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

GB/T 45046-2024

**Earth-moving machinery - Battery electric hydraulic excavators
- Technical requirements**

土方机械 纯电动液压挖掘机 技术要求

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee for Standardization of Earthmoving Machinery (SAC/TC334). This document was drafted by: Guangxi Liugong Machinery Co., Ltd., Shandong Construction Machinery Co., Ltd., SINOMACH Heavy Industry Group Changlin Co., Ltd., China Railway Changan Heavy Industry Co., Ltd., Xiamen XGMA Zhonglixing Intelligent Technology Co., Ltd., Shandong Lingong Engineering Machinery Co., Ltd., Xiamen Yulong Machinery Machinery Co., Ltd., Sunward Intelligent Equipment Co., Ltd., Xuzhou Xugong Excavator Co., Ltd., Sany Heavy Machinery Co., Ltd., Shandong Changlin Machinery Machinery Group Co., Ltd., Jiangsu Huizhi High-end Engineering Machinery Innovation Center Co., Ltd., Sichuan-Tibet Railway Technology Innovation Center Co., Ltd., Huzhou Hongwei New Energy Automobile Co., Ltd., Weichai (Qingdao) Smart Heavy Industry Co., Ltd., Zhejiang Pangu Power Technology Co., Ltd., Aiqidi now Daidi Wanlun Engineering Machinery Co., Ltd., Shandong Province Gongtong Engineering Machinery Co., Ltd., China Automotive Parts (Xiamen) Co., Ltd., Hangzhou Zhou Nanhua Auto Parts Co., Ltd., Beijing Institute of Technology, and Tianjin Engineering Machinery Research Institute Co., Ltd. The main drafters of this document are: Peng Xingde, Liu Qifeng, Jiang Lili, Zhai Chaojie, Zheng Cong, Xia Zhaoyi, Liao Defeng, Hao Peng, Xia Yan, Cui Huixi, Gao Gongru, Yang Tao, Li Bingtian, Wen Yaming, Zhang Kai, Yu Hebo, Lei Ming, Zhang Ruwei, Xiong Xiaoxin, Wu Jianhua, Wang Shuo, Li Guangqing, Peng Yan, Zhang

Huina, Wu Hongli. Technical requirements for pure electric hydraulic excavators for earthmoving machinery

1 Scope

GB/T 45046-2024 sets the technical requirements for battery electric hydraulic excavators. China is electrifying construction plant faster than anywhere else, driven by urban emission rules and by the cost of diesel on site, and this is the first national standard defining what such a machine has to be. It covers the classification and the basic parameters, the general requirements on the machine and its structure, the requirements on the drive system, the battery system and the battery management, the charging interface and the charging modes, the electrical safety requirements including insulation, potential equalisation, protection against electric shock and the behaviour of the high voltage system in a fault, the performance requirements, the requirements on the operator's station and the controls, the safety and protection functions, and the marking and instructions. Its companion GB/T 45049 gives the test methods. For a manufacturer, an importer or a contractor specifying electric plant in China, this is the governing text.

This document specifies the technical requirements, inspection rules, marking, packaging, transportation and storage of pure electric hydraulic excavators, and describes the corresponding test Test method. This document applies to the manufacture and inspection of pure electric hydraulic excavators.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 4208 Enclosure protection grade (IP code)

GB/T 6572 Terminology and commercial specifications for earth-moving machinery hydraulic excavators

GB/T 7586 Earth-moving machinery - Hydraulic excavators - Test methods

GB/T 8419 Laboratory evaluation of vibration of earth-moving machinery driver's seats

GB/T 8595 Earth-moving machinery operator's controls

GB/T 14039-2002 Code for solid particle contamination level of hydraulic transmission oil

GB/T 16935.1-2023 Insulation coordination for equipment in low-voltage power supply systems Part

4 High power DC charging interface

GB/T 22358 Protection and storage of earth-moving machinery

GB/T 22359.1 Electromagnetic compatibility (EMC) of earth-moving machinery and construction machinery with built-in power supply Part

1. Typical General requirements for EMC under electromagnetic environment conditions

GB/T 25602 Terminology for earth-moving machinery availability

GB/T 25606 Earthmoving machinery product identification code system

GB/T 25684.1-2021 Safety of earth-moving machinery Part