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

**GB 24804-2009**

Replacing GB/T 24804-2009

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**Rules for the improvement of safety of existing lifts**

提高在用电梯安全性的规范

**(English Translation)**

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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 replaces GB/T 24804-2009 "Specifications for Improving the Safety of Elevators in Use". Compared with GB/T 24804-2009, except for in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Added content that does not apply to "elevators (lifting platforms) with rated speeds less than or equal to 0.15m/s" [see 1.3d)];
- b) Delete content that does not apply to "Safety during fire operations" (see 1.4 of the 2009 version);
- c) 14 major hazards have been added (see Chapter 4);
- d) Added relevant requirements for elevator owners before, after, and during use of the elevator (see 5.1);
- e) Added requirements for handling extreme risks when inspecting elevators (see 5.2);

- f) Added requirements for recording of elevators after modification (see Chapter 7);
- g) In the safety checklist for elevators in use, "in compliance with GB 7588-2003 (or GB 21240-2007) or in accordance with GB/T 24804-2009 "Priority Description" column for comparing the safety level of modified elevators (see Table A.1, 2009 version of Table B.2);
- h) In the safety checklist for elevators in use, the items to be checked and the corresponding protective measures have been changed (see Table A.1, 2009 version of the table) B.2).

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## Introduction

0.1 Since elevators have a longer service life than most other transportation and construction equipment, this means that the parts that are installed and used are Existing elevators may lag behind the current technological level in terms of design, performance and safety. These elevators in use need to be modified to reduce existing risks and meet the security requirements of this document.

**Note:** Modifications in this document generally include repairs and modifications.

0.2 This document classifies various hazards and dangerous states, and analyzes each hazard using risk assessment methods; provides a step-by-step guideline Correct methods to improve the safety of elevators in use and bring them up to today's safety level; according to the probability of occurrence of each risk and the severity of the injury degree, identify the safety status of the elevator in use and determine the safety measures that should be taken; list various high, medium and low risks, and propose steps that can be adopted step by step the right way to reduce risk.

0.3 This document serves as guidance in the following areas.

- a) Go through a screening process using a reasonable and practical approach<sup>1)</sup> based on risk level (high, medium, low) and social and economic factors (see Chapter 5) to determine their respective implementation procedures;
- b) Elevator owners shall perform their obligations in accordance with relevant laws and regulations;
- c) The elevator maintenance organization and/or relevant agencies determine the safety level of the elevator in use;
- d) The elevator owner improves the safety of the elevator in use based on the safety level of the elevator in use determined in c).

0.4 Appendix A can be used to inspect elevators in use to determine hazard categories and

correct safety measures. If the identified risk situation not included in this document, the risk needs to be evaluated in accordance with GB/T 20900.

**Note:** The risk distribution map is slightly modified according to GB/T 20900 in order to confirm the risk level according to the existing method and determine the differences in project upgrades on elevators in use.

Priority (see 5.3 and 5.4). Between probability levels "C" and "E", probability level "D" covers a larger probability range, and the risk profile of elevators in use is Most of the rates will be in the "D" category. Therefore, the probability grade "D" is divided into three smaller grades "CD", "D" and "DE". A higher probability level "CD" can may cause a large number of events and is close to "C", so it is considered to have a higher priority (P1) for severity "1" and "2", and for severity "3" Has medium priority (P2). At the lower probability level "DE", only a very small number of events are expected, close to "E", with a moderate severity level for severity "1" Priority (P2) is between the high priority (P1) of risk level "1D" and the low priority (P3) of risk level "1E".

There is low priority (P3), and risk level "2E" also has low priority (P3).

1) "Reasonable and practicable" means. What is reasonable and practicable is determined based on the severity of the harm caused by the risk and the difficulty and cost of eliminating or reducing the risk.

Practical and feasible. If the difficulty and expense are high, but a careful evaluation of the risk shows that the risk is not high, there is no need to take action. the other party If the risk is high, action should be taken regardless of the cost.

Standards to improve the safety of elevators in use

## 1 Scope

### 1.1

This document specifies methods to improve the safety of elevators in use. The goal is to apply current safety technology to make elevators in use meet the safety standards of newly installed elevators.

The same level of safety as the ladder.

**Note:** Due to building design conditions and other reasons, it may be difficult to fully achieve the current level of safety.

### 1.2

This document applies to permanently installed traction, forced and hydraulically driven passenger or freight elevators.

This document improves the safety of elevators in use for the following people.

- a) Passengers;
- b) Maintenance and inspection personnel;
- c) People around the hoistway, machine space and pulley room who may be affected by the elevator;
- d) Any other authorized person.

### 1.3

This document does not apply to the following situations, but can be used as a reference.

- a) Elevators with drive methods other than those specified in GB/T 7588.1-2020;
- b) Lifting equipment, such as chain bucket elevators, mining elevators, stage lifting equipment, machinery with automatic cages and hoppers, construction Lifts, marine lifts, offshore mining or drilling platforms, construction and maintenance machinery, or elevators in wind power towers;
- c) Elevators with an inclination angle between the guide rail and the plumb line greater than 15°;
- d) Elevators (lifting platforms) with a rated speed less than or equal to 0.15m/s;
- e) Safety of operation during transportation, installation, repair and disassembly of the elevator.

## 2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

GB/T 7024 Terminology for elevators, escalators, and moving walkways GB/T 7588.1-2020 Safety Specifications for Elevator Manufacturing and Installation Part 1: Passenger Elevators and Freight Elevators GB/T 20900 Methods for risk assessment and reduction of elevators, escalators and moving walkways GB/T 23821-2022 Mechanical safety distance to prevent upper and lower limbs from touching the danger zone GB/T 24475 Elevator remote alarm system GB/T 24477-2009 Additional requirements for elevators for people with disabilities GB/T 24479-2023 Elevator characteristics in case of fire GB/T 24480-2009 Elevator landing door fire resistance test leakage, heat insulation, radiation measurement method GB/T 26465-2021 Safety Specifications for the Manufacturing and Installation of Firefighter Elevators GB/T 28621-2023 Safety specifications for the manufacture and installation of new elevators installed in existing buildings GB/T 31095-2014 Elevator requirements under earthquake conditions EN81-82:2013 Safety regulations for the