

Australian Standard™

Castors and wheels

Part 2: Test methods and apparatus



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Australian Industry Group
Commercial Furniture Industry Association of Australia
Furntech
Wheel manufacturing interests

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Part 2: Test methods and apparatus

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PREFACE

This Standard was prepared by the Standards Australia Committee ME-031, Industrial Castors, to supersede in part AS 1961—1977, *Industrial wheels and castors (dimensions and capacities)*.

This Standard is identical with and has been reproduced from ISO 22878:2004, *Castors and wheels—Test methods and apparatus*.

The objective of this Standard is to provide test methods and apparatus to be used when assessing castors and wheels for compliance with product specifications.

The term ‘normative’ has been used in this Standard to define the application of the annex to which it applies. A ‘normative’ annex is an integral part of a Standard.

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- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
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<i>Reference to International Standard or other publication</i>		<i>Australian Standard</i>	
ISO		AS	
22877	Castors and wheels—Vocabulary, symbols and multilingual terminology	1961 1961.1	Castors and wheels Part 1: Vocabulary, symbols and multilingual terminology

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INTRODUCTION

Castors and wheels are used in many applications and environments.

For many of these, specific requirements are needed. Thus the need arose for an International Standard on testing of castors and wheels suitable for users, original equipment manufacturers and testing houses.

AUSTRALIAN STANDARD

Castors and wheels

Part 2: Test methods and apparatus

1 Scope

This International Standard specifies the test methods and apparatus to be used to check the performance of castors and wheels.

The tests to be used for specific types of castor and wheel, and the relevant acceptance criteria, values and applicability are given in ISO 22879 to ISO 22884.

2 Normative references

The following referenced documents are indispensable for the application 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 22877, *Castors and wheels — Vocabulary, symbols and multilingual terminology*

3 Terms, definitions and symbols

For the purposes of this document, the terms and definitions given in ISO 22877 apply. The symbols are listed in the individual tests, and a combined list of symbols is given in Annex A.

4 Test methods

4.1 General requirements

4.1.1 Test sequence

Tests shall be carried out in a predefined sequence to allow repeatability of testing conditions.

4.1.2 Test sample

All tests within the sequence shall be made with the same castor(s) or wheel(s), unless otherwise specified in the appropriate standard. Castors and wheels shall not be artificially cooled during testing.

4.1.3 Application of test load

The test load shall always be applied directly so that its centre of gravity lies central to the mounting plane of the castor(s), or the centre of the test frame (where required) on which the sample(s) under test are mounted (see Figures 3 and 7). Unless otherwise specified, the test load shall be a real weight.

4.1.4 Test report

Actual readings and test results of each test and indication if the test is passed or failed shall be clearly given in the test report, including the following information:

- reference to the relevant International Standard;
- type of the test machine which was used;
- details of any deviation from this International Standard;
- main features of the test sample;
- name and address of location where the test was carried out;
- date of the test.

4.2 Wheel play test

4.2.1 Objectives

This test is to determine the initial wheel play at the beginning of the test sequence, and the final wheel play at the end of the test sequence.

4.2.2 Symbols

The symbols of Table 1 shall be used.

Table 1

Symbol	Meaning of the symbol
d_{W1}	maximum initial wheel play
d_{W2}	maximum wheel wear play

4.2.3 Apparatus

4.2.3.1 Device to clamp the fork with the fitted wheel under test.

4.2.4 Procedure

The measurements shall be taken with the wheel and axle bush assembled as during test (original product). Clamp the fork of the castor rigidly in a vertical position, ensuring that the fork width is maintained and the movement of the wheel is not impaired. The wheel play shall not include any side movement of the wheel on the axle. Wheel play shall be quoted in millimetres and measured as shown in Figure 1. To determine the wear play, subtract the initial wheel play from the final wheel play.



^a Measured wheel play.

Figure 1 — Wheel play test

4.3 Swivel play test

4.3.1 Objectives

This test is to determine the initial swivel play at the beginning of the test sequence, and the final swivel play at the end of the test sequence.

4.3.2 Symbols

The symbols of Table 2 shall be used.

Table 2

Symbol	Meaning of the symbol
d_{S1}	maximum initial swivel play
d_{S2}	maximum swivel wear play

4.3.3 Apparatus

4.3.3.1 Lever, of at least 200 mm in length, suitable to be rigidly fixed to the mounting plane of the castor under test as in Figure 2.

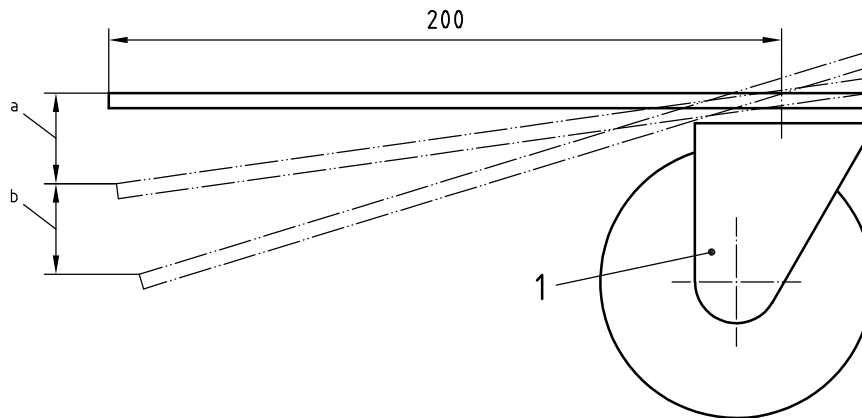
4.3.4 Procedure

The measurements shall be taken with the wheel and axle bush assembled as during test (original product). Clamp the fork of the castor rigidly in a vertical position, ensuring that the fork width is maintained and the movement of the swivel is not impaired. Make a mark on the fixed and swivelling parts of the castor. Measure the swivel play at (200 ± 2) mm from the swivel axis of the castor when

- the marks are aligned, and
- the mounting plane is rotated through $(90 \pm 5)^\circ$.

The larger of these two values shall be taken. Swivel play shall be quoted in millimetres and measured as in Figure 2. To determine the swivel wear play, subtract the initial swivel play from the final swivel play.

Dimensions in millimetres

**Key**

- 1 fork of castor (clamped)
- a Initial swivel play (the maximum of this value is d_{s1}).
- b Swivel wear play (the maximum of this value is d_{s2}).

Figure 2 — Swivel play test**4.4 Electrical resistance test****4.4.1 Objectives**

This test is to measure the electrical resistance of the sample.

4.4.2 Symbols

The symbols of Table 3 shall be used.

Table 3

Symbol	Meaning of the symbol
F_{17}	test load
R	electrical resistance

4.4.3 Apparatus

4.4.3.1 Instrument, having a nominal open circuit voltage of 500 V d.c., preferably an insulation tester (ohm meter), or any suitable instrument known to give comparable results.

The instrument shall be sufficiently accurate to determine the resistance within 10 % and shall not dissipate more than 3 W in the product.

The resistance values obtained will vary with the applied voltage, and errors may occur when low test voltages are involved. In case of dispute, the voltage applied to the product shall be not less than 40 V, except where this conflicts with the requirement not to dissipate more than 3 W in the test piece.