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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 20641-2025

Replacing GB/T 20641-2014

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

低压成套开关设备和控制设备 空壳体的一般要求

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document supersedes GB/T 20641-2014 "General Requirements for Empty Enclosures of Low-Voltage Switchgear and Controlgear Assemblies", and is consistent with...

Compared with GB/T 20641-2014, apart from structural adjustments and editorial changes, the main technical changes are as follows.

---The regulations concerning electric shock protection have been amended, introducing the concepts of Class I and Class II enclosures, and correspondingly increasing the requirements for such enclosures.

Summation experiments (see 3.10, 3.11, 8.5, 9.11, 9.12; 8.5, 8.6, 9.10, 9.11 in the 2014 edition);

---Added requirements for thermal dissipation capability in the information provided about the housing, and changed the type testing requirements for thermal dissipation capability (see...).

Versions 6.3.7, 9.15 (version 9.14 of 2014);

---Static load requirements have been changed (see 8.2, 9.4, and 8.2, 9.4 in the 2014 version);

---Added relevant requirements for corrosion resistance in structures and designs (see 8.8);

---Added relevant requirements for enclosures constructed or covered with insulating materials in the structure and design (see 8.9);

---Type testing requirements for mechanical operation have been added (see 9.6);

---The type testing requirements for UV radiation resistance have been changed (see 9.13, 9.12 in the 2014 version).

This document adopts IEC 62208:2023 "General requirements for empty enclosures of low-voltage switchgear and controlgear assemblies".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Electrical Equipment Industry Association.

This document is under the jurisdiction of the National Technical Committee on Standardization of Low-Voltage Switchgear and Control Equipment (SAC/TC266).

Introduction

The purpose of this document is to harmonize, as far as possible, the rules applicable to all common properties of empty enclosures for low-voltage switchgear and controlgear assemblies.

The requirements are to ensure consistency between the requirements and verification of the empty shell and to avoid verification in other standards.

Low-voltage switchgear and controlgear General requirements for empty shells

1 Scope

This document applies to empty enclosures provided by the enclosure manufacturer prior to the installation of switchgear and control equipment components by the assemblies manufacturer.

Body (hereinafter referred to as "shell").

This document specifies the enclosure designations for low-voltage switchgear and controlgear assemblies (e.g., conforming to the IEC 61439 series product standards).

Definition, classification, performance, and testing requirements. Its rated voltage is AC not exceeding 1000V or DC not exceeding 1500V, suitable for indoor or outdoor use.

External applications.

Note 1: Additional requirements may be added for special applications.

Note 2: The housing described in this document is for the installation of electrical components.

This document does not apply to housings mentioned in other specific product standards (such as IEC 60670-24).

The equipment manufacturer is responsible for ensuring that the final product manufactured using the housing meets the safety requirements of the relevant product standards.

Note 3: This document can be used as a base standard for other technical committees.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 2423.4-2008 Environmental testing of electrical and electronic products - Part 2: Test methods - Test Db. Alternating damp heat (12h) (12h cycle) (IEC 60068-2-30:2005, IDT)
GB/T 2423.17-2024 Environmental testing-Part 2: Test methods-Test Ka. Salt spray (IEC 60068-2-11:2021, IDT) GB/T 5169.5-2020 Fire Hazard Testing of Electrical and Electronic Products - Part 5: Test Flame Needle Flame Test Method and Apparatus Recognize the test methods and guidelines (IEC 60695-11-5:2016, IDT) GB/T 9286-2021 Paints and varnishes - Cross-cut test (ISO 2409:2020, IDT) GB/T 11021-2014 Electrical insulation - Heat resistance and representation method (IEC 60085:2007, IDT) GB/T 16422.2-2022 Plastics - Laboratory Light Source Exposure Tests - Part 2: Xenon Arc Lamps (ISO 4892-2.

2013, IDT)

IEC 60068-2-2:2007 Environmental testing of electrical and electronic products - Part 2: Test methods - Test B. High temperature Note. GB/T 2423.2-2008 Environmental testing for electrical and electronic products - Part 2: Test methods - Test B. High temperature (IEC 60068-2-2:2007, IDT) Note. GB/T 16895 (all parts) Low-voltage electrical installations [IEC 60364 (all parts)]

1) Combined version 2.2 (2013), which includes IEC 60529 (1989) and its first amendment (1999) and second amendment (2013).

IEC 60529:1989/AMD1.1999 Amendment No. 1 to Enclosure Protection Ratings (IP Code)
IEC 60529:1989/AMD2.2013 Amendment No. 2 to Enclosure Protection Ratings (IP Code)
Note. GB/T 4208-2017 Degrees of protection provided by enclosures (IP code) (IEC

60529:2013, IDT)