ADVANCED FURNITURE TESTING

The New Benchmark in Certification

“If something is worth doing,
it’s worth doing well.”

The most technologically advanced furniture testing laboratory in the Southern Hemisphere.

Who is Advanced Furniture Testing?

Advanced Furniture Testing is an accredited independent laboratory which tests commercial furniture to specific Australian and international furniture standards.

In its mechanical testing laboratory, Advanced Furniture Testing conducts tests using specialised technical apparatus which simulate real-life use and foreseeable misuse for many types of furniture.

Advanced Furniture Testing is accredited by the National Association of Testing Authorities (NATA). It is authorised to test and certify furniture to 14 international furniture standards and is regularly audited by NATA to ensure a high level of technical competence and integrity.

▶ Advanced Furniture Testing Laboratory

Who is NATA?

NATA ensures that laboratories and technical facilities are accredited to internationally recognised standards. It conducts audits to ensure the facilities meet these world standards in testing and comply with the requirements of ISO/IEC 17025:2005 (General Requirements for the Competence of Testing Laboratories).

NATA

NATA ACCREDITED LABORATORY

National Association of Testing Authorities, Australia

(ABN 59 004 379 748)

has accredited

Hawa Dane Pty Ltd
Advanced Furniture Testing

following demonstration of its technical competence to operate in accordance with

ISO/IEC 17025

This facility is accredited for the tests shown on the *Scope of Accreditation* issued by NATA

Jennifer Evans
Chief Executive Officer

Date of issue: 19 March 2018
Date of accreditation:1 February 2018
Accreditation number: 20299

NATA is Australia's government-endorsed accreditor of laboratories, and a leader in accreditation internationally. NATA is a signatory to the international mutual recognition arrangements of the International Laboratory Accreditation Cooperation (ILAC) and the Asia Pacific Laboratory Accreditation Cooperation (APLAC).
AP8-1-9 / Issue 4 / December 2017

Benefits of Certified Furniture

- Assures the furniture meets a high standard of safety
- Provides insight into the structural adequacy, strength and durability of a product
- Identifies any issues prior to the furniture being employed into the workplace
- Reduces risk relating to workplace injuries or accidents
- Provides peace of mind that purchasing decisions are based on documented evidence. This can only be achieved through certification.

Certification = Reduced Risk = Peace of Mind

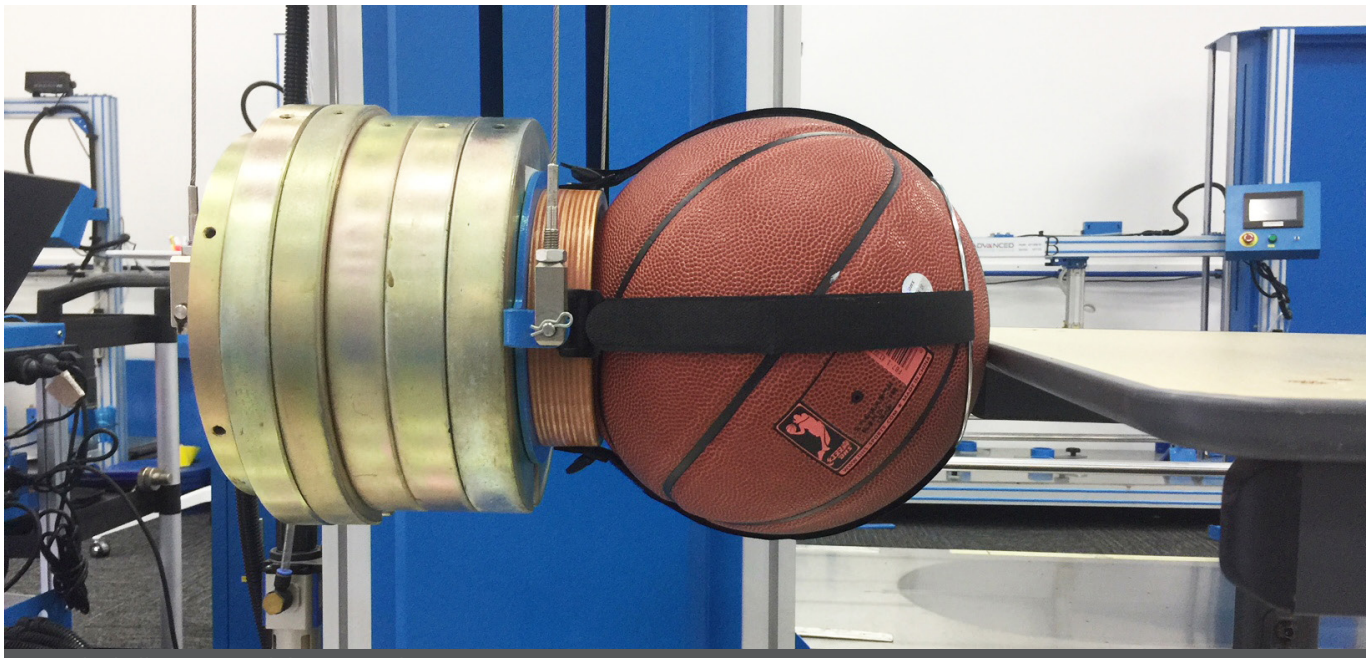
What tests are carried out?

In order to certify commercial furniture to international standards, the following tests are conducted:

- Cycle endurance
- Deflection
- Dimensions
- Dislodgment
- Drop
- Durability
- Fatigue
- Footrail strength
- Frame detachment evaluation
- Functional characteristics
- Handling
- Impact
- Load
- Outstop
- Overturn
- Racking
- Stability
- Stiffness
- Strength
- Swivel
- Tilting
- Tipping
- Top load ease

These tests generally endeavour to simulate the normal use of the product by mechanical apparatus using accelerated simulation.

SAFETY • STRENGTH • DURABILITY • STABILITY



▶ "Basketball Impact" Stability Test (55kg)

▶ Rearward Stability Test

▶ Seat Impact Test

▶ Back Impact Test

▶ Front Stability Test

▶ Table Top Impact Test

▶ Seat and Back Durability Test

▶ Armrest Durability Test

▶ Chair Swivel Test

▶ Tilt Mechanism Test

▶ Castor Durability Test

▶ Concentrated Static Load Test

▶ "Basketball Impact" Stability Test

What is a Standard?

Standards are intended to provide all users with a common basis for evaluating the safety, durability and structural adequacy of furniture. They are developed in a consensus-based process organised by a recognised standards body. In Australia this is Standards Australia™ (AS/NZS). In the USA this is ANSI/BIFMA.

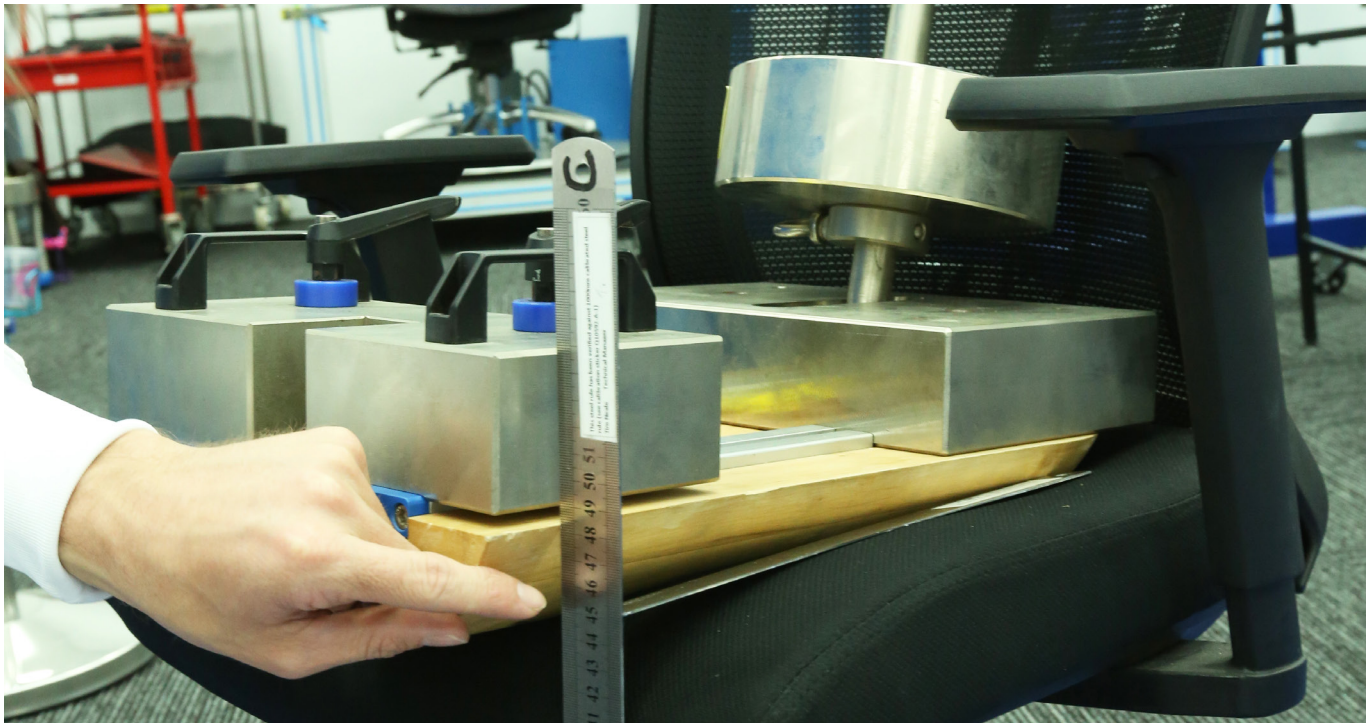
In summary, standards:

- Describe the means of evaluating furniture products
- Define the specific tests
- Define the test equipment that may be used
- Define the minimum acceptable levels
- Define how products should be tested

Who is Standards Australia™?

STANDARDS Australia

Standards Australia is the leading independent, non-governmental, not-for-profit organisation specialising in the development and adoption of international and Australian standards.



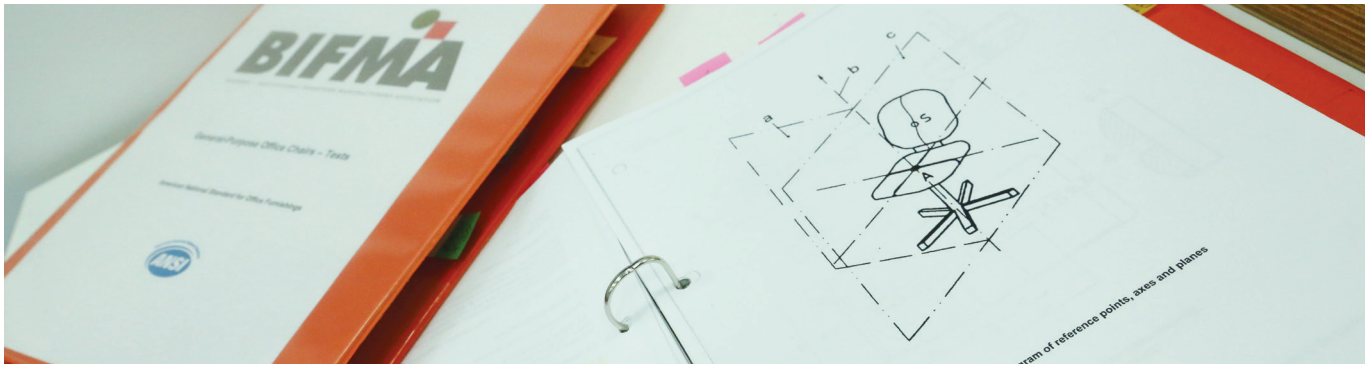
What Standards does Advanced Furniture Testing certify?

NATA has approved Advanced Furniture Testing to perform tests to 6 Australian standards. Each piece of furniture is put through an extensive series of tests which determine the furniture's strength, durability and stability. Only furniture that has passed the tests specified in these standards can be certified.

No.	PRODUCTS	AUSTRALIAN STANDARD
1	School and Educational Furniture	AS/NZS 4610.1 – Tables
2		AS/NZS 4610.2 – Chairs
3		AS/NZS 4610.3 – Storage
4	Office Workstations, Tables and Desks	AS/NZS 4442 – Office Desks, Workstations and Tables
5	Chairs	AS/NZS 4438 – Height-adjustable swivel chairs
6		AS/NZS 4688 – Fixed height chairs

Advanced Furniture Testing also has the competence to perform tests to the following 8 international standards. Only furniture that has passed the tests specified in these standards can be certified.

No.	PRODUCTS	INTERNATIONAL STANDARD
1	Tables	BS EN 1730 – Tables
2		BS EN 15372 – Non-domestic tables
3	Office Workstations, Tables and Desks	ANSI/BIFMA X5.5 – Desks & Tables
4		ANSI/BIFMA X5.6 - Workstations
5	Chairs - Fixed and Adjustable Height	ANSI/BIFMA X5.1 – Office Chairs
6		ANSI/BIFMA X5.11 – Large occupant seating
7		ABS EN 1335 – Office work chairs
8		ISO 21015 – Office work chairs



Example of Testing Regime

AS/NZS 4610.2:1999
Furniture - School and Educational
Chairs - Strength, durability and stability.

Reference - Standards Australia; Standards New Zealand; SAI Global, pp.7 & 37.

TABLE 1

REQUIREMENTS FOR STRENGTH TESTS

Clause No./ Appendix Reference	Test	Criteria	Chair sizemark				
			1	2	3	4, 5 and 6 Normal Rating	4, 5 and 6 Severe Rating
6.3 B	Seat static load	Applications Force	10 1 200 N	10 1 500 N	10 1 500 N	10 1 500 N	10 1 800 N
6.4 C	Back static load	Applications Horizontal force Balancing load	10 410 N 1 200 N	10 560 N 1 500 N	10 760 N 1 500 N	10 760 N 1 500 N	10 760 N 1 800 N
6.5 D	Seat fatigue load	Applications Force	No test	No test	No test	100 000 950 N	200 000 950 N
6.6 E	Back fatigue load	Applications Force Balancing load	No test	No test	No test	100 000 330 N 950 N	200 000 330 N 950 N
6.7 F	Tipping forward on one front leg	Force	450 N	450 N	450 N	450 N	450 N
6.8 G	Seat impact	Applications Height	No test	No test	10 135 mm	10 135 mm	10 190 mm
6.9 H	Back impact	Applications Angle	No test	No test	10 57°	10 57°	10 90°
6.10 I	Chair drop	Applications Drop height	10 700 mm	10 700 mm	10 700 mm	10 700 mm	10 900 mm
6.11 J	Shell impact and frame detachment	Applications Drop height	10 600 mm	10 600 mm	10 600 mm	10 600 mm	10 900 mm
6.12 K	Ferrule	Cycles Load	40 000 10 kg				
6.13 L	Footrail	Applications Force	10 950 N	10 950 N	10 950 N	10 950 N	10 1200 N

TABLE M1

SEAT LOADS AND OVERTURNING FORCES

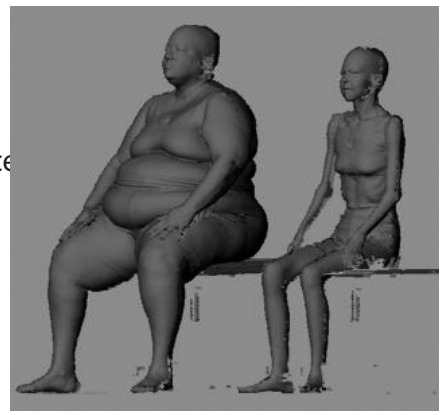
Chair sizemark	Seat load (W) N	Distance x from intersection (Fig. M3) mm	Overturning force (F), N			Distance (y) from seat plane (Figure M3) mm
			Forward	Sideways	Rearwards	
1	200	120	20	40	50	200
2	250	130	20	50	70	220
3	350	145	30	60	100	250
4	600	175	40	70	180	300
5 & 6	600	175	50	70	180	300

The 95th Percentile

"The National Health and Nutrition Examination Survey (NHANES) 2007-2010 study, which indicates the weight of the 95th percentile male is 125 kg was used in the development of the tests.

> This does not mean that users with weights above the percentiles referenced cannot safely or comfortably use a chair developed to a given BIFMA standard.

The tests were developed with an estimated product life of ten years based on single-shift usage.



Product life will be affected by user size/weight, product use, care and maintenance, environment, and other factors, and, as such, product compliance to this standard does not necessarily guarantee a ten-year product life."

Reference - ANSI/BIFMA X5.1-2017 - American National Standard for Office Furnishings General-Purpose Office Chairs - Tests

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FURNITURE TESTING

Strength

Durability

Stability

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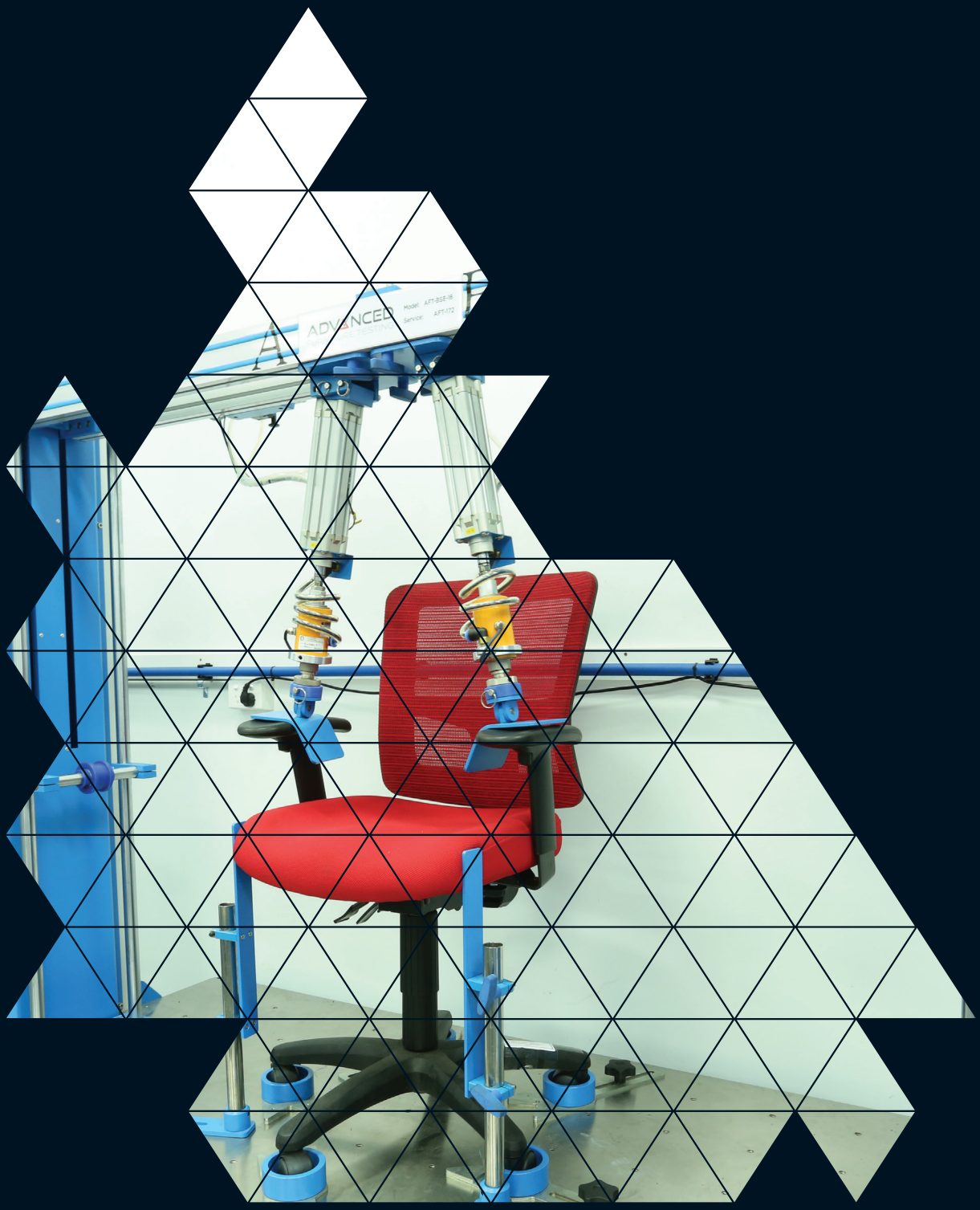

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