



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ADVANCED PLASTIC AND MATERIAL TESTING, INC.  
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MECHANICAL

Valid To: November 30, 2024

Certificate Number: 0326.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following types of tests on ABS, Acetal, acrylic, acrylonitrile butadiene styrene, adhesives, automotive products, cable, circuit boards, coatings, composites, contaminants, fasteners, films, fluid, foam, fuel, gaskets, HDPE, jewelry, labels, ladders, LDPE, lubricants, metal, metal alloys, mirrors, Nylon, oil, packaging, PAEK, paint, PCTFE, PEEK, PET, PETE, petroleum products, pipe, plastic, platings, PMMA, polyamide, polycarbonate, polyethylene, polymers, polyoxymethylene, polypropylene, polystyrene, polyvinyl chloride, POM, powder metal, PTFE, pultrusions, PVC, rubber, sealants, siding, solutions, tape, and wire:

**Test Method <sup>1</sup>:**

**Test Description:**

AMS 3650  
AMS 3678  
ASM Handbook,  
Vol. 11

Dimensional Stability of PCTFE (*except Zero Strength Time*)  
Dimensional Stability of PTFE  
Failure Analysis and Prevention (Using methods listed on this Scope of Accreditation):  
Root Cause Analysis, Failure Mechanism, Fractography, Fracture Examination, Processing Defects, Degradation, Contaminant Identification, Chemical Resistance, Corrosion Analysis, Microstructure, Microstructural Analysis, Material Analysis

ASME B46.1  
ASTM A247  
ASTM A370

Surface Texture: Surface Roughness, Waviness and Lay, Arithmetic Average  
Microstructure of Graphite in Iron Castings: Ductile Iron, Cast Iron, Nodularity  
Mechanical Testing of Steel Products (*except Impact*):

ASTM B117  
ASTM B244  
ASTM B298  
ASTM B487

Tension, Bend, Brinell Hardness, Rockwell Hardness  
Salt Spray (Fog) Apparatus Operation: Corrosion Resistance, Salt Fog Test  
Coating Thickness (Dry Film Thickness) by Eddy Current  
Continuity of Coating (Continuity Test Only)

ASTM B499  
ASTM B557  
ASTM B568  
ASTM B571

Coating Thickness by Microscopical Examination of a Cross Section:  
Plating Thickness, Coating Thickness, Paint Thickness  
Coating Thickness by Magnetic Method  
Tensile Properties of Aluminum and Magnesium Alloys  
Coating Thickness by X-Ray Fluorescence (XRF): Plating Thickness  
Qualitative Adhesion Testing of Metallic Coatings (*except Draw Test*):  
Bend, Burnishing, Chisel-Knife, File, Grind-Saw, Heat-Quench, Impact, Peel, Push, Scribe-Grid

ASTM B578  
ASTM B678  
ASTM B748  
ASTM C1147

Microhardness of Coatings: Knoop, Vickers  
Solderability of Coated Products  
Coating Thickness by Scanning Electron Microscope (SEM) in Cross Section  
Tensile Weld Strength (*except preparation of welds*)

**Test Method 1:****Test Description:**

ASTM D115	Solvent Containing Varnishes (Dielectric Strength Only)
ASTM D149	Dielectric Breakdown Voltage and Dielectric Strength (100 kV Maximum)
ASTM D150	Dielectric Constant (Permittivity) and Dissipation Factor
ASTM D256	Izod Pendulum Impact Resistance:
	Impact Resistance, Izod Impact, Reverse Notch Impact
ASTM D257	DC Resistance or Conductance of Insulating Materials:
	DC Resistance, Insulation Resistance, Surface Resistance, Surface Resistivity, Volume Resistance, Volume Resistivity
ASTM D374,	Thickness of Electrical Insulation (Methods A & C)
ASTM D380	Rubber Hose (Pressure Tests Only): Burst, Hydrostatic
ASTM D395, Method B	Compression Set
ASTM D412	Tension Test Methods:
	Elongation, Tensile Properties, Tensile Set, Tensile Strength, Tensile Stress, Yield Point
ASTM D471	Effect of Liquids: Fluid Immersion, Fluid Resistance, Volume Change
ASTM D523	Specular Gloss (20°, 60°, 85°)
ASTM D542	Index of Refraction: Refractive Index, Refractometer
ASTM D543	Chemical Resistance of Plastics: Environmental Stress Cracking (ESCR)
ASTM D573	Air Oven Deterioration:
	Heat Aging, Heat Resistance, Oxidative Aging, Accelerated Aging, Thermal Aging, Oven Aging
ASTM D610	Evaluating Degree of Rusting on Painted Steel Surfaces
ASTM D618	Conditioning Plastics
ASTM D621 (1994)*	Deformation Under Load
ASTM D624	Tear Strength: Tear Resistance
ASTM D635	Flammability of Plastics in a Horizontal Position
ASTM D638	Tensile Properties:
	Modulus of Elasticity, Percent Elongation, Tensile Strength, Poisson's Ratio, Yield Strength, Young's Modulus
ASTM D648, Method B	Heat Deflection Temperature (HDT, DTUL)
ASTM D695	Compressive Properties: Compressive Strength, Compressive Modulus
ASTM D714	Evaluating Degree of Blistering of Paints
ASTM D732	Shear Strength by Punch Tool
ASTM D785	Rockwell Hardness of Plastics (Scales: R, L, M, E, K)
ASTM D790	Flexural Properties: Flexural Strength, Flexural Modulus, Secant Modulus
ASTM D865	Deterioration by Heating in Air: Heat Aging, Heat Resistance
ASTM D882	Tensile Properties of Thin Sheet:
	Modulus of Elasticity, Tensile Strength, Toughness, Yield Stress, Breaking Factor, Secant Modulus
ASTM D897	Tensile Properties of Adhesive Bonds
ASTM D903	Peel Strength: 180° Peel, Adhesive Bonding, Stripping Strength
ASTM D953	Bearing Strength
ASTM D1002	Shear Strength by Lap Joint: Lap Shear Strength
ASTM D1003, Procedure B	Luminous Transmittance and Haze
ASTM D1004	Tear Resistance (Graves Tear) of Film
ASTM D1044	Surface Abrasion of Transparent Plastics
ASTM D1056	Cellular Materials – Foam Density & Compression Deflection Only
ASTM D1151	Conditioning of Adhesives: Effect of Moisture, Humidity Resistance
ASTM D1414	Rubber O-Ring Testing ( <i>except Low Temperature Test, Mold Shrinkage, Corrosion</i> ):
	Tension Testing, Tension Set, Compression Set, Relative Density, Immersion, Heat Aging, Hardness
ASTM D1415	International Hardness (IRHD): Rubber Microhardness

**Test Method 1:**

ASTM D1525  
ASTM D1599  
ASTM D1621  
ASTM D1622/D1622M  
ASTM D1654

ASTM D1708  
ASTM D1709  
ASTM D1710  
ASTM D1781  
ASTM D1876  
ASTM D1894  
ASTM D1922  
ASTM D2197  
ASTM D2240

ASTM D2244  
ASTM D2344/D2344M  
ASTM D2583  
ASTM D2794  
ASTM D2990

ASTM D3012  
ASTM D3039/D3039M  
ASTM D3167  
ASTM D3294

ASTM D3295  
ASTM D3330

ASTM D3354, Method B  
ASTM D3359  
ASTM D3574

ASTM D3575  
ASTM D3801  
ASTM D3950  
ASTM D4039  
ASTM D4060  
ASTM D4226  
ASTM D4329  
ASTM D4587  
ASTM D4804  
ASTM D4812  
ASTM D5420  
ASTM D6100  
ASTM D6262  
ASTM D6862  
ASTM D7091  
ASTM E3  
ASTM E8/E8M

**Test Description:**

Vicat Softening Temperature (VST): Vicat Softening Point  
Pressure Testing of Pipe, Tubing, and Fittings: Hydrostatic Testing  
Compressive Properties of Cellular Plastics  
Density of Cellular Plastics: Foam Density  
Evaluation of Painted or Coated Specimens After Corrosive Environments:  
Corrosion Creepback, Blistering, Corrosion, Creepage  
Tensile Properties by Microtensile Specimens  
Impact Resistance of Film: Dart Drop Impact  
Dimensional Stability of PTFE  
Climbing Drum Peel: Peel Strength  
Peel Resistance: T-Peel Test  
Coefficient of Friction: Kinetic Friction, Static Friction  
Propagation Tear Resistance of Film: Elmendorf Tear Resistance  
Scrape Adhesion  
Durometer Hardness (Scales A, D and M): Shore Hardness, Indentation Hardness, Micro-Hardness  
Color Difference by Instrumental Analysis: CIELAB  
Short Beam Shear Strength  
Barcol Hardness  
Impact Resistance of Coatings  
Creep Testing:  
Creep-Rupture, Tensile Creep, Flexural Creep, Compressive Creep  
Thermal Oxidative Stability: Biaxial Rotator  
Tensile Properties of Composites  
Floating Roller Peel  
PTFE Sheet and Basic Shapes: Tensile, Elongation, Dielectric, Specific Gravity, Porosity, Dimensional Stability (*except Internal Defects*)  
PTFE Tubing, Dimensional Stability  
Peel Adhesion of Tape  
180 Degree Peel, Adhesion to Backing, Adhesion to Liner, 90 Degree Peel  
Blocking Load of Film by Parallel Plate Method  
Measuring Adhesion by Tape Test: Coating Adhesion, Tape Adhesion  
Flexible Cellular Materials, Urethane Foam (Tests A, B1, C, D, E):  
Density, Indentation Force Deflection (IFD), Compression Force Deflection, Compression Set, Tensile  
Flexible Cellular Materials: Compression Creep Suffix BB Only  
Flammability of Plastics in a Vertical Position  
Breaking and Joint Strength of Strapping  
Reflection Haze of High Gloss Surfaces  
Abrasion Resistance by Taber Abraser: Taber Abrasion, Wear Index  
Impact Resistance of PVC Building Products: Impact of Siding  
UV Exposure of Plastics: QUV  
UV Exposure of Coatings: QUV  
Flammability of Films  
Unnotched Cantilever Beam Impact Resistance of Plastics  
Impact Resistance by Falling Weight: Gardner Impact  
Polyoxymethylene Shapes: Tensile, Elongation, Modulus, Dimensional Stability  
Shapes of PAEK: Tensile Properties, Dimensional Stability, Flexural, Izod  
90 Degree Peel Resistance  
Coating Thickness (Dry Film Thickness) by Eddy Current or Magnetic Method  
Preparation of Metallographic Specimens: Metallographic Mounts, Cross Sections  
Tension Testing of Metals:  
Percent Elongation, Reduction of Area, Tensile Strength, Tension Testing, Yield Strength, Modulus

**Test Method 1:**

ASTM E10  
ASTM E18  
ASTM E92  
ASTM E112  
ASTM E290  
ASTM E313  
ASTM E340  
ASTM E345  
ASTM E384  
ASTM E407  
ASTM E1004  
  
ASTM E1331  
ASTM E1348  
  
ASTM F606/F606M  
  
  
ASTM G151  
ASTM G154  
ASTM G195  
Chamber Manual  
  
  
FMVSS 206  
FMVSS 302  
IPC-A-600  
  
  
  
  
  
  
  
ISO 37  
ISO 48  
ISO 75-1, -2, -3  
ISO 178  
ISO 179-1  
ISO 180  
ISO 188  
ISO 306  
ISO 489  
ISO 527  
  
ISO 868  
ISO 1817  
ISO 2039-2  
ISO 3795

**Test Description:**

Brinell Hardness (Scales 500, 1500, 3000 kgf)  
Rockwell Hardness (Scales A, B, C, F, 15N, 30N, 15T, 30T)  
Vickers and Knoop Hardness of Metallic Materials  
Average Grain Size (Comparison Procedure & Intercept Method)  
Bend Testing (*except Guided Bend*)  
Yellowness Index  
Macroetching Metals and Alloys: Macrostructure  
Tension Testing of Metallic Foil: Tensile Strength, Yield Strength, Elongation  
Microindentation Hardness: Micro-Hardness (Scales Knoop & Vickers 25 to 500g)  
Microetching Metals and Alloys  
Electrical Conductivity by Electromagnetic (Eddy-Current) Method  
Conductivity of Solids (%IACS)  
Color by Spectrophotometry Using Hemispherical Geometry:  
Spectrophotometer, Color Matching, CIELAB, Reflectance  
Color by Spectrophotometry Using Hemispherical Geometry:  
Transmittance  
Mechanical Properties of Fasteners, Washers and Rivets  
(*except Single Shear, Cone Proof, Compression Load, and Embrittlement*):  
Product Hardness, Proof Load, Axial Tension, Wedge Tension, Embrittlement,  
Decarburization, Carburization  
UV Exposure: QUV Fluorescent Light Apparatus (General)  
UV Exposure: QUV Fluorescent Light Apparatus, Accelerated Weathering  
Wear Testing by Taber Abrader  
Environmental Simulation:  
Thermal Shock, Temperature and Humidity Cycling  
Best Range: (-73 to 1100) °C / (-100 to 2,000) °F  
Best Control:  $\pm 0.01$  °C,  $\pm 1\%$  Humidity (not available for all ranges)  
Door Latch Testing (*except Inertial Force Test*): Door Locks  
Flammability of Automotive Interior Materials (49 CFR 571.302): Burn Rate  
Acceptability of Printed Circuit Boards (All Sections)  
Solder Coatings: Solder Thickness  
Holes: Nodules, Voids, Lifted Lands, Surface Plating  
Solder Mask: Registration, Ball Grid Array (BGA), Adhesion  
Pattern Definition: Conductor Width, Conductor Spacing, Annular Ring  
Dielectric Materials: Dielectric Thickness, Etchback, Delamination, Blister  
Conductive Patterns: Surface Conductor Thickness, Foil Thickness  
Plated Through Holes (PTH): Copper Plating Thickness, Wicking, Vias,  
Cracks, Inner Layer Separation (IP Separation), Hole Wall Thickness  
Solderability: Thermal Stress, Solder Shock  
Tensile Properties of Rubber  
International Hardness (IRHD): Rubber Microhardness (Type M)  
Temperature of Deflection Under Load (DTUL, HDT)  
Flexural Properties: Flexural Strength, Flexural Modulus, Chord Modulus  
Charpy Impact Resistance  
Izod Impact  
Accelerated Aging and Heat Resistance  
Vicat Softening Temperature (VST)  
Refractive Index: Index of Refraction  
Tensile Properties: Tensile Strength, Tensile Elongation, Tensile Modulus,  
Poisson's Ratio, Chord Modulus  
Durometer Hardness (Scales A & D)  
Effects of Liquids: Fluid Resistance  
Rockwell Hardness (Scales L, R, M)  
Flammability of Interior Materials

**Test Method <sup>1</sup>:**

Microscope Manual  
SAE J419  
SAE J423  
SAE J1128  
SAE J2283  
SEM Manual  
UL 94

**Test Description:**

Light Microscopy: Image Analysis, Light Microscope, Optical Microscopy  
Decarburization  
Measuring Case Depth  
Primary Cable Testing (Abrasion Resistance Only)  
Wheel Nut Proof Test  
Scanning Electron Microscopy (SEM)  
Flammability (*except HBF Test*):  
Horizontal Burning Test (HB), 20 mm Vertical Burning Test (V-0, V-1, V-2),  
500 w (125 mm) Vertical Burning Test (5VA, 5VB),  
Thin Material Vertical Burning Test (VTM-0, VTM-1, VTM-2)

*Also using client/custom test methods directly related to the test methods and parameters listed above.*

*\*This laboratory's scope contains withdrawn or superseded methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.*

**Dimensional Testing <sup>2</sup>:**

Parameter/Equipment	Range	CMC <sup>3</sup> (±)	Comments
Linear <sup>4</sup> —  Work Piece Measurement	Up to 1.00 in	0.00022 in	Micrometer
	Up to 25.40 mm	0.0055 mm	
	Up to 12.00 in	0.0021 in	Caliper
	Up to 304.80 mm	0.053 mm	
	Up to 1.00 in	0.0010 in	Indicator
	Up to 25.40 mm	0.026 mm	

Parameter	Range	CMC <sup>3</sup> (±)	Comments
Linear <sup>4</sup> —  Work Piece Measurement (cont)	(0.061 to 1.00) in	0.001 in	Plug gage
	(1.55 to 25.40) mm	0.03 mm	

	Up to 36.00 in	0.02 in	Steel rule
	Up to 914.40 mm	0.5 mm	
	Up to 2.00 in	0.00033 in	Microscope
	Up to 50.80 mm	0.0084 mm	

**Mechanical:**

Parameter/Equipment	Range	CMC <sup>3</sup> (±)	Comments
Mass <sup>4</sup> —	0 to 1 g	0.0001 g	Micro-Gram Balance
	1 g to 50 g	0.0014 g	
	50 to 320 g	0.0028 g	Analytical Balance
	320 to 5000 g	4 g	Lab Balance
	5 to 45 kg	2.0%	Load Cell

<sup>1</sup> When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA R101 - *General Requirements-Accreditation of ISO-IEC 17025 Laboratories*.

<sup>2</sup> This laboratory offers commercial dimensional testing service only.

<sup>3</sup> Calibration and Measurement Capability (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine measurements of nearly ideal measurement standards or nearly ideal measuring equipment. Calibration and Measurement Capabilities 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 measurement 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 measurement.

<sup>4</sup> This test is not equivalent to that of a calibration.

*The laboratory is accredited for the test methods listed above. The accredited test methods are used in determining compliance with the material specifications listed below; however, the inclusion of these material specifications on this Scope does not confer laboratory accreditation to the material specifications. Inclusion of these material specifications on this Scope also does not confer accreditation for every method embedded within the specification. Only the methods listed above on this Scope are accredited.*

AMS: AMS2422, AMS2431, AMS2474, AMS2482, AMS2491, AMS2759, AMS3216, AMS3270, AMS3305, AMS3320, AMS3327, AMS3347, AMS3352, AMS3617, AMS3650, AMS3652, AMS3653, AMS3654, AMS3656, AMS3657, AMS3658, AMS3659, AMS3660, AMS3661, AMS3662, AMS3667, AMS3669, AMS3670, AMS3678, AMS4027, AMS4078, AMS4082, AMS4117, AMS4120, AMS4150, AMS4904, AMS4911, AMS5525, AMS5599, AMS5613, AMS5618, AMS5643, AMS5659, AMS5678, AMS5688, AMS5848, AMS6260, AMS6378, AMS6382, AMS6411, AMS6415, AMS6440, AMS7257, AMS7276, AMS7287, AMS-DTL-23053, AMS-QQ-A-200, AMS-QQ-A-225, AMS-QQ-A-250, AMS-QQ-S-763, AMS-R-25988, AMS-R-83485

ASTM: ASTM A29, ASTM A36, ASTM A106, ASTM A108, ASTM A194, ASTM A240, ASTM A276, ASTM A513, ASTM A582, ASTM A666, ASTM A681, ASTM A867, ASTM A967, ASTM B6, ASTM B16, ASTM B103, ASTM B152, ASTM B160, ASTM B162, ASTM B187, ASTM B194, ASTM B209, ASTM B211, ASTM B221, ASTM B333, ASTM B335, ASTM B348, ASTM B373, ASTM B438, ASTM B488, ASTM B637, ASTM B733, ASTM D1056, ASTM D1248, ASTM D1430, ASTM D1710, ASTM D2000, ASTM D3159, ASTM D3294, ASTM D3307, ASTM D3308, ASTM D3350, ASTM D3577, ASTM D3935, ASTM D3950, ASTM D4101, ASTM D4397, ASTM D4745, ASTM D4894, ASTM D4895, ASTM D4976, ASTM D5813, ASTM D5989, ASTM D6098, ASTM D6100, ASTM D6262, ASTM D6394, ASTM D6456, ASTM D6778, ASTM D6779, ASTM D7293, ASTM E1745, ASTM F15, ASTM F30, ASTM F67, ASTM F2831

Ford: Ford WSB-M2D280, Ford WSS-M2D476, Ford WSS-M4D731, Ford WSS-M4D854, Ford WSS-M4D993

IPC: IPC-A-600, IPC-6011, IPC-6012, IPC-6013

MIL: A-A-59136, A-A-59163, A-A-59588, FED-L-P-392, MIL-A-8625, MIL-A-46106, MIL-A-46146, MIL-C-5541, MIL-DTL-5541, MIL-DTL-25988, MIL-DTL-81706, MIL-DTL-85891, MIL-I-16923, MIL-I-24768, MIL-P-22241, MIL-P-46183, MIL-PRF-6855, MIL-PRF-15624, MIL-PRF-24712, MIL-PRF-32073, MIL-PRF-81733, MIL-R-8791, MIL-S-23190

Other: ANSI A14.5, AS7471, AS8660, AWWA D121, Chrysler MS-DB-75, Chrysler MS-DB-500, Chrysler PS-1207, GMW16607, IPC-A-600, Mercedes DBL-5416, Mercedes DBL-5418, FMVSS 206, FMVSS 302, ISO 898, ISO 20795, NYCT-61, ROHS, USPS-T-3204, WEEE, ROHS

SAE: SAE J20, SAE J188, SAE J200, SAE J429, SAE J431, SAE J434, SAE J454, SAE J1127, SAE J1128, SAE J1199, SAE J1677, SAE J2045, SAE J2283

UL: 746A, 746B, 746C



## Accredited Laboratory

A2LA has accredited

**ADVANCED PLASTIC AND MATERIAL TESTING, INC.**

*Ithaca, NY*

for technical competence in the field of

**Mechanical Testing**

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 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 15<sup>th</sup> day of November 2022.

A blue ink signature of Mr. Trace McInturff.

Mr. Trace McInturff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 0326.01  
Valid to November 30, 2024

*For the types of tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.*