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

**GB/T 30661.10-2024**

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**Wheelchair seating - Part 10: Resistance to ignition of postural  
support devices - Requirements and test methods**  
**(English Translation)**

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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 10 of GB/T (Z) 30661 Wheelchair Seats. GB/T (Z) 30661 has been published as follows.

--- Part 1: Vocabulary, reference axis rules and measurement of body parts, body positions and body support surfaces;

--- Part 2: Determination of physical and mechanical properties of devices for maintaining tissue integrity - Seat cushions;

- Part 3: Determination of static, impact and fatigue strength of body support devices;
- Part 4: Seat systems for use in motor vehicles;
- Part 6: Simulated use and determination of changes in seat cushion performance;
- Part 9: Guidelines for seat interface pressure distribution;
- Part 10: Flame retardancy requirements and test methods for body support devices;
- Part 11: Determination of perspiration dissipation characteristics of seat cushions;
- Part 12: Testing of seat cushion wrapping and sinking characteristics using a double hemisphere loader;
- Part 13: Determination of lateral stability of seat cushions.

This document is equivalent to ISO 16840-10:2021 "Wheelchair seats - Part 10: Flame retardancy requirements and test methods for body support devices" Test Methods".

The following minimal editorial changes have been made to this document.

- Incorporate the content of ISO 16840-10:2021/Amd1.2024.

## Introduction

Wheelchair Seats is a standard that ensures the performance and quality of wheelchair seats and accurately provides these performance and quality to relevant parties.

The users of chairs and cars want to know the performance and quality of the products, the manufacturers want to know how to achieve better quality, and the inspection agencies want to know how to achieve better quality.

Know how to inspect the product. Because the Wheelchair Seat is too long, and the parties using the document generally only need part of it.

Since the content is not updated synchronously, it is compiled in parts and is intended to consist of the following parts.

- Part 1: Vocabulary, reference axis rules and measurement of body parts, body positions and body support surfaces;
- Part 2: Determination of physical and mechanical properties of devices for maintaining tissue integrity - Seat cushions;
- Part 3: Determination of static, impact and fatigue strength of body support devices;
- Part 4: Seat systems for use in motor vehicles;
- Part 6: Simulated use and determination of changes in seat cushion performance;
- Part 9: Guidelines for seat interface pressure distribution;

- Part 10: Flame retardancy requirements and test methods for body support devices;
- Part 11: Determination of perspiration dissipation characteristics of seat cushions;
- Part 12: Testing of seat cushion wrapping and sinking characteristics using a double hemisphere loader;
- Part 13: Determination of lateral stability of seat cushions;
- Part 14: Concepts related to the control of external forces to maintain tissue integrity;
- Part 15: Selection, placement and fixing of flexible body support devices in seats.

Part 1 and Part 14 are definitions of terms, Part 2, Part 3, Part 10 and Part 12 are wheelchair seat cushions.

Part 4 is for special purpose requirements, and Part 6, Part 11, and Part 13 are for seat performance test methods.

Part 9 provides assessment information and Part 15 is about flexible body support devices.

Wheelchair fires are rare, but they may occur due to the following reasons.

- The wheelchair is close to burning objects such as fire;
- Some electrical components on the wheelchair overheated;
- Exposure to sparks or flames (such as welding sparks, cigarettes or matches).

If such a fire occurs, occupants may be at particular risk of injury or even death due to their inability to exit the wheelchair.

A wheelchair generally consists of the following components.

- a) Structural components (such as wheelchair frame, wheels, etc.), which are essential to a complete wheelchair;
- b) Electrical components (such as motors, power supplies, controllers, etc.), which are essential for electric wheelchairs;
- c) One-piece or two-piece tissue integrity maintenance devices (such as chair seat or backrest cushions), the main purpose of these components in clinical practice it reduces the risk of skin damage and also has the function of controlling sitting posture;
- d) Such as soft seats, soft backrests, armrests, foot supports, pelvic support (hip support belt), trunk support devices, body support devices these components are fixed to the wheelchair or its seat system, and mainly serve to fix the body position of the wheelchair occupant.

Each of the above components has different combustion hazards and can cause harm to the wheelchair occupants.

Wheelchair manufacturers design and produce wheelchairs and their components that balance flame retardancy requirements and functional requirements. This document specifies the requirements for the above-mentioned components.

The purpose of this document is to provide a suitable choice among the standards based on the furniture flame retardancy standards.

It can reflect the use and purpose of the wheelchair and its accessories.

Flame retardancy standards for structural components[a)] have not yet been developed.

The flame retardancy requirements for electrical components [b)] fall within the scope of ISO 7176-14, which specifies the requirements for preventing possible flame retardancy due to overheating of electrical components.

Fire related requirements.

Tissue integrity devices [see c) above] and postural support devices [see d) above] are within the scope of this document.

Heat output varies, and the heat output of different cigarettes varies even more, so using a smoldering cigarette as a standard heat source is not necessarily a reproducible heat source.

Since the early introduction of furniture combustion standards, with the continuous development of filter cigarettes and fire-resistant cigarettes, the original furniture combustion standards are no longer used.

This document is intended to describe a reproducible, equivalent heat source to the standard heat used in the original flame retardancy standard.

The output is comparable and can be scaled to be equivalent to other heat sources.

The standard is set at a basic minimum level and is less stringent than the current requirements in some countries.

Flammability as a minimum risk of hazard and the potential health effects of flame retardants, it is strongly recommended that this document be used as a reference for all products that come into contact with the human body.

Cancel the requirements of the furniture standard and GB/Z 18029.16-2021 for the flame retardancy of textile materials/soft parts of wheelchair seats that are exposed to flame retardancy.

Strict flame retardancy allows the use of more clinically suitable textiles to ensure the health and comfort of wheelchair users.

A better approach is to use materials that minimize the risk of releasing toxic substances due to combustion and do not cause harm to wheelchair users.