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

GB/T 45162.2-2026

**Warehouse logistics equipment - Specification for reliability
testing - Part 2: Storage equipment**

物流仓储设备 可靠性试验规范 第2部分：存储设备

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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. This document is Part 2 of GB/T 45162 "Reliability Test Specification for Logistics and Warehousing Equipment". GB/T 45162 has been published. The following section.

1. Conveying and Sorting Equipment;

2. Storage devices. 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 by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee on Standardization of Logistics and Warehousing Equipment (SAC/TC499). This document was drafted by: Kunming Shipbuilding Intelligent Technology Co., Ltd., Beijing Lifting and Transportation Machinery Design and Research Institute Co., Ltd., and Shenzhen Hai... Rouchuang Innovation Technology Co., Ltd., Taiyuan Fulairuida Logistics Equipment Technology Co., Ltd., Surui Intelligent (Mingguang) Co., Ltd., Zhongding Intelligent (Wuxi) Science & Technology Co., Ltd., Jiangsu Liuwei Intelligent Logistics Equipment Co., Ltd., Shanghai Oride Logistics Technology Co., Ltd., Zhejiang Kailes Technology Group Co., Ltd., Shenzhen CIMC Tianda Logistics System Engineering Co., Ltd., China Automotive Engineering Co., Ltd. Beijing Automation Research Institute (Beijing) Technology Development Co., Ltd., Shicang Intelligent Warehousing Equipment (Shanghai) Co., Ltd., and Shanghai Jingxing Logistics Equipment Engineering Co., Ltd. Limited Liability Company, RoboTech Automation Technology (Suzhou) Co., Ltd., Shenzhen Today International Logistics Technology Co., Ltd., Shanghai Leading Automation Automation Systems Co., Ltd., Jiangyin Huaxi Chemical Terminal Co., Ltd., Zhejiang Zhongyang Automated Warehouse Technology Co., Ltd., Jiangsu Baoxiang Intelligent Technology Co., Ltd. The company, Jiangsu Shengpai Transmission Technology Co., Ltd., and Shenzhen Times High-Tech Equipment Co., Ltd. The main drafters of this document are. Gao Sheng, Li Rong, Wang Qiao, Chen Dixing, Lin Shicai, Xu Xijun, Zhang Weiguo, Gai Yuchun, Xu Zhenglin, and Huang Wen. Deng Zhida, Mi Bo, Xu Zhiwang, He Zhiwu, Wan Yinghe, Wang Zhiyu, Huang Xi, Wang Jianxing, Yang Xinli, Zeng Weiwei, Song Liangqi, Wu Meihua, Wang Kaisheng Xie Guobao, Yang Yi, Wang Pu, and Tian Hanrong.

Reliability is a key indicator for measuring the quality of logistics warehousing equipment. Therefore, it is necessary to define the reliability of logistics warehousing equipment from a standards perspective. Standardize the testing and recording processes, and propose reliability requirements to improve equipment quality and promote the technological advancement of logistics and warehousing equipment. GB/T 45162, "Specification for Reliability Testing of Logistics Warehousing Equipment," aims to establish a standard universally applicable to reliability testing of logistics warehousing equipment. The standards and requirements are proposed to consist of three parts.

1. Conveying and Sorting Equipment. The purpose is to establish suitable procedures for the operation of conveying and sorting equipment in logistics and warehousing facilities under

normal conditions. The basic requirements and methods for conducting reliability tests under operating conditions are outlined to ensure effective reliability testing.

2.Storage Devices. The purpose is to establish applicable guidelines for storage devices in logistics warehousing equipment under normal operating conditions. The basic requirements and methods for reliability testing are outlined to ensure effective reliability testing.

3.Warehousing Systems. The purpose is to establish a basis for reliability testing of warehousing systems under normal operating conditions. These requirements and methods are for the purpose of effectively conducting reliability tests. One of the tasks in developing GB/T 45162 was to provide effective input for improving the reliability of logistics warehousing equipment. Currently, my country's logistics warehousing... Equipment quality varies considerably. Reliability, as a characteristic of product quality, is a crucial means of enhancing product competitiveness. Therefore, it is indeed necessary to GB/T 45162 needs to be developed to help establish a reliability testing standard for logistics and warehousing equipment that meets domestic needs, standardize testing procedures, and improve [the system's capabilities]. Improve testing efficiency, shorten testing cycles, and reduce testing costs. The formulation of GB/T 45162 focuses on the test conditions, methods, and records for the reliability of logistics warehousing equipment, ensuring that logistics warehousing equipment... With a clear definition of reliability, standardized test conditions and methods, and standardized data collection and analysis, we can verify whether the equipment meets quality requirements throughout its entire lifecycle. Empirical evidence and decision-making data are required. The formulation of GB/T 45162 will further standardize the promotion and implementation of reliability measures for logistics warehousing equipment. To fundamentally improve equipment quality and promote the high-quality development of logistics and warehousing equipment in my country. Reliability Test Specifications for Logistics and Warehousing Equipment Part

1 Scope

GB/T 45162.2-2026 is the Chinese national standard covering the reliability of racking, shuttles and automated storage systems - the duty cycles they are tested through, the failure definitions, and the mean time between failures a warehouse designer needs in order to size maintenance and spares. Part 2 of the series, first edition, 17,500 words. It was issued on 28 January 2026 and has been in force since 1 August 2026, as a first edition. The document is under the responsibility of the China Machinery Industry Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document defines the relevant terminology for the reliability of storage equipment in logistics warehousing facilities, specifies the test conditions, and provides test methods and

procedures. The test items, test records, and test reports describe the sampling and test methods. This document applies to reliability testing of storage equipment such as stacker cranes, two-way shuttles, four-way shuttles, and vertical conveyors.

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 45162.1 Reliability Testing Specification for Logistics and Warehousing Equipment - Part

3 Terms and Definitions

The terms and definitions defined in GB/T 45162.1 and the following terms and definitions apply to this document.

3.1 The average number of operations between two failures in the total number of equipment failures under given operating conditions.

3.2 stacker crane Lane stacking crane Equipment that runs along tracks within the shelving aisles to retrieve unit goods from storage compartments, completing inbound and outbound operations. [Source: GB/T 43910-2024, 3.2.23]

3.3 Two-directions shuttle; two-way shuttle A rail-guided shuttle vehicle that travels back and forth within the same aisle. [Source: GB/T 43910-2024, 3.2.31]

3.4 Four-directions shuttle; four-way shuttle Rail-guided shuttle cars that can change aisles on the same floor. [Source: GB/T 43910-2024, 3.2.32]

3.5 Vertical conveyor Conveying equipment that transports unit goods and/or rack-mounted shuttles in a vertical, layered manner.