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GB/T 45052-2024

**Earth-moving machinery - Battery electric wheel loaders - Test
methods**

土方机械 纯电动轮胎式装载机 试验方法

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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., XCMG Engineering Machinery Co., Ltd. Technology Branch, Shantui Engineering Machinery Co., Ltd., SINOMACH Changlin Co., Ltd., Xiamen Loader Co., Ltd., China Railway Changan Heavy Industry Co., Ltd., Tianjin Engineering Machinery Research Institute Co., Ltd., Xiamen XGMA Machinery Co., Ltd., Longgong (Shanghai) Machinery Manufacturing Co., Ltd., Boreton Technology Co., Ltd., Liuzhou Automobile Inspection Co., Ltd., Zhengzhou Yutong Mining Equipment Co., Ltd., Jiangsu Xugong Guozhong Laboratory Technology Co., Ltd., Shanghai Qiyuanxin Power Technology Co., Ltd., Sichuan-Tibet Railway Technology Innovation Center Co., Ltd., Lovol Heavy Industry Group Co., Ltd., Tangshan Dingshi Automotive Car Manufacturing Co., Ltd. The main drafters of this document are. Tang Bin, Zhai Genli, Huang Yajun, Zhang Yajun, Zheng Shixiong, Zheng Zongjun, Chen Shuqiao, Wu Rongfeng, Hua Wenbo, Meng Weixiang, Xia Sheng, Wu Taizhu, Gao Jingwei, Zhang Zhenzhong, Yao Jingchuan, Chen Hongqian, Wang Liquan, Li Yongzhi, Ren Yanli, and Ruan Wei. Earthmoving machinery electric wheel loader Test methods

1 Scope

GB/T 45052-2024 gives the Chinese test methods for battery electric wheel loaders. The electric loader is the machine where Chinese construction equipment electrification has moved fastest, and it needs its own methods because the figures that matter are not the

ones a diesel machine is measured by: the energy consumption over a defined work cycle, the operating time on a charge, the charging time and the behaviour of the battery and drivetrain thermally under sustained heavy work replace the fuel consumption and the engine power. The standard sets the test conditions and the preparation, the determination of the main parameters, and then the tests: the traction and drawbar performance, the hydraulic and lifting performance, the braking, the energy consumption and endurance over the specified loading cycles, the charging performance, the thermal behaviour under continuous operation, the gradeability and the stability, together with the safety checks on the high voltage system. It takes effect on 1 July 2025.

This document describes the test methods for earth-moving machinery pure electric wheel loaders. This document is applicable to the inspection of pure electric wheel loaders of earth-moving machinery. Other types of loaders can be used for reference.

2 Normative references

The contents of the following documents constitute the 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 2900.1 Basic terms of electrical engineering

GB/T 4208 Enclosure protection grade (IP code)

GB/T 6375 Earth-moving machinery traction test method

GB/T 8498 Identification, terms and definitions of basic types of earth-moving machinery

GB/T 8499 Method for determining the center of gravity of earth-moving machinery

GB/T 8592 Earth-moving machinery - Determination of steering dimensions of wheeled machines

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

GB/T 10175.1 Earth-moving machinery - Loaders and backhoe loaders - Part

1. Calculation and verification of rated working load - Tipping load Test method for load calculation value

GB/T 10175.2 Earth-moving machinery - Loaders and backhoe loaders - Part