



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017¹

IMR TEST LABS - PORTLAND
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Portland, OR 97222
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MECHANICAL

Valid To: September 30, 2023

Certificate Number: 1140.07

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 aluminum alloys, brass & bronze, carbon steel, cast iron, cobalt alloys, copper alloys, fasteners, low alloy steel, nickel alloys, stainless steel, super alloys, titanium alloys, for the following industries: aerospace, automotive, nuclear, medical device, consumer products & industrial goods, metal production, general manufacturing, utilities, petrochemical, and power generation:

<u>Test</u>	<u>Test Method(s)</u>
<u>Fasteners</u>	
Tensile (Axial and Wedge)	ASTM A370, F606, F606M; NASM 1312-8; SAE J429
Proof (Internal and External Threads)	ASTM A370, F606, F606M; NASM 1312-8; SAE J429
Hardness	ASTM F606, F606M
<u>Physical Testing</u>	
Charpy Impact (-320°F to 500°F)	ASTM A370, E23
Creep	ASTM E139
Density	ASTM B311
Ductility (Bend)	ASTM A370, E190, E290 (Guided, Semi Guided: B, C)
Hardness	
Brinell (3000 kg)	ASTM A370, E10
Rockwell (A, B, C, E, F, 15N, 30N, 45N, 15T, 30T, 45T)	ASTM A370, E18
Hydrogen Embrittlement	ASTM F519

<u>Test</u>	<u>Test Method(s)</u>
Jominy Hardenability	ASTM A255
Microhardness Knoop (100 g, 300 g, 500 g) Vickers (100 g, 300 g, 500 g and 10,000 g)	ASTM E92, E384; SAE ARP 1820
Rotating Beam Fatigue	ASTM E468; ISO 1143; JIS Z 2274; MPP-008
Stress Rupture	ASTM E139, E292
Tensile Elevated Temperature (Up to 2000 °F) Room Temperature (TS, YS, EL, RA) (Up to 120,000 lbs) Young's, Tangent and Chord Modulus	ASTM E21 ASTM A370, B557, E8/E8M; ISO 6892-1 ASTM E111
Weld Operator and Procedure Qualification Testing	ASME Section IX; AWS D1.1, D1.2, D1.4, D1.5, D1.6, D1.7
<u>Metallographic Evaluation</u>	
Preparation of Specimens	ASTM E3
Alpha Case	ASTM E407; GE P3TF19, GE P3TF32; PWA E142
Depth of Decarburization (Microscopical and Microindentation Hardness Methods)	ASTM E1077
Determination of Volume Fraction by Point Count	ASTM E562
Determination of Delta Ferrite Content	AMS 2315, US NRC Reg. Guide 1.31
Case Depth	SAE J423
Grain Size	ASTM E112 (Method A & D), E930, E1181
Inclusion Content	ASTM E45 (Method A)
Intergranular Attack/Corrosion Susceptibility	ASTM A262 (Practice A, B, C, E), A923 (Method A & C), G48 (Method A), G110; AMS-H-6088, AMS 2772
Macroetching	ASTM E340, E381; ISO 15614-1, 17639
Microetching	ASTM E407
Microstructure	ASTM A247, F1854; ASM Metals Handbook Volume 9

Test**Test Method(s)****Chemical Analysis**

Combustion Analysis (C, H, N, O, S)

ASTM E1019, E1409, E1447, E1941; CPP-004

Atomic Emission Spectroscopy – Inductively Coupled Plasma (ICP) (Ferrous and Non-Ferrous Metals) (Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cu, Fe, Ga, Ge, Hf, In, K, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Pd, Pt, Re, Ru, S, Sb, Se, Si, Sn, Sr, Ta, Te, Ti, Tl, V, W, Y, Zn, Zr)

ASTM E34, E2626; CPP-014

Optical Emission Spectroscopy (OES)

Iron Base:

(Al, As, B, C, Ca, Co, Cr, Cu, Mg, Mn, Mo, Nb (Cb), Ni, P, Pb, S, Sb, Si, Sn, Ti, V, W, Zn, Zr)

ASTM A751, E415, E1999

Stainless Steel:

(Al, B, C, Co, Cr, Cu, Mn, Mo, Nb (Cb), Ni, P, Pb, S, Si, Sn, Ti, V, W)

ASTM E1086

Aluminum Base:

(B, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Li, Mg, Mn, Na, Ni, P, Pb, Si, Sn, Sr, Ti, V, Zn, Zr)

ASTM E1251

Nickel Base:

(Al, B, C, Co, Cr, Cu, Fe, Mg, Mn, Mo, Nb (Cb), P, Pb, S, Si, Sn, Ti, V, W, Zr)

ASTM E3047; CPP-003

Titanium Base:

(Al, Cr, Cu, Fe, Mn, Mo, Nb (Cb), Ni, Pd, Si, Sn, V, Zr)

ASTM E2994; CPP-003

Cobalt Base:

(Al, B, C, Cr, Cu, Fe, La, Mn, Mo, Nb (Cb), Ni, P, Pb, S, Si, Sn, Ti, V, W)

CPP-003

¹This laboratory also meets the requirements of ISO/IEC 17025:2005.



Accredited Laboratory

A2LA has accredited

IMR TEST LABS - PORTLAND

Portland, OR

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 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 23rd day of August 2021.

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

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1140.07
Valid to September 30, 2023

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