

ICS 91.140.90

CCS Q 78



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

GB/T 46154-2025

**Safety rules for the construction and installation of lifting
appliances in wind turbines**

风力发电机组用电梯制造与安装安全规范

Issued on: August 29, 2025

Implemented on: March 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

Preface	III
Introduction	IV
1 Scope	1
2 Normative References	1
3 Terms, Definitions, and Symbols	2
3.1 Terms and Definitions	2
3.2 Symbol	5
4 List of Major Hazards 6.	6
5 Safety requirements and/or protective measures 6.	6
5.1 General Rules	6
5.2 Loads and Calculations	7
5.3 Safety devices for elevator shafts and 14 entrances/exits of floors/stations	22
5.4 Base frame	22
5.5 Guiding System and Buffer	22
5.6 Car	24
5.7 Lifting Mechanism	26
5.8 Control and Limiting Devices	31
5.9 Electrical equipment (devices) and their connections	37
5.10 Safety devices to prevent fan elevators from falling	39
6 Verification of safety requirements and/or protective measures	40
6.1 Technical Conformity Documents	40
6.2 Design Validation	40
6.3 Pre-delivery inspection	48
7 Information	48
7.1 General Rules	48
7.2 Instruction Manual	48
7.3 Installation, commissioning, dismantling, transportation, loading and unloading, and storage information	49
7.4 Maintenance Information	49
7.5 Information inside the car	50
7.6 Bottom-level terminal station information	50
7.7 Mark	50

Appendix A (Informative) List of Major Hazards	52
Appendix B (Normative) Test of Fan Elevator.....	54
Appendix C (Normative) Hoisting Mechanism Test.....	66
Appendix D (Informative) Guide to Calculation Methods	72
Appendix E (Normative) Tests for Overspeed Safety Devices and Fall Arrestors.....	73
Appendix F (Normative) Door Strength Test.....	80
Appendix G (Informative) Evacuation and Rescue	81
References	82

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.

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 and is under the jurisdiction of the National Elevator Standardization Technical Committee (SAC/TC196).

This document was drafted by: Zhongji United (Beijing) Technology Co., Ltd., Chongqing Special Equipment Inspection and Research Institute, and Hangzhou Aolida Electric Co., Ltd.

Schindler Elevator Co., Ltd., Jiangsu Special Equipment Safety Supervision and Inspection Institute, Guangdong Special Equipment Testing and Research Institute Dongguan Testing Institute, Jianyan Machinery Inspection and Testing (Beijing) Co., Ltd., KONE Elevator Co., Ltd., Zhejiang Youmai Heavy Industry Machinery Co., Ltd.

Guangdong Special Equipment Inspection and Research Institute, Shenzhen Special Equipment Safety Inspection and Research Institute, Henan Special Equipment Inspection and Technology Research Institute, Shanghai Municipal Special Equipment Supervision and Inspection Technology Research Institute, Shanghai Mitsubishi Elevator Co., Ltd., Xizi Elevator Technology Co., Ltd., Suzhou Di'ao Elevator Co., Ltd.

The company, Otis Elevator Co., Ltd., Suzhou Xili Technology Co., Ltd., Xiji Schindler Elevator Co., Ltd., Beijing Institute of Building Mechanization Institute Co., Ltd., Kangli Elevator Co., Ltd., Gansu Provincial Special Equipment Inspection and Testing Institute, Guizhou Provincial Special Equipment Inspection and Testing Institute, Ningxia Special Equipment Inspection and Testing Institute, Zhongheyi Testing Technology Co., Ltd., Southeast Elevator Co., Ltd., Suxun Elevator Co., Ltd., Shanghai Aidenburg Elevator Group Co., Ltd., Foshan Shunde Dingli Electric Co., Ltd., Changshu Institute of Technology, Julong

Elevator Co., Ltd.

Shanghai Xinshida Electric Co., Ltd., Hangzhou Special Equipment Inspection and Research Institute (Hangzhou Special Equipment Emergency Response Center), and Singh Lin Elevator Co., Ltd., Zhufu Elevator Technology Co., Ltd., Hitachi Elevator Motor (Guangzhou) Co., Ltd., Shanghai Desheng Migo Elevator Co., Ltd.

Shenlong Elevator Co., Ltd., Giant Kone Elevator Co., Ltd., and Beijing CRRC Installation Engineering Co., Ltd.

The main drafters of this document are: Zhang Qingwei, Li Xing, Kang Ligui, Wang Liang, Wei Zhanhao, Xu Na, Yin Yanbin, Cai Yaguang, Li Yang, Feng Bin, and Luo Haijun.

Chen Guizhou, Su Xiaofeng, Xu Guoqiang, Li Feng, Chen Jun, Tang Linzhong, Sun Guoliang, Liu Yan, He Minpeng, Xiao Hongtao, Jiang Huibiao, Ma Xiaoshi, Zhou Xi Zhang Shidong, Zhou Jian, Du Haijun, Li Yingcong, Pan Asuo, Xie Jun, Zhang Fusheng, Shen Weiqiang, Wu Zhenyu, Wang Libin, Zhang Jianyu, Luo Junhua, Xiao Jiafeng Pei Xiao, Tang Zhirong, Gao Yunlong, Li Lei.

Introduction

According to the classification of GB/T 15706-2012, this document belongs to Class C standards.

This document is particularly relevant to the following stakeholders related to machinery safety.

- Machine manufacturing unit;
- Health and Safety Agency.

Other stakeholders affected by the level of mechanical safety include.

- Machine users;
- Machine owner;
- Service provider;
- Consumer (when the machine is scheduled to be used by the consumer).

All of the aforementioned stakeholders may participate in the drafting of this document.

The scope of the machinery involved, as well as the hazards, hazardous conditions, and hazardous events covered therein, is given in the scope of this document.

When the requirements of this Class C standard differ from those of Class A or Class B standards, for products designed and manufactured in accordance with this Class C standard...

For machines, the requirements in this Class C standard take precedence over the requirements in other standards.

Safety Specifications for the Manufacturing and Installation of Elevators for Wind Turbine Generators

1 Scope

This document specifies the list of major hazards, safety requirements and/or protective measures for elevators used in wind turbine generator sets, as well as their verification and usage information.

This document applies to permanently installed, power-driven wind turbine generators used for internal or external work and access to wind turbine generators.

Safety guidelines for the manufacture and installation of elevators for wind turbine generator sets in the working area, including rescue and evacuation procedures. (Wind turbine generator) A modular elevator has a car serving designated floors, capable of transporting personnel to work positions (including work performed in the car), and has a lower... Column characteristics.

- Used for transporting people and/or goods;
- With guiding device;
- Run along a path with an angle of inclination to the vertical of less than or equal to 15°;
- Supported by a rack and pinion lifting mechanism or suspended by a climbing lifting mechanism;
- Operating speed not exceeding 0.70m/s;
- The operating ambient temperature range is -25°C to 55°C.

This document does not cover the risks arising from the following.

- noise;
- Used for the installation and removal of wind turbine generator sets;
- Lightning strike;
- Potentially explosive atmosphere;
- Electromagnetic compatibility (emission, immunity);
- Transporting goods outside the elevator car;
- Use an internal combustion engine;
- Hydraulic and pneumatic lifting mechanisms;