AS/NZS ISO 7176.8:2015
ISO 7176-8:2014

AS/NZS ISO 7176.8:2015

Australian/New Zealand Standard™

Wheelchairs

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

STANDARDS Australia

STANDARDS NEW ZEALAND
PAEREWA AOTEAROA

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee ME-067, Assistive Technology Products for Persons with Disability. It was approved on behalf of the Council of Standards Australia on 4 September 2015 and on behalf of the Council of Standards New Zealand on 10 September 2015.
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The following are represented on Committee ME-067:

Assistive Technology Suppliers Australasia
Association of Consultants in Access Australia
Australian Rehabilitation and Assistive Technology Association
Bus and Coach Association of New Zealand
Commercial Vehicle Industry Association of Australia
Department for Communities and Social Inclusion, SA
Employers' Chamber of Commerce Central
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Part 8: Requirements and test methods for static, impact and fatigue strengths

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-067, Assistive Technology Products for Persons with Disability, to supersede AS/NZS 3696.8:1998.

The objective of this Standard is to specify requirements and test methods for static, impact, and fatigue strength of wheelchairs including scooters. It also specifies requirements for disclosure of the test results. This Standard applies to wheelchairs, including scooters, intended to carry one person, with a maximum speed not exceeding 15 km/h.

This Standard is identical with, and has been reproduced from, ISO 7176-8:2014, *Wheelchairs,* Part 8*: Requirements and test methods for static, impact and fatigue strengths.*

As this Standard is reproduced from an International Standard, the following applies:

(a) In the source text 'this part of ISO 7176' should read 'this Australian/New Zealand standard'.

(b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard			*Australian/New Zealand Standard*		
ISO			AS/NZS		
7176	Wheelchairs		3696	Wheelchairs	
7176-6	Part 6:	Determination of maximum speed, acceleration and deceleration of electric wheelchairs	3696.6	Part 6:	Determination of maximum speed, acceleration and retardation of electric wheelchairs
7176-11	Part 11:	Test dummies	3696.11	Part 11:	Test dummies
			AS/NZS ISO		
7176	Wheelchairs		7176	Wheelchairs	
7176-26	Part 26:	Vocabulary	7176.26	Part 26:	Vocabulary

Only normative references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

The term 'informative' has been used in this Standard to define the application of the annexes to which it applies. An 'informative' annex is only for information and guidance.

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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.

NOTES

AUSTRALIAN/NEW ZEALAND STANDARD

Wheelchairs

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

1 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.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7176-6, *Wheelchairs — Part 6: Determination of maximum speed, acceleration and deceleration of electric wheelchairs*

ISO 7176-7, *Wheelchairs — Part 7: Measurement of seating and wheel dimensions*

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

ISO 7176-15, *Wheelchairs — Part 15: Requirements for information disclosure, documentation and labelling*

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

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7176-7, ISO 7176-11, ISO 7176-26, and the following apply.

3.1
fracture
unintentional separation (of a component) into two or more pieces