

Wheelchairs —

Part 1: Determination of static stability

ICS 11.180

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National foreword

This British Standard reproduces verbatim ISO 7176-1:1999 and implements it as the UK national standard. It supersedes ISO 7176-1:1986 which is withdrawn. ISO 7176-1:1986 was not implemented as a British Standard.

The UK participation in its preparation was entrusted to Technical Committee CH/40, Sanitary chairs and wheelchairs, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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

Cross-references

The British Standards which implement international publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, the ISO title page, pages ii to v, a blank page, pages 1 to 14, an inside back cover a a back cover.

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Part 1: Determination of static stability

Fauteuils roulants —

Partie 1: Détermination de la stabilité statique



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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 3.

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.

International Standard ISO 7176-1 was prepared by Technical Committee ISO/TC 173, *Technical systems and aids for disabled or handicapped persons*, Subcommittee SC 1, *Wheelchairs*.

This second edition cancels and replaces the first edition (ISO 7176-1:1986), which has been technically revised.

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

- ¾ *Part 1: Determination of static stability*
- ¾ *Part 2: Determination of dynamic stability of electric wheelchairs*
- ¾ *Part 3: Determination of efficiency of brakes*
- ¾ *Part 4: Determination of energy consumption of electric wheelchairs and scooters — Theoretical range*
- ¾ *Part 5: Determination of overall dimensions, mass and turning space*
- ¾ *Part 6: Determination of maximum speed, acceleration and retardation of electric wheelchairs*
- ¾ *Part 7: Measurement of seating and wheel dimensions*
- ¾ *Part 8: Requirements and test methods for static, impact and fatigue strengths*
- ¾ *Part 9: Climatic tests for electric wheelchairs*
- ¾ *Part 10: Determination of the obstacle-climbing ability of electric wheelchairs*
- ¾ *Part 11: Test dummies*
- ¾ *Part 13: Determination of coefficient of friction of test surfaces*
- ¾ *Part 14: Power and control systems of electric wheelchairs — Requirements and test methods*
- ¾ *Part 15: Requirements for information disclosure, documentation and labelling*
- ¾ *Part 16: Requirements and test methods for resistance to ignition of upholstered parts*

The following parts are also on the programme of work:

- ¾ *Part 17: Serial interface for electric wheelchair controllers*
- ¾ *Part 19: Requirements and test methods for transportation wheelchairs for use in motor vehicles*

¾ Part 20: Determination of the performance of stand-up type wheelchairs

¾ Part 21: Requirements and test methods for electromagnetic compatibility of powered wheelchairs and motorized scooters

¾ Part 22: Set-up procedures

¾ Part 23: Requirements and test methods for attendant-operated stair-climbing devices

¾ Part 24: Requirements and test methods for user-operated stair-climbing devices

Annexes A and B of this part of ISO 7176 are for information only.

Introduction

It is important to know the static-stability characteristics of a wheelchair for prescription and adjustment purposes. Some users need large reserves of stability to ensure their safety while others prefer finely balanced wheelchairs which have better manoeuvrability.

This part of ISO 7176 specifies tests in which static stability is measured with wheel locks (parking brakes) applied, as is the case if the wheelchair is standing on a slope. Tests are also made with the wheels unlocked, simulating the situation where the wheelchair is standing on a slope with the wheels against obstacles, the situation on a level surface with the wheels unlocked and the wheelchair user reaching for an object, or instability while rolling. These tests also give information about the ease with which a wheelchair can be tipped about its rear wheels, such as happens when negotiating kerbs or balancing on the rear wheels.

