



# ***Information Kit on Testing Office Swivel Chairs***

## **1. Test Levels**

Most furniture standards in Australia and overseas are performance standards - they take an "accelerated lifetime" approach. Naturally, the lifetime will depend on the application in which a product is used - some situations will be far harder on furniture than others. This is often addressed in Standards by designing test levels which reflect the relative severity of various uses.

The Australian/New Zealand Standard for height adjustable swivel chairs (known as AS/NZS 4438) has four test levels listed below.

Level 3	Domestic	Chairs for domestic use.
Level 4	General Commercial	Chairs for office, general keyboard and executive use.
Level 5	Heavy Commercial	Chairs for heavy duty office, industrial and similar applications.
Level 6	Severe Commercial	Chairs for extremely severe conditions of use such as police stations, military installations, control rooms and heavy industrial.

Three of these - levels 4, 5 and 6 - are considered suitable for commercial application. Blue Tick certification is available at these levels only.

Please note that it is not possible to test chairs to a range of levels or to test to find out what level each chair may be. You will need to nominate the test level required in the light of the chair's construction and intended use.

A chair standard suitable for particularly heavy people for 24/7 use is also available. This is a very severe test. A testing price is available on request.

## **2. What's involved?**

A typical test process includes:

- initial inspection

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- examination of labelling and components check
- measurement
- static load tests
- fatigue tests
- impact tests
- swivel test
- stability tests
- final inspection.

### **2.1. Initial Inspection**

The chair is inspected for functionality, adjustability and safety.

### **2.2. Labelling and Components Check**

The marking and instructions of a chair need to meet the requirements of the Standard. **See Section 10 Notes on Instructions and Marking.**

The Standard also requires that the major components of the chair (castors, gas springs, mechanisms, bases, fabrics and filling materials) have themselves been tested to relevant standards. **See Section 3.1 Components.**

### **2.3. Measurements**

The Standard sets out a complicated series of measurements each chair must comply with. These include ranges and adjustability required for ergonomic reasons, as well as dimensions that relate to stability.

### **2.4. Static Load Tests**

The principle here is that relatively high forces are applied to a chair to test its strength in relation to loads of a magnitude that are considered likely to be only infrequently applied. The amount of force varies between test levels. It also varies according to the part of the chair being tested e.g. the seat, back or arms.

### **2.5. Fatigue Tests**

The concept of fatigue testing involves the repeated application of loads selected to simulate a 'lifetime' of use. Forces are applied to the seat and back 50,000, 100,000 or 200,000 times for chairs tested at levels 3, 4 and 5 respectively. Level 6 chairs are also subject to 200,000 fatigue cycles - but at higher loads.

### **2.6. Impact Tests**

An assessment of the durability of a chair is gained by subjecting it to applications of the following impact events:

- seat impact
- back impact
- arm impact
- the drop test (the whole chair is dropped onto one leg).

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### 2.7. Swivel Test

The chair is weighted down and swiveled back and forth 100,000 times.

### 2.8. Stability Tests

The "rearwards overturning" test assesses the tendency of a chair to tip over backwards when subject to specified vertical and horizontal forces.

The "rearwards overturning of tilting or reclining chairs" test assesses the tendency of a chair to tip over backwards when reclined and subject to a load of 110 kg in the form of disks which conform to the contour of the backrest of the chair.

The "accidental rearwards overturning" test assesses the propensity of a chair to fall over backwards.

The "rolling stability" test assesses the chair to ensure that it will not move too freely across the floor.

### 2.9. Final Inspection

At the conclusion of the test program, the chair is again inspected to see if the testing has caused breakages or deformity and to check that the chair is still functional and safe.

## 3. Costs

Following are our standard charges for testing chairs (based on Australian/New Zealand Standard AS/NZS 4438 *Height adjustable swivel chairs*):

Per chair	Level 3	POA*
	Level 4	\$4,140
	Level 5	\$4,865
	Level 6	\$4,990

**These prices are subject to 10% GST and membership discount.**

**\* Certification is not available for chairs tested at level 3.**

Charges include:

- freight to and from the nearest Furntech-AFRDI depot (see Section 5);
- up to three back sizes - normally low, medium and high – **only if** they share the same construction and shape and are supplied with the sample chair;
- Blue Tick Product Certification for three years (available at test levels 4, 5 and 6 only).

Charges may vary depending on the complexity of the chair.

### 3.1. Components

**These prices assume that the chair is fitted with components (castors, base, gas spring and mechanism) compliant with AFRDI Standard 109, and**

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**filling material compliant with AS 2282.3 and AS/NZS 4088.1.** Fabrics are also required to be compliant with AS/NZS 4088.1 but are not included within the assessment process (responsibility is left to the chair supplier to ensure the selection of appropriate fabrics).

A list of Blue Tick certified components is available from our website [www.furntech.org.au](http://www.furntech.org.au) or by request. Components that are not on this list may require full or partial testing or retesting. This would normally be paid for by the component supplier.

### **3.2. Adjustments**

In the event of failure prior to the completion of testing a credit towards future charges is normally issued for any unexpended part of the testing fee. If tests have to be repeated further charges are also normally applicable.

### **3.3. Discounts**

Furntech-AFRDI members receive discounts on testing and research fees. Information on membership is available from the Institute or our website.

## **4. Payment**

Furntech-AFRDI policy is that **PAYMENT MUST BE MADE BEFORE TESTING COMMENCES**. Please phone 03 6326 6155 to request an invoice if this will help to facilitate payment. Facilities are available for payment by Visa and MasterCard.

## **5. Freight**

Refer to the Institute's [Information Kit on Freight to Furntech-AFRDI](#). Distribution of this Kit in hardcopy form will include the freight-related information as a supplementary sheet.

## **6. Timing**

Freight normally takes between seven and fourteen days. The testing process for Level 4 takes from three to four weeks, while Levels 5 and 6 take approximately one week longer.

When the chair, Testing Request form, and payment, are all received, the item will be placed on the testing schedule and testing will commence shortly thereafter.

## **7. Blue Tick Certification**

Blue Tick certification is open to suppliers whose products meet the required standard. The concept is that for Furntech-AFRDI to endorse a product, the Institute needs to have an on-going contractual relationship with the supplier that ensures purchasers can rely on certificates of endorsement. Certification involves periodic audits and the investigation of complaints arising from the sale of endorsed products.

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Under the Blue Tick product certification program, suppliers agree to:

- maintain quality of production to at least that of the sample tested;
- advise of changes in the product including changes in materials, components and means and place of manufacture;
- not use (nor permit its agents to use) the logo to promote goods which are not covered by the agreement or to misrepresent the nature of Furntech-AFRDI's endorsement;
- keep and make available a register of complaints arising from the sale of goods covered by the agreement;
- submit goods for retesting every three years or as necessary when standards change;
- agree to random checks of the quality of products covered by the agreement;
- maintain an adequate product liability insurance cover; and
- pay a certification fee – the first three years fee is included in the testing charge.

In return, Furntech-AFRDI agrees to:

- permit the use of the Furntech-AFRDI logo to promote goods covered by the agreement; and
- commend to specifiers and purchasers the goods covered by the agreement in lists on the Institute's website.

A copy of the agreement and any further information is also available on request.

### **8. What You Get**

Assuming that the product complies and that you sign a Blue Tick product certification agreement, at the end of the process Furntech-AFRDI will:

- issue a Test Report and product certificate/s;
- mark with paint the sample that has been found to comply and return it to the supplier (this marked sample is in effect part of the certificate of compliance and should be retained);
- enter into a product certification agreement with the supplier of the chair, or add the chair to an existing agreement. The first three years' fee is included in the testing charge; and
- add the product to the Furntech-AFRDI list of endorsed products under the AFRDI Blue Tick Product Certification Scheme.

### **9. Information Required**

A Testing Request form and Information Sheet is to be completed for each chair to be tested (see section 11). Note: AS/NZS 4438 requires that fabrics, foams,

castors, bases, gas springs and mechanisms, be separately tested. Your component suppliers should be able to quote a certificate (or test report number) for each of these, other than for fabrics which are not included within Blue Tick's scope of assessment. Alternatively certificate numbers may be found on the Furntech-AFRDI list of prequalified office chair components which is available online at:

<http://www.furntech.org.au/index.php/commercial-furniture/chair-components.html>

Fabrics are typically tested independently by fabric suppliers. They should be able to provide details of fabric compliance on request.

### 10. Notes on Instructions and Marking

The following notes offer guidance in respect of the requirements for a chair's markings and instructions that must be supplied with a certified chair. They are based on Section 6 of AS/NZS 4438 - Height adjustable swivel chairs. **The sections listed here are arranged and numbered as they appear in the standard.** Each section begins with a bracketed and italicised excerpt from the standard, which is then followed by the guidance notes.

**NB** In the interest of avoiding possible certification delays, effort should be made to meet these requirements (as much as possible) **prior** to the submission of a chair for assessment.

***16.2 Instructions for use*** Each chair shall be supplied with instructions containing the following information:

- (a) Instructions on the use of the adjusting mechanisms.*
- (b) Instructions on the upkeep and maintenance of the chair.*
- (c) An outline on ergonomic seat back and height setting.*
- (d) The manufacturer's or importer's name and address.*
- (e) Care, flammability, and summarized operating details.]*

#### **Guidance notes**

**6.2 (a) Instructions on the use of the adjusting mechanisms.** Instructions for use of the adjusting mechanisms may be supplied in the form of a swing tag, leaflet, or brochure, that accompanies the chair.

Alternatively, they may be printed, embossed, or presented in the form of a sticker fixed to the chair – although in each of these cases they must be easily visible to the chair's seated occupant. Clearly marked actuation levers are an acceptable example of this approach.

Instructions may be augmented with information from a website, or from a CD (or similar) supplied with the chair, but the supplied hardcopy documentation – on its own – must be sufficient to meet the requirements of the standard.

Instructions should be supplied with diagrams or images to enhance clarity.

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**6.2 (b) Instructions on the upkeep and maintenance of the chair.** Some kind of relevant statement is required. This may even take the form of a statement indicating that no maintenance is required.

It is preferable that instructions be in the form of a swing tag, leaflet, or brochure, that accompanies the chair. They may, however, be printed, embossed, or in the form of a sticker fixed to any part of the chair (as long as they are clearly legible and not hidden or otherwise concealed).

Instructions may be augmented with information from a website, or from a CD (or similar) supplied with the chair, but the supplied hardcopy documentation – on its own – must be sufficient to meet the requirements of the standard.

Instructions should be supplied with diagrams or images to enhance clarity.

### **6.2 (c) An Outline of Ergonomic Seat Back and Height Setting.**

In principle, the instructions for ergonomic seat, back and height setting should be able to be read a person seated in the chair.

In practice, this means they should almost always be in the form of a swing tag, leaflet or brochure that accompanies the chair. They may be somehow otherwise attached to the chair, but if so, should conform to the 'in principle' requirement of 'easy seated viewing'.

Ergonomic instructions listed on stickers attached, for example, to the underside of a chair's seat will be accepted, but are considered undesirable, as locations such as these contradict the principles of ergonomics the instructions are intended to promote.

Instructions may be augmented with information from a website, or from a CD (or similar) supplied with the chair, but the supplied hardcopy documentation – on its own – must be sufficient to meet the requirements of the standard.

As a minimum the instructions must make reference to optimizing the settings of the seat height, seat depth and the height of the backrest. The aim being to promote good sitting posture. Instructions should also make reference to optimizing the height of the arm rests, (if adjustable), as well as any other adjustable features that may be included in the design.

**NB:** It is not sufficient to simply repeat the instructions for the use of any adjusting mechanisms.

As stated, instructions provided with the chair should explain how to obtain a correct ergonomic seating position. We recommend this be based on professional ergonomic advice. An example is shown below (Stevenson M G, Principles of Ergonomics, p7.11):

- Sit in the chair, if seat tilt is adjustable, adjust the seat so that it is approximately horizontal
- Adjust the seat height so that your feet are resting flat on the floor. For good circulation your feet should take the weight of your legs.
- Adjust the fore and aft movement of the backrest to give firm support while sitting upright.

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- Adjust the height of the backrest to give support to the lumbar region of your back.
- Your forearms should be as close to horizontal as possible when working at a desk.
- For computer work, set the seat tilt to be horizontal or incline it slightly back, and for writing work incline the seat slightly forward.

### 6.2 (d) The Manufacturer's or Importer's Name and Address.

We do not require that a company's name and address be supplied with the chair's *instructions*.

But if it is supplied, and it is printed, embossed, or in the form of a sticker applied to the chair, this **may** simultaneously satisfy the requirements of 6.3 (a) – if, that is, the marking is considered to be **permanent** (see 6.3 Marking).

To achieve 'permanence' markings must be of high quality. Stickers, especially, must be of very high quality and demonstrate very good adhesion. Please note: light-weight paper stickers, stickers with turned up edges, poor or faint printing, will not be considered acceptable. Stickers of a slightly lower quality may be accepted if they are stapled to the chair or otherwise attached by secondary means.

**NB:** Although stickers, printing, embossing, or any other form of marking directly attached to the chair, are considered sufficient to meet the requirements of *this clause*, they should not automatically be considered sufficient to constitute a chair being *permanently marked* in accordance with the requirements of clause 6.3 (a).

### 6.2 (e) Care, Flammability and Summarised Operating Instructions.

#### Care

Care labels should meet the requirements of AS/NZS 1957:1998. They also need to be present to meet the overarching requirements of AS/NZS 4438. However, as labels are typically fabric specific, and as fabrics are not directly assessed within the Blue Tick certification program, care labels are also not assessed by the program i.e. you will not be required to submit care labels to us when you submit a chair for assessment. This is on the understanding that the obligation to apply appropriate care labels will be met once a fabric has been specified for a chair. A statement to the effect that care labelling requirements have not been assessed appears on the certificates drawn up for all successfully tested products.

#### Flammability

Due to the enormous variety of fabrics available to chair manufacturers, AFRDI do not test the fabric supplied with a chair. This is on the understanding that the chair manufacturer will only use fabrics that do comply with the flammability requirements of AS/NZS 4088.1. A statement to this effect appears on the certificates drawn up for all successfully tested products.

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However, from the point of view of the assessment of labelling, we do require - as a minimum - that a statement be made attesting that a chair's foam has met the flammability requirements of AS/NZS 4088.1 e.g. "Foams on this chair comply with the flammability requirements of AS/NZS 4088.1" (it is preferred that the statement includes both the foam and fabric e.g. "Foams and fabrics on this chair comply with the flammability requirements of AS/NZS 4088.1")

This information may appear on a swing tag, leaflet, brochure, or be somehow otherwise attached to the chair. It may also be printed, embossed or presented in the form of a sticker fixed to the chair (as long as it is clearly legible and not hidden or otherwise concealed).

### Summarised operating details

Summarised operating details are considered to be adequately covered when previous requirements are fulfilled.

### ***16.3 Marking*** All chairs be permanently marked with the following:

(a) *The manufacturer's/importer's name and address.*

(b) *The year of manufacture.*

(c) *A label stating: 'Hard-tyred castors are unsuitable for use on hard floors or firm chairmats in which case soft-tyred castors should be used. Soft-tyred castors are distinguishable by the tyre being a different colour to the body of the castor.'*

### **Guidance notes**

Each of 6.3 (a), (b) and (c) require that the relevant information be **permanently** affixed to the chair. To achieve this, markings must be of high quality. If stickers are used, they must be of very high quality and demonstrate very good adhesion. Light-weight paper stickers, stickers with turned up edges, poor or faint printing, will not be considered acceptable. Stickers of a slightly lower quality may be accepted if they are stapled to the chair or otherwise attached by secondary means.

Alternatively 'permanence' may be achieved by gluing, stapling or sewing a label onto the chair, or by including appropriate words in a die so that they appear clearly formed in a moulded component of the chair.

### **6.3 (a) The manufacturer's/importer's name and address.**

Each BT certificate holder needs to supply a name and address relating to **their organisation** regardless of whether or not they are actually the manufacturer or importer of the chair.

A telephone number or web address alone will not suffice. Any of the following combinations are acceptable minimums:

- A name, and an Australian or New Zealand street address (a Post Office Box number is not sufficient)
- A web address and a phone number. The web address must lead to a website which includes at least an Australian or New Zealand street address.

### 6.3 (b) The year of manufacture.

The minimum requirement is that a chair be marked with its year of manufacture. It is preferable that the month, week or day is also indicated. This should be formatted such that it is likely to be understandable to the general public; that is, a coded date is not acceptable - unless a decoding key is also present on the marking or in other documentation supplied with the chair.

Following are examples of what would be considered 'likely to be understandable to the general public':

- dd/mm/yy or dd/mm/yyyy eg 23/06/09 or 23/06/2009
- yyyy eg 2009
- month year eg February 2009 (or 09) or Feb 2009 (or 09)
- day month year eg 16 February 2009 (or 09) or 16 Feb 2009 (or 09)

Following are examples of what would not be considered 'likely to be understandable to the general public' but would be acceptable with a decoding key or explanation:

- yy/mm/dd eg 09/06/23
- yy/mm eg 09/06
- mm/dd/yy or mm/dd/yyyy eg 06/23/09 or 06/23/2009
- yy ww eg 09 24 (i.e. the 24<sup>th</sup> week of 2009)

Satisfactory 'decoding' may be as simple as adjacent symbolic date markings such as 'yy/mm/dd', 'yy/mm' etc.

The above lists are not exhaustive and other formats will be considered on their merits.

**6.3 (c) A label stating: 'Hard-tyred castors are unsuitable for use on hard floors or firm chairmats in which case soft-tyred castors should be used. Soft-tyred castors are distinguishable by the tyre being a different colour to the body of the castor.'**

This is self explanatory.

## 11. The Next Step

If you are interested in considering product testing, please:

- 1 Contact Furntech-AFRDI for a quotation. Include details of the product, or range of products, for which you are seeking certification. If you wish to test products with component variations (eg different bases, backrests, armrests etc) it is important to include this information.

If you wish to proceed with testing, please follow these steps:

- 2 Copy the Testing Request form and Information Sheet (see sections 14 and 15) and complete for each chair. Fax or e-mail a

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copy of both to Furntech-AFRDI and attach a copy of the Testing Request form to each chair.

- 3 Deliver the chairs to our Freight Forwarders or make alternative freight arrangements (see section 5).
- 4 Send your payment to Furntech-AFRDI (we accept cheque, EFT, Visa and MasterCard). Please phone 03 6326 6155 to request an invoice if this will help to facilitate payment

### **12. Before Dispatch**

**PLEASE MARK THE MODEL NAME/NUMBER ON EACH CHAIR BEFORE DISPATCH.** The name should match that used on the Testing Request Form. To assist with matching chairs with the Testing Request forms, please attach a copy of the Testing Request form to each chair.

### **13. Confidentiality**

Testing conducted at Furntech-AFRDI is confidential. The Institute's procedures prohibit the disclosure of the fact that an item is being tested or the results of any such testing without the express permission of the client concerned.

To assist us to preserve the confidentiality of other customers, we request three working days notice of an intended visit to the Institute's laboratory.

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## 14. Testing Request – Office Swivel Chairs

Please complete for each chair to be tested and fax or e-mail one copy to 03 6326 3090 or [info@furntech.org.au](mailto:info@furntech.org.au) and attach the other to the chair before dispatch.

- \* Name of Organisation (one company name only).....
- \* Name of Contact (a): .....
- \* Address of Organisation (b): .....
- .....Postcode.....
- \* Telephone Number: .....
- Fax Number: .....
- Email: .....
- Website: .....
- ABN Number: .....
- \* Product Name/Number (c) (one name only): .....
- \* Factory Name (d): .....
- \* Factory Address (d): .....
- Reasons for Test: .....
- \* Test Level: .....

\* It is mandatory that information be entered in these fields.

### Authorisations

I hereby authorise Furntech-AFRDI or its agents to carry out the tests described above at the agreed price.

Should the product(s) described above be found to comply with the relevant standard, I authorise Furntech-AFRDI to :

*(Optional – strike out where permission is not given)*

- publicise the fact.
- publish a certificate of compliance on the Furntech-AFRDI website.

Signature of Authorised Officer .....

Date .....

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### NOTES

- (a) Please insert the name of the person Furntech-AFRDI staff should contact, if necessary, concerning the tests.
- (b) Please insert street address.
- (c) Please print the name and/or number of the product you wish to appear on the test report and certificate.
- (d) Please specify the street address and name of the factory in which the product is made.

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### 15. Information Sheet

The following information is required for each chair to be tested.

Name of Company:  
(one company name only).....  
Product Name/Number  
(one name only).....

#### 15.1. Information Sheet

Component	Supplier	Model Identification	Certificate No.
Arms: Fixed Height			
Arms: Adjustable Height			
Mechanism			
Base			
Gas spring			
Footring			
Castors: Friction			
Castors: Free Wheeling			
Foam: Seat			
Foam: Back			

#### Authorisation

I warrant that the information above is accurate.

Signature of  
Authorised Officer.....Date.....

Name (print).....

Position in Company.....

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### 16. Summary Checklist

Before you send us a chair please make sure you have:

1. Filled out the Testing Request Form and faxed or emailed a copy to us and attached another copy to your chair.
2. Filled out the Information Sheet and faxed or emailed a copy to us.
3. Applied the appropriate markings to the chair as required (see section 10 – Notes on Instructions and Marking).
4. Prepared the Instructions intended to accompany the chair (swing tags, brochures, video, computer disc, etc). These should also be sent with the chair (see section 10 – Notes on Instructions and Marking).