
Wheelchairs —

Part 32:
**Test method for wheelchair castor
assembly durability**

Fauteuils roulants —

*Partie 32: Méthode d'essai pour la durabilité des roues pivotantes des
fauteuils roulants*



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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).

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).

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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*.

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

This document has been developed to address the need for evaluation of wheelchair castor assembly quality. Wheelchair castor assemblies come in different sizes and designs. Most castor assembly designs are known to fail within three months to two years of use due to impacts, fatigue, and wear caused by adverse outdoor conditions^[3]. Castor assembly quality issues have been identified. Only a subset of field castor assembly failures is covered in the ISO 7176-8, which include static, impact and fatigue tests^[2]. Failures caused by environmental factors (corrosion, dust, dirt, abrasion on rough surfaces) and heavy impacts while travelling on rocky terrains and transporting wheelchairs are not represented. To reproduce accurately field failures and to predict castor assembly quality in the laboratory, it is recommended to conduct castor assembly testing based on outdoor environmental and use conditions. This document introduces a new wheelchair castor assembly durability testing standard that is developed based on field evidence.

Wheelchairs —

Part 32:

Test method for wheelchair castor assembly durability

1 Scope

This document specifies strength requirements and test methods for wheelchair castor assemblies. The test methods include corrosion, abrasion and fatigue conditions. This document also specifies requirements for disclosure of test results.

It is applicable to castor assemblies of or developed for use in occupant and to assistant-propelled manual wheelchairs and electrically powered wheelchairs.

The test requirements are also applicable to wheelchair castor assemblies not necessarily associated or supplied with a wheelchair.

Castor assemblies including those with anti-tip castor wheels that do not touch the ground during wheelchair travel are outside the scope of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7176-11, *Wheelchairs — Part 11: Test dummies*

ISO 7176-22, *Wheelchairs — Part 22: Set-up procedures*

ISO 7176-26, *Wheelchairs — Part 26: Vocabulary*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 22877, *Castors and wheels — Vocabulary, symbols and multilingual terminology*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7176-26, ISO 22877 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

castor assembly test load

weight supported by the castor