AS/NZS 4688.3:2000
ISO 7174-1:1988

Australian/New Zealand Standard™

Furniture—Fixed height chairs

Part 3: Determination of stability—Upright chairs

[ISO title: Furniture—Chairs—Determination of stability, Part 1: Upright chairs and stools]

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Australia Post
Australian Chamber of Commerce and Industry
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Furntech, Australia
National Furnishing Industry Association of Australia
New Zealand Furniture Manufacturers Federation
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PREFACE

This Standard was prepared by the Standards Australia/Standards New Zealand Committee CS/88, Commercial Furniture. The Standard is identical with and has been reproduced from, ISO 7174-1:1988, *Furniture—Chairs—Determination of stability*, Part 1: *Upright chairs and stools*.

The objective of this Standard is to provide specifiers and manufacturers with a Standard for the determination of stability of chairs and stools and enables purchasing authorities, retailers and users to use these criteria to assist in selection and evaluation.

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

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text, 'this International Standard' should read 'this Australian/New Zealand Standard'.

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

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

Reference to International Standard		*Australian/New Zealand Standard*	
ISO		AS/NZS	
7173	Furniture—Chairs and stools—Determination of strength and durability	4688	Furniture—Chairs
		4688.2	Part 2: Determination of strength and durability

This Standard is Part 3 of a series for testing fixed height chairs. Other Parts in this series are as follows:

Part 1: Ergonomic and general requirements
Part 2: Determination of strength and durability
Part 4: Determination of stability—Chairs with tilting or reclining mechanisms when fully reclined, and rocking chairs.

For chair types and chairs with pedestal bases not covered by this Standard refer to AS/NZS 4438, *Height adjustable swivel chairs* and AS/NZS 3813, *Plastic monobloc chairs*.

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AUSTRALIAN/NEW ZEALAND STANDARD

Furniture—Fixed height chairs

Part 3:
Determination of stability—Upright chairs

0 Introduction

This International Standard is one of a series being prepared on the strength, durability and stability of furniture. The series currently consists of the following:

ISO 7170, *Furniture — Storage units — Determination of strength and durability.*

ISO 7171, *Furniture — Storage units — Determination of stability.*

ISO 7172, *Furniture — Tables — Determination of stability.*

ISO 7173, *Furniture — Chairs and stools — Determination of strength and durability.*

ISO 7174-1, *Furniture — Chairs — Determination of stability — Part 1: Upright chairs and stools.*

ISO 7174-2, *Furniture — Chairs — Determination of stability — Part 2: Chairs with tilting or reclining mechanism.*

ISO 8019, *Furniture — Tables — Determination of strength and durability.*

Chair stability may be determined by both the experimental method and the calculative method described in this part of ISO 7174. These methods are compatible in that they apply the same forces and application positions, and give similar results.

The calculative method does not deal readily with easy chairs or settees and is not able to compensate for

a) upholstery items where the springing does not have a constant spring rate;

b) chairs that undergo changes in their geometry when loaded, e.g. folding chairs, some metal chairs and some plastic chairs.

The calculative method is also invalid for chairs which visibly flex more than 25 mm when loaded. The calculative method is useful, however, in situations where it is not practicable to move heavy masses.

1 Scope and field of application

This part of ISO 7174 describes methods for determining the stability of all types of upright chairs, stools and pouffes. It does not apply to settees and other multiple seating, nor to reclining chairs when they are reclined, chairs with tilting mechanisms when they are tilted, nor to swivelling or rocking chairs. The methods are, however, applicable to testing chairs with reclining, tilting and adjustable back-angle mechanisms when these are used as upright chairs.

Part 2 of ISO 7174 deals with stability for chairs with tilting or reclining mechanisms when fully reclined.

The test results are only valid for the article tested. When the test results are intended to be applied to other similar articles, the test specimen should be representative of the production model.

In the case of designs not catered for in the test procedures, the test should be carried out as far as possible as described, and deviations from the test procedure recorded in the test report.

The annex does not form part of ISO 7174-1. The chart demonstrates how this part of ISO 7174 may be applied to any type or design of adult chair. The stability requirements contained in it should be considered as suggestions only.

2 Reference

ISO 7173, *Furniture — Chairs and stools — Determination of strength and durability.*

3 Definition

stability: Ability to withstand forces that tend to cause the article to overturn.

4 Test equipment

4.1 Loading pad, rigid circular object 200 mm in diameter with a face having a convex spherical curvature of 300 mm radius with a 12 mm edge radius. It shall be designed to remain in position without restricting the freedom of the chair to overturn.

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