

COMMITTEE CS-088/CS-091

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Combined Postal Ballot/Draft for Public Comment Australian/New Zealand Standard

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FOR COMMENT:

**Domestic furniture—Freestanding chests of drawers,
wardrobes and bookshelves/bookcases—
Determination of stability**



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**Combined Postal Ballot/ Draft for Public Comment
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The committee responsible for the issue of this draft comprised representatives of organizations interested in the subject matter of the proposed Standard. These organizations are listed on the inside back cover.

Comments are invited on the technical content, wording and general arrangement of the draft.

The preferred method for submission of comment is to download the MS Word comment form found at <http://www.standards.com.au/Catalogue/misc/Public Comment Form.doc>. This form also includes instructions and examples of comment submission.

When completing the comment form ensure that the number of this draft, your name and organization (if applicable) is recorded. Please place relevant clause numbers beside each comment.

Editorial matters (i.e. spelling, punctuation, grammar etc.) will be corrected before final publication.

The coordination of the requirements of this draft with those of any related Standards is of particular importance and you are invited to point out any areas where this may be necessary.

Please provide supporting reasons and suggested wording for each comment. Where you consider that specific content is too simplistic, too complex or too detailed please provide an alternative.

If the draft is acceptable without change, an acknowledgment to this effect would be appreciated.

When completed, this form should be returned to the Projects Manager, Ashwini Sharma via email to ashwini.sharma@standards.org.au.

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Combined Postal Ballot/Draft for Public Comment
STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND
Committee CS-088/CS-091—Commercial/Domestic Furniture

DRAFT

Australian/New Zealand Standard

**Domestic furniture—Freestanding chests of drawers, wardrobes and
bookshelves/bookcases—
Determination of stability**

(To be AS/NZS 4935:200X)

Please note that this document is currently being balloted by the committee and the results of the postal ballot will be contingent on public comment received.

Comment on the draft is invited from people and organizations concerned with this subject. It would be appreciated if those submitting comment would follow the guidelines given on the inside front cover.

This document is a draft Australian/New Zealand Standard only and is liable to alteration in the light of comment received. It is not to be regarded as an Australian/New Zealand Standard until finally issued as such by Standards Australia/Standards New Zealand.

PREFACE

This Standard was prepared by Joint Standards Australia/Standards New Zealand Committee CS-088/091, Commercial/Domestic Furniture.

This Standard provides the Australian and New Zealand domestic furniture industry with tests for determining the stability of domestic freestanding chests of drawers, freestanding wardrobes and freestanding bookshelves/bookcases (together 'furniture items'). The aim of these tests is to assist in the reduction of stability problems that may arise from the use of the furniture items. Labelling requirements have been included to draw attention to the dangers the furniture items introduce in the domestic environment.

Furniture items used in the domestic environment are potentially dangerous, especially when children attempt to climb or play on them. The objective of this Standard is to assist in reducing the probability of the furniture items tipping and causing injury to, or the death of, users and children in particular. Consideration of children in the development of this Standard is further discussed in the Foreword.

Due to the many circumstances that may arise in the use of the furniture items, this Standard cannot address all possible aspects of stability. Furniture items that meet this Standard can still tip under certain circumstances, especially when placed on carpet, uneven or sloping flooring, or when subject to extreme use. Therefore, care must be taken wherever freestanding chests of drawers, freestanding wardrobes, freestanding bookshelves/bookcases or similar furniture items can be accessed by children.

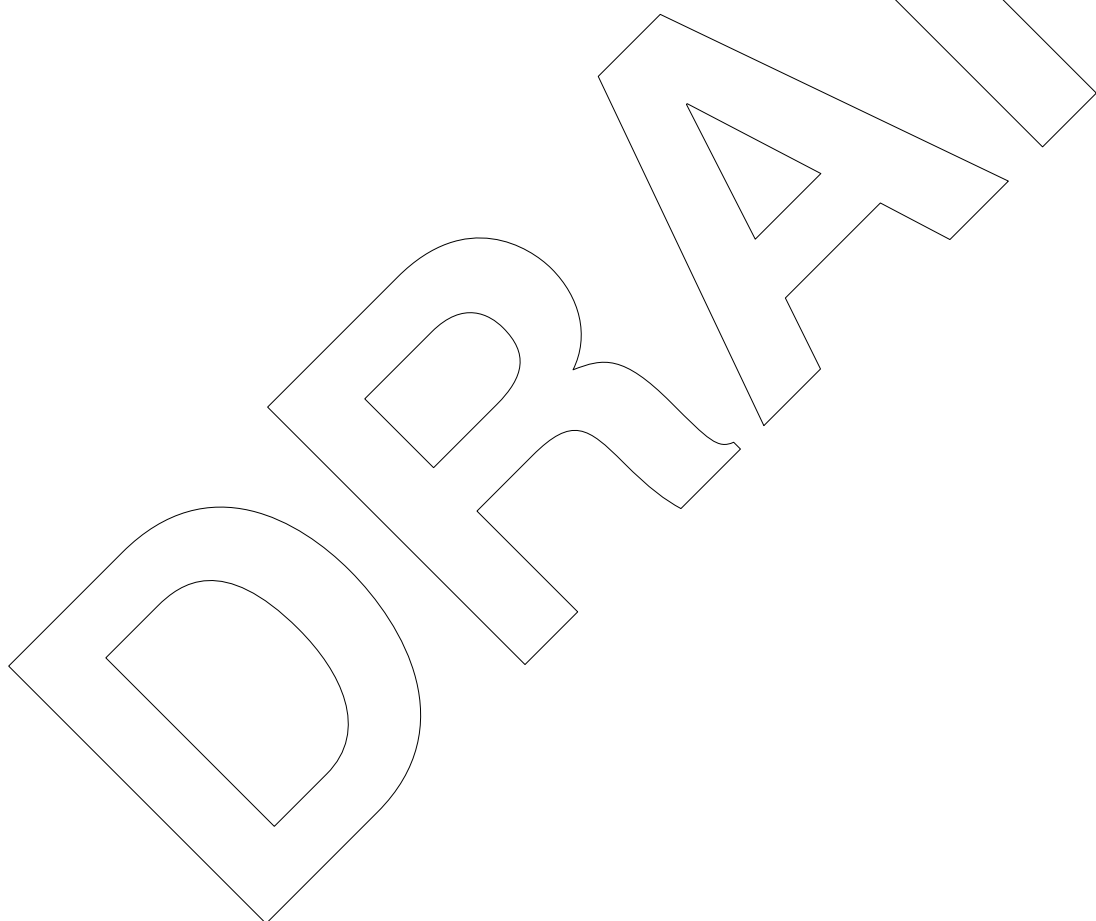
In the preparation of this Standard reference was made to ASTM F2057-04, *Standard Safety Specification for Chests, Door Chests, and Dressers* and to ANSI/SQHO S6.5:2008, *Small Office/Home Office Furniture—Tests*.

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.

The committee wishes to acknowledge the contribution of Furntech-AFRDI (AFRDI), Furnishing Industry Association of Australia (FIAA) and Department of Commerce, Consumer Protection Division WA (DQCEP).

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FOREWORD

In determining the test criteria for this Standard, Committee CS-088 considered data and documents from a range of organizations, including the following:

- (a) ANSI/SOHO S6.5-2008, *Small Office/Home Office Furniture—Tests*.
- (b) ASTM F2057-04, *Standard Safety Specification for Chests, Door Chests, and Dressers*.
- (c) World Health Organization, *WHO Growth Standards: Methods and development: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age*.
- (d) World Health Organization, WHO Reference 2007 Growth reference data for 5–19 years.
- (e) Victorian Government, Child Health Record Growth Charts (CDC 2000 growth charts).
- (f) National Centre for Health Statistics, Clinical Growth Charts.

From this research the Committee decided that the Standard should specifically address the use of the furniture items in the domestic environment by children up to and including 5 years and 11 months of age and in 95th percentile stature and body mass.

The studies referenced above indicate that the 95th percentile body mass for children of this age was approximately 27 kg, and stature was 123 to 125 cm, at the time those studies were conducted. Due to a general trend* towards increases in body mass in recent years, the test mass used in this Standard was increased to 29 kg.

* Norris B and Wilson JR. The Handbook of Child Measurements and Capabilities-Data for Design Safety. Institute for Occupational Ergonomics, Department of Manufacturing Engineering and Operations Management, University of Nottingham, University Park, Nottingham. Department of Trade and Industry, UK. 1995.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Domestic furniture—Freestanding chests of drawers, wardrobes and bookshelves/bookcases—
Determination of stability****1 SCOPE**

This Standard specifies test methods for determining the stability performance of domestic freestanding chests of drawers over 500 mm high, freestanding wardrobes over 500 mm high and freestanding bookshelves/bookcases over 600 mm high. Labelling requirements are also specified.

It should be noted that even furniture items passing the test methods specified in this Standard can still tip under certain circumstances.

This Standard applies to the furniture items constructed of any materials.

This Standard specifically addresses stability performance in relation to the hazard of children climbing on freestanding items. Climbing is assumed to take place on the face of the furniture item, which may feature common foot or handholds, e.g. doors and extendible elements (drawers and similar), including their associated handles. Furniture items that feature other types of foot or handholds on sides not including doors or extendible elements may present similar hazards but these have not been considered in this method.

The objective of this Standard is to assist in reducing the probability of the defined furniture items tipping and causing injury to, or the death of, users and in particular, children up to and including 5 years and 11 months of age and 95th percentile stature and body mass.

2 REFERENCED DOCUMENTS

The following documents were referred to in this Standard:

ISO/IEC

17025 General requirements for the competence of testing and calibration laboratories

3 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

3.1 Bookshelf/bookcase

A freestanding set of shelves over 600 mm tall, primarily intended for the storage of books. It may also contain doors, drawers or other extendible elements.

3.2 Chest of drawers

A freestanding furniture item over 500 mm tall that contains one or more drawers or other extendible elements and intended for the storage of clothing. It may also contain one or more doors or one or more shelves, or both, in various configurations.

3.3 Drawer/extendable element full extension length

The full extension length as measured from the fully closed to the fully open position. The fully open position is that position where the drawer stops or extendible element stops prevent further extension or, where no stops are fitted, the drawer or extendible element is no longer supported by the cabinet.

3.4 Extendible elements

Any drawer, door, shelf or other element that can be extended from the furniture item for the purpose of storage or for accessing the storage areas.

3.5 Freestanding

Where a furniture item is not attached to any structure or other item.

3.6 Minor fittings

Fittings attached to the furniture item and intended to hold clothing or clothing accessories and which can be extended from the furniture item to allow easy access. Drawers and shelves are not regarded as minor fittings.

3.7 Wardrobe

A freestanding furniture item over 500 mm tall, primarily intended for the storage of hanging clothing. It may also contain one or more drawers, doors or other extendible elements, fixed shelves or a combination of the above.

4 TEST METHODOLOGY AND REQUIREMENTS

4.1 Laboratory accreditation

The laboratory that performs the test procedures shall be accredited to ISO/IEC 17025 by an accreditation body that is a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) and its scope of accreditation shall include reference to this Standard, AS/NZS 4395:200X. The results shall be reported on an endorsed test report, i.e. a report that includes the accreditation symbol of the accreditation body.

NOTE: The Australian signatory to the ILAC MRA is the National Association of Testing Authorities, Australia (NATA), and for New Zealand the signatory is International Accreditation New Zealand (IANZ).

4.2 Assembly

The furniture item being tested shall be assembled according to the manufacturer's instructions and shall be tested while freestanding and not supported by any other item or structure.

4.3 Performance requirements

The following requirements apply:

- (a) Apart from minor fittings as defined in Clause 3.6 furniture items that fracture and therefore cannot accept full application of the test mass or force as specified in the relevant sections of Clause 5 shall be deemed to have failed the requirements of this Standard.
- (b) Furniture items that tip over, or are only prevented from tipping by an extendible element, when tested as described in Clause 5.1, Step (d) or as described in Clause 5.1, Step (h) or Clause 5.2, Step (d) or both, as applicable, shall be deemed to have failed the requirements of this Standard.

Where the correct categorization of a furniture item is unclear, appropriate test procedures specified in both Clauses 5.1 and 5.2 shall be conducted. For example, where a bookshelf/bookcase contains extendible elements, including doors, it shall also be tested to the requirements of Clause 5.1.

5 STABILITY TESTS

CAUTION: CARE IS NEEDED WITH THIS PROCEDURE IN THE CASE OF TIPPING OR FRACTURE OF THE FURNITURE ITEM DURING TEST. IT IS ADVISABLE TO PLACE A SUPPORT FRAME IN FRONT OF THE FURNITURE ITEM TO PREVENT DANGEROUS TIPPING AND TO APPLY THE MASS OR FORCE BY REMOTE MEANS.

5.1 Test procedures for freestanding chests of drawers and freestanding wardrobes

The procedure shall be as follows:

- (a) Inspect the furniture item for any defects evident prior to testing.
- (b) Place the furniture item on a hard, flat, level surface, with the front of the base or the front legs against stops, no higher than 12 mm, to prevent the furniture item from sliding but not tipping. Castors, if fitted, shall be placed in their least stable position.
- (c) Ensure the furniture item is level and all storage areas are unloaded.
- (d) Open, and leave open, each drawer or extendible element to two-thirds of its full extension length any doors so that they are perpendicular to the front of the furniture item.
- (e) Determine whether any fracture or tipping occurs according to the requirements of Clause 4.3 and inspect for any defects present after testing.
- (f) Close all drawers, extendible elements and doors.
- (g) To gain access to any drawer or extendible element for the following test, any covering door shall be opened so that it is perpendicular to the front of the furniture item. All other doors shall remain closed.
- (h) Open each drawer or extendible element to two thirds of its full extension length separately and in turn, while leaving all other drawers and extendible elements closed and load the opened drawer or extendible element with a mass of 29 ± 0.5 kg or apply an equivalent force. The test mass or force shall act vertically downwards and be centred over the front of the drawer or extendible element and at the centre of its width.
- (i) Determine whether any fracture or tipping occurs according to the requirements of Clause 4.3 and inspect for any defects present after testing.
- (j) Close all drawers, doors and extendible elements.
- (k) While leaving all drawers and extendible elements closed open each door separately and in turn so it is perpendicular to the front of the furniture item and load it with a test mass of 29 ± 0.5 kg (or apply an equivalent force). The test mass or force is to be applied vertically downwards at a point 50 mm back from the outer edge of the door.
- (l) Determine whether any fracture or tipping occurs according to the requirements of Clause 4.3 and inspect for any defects present after testing.

5.2 Test procedures for freestanding bookshelves/freestanding bookcases

The procedure shall be as follows:

- (a) Place the furniture item on a hard, flat, level surface, with the front of the base or the front legs against stops, no higher than 12 mm, to prevent the furniture item from sliding but not tipping. Castors, if fitted, shall be placed in their least stable position.
- (b) Ensure the furniture item is level and all storage areas are unloaded.
- (c) Evenly distribute a load of 35 kg per metre of shelf width on the bottom shelf of the bookshelf/bookcase and close any extendible elements or doors.

- (d) Hang a mass of 29 ± 0.5 kg (or apply an equivalent force) vertically at the centre of the width of the bookshelf/bookcase at a point 125 mm out from the front edge of the most protruding point, whether it be a shelf, or the top of the furniture item.

NOTE: This may be done by clamping a bar of suitable strength to the relevant shelf, or top and hanging the mass from the bar at the 125 mm distance.

6 LABELS, INSTRUCTIONS AND MARKING

All labels and any relevant instruction sheets supplied with the furniture item shall provide adequate detail and be unambiguous, legible and written in English.

Furniture items shall show the name, and contact address of the manufacturer or distributor, the model name/number of the item and the country of manufacture.

NOTE: Manufacturers and traders involved in the supply of the furniture items mentioned in this Standard making a statement of compliance with this Standard on a product, packaging, or promotional material related to that product are advised to ensure that such compliance is capable of being verified.

Appendix A specifies requirements for warning labels, swing tags and the attachment of furniture items to suitable structures.

NOTE: Appendix B provides suitable warning advice for furniture items that do not conform to this Standard.

7 TEST REPORT

Following application of the tests to the furniture item, a test report shall be prepared. The test report shall include at least the following details:

- (a) Detailed description of the furniture item, including photograph and model number/name.
- (b) Name and address of manufacturer, importer, distributor or supplier.
- (c) Any defects noted before testing and any defects noted after testing.
- (d) Whether the item passed or failed testing to this Standard.
- (e) Any deviations from the test method.
- (f) Name and address of the testing facility.
- (g) NATA or equivalent endorsement.
- (h) Date of test.
- (i) Reference to this Standard, i.e. AS/NZS 4935.

APPENDIX A

ATTACHMENT DEVICES, WARNING LABELS AND SWING TAGS

(Normative)

A1 ATTACHMENT DEVICES

Even for furniture items passing the stability tests of this Standard, it is strongly recommended that devices, e.g. angle brackets or webbing, that are suitable for attachment of the furniture item to a structural component of the building, together with adequate attachment instructions, should be included with the furniture item when purchased by the end user.

A2 WARNING LABELS AND SWING TAGS**A2.1 Warning labels applicable to furniture items that have passed the test requirements of this Standard.**

Furniture items shall include the labels and swing tags specified in this Appendix.

The warning label shall stand alone, be legible and include a warning message in bold letters such as that set out in Figure A1. The word **WARNING** shall be at least 5 mm high and appear in red at the top of the warning label, see Figure A2(a).

A2.2 Durability test

Warning labels shall show no detachment from the furniture item and the wording on labels either fixed to the product or on markings shall remain easily legible when rubbed by hand for 15 s with a piece of cloth soaked with undiluted liquid domestic dishwashing detergent.

WARNING:

This furniture item can become unstable and may topple if climbed upon and can be especially dangerous to children. Serious injury or death may result.

It is undesirable to place objects of interest to children in view on these types of furniture item, otherwise children may be tempted to climb on the furniture item to retrieve the objects of interest with the result being that the furniture item may tip and cause injury or death of the child.

This furniture item meets the requirements of AS/NZS 4935. However, even furniture items that meet these requirements can still tip under certain circumstances, especially when placed on carpet, uneven or sloping flooring, or when subject to extreme use.

Attachment of the furniture item to an appropriate structural component of the building using suitable means, as advised by a qualified tradesperson, is strongly recommended even for those furniture items meeting the stability requirements of AS/NZS 4935.

FIGURE A1 EXAMPLE OF WARNING LABEL



(a)

FIGURE A2 EXAMPLE OF WARNING SYMBOLS

A2.3 Attachment of warning labels

A2.3.1 Chests of drawers/wardrobe

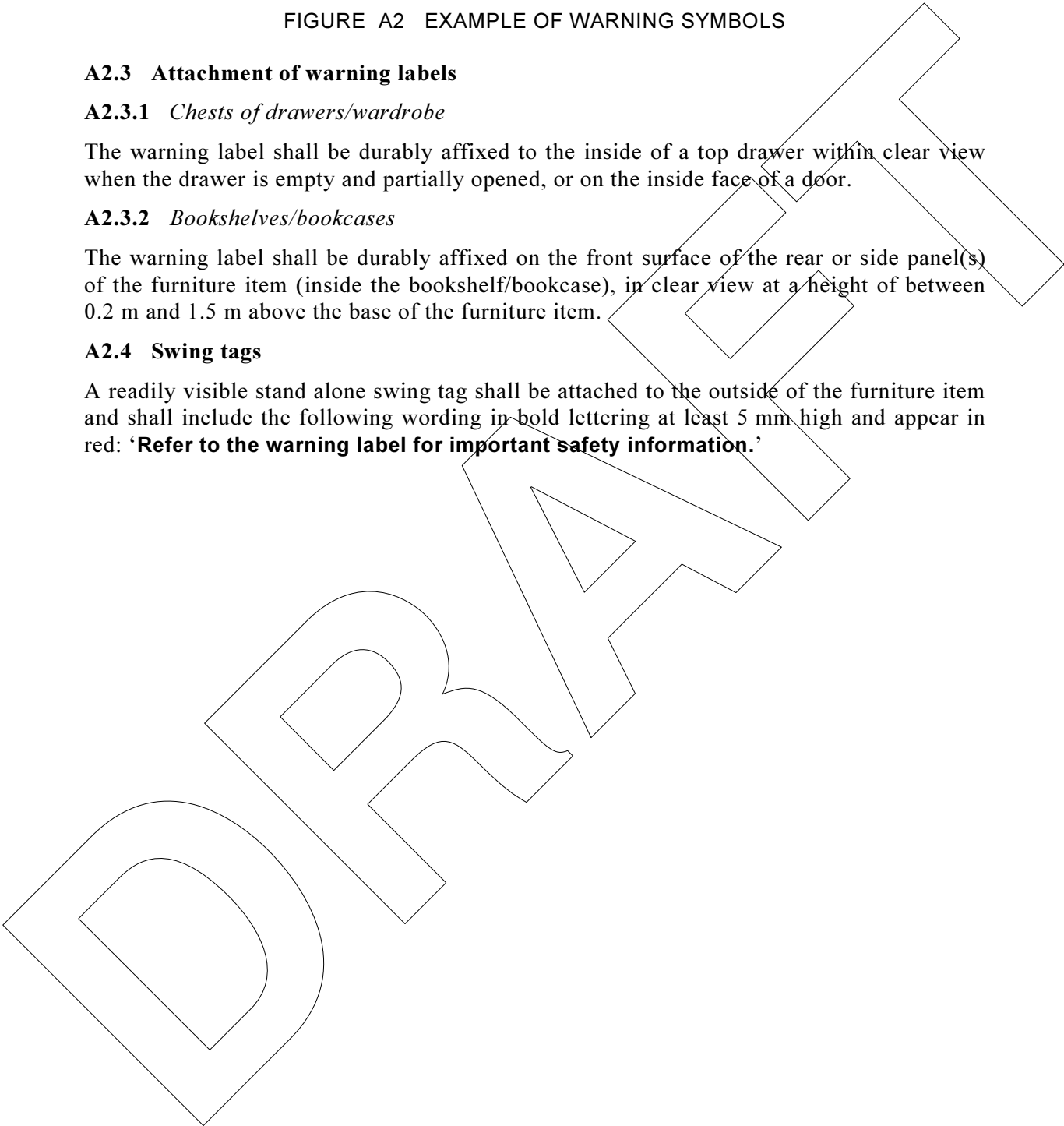
The warning label shall be durably affixed to the inside of a top drawer within clear view when the drawer is empty and partially opened, or on the inside face of a door.

A2.3.2 Bookshelves/bookcases

The warning label shall be durably affixed on the front surface of the rear or side panel(s) of the furniture item (inside the bookshelf/bookcase), in clear view at a height of between 0.2 m and 1.5 m above the base of the furniture item.

A2.4 Swing tags

A readily visible stand alone swing tag shall be attached to the outside of the furniture item and shall include the following wording in bold lettering at least 5 mm high and appear in red: **‘Refer to the warning label for important safety information.’**



APPENDIX B

WARNING LABELS FOR NON-COMPLYING FURNITURE ITEMS

(Informative)

Where furniture items are not tested to or fail to meet the stability requirements specified in this Standard, it is recommended that the furniture items be supplied with appropriate attachment devices and instructions (see Paragraph A1) and a warning label. See Figure B1 for an example of a suitable warning label.

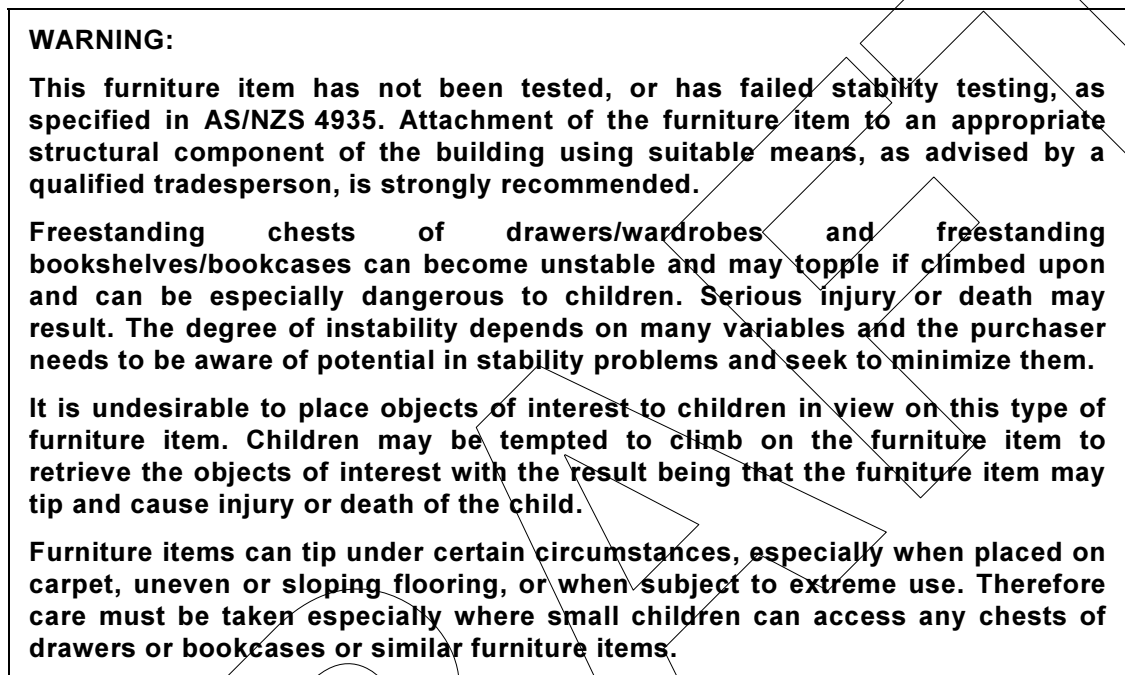


FIGURE B1 EXAMPLE OF WARNING LABEL FOR NON-COMPLYING FURNITURE ITEMS

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PREPARATION OF JOINT AUSTRALIAN/NEW ZEALAND STANDARDS

Joint Australian/New Zealand Standards are prepared by a consensus process involving representatives nominated by organizations in both countries drawn from all major interests associated with the subject. Australian/New Zealand Standards may be derived from existing industry Standards, from established international Standards and practices or may be developed within a Standards Australia, Standards New Zealand or joint technical committee.

During the development process, Australian/New Zealand Standards are made available in draft form at all sales offices and through affiliated overseas bodies in order that all interests concerned with the application of a proposed Standard are given the opportunity to submit views on the requirements to be included.

The following interests are represented on the committee responsible for this draft Australian/ New Zealand Standard:

Australian Postal Corporation
Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Retailers Association
Business New Zealand
Department of Commerce, Consumer Protection Division, WA
Ergonomics Society of Australia
Furnishing Industry Association of Australia
Furniture Association of New Zealand
Furntech-AFRDI
Ministry of Consumer Affairs, New Zealand
National Occupational Health & Safety Commission
National Supply Group
New Zealand Ergonomics Society
Plastics and Chemicals Industries Association
Plastics New Zealand

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Standards New Zealand

The first national Standards organization was created in New Zealand in 1932. The Standards Council of New Zealand is the national authority responsible for the production of Standards. Standards New Zealand is the trading arm of the Standards Council established under the Standards Act 1988.

Australian/New Zealand Standards

Under a Memorandum of Understanding between Standards Australia and Standards New Zealand, Australian/New Zealand Standards are prepared by committees of experts from industry, governments, consumers and other sectors. The requirements or recommendations contained in published Standards are a consensus of the views of representative interests and also take account of comments received from other sources. They reflect the latest scientific and industry experience. Australian/New Zealand Standards are kept under continuous review after publication and are updated regularly to take account of changing technology.

International Involvement

Standards Australia and Standards New Zealand are responsible for ensuring that the Australian and New Zealand viewpoints are considered in the formulation of international Standards and that the latest international experience is incorporated in national and Joint Standards. This role is vital in assisting local industry to compete in international markets. Both organizations are the national members of ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission).

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