

Australian/New Zealand Standard™

Shower/toilet chairs (mobile and static)



AS/NZS 3973:2009

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee ME-067, Mobility Appliances for People with Disabilities. It was approved on behalf of the Council of Standards Australia on 19 May 2009 and on behalf of the Council of Standards New Zealand on 29 May 2009. This Standard was published on 17 June 2009.

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This Standard was issued in draft form for comment as DR 08212.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION
OF
AS/NZS 3973:2009
Shower/toilet chairs (mobile and static)

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Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 25 November 2015.

Approved for reconfirmation in New Zealand on behalf of the Standards Council of New Zealand on 18 May 2016.

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NOTES

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Originated in Australia as AS 3973—1991.
Previous edition as AS/NZS 3973:2005.
Third edition 2009.

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Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 9167 0

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-067, Mobility Appliances for People with Disabilities. In Australia, the Standard supersedes AS 3973—2005, *Shower/toilet chairs (mobile and static)*.

The previous edition has been revised to rectify some inconsistencies in the requirements and related test methods plus the inclusion of methodology for testing masses greater than 100 kg.

Included as an appendix to the Standard is a list of information to be requested by the manufacturer/retailer from the purchaser ordering a chair or stool. This information will assist in the purchase of a product that is most suited to the needs of the intended user or users.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard
Shower/toilet chairs (mobile and static)

1 SCOPE

This Standard specifies materials, construction, performance and labelling requirements for chairs that are intended for use in showers and toilets. It covers requirements for mobile shower/commode chairs, static commode chairs and stools, and static chairs and stools for use in showers. It does not cover use in pools or other similarly corrosive environments.

The materials requirements cover two types of chairs, as follows:

- (a) *Type A*: High usage, e.g. institutions and equipment loan schemes.
- (b) *Type B*: Limited usage, e.g. domestic.

2 OBJECTIVE

The objective of this Standard is to provide manufacturers, suppliers, purchasers, specifiers and users with minimum safety requirements for chairs and stools for use by people with limited mobility in showers and toilets.

3 REFERENCED DOCUMENTS**AS**

- 1192 Electroplated coatings—Nickel and chromium
- 1428 Design for access and mobility
- 1428.1 Part 1: General requirements for access—New building work
- 1580 Paints and related materials—Methods of test
- 1580.408.4 Method 408.4: Adhesion (crosscut)
- 1683 Methods of test for elastomers
- 1683.15.1 Method 15.1: International rubber hardness
- 2281 Flexible cellular polyurethane for seat cushioning and bedding
- 2282 Methods for testing flexible cellular polyurethane
- 2282.3 Part 3: Determination of apparent density
- 2282.8 Part 8: Determination of force deflection
- 2331 Methods of test for metallic and related coatings
- 2331.3.1 Method 3.1: Corrosion and related property tests—Neutral salt spray (NSS) test
- 2706 Numerical values—Rounding and interpretation of limiting values
- 3696 Wheelchairs
- 3696.11 Part 11: Test dummies

AS/NZS

- 2088 Prams and strollers—Safety requirements
- 3696 Wheelchairs
- 3696.1 Part 1: Determination of static stability
- 3696.3 Part 3: Determination of effectiveness of brakes
- 3696.8 Part 8: Requirements and test methods for static, impact and fatigue strengths

AS/NZS

- 4688 Furniture—Fixed height chairs
 4688.2 Part 2: Determination of strength and durability
 4688.3 Part 3: Determination of stability—Upright chairs

ISO

- 7176 Wheelchairs
 7176-26 Part 26: Vocabulary

BS

- 4322 Recommendations for buffering on hospital vehicles such as trolleys

EN

- 12373 Aluminium and aluminium alloys—Anodizing
 12373-1 Part 1: Method for specifying decorative and protective anodic oxidation coatings on aluminium

NZS

- 4121 Design for access and mobility—Building and associated facilities

4 DEFINITIONS

For the purpose of this Standard, the definitions given in ISO 7176-26 and those below apply.

4.1 Buffering device

An attachment made from a soft material that is attached to a chair to protect other objects from damage.

4.2 Castors

4.2.1 Fixed castor

A castor that cannot swivel about its vertical axis.

NOTE: Fixed castors are also known as ‘fixed wheel brackets’, ‘rigid castors’, ‘stationary castors’, and ‘non-swivel castors’.

4.2.2 Swivel castor

A castor that is free to swivel without restriction about its vertical axis.

4.3 Combined wheel and swivel lock

A device that immobilizes both the wheel rotation and swivel action and is applied when stationary.

4.4 Foot support

4.4.1 Non-weight-bearing foot support

A foot support that is intended to provide support for the user’s feet when seated, but not to act as a load-bearing component when the user mounts or alights from the chair.

4.4.2 Weight-bearing foot support

A foot support that is intended for the user and an attendant to stand on while mounting or alighting from the chair and to provide support for the user’s feet.

4.5 May

Indicates the existence of an option.

4.6 Parking brake

A device that immobilizes the wheel and is applied when the chair is stationary, also known as a wheel lock.

4.7 Positive locking device

A device that prevents unintended movement.

4.8 Safe working load

The manufacturer specified load equivalent to the maximum user mass for which the chair or stool is designed.

4.9 Shall

Indicates that a statement is mandatory.

4.10 Should

Indicates a recommendation.

4.11 Swivel lock

A device that immobilizes the swivel action of a swivel castor.

4.12 Thread guard

A non-revolving circular component assembled on the side of a wheel to protect the hub from threads and other foreign objects that may prevent free revolving of the wheel.

4.13 Upholstery

Fabric used to cover furniture.

5 MATERIALS

5.1 Corrosion resistance

The following shall apply:

(a) *For Type A chairs and stools*

When metal parts are exposed for not less than 1000 h to salt spray in accordance with AS 2331.3.1 their external and internal surfaces shall show no significant evidence of corrosion, and shall be operational. For the purposes of the test, any coating shall be stripped from the metal and any removable covers/seals shall be removed.

(b) *For Type B chairs and stools*

When metal parts or coated metal parts are exposed for not less than 168 h to salt spray in accordance with AS 2331.3.1, their external and internal surfaces shall show no significant evidence of base metal corrosion, or of blistering of the coating, and shall be operational.

(c) A representative part of the product may be submitted for test under this Clause providing it contains elements of all differing metals (including joins) contained in the chair or stool.

NOTES:

- 1 For provision of consumer guidance, see Appendix A, Paragraph A2.
- 2 'Significant evidence' means base metal corrosion more than 3 mm from an edge or from a line scribed through a coating or any discontinuity or non-uniformity of the material.
- 3 Grade 304 stainless steel will generally meet the requirement for Type A.
- 4 Exposed parts include surfaces of those parts that are exposed to the atmosphere, irrespective of whether water falling or flowing down would contact them (e.g. inside vertical tubes).

5.2 Surface finishes

The finish of all surfaces shall be smooth and non-absorbent and shall be as follows:

- (a) *Enamel or plastics coating* Finishes of enamel or plastics coating shall be tested in accordance with AS 1580.408.4 and shall not exceed Classification 2.
- (b) *Chromium plate* Finishes of chromium plate shall comply with the requirements for any of those coatings specified in AS 1192 as being not less than service condition No. 3 (severe).
- (c) *Anodized finish* Anodized finishes shall comply with the requirements for Grade AA15 of EN 12373-1.

5.3 Upholstery

Upholstery materials shall be non-porous and non-absorbent, and any joins or seams shall be non-porous.

5.4 Cushioning materials

Cushioning materials shall comply with the following:

- (a) Materials shall be flexible. If flexible cellular polyurethane is used, the material shall comply with AS 2281.
- (b) Materials shall be non-absorbent or shall be covered with a non-porous material.

NOTE: To determine the absorption of water, weigh cushion sample before immersing in a water bath with a water temperature of $40 \pm 5^\circ\text{C}$ for not less than 20 minutes. Wipe down surface of sample with a cloth and reweigh.

6 DESIGN AND CONSTRUCTION

6.1 General

There shall be no sharp edges or unsealed formations in which liquid may accumulate.

NOTES:

- 1 Sharp edges should be tested to the hazardous sharp edges test specified in AS/NZS 2088.
- 2 It is important for reasons of infection control that the chair and its component parts should be constructed to facilitate cleaning.
- 3 Particular attention should be paid to the prevention of ingress and accumulation of water into such areas as wheel bearings, castor swivels, and the inside of tubular constructions.
- 4 Designers and purchasers of mobile shower/toilet chairs should be aware of the possible hazards to the attendant incurred by steering a chair which has a long wheelbase and four swivel castors, particularly where a weight-bearing foot support is provided.

6.2 Clearance

Chairs with a seat aperture shall comply with the following requirements or they shall be labelled in accordance with Clause 9(a)(iii):

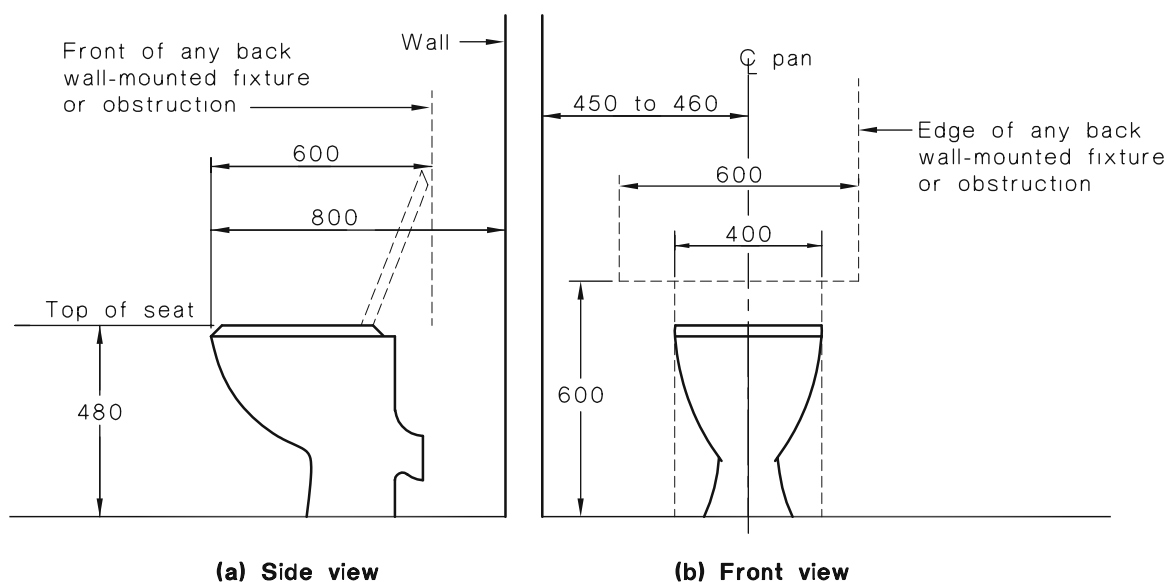
- (a) When the chair is placed over a WC pan of the dimensions shown in Figure 1, the chair shall clear the WC pan.
- (b) When the chair is placed over a WC pan as shown in Figure 1, the chair shall be clear of the walls and any wall-mounted fixture at the rear of the pan.

NOTE: Provision should be made to clear a raised WC seat lid.

NOTES:

- 1 For provision of consumer guidance, see Appendix A, Paragraph A3.
- 2 These clearance requirements are considered to be crucial to the access, safety, and comfort of the user.

- 3 For chairs to be used where there may be loss of muscle tone resulting in buttock skin sag, refer to Notes to Clause 6.4.
- 4 The dimensions given in Figure 1 are those required for WC pan installations in AS 1428.1. Chairs designed to clear these dimensions will also clear WC pan installations in accordance with NZS 4121 where the minimum height of the WC pan and lid is 460 mm and the height from the floor of a back wall-mounted cistern is 700 mm.
- 5 See Appendix B for guidance on measurement of chair frame dimensions for mobile chairs.



DIMENSIONS IN MILLIMETRES

FIGURE 1 WATER CLOSET PAN AND WALL FIXTURE CLEARANCES (from AS 1428.1)

6.3 Seat

The construction of the seat shall be as follows:

- (a) The seat shall be fully supported around the circumference.
- (b) For chairs designed for side transfer, the seat shall extend from the aperture to the whole of the outside edge of the chair frame.

NOTES:

- 1 For provision of consumer guidance, see Appendix A, Paragraph A5.
- 2 An example of seat aperture measurements is given in Appendix C.
- 3 Seats for use over a toilet pan should have an angle between the seat and the back support that will provide fitment over the toilet pan and at the same time facilitate the retention of the user on the seat. The recommended angle is given in Figure 2.