



BSI Standards Publication

## Wheelchair seating

Part 11: Determination of perspiration  
dissipation characteristics of seat cushions  
intended to manage tissue integrity

**National foreword**

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A list of organizations represented on this committee can be obtained on request to its secretary.

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**Wheelchair seating —**

**Part 11:**

**Determination of perspiration  
dissipation characteristics of seat  
cushions intended to manage tissue  
integrity**

*Sièges de fauteuils roulants —*

*Partie 11: Détermination des caractéristiques de dissipation de la  
transpiration des coussins de siège censés gérer l'intégrité du tissu*





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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 173, *Assistive products for persons with disability*, Subcommittee SC 1, *Wheelchairs*.

ISO 16840 consists of the following parts, under the general title *Wheelchair seating*:

- *Part 1: Vocabulary, reference axis convention and measures for body segments, posture and postural support surfaces*
- *Part 2: Determination of physical and mechanical characteristics of devices intended to manage tissue integrity — Seat cushions*
- *Part 3: Determination of static, impact and repetitive load strengths for postural support devices*
- *Part 4: Seating systems for use in motor vehicles*
- *Part 6: Simulated use and determination of the changes in properties — Seat cushions*
- *Part 10: Resistance to ignition of non-integrated seat and back support cushions — Requirements and test methods*
- *Part 11: Determination of perspiration dissipation characteristics of seat cushions intended to manage tissue integrity [Technical Specification]*

## Introduction

Dissipating perspiration and moisture on seat cushions is important to prevent pressure ulcers, tissue maceration and for comfortable sitting. This part of ISO 16840 specifies a test method for the measurement of the perspiration dissipating characteristics of wheelchair cushions under test conditions that simulate body loading on support surfaces with flat and contoured profiles. The test method is intended to be applicable to a wide variety of seat cushions that are used across the world.

This part of ISO 16840 specifies apparatus to measure dissipation characteristics (of perspiration) of seat cushions and the approach to be employed in measuring these characteristics. It is the intention of ISO/TC 173/SC 1 to further evaluate the outcomes of this test method and their clinical implications with the aim of developing an International Standard on this topic.

# Wheelchair seating —

## Part 11:

# Determination of perspiration dissipation characteristics of seat cushions intended to manage tissue integrity

## 1 Scope

This part of ISO 16840 specifies a method for determining the dissipation characteristics of simulated perspiration exposure on wheelchair seat cushions.

This part of ISO 16840 is applicable to wheelchair seat cushions that include a cushion cover.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 16840-2:2007, *Wheelchair seating — Part 2: Determination of physical and mechanical characteristics of devices intended to manage tissue integrity — Seat cushions*

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### ischial tuberosity

##### IT

one of two locations on the inferior surface of the RCLI or PRCLI that corresponds in position to the location of a human ischial tuberosity

### 3.2

#### rigid cushion loading indenter

##### RCLI

cushion loading indenter with a rigid exterior surface contour

Note 1 to entry: Example details of the RCLI are provided in Annex A of ISO 16840-2:2007.

### 3.3

#### electrical impedance

complex number ratio of the voltage to the current in an alternating current circuit.

Note 1 to entry: Impedance extends the concept of electrical resistance to the alternating current circuit.

### 3.4

#### perspiration rigid cushion loading indenter

##### PRCLI

rigid cushion loading indenter modified to the specifications of [5.1](#)