

STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 2001.5.4—2005

Methods of test for textiles

**Method 5.4: Dimensional change—Domestic washing and drying procedures for
textile testing (ISO 6330:2000, MOD)**

RECONFIRMATION NOTICE

Technical Committee TX-020 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 6 July 2016.

The following are represented on Technical Committee TX-020:

Ag Research
Australian Wool Processors Council
AWTA Textile Testing
Council of Textile and Fashion Industries of Australia
Drycleaning Institute of Australia
National Association of Testing Authorities Australia
RMIT University
The Textile Institute

NOTES

Australian Standard™

AS 2001.5.4—2005

Methods of test for textiles**Method 5.4: Dimensional change—Domestic washing and drying procedures for textile testing (ISO 6330:2000, MOD)**

PREFACE

This Standard was prepared by the Standard Australia Committee TX-020 Testing of Textiles to supersede AS 2001.5.4—1987, *Methods of test for textiles, Part 5.4: Dimensional change—Determination of dimensional change in laundering of textile fabrics and garments—Automatic machine method*, which will remain available superseded.

The Standard is an adoption with national modifications and has been reproduced from ISO 6330:2000, *Textiles—Domestic washing and drying procedures for textile testing*.

The objective of this Standard is to provide manufacturers and testing bodies with a suitable test method for determining the dimensional change of fabrics and garments after the laundering process.

For the purpose of this Standard, the ISO text is supplemented as set out in Appendix ZZ. These changes are indicated by a margin bar against the relevant clause or part thereof affected.

The term ‘normative’ has been used in this Standard to define the application of the annex or appendix to which it applies. A ‘normative’ annex or appendix is an integral part of a Standard.

Appendix ZZ outlines the differences between ISO 6330 and this Standard. The variations relate to the specifications and washing action of Type B washing machines. Preparation and assessment of test samples are also included as well as references made to AS 2001.5.1, *Methods of test for textiles, Part 5: Dimensional change—General requirements* and AS 2001.1, *Methods of test for textiles, Part 1: Conditioning procedures*.

As some laboratories will be retaining older type washing machines for the purpose of this test, the 1987 edition of this method is available superseded. If testing by this method, reference should be made to AS 2001.5.4—1987.

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 Standard’.
- (c) A full point should be substituted for a comma when referring to a decimal marker.

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

<i>Reference to International Standard</i>	<i>Australian/New Zealand Standard</i>
ISO	AS/NZS
3758 Textiles—Care labelling code using symbols	1957 Textiles—Care labelling
<i>Reference to International Standard</i>	<i>Australian/New Zealand Standard</i>
ISO	AS/NZS
6059 Water quality—Determination of the sum of calcium and magnesium—EDTA titrimetric method	—

1 Scope

1.1 This International Standard specifies domestic washing and drying procedures for textile testing. The procedures are applicable to textile fabrics, garments or other textile articles which are subjected to appropriate combinations of domestic washing and drying procedures.

1.2 Provision is made for:

- a) ten different washing procedures based on the use of a horizontal drum, front-loading type of machine (type A washer) or
- b) eleven procedures based on the use of a top-loading agitator type of machine (type B washer).

The results obtained with the two types of machine may not be comparable.

1.3 Each washing procedure represents a single domestic wash.

1.4 This International Standard also specifies five drying procedures:

- A — Line dry
- B — Drip dry
- C — Flat dry
- D — Flat press
- E — Tumble dry

1.5 A complete test consists of a washing and drying procedure.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3758:1991, *Textiles — Care labelling code using symbols*.

ISO 6059:1984, *Water quality — Determination of the sum of calcium and magnesium — EDTA titrimetric method*.

3 Principle

A specimen is washed in an automatic washing machine and dried according to specified procedures.

4 Reagents

4.1 Reference detergents

4.1.1 AATCC 1993 reference detergent WOB (without optical brightener).

NOTE 1 AATCC 1993 reference detergent WOB can only be used in top-loading type B washers.

NOTE 2 The nominal composition of AATCC 1993 reference detergent WOB is given in annex A.

4.1.2 Non phosphate ECE reference detergent A (without optical brightener)

NOTE 1 Non phosphate ECE reference detergent A can be used in all machines.

NOTE 2 The nominal composition of non phosphate ECE reference detergent A is given in annex B.

4.1.3 Non phosphate IEC reference detergent A (with optical brightener). This can be used except when colour fastness is being assessed.

NOTE 1 Non phosphate IEC reference detergent A can be used in all machines.

NOTE 2 The nominal composition of non phosphate IEC reference detergent A is given in annex B.

4.2 Water of hardness not exceeding 0,002 % (20 ppm), expressed as calcium carbonate, when determined in accordance with ISO 6059:1984.

5 Apparatus

5.1 Automatic washing machines, capable of being operated under the following conditions.

5.1.1 Type A washer — Front loading, horizontal drum type

NOTE 1 Suitable machines are available commercially. Names of such machines may be obtained from national standards bodies. Other machines can be used if it has been established that they give equivalent results.

- a) Front loading horizontal rotating drum type.
- b) Diameter of inner drum: $(51,5 \pm 0,5)$ cm.
- c) Depth of inner drum: $(33,5 \pm 0,5)$ cm.
- d) Distance between inner and outer drums: $(2,8 \pm 0,1)$ cm.
- e) Lifting vanes: three, each $(5 \pm 0,5)$ cm high, extending the depth of the inner drum and spaced 120° apart.
- f) Rotating action:
 - 1) (Normal): $(12 \pm 0,1)$ s clockwise, $(3 \pm 0,1)$ s stop, $(12 \pm 0,1)$ s anticlockwise, $(3 \pm 0,1)$ s stop.
 - 2) (Gentle): $(3 \pm 0,1)$ s clockwise, $(12 \pm 0,1)$ s stop, $(3 \pm 0,1)$ s anticlockwise, $(12 \pm 0,1)$ s stop.
- g) Rotational frequency:
 - during washing: 52 min^{-1}
 - during hydroextraction (spin): $(500 \pm 20) \text{ min}^{-1}$.
- h) Water supply normal: $(25 \pm 5) \text{ l/min}$, $(20 \pm 5) ^\circ\text{C}$.

NOTE 2 In tropical countries this figure should be regarded as a minimum temperature. When the measurement is carried out with the water temperature different from these limits, the supply water temperature should be stated in the measurement report.

- i) Filling time: less than 2 min when filled to 13 cm.
- j) Draining time: less than 1 min when drained from 13 cm.
- k) Heating: electric, thermostatically controlled.
- l) Heater capacity: 5,4 kW, with a relative tolerance of $\pm 2\%$.

5.1.2 Type B washer — Top-loading, agitator type

NOTE 1 Suitable machines are available commercially. Names of such machines may be obtained from national standards bodies. Other machines can be used if it has been established that they give equivalent results.

NOTE 2 Conditions represent machines manufactured from 1992 onwards. For machines manufactured prior to 1992, contact the Secretariat of ISO/TC 38/SC 2 for information on machine specifications.

- a) Machines consist of a drum with an inner perforated basket (50 ± 5) cm in diameter and (30 ± 5) cm in depth.
- b) Examples of alternative washing conditions:

Machine cycle	Washing temperature
1) Normal/Cotton sturdy	II (27 ± 3) °C
2) Delicate	III (41 ± 3) °C
3) Durable press	IV (49 ± 3) °C
	V (60 ± 3) °C
	VI (70 ± 3) °C

Examples of machine settings without load:

Cycle	Normal	Delicate	Durable press
Water level			
Agitation speed	$(2,983 \pm 0,033) \text{ s}^{-1}$ [(179 $\pm$ 2) rpm]	$(1,983 \pm 0,033) \text{ s}^{-1}$ [(119 $\pm$ 2) rpm]	$(2,983 \pm 0,033) \text{ s}^{-1}$ [(179 $\pm$ 2) rpm]
Wash time	(12 $\pm$ 1) min	(8 $\pm$ 1) min	(10 $\pm$ 1) min
Spin speed	$(10,75 \pm 0,25) \text{ s}^{-1}$ [(645 $\pm$ 15) rpm]	$(7,167 \pm 0,25) \text{ s}^{-1}$ [(430 $\pm$ 15) rpm]	$(7,167 \pm 0,25) \text{ s}^{-1}$ [(430 $\pm$ 15) rpm]
Final spin time	(6 $\pm$ 1) min	(6 $\pm$ 1) min	(4 $\pm$ 1) min

5.2 Dryer of the rotary tumble type, complying with the following requirements:

NOTE Suitable machines are available commercially. Details may be obtained from the Secretariat of ISO/TC 38 or from the ISO Central Secretariat. Other machines can be used if it has been established that they give equivalent results.