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## 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*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 7176-14 was prepared by Technical Committee ISO/TC 173, *Assistive products for persons with disability*, Subcommittee SC 1, *Wheelchairs*.

This second edition cancels and replaces the first edition (ISO 7176-14:1997), all clauses of which have been technically revised.

ISO 7176 consists of the following parts, under the general title *Wheelchairs*:

- *Part 1: Determination of static stability*
- *Part 2: Determination of dynamic stability of electric wheelchairs*
- *Part 3: Determination of effectiveness of brakes*
- *Part 4: Energy consumption of electric wheelchairs and scooters for determination of theoretical distance range*
- *Part 5: Determination of dimensions, mass and manoeuvring space*
- *Part 6: Determination of maximum speed, acceleration and deceleration of electric wheelchairs*
- *Part 7: Measurement of seating and wheel dimensions*
- *Part 8: Requirements and test methods for static, impact and fatigue strengths*
- *Part 9: Climatic tests for electric wheelchairs*
- *Part 10: Determination of obstacle-climbing ability of electric wheelchairs*
- *Part 11: Test dummies*
- *Part 13: Determination of coefficient of friction of test surfaces*
- *Part 14: Power and control systems for electrically powered wheelchairs and scooters — Requirements and test methods*
- *Part 15: Requirements for information disclosure, documentation and labelling*
- *Part 16: Resistance to ignition of upholstered parts — Requirements and test methods*

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- *Part 19: Wheeled mobility devices for use in motor vehicles*
- *Part 21: Requirements and test methods for electromagnetic compatibility of electrically powered wheelchairs and motorized scooters*
- *Part 22: Set-up procedures*
- *Part 23: Requirements and test methods for attendant-operated stair-climbing devices*
- *Part 24: Requirements and test methods for user-operated stair-climbing devices*
- *Part 26: Vocabulary*

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## Introduction

This part of ISO 7176 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.