



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT CHARLOTTE
1200 Westinghouse Blvd., Suite A
Charlotte, NC 28273
Parth Patel Email: parth.patel@element.com

MECHANICAL

Valid To: December 31, 2026

Certificate Number: 2335.01

In recognition of the successful completion of the A2LA evaluation process accreditation is granted to this laboratory to perform the following tests on metals and metal products:

<u>Test</u>	<u>Test Method(s)</u>
Bend	ASME Sec. IX; ASTM A370, E290; AWS D1.1, D1.5; ISO 5173
Coating Weight	ASTM A90/A90M; Fed-Spec TT-C-490
Corrosion Testing Intergranular Corrosion Susceptibility	ASTM A262 (Practice A and E only); ISO 3651-2
Creep Testing	ASTM E139, E292
Stress Rupture	ASTM E139, E292
SEM/ EDS Qualitative Analysis	ASTM E1508
Fasteners Hardness	ASTM A370, F606/F606M; AIA/NAS NASM 1312-6
Tensile Ambient	ASTM A370, B557, E8/E8M; ISO 6892-1
Elevated Temperature (400 to 1800)°F	ASTM E21; ISO 6892-2
Test Specimen Machining/ Grinding	ASTM A370, B557, E8/E8M, E23, E139, E292, F606/F606M; GE P1TF79 (Class B)
Test Specimen Longitudinal/Axial Polish	SOP 25.00

Test**Hardness/ Microhardness**

Rockwell (A, B, C, F, 15N, 30N, 45N, 15T, 30T)

Brinell (500, 3000) Kg

Vickers (100, 200, 300, 500, 1000) gf

Knoop (100, 200, 300, 500, 1000) gf

Test Method(s)

ASTM E18; ISO 6508-1

ASTM E10

ASTM E92, E384

ASTM E92, E384

Impact (Charpy / (-320 to 450)°F)

ASTM A370, E23; ISO 148-1

Metallography/Micrography on Ferrous and Nonferrous Materials

Alpha Case

GE P3TF19, P3TF32; SOP 50.75

Case Depth

ASTM F2328; SAE J423

Decarburization

ASTM E1077, F835, F912, F2328; SAE J419

Grain Size

ASTM E112, E930, E1181; GE E50TF133

Macroscopic Examination

ASTM A561, A604, E340, E381

Microstructure

SOP 50-35; GE E50TF133; ASM Handbook Vol. 9

Non-metallic Inclusion

ASTM E45 (Methods A, B, and D)

Plating Thickness

ASTM B487, B499, E376

Sample Preparation

ASTM E3, E407

Specimen Heat Treatment

ASM 2750¹; SOP 60.10

Volume Fraction Determination

ASTM E562, E1245

Magnetic Permeability

ASTM A342; SEV-ENG-96040.1; SOP 55.00

Welder/Weld Procedure Qualification

AWS D1.1, D1.4 (Sections 6 and 7), D1.5 (Sections 1, 5, 6, 7), D1.6, D17.1; AMS-W-6858; ASME Section IX

Failure Analysis

Using the methods listed above on the mechanical scope of accreditation, in accordance with the ASM Handbook Volume 11

Density Testing

ASTM B311

¹ Please note that this is not a test method but rather a heat treatment specification covering the pyrometric requirements for sample and specimen preparation



Accredited Laboratory

A2LA has accredited

ELEMENT CHARLOTTE

Charlotte, NC

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 2nd day of December 2024.

A blue ink signature of Mr. Trace McInturff.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2335.01
Valid to December 31, 2026

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



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CHEMICAL

Valid To: December 31, 2026

Certificate Number: 2335.02

In recognition of the successful completion of the A2LA evaluation process accreditation is granted to this laboratory to perform the following spectroscopy tests on metals and metal products (Aluminum, Cast Iron, Cobalt, Copper, Nickel, Titanium):

Test

Test Method(s)

Combustion & Fusion Analysis¹
Hydrogen (Titanium only)/ Oxygen, Nitrogen, and Hydrogen
by Inert Gas Fusion

ASTM E1447, E2792, E1019,
E1941, E1409; SOP 14000

Carbon/Sulfur Analysis by Combustion¹

ASTM E1019; SOP 13.00

Optical Emission Spectroscopy (OES)^{1,2}
(Al, B, C, Co, Cr, Cu, Fe, Mg, Mn, Mo, Nb, Ni,
P, Pb, S, Si, Sn, Sr, Ta, Ti, V, W, Zn, Zr)

ASTM E415, E1086, E1251,
E2994, E1999, E3047;
SOP 12.00, SOP 14000

¹ This laboratory performs field testing activities for these tests.

² 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.

Test	Material Specification
Optical Emission Spectroscopy (OES) (Al, B, C, Co, Cr, Cu, Fe, Mg, Mn, Mo, Nb, Ni, P, Pb, S, Si, Sn, Sr, Ta, Ti, V, W, Zn, Zr)	API 5LD



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Charlotte, NC

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Chemical Testing

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Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2335.02
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