



Mechanical Testing ISO/IEC 17025 Application Document

Annex I: Textiles and wool

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Mechanical Testing Annex I: Textiles and wool

This document provides interpretative criteria and recommendations for the application of ISO/IEC 17025 for both applicant and accredited facilities conducting textiles and wool testing under Mechanical Testing.

Applicant and accredited facilities must also comply with the ISO/IEC 17025 standard and Mechanical Testing field application document and any field annexes, policies and/or technical circulars (refer to *NATA procedures for accreditation*).

The clause numbers in this document follow those of ISO/IEC 17025 but since not all clauses require interpretation the numbering may not be consecutive.

5.5.2 Common equipment performance checks

Facilities are responsible for establishing their own equipment assurance program. This is to ensure that all equipment used satisfies the need to produce consistent and reliable and where appropriate traceable results. In doing so facilities must ensure that where methods writing bodies have included equipment calibration and checking intervals in standard methods that these intervals must be followed if the methods are covered by the accreditation. Facilities should refer to the guidance documents available for equipment (General Equipment Table) for further information on calibrations and checks on equipment.

The following supplementary information pertains to equipment items having specific application to textiles and wool testing and may not be directly described within the General Equipment Table.

Item of equipment	Calibration interval (years)	Checking interval (months)	Procedures and references
Abradant fabric	Initial		Check against specification. Check end point with reference fabric.
Abrasion resistance			
Inflated diaphragm machine		12	AS 2001.2.7
Oscillatory cylinder machine		12	AS 2001.2.30
Rotary platform double-head abrading machine		12	AS 2001.2.28
Abrasion tester			
Flex		12	AS 2001.2.26
Frosting unit/universal wear tester		12	AS 2001.2.22
Martindale		12	Check Lissajous figure. Check against standard fabric(s), AS 2001.2.25, ISO 12947-1.

Item of equipment	Calibration interval (years)	Checking interval (months)	Procedures and references
Air flow apparatus (wool testing)	Ten thousand tests	As detailed in AS/NZS 1133 or IWTO-6	
Air permeability apparatus	*0.5	On use	AS 2001.2.34
Alkaline milling / colour fastness to washing testing device			
Rotatable shaft		12	AS 2001. 4.5, 4.11 ISO 105 E03
Almeter (*0.5		Reference gauge. Reference top. IWTO-17
Atlas (wool testing)			
<u>Length measurement apparatus</u>			
Check gauges		12	Gauges ± 0.25 mm at 20°C.
Staple length measurement system		8 hours	AS 2810 Appendix A
Ball burst attachment	*Initial		Check dimensions of steel ball, annular rings.
Bulk tester	Initial		Check dimensions.
Circular cutter	2		Check dimensions.
		On use	Visual inspection for damage.
Colorimeter		On use	AS 2001.4.A01, ISO 105 A05
Colour matching booth		6	Light operation time. Light intensity. Angle of viewing.
Conductivity meter		12	
Constant tension winding tester		On use	
Crease recovery tester		On use	Check mass AS 2001.2.17. Specimen dimensions.
Crockmeter		12	Stroke length, peg size and mass
Drape tester		On use	Distance of platform to projection.
Dry cleaning machine		12	AS 2001.5.7
Dynamic load test machine		6	Dimensions. Condition.

Item of equipment	Calibration interval (years)	Checking interval (months)	Procedures and references
Evenness tester		1	Check against reference samples.
Exposure cabinet (colour fastness to daylight)		Initial	AS 2001.4.B01
		On use	Clean glass.
Extraction units		6	Function check.
Flex cracking resistance tester		12	Stroke. Speed.
Friction tester		6	Equipment manual.
Furnace		1	Temperature check.
Geotextile equipment			
CBR burst plunger		12	Dimensions. Damage
Drop cone tester		6	Dimensions. Damage
Drop cone tester measuring		6	Dimensions. Damage
Permittivity tester flow tubes		6	Flow rate
Grey scales		6	Condition
Hexapod tumble tester		6	Speed. Condition of pod.
Hydraulic diaphragm bursting tester		12	Calibrate pressure measuring device.
Inflated diaphragm tester			
Iron		6	Temperature settings.
Lamps Colour fastness to artificial light		*	*Frequency for intensity drop checks to take into account lamp life under typical operating conditions. If a time-based lamp replacement system is used this must be an evidence-based program.
Laserscan	1		
		Before use	IWTO – 12. Check against reference samples
Laundrometer		12	Temperature. Speed
Microscope	1		Line gratings
Perspiration tester		24	Mass, dimensions. AS 2001.4.E01, 4.E02, 4.17
Pick counter			
Manual		Initial	Check scale.
Electronic		6	Against calibration card.
Pilling test equipment			
Photographs		24	Condition of photographs.

Item of equipment	Calibration interval (years)	Checking interval (months)	Procedures and references
Brush		12	Speed. Condition.
ICI		12	Tube length/diameter/hardness, check liners (using reference fabrics), check revs, pilling box dimensions.
Martindale		12	ISO 12947-1
Random tumble		12	Condition of air supply line, check liners (using reference fabrics)
Pressing apparatus		24	AS 2001.4.6
Projection microscope		12	Line grating.
Resistance to compression apparatus (wool testing)			
Force transducer		6	Linearity.
Rubbing tester (see Crockmeter)			
Rubfastness tester (Carpets)			
		12	AS 2111.19.1
Scorch tester			
		12	Temperature settings.
Seam opening tester (Deadweight testing machine)			Check masses, clamps. AS 2001.2.21
Skein gauge		24	
Snag tester		12	Condition
Soiling tester		12	Comparison to standard
Spectrophotometer		12 or on use	AS 2001.4.A01 and ISO 105 A04
Spray tester		On use	AS 2001.2.16
Stiffness tester		24	Condition.
Tear tester (falling pendulum/Elmendorf)			
		12	Using check weights. AS 2001.2.8
		On use	Friction of pointer.

Item of equipment	Calibration interval (years)	Checking interval (months)	Procedures and references
Tetrapod		24	Speed. Condition of tetrapod.
Thickness testers			
Carpet	2		
		6	Against gauge block.
Cloth (static)		6	Against gauge blocks. AS 2001.2.15
Thread counter		24	Lengths.
Tumble drier		12	Speed-rotational /temperature.
Twist tester		24	Test length, pretensioning mass. AS 2001.2.14
Viscometer	Initial		AS 2001.3.6
		24	AS 2001.3.6
Washing machine			
Cubex		24	
Type A (Wascator)		12	AS 2001.5.4. Check dimensions, cycle
Type B		12	AS 2001.5.4
Weatherometer	6	3	Humidity and Blue reference scales.
Wrap reel		24	Circumference AS 2001.2.23
Yarn balance			
Manual		On use	
		12	Lengths
Electronic		On use	Compare to manual for specific parameters

*Commonly conducted by laboratory staff

References

This section lists publications referenced in this document. The year of publication is not included as it is expected that only current versions of the references shall be used.

Standards

AS/NZS 1133	<i>Wool - Determination by the Airflow Method of the mean fibre diameter of core samples of raw wool</i>
AS 2001.2.7	<i>Determination of breaking force and extension of yarns</i>
AS 2001.2.8	<i>Determination of tear force of fabrics using the ballistic pendulum method</i>
AS 2001.2.14	<i>Determination of twist in yarns</i>
AS 2001.2.15	<i>Determination of thickness of textile fabrics</i>
AS 2001.2.16	<i>Determination of water repellency of textile surfaces – Spray rating test</i>
AS 2001.2.17	<i>Determination of resistance of fabrics to water penetration – Hydrostatic pressure test</i>
AS 2001.2.21	<i>Determination of seam opening due to the application of force in the transverse direction</i>
AS 2001.2.22	<i>Determination of yarn slippage in woven fabrics at a standard stitched seam</i>
AS 2001.2.23	<i>Determination of linear density of textile yarn from packages</i>
AS 2001.2.25	<i>Determination of the abrasion resistance of fabrics by the Martindale method</i>
AS 2001.2.26	<i>Determination of abrasion resistance of textile fabrics (flexing and abrasion method)</i>
AS 2001.2.28	<i>Determination of abrasion resistance of textile fabrics (rotary platform, double-head method)</i>
AS 2001.2.30	<i>Determination of abrasion resistance of coated textile fabrics (oscillatory cylinder method)</i>
AS 2001.2.34	<i>Determination of permeability of fabrics</i>
AS 2001.3.6	<i>Determination of cuprammonium fluidity of cotton and cellulosic man-made fibres</i>
AS 2001.4.A01	<i>Colourfastness tests - General principles of testing</i>
AS 2001.4.B01	<i>Determination of colourfastness to daylight of textile materials</i>
AS/NZS 2001.4.5	<i>Determination of colourfastness to chlorinated swimming pool water</i>

AS 2001.4.6	<i>Determination of colourfastness to hot pressing</i>
AS 2001.4.E01	<i>Colourfastness to water</i>
AS 2001.4.11	<i>Determination of colourfastness to bleaching with sodium hypochlorite</i>
AS 2001.4.E02	<i>Determination of colourfastness to seawater</i>
AS 2001.4.17	<i>Determination of colourfastness to perspiration (Superseded)</i>
AS 2001.5.4	<i>Dimensional change - Domestic washing and drying procedures for textile testing (ISO 6330:2000, MOD)</i>
AS 2001.5.7	<i>Dimensional change - Determination of dimensional change on dry cleaning in perchloroethylene excluding finishing - Machine method</i>
AS/NZS 2111.19.1	<i>Tests and measurements –Colourfastness tests - Rubbing</i>
AS/NZS 2810	<i>Wool - Determination of staple length and staple strength</i>
ISO 12947-1	<i>Textiles - Determination of the abrasion resistance of fabrics by the Martindale method - Part 1: Martindale abrasion testing apparatus</i>
ISO 105-A04	<i>Textiles - Tests for colour fastness - Part A04: Method for the instrumental assessment of the degree of staining of adjacent fabrics</i>
ISO 105-A05	<i>Textiles - Tests for colour fastness - Part A05: Instrumental assessment of change in colour for determination of grey scale rating</i>
ISO 105-E03	<i>Textiles - Tests for colour fastness - Part E03: Colour fastness to chlorinated water (swimming-pool water)</i>
IWTO-6	<i>Method of test for the determination of the mean diameter of wool fibres in combed sliver using the airflow apparatus</i>
IWTO-12	<i>Measurement of the mean & distribution of fibre diameter using the Sirolan-Laserscan fibre, diameter analyser</i>
IWTO-17	<i>Determination of fibre length distribution parameters</i>

Other references

VIM *International vocabulary of basic and general terms in metrology*

Guidance documents covering the implementation of specific accreditation requirements are also available from the ILAC (www.ilac.org) and APLAC (www.aplac.org) websites.

Amendment Table

The table below provides a summary of changes made to the document with this issue.

Section or Clause	Amendment
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Annex title	Retitled as Annex I
Equipment performance checks table	Amended to include only those activities applicable to textiles and wool testing.
References	Updated