



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

TESTING MACHINES, INC. FIELD SERVICE DEPARTMENT
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CALIBRATION

Valid To: December 31, 2021

Certificate Number: 2091.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations^{1,4}:

I. Dimensional

Parameter/Equipment	Range	CMC ² (±)	Comments
Micrometers ³ –			
Thickness –			
Imperial	(10 to 50) mils (100 to 500) mils	0.014 mils 0.059 mils	ISO 534, TAPPI T 411
Metric	(0.254 to 1.272) mm (2.54 to 12.72) mm	0.0004 mm 0.0015 mm	FCI/497000
Parallelism –			
Imperial	Up to 1 in	0.013 mils	
Metric	Up to 25.4 mm	0.0003 mm	
Deadweight Load Force	Up to 5 lbf	0.06 lbf	

II. Mechanical

Parameter/Equipment	Range	CMC ² (±)	Comments
Tear Testers ³ – Pendulum Force Cut Depth Jaw Separation	(0 to 4385) gf (0 to 0.787) in (0 to 0.11) in	0.1 gf 0.002 in 0.002 in	ISO 1974, TAPPI T 414, ASTM D1922, D1424 FCI/831100
Canadian Standard Freeness Tester ³ – ID Length Volume	(0 to 130) mm (0 to 24) mL	0.07 mm 0.07 mL	ISO 5267-2, TAPPI T 227, CPPA C1 FCI/332400
Burst Testers ³ – Pressure	(0 to 200) psi (200 to 1000) psi	0.6 psi 2.9 psi	ISO 2758, ISO 2759, TAPPI T 403, T 807, T 810, FCI/130100, FCI/130900
Melt Flow Indexers ³ – Temperature Bore Diameter Piston Diameter Mass Die Length Piston Land Length	(100 to 400) °C Up to 0.4 in Up to 0.4 in Up to 4 kg Up to 0.4 in Up to 0.3 in	0.56 °C 0.0006 in 0.0006 in 0.1 g 0.0006 in 0.0006 in	ASTM D1238 FCI/460000

Parameter/Equipment	Range	CMC ² (±)	Comments
Horizontal Plane Slip and Friction Tester ³ – Force Sled Mass	Up to 2000 gf (100 to 2000) g	0.1 gf 0.1 g	ISO 15359, TAPPI T 549, T816, ASTM D1894, FCI/320000
Z-Direction Tensile Testers ³ – RPM Speed Force (Tension Compression)	(0 to 30) rpm Up to 20 in/min (0 to 250) lbf	0.18 rpm 0.005 in/min 0.67 lbf	FCI/842200
Impact Testers ³ – Sample Support Length Mass Notch Depth	Up to 4 in (0 to 4) kg Up to 0.4 in	0.003 in 0.1 g 0.0011 in	ISO 179, ISO 180, ASTM D256, ASTM D1822, ASTM D6110, FCI/322500, FCI/430100, FCI/430200, FCI/220500
Release and Adhesion Tester ³ – RPM Force	(0 to 160) rpm (0 to 2000) gf	0.18 rpm 0.1 gf	TLMI L-IA1, L-IA2; PSTC –1, 4; FINAT FTM 1, 2, 3, 4; FCI/809000

Parameter/Equipment	Range	CMC ² (±)	Comments
Compression Testers ³ – Crosshead Speed Force	Up to 3 in/min (0 to 100) lbf (100 to 250) lbf (250 to 1000) lbf (1000 to 2000) lbf (2000 to 10 000) lbf (10 000 to 25 000) lbf	0.011 in/min 0.29 lbf 0.67 lbf 2.7 lbf 3.7 lbf 18 lbf 29 lbf	ISO 13820; TAPPI T 824, T 811, T 809, T 825, T 818, T 822; FCI/173700, FCI/170000; ASTM E4
Inclined Plane Friction Testers ³ – Sled Mass Plane Angle	(200 to 1260) g 0° to 90°	0.07 g 0.32°	TAPPI T 815 FCI/322500
Tensile Testers ³ – Crosshead Speed (Distance/Time) Crosshead Travel Force RPM	Up to 12 in/min Up to 8 in (0 to 250) lbf (250 to 2000) lbf (2000 to 10 000) lbf (10 000 to 25 000) lbf (0 to 48) rpm	0.011 in/min 0.002 in 0.67 lbf 3.8 lbf 18 lbf 33 lbf 0.18 rpm	ISO 1924, TAPPI T 404, T 494, FCI/840000, FCI/842100; ASTM E4
Ink Rub Testers ³ – Mass Frequency	(0 to 4) lbs Up to 100 strokes/min	0.0002 lb 0.26 strokes/min	TAPPI T 830, ASTM D5264; FCI/101801
Scales	100 mg to 100 g 100 g to 1 kg	0.27 mg 0.13 g	Standard weights; FCI/scales

¹ This laboratory offers commercial calibration service and Field Service Calibration.

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 and this laboratory meets A2LA *R104 – General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. 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 This scope meets A2LA's *P112 Flexible Scope Policy*.



Accredited Laboratory

A2LA has accredited

TESTING MACHINES INC. FIELD SERVICE DEPARTMENT

New Castle, DE

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 30th day of July 2020.

A blue ink signature of a person, written over a horizontal line.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2091.01
Valid to December 31, 2021

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