

## Getting Back to Basics in Furniture Design

Seven years ago, Furntech-AFRDI produced a document outlining the Institute's certification program based on AS/NZS 4935:2009 *Domestic furniture—Freestanding chests of drawers, wardrobes and bookshelves/bookcases—determination of stability*.

The objective of the Standard is to assist in reducing the probability of these types of furniture items tipping, resulting in possible injury or death (to children in particular). The Standard remains highly topical, as reports from around the world highlight the number of injuries and deaths through toppling items of furniture.

AFRDI's technical manager, Ian Burton, suggests designers examine ways to increase - through application of basic design principles - the intrinsic stability of an item. Some basic design principles:

- Other things being equal the heavier a furniture item is, the better.
- An item of furniture with a big 'footprint' is better than a similar item with a smaller one
- Weight distributed toward the rear is better than towards the front of the item (assuming a child is more likely to climb up the front)
- Lighter drawers and doors will normally be better than heavier ones
- A smaller drawer extension is better than a larger one
- In addition to the above, another worthwhile design principle is to attempt to design furniture with its weight distributed as close to the floor as possible

**For items of furniture that are not intrinsically stable – in fact even for those that are – fixing to a wall or floor, if done properly, will make the probability of overturning vanishingly small.**

Ian Burton says when testing to AS/NZS 4935 items need to be sent to the laboratory so that the correct testing conditions can be used.

**Contact AFRDI on (03) 6326 6155 if you're interested in using the Standard to make safer furniture.**

# Penalties imposed for selling unsafe baby cots and strollers

The Federal Court has ordered Online Dealz Pty Ltd (Online Dealz) to pay a penalty of \$100,000 for supplying a household cot, portable cot and stroller that did not comply with safety standards, and for making misleading representations in advertisements for the household cot, in proceedings brought by the Australian Competition and Consumer Commission.

The Court also ordered Online Dealz' sole director, Janet Lucas, to pay a penalty of \$20,000 after finding that she was knowingly concerned in the conduct of Online Dealz in relation to the household cot.

"All traders, including small retailers operating online, must have adequate measures in place to ensure that the products they sell comply with Australian product safety standards. This includes obtaining regular compliance certificates from accredited testing agencies, as well as other inspection measures to ensure products are safe and display the required warnings and labels," ACCC Commissioner Sarah Court said.

Online Dealz is an online retailer which sells a variety of products through its website, and on eBay and Gumtree. Between August 2014 and March 2015, Online Dealz sold approximately 250 affected household and portable cots, and strollers.

The products found to be non-compliant with the relevant safety standard were:

- A household cot identified as a3 in 1 wooden sleigh cot (right)
- A portable cot identified as a7 in 1 Portacot or Frank Masons Portable Cot, and
- A baby stroller identified as a Multifunctional Luxury Baby Stroller



The Court found that these three products posed numerous risks to children including limb entrapment, suffocation, or strangulation, as well as being incorrectly labelled.



The Court also found that advertisements for the household cot that were placed on eBay and Gumtree by Online Dealz were misleading. These advertisements used phrases including "Certified to Australian Standard" and "Meeting Australian and New Zealand Standards AS/NZS 2172" to represent that the products were safe and complied with the safety standard when this was not the case.



## WA launches Campaign to ensure safety of second-hand cots

The West Australian government is urging parents to measure cots to check if safety standards are being met. The government says older cots that do not meet current safety standards should be destroyed.

The background to the new campaign is that about 50 West Australian children are taken to hospital with cot-related injuries each year.

Commerce Minister Michael Mischin said the campaign aimed to prevent the sale or exchange of dangerous cots that did not comply with current Australian safety standards.

"New parents are often given cots by friends or relatives, so it's important that these cots are examined carefully and checks are carried out to prevent any injuries or deaths. It is illegal for retail stores to sell a product that fails to comply with mandatory safety standards."

Consumers can report the sale of unsafe cots to Consumer Protection by emailing [consumer@commerce.wa.gov.au](mailto:consumer@commerce.wa.gov.au) or phoning 1300 30 40 54

# Carefully check the bona fides of test reports: important sections may be missing

AFRDI has a policy of examining (at a cost to the client) reports from other laboratories when considering some products for certification. A number of testing laboratories exist in other countries producing reports which may partly satisfy AFRDI's Blue Tick requirements under AS/NZS 4438, the standard covering variable height office chairs.

Increasingly, AFRDI is aware of some distributors selling chairs which purport to have been tested to the 4438 Standard, quoting testing done by overseas laboratories. Our experience suggests many chairs may have only been partially tested.

Testing is generally only considered as truly valid if carried out by a laboratory which has been accredited to do those tests (AFRDI is NATA accredited). In our experience, this is not always the case.

AFRDI is not saying don't trust all overseas test reports, but:

- Do make sure they offer an appropriate service
- Wording commonly seen, such as "in our opinion the submitted samples comply with AS/NZS 4438 as shown..." is not adequate when the list of tests is only part of the standard or the tests are not in the scope of accreditation
- Also seen frequently is the phrase "selected tests" which refers to only parts of the full standard (in some cases no durability/fatigue testing has been performed, just static loading)
- As well, sometimes, no test results are shown, just the tests performed
- Some reports we have been provided are drafts and are unsigned

## Check the whole story

Testing alone isn't the whole story. An important additional component to the assurance of quality through certification is the legal agreement entered into between AFRDI and a manufacturer/client committing to maintain the original testing sample's quality.

Not only does certification embody notions of durability and fitness for purpose – it also underpins concepts of duty of care to consumers through a commitment to upholding manufacturing standards.

For more details on what is acceptable to AFRDI in reports from other laboratories, visit [www.furntech.org.au](http://www.furntech.org.au) and look under AFRDI Blue Tick and other services, **Kit for test reports from other laboratories**.

## Check ACCC Guidelines

You should also consult the ACCC's Guide to Product Testing, online at [www.accc.gov.au](http://www.accc.gov.au) Pages 8 and 9 of the Product Safety Testing Guide give comprehensive details of points to consider when reading product reports, and checking their validity.

**Always remember that, in the case of a liability claim arising for personal injury, statements that a product was certified will be rigorously checked.**

AFRDI's recommendations on chair loadings

*We're often asked about this, and so we repeat a list published previously on the next page*



## RECOMMENDED CHAIR LOADINGS



### Height adjustable swivel chairs

Standard	Uses	Duty
AS/NZS 4438 levels 4 - 6	Recommended* for individuals up to 110 kg	L4 – normal commercial L5 – heavy commercial L6 – severe commercial
AFRDI 142 135 SS	Rated** for individuals up to 135 kg	8/5 (normal – heavy)
AFRDI 142 135 MS	Rated** for individuals up to 135 kg	24/7 (heavy – severe)
AFRDI 142 160 SS	Rated** for individuals up to 160 kg	8/5 (normal – heavy)
AFRDI 142 160 MS	Rated** for individuals up to 160 kg	24/7 (heavy – severe)

### Fixed height chairs

Standard	Uses	Duty
AS/NZS 4688 levels 4 - 6	Not for more than occasional use by people over 100 kg	L4 – general commercial L5 – heavy commercial L6 – severe commercial
AFRDI 151 option 135	Rated ** for a normal population of people up to 135 kg	L6 +
AFRDI 151 option 160	Rated** for a normal population of people up to 160 kg	L6 +
AFRDI 151 option 185	Rated ** for a normal population of people up to 185 kg	L6 +
AFRDI 151 option 300	Rated** for Bariatric use (for people up to 300 kg)	N/A

\* = inferred, although not explicitly stated in the standard, as fact

\*\* = the standard is specifically designed for users up to that mass limit

# ACCC issues new warning on loose blind and curtain cords

The warning comes at a time when tragically, between one and two children die in Australian homes every year as a result of non-compliant blinds and curtains. Similar deaths occur regularly across the world and the ACCC is joining international regulators to warn of the hidden dangers associated with corded blinds and curtains.

“Loose cords can be extremely dangerous to young children, as they can quickly tangle or loop around a child’s neck. We are urging parents and carers to check each room in their house for blinds or curtains with cords and tie them up with cleats,” ACCC Commissioner Sarah Court said.

“It is important to make sure cots, beds, highchairs and playpens are placed away from blind or curtain cords so they remain inaccessible to infants at all times.

“Young children will also climb on furniture, such as chairs and couches that may be near windows with blinds or curtain cords. All cords throughout the house should be secured and out of reach of children,” Ms Court said.

The mandatory standard for internal window coverings was declared in July 2010 and a separate regulation relating to installation services of window coverings came into effect in January 2015.

In April, the ACCC conducted a survey of corded blinds and curtains in 131 display homes and found evidence of an alarmingly poor level of compliance with the regulations for both supply and installation of window coverings. Had the homes been sold with the window coverings as installed, only 10 per cent would have complied with all the requirements of the mandatory standard, including the incorporation of cord guides, cleats to keep the cords out of harm’s way, installer details, and mandatory warning labels.

## John Brock: proving a point in style

**They say that once you learn to ride a bike, you never forget. For many people, that’s often about as far as they go with cycling. But AFRDI testing officer John Brock has carried the maxim a step further: at the age of 72, he is showing that he can mix it successfully with some of the world’s top cyclists.**



Earlier this month (September), John placed fourth in the final round of the Union Cycliste Internationale (UCI) World Master Championship, raced in Perth (WA).

The event attracted cyclists aged between 19 and 77, with 25% of riders in each age group qualifying for the championships.

John placed fourth in his event, being just pipped for third by recently crowned World Time Trial champion, John Horsburgh, two years Brock’s junior. John Brock admits cramp affected his riding for the last 40 kilometres of the event.

A week after the Perth event, John Brock again raced against John Horsburgh over 120 kilometres, from Lorne in Victoria, climbing into the Otway Ranges, and finishing on the Great Ocean Road. This time, he finished second overall, thus gaining the right to compete in next year’s International championships being held in Albi, south-west France.



# STANDARDS UPDATE

## **AS/NZS 3813 Plastic Monobloc Chairs**

This standard has been prepared and is currently out for committee ballot.

As it is a joint Australian and New Zealand Standard it will need to be endorsed by NZ before publication.

## **AS/NZS 4442/3 Desks and Workstations**

A comprehensive committee draft has been prepared with AFRDI being the Lead Drafter.

Following formatting and sketch inclusion by Standards Australia, the draft has just completed the committee comment phase. The committee will now meet to assess the feedback.

## **AS/NZS 4688.1 Fixed Height chairs**

The standard was originally published in 2000. In 2007 a revised part 1 of AS/NZS 4688 standard was published but there were errors and it was subsequently withdrawn in 2008. The kick-off meeting to review this standard was held in July. The meeting covered scope, general and functional requirements.

AFRDI is also the Lead Drafter and will now prepare a draft for committee discussion.

## **AS/NZS 4610 School and education furniture**

The kick-off meeting for review of these standards was held in August.

AFRDI is also the Lead Drafter and will now prepare a draft for committee discussion.

## **New moves on testing of bunks**

The mandatory standard is under review by the ACCC.

New options for it include:

- No mandatory standard
- The same as the existing mandatory standard or similar
- More comprehensive requirements, under national or other recognised standards
- AS/NZS standard or similar international standards

Good progress is also being made on the research of AFRDI's new Rated Load Standard on bunks. It will be for people up to 135 kg and will include all the requirements of AS/NZS 4220 and the Mandatory Standard but with more severe strength, durability and stability testing. Suggested uses include institutional and public facilities, or anywhere where bunks will be frequently used by adults.

## **Complaints by small business on the rise**

A news release from the ACCC points to an increase in the number of complaints made to the agency from the small business sector, in particular in relation to issues such as misleading conduct by other firms, consumer guarantees, and agricultural issues (a sector not previously reported).

ACCC deputy chairman Dr Michael Schaper said there had been more than half a million visits to the agency's business web pages during the past six months, and there were ongoing reports of losses due to scammers targeting small business.

## **Herman Miller engages with high tech**

One of the world's leading furniture design companies, Herman Miller, has announced that it's now employing 3-D printing or additive manufacturing in order to cut production development times. The company has not yet outlined the kind of parts it's making with the emerging technology.

# Extra-curricular testing at AFRDI



University of Tasmania students from the School of Architecture and Design visited AFRDI's laboratory to test some of their chair designs.

As lecturer Matthew Prince puts it : “The results of their testing will inform the next stage of development, which will include resolving any structural issues to ensure a successful design outcome. “

Translated, that means some chairs will break – but that after all is the point of testing.

The chair (**left**) impressed Team Leader Eric Paul (in blue shirt, **above**). It survived 5 cycles of 3000 Newtons on the seat, 5 cycles of 1000 Newtons on the backrest and 71-thousand cycles of testing at Level 6 (1200 Newtons on the seat, 415 Newtons on the back) over a weekend, without visible stress

The chair consists of 3mm MDF laminated, the two halves joined by fibreglass.

That some student-designed chairs survive relatively arduous testing conditions comes as no surprise to AFRDI's technical manager, Ian Burton. (**top photo, at right**). He's seen quite a few tested by AFRDI, with some showing unexpected flexibility.

“It is a good principle to test early in the design process, because you can always learn from the way things fail,” Ian says.

“Out of failure, better designs emerge.”