Third edition
2022-03

Wheelchairs —

Part 14: Power and control systems for electrically powered wheelchairs and scooters — Requirements and test methods

Fauteuils roulants —

Partie 14: Systèmes d'alimentation et de commande des fauteuils roulants et des scooters électriques — Exigences et méthodes d'essai

Reference number
ISO 7176-14:2022(E)

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Published in Switzerland

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Foreword

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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).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 173, *Assistive products*, Subcommittee SC 1, *Wheelchairs*.

This third edition cancels and replaces the second edition (ISO 7176-14:2008), which has been technically revised.

The main changes compared to the previous edition are as follows:

— addition of provisions on the following:

  — wireless communication technology;

  — thermal drive test;

  — occupant operable battery isolation switch;

  — battery chemistries other than lead-acid.

A list of all parts in the ISO 7176 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Electronic control systems in electric powered wheelchairs and scooters are critical for the safety, functionality and reliability of the vehicle.

This document specifies some wheelchair tests that are conducted on an inclined test plane. The intention of these tests is not to evaluate the performance of a wheelchair at the maximum gradient on which it is capable of operating. Instead, the objective is to reveal any changes in the wheelchair's behaviour that might occur under fault conditions, and these changes are more readily discovered when it is operated on a slope. For convenience, the inclined test plane has a fixed gradient, representative of those on which the wheelchair might be used.

The range of ambient temperatures under which testing is carried out is limited to allow comparison between the performance of a wheelchair in normal operation and performance when faults are introduced.

With inter-module wireless communication becoming more common with the possibility that the communication may cause changes in the behaviour of other devices, a subclause has been added to assist with an associated safety assessment.