



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT CHARLOTTE  
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MECHANICAL

Valid To: December 31, 2024

Certificate Number: 2335.01

In recognition of the successful completion of the A2LA evaluation process (including compliance to *R223 – Specific Requirements – GE Aviation S-400 Accreditation Program*), 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
Coating Weight	ASTM A90/A90M; Fed-Spec TT-C-490E
Corrosion Testing Intergranular Corrosion Susceptibility	ASTM A262 (Practice A and E only)
Creep Testing	ASTM E139, E292
Stress Rupture	ASTM E139, E292
SEM/ EDS Qualitative Analysis	ASTM E1508
Fasteners Hardness	ASTM A370, F606/F606M; NASM 1312-6
Tensile Ambient	ASTM A370, B557, E8/E8M
Elevated Temperature (400 to 1800)°F	ASTM E21
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****Test Method(s)**

## Hardness/ Microhardness

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

ASTM E18

Brinell (500, 3000) Kg

ASTM E10

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

ASTM E92, E384

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

ASTM E92, E384

Impact (Charpy / (-320 to 450)°F)

ASTM A370, E23

**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 2750; SOP 60.10

Volume Fraction Determination

ASTM E562, E1245

Magnetic Permeability

ASTM E342; 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



# 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 laboratory also meets the requirements of R223 – Specific Requirements – GE Aviation S-400 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 2<sup>nd</sup> day of December 2022.

A blue ink signature of Mr. Trace McInturff, written over a horizontal line.

Mr. Trace McInturff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 2335.01  
Valid to December 31, 2024

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