



THE AMERICAN ASSOCIATION FOR
LABORATORY ACCREDITATION

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 17025:2005 *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 18 June 2005*).



Presented this 24th day of November 2008.

A handwritten signature in black ink, appearing to read "Peter Abney".

President

For the Accreditation Council

Certificate Number 0326.01

Valid to November 30, 2010

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

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

ADVANCED PLASTIC AND MATERIAL TESTING, INC.
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MECHANICAL

Valid To: November 30, 2010

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 adhesives, air bags, automotive products, cable, circuit boards, coatings, composites, contaminants, fasteners, films, fluid, fuel, gaskets, labels, lubricants, metal, metal alloys, mirrors, oil, packaging, paint, petroleum products, pipe, plastic, platings, polymers, powder metal, rubber, sealants, solutions, tape and wire:

<u>Test Method</u>	<u>Test Description</u>
AATCC EP1	Gray Scale for Color Change
ANSI Z26.1	Safety Glazing Materials (Abrasion Resistance Only)
ASM Handbook	Failure Analysis and Prevention: Fractography, Corrosion Analysis, Fracture Examination, Metallographic Mounts, Microstructure, Microstructural Analysis, Metallography
ASME B46.1	Surface Texture: Surface Roughness, Waviness and Lay
ASTM A90	Zinc Coating Weight on Steel Articles
ASTM A247	Microstructure of Graphite in Iron Castings
ASTM A370	Mechanical Testing of Steel Products (Except Impact): Tension, Bend, Brinell Hardness, Rockwell Hardness
ASTM B117	Salt Spray (Fog) Apparatus Operation: Corrosion Resistance
ASTM B487	Coating Thickness by Microscopical Examination of a Cross Section
ASTM B557	Tensile Properties of Aluminum and Magnesium Alloys
ASTM B568	Coating Thickness by X-Ray Fluorescence (XRF): Plating Thickness
ASTM B571	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	Microhardness of Coatings: Knoop, Vickers
ASTM B678	Solderability of Coated Products
ASTM B748	Coating Thickness by Scanning Electron Microscope (SEM)
ASTM C724	Acid Resistance of Ceramic Decorations on Architectural-Type Glass
ASTM D115	Solvent Containing Varnishes (Dielectric Strength)
ASTM D149	Dielectric Breakdown Voltage and Dielectric Strength (100 kV Maximum)
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 D395	Compression Set (Method B)

<u>Test Method</u>	<u>Test Description</u>
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 D522	Mandrel Bend Test of Coatings (Method B)
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 Resistance, Oxidative Aging, Accelerated Aging, Thermal Aging
ASTM D575	Rubber Properties in Compression: Compression Deflection
ASTM D610	Evaluating Degree of Rusting on Painted Steel Surfaces
ASTM D618	Conditioning Plastics
ASTM D624	Tear Strength: Tear Resistance
ASTM D638	Tensile Properties: Modulus of Elasticity, Percent Elongation, Tensile Strength, Poisson's Ratio, Yield Strength, Young's Modulus
ASTM D648	Heat Deflection Temperature (HDT, DTUL) (Method B)
ASTM D695	Compressive Properties: Compressive Strength, Compressive Modulus
ASTM D732	Shear Strength by Punch Tool
ASTM D785	Rockwell Hardness of Plastics
ASTM D790	Flexural Properties: Flexural Strength, Flexural Modulus
ASTM D865	Deterioration by Heating in Air: Heat Aging, Heat Resistance
ASTM D877	Dielectric Breakdown Voltage of Insulating Liquids: Dielectric Strength
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
ASTM D1003	Luminous Transmittance and Haze (Procedure B)
ASTM D1004	Initial Tear Resistance
ASTM D1044	Surface Abrasion of Transparent Plastics
ASTM D1308	Effect of Household Chemicals on Organic Finishes
ASTM D1414	Rubber O-Ring Testing (Except Low Temperature Test, Mold Shrinkage)
ASTM D1415	International Hardness (IRHD): Rubber Microhardness
ASTM D1525	Vicat Softening Temperature (VST)
ASTM D1599	Pressure Testing of Pipe, Tubing, and Fittings
ASTM D1654	Evaluation of Painted or Coated Specimens after Corrosive Environments: Corrosion Creepback, Blistering, Corrosion, Creepage
ASTM D1708	Tensile Properties by Microtensile Specimens
ASTM D1709	Impact Resistance of Film: Dart Drop Impact
ASTM D1781	Climbing Drum Peel: Peel Strength
ASTM D1876	Peel Resistance: T-Peel Test
ASTM D1894	Coefficient of Friction: Kinetic Friction, Static Friction
ASTM D2122	Dimensions of Pipe
ASTM D2197	Scrape Adhesion
ASTM D2240	Durometer Hardness (Scales A and D): Shore Hardness, Indentation Hardness
ASTM D2244	Instrumentally Measured Color Differences: CIELAB, Color Matching
ASTM D2583	Barcol Hardness
ASTM D2616	Visual Difference by Gray Scale

<u>Test Method</u>	<u>Test Description</u>
ASTM D2732	Shrinkage of Plastic Film
ASTM D2794	Impact Resistance of Coatings
ASTM D2863	Limiting Oxygen Index (LOI)
ASTM D2990	Creep Testing: Creep-Rupture, Tensile Creep, Flexural Creep, Compressive Creep
ASTM D3012	Thermal Oxidative Stability: Biaxial Rotator
ASTM D3167	Floating Roller Peel
ASTM D3354	Blocking Load of Film by Parallel Plate Method (Method B)
ASTM D3359	Measuring Adhesion by Tape Test: Coating Adhesion, Tape Adhesion
ASTM D3363	Pencil Hardness
ASTM D3574	Flexible Cellular Materials, Urethane Foam (Tests A, B1, C-F, I1, K, L): Density, Indentation Force Deflection (IFD), Compression Force Deflection, Compression Set, Tear Resistance, Static Force Loss, Dry Heat Aging, Wet Heat Aging
ASTM D3950	Nonmetallic Strapping
ASTM D4060	Abrasion Resistance by Taber Abraser: Taber Abrasion, Wear Index
ASTM D4329	UV Exposure of Plastics: QUV
ASTM D4587	UV Exposure of Coatings: QUV
ASTM D5420	Impact Resistance by Falling Weight: Gardner Impact
ASTM D6110	Charpy Impact Resistance of Notched Plastics
ASTM E3	Preparation of Metallographic Specimens
ASTM E8	Tension Testing of Metals: Percent Elongation, Reduction of Area, Tensile Strength, Tension Testing, Yield Strength, Modulus
ASTM E10	Brinell Hardness
ASTM E18	Rockwell Hardness
ASTM E92	Vickers Hardness (1 kg Maximum Load)
ASTM E112	Average Grain Size (Comparison Method)
ASTM E290	Bend Testing (Except Guided Bend)
ASTM E384	Microindentation Hardness: Micro-Hardness, Knoop Hardness, Vickers Hardness
ASTM E407	Microetching Metals and Alloys (Microstructural Analysis)
ASTM E1003	Hydrostatic Leak Testing (Except Ultrasonic Test): Pressure Test
ASTM E1004	Electrical Conductivity by Electromagnetic (Eddy-Current) Method
ASTM E1331	Color by Spectrophotometry Using Hemispherical Geometry: Spectrophotometer, Color Matching, CIELAB, Reflectance
ASTM E1348	Color by Spectrophotometry Using Hemispherical Geometry: Transmittance
ASTM F606, F606M	Mechanical Properties of Fasteners, Washers and Rivets (Except Single Shear, Cone Proof, and Compression Load): Product Hardness, Proof Load, Axial Tension, Wedge Tension, Embrittlement, Decarburization, Carburization
ASTM F2328, F2328M	Decarburization and Carburization in Threaded Fasteners
ASTM G151	UV Exposure: QUV Fluorescent Light Apparatus
ASTM G154	UV Exposure: QUV Fluorescent Light Apparatus
Chamber Manual	Environmental Simulation: Thermal Shock, Temperature and Humidity Cycling Best Range: -73° C to 1100° C / -100° F to 2000° F Best Control: ± 0.01° C, ± 1% Humidity (not available for all ranges)
FLTM B1104-01	Water Immersion
FLTM B1106-01	Paint Adhesion Test: Tape Adhesion
FMVSS 111	Radius of Curvature (49 CFR 571.111)
FMVSS 302	Flammability of Interior Materials (49 CFR 571.302)

<u>Test Method</u>	<u>Test Description</u>
GM 3661P	Hydrogen Embrittlement
GM 4298P	Salt Spray Test: Corrosion Resistance
GM 9070P	Flammability of Interior Materials
ISO 75	Temperature of Deflection Under Load (DTUL, HDT)
ISO 178	Flexural Properties: Flexural Strength, Flexural Modulus
ISO 179	Charpy Impact
ISO 180	Izod Impact
ISO 188	Accelerated Aging and Heat Resistance
ISO 306	Vicat Softening Temperature (VST)
ISO 527	Tensile Properties: Tensile Strength, Tensile Elongation, Tensile Modulus, Poisson's Ratio, Chord Modulus
ISO 3795	Flammability of Interior Materials
Microscope Manual	Light Microscopy: Image Analysis, Light Microscope, Optical Microscopy
SAE J369	Flammability of Interior Materials
SAE J419	Decarburization
SAE J423	Measuring Case Depth
SAE J964	Reflectivity of Mirrors
SAE J1127	Battery Cable Testing (Except Ozone): Outside Diameter, Wall Thickness, Winding, Strand Coating, Solderability, Mechanical Properties, Dielectric, Cold Bend, Resistance to Flame Propagation, Fluid Compatibility, Resistance to Hot Water, Insulation Volume Resistivity, Temperature and Humidity Cycling
SAE J1128	Primary Cable Testing (Except Ozone): Outside Diameter, Wall Thickness, Winding, Strand Coating, Solderability, Mechanical Properties, Dielectric, Cold Bend, Resistance to Flame Propagation, Fluid Compatibility, Resistance to Pinch, Resistance to Sandpaper Abrasion, Crosslinking, Strip Force, Resistance to Hot Water, Insulation Volume Resistivity, Temperature and Humidity Cycling
SAE J1545	Instrumental Color Difference
SAE/USCAR-1	Salt Spray Testing of Fasteners
SEM Manual	Scanning Electron Microscopy (SEM)
Shock Manual	Shock, Mechanical
UL 94	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)
Vibration	Vibration Testing 2 to 6250 Hz, 0 to 214 g Acceleration Sine and Random

Dimensional Testing

Parameter	Range	Best Uncertainty* (\pm)	Technique
Linear	(0 to 1.00000) in (0 to 25.400) mm	0.00010 in 0.003 mm	Micrometer
	(0 to 8.0000) in (0 to 203.20) mm	0.0008 in 0.02 mm	Caliper
	(0 to 1.00000) in (0 to 25.400) mm	0.00082 in 0.021 mm	Dial Indicator
	(0.061 to 0.500) in (1.55 to 12.70) mm	0.001 in 0.03 mm	Plug Gage
	(0 to 24.000) in (0 to 609.60) mm	0.010 in 0.25 mm	Pi Tape
	(0 to 36.00) in (0 to 914.4) mm	0.01 in 0.2 mm	Steel Rule
	(0 to 2.00000) in (0 to 50.000) mm	0.00005 in 0.001 mm	Measuring Microscope

*“Best Uncertainty” is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine inspections of nearly ideal measurement standards with nearly ideal measuring equipment. Best uncertainties represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The best uncertainty of a specific test performed by the laboratory may be greater than the best uncertainty due to the behavior of the customer’s test piece, to the environment (if the dimensional inspection is performed in the field) and to influences from the circumstances of the specific test.

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: 2374, 2422, 2423, 2431, 2491, 3195, 3196, 3216, 3218, 3222, 3270, 3302, 3303, 3320, 3325, 3326, 3347, 3352, 3356, 3581, 3586, 3608, 3609, 3611, 3612, 3615, 3617, 3628, 3648, 3650, 3651, 3652, 3653, 3656, 3658, 3659, 3660, 3666, 3667, 3669, 3670, 3690, 3711, 3824, 4001, 4025, 4027, 4035, 4082, 4117, 4120, 4500, 4530, 4610, 4650, 4902, 4911, 4945, 5022, 5024, 5069, 5120, 5121, 5336, 5504, 5510, 5513, 5514, 5516, 5518, 5528, 5529, 5537, 5542, 5544, 5557, 5560, 5561, 5570, 5576, 5581, 5590, 5596, 5599, 5604, 5610, 5613, 5620, 5630, 5639, 5640, 5643, 5645, 5646, 5653, 5659, 5662, 5666, 5678, 5687, 5689, 5906, 6260, 6300, 6415, 6512, 6532, 7259, 7273, 7276, DTL-23053, QQ-A-200, QQ-A-225, QQ-A-250, QQ-S-763

ANSI: A14.5

ASTM: A29, A108, A109, A167, A176, A203, A204, A240, A242, A276, A307, A314, A322, A473, A479, A480, A484, A505, A506, A564, A568, A635, A946, A980, B16, B19, B30, B36, B209, B211, B221, B301, B488, B633, B840, B927, C581, C881, D706, D707, D787, D788, D1201, D1248, 1430, D1562, D1710, D1784, D2000, D2116, D3159, D3222, D3275, D3294, D3295, D3296, D3307, D3350, D3595, D3679, D3915, D3935, D3950, D3965, D4000, D4020, D4066, D4067, D4101, D4181, D4203, D4216, D4349, D4396, D4441, D4474, D4507, D4549, D4617, D4634, D4673, D4745, D4802, D4894, D4895, D4976, D5021, D5046, D5138, D5203, D5204, D5205, D5260, D5336, D5436, D5476, D5510, D5575, D5593, D5675, D5676, D5857, D5927, D5990, D6098, D6314, D6338, D6339, D6358, D6394, D6456, D6457, D6585, D6778, D6779, D6835, DS-561, F949, F964, F1216, F1504

Chrysler: MS-DB41, MS-DB100, MS-DB195, PS-5873, PS-8955

Delphi: ES-C836, ES-M2170, ES-M3197

Ford: ES-XU5T-14A099-AA, WSB-M10-P10, WSB-M12P2, WSB-M26G7/G8, WSB-M2D280, WSK-M4D702, WSS-M1P83, WSS-M21P17, WSS-M4D951, WSS-M4D993, WSS-M99P6

GM: 3626M, 4345M, 4350M, 4497M, 6090M, 6121M, 7001M, GMP.PA66.008, GMP.PA66.009, GMP.PE.003, GMP.PE.050, GMP.PE.059, GMP.PE.064, GMP.POM.016, GMP.PP.008, GMP.PP.032, GMP.PP.039, GMP.PP.063, GMP.PP.067, GMP.PP.075, GMP.UP.007, GMW3044, GMW4700

SAE: HS-1086, J30, J200, J403, J404, J405, J429, J431, J434, J435, J452, J457, J461, J463, J470, J515, J844, J995, J1127, J1128, J1199, J1639

UL: 746A, 746B, 746C

UNS: A01001 to A98280, C10100 to C99750, D40450 to D61440, F10001 to F47006, G10050 to G98500, H10380 to H94301, J01700 to J95705, K00040 to K95100, N01001 to N99810, S13800 to S70003, T11301 to T91907

USPS: C820

Also, client or custom specifications directly related to the testing technologies listed above.