

Australian Standard[®]

**Cast aluminium alloy enclosures for
gas-filled high-voltage switchgear and
controlgear**

STANDARDS
Australia



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- Australasian Railway Association
 - Australian British Chamber of Commerce
 - Australian Electrical and Electronic Manufacturers Association
 - Energy Networks Association
 - Engineers Australia
 - Testing interests (Australia)
-

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PREFACE

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

The objective of this Standard is to specify the requirements for cast aluminium enclosures that are to be used in high-voltage switchgear and controlgear and associated gas-filled equipment.

The text of this Standard is identical with, and has been reproduced from, EN 50052:1986, *Cast aluminium alloy enclosures for gas-filled high-voltage switchgear and controlgear* (including its Amendments 1 and 2); however, the formatting has been updated to reflect current style.

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

- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
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Cast aluminium alloy enclosures for gas-filled high-voltage switchgear and controlgear

0 Introduction

This Standard covers the requirements for the design, construction, testing, inspection and certification of gas-filled enclosures for use specifically in high-voltage switch-gear and controlgear, or for associated gas-filled equipment. Special consideration is given to these enclosures for the following reasons.

- (a) The enclosures usually form the containment of electrical equipment, thus their shape is determined by electrical rather than mechanical considerations.
- (b) The enclosures are installed in restricted access areas and the equipment is operated by experts and instructed persons only.
- (c) As the thorough drying of the inert, non-corrosive gas-filling medium is fundamental to the satisfactory operation of the electrical equipment, it is periodically checked. For this reason, no internal corrosion allowance is required on the wall thickness of these enclosures.
- (d) 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 are not liable to fatigue due to pressure cycling.
- (e) 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 pressure tests shall be carried out after installation and before placing in service and no periodic inspection of the enclosure interiors or pressure tests shall be carried out after the equipment is placed in service.

1 Scope

This Standard applies to cast aluminium alloy enclosures pressurized with dry air, inert gases, for example sulphur hexafluoride or nitrogen or a mixture of such gases, 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, and with rated voltages:

- 10 kV up to and including 52 kV and with gas-filled compartments with design pressure greater than 3 bar (gauge);
- 72.5 kV and above.

The enclosures comprise parts of electrical equipment not necessarily limited to the following examples:

- Circuit-breakers
- Switch-disconnectors
- Disconnectors
- Earthing switches
- Current transformers