



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT CHARLOTTE
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MECHANICAL

Valid To: December 31, 2020

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, B449; 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 1508
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, E8/E8M, E23, E139, E 292, F606, F606M; GE P1TF79 (Class B)

<u>Test</u>	<u>Test Method(s)</u>
Hardness/ Microhardness	
Rockwell (A, B, C, F, 15N, 30N, 45N, 15T, 30T)	ASTM E18
Brinell (500Kg, 3000Kg)	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 P3tf32, P3TF19; SOP 50.75
Case Depth	ASTM F2328; SAE J423
Decarburization	ASTM E1077, F835, F912, F2328; SAE J121, J121M, J419
Grain Size	ASTM E112, E1181, E930; 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	SOP 60.10
Systematic Point Count	ASTM E562
Magnetic Permeability	ASTM 342; SEV-ENG-96040.1; SOP 55.00
Welder/Weld Procedure Qualification	AWS D1.1, D1.4 (Section 6 and 7), D1.5 (Section 1, 5, 6, 7), D1.6, D17.1; AMS-W-6858; ASME Section IX
Failure Analysis	Using the methods listed above on the chemical scope of accreditation, in accordance with the ASM Handbook Volume 11



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 10th day of December 2018.

A handwritten signature in black ink, written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 2335.01
Valid to December 31, 2020

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