

ICS 11.180.10

CCS Y 14



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

**GB/T 30661.11-2024**

---

**Wheelchair seating - Part 11: Determination of dissipation  
characteristics of sensible perspiration into seat cushions  
(English Translation)**

**Issued on: October 26, 2024**

**Implemented on: February 1, 2025**

---

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

## Table of Contents

|                                               |
|-----------------------------------------------|
| Preface                                       |
| Introduction                                  |
| 1 Scope                                       |
| 2 Normative references                        |
| 3 Terms and Definitions                       |
| 4 Abbreviations                               |
| 5 Principle                                   |
| 6 Devices                                     |
| 6.1 Sweating Hard Seat Cushion Loader (PRCLI) |
| 6.2 Electrical Impedance Measurement System   |
| 6.3 Test Environment                          |
| 7 Sample Preparation                          |
| 8 Test Method                                 |
| 9 Inspection Report                           |
| References                                    |

## 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 11 of GB/T (Z) 30661 Wheelchair Seats. GB/T (Z) 30661 has been published in 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.

This document is equivalent to ISO 16840-11:2022 "Wheelchair seats - Part 11: Determination of visible perspiration dissipation properties of seat cushions".

## 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.

The content is too large and the updates of each part will not be synchronized, so it is compiled in parts and is intended to be composed 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 mainly related to seat performance.

Test methods, Part 9 provides evaluation information, and Part 15 is about flexible body support devices.

The removal of perspiration and moisture from the seat cushion is important to prevent pressure injuries, tissue maceration, and for seating comfort.

The phase transition occurs in the form of vapor and/or moisture - the sensible moisture has not yet changed phase to vapor, while the insensible moisture has changed phase and is in the vapor phase.

The results of the test methods in this document have not been clinically validated and do not support any medical recommendations for preventing pressure injuries or tissue maceration.

Claim.

Wheelchair seats - Part 11: Seat cushions for perspiration dissipation Determination of characteristics

## 1 Scope

This document describes a method for determining the sensible perspiration dissipation characteristics of wheelchair seat cushions under load conditions simulating the support surface of the human body.

The test method is applicable to various seat cushion materials and structures.

This test method is intended to determine how a seat cushion handles a liquid load. It is not intended to determine how a seat cushion responds to liquid or steam.

Sustained release.

This document also describes the method and measurement equipment used to measure the visible perspiration dissipation characteristics of seat cushions.

This document applies to seat cushions that come with a seat cover.

**NOTE:** The perspiration dissipation performance of a seat cushion can be greatly affected by the clothing worn, e.g. a seat cushion made of hygroscopic material can be very sensitive to the skin of a patient sitting in a wet adult diaper.

The situation is of no help.

## 2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

ISO 16840-2:2018 Wheelchair seats - Part 2: Determination of physical and mechanical properties of seat cushions to maintain tissue integrity Note. GB/T 30661.2-2014 Wheelchair seats Part 2: Determination of physical and mechanical properties of devices for maintaining tissue integrity Seat cushions (ISO 16840-2:2007, IDT)

## 3 Terms and Definitions

The following terms and definitions apply to this document.

One of two locations on the underside of the indenter that corresponds to the location of the ischial tuberosities on the human buttocks.

electrical impedance in an AC circuit, the complex ratio of voltage to current.

**Note:** Impedance extends the concept of resistance to AC circuits.

sensible perspiration There is no sweat that turns into water vapor.

**NOTE:** This is the phase of sweat that humans perceive as wetness, in contrast to the water vapor phase of sweat which is described as insensible.