



NSAI
Standards

Irish Standard
I.S. EN 50052:2016

High-voltage switchgear and controlgear - Gas-filled cast aluminium alloy enclosures

I.S. EN 50052:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

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National Foreword

I.S. EN 50052:2016 is the adopted Irish version of the European Document EN 50052:2016, High-voltage switchgear and controlgear - Gas-filled cast aluminium alloy enclosures

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EUROPEAN STANDARD

EN 50052

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2016

ICS 29.130.10

Supersedes EN 50052:1986

English Version

High-voltage switchgear and controlgear - Gas-filled cast aluminium alloy enclosures

Enveloppes moulées en alliage d'aluminium pour les appareillages à haute tension sous pression de gaz

Hochspannungs-Schaltgeräte und -Schaltanlagen - Gasgefüllte Kapselungen aus Leichtmetallguss

This European Standard was approved by CENELEC on 2016-09-12. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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EN 50052:2016 (E)

European foreword

This document (EN 50052:2016) has been prepared by CLC/TC 17AC “High-voltage switchgear and controlgear”.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-09-12
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2019-09-12

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 50052:1986.

This European Standard supplements the relevant product standards on gas-insulated switchgear and controlgear in that it provides specific requirements for pressurized high-voltage switchgear and controlgear.

This European Standard has been written to get a European specification for the design, construction, testing, inspection and certification of pressurized enclosures used in high-voltage switchgear and controlgear.

In this respect, this European Standard constitutes the exclusion of HV switchgear from the scope of the Directive 2014/68/EU (superseding 97/23/EC) concerning pressure equipment. Article 1, 2. (l) excludes “enclosures for high-voltage electrical equipment such as switchgear, controlgear, transformers, and rotating machines” from the scope of the Directive.

This European Standard deals with gas-insulated switchgear enclosures of cast aluminium alloy. For different enclosure materials other European Standards are available.

Introduction

This standard covers the requirements for the design, construction, testing, inspection and certification of gas-filled enclosures for use specifically in high-voltage switchgear 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 requirements.

(b) The enclosures are installed in restricted access areas and the equipment is operated by instructed, authorized persons only.

(c) As the thorough drying of the inert, non-corrosive gas medium is fundamental to the satisfactory operation of the electrical equipment, the gas 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.

Due to the foregoing reasons and to ensure maximum service continuity as well as to reduce the risk of moisture and dust entering the enclosures which may endanger safe electrical operation of the switchgear, no pressure tests should be carried out after installation and before placing in service and no periodic inspection of the enclosure interiors or pressure tests should be carried out after the equipment is placed in service.

EN 50052:2016 (E)

1 General

1.1 Scope

This European 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 above 1 kV, where the gas is used principally for its dielectric and/or arc-quenching properties with rated voltages

- above 1 kV and up to and including 52 kV and with gas-filled enclosures with design pressure higher than 300 kPa relative pressure (gauge);
- and with rated voltage above 52 kV.

The enclosures comprise parts of 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
- etc.

The scope also covers enclosures of pressurized components such as the centre chamber of live tank switchgear, gas-insulated current transformers, etc.

1.2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 10204, *Metallic products — Types of inspection documents*

EN 12258-1:2012, *Aluminium and aluminium alloys — Terms and definitions — Part 1: General terms*

EN 50064, *Wrought aluminium and aluminium alloy enclosures for gas-filled high-voltage switchgear and controlgear*

EN 62271-1:2008, *High-voltage switchgear and controlgear — Part 1 Common specifications (IEC 62271-1:2007)*

EN 62271-203:2012, *High-voltage switchgear and controlgear — Part 203: Gas-insulated metal-enclosed switchgear for rated voltages above 52 kV (IEC 62271-203:2011)*

EN ISO 898 (series), *Mechanical properties of fasteners made of carbon steel and alloy steel*

EN ISO 6520-1:2007, *Welding and allied processes — Classification of geometric imperfections in metallic materials — Part 1: Fusion welding (ISO 6520-1:2007)*

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