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Electric earth-moving machinery - Terminology

电动土方机械 术语

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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 Lingong Engineering Machinery Co., Ltd., Shaanxi Tongli Heavy Industry New Energy Intelligent Technology Co., Ltd., Inner Mongolia North Heavy Duty Truck Co., Ltd., Shandong Carter Heavy Industry Machinery Co., Ltd., Sykes Hydraulic Technology Co., Ltd., Fujian Jingong Machinery Co., Ltd., MCC Beijing (Xiangtan) Mining Equipment Co., Ltd., Boleiton Technology Co., Ltd., Lovol Heavy Industry Group Co., Ltd., Zhejiang Gaoyu Hydraulic Electromechanical Co., Ltd., Shandong Kenshi Heavy Industry Machinery Co., Ltd., Xuzhou Meichi Axle Co., Ltd., Xiamen XGMA Machinery Co., Ltd., Shanghai Qiyuanxin Power Technology Co., Ltd., Tianjin Engineering Machinery Research Institute Co., Ltd., Jiangsu XCMG Guozhong Laboratory Technology Co., Ltd. and China Railway 22nd Bureau Group Electrification Engineering Co., Ltd. The main drafters of this document are: Zhang Qiang, Chi Feng, Liu Juan, Pei Jie, Wang Xinchun, Guan Baiping, Liu Xiongwei, Shen Piaopiao, Dai Weibin, Wang Zhenghang, Jiang Rongcong, Liu Xiangkun, Liu Haijun, Zheng Chuyuan, Luo Haoliang, Li Guangqing, Tang Jianlin, Li Chuncheng, Li Jianhua, Chen Shuqiao, and Deng Yanfang. Electric Earthmoving Machinery Terminology

1 Scope

GB/T 44254-2024 is the Chinese vocabulary of electric earth-moving machinery.

Construction plant is electrifying quickly in China, and the vocabulary has had to be built from nothing: the terms come partly from automotive electrification, partly from industrial trucks and partly from the existing earth-moving machinery standards, and they were being used inconsistently in specifications, safety documents and service manuals at exactly the moment when precision mattered most, because these are high voltage machines maintained by mechanics whose training was diesel. The standard defines the terms across the field: the machine types and their electric configurations, battery electric, cable electric and hybrid, the energy storage system and its components, the electric drive and its control, the charging equipment and interfaces, the high voltage system, its isolation, protection and safety terms, and the performance and rating terms by which such a machine is specified. For anyone reading Chinese electric construction machinery documentation, this is the key to the vocabulary. It took effect on 24 July 2024.

This document defines the terms and definitions for electric earth-moving machinery, key systems and components, charging and battery replacement facilities, safety and performance. This document is applicable to the scientific research, design, manufacturing, writing of relevant technical documents and technical exchanges of electric earth-moving machinery.

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

3 Terms and definitions

The terms and definitions defined in GB/T 8498 and the following apply to this document.

3.1 Whole Machine

3.1.1 Electric earth-moving machinery electric earth-moving machinery; EEMM Earth-moving machinery whose operating energy is fully or partially provided by electrical energy. Note

1. Operating energy refers to the energy required for earth-moving machinery operations, including energy input, energy output and the intermediate energy conversion process.

Note

2. The electrical energy comes from an onboard rechargeable energy storage system, a fuel cell, a generator device, an external power grid or other external energy storage devices.

3.1.2 Battery electric earth-moving machinery Electric earth-moving machinery whose operating energy is completely provided by an onboard rechargeable energy storage system.

3.1.3 battery swap electric earth-moving machinery battery swap electric earth-moving machinery Electric earth-moving machinery whose operating energy is provided wholly or partly by a replaceable onboard rechargeable energy storage system.

Note. A complete battery replacement process generally takes no more than 15 minutes.

3.1.4 Hybrid electric earth-moving machinery Electric earth-moving machinery whose operating energy is provided by at least two of the following types of onboard energy sources.

--- Consumable fuel;

---Rechargeable energy storage system.

3.1.5 fuel cell earth-moving machinery fuel cell electric earth-moving machinery The operating energy is provided by the fuel cell system as the sole power source, or by the fuel cell system and the rechargeable energy storage system. Electric earth-moving machinery.