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

GB/T 38943.3-2020

**Earth-moving machinery--Electrical safety of machines utilizing
electric drives and related components and systems - Part 3:
Particular requirements for self-powered machines**

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Foreword

GB/T 38943 "Electrical Safety of Machinery Driven by Electricity for Earth-moving Machinery and Related Parts and Systems" is divided into three parts.

---Part 1.General requirements;

---Part 2.Specific requirements for external power machines;

---Part 3.Specific requirements for self-propelled machines.

This part is Part 3 of GB/T 38943.

This section was drafted in accordance with the rules given in GB/T 1.1-2009.

The translation method used in this part is equivalent to the adoption of ISO 14990-3:2016
"Earth-moving machinery using electric drive machinery and related parts and

Electrical safety of the system. Part 3. Specific requirements for self-propelled machines.

The Chinese documents that have a consistent correspondence with the international documents cited in this section are as follows.

---GB/T 38943.2-2020 Electrical safety of earth-moving machinery and related parts and systems driven by electricity No. 2

Part. Specific requirements for external power machinery (ISO 14990-2:2016, IDT).

This section has made the following editorial changes.

---Modified the ISO chapter number error, the power disconnect part "10.1.1" in Table B.1 was changed to "Chapter 10".

Please note that certain contents of this document may involve patents. The issuing agency of this document is not responsible for identifying these patents.

This part was proposed by China Machinery Industry Federation.

This part is under the jurisdiction of the National Earthmoving Machinery Standardization Technical Committee (SAC/TC334).

Drafting organizations of this section. Xuzhou Construction Machinery Group Co., Ltd., Guangxi Liugong Machinery Co., Ltd., Anhui Hongchang Mechanical and Electrical Equipment System

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Limited company.

Introduction

Electrification technology can make machine packaging more flexible. Early earth-moving machinery (EMM) electrical systems were mainly in the 12V~24V direct

Within the flow range, so you need to pay special attention to the following two safety aspects.

---Very high voltages, such as those used in industry, construction and other transportation sectors;

---Greater available electrical energy.

Part of this section applies to electrical design (such as Chapter 9, Chapter 11, Chapter 12, and Chapter 17). Due to certain design attributes

It is inseparable from electrical safety, so these requirements are necessary.

Part of the content of this section is based on IEC 60204-1 and IEC 60204-11, and adjusted according to the actual needs of earth-moving machinery.

Non-electrical hazards are described in the ISO 20474 series of standards.

Figure 1 helps to understand the relationship between the various components of a machine and its related equipment. Figure 1 is a typical machine and related equipment

The prepared block diagram shows the various components of the electrical equipment mentioned in this section.

Figure 1 Typical machine frame diagram

Earth-moving machinery uses electric-driven machinery and

Electrical safety of related parts and systems

Part 3. Specific requirements for self-propelled machines

1 Scope

This part of GB/T 38943 specifies the electrical equipment of self-propelled (using on-board power supply) electric-driven earth-moving machinery (EMM) and its

Specific safety requirements for components.

This part is applicable to AC with any frequency within the range of 50V~36kV and DC within the range of 75V~36kV.

Electricity, including any machine for outdoor use with repetitive rate pulsating direct current.

The voltage inside the device is not the vehicle voltage, so it is not within the scope of this standard.

This part is used in conjunction with GB/T 38943.1. GB/T 38943.1 specifies the general requirements for electric-driven earth-moving machinery.

On its power supply method. GB/T 38943.2 specifies the specific requirements for the use of externally powered earth-moving machinery. For both self-powered and used

Externally powered earth-moving machinery (such as battery-powered machinery with a built-in charger with power supply function) should also comply with GB/T 38943.2

Requirements.

Note. For machines running on highways, automotive standards ISO 6469 and/or UNECER100 can provide useful guidance. See Appendix B for comparison requirements.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 38943.1-2020 Electrical safety of earth-moving machinery and related parts and systems driven by electricity, Part 1

Points. General requirements (ISO 14990-1:2016, IDT)

ISO 14990-2 Earth-moving machinery, electrical safety of electrical-driven machinery and related parts and systems-Part 2.External motion

Specific requirements for power machines

(Earth-movingmachinery-Electricalsafetyofmachinesutilizingelectricdrivesor

relatedcomponentsandsystems-Part

2.Particularrequirementsforexternaly-poweredmachines)

3 Terms and definitions

The terms and definitions defined in GB/T 38943.1-2020 apply to this document.

4.1 General requirements

In addition to the revised part of this chapter, GB/T 38943.1-2020 Chapter 4 applies to this chapter.

4.2 Special conditions

The enquiry form A.1 provided in Annex A can be used as users and suppliers regarding special conditions or some terms in this section may not apply

The basis for reaching an agreement under the circumstances. The exemption from any requirement is limited to situations not covered in this section.