



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

ELEMENT MATERIALS TECHNOLOGY DALEVILLE
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MECHANICAL

Valid To: August 31, 2020

Certificate Number: 0174.02

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 materials, metals and fasteners:

Test	Test Method(s)
Physical Properties:	
Bend	ASTM A370, E290, E190
Coating and Plating Adhesion	ASTM B571 (Less Sec. 6 & 10), C633, D3359, E290, F1044, F1147; Federal Test Method Standard 141D, Method 6301.3
Creep, Stress Rupture	ASTM E139, E292
End Quench Hardenability - Jominy	ASTM A255; SAE J406
Hardness Testing	
Rockwell (A, B, C, E, F)	ASTM A370, E18; Bell Helicopter BPS 4467
Rockwell Superficial (15N, 30N, 45N, 15T, 30T, 45T)	ASTM A370, E18; Bell Helicopter BPS 4467
Brinell Hardness (500, 1000, 3000 Kg)	ASTM A370, E10
Microhardness	
Vickers (50, 100, 200, 300, 500, 1000g)	ASTM B578, E92, E384; NASM 1312-6
Knoop (25, 50, 100, 200, 300, 500, 1000g)	ASTM B578, E92, E384; NASM 1312-6
Hydrogen Embrittlement	ASTM F519
Impact Testing	
Charpy Impact (-320°F to Room Temperature)	ASTM A370, A923, E23
Izod Impact (Room Temperature)	ASTM E23

<u>Test</u>	<u>Test Method(s)</u>
<u>Tension / Tensile:</u>	
Elevated Temperature Tension / Tensile	ASTM E21
Strain Ratio (r value)	ASTM E517
Strain-Hardening (n value)	ASTM E646
Tensile (60K max)	ASTM A370, A974, A975, B557/B557M, E8/E8M, E345, F1147; ISO 6892-1
<u>Metallographic Evaluations:</u>	
Alpha Case	PTP 1007 ¹ ; GEAE P3TF19, P3TF32; PW MCLM E142
Bond Integrity / Oxide Content / Cracking	PTP 1060 ¹ ; GEPE P16B-AG11; PW MCLM E53
Case Depth	AMS-H-6875; SAE J423; ARP 1820B
Coating / Plating Thickness (Metallographic)	ASTM B487; NASM 1312-12
Corrosion and Exfoliation Corrosion Susceptibility	AMS-STD-753; ASTM A262 (Practice A, E), A763 (Practice W, X, Y, Z), A923, G28 (Method A), G34, G46, G48 (Method A), G110, G112
Depth of Decarburization	AMS-H-6875; ASTM E1077; SAE J121
Grain Size	ASTM E112, E883, E930, E1181
Image Analysis (Second Phase Analysis)	ASTM E1245
Inclusion Content	ASTM E45; SAE J422
Macroetching	ASTM A604, E340, E381
Microetching	ASTM E407
Evaluation of Porous Coatings	ASTM F1854
Microstructure Evaluation	ASM Metals Handbook (Volume 7, 8 th Edition); NAS 4002, 4004; PTP 1010 ¹
Preparation	ASTM E3
Recast / Re-melt	PTP 1049 ¹
SEM/EDS Imaging	PTP 1066



Test	Test Method(s)
<u>Metallographic Evaluations (cont'd):</u>	
Surface Finish	SAE J448
Visual / Microscopic Metallurgy	GE P3TF3
Thermoelectric Sorting	ASTM E977
Welder Certification / Weld Procedure Testing (Visual, Mechanical)	Using the methods listed above in accordance with: ASME Section IX; AWS: D1.1/D1.1M, D1.2/D1.2M, D1.3/D1.3M, D1.5/D1.5M, D1.6/D1.6M, D9.1/D9.1M, D10.9/D10.9M, D17.1/D17.1M; MIL-STD-248D (Withdrawn 1997) ² ; NAVSEA S 9074-AQ-GIB-010/248
<u>Environmental Simulation:</u>	
Salt Spray	ASTM B117, D1654; NASM 1312-1; GM4298P (Superseded 2010) ²
<u>Failure Analysis:</u>	Using the methods listed above in accordance with ASM Handbook Volume 11; QAP-1031 ¹ ; and PTP 1057 ¹

¹In-House Test Methods.

²This laboratory's scope contains withdrawn or superseded methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.





Accredited Laboratory

A2LA has accredited

ELEMENT MATERIALS TECHNOLOGY DALEVILLE

Daleville, IN

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of R223 – Specific Requirements: GE Aviation S400 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 21st day of May 2018.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0174.02
Valid to August 31, 2020
Revised June 17, 2019

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