AS EN 50089—2013
EN 50089:1992
EN 50089:1992/A1:1994
(Incorporating Amendment No.1)

AS EN 50089—2013

Australian Standard®

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

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The following are represented on Committee EL-007:

- Australian British Chamber of Commerce
- Australian Industry Group
- Energy Australia
- Energy Networks Association
- Engineers Australia
- University of New South Wales

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-007, Power Switchgear.

This Standard incorporates Amendment No. 1 (September 2013). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

The objective of this Standard is to provide 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.

This Standard is identical with and has been reproduced from EN 50089:1992, *Cast resin partitions for metal enclosed gas-filled high voltage switchgear and control gear*, and its Amendment (1994) which is added at the end of the source text.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

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The references to European and International Standards should be replaced by references to the following Australian or Australian/New Zealand Standards:

Reference to International or European Standard		*Australian or Australian/New Zealand Standard*	
HD		AS	
358 S3 (IEC 517)	Gas-insulated metal-enclosed switchgear for rated voltage of 72.5 kV and above	62271	High-voltage switchgear and controlgear
		62271.203	Part 203: Gas-insulated metal-enclosed switchgear for rated voltages above 52 kV
EN		AS/NZS ISO	
29000	Quality management and quality assurance (series)	9000	Quality management systems—Fundamentals and vocabulary (series)

Only European and international references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

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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.

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AUSTRALIAN STANDARD

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

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.

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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.

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