Mechanical Testing ISO/IEC 17025 Application Document

Annex E: Rubber/plastics

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Mechanical Testing Annex E: Rubber and plastics

This document provides interpretative criteria and recommendations for the application of ISO/IEC 17025 for both applicant and accredited facilities conducting rubber and plastics 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.

Accelerated air ageing of rubber

Where it is not clear that the ventilation rate requirement of the method is satisfied, reports must either:

a) note the variation from the required ventilation rate; or

b) note that the ventilation rate is not known.

Weatherometers

Some weatherometers are equipped with spray nozzles which are not fully compliant with ASTM G155. Facilities using models which do not fully comply must identify the model used on test reports when reporting tests.

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 rubber and plastics testing and may not be directly described within the General Equipment Table.

Item of equipment	Calibration interval (years)	Checking interval (months)	Procedures and references
Cutting dies			
			Depends on standard. Some require the specimen to be measured, others specify die dimensions.

Item of equipment	Calibration interval (years)	Checking interval (months)	Procedures and references
	Initial		Full dimensional check whenever sharpened (where die dimensions are specified).
		Frequent	Check for damage.
Differential scanning calorimeter	0.5		Temperature calibration using high purity indium and tin standards. ISO 11357-6 reference metals. The melting points specified for these materials must be accompanied by evidence of measurement traceability to national or international temperature measurement standards.
Hardness testers			
Deadweight for rubber	3		
Deadweight for plastics	3		
Durometers for rubber	1		Dimensional calibration.
		6	Against rubber hardness test blocks. AS 1683.15.2
Impact testing machines			
Charpy and Izod impact testers	1 (partial)		AS 1146.3
	5 (complete)		
Melt flow index	5		Calibrate masses.
	5		Dimensions of plunger etc.
	1		Orifice dimensions.
		6	Use a known secondary standard to check for any time dependent changes.
Rubber hardness test blocks			
	*2		Against a dead load IRHD hardness tester.
		6	Store lightly dusted with talc, in a covered wooden container away from light, heat, oil and grease.

Item of equipment	Calibration interval (years)	Checking interval (months)	Procedures and references
Thickness gauges (for compressible materials)			
	2		Dial gauge, dimensions and pressure of foot
Weatherometer	Initial		Verify all variable parameters against setting (e.g. temperature, humidity).

*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 1146.3	*Methods for impact tests on plastics - Calibration of the testing machine*
AS 1683.15.2	*Methods of test for elastomers - Durometer hardness*
AS 2853	*Enclosures - Temperature-controlled - Performance testing and grading*
ISO 11357-6	*Plastics - Differential scanning calorimetry (DSC) - Part 6: Determination of oxidation induction time (isothermal OIT) and oxidation induction temperature (dynamic OIT)*

ASTM G155 - 05a *Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials*

Amendment Table

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

Section or Clause	Amendment
Weatherometers	Standard updated
Equipment performance checks table	Amended to include only those activities applicable to rubber and plastics testing
References	Updated