



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

POLYMER TESTING INSTRUMENTS, INC.
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Fletcher, NC 28732
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CALIBRATION

Valid To: June 30, 2025

Certificate Number: 1504.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations^{1, 7}:

I. Dimensional

Parameter/Equipment	Range	CMC ² (±)	Comments
Cutting Dies	Up to 8 in	310 µin	Caliper, video comparator
Dial & Electronic Indicators ³	Up to 1 in	120 µin	Gage blocks
Calipers ³	Up to 6 in	310 µin	Caliper master
Micrometers ³	Up to 1 in	140 µin	Gage blocks

II. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC ^{2,6} (±)	Comments
Electrical Calibration of Thermocouple Indicators ³ – Generate & Measure Type J Type K Type T	(-210 to 1200) °C (-200 to 1372) °C (-250 to 400) °C	0.22 °C 0.23 °C 0.23 °C	Omega / Martel CL3001
Electrical Calibration of RTD Indicators ³ – Generate & Measure Pt 385, 100 Ω Pt 385, 1 kΩ Pt 3902, 100 Ω Pt 3926, 100 Ω Cu 427, 10 Ω	(-200 to 800) °C (-190 to 630) °C (-200 to 630) °C (-200 to 630) °C (-100 to 260) °C	0.18 °C 0.18 °C 0.18 °C 0.18 °C 0.18 °C	Omega / Martel CL3001

III. Mechanical

Parameter/Equipment	Range	CMC ^{2,5} (±)	Comments
Force – Measure ³	(0 to 500) lbf	0.062 % of full scale	ASTM E4 w/ load cells
Force Gages & Tensile Testers	(500 to 2000) lbf (2000 to 5000) lbf	0.14 % of full scale 0.14 % of full scale	Load cell comparison
Crosshead Speed	(0 to 20) in/min	0.037 in/min	Calibrated scale & stopwatch
Pressure – Measuring Equipment ³	(0 to 2000) psi	0.12 % of full scale	Druck pressure gauge

Parameter/Equipment	Range	CMC ^{2,5} (±)	Comments
Rotational Speed ³ , Non-Contact – Measuring Equipment	(0 to 2000) rpm	2.4 rpm	Tachometer
Verification of Scales & Balances ³ – Resolution (R): R = 0.1 g R = 0.01 g R = 0.0005 g R = 0.1 g R = 0.01 g R = 0.1 g R = 0.01 g	Up to 200 g Up to 200 g Up to 200 g Up to 1000 g Up to 1000 g Up to 4000 g Up to 4000 g	58 mg 5.9 mg 0.89 mg 58 mg 6.7 mg 62 mg 23 mg	Class 1 weights

IV. Rubber Industry-Specific Measurements

Parameter/Equipment	Range	CMC ² (±)	Comments
Extensometer ³ – Gage Length	Class D	0.007 in	ASTM E83 w/ calibrated scale
Rubber Hardness – Block Standardization Shore A Shore C Shore D Shore M IRHD M	(0 to 100) units (0 to 100) units (0 to 100) units (0 to 100) units (0 to 100) units	0.71 “A” units 0.71 “C” units 0.71 “D” units 0.71 “M” units 0.61 units	Durometer

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
Direct Verification of Durometers –			ASTM D2240
Indentor Extension & Shape –			
Diameter	(0 to 25) mm	100 µin	Video comparator
Radius	(0 to 25) mm	100 µin	
Angle	(0 to 90)°	0.04°	
Extension	(0 to 25) mm	100 µin	Gage blocks
Indentor Display	(0 to 100) Duro	0.58R + 12 µDuro	
Spring Calibration – Force			
Type Shore A	(0 to 100) Duro	0.6 Shore A units	
Type Shore C	(0 to 100) Duro	0.61 Shore C units	
Type Shore D	(0 to 100) Duro	0.61 Shore D units	
Type JIS A	(0 to 100) Duro	0.58 JIS A units	
Type IRHD	(0 to 100) Duro	0.61 IRHD units	
Type Shore M	(0 to 100) Duro	0.85 Shore M units	
Type Shore 0,00	(0 to 100) Duro	0.59 Shore 0,00 units	
Rheometer ³ –			
Torque @ (0.5, 1, 3) degrees arc	(0 to 200) lbf·in	0.20 lbf·in	Torque standard ASTM D2084 ASTM D5289
Mooney Viscometer ³	(0 to 200) Mooney	0.12 Mooney	ASTM D1646

V. Thermodynamics

Parameter/Equipment	Range	CMC ^{2, 5} (±)	Comments
Temperature – Measure ³	(-200 to 350) °C	0.35 °C	RTD/Thermocouple; calibration of various temperature devices such as oil baths & ovens
Relative Humidity – Measure ³	(10 to 75) % RH	1.3 % RH	Vaisala HMI41 & HMP46

VI. Time & Frequency

Parameter/Equipment	Range	CMC ^{2, 5} (±)	Comments
Time Interval – Measure ³	(0 to 100) hr	3 s/day	Digital stopwatch

¹ This laboratory offers commercial calibration service and field calibration service.

² Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³ Field calibration service is available for this calibration. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

⁴ In the statement of CMC, R is defined as the resolution of the device.

⁵ The type of instrument or material being calibrated is defined by the parameter. This indicates the laboratory is capable of calibrating instruments that measure or generate the values in the ranges indicated for the listed measurement parameter.

⁶ The stated measured values are determined using the indicated instrument (see Comments). This capability is suitable for the calibration of the devices intended to measure or generate the measured value in the ranges indicated. CMC's are expressed as either a specific value that covers the full range or as a percent or fraction of the reading a fixed floor specification.

⁷ This scope meets A2LA's *P112 Flexible Scope Policy*.



Accredited Laboratory

A2LA has accredited

POLYMER TESTING INSTRUMENTS, INC.

Fletcher, NC

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and R205 – Specific Requirements: Calibration Laboratory Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 16th day of May 2023.

A blue ink signature of Mr. Trace McInturff, written over a horizontal line.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1504.01
Valid to June 30, 2025

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.