SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

IIA LAB SERVICES, LLC – ST. LOUIS
2810 Clark Avenue
St. Louis, MO 63103
Don Baumer Phone: 314 531 8080

CHEMICAL

Valid To: August 31, 2025 Certificate Number: 397.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory for tests on the following products and materials: steel, stainless steel, aluminum and alloys, brass and bronze, copper and alloys, titanium, zinc coating, nickel and cobalt alloys, polymers, paint, metallic coatings, polymer coatings, glass and ceramic materials[1].

Test Technologies	**Test Method(s)**
ICP-AES (Alloys and Lead)	ASTM F963 (Section 4.3.5.1(2)), ASTM E1613, ASTM E2594; ICP-SLTL-002 (Rev. 1)[2]; 16 CFR Part 1303; CPSC-CH-E1001-08, CPSC-CH-E1002-08, CPSC-CH-E1003-09
Gas Chromatography Mass Spectrometry	CPSC-CH-C1001-09.4; 16 CFR Part 1308
X-Ray Fluorescence Spectroscopy (XRF, PMI)	ASTM E2119, ASTM E572; 16 CFR Part 1303
Optical Emission Spectroscopy of Steel Alloys, Stainless Steels, Cast Iron, Aluminum Alloys (Al, Ar, B, Be, Bi, Bo, C, Ca, Co, Cr, Cu, Fe, Ga, Li, Mg, Mn, Mo, N, Na, Nb, Ni, P, Pb, S, Sb, Si, Sn, Sr, Ti, V, Zn, Zr)	ASTM E415, ASTM E1086, ASTM E1999, ASTM E1251

[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] In-house method using modified ASTM E2594.

Test Technologies	**Test Method(s)**
Standard Test Method for Analysis of High Manganese Steel by Spark Atomic Emission Spectrometry	ASTM D2209
Standard Practice for Sampling of Zinc and Zinc Alloys for Analysis by Spark Atomic Emission Spectrometry	ASTM E634
Standard Test Method for Analysis of Nickel Alloys by Spark Atomic Emission Spectrometry	ASTM E3047
Standard Test Method for Analysis of Titanium and Titanium Alloys by Spark Atomic Emission Spectrometry and Glow Discharge Atomic Emission Spectrometry (Performance-Based Method	ASTM E2994
Standard Test Methods for Chemical Analysis of Copper Alloys	ASTM E478
Combustion Analysis (C and S)	ASTM E1019
Standard Test Method for Ignition Loss of Cured Reinforced Resins	ASTM D2584
SEM/EDS	ASTM E1508
Fourier Transform Infrared Spectroscopy	ASTM E1252
Thermographic Analysis	ASTM D6370
Differential Scanning Calorimetry	ASTM D3418
Cathodic Disbondment	ASTM G95
Coating Permeability	ASTM E96/E96M
Coating Adhesion	ASTM D4541
Soluable Migrated Elements	ASTM F2075 (Sections 4.5.2 and 8)
Soluble Element Test	ASTM F963-17 (Sections 4.3.5.1 (2), 4.3.5.2, and 8.3)
pH	ASTM D1293; SM 4500H + B, 19th Ed.
Lead in Drinking Water	EPA 200.8
Standard Practice for Proof Silver Corrections in Metal Bearing Ores, Concentrates, and Related Materials by Fire Assay Gravimetry	ASTM E2994

Test Technologies	**Test Method(s)**
Turbidity	SM 2130B, 23rd Ed.

Accredited Laboratory

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IIA LAB SERVICES, LLC – ST. LOUIS

St. Louis, MO

for technical competence in the field of

Chemical 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 3rd day of October 2023.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 397.01
Valid to August 31, 2025
Revised July 21, 2025

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

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

IIA LAB SERVICES, LLC – ST. LOUIS
2810 Clark Avenue
St. Louis, MO 63103
Don Baumer Phone: 314 531 8080

MECHANICAL

Valid To: August 31, 2025 Certificate Number: 397.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on metallic and non-metallic materials:

Test Technologies	**Test Method(s)**
Tension (Up to 120 000lbf) (Ambient/Room Temperature) (Up to 120 000 lbf) (Elevated Temperature to 1000 °C)	ASTM A370, ASTM B557, ASTM D412, ASTM D638, ASTM E8/E8M, ASTM E21, ASTM F606/F606M; ASME SA370 ASTM E21
Impact Charpy Gardner Izod	 ASTM E23, ASTM A370; API 5L 1104; ASME (Section IX QW-140); AWS B2.1/B2.1M (Section 4.7.7), AWS D1.1/D1.1M (Section 6, Part D), AWS D1.5/D1.5M (Section 7.18.5); EN 10045-1 ASTM D2794 ASTM D256
Tear Strength	ASTM D624 (Sections 4.2.2, 4.2.3 and 4.2.4)
Flexural Properties	ASTM D790
Metallographic Evaluation Inclusion Content Graphite in Cast Iron Decarburization Grain Size Case Depth Plating Thickness	 ASTM E45 (Method A) ASTM A247 ASTM E1077 (Sections 7.2, 7.3 and 7.4); SAE J419 (Sections 4.1 and 4.2) ASTM E112 (Section 10) SAE J423 (Sections 5.2 and 6.3) ASTM B487
Corrosion Testing	ASTM A262 (Practices A and E), ASTM G28, ASTM G31, ASTM G34, ASTM G36, ASTM G48 (Method A)

Test Technologies	**Test Method(s)**
Coating Weight	ASTM A90/A90M, ASTM A428/A428M
Salt Water Spray	ASTM B117, ASTM D1654
Humidity Testing	ASTM D2247
Coefficient of Friction	ASTM D1894 (Type C)
Compression Testing	ASTM E9, ASTM D695
Shear Testing	ASTM D1002
Hardenability	ASTM A255
Macroetch	ASTM E340; API 5L 1104; ASME (Section IX QW-140); AWS B2.1/B2.1M (Annex G), AWS D1.1/D1.1M (Sections 4.9.4 & 4.22.2), AWS D1.2 (Annex H), AWS D1.5/D1.5M (Section 5.18.2)
Hardness Brinell (500 to 3000) kgf Rockwell (HRA, HRBW, HRC, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T) Durometer (Shore A and D) Pencil Microhardness Vickers (100 gf, 500gf) Macrohardness Vickers (10 kgf) Leeb Rebound Method	 ASTM A833, ASTM E10 ASTM E18 ASTM D2240 ASTM D3363 ASTM E384/E92 ASTM E92 ASTM A956
Bend	API 5L (Section 10.2.4), API 5L 1104 (Sections 5 & 6); ASME (Section IX QW-140); AWS B2.1/2.1M (Annex A), AWS D1.1/D1.1M (Section 4.9.3.1), AWS D1.2/D1.2M (Section 3.8), AWS D1.5/D1.5M (Section 5.18.3)
Taber Abrasion	ASTM D4060
Weld Operator & Procedure Qualification	API 5L 1104 (Sections 5 & 6); ASME (Section IX Articles II & III); AWS B2.1/2.1M,

Test Technologies	**Test Method(s)**
	AWS D1.1/1.1M (Section 4 Parts B & C), AWS D1.2/D1.2M (Section 2 Parts C & D), AWS D1.3/D1.3M (Section 4 Parts B & C), AWS D1.5/D1.5M (Section 5 Parts A & B), AWS D1.6/D1.6M (Section 4 Parts A & B), AWS D1.8/D1.8M, D17.1/D17.1M (Section 5)
Failure Analysis	Using the methods listed above (and on Scope of Accreditation 0397.01) in accordance with the ASM Handbook Volume 11

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IIA LAB SERVICES, LLC – ST. LOUIS

St. Louis, MO

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 17th day of October 2023.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 397.02
Valid to August 31, 2025
Revised July 21, 2025

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

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017
& ANSI/NCSL Z540-1-1994

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St. Louis, MO 63103
Don Baumer Phone: 314-531-8080

CALIBRATION

Valid To: August 31, 2025 Certificate Number: 397.03

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations[1, 3]:

I. Dimensional

Parameter/Equipment	Range	CMC[2] (±)	Comments
Micrometers	Up to 1 in (> 1 to 3) in (> 3 to 6) in	190 µin 220 µin 260 µin	Gage blocks
Calipers	Up to 1 in (> 1 to 6) in (> 6 to 12) in	180 µin 300 µin 490 µin	Gage blocks

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II. Mechanical

Parameter/Equipment	Range	CMC[2, 4, 5] (±)	Comments
Gauge Pressure - Measuring Equipment			
Pneumatic	(30 to 300) psig	0.17 psig	Druck DPI 610
Hydraulic	(> 10 to 1000) psig (> 1000 to 10 000) psig	0.11 % 0.11 %	Deadweight tester & pressure transducer, Ametek (Model R-50)
	(> 10 to 1000) psig (> 2200 to 10 000) psig	0.056 % 0.017 %	Deadweight tester & pressure transducer, GE (Model 3100)
Torque – Torque Wrenches	(0.5 to 400) oz·in (3.75 to 50) lbf·in (10 to 150) lbf·in (30 to 400) lbf·in (50 to 250) lbf·ft (60 to 600) lbf·ft	0.61 % 0.78 % 0.69 % 0.59% 1.2 % 1.3 %	Torque transducer

[1] This laboratory offers commercial 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] This scope meets A2LA's *P112 Flexible Scope Policy.*

[4] In the statement of CMC, percentage (%) refers to percent of reading, unless otherwise noted.

[5] 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

IIA LAB SERVICES, LLC – ST. LOUIS

St. Louis, MO

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 the requirements of ANSI/NCSL Z540-1-1994 and 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 17th day of October 2023.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 397.03
Valid to August 31, 2025
Revised July 21, 2025

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