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

GB 46038-2025

**Electrical equipment and system of industrial machines - Safety
requirements**

工业机械电气设备及系统 安全要求

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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. 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 and is under the jurisdiction of the Ministry of Industry and Information Technology of the People's Republic of China.

Industrial machinery electrical equipment and systems refer to the electrical, electronic, and programmable electronic devices of machinery (including a group of machinery working together). Equipment and systems (see GB/T 5226.1-2019). Industrial machinery electrical systems mainly consist of industrial machinery electrical equipment and industrial machinery electronic control systems. The system consists of two categories. Industrial machinery and electrical equipment includes machine tools, construction machinery, hoisting machinery, semiconductor machinery, plastics machinery, textile machinery, and sewing equipment. In terms of electrical equipment such as machinery, industrial mechanical electronic control systems include both safety control systems and digital control systems. Industrial machinery electrical safety standards have always played a crucial role in protecting personal health, safety of life and property, and ensuring safe production. This document plays a crucial role. Focusing on industrial machinery, electrical equipment, and systems as a whole, it proposes general safety requirements to protect personnel and property. To ensure the safety of production, guarantee the reliable operation of electrical equipment and systems, and facilitate the use and maintenance of electrical equipment and systems. Category A standards (basic safety standards) provide basic concepts, design principles, and general characteristics applicable to all machinery; Category B standards (general safety standards) Safety standards refer to a safety feature of machinery or a class of safety devices with a wide range of applications (see GB/T

15706). This document belongs to... Category B safety standards. When the requirements of this document differ from those specified in Category A safety standards, for industrial machines designed and manufactured in accordance with this document... For mechanical and electrical equipment and systems, the requirements of this document take precedence over the requirements in Category A standards. Safety requirements for electrical equipment and systems of industrial machinery

1 Scope

GB 46038-2025 is the Chinese national standard on electrical equipment and system of industrial machines - safety requirements, in the field of electrical engineering. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 5 October 2025 by the State Administration for Market Regulation; Standardization Administration of China, and takes effect on 1 November 2026.

Classification: ICS 29.020, CCS K09. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the safety requirements for electrical equipment and systems in industrial machinery, including basic safety requirements, electrical system safety requirements, and control... System security requirements and security protection requirements. This document applies to the design, manufacture, and application of electrical, electronic, and programmable electronic equipment and systems for machinery (including a group of machines working in concert). Manufacturing, production, use, and maintenance. This document applies to electrical equipment or components with a nominal power supply voltage not exceeding 1000Va.c. or 1500Vd.c. The frequency shall not exceed 200Hz. Electrical equipment or components operating at higher nominal power supply voltages or higher frequencies require additional specifications. Require.

Note. Examples of devices within the scope of this document are given in Appendix A. This document does not apply to.

- Electrical equipment used in potentially explosive environments;
- Electrical equipment used for radiological and medical purposes;
- Electrical components of elevators used for goods and personnel;
- Special electrical equipment for ships, aircraft, or railways;
- Household and similar household appliances.

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 5226.1-2019 Electrical Safety of Machinery - Electrical Equipment of Machinery - Part

4 Emissions in Industrial Environments

GB/T 17799.7 General Standard for Electromagnetic Compatibility - Part

7.Systems Used in Industrial Locations for Performing Safety-Related Functions (Functions) Immunity requirements for safety equipment

GB/T 18153 Safety data for determining the temperature limits of accessible hot surfaces in mechanical safety

GB/T 18209.1 Electrical safety indications, signs and operation of machinery - Part

6 Technical Conditions for Construction Machinery

GB/T 5226.31 Electrical Safety of Machinery - Electrical Equipment of Machinery - Part

31.Special Purpose Sewing Machines, Sewing Units and Sewing Systems Safety and EMC requirements

GB/T 5226.32 Electrical Safety of Machinery - Electrical Equipment of Machinery - Part

32.Technical Conditions for Lifting Machinery

GB/T 5226.33 Electrical Safety of Machinery - Electrical Equipment of Machinery - Part

33.Technical Conditions for Semiconductor Equipment

GB/T 5226.34 Electrical Safety of Machinery - Electrical Equipment of Machinery - Part

34.Technical Conditions for Machine Tools

GB/T 15706 General Principles for Safety Design of Machinery. Risk Assessment and Risk Reduction

GB/T 17454 (all parts) Mechanical safety varistor protection device

GB/T 17799.2 General standards for electromagnetic compatibility - Part