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भारतीय मानक मसौदा
व्हीलचेयर
भाग 8: स्थैतिक, प्रभाव और थकान शक्तियों के लिए
आवश्यकताएँ और परीक्षण विधियाँ

Draft Indian Standard

Wheelchairs

**Part 8: Requirements and test methods for
static, impact and fatigue strengths**

[ICS 11.180.10]

Artificial Limbs, Rehabilitation Appliances
and Equipment for the Person with Disability
Sectional Committee, MHD 09

Last date for comments 12.01.2024

NATIONAL FOREWORD

(Adoption clause will be added later)

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are however not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'
- Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their respective places are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 7176-6, Wheelchairs — Part 6: Determination of maximum speed, acceleration and deceleration of electric wheelchairs	MHD/09/24154/ ISO 7176-6 : 2018, Wheelchairs — Part 6: Determination of maximum speed, acceleration and deceleration of electric wheelchairs	Identical
ISO 7176-7, Wheelchairs — Part 7: Measurement of seating and wheel dimensions	MHD/09/24155/ ISO 7176-7 : 1998, Wheelchairs — Part 7: Measurement of seating and wheel dimensions	Identical
ISO 7176-11, Wheelchairs — Part 11: Test dummies	MHD/09/24159/ ISO 7176-11 : 2012, Wheelchairs — Part 11: Test dummies	Identical
ISO 7176-15, Wheelchairs — Part 15: Requirements for information disclosure, documentation and labelling	MHD/09/24162/ ISO 7176-15 : 1996, Wheelchairs — Part 15: Requirements for information disclosure, documentation and labelling	Identical
ISO 7176-22, Wheelchairs — Part 22: Set-up procedures	MHD/09/24165/ ISO 7176-22 : 2014, Wheelchairs — Part 22: Set-up procedures	Identical
ISO 7176-26, Wheelchairs — Part 26: Vocabulary	IS/ISO 7176-26 : 2007 Wheelchairs: Part 26 vocabulary	Identical

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test shall be rounded off in accordance with IS 2: 2022 ‘Rules for rounding off numerical values (revised)’.

The technical content of the document has not been enclosed as it is identical with the corresponding ISO standard. For details, please refer to **ISO 7176-8:2014** or kindly contact:

Head
Medical Equipment and Hospital Planning Department
Bureau of Indian Standards
9 Bahadur Shah Zafar Marg
New Delhi-110002
Email: mhd9@bis.gov.in , hmhd@bis.gov.in

Introduction

This part of ISO 7176 has been an important part of the strength testing of wheelchairs since its publication in 1998. It contains test methods and sets minimum requirements for static, impact, and fatigue strength of both the overall wheelchair and individually stressed components.

Several parts of this International Standard have been reviewed. In particular:

- the fatigue testing elements, including the speed and size of slat of the two-drum test machine, and the number of test cycles for both two drum and drop tests have been reviewed through empirical testing and confirmed;
- the failure criteria have been clarified, and permissible adjustments and repairs more clearly defined to minimize variation between laboratories;
- a more precisely defined setup procedure for the reference configuration of adjustable wheelchairs as given in ISO 7176-22;
- static, impact, and repeated load test procedures for Postural Support Devices (PSDs) have been revised and are contained in ISO 16840-3.

It is anticipated that all parts of this International Standard will continue to be developed and future revisions may include the results of ongoing work in the following areas:

- consideration of whether the fatigue test requirements should be revised for wheelchairs intended for use in less resourced settings;
- review of the test methods and apparatus to facilitate testing in less resourced settings;
- further development of the test dummies to improve the way in which they load the backs of test wheelchairs and, in particular, to improve their suitability for use with wheelchairs with low back supports.

SCOPE

This part of ISO 7176 specifies requirements for static, impact, and fatigue strength of wheelchairs including scooters. It specifies the test methods for determining whether the requirements have been met. It also specifies requirements for disclosure of the test results.

The test methods can also be used to verify the manufacturers' claims that a product exceeds the minimum requirements of this part of ISO 7176.

This International Standard applies to occupant- and attendant-propelled manual wheelchairs and electrically powered wheelchairs intended to provide indoor and outdoor mobility for people with disabilities.

NOTE 1 For the purposes of this part of ISO 7176, “wheelchair(s)” is used as an abbreviation for manual wheelchair(s) or electrically powered wheelchair(s), including scooter(s), to which the requirements and test methods are applied.

NOTE 2 Clauses of this part of ISO 7176 will be used as a basis for developing requirements and test methods for wheelchairs not covered by this part of ISO 7176.