switchgear for rated voltage of 72.5 kV and above.  
EN 29000:1988 Quality management and quality assurance.

CAST RESIN PARTITIONS FOR METAL ENCLOSED  
GAS-FILLED HIGH VOLTAGE SWITCHGEAR AND CONTROLGEAR

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## 1 Introduction

This standard covers the strength requirements for the mechanical aspects of design, manufacture, testing, inspection, certification and marking of cast resin partitions which are pressurized for use specifically in metal enclosed gas filled High Voltage Switchgear and associated equipment.

Electrical performance requirements have no bearing on mechanical strength and are therefore not considered in this standard.

Special consideration shall be given to these partitions for the following reasons:

1.1 For electrical reasons the partitions must be manufactured in insulating material. This standard deals only with cast resin.

1.2 The enclosures usually form the containment of electrical equipment, thus their shape and therefore the shape of the partitions is determined by electrical as well as mechanical considerations.

1.3 The enclosures in which the partitions are integrated are installed in restricted access areas and the equipment is operated by skilled and instructed persons only.

1.4 The enclosures are subjected to only small fluctuations of pressure as the gas-filling density shall be maintained within close limits to ensure satisfactory insulating and arc-quenching properties. Therefore the enclosures and hence the partitions are not liable to fatigue due to pressure cycling.

1.5 The operating pressure is relatively low.

For the foregoing reasons, and to ensure the minimum disturbance, hence reducing the risk of moisture and dust entering the enclosures which would prevent correct electrical operation of the switchgear, no repetition of pressure tests shall be carried out after installation and before placing in service and no periodic inspection of enclosure interiors or pressure tests shall be carried out after the equipment is placed in service.

## 2 Scope

### 2.1 Type of equipment

This standard applies to cast resin partitions pressurized with inert gases, for example sulphur hexafluoride or a mixture of gases such as sulphur hexafluoride and nitrogen used in indoor or outdoor installations of high-voltage switchgear and controlgear, where the gas is used principally for its dielectric and/or arc-quenching properties, with rated voltages

- 1 kV and up to and including 52 kV and with gas-filled compartments with design pressure greater than 3 bar (gauge)
- and with rated voltage 72,5 kV and above.

The partitions comprise pressurized barriers in electrical equipment not necessarily limited to the following examples:

circuit breakers,  
switch disconnectors,  
disconnectors,  
earthing switches,  
current transformers,  
voltage transformers,  
surge arrestors,  
busbars and connections,  
cable connections.

This standard does not apply to high voltage bushings (see HD 358 S3 (IEC 517)).

### 2.2 Quality assurance

It is the intention of this standard that the switchgear manufacturer shall be responsible for achieving and maintaining a consistent and adequate quality of product.