SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT HOUSTON - YORKTOWN
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MECHANICAL

Valid To: December 31, 2026 Certificate Number: 1480.05

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

Test:	**Test Method(s):**
Corrosion	
Intergranular Attack	ASTM A262, ASTM G28; ASTM A923, ASTM G48
Pitting	ASTM G48
Crevice	ASTM G48
Hydrogen-Induced Cracking	NACE TM0284
Sulfide Stress Cracking	NACE TM0177, TM0316
Slow Strain Rate	NACE TM0198
Salt Spray	ASTM B117: BS EN ISO 9227, ASTM G85; ISO 12944-6, ISO 12944-9, Norsok M501
Immersion Testing	ASTM G31, NACE TM0169
Stress Corrosion Cracking	ASTM G44, ASTM G47, ASTM G49
Hydrogen Embrittlement Evaluation	ASTM F519
Failure Analysis	ASM Handbook, Volume 11
Hardness	
Brinell (1500, 3000 lbs)	ASTM A370, ASTM E10; ISO 6506
Rockwell (A, B, C and 15N)	ASTM A370, ASTM E18; AWS B4.0 (Clause 8); BS EN ISO 6508, ISO 15156-1, 898-1
Knoop (100 g, 500 g)	ASTM E92, ASTM E384
Vickers (100 g, 500 g, 5 kg, 10 kg, 30kg)	ASTM E92, ASTM E384; ISO 15614-1, ISO 9015-1, ISO 9015-2, 15156-1, ISO 6507
Magnetic Permeability	ASTM A342/A342M; MIL-I-17214

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Test:	Test Method(s):
Metallographic Examination	
Preparation of Metallographic Specimens	ASTM E3; BS EN 3114-001
Alpha Case	SOP MET-40.24; GE P3TF19, GE P3TF32
Carburization/Decarburization (Hardness, Optical)	ASTM E1077, ASTM F2328, ASTM F2328M; ISO 898-1; SAE J121
Coating Thickness (Cross Sectioning)	ASTM B487
Coating Weight	ASTM A90/A90M
Macroetch	ASME IX; ASTM A604, ASTM E340, ASTM E381; AWS D1.2/D1.2M (Clause 3), D1.5M/D1.5 (Clause 5), D1.6/D1.6M (Clause 4), D14.1/D14.1M (Clause 9); ISO 15614-1, ISO 17639, AWS D1.1/D1.1M, API 1104; EN 287, EN 288, EN 1321
Microetch	ASTM E407, ASTM E3; BS EN 3114-001
Grain Size	ASTM E112, ASTM E930, ASTM E1181
Banding / Microstructure	ASTM E1268; ASM Metals Handbook, Vol. 9
Inclusion Content	ASTM E45, Methods A & D
Volume Fraction	ASTM E562
Microstructure of Graphite in Iron Casting (silica)	ASTM A247
Detrimental Intermetallic Phase Determination in Duplex Stainless Steel	ASTM A923
SEM Electron Microscopy	ASM Handbook, Vol. II
Energy Dispersive Spectroscopy (Semi-quantitative)	ASTM E1508
Bend	API 1104; ASME IX; ASTM A370; ISO 15614-1; ISO 5173 AWS B4.0 (Clause 6), D1.1 (Clause 4), D1.2 (Clause 3), D1.5 (Clause 5), D1.6 (Clause 4), ISO 5173, ABS Rules, DNV Rules
Fillet Weld Break Test	ASME IX; AWS D1.1/D1.1/M; ISO 9606-1
Compression Compression at Elevated Temperature	ASTM E9 ASTM E209
Cyclic Straining	DNV-OS-F101 (DNV-OS-F101)
Drop Weight Testing	ASTM E208
Flattening	ASTM A370
Fracture Toughness	API 1104; ASTM E399, ASTM E1290, ASTM E1820; BS 7448 Pts 1, 2, & 4, BS 8571; DNVGL-ST-F101, DNVGL-RP-F108 ISO 12135, ISO 15653, CSA Z662 Annex K
Nick-Break	API 1104
Ring Flattening	ASTM A53/A53M, ASTM A530/A530M, ASTM A999/A999M; API 5L; API 5CT, API 5CRA; ASME SA530
Impact (Charpy) – Metals (-320°F to +300°F)	API 1104; ASME VIII, IX, ASME B31.3; ASTM A370, ASTM E23; AWS B4.0 (Clause 7), D1.1 (Clause 4), D1.5 (Clause 5); ISO 148-1; ISO 9016
Proof Load (Internal/External Threads)	ASTM A370, ASTM F606/F606M; ISO 898-1; ISO 898-2, ISO 3506-1, ISO 3506-2

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Test:	Test Method(s):
Torsional Testing of Externally-Threaded Fasteners	ASTM F606/F606M; MET-20.20, ISO 898-1, ISO 3506-1
Tensile Machined (Round & Flat), Full-Tube, and Full-Body	API 1104; ASME IX; ASTM A370, ASTM B557; EN-2002-1; ASTM E8/E8M, ASTM E21 (Up to 1800˚F), ISO 6892-2; ASTM F606/F606M; AWS B4.0 (Clause 5), D1.1, D1.2 (Clause 3), D1.5 (Clause 5), D1.6 (Clause4); ISO 15614-1, ISO 4136, ISO 898-1; ASTM A770/A770M; ABS Rules; BS 4515; DNVGL-ST-F101, DNVGL-RP-F108, EN ISO 6892-1;
Fastener Tensile (Wedge/Axial)	ASTM A370, ASTM F606/F606M; ISO 898-1, ISO 3506-1
Low Stress Grinding Low Stress Grinding and Polishing	GE P1TF79 GE P1TF79
Non-Metallics	
Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials	ASTM D790
Hardness Shore A &D Barcol	 ASTM D2240 ASTM D2583
Compression Set	ASTM D395 Method B, ASTM D1414
Uniaxial Tensile Properties	ASTM D412 (Method A), ASTM D1414, ISO 37, ASTM D638
Tear Strength	ASTM D624 Types C and T
Aging	ISO 23936-1, NACE TM0187, NACE TM0296
Aging and RGD	NORSOK M-710, ISO 23936-2
Thermal Conductivity	ASTM C518
Mass and Volume	ASTM D471
Density and Specific Gravity	ASTM D792
Coatings	
Condensation Adhesion Visual Assessment Water Immersion Cathodic Disbondment UV Accelerated weathering Coating thickness	ISO 6270-1, ISO 12944-6, ISO 4624, ISO 2409, ISO 12944-6, ISO 12944-9; ASTM D4541; Norsok M501 ISO 4628-2, ISO 4628-3, ISO 4628-4, ISO 4628-5, ISO 4628-6, ISO 12944-6, ISO 12944-9; Norsok M501 ISO 2812-2, ISO 12944-6, ISO 12944-9; Norsok M501, ISO 21809-1, ISO 21809-2, ISO 21809-3; CSA Z245.20 series 18 ISO 15711, ISO 21809-1, ISO 21809-2, ISO 21809-3, ISO 12944-9; Norsok M501 ASTM G154; ISO 16474-3, ISO 12944-6, ISO 12944-9, Norsok M501 ISO 2808, ASTM G154

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Test:	Test Method(s):
Chemical Combustion Analysis (C, H, N, O, S) Optical Emission Spectroscopy (Al, B, Be, Bi, C, Cd, Co, Cr, Cu, Fe, Mn, Mo, N, Nb, Ni, P, Pb, S, Sb, Si, Ta, Ti, V, W, Zn, Zr)	 ASTM E1019, ASTM E1409, ASTM E1447; SOP MET-30.03 ASTM E415, ASTM E1086, ASTM E1251, ASTM E1999, ASTM E3047; SOP MET-30.01 ASTM A751
Composition, TGA	ASTM D6370, ASTM E1131
Tg, Tm, Enthalpy, DSC	ASTM D7426, ASTM E1356, ASTM D3418
FTIR	ASTM E1252

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Accredited Laboratory

A2LA has accredited

ELEMENT HOUSTON – YORKTOWN

Houston, TX

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 9th day of October 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1480.05
Valid to December 31, 2026
Revised October 3, 2025

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

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