IEC 62208

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COMMENTED VERSION

INTERNATIONAL STANDARD

colour inside

Empty enclosures for low-voltage switchgear and controlgear assemblies – General requirements

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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EMPTY ENCLOSURES FOR LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR ASSEMBLIES – GENERAL REQUIREMENTS

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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This commented version (CMV) of the official standard IEC 62208:2023 edition 3.0 allows the user to identify the changes made to the previous IEC 62208:2011 edition 2.0. Furthermore, comments from IEC SC 121B experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.

A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.

This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.

IEC 62208 has been prepared by subcommittee 121B: Low-voltage switchgear and controlgear assemblies, of IEC technical committee 121: Switchgear and controlgear and their assemblies for low voltage. It is an International Standard.

This third edition cancels and replaces the second edition published in 2011. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) consideration of the modifications introduced in IEC 61439-1:2020;

b) alignment of test procedures with the newest relevant standards.

The text of this International Standard is based on the following documents:

Draft	Report on voting
121B/180/FDIS	121B/180/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

The reader's attention is drawn to the fact that Annex A lists all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this document.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The purpose of this document is to harmonize as far as practicable all rules and requirements of a general nature applicable to empty enclosures for low-voltage switchgear and controlgear assemblies, in order to obtain uniformity of requirements and verification for empty enclosures and to avoid the need for verification in other standards.

EMPTY ENCLOSURES FOR LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR ASSEMBLIES – GENERAL REQUIREMENTS

1 Scope

This document applies to empty enclosures, as provided by the enclosure manufacturer, prior to the incorporation of switchgear and controlgear components by ~~the user, as supplied by the enclosure~~ the assembly manufacturer. 1

This document specifies general definitions, classifications, characteristics and test requirements of enclosures to be used as part of switchgear and controlgear assemblies (e.g. in accordance with the product standard in the IEC 61439 series), the rated voltage of which does not exceed 1 000 V AC or 1 500 V DC, and suitable for general use for either indoor or outdoor applications.

NOTE 1 Additional requirements ~~may~~ could apply for specific applications.

~~NOTE 2 The United States of America (USA) uses enclosure "Type" designations according to NEMA 250. The NEMA Enclosure Type designations specify additional environmental requirements for conditions such as corrosion, rust, icing, oil, and coolants. For this reason, the IEC Enclosure Classification Designations IP are used with an enclosure Type designation number appropriate for these markets.~~ 2

NOTE 2 Empty enclosures according to this document are suitable for mounting of electrical components.

This document does not apply to enclosures which are covered by other specific products standards (e.g. ~~IEC 60670 series~~ IEC 60670-24).

Compliance with the safety requirements of the applicable product standard for the final product produced using an empty enclosure is the responsibility of the assembly manufacturer. 3

NOTE 3 This document ~~may~~ could serve as a basis for other technical committees.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60068-2-2:2007, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

IEC 60068-2-11:~~1981~~2021, ~~*Basic*~~ *Environmental testing* ~~*procedures*~~ *– Part 2-11: Tests – Test Ka: Salt mist*

IEC 60068-2-30:2005, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60085:2007, *Electrical insulation – Thermal evaluation and designation*

IEC 60364 (all parts), *Low-voltage electrical installations*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*[1]
IEC 60529:1989/AMD1:1999
IEC 60529:1989/AMD2:2013

IEC 60695-2-10:2000~~2000~~2021, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

IEC 60695-2-11:2000~~2000~~2021, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test methods for end-products (GWEPT)*

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IEC 60695-11-5:2016; *Fire hazard testing – Part 11-5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance*

IEC TR 60890:2014, *A method of temperature-rise verification of low-voltage switchgear and controlgear assemblies by calculation*

~~IEC 61439-1:2011, *low-voltage switchgear and controlgear assemblies – Part 1: General rules*[2]~~

IEC 62262:2002, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*
IEC 62262:2002/AMD1:2021

ISO 178:2001~~2001~~2019, *Plastics – Determination of flexural properties*

~~ISO 179 (all parts), *Plastics – Determination of Charpy impact properties*~~

ISO 179-1:2010, *Plastics – Determination of Charpy impact properties – Part 1: Non-instrumented impact test*

ISO 179-2:2020, *Plastics – Determination of Charpy impact properties – Part 2: Instrumented impact test*

ISO 2409:2007~~2007~~2020, *Paints and varnishes – Cross-cut test*

ISO 4628-3:2003~~2003~~2016, *Paints and varnishes – Evaluation of degradation of coatings – Designation of quantity and size of defects, and of intensity of uniform changes in appearance – Part 3: Assessment of degree of rusting*

ISO 4892-2:2006~~2006~~2013, *Plastics – Methods of exposure to laboratory light sources – Part 2: Xenon-arc ~~sources~~ lamps*
~~Amendment 1 (2009)~~

ISO 11469:2000~~2000~~2016, *Plastics – Generic identification and marking of plastic products*

[1] ~~There is a consolidated edition 2.1 (2001) that includes IEC 60529 (1989) and its Amendment 1 (1999).~~

[2] ~~To be published.~~

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Edition 3.0 2023-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Empty enclosures for low-voltage switchgear and controlgear assemblies – General requirements

Enveloppes vides destinées aux ensembles d'appareillage à basse tension – Exigences générales

IEC 62208:2023-06(en-fr)

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ENVELOPPES VIDES DESTINÉES AUX ENSEMBLES D'APPAREILLAGE À BASSE TENSION – EXIGENCES GÉNÉRALES

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L'IEC 62208 a été établie par le sous-comité 121B: Ensembles d'appareillages à basse tension, du comité d'études 121 de l'IEC: Appareillages et ensembles d'appareillages basse tension. Il s'agit d'une Norme internationale.

Cette troisième édition annule et remplace la deuxième édition parue en 2011. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) prise en compte des modifications introduites dans l'IEC 61439-1:2020;
b) alignement des procédures d'essai sur les toutes nouvelles normes applicables.

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
121B/180/FDIS	121B/180/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/publications.

L'attention du lecteur est attirée sur le fait que l'Annexe A énumère tous les articles qui traitent des différences à caractère moins permanent inhérentes à certains pays, concernant le sujet du présent document.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous webstore.iec.ch dans les données relatives au document recherché. À cette date, le document sera

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- amendé.

INTRODUCTION

Le présent document a pour objet d'harmoniser autant que possible toutes les règles et exigences d'ordre général applicables aux enveloppes vides destinées aux ensembles d'appareillages à basse tension, afin d'uniformiser les exigences et la vérification des enveloppes vides et d'éviter de faire appel à d'autres normes pour la vérification.

ENVELOPPES VIDES DESTINÉES AUX ENSEMBLES D'APPAREILLAGE À BASSE TENSION – EXIGENCES GÉNÉRALES

1 Domaine d'application

Le présent document s'applique aux enveloppes vides, dans l'état dans lequel elles sont fournies par le fabricant d'enveloppes, avant incorporation des composants d'appareillage par le fabricant de l'ensemble.

Le présent document spécifie les définitions, les classifications, les caractéristiques et les exigences d'essai générales des enveloppes à utiliser en tant que partie d'ensembles d'appareillage (selon par exemple la norme de produit de la série IEC 61439), dont la tension assignée ne dépasse pas 1 000 V en courant alternatif ou 1 500 V en courant continu pour usage général extérieur ou intérieur.

NOTE 1 Des exigences supplémentaires peuvent s'appliquer dans le cas de certaines applications particulières.

NOTE 2 Les enveloppes vides conformes au présent document sont adaptées au montage de composants électriques.

Le présent document ne s'applique pas aux enveloppes qui sont couvertes par d'autres normes de produits spécifiques (par exemple par l'IEC 60670-24).

La conformité aux exigences de sécurité de la norme de produit applicable au produit final réalisé à partir d'une enveloppe vide est de la responsabilité du fabricant de l'ensemble.

NOTE 3 Le présent document peut servir de base pour d'autres comités d'étude.

2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60068-2-2:2007, *Essais d'environnement – Partie 2-2: Essais – Essai B: Chaleur sèche*

IEC 60068-2-11:2021, *Essais d'environnement – Partie 2-11: Essais – Essai Ka: Brouillard salin*

IEC 60068-2-30:2005, *Essais d'environnement – Partie 2-30: Essais – Essai Db: Essai cyclique de chaleur humide (cycle de 12 h + 12 h)*

IEC 60085:2007, *Isolation électrique – Évaluation et désignation thermiques*

IEC 60364 (toutes les parties), *Installations électriques à basse tension*

IEC 60529:1989, *Degrés de protection procurés par les enveloppes (Code IP)*
IEC 60529:1989/AMD1:1999
IEC 60529:1989/AMD2:2013

IEC 60695-2-10:2021, *Essais relatifs aux risques du feu – Partie 2-10: Essais au fil incandescent/chauffant – Appareillage et méthode commune d'essai*

IEC 60695-2-11:2021, *Essais relatifs aux risques du feu – Partie 2-11: Essais au fil incandescent/chauffant – Méthode d'essai d'inflammabilité pour produits finis (GWEPT)*

IEC 60695-10-2:2014, *Essais relatifs aux risques du feu – Partie 10-2: Chaleurs anormales – Essai à la bille*

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IEC TR 60890:2014, *Méthode de vérification par calcul des échauffements pour les ensembles d'appareillage à basse tension*

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ISO 179-1:2010, *Plastiques – Détermination des caractéristiques au choc Charpy – Partie 1: Essai de choc non instrumenté*

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ISO 2409:2020, *Peintures et vernis – Essai de quadrillage*

ISO 4628-3:2016, *Peintures et vernis – Évaluation de la dégradation des revêtements – Désignation de la quantité et de la dimension des défauts, et de l'intensité des changements uniformes d'aspect – Partie 3: Évaluation du degré d'enrouillement*

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