

ICS 11.180.10

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

GB/T 18029.32-2024

**Wheelchairs - Part 32: Test method for wheelchair castor
assembly durability
(English Translation)**

Issued on: December 31, 2024

Implemented on: April 1, 2025

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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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.

This document is part 32 of GB/T (Z) 18029 "Wheelchairs". GB/T (Z) 18029 has published the following parts.

- Part 1: Determination of static stability;
- Part 2: Determination of dynamic stability of electric wheelchairs;
- Part 3: Determination of braking performance;
- Part 4: Determination of theoretical energy consumption of electric wheelchairs and electric scooters;
- Part 5: Determination of size, mass and operating space;
- Part 6: Determination of the maximum speed of electric wheelchairs;
- Part 7: Measurement of seat and wheel dimensions;
- Part 8: Requirements and test methods for static strength, impact strength and fatigue strength;
- Part 9: Climatic test methods for electric wheelchairs;
- Part 10: Determination of obstacle surmounting capability of electric wheelchairs;
- Part 11: Test dummies;
- Part 13: Determination of coefficient of friction of test surfaces;
- Part 14: Requirements and test methods for power and control systems for electric wheelchairs and electric scooters;
- Part 15: Requirements for information release, document issuance and identification;
- Part 16: Flame retardancy of body positioning devices;
- Part 19: Wheeled mobile devices that can be used as seats in motor vehicles;
- Part 21: Electromagnetic compatibility requirements and test methods for electric wheelchairs, electric scooters and battery chargers;
- Part 22: Adjustment procedures;
- Part 25: Batteries and chargers for electric wheelchairs;
- Part 26: Terminology;
- Part 28: Requirements and test methods for stair climbing equipment;
- Part 30: Test methods and requirements for wheelchairs that change the occupant's posture;
- Part 32: Test method for durability of castor assemblies for wheelchairs.

This document is equivalent to ISO 7176-32:2022 "Wheelchairs - Part 32: Test method for durability of castor assemblies for wheelchairs".

Introduction

GB/T (Z)18029 "Wheelchairs" is a standard that ensures the performance and quality of wheelchairs and accurately provides these performance and quality to relevant parties.

Wheelchair users want to know the performance and quality of the product, manufacturers want to know how the product achieves good quality, and testing agencies want to know how to achieve good quality.

I want to know how to inspect the product. Because GB/T (Z) 18029 is too long, and the parties using the document generally only need to Some content, and the updates of each part will not be synchronized, so it is compiled in parts and is planned to consist of 24 parts.

- Part 1: Determination of static stability;
- Part 2: Determination of dynamic stability of electric wheelchairs;
- Part 3: Determination of braking performance;
- Part 4: Determination of theoretical energy consumption of electric wheelchairs and electric scooters;
- Part 5: Determination of size, mass and operating space;
- Part 6: Determination of the maximum speed of electric wheelchairs;
- Part 7: Measurement of seat and wheel dimensions;
- Part 8: Requirements and test methods for static strength, impact strength and fatigue strength;
- Part 9: Climatic test methods for electric wheelchairs;
- Part 10: Determination of obstacle surmounting capability of electric wheelchairs;
- Part 11: Test dummies;
- Part 13: Determination of coefficient of friction of test surfaces;
- Part 14: Requirements and test methods for power and control systems for electric wheelchairs and electric scooters;
- Part 15: Requirements for information release, document issuance and identification;
- Part 16: Flame retardancy of body positioning devices;
- Part 19: Wheeled mobile devices that can be used as seats for motor vehicles;
- Part 21: Electromagnetic compatibility requirements and test methods for electric

wheelchairs, electric scooters and battery chargers;

--- Part 22: Adjustment procedures;

--- Part 25: Batteries and chargers for electric wheelchairs;

--- Part 26: Terminology;

--- Part 28: Requirements and test methods for stair climbing equipment;

--- Part 30: Test methods and requirements for wheelchairs that change the occupant's posture;

--- Part 31: Requirements and test methods for lithium-ion battery systems and chargers for electric wheelchairs;

--- Part 32: Test method for durability of castor assemblies for wheelchairs.

Part 26 is the foundation, Part 11 and Part 13 are the infrastructure requirements for wheelchair testing, and Part 22 is the test criteria.

Part 15 is the information release requirements, Part 19, Part 28, and Part 30 are the requirements for special wheelchairs, and Part 2, Part 4, Part 6, Part 9, Part 14, Part 25 are the requirements and test methods for electric wheelchairs, and Part 32 is the requirements for electric wheelchairs.

Durability requirements for universal caster assemblies for chairs and vehicles, and the rest are requirements and test methods for all wheelchairs.

This document is intended to meet the needs of quality assessment of wheelchair castor assemblies. Wheelchair castor assemblies are available in different sizes and designs.

It is well known that most caster assemblies will fail within three months to two years of use due to impact, fatigue and wear caused by harsh outdoor conditions.

[4] The quality problem of caster assemblies has become a consensus. ISO 7176-8 only covers one part of the failure of caster assemblies during use.

These include static, impact and fatigue tests[2]. They do not include environmental factors (corrosion, dust, dirt, etc.) when driving on rough roads and transporting wheelchairs.

In order to accurately simulate the failure phenomenon of caster assemblies in the laboratory and predict their Quality, it is recommended to test the caster assembly according to the outdoor environment and usage conditions. This document introduces a method based on field data to develop New durability test standard for wheelchair caster assemblies.

Wheelchairs. Part 32: Castor assemblies for wheelchairs Durability test method