



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ADVANCED CALIBRATION TECHNOLOGIES
DBA AD-TEK, INC.

Shipping Address:
28111 SE Wally Road
Boring, OR 97009

Physical Laboratory Location:
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Boring, OR 97009

Michael Beem Phone: 503 663 7265

CALIBRATION

Valid To: September 30, 2026

Certificate Number: 1342.01

In recognition of the successful completion of the A2LA evaluation process, (including an assessment of the organization's compliance with A2LA's Calibration Program Requirements), accreditation is granted to this laboratory to perform the following calibrations and dimensional testing^{1,6}:

I. Chemical

Parameter/Equipment	Range	CMC ^{2,7} (±)	Comments
pH – Measuring Equipment ³	4 pH 7 pH 10 pH	0.02 pH 0.02 pH 0.02 pH	Standard pH solutions

II. Dimensional

Parameter/Equipment	Range	CMC ² (±)	Comments
Extensometers & Deflectometers ³ (Displacement up to 24 Inches of Travel)	Up to 2 in	54 μin	Gage blocks & linear calibrator to ASTM E83
Calipers ³	Up to 6 in Up to 12 in Up to 48 in	300 μin 320 μin 760 μin	Gage blocks, length bar



Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
Micrometers ³	Up to 6 in Up to 12 in	70 μin 130 μin	Gage blocks, length bar
Dial Indicators ³	Up to 6 in	70 μin	Dial indicator calibrator or gage blocks
Steel Rulers ³	Up to 24 in	0.0058 in	Gage blocks
Feeler Gages ³	(0.001 to 0.050) in	14 μin	Gauge block comparator & feeler gauge
Straight Edges ³	Up to 24 in	110 μin	Surface plate & feeler gages
Sieves ³ – Fine & Coarse	Up to 12 in	300 μin	Calipers & micrometers
3.2.1 Blocks ³	Up to 12 in	120 μin	Calipers
Gage Blocks	Up to 1 in (1 to 4) in (4 to 20) in	11 μin 21 μin 210 μin	Master gage block, gage block comparator
Gage Blocks ³	Up to 1 in (1 to 4) in	140 μin 150 μin	Gage blocks & micrometer
Grooving Tools ³	Up to 12 in	320 μin	Calipers
Tampers ³	Up to 12 in	320 μin	Calipers
LA Abrasion Machines ³	Up to 12 in	320 μin	Calipers & steel rule
Sample Splitters ³	Up to 12 in	320 μin	Digital calipers & steel rule to ASTM & AASHTO specifications
Angle ³	(30, 45, 60, 90)°	0.0055 %	Angle block

III. Dimensional Testing/Calibration^{1,5}

Parameter/Equipment	Range	CMC ² (±)	Comments
1D Linear Measurement ³ – Molds, Expansion Racks, etc.	Up to 12 in	0.0031 in	Digital calipers &/or 3-point bore gage with setting ring to ASTM & AASHTO specifications

IV. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC ² (±)	Comments
Temperature ³ – Electrical Simulation of Thermocouples			
Type J	(-210 to -100) °C (-100 to -30) °C (-30 to 150) °C (150 to 760) °C (760 to 1200) °C	0.23 °C 0.14 °C 0.11 °C 0.15 °C 0.20 °C	Fluke 5500A
Type K	(-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 1000) °C (1000 to 1372) °C	0.28 °C 0.16 °C 0.14 °C 0.22 °C 0.34 °C	
Type T	(-250 to -150) °C (-150 to 0) °C (0 to 120) °C (120 to 400) °C	0.54 °C 0.20 °C 0.14 °C 0.11 °C	

V. Fluid Quantities

Parameter/Equipment	Range	CMC ² (±)	Comments
Flow Meters ³ (Air/Nitrogen)	(0 to 6) L/min	0.014 L/min	Digital flow meter & density/mass calculations
POVA (Piston Operated Volumetric Apparatus) ³ – Pipettes	(0.2 to 50) µL (50 to 1000) µL (1000 to 5000) µL (5000 to 10 000) µL (10 000 to 20 000) µL	0.12 µL 1.2 µL 7.5 µL 21 µL 26 µL	Gravimetric method using analytical balances

VI. Mechanical

Parameter/Equipment	Range	CMC ^{2, 4, 7} (±)	Comments
Force ³ – Measure			
Compression	Up to 100 lbf (100 to 1000) lbf (1000 to 10 000) lbf (10 000 to 50 000) lbf (50 000 to 600 000) lbf (600 000 to 1 000 000) lbf	0.015 lbf 0.049 % 0.026 % 0.021 % 0.082 % 0.020 %	Load cells & dead weights to ASTM E4, ASTM E74
Tension	Up to 100 lbf (100 to 1000) lbf (1000 to 10 000) lbf (10 000 to 50 000) lbf (50 000 to 600 000) lbf	0.015 lbf 0.2 % 0.045 % 0.013 % 0.13 %	Load cells & dead weights to ASTM E4
Gyratory Compactors			
Force	Up to 10 000 lbf	0.026 %	Load cell/proving ring, height blocks, timer & RAM. All makes & models.
Height	(0 to 10) in	450 µin	
Angle	(0 to 130)°	0.0013°	
Speed of Rotation	(0 to 1) min	0.076 s	

Parameter/Equipment	Range	CMC ^{2,4,7} (±)	Comments
Pressure ³ – Measure Pneumatic (Nitrogen) Hydraulic	(10 to 500) psi (500 to 10 000) psi	0.031 psi 0.029 psi	Dead weights testers
Vacuum ³ – Manometers, Absolute Pressure Gauges	Up to 1000 mmHg	0.014 %	Manometers & transducers
Torque – Measuring Equipment	Up to 1000 lbf·ft	1.3 lbf·ft + 0.40 %	Torque calibrator
Speed – RPM ³ – Measure Tachometer	Up to 1000 RPM Up to 30 000 RPM Up to 99 999 RPM	(0.13 + 0.020 %) RPM (1.5 + 0.020 %) RPM 0.002 RPM	Tachometer Counter, LED
Mass	Up to 500 mg 1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 1 lb 2 lb 5 lb 10 lb 20 lb 50 lb	0.000 02 g 0.000 01 g 0.000 02 g 0.000 02 g 0.000 02 g 0.000 02 g 0.000 02 g 0.000 02 g 0.000 03 g 0.000 04 g 0.015 g 0.016 g 0.017 g 0.018 g 0.000 007 lb 0.000 007 lb 0.000 009 lb 0.000 01 lb 0.000 02 lb 0.0005 lb	ASTM D4753 & AASHTO M231 with Class 1 weights, double substitution

Parameter/Equipment	Range	CMC ^{2, 4, 7} (±)	Comments
Indirect Verification of Rockwell Hardness Testers ³	HRBW: Low (20 to 44) HRB Medium (45 to 70) HRB High (71 to 100) HRB HRC: Low (20 to 34) HRC Medium (35 to 44) HRC High (45 to 69) HRC	0.49 HRB 0.63 HRB 0.68 HRB 0.39 HRC 0.40 HRC 0.36 HRC	Indirect verification per ASTM E18
Indirect Verification of Brinell Hardness Testers ³	(126 to 758) HBW	0.025 HBW	Hardness test blocks
Scales & Balances ³ – Class I Balances Class II Balances Class III Light Capacity Scales Class III Medium Capacity Scales	Up to 100 g Up to 200 g Up to 1 kg Up to 2 kg Up to 5 kg Up to 10 kg Up to 20 kg Up to 50 kg 1 lb Up to 2 lb Up to 5 lb Up to 10 lb Up to 20 lb Up to 50 lb Up to 100 lb Up to 200 lb Up to 500 lb Up to 1000 lb Up to 2000 lb Up to 2500 lb	0.000 08 g 0.000 084 g 0.0094 g 0.0094 g 0.0078 g 0.0083 g 0.0088 g 0.021 g 0.000 094 lb 0.000 090 lb 0.000 094 lb 0.000 094 lb 0.000 079 lb 0.000 66 lb 0.015 lb 0.039 lb 0.079 lb 0.16 lb 0.39 lb 0.39 lb	ASTM D4753, AASHTO M231, & NIST Handbook 44 with: Class 1 weights Class 2 weights Class F weights

VII. Thermodynamics

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
Temperature ³ – Furnaces & Ovens	(0 to 300) °C (300 to 600) °C	0.13 °C 0.47 %	Tegam with probe to ASTM & AASHTO specifications including ASTM E145
Digital Thermometers	(-195 to 420) °C	0.065 °C	PRT with indicator to ASTM & AASHTO specifications
Liquid in Glass Thermometers	(-38 to 300) °C	0.15 °C	
Relative Humidity ³ – Measure	(20 to 80) % RH @ 25 °C	0.32 % RH	Digital hygrometer

VIII. Time & Frequency

Parameter/Equipment	Range	CMC ² (±)	Comments
Counters, Timers & Clocks ³	(1 to 3600) s/hr	0.076 s	Oscillator

¹ This laboratory offers commercial dimensional testing/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, percentages are percentage of reading, unless otherwise noted.

⁵ This laboratory meets *R205 – Specific Requirements: Calibration Laboratory Accreditation Program* for the types of dimensional tests listed above and is considered equivalent to that of a calibration.

⁶ This scope meets A2LA's *P112 Flexible Scope Policy*.

⁷ 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.



Accredited Laboratory

A2LA has accredited

ADVANCED CALIBRATION TECHNOLOGIES DBA AD-TEK, INC.

Boring, OR

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 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 September 2024.

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 1342.01
Valid to September 30, 2026

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