SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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MECHANICAL

Valid To: January 31, 2026 Certificate Number: 1888.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following mechanical, metallurgical and environmental simulation tests on metallic and polymeric materials:[1]

Test	Test Method(s):
Metallic Materials Testing	
Mechanical	
Tensile Testing	ASTM E8, A370, B557; EN895; EN ISO 4136; ISO 6892
Young's Modulus, Tangent Modulus, and Chord Modulus	ASTM E111
Fastener Testing, Tensile (Axial/Wedge), Proof	ASTM F606/F606M; SAE J429
Fractured Toughness	ASTM E1290, E1820, E399
Notched Bar (Charpy) Impact	ASTM E23, A370; EN 10045-1; ISO 148-1; EN ISO 9016
Bend Testing	ASTM E290, A370, EN910; EN ISO 5173
Rockwell Hardness of Metallic Materials (15N, 30N, 45N, 15T, 30T, 45T, A, B, C)	ASTM E18, A370
Brinell Hardness of Metallic Materials (10 mm – 3000 kg, 1500 kg, 1000 kg, 500 kg)	ASTM E10, A370; ISO 6506-1

Test	Test Method(s):
Microhardness of Materials (HK-500 g, 100 g) (HV 1000 g, 500 g, 100 g)	ASTM E384, E92; EN 1043-2; EN ISO 9015-2; ISO 6507-2
Vickers Macrohardness (HV-5000 g, 10 000 g)	ASTM E92; EN 1043-1; ISO 6507-1; EN ISO 9015-1
Leeb Hardness	ASTM A956
Metallographic Analysis	
Case Depth (Optical and Effective)	ATS MAT-P-905; SAE J423; ASM HBK, Vol 9 (9th edition), Vol 7 (8th edition)
Decarburization Depth	ASTM E1077
Ferrite Percent in Stainless Steels	ASTM E562
Grain Size	ASTM E112
Image Analysis	ASTM E1245
Inclusion Evaluation	ASTM E45, E3
Microstructure of Graphite in Iron	ASTM A247
Welding and Joining Evaluation	
Macroscopic and Microscopic Examination of Welds	EN 1321
Weld and Braze Evaluation and Qualification	AMS-STD-1595; API 1104; ASME Sec. III, VIII, IX; AWS B2.1/B2.1M, B2.2/B2.2M , D1.1/D1.1M, D1.2/D1.2M, D1.3/D1.3M, D1.4/D1.4M, AASHTO AWS D1.5/D1.5M, D1.6/D1.6M, D1.9/D1.9M, D9.1/D9.1M, D14.1/D14.1M, D14.3/D14.3M, D14.4/D14.4M, D14.6/D14.6M, D15.1/D15.1M, D17.1/D17.1M, D17.2/D17.2M, D17.3/D17.3M, D3.6, D18.1/D18.1M; ISO 15614-1; BS EN287-1, BS EN 288-8, BS EN 1418, BS EN 287-2 (Canceled 12/17/04)[3], DIN-EN 15085-2, EN ISO 15613, EN ISO 15614-2, EN ISO 15614-8, EN ISO 15614-11, EN ISO 9606-1, EN ISO 9606-2, EN ISO 9606-3, EN ISO 9606-4; MIL-STD-248D, MIL-STD-1595A, MIL-STD-2219, NAVSEA S9074-AQ-GIB-010/248; NACE MR0175/ISO15156-1, 15156-2, 15156-3; NACE MR0103; NACE SP0472

Test	Test Method(s):
Structural Evaluation	
ICC Buckling Test for Cold Formed Assembled Columns	ATS MAT-P-1211
ICC Four Point Bend Testing of Composite Concrete Beams	ATS MAT-P-1210
Metallic Coatings	
Metal and Oxide Coating Thickness	ASTM B487, B748 (SEM)
Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings	ASTM A90
Seal Quality of Anodic Coatings on Aluminum by Acid Dissolution	ASTM B680
Corrosion Testing	
IGA Susceptibility	ASTM A262
Pitting and Crevice Corrosion Resistance	ASTM G48 (Methods A, C, and D)
Failure Analysis	
Failure Investigation	ATS MAT-P-931, ATS MAT-P-949, ATS MAT-P-959, ASM HBK Vol.11 and the testing on accreditation scopes 1888.01, 1888.02 & 1888.04
SEM/EDS	ATS MAT-P-914; MAT-P-915; ASTM E1508
Conductivity Measurement	ASTM E1004
Non-metallic Materials	
Rockwell Hardness, Plastics (HRR, HRM)	ASTM D785; ISO 2039-2
Durometer (Shore A & D)	ASTM D2240; DIN 53505
Tensile Properties of Plastics	ASTM D412, D638; ISO 527-1; DIN 53504
Flexural Properties	ASTM D790; ISO 178
Izod Impact (Method A)	ASTM D256
Tear Resistance	ASTM D624, method B, C

Test	Test Method(s):
Environmental	
Salt Spray / Corrosion	
Cyclic Salt Spray	ASTM G85 (Appendix 1, 2, 3, 5); MIL-STD-810H (Method 509); SAE J1563; CETP 00.00-L-467; FLTM BI 103; GM 9540P, GMW 14872, GMW 3172, GM 4298P; ISO 11997 (Part 2, Part 5, Part 6)
CASS	ASTM B368
Filiform Corrosion	ASTM D2803; DIN 3665
Neutral Salt Spray	ASTM B117; DIN EN ISO 9227; DIN 50021; ISO 7253; MBN 10494
Temperature / Humidity	MIL-STD-810H (Method 501, 502, 507); GM 9505P2; BMW TS 308; PrV303; ISO 2440; IEC 60068-2-30
Shock, Vibration and Dynamics	
Shock & Vibration Single Axis, with Slip Table 20 000 lbf shock 12 000 lbf (5 to 2000) Hz Sine and Random 2 in peak to peak	Customer Profiles MIL-STD-810H (Method 514, 516); IEC 60068-2-27; IEC 60068-2-31, 60068-2-64; RTCA/DO-160 (Sections 7 & 8)
Seismic Testing	IEEE 344; GR-63-CORE; AC-156
Ingress Protection	
Solids: Water: IPX8 IPX7 IP6X IPX6 IP5X IPX5 IP4X IPX4 IP3X IPX3 IP2X IPX2 IP1X IPX1	IEC60529

Test	Test Method(s):
Environmental Exposure	
Altitude and Decompression Testing	MIL-STD-810 (Method 500) Procedure I, II & III; MIL-STD-202 (Method 105, 205)
Solar Testing	MIL-STD-810H (Method 507); DIN 75220
Blowing rain, dripping rain	MIL-STD-810H (Method 506)
Xenon Testing	ASTM G155, ASTM D2565, ASTM D4355, ASTM D4459, ASTM D6695, ASTM D7869; SAE J2527, J1885, J2412; ISO 4892-2; VDA 75202; FLTM BO 116-01; GMW 3414, GMW 14162; ISO 105-B02, 105-B04; PV 3929 (Florida), PV 3930 (Kalahari), PV 1303; JIS D 0205 Sections 1-6, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 7.8, 7.9, 7.10, 8-9; AATCC Test Method 169
UV Testing	ASTM G154, ASTM D4329, ASTM D4587, ASTM D5894; ISO 4892-3, ISO 11507; SAE J2020
Fogging	DIN 75201; PV 3015
Odor	VDA 270
Organic Emissions of Non-Metallic Materials for Automobile (Marks Instrumentation)	VDA 278
Flammability	
Flammability of Interior Materials	DIN 75200; FMVSS 302; HES C206, HES D6003; GMW 3232 (GM); GB 8410 (Chinese standard); BN 024-02 (Ford); 49CFR 571.302 (US standard); GS 97038 (BMW); DBL 5307 (Mercedes); TSM 0550G (Toyota); STD 104-0001 (Volvo); TL 1010 (VW); ISO 3795 (European standard)
Flammability of Clothing Textiles	16 CFR 1610; ASTM D1230
Flammability of Plastic Materials	UL 94
Flammability of Toys	ASTM F963-17-Section A5
Color / Gloss Testing	
Color	ASTM D2244, ASTM D4674; ISO 7724, ISO 3668
Specular Gloss	ASTM D523; ISO 2813

Test	Test Method(s):
Paint/Coating Testing	
Pencil Hardness	ASTM D3363
Tape Adhesion	ASTM D3359; FLTM BI 106; GM 9502P[3]; ISO 2409
Coating Impact (Gardner)	ASTM D2794; ISO 6272-1
Immersion in Liquids (Paints & Varnishes)	ISO 2812-1, -2, -3, -4, -5
Taber Abrasion	ASTM D4060
Coating Mass on Anodically Coated Aluminum	ASTM B137
Coating Thickness	ASTM D7091
Degradation of Coatings	ISO 4628 (Part 1, Part 2, Part 3, Part 4, Part 8)
Humidity (Condensing)	ASTM D2247, D4585, ASTM D1735; GM 4465P[3]; ISO 6270-2
Stone Chipping Resistance / Gravelometer	ASTM D3170; SAE J400; DIN ISO 20567-1, Part 1
Coating for automotive industry - pressure-water jetting	DIN 55662; DIN EN ISO 16925
CPSC Testing[1]	
Small Parts Testing	16 CFR 1500, 16 CFR 1501
Toy Chests	ASTM F834-08, ASTM F963-17 Section 4.41, 8.27, ASTM F963-23 Section 4.41, 8.27
Toy Chest Lids and Closures	ASTM F963-17 Section 8.27.1, ASTM F963-23 Section 8.27.1
Sound Producing Toys	ASTM F963-17 Section 4.5, 8.20, ASTM F963-23 Section 4.5, 8.20
Small Objects	ASTM F963-17 Section 4.6, ASTM F963-23 Section 4.6
Accessible Edges	ASTM F963-17 Section 4.7, ASTM F963-23 Section 4.7; 16 CFR 1500.49
Projections	ASTM F963-17 Section 4.8, ASTM F963-23 Section 4.8
Accessible Points	ASTM F963-17 Section 4.9, ASTM F963-23 Section 4.9; 16 CFR 1500.48

Test	Test Method(s):
Wires or Rods	ASTM F963-17 Section 4.10, 8.12, ASTM F963-23 Section 4.10, 8.12
Nails and Fasteners	ASTM F963-17 Section 4.11, ASTM F963-23 Section 4.11
Folding Mechanisms and Hinges	ASTM F963-17 Section 4.13, ASTM F963-23 Section 4.13
Cords, Straps, and Elastics	ASTM F963-17 Section 4.14, 8.23, ASTM F963-23 Section 4.14, 8.23
Stability and Overload Requirements	ASTM F963-17 Section 4.15, 8.15, 8.28, ASTM F963-23 Section 4.15, 8.15, 8.28
Confined Spaces	ASTM F963-17 Section 4.16, ASTM F963-23 Section 4.16
Wheels, Tires, and Axles	ASTM F963-17 Section 4.17, 8.11, ASTM F963-23 Section 4.17, 8.11
Holes, Clearances, and Accessibility of Mechanisms	ASTM F963-17 Section 4.18, ASTM F963-23 Section 4.18
Simulated Protective Devices	ASTM F963-17 Section 4.19, ASTM F963-23 Section 4.19
Pacifiers	ASTM F963-17 Section 4.20, ASTM F963-23 Section 4.20
Toy Pacifiers	ASTM F963-17 Section 4.20.2, ASTM F963-23 Section 4.20.2
Projectile Toys	ASTM F963-17 Sections 4.21.2.3, 4.21.2.6, 4.21.3.3, 4.21.4, ASTM F963-23 Sections 4.21.2.3, 4.21.2.6, 4.21.3.3, 4.21.4
Teethers and Teething Toys	ASTM F963-17 Section 4.22, ASTM F963-23 Section 4.22
Rattles	ASTM F963-17 Section 4.23, ASTM F963-23 Section 4.23
Squeeze Toys	ASTM F963-17 Section 4.24, ASTM F963-23 Section 4.24
Battery Operated Toys	ASTM F963-17 Section 4.25, 8.17, 8.18, 8.19, ASTM F963-23 Section 4.25, 8.17, 8.18, 8.19
Toys Intended to be Attached to a Crib or Playpen	ASTM F963-17 Section 4.26, ASTM F963-23 Section 4.26
Stuffed and Beanbag-Type Toys	ASTM F963-17 Section 4.27, 8.9.1, ASTM F963-23 Section 4.27, 8.9.1

Test	Test Method(s):
Toy Gun Marking	ASTM F963-17 Section 4.30, ASTM F963-23 Section 4.30
Certain Toys with Spherical Ends	ASTM F963-17 Section 4.32, ASTM F963-23 Section 4.32
Pompoms	ASTM F963-17 Section 4.35, 8.16, ASTM F963-23 Section 4.35, 8.16
Hemispherical-Shaped Objects	ASTM F963-17 Section 4.36, ASTM F963-23 Section 4.36
Yo-Yo Elastic Tether Toys	ASTM F963-17 Section 4.37, 8.23, ASTM F963-23 Section 4.37, 8.23
Magnets	ASTM F963-17 Section 4.38, 8.24, ASTM F963-23 Section 4.38, 8.24
Jaw Entrapment in Handles and Steering Wheels	ASTM F963-17 Section 4.39, ASTM F963-23 Section 4.39
Overload of Ride-On Toys and Toy Seats	ASTM-F963-17 Section 8.28, ASTM-F963-23 Section 8.28
Pacifier Testing	16 CFR 1511
Rattle Testing	16 CFR 1510
Battery Compartment Securement Options	16 CFR 1263 - UL-4200A Section 5.5–5.6
Accessibility Test	16 CFR 1263 - UL-4200A Section 5.3–5.4
Preconditioning in Oven	16 CFR 1263 - UL-4200A Section 6.2.1
Simulated Battery Replacement	16 CFR 1263 - UL-4200A Section 6.2.2
Drop Test	16 CFR 1263 - UL-4200A Section 6.3.2
Impact Test	16 CFR 1263 - UL-4200A Section 6.3.3
Crush Test	16 CFR 1263 - UL-4200A Section 6.3.4
Compression Test	16 CFR 1263 - UL-4200A Section 6.3.4A
Torque Test	16 CFR 1263 - UL-4200A Section 6.3.4B
Tension Test	16 CFR 1263 - UL-4200A Section 6.3.4C
Probe for Accessibility	16 CFR 1263 - UL-4200A Section 6.3.5

Test	Test Method(s):
European Toy Safety	
Mechanical and Physical Properties	EN-71: Part 1 § 8.2–8.14, 8.16–8.20, 8.23, 8.24, 8.27, 8.28 (*excluding earphones*), 8.30 – 8.34.2, 8.35
Personal Transport Vehicle Testing	
Brake Performance	ANSI/OPEI Z135 8.8.4 - 2020
Static Stability	ANSI/OPEI Z135 8.8.3 - 2020
Maximum PTV Speed	ANSI/OPEI Z135 8.8.1 - 2020
Occupant Hand Hold	ANSI/OPEI Z135 8.7.3 - 2020
Main Power Switch	ANSI/OPEI Z135 8.4.6 - 2020
Hazardous Parts	ANSI/OPEI Z135 8.7.7 - 2020
Lights	ANSI/OPEI Z135 8.5.1 - 2020
Identification Number	ANSI/OPEI Z135 8.1 – 2020
Noise	Club Car GL-0032
Mirrors	ANSI/OPEI Z135 8.6.2 – 2020 ; SAE J268 Sections 4.1 & 4.2 – AUG2016

[1]The Consumer Product Safety Improvement Act (CPSIA) requires that every children's product subject to a federal consumer product safety requirement be tested by a Consumer Product Safety Commission (CPSC) accepted laboratory for compliance with the applicable federal children's product safety requirements. Accreditation by A2LA does not infer acceptance by the CPSC. Please verify this organization's acceptance status by using the CPSC's searchable database, located at http://www.cpsc.gov/cgi-bin/labsearch/.

[2] Tests also performed in accordance with customer and industry standards directly related to the above listed testing parameters.

[3] 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.

Accredited Laboratory

A2LA has accredited

APPLIED TECHNICAL SERVICES, LLC

Marietta, GA

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 25th day of April 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1888.01
Valid to January 31, 2026

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