



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

METCUT RESEARCH INC.  
3980 Rosslyn Drive  
Cincinnati, OH 45209  
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MECHANICAL

Valid To: June 30, 2022

Certificate Number: 296.01

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 at the location listed above as well as the one satellite laboratory location listed below to perform the following types of tests on metallic and nonmetallic materials:

Mechanical Testing Capabilities

Load, Strain and / or Stroke control, uniaxial to 15 axis multi-axial.  
Load Capacity: 2 lbs (1000g) to 200,000 lbs. (890kN)  
Strain Capacity: +/- .5% to +/- 20%  
Frequency Capacity: Indefinite hold to 80Hz  
Temperature Capability: -320°F (-196°C) to 2600°F (1427°C)

**Test Name (Specific Methods)**

**Test Method**

Physical Testing

Compression	ASTM E9, E209
Erosion Testing by Solid Particle Impingement Using Gas Jets	ASTM G76
Fatigue Crack Growth	ASTM E647
Flat Bending Fatigue	ASTM E466
Fracture Toughness	ASTM E399, E1820
High Cycle Fatigue	ASTM E466; GE: E50TF148
Low Cycle Fatigue	ASTM E606; GE: E50TF148
Rotating Bar Bending Fatigue	ISO 1143
Tensile – RT	ASTM B557, E8/E8M
Tensile – ET	ASTM E21
Young's Modulus & Shear Modulus	ASTM E1875

Specimen Preparation

Conventional Machining	Metcut MRI Series 200 Procedures; GE: P1TF79
Electron Discharge Machining	Metcut MRI Series 200 Procedures; GE: P1TF79
Low-Stress Grinding & Polish	Metcut MRI Series 200 Procedures; GE: P1TF79

**Test Name (Specific Methods)**

**Test Methods**

Specimen Preparation (cont'd)

Inertia Welding (Less than 1.0 in)

Metcut MRI Series 200 Procedures;  
GE: P1TF79

Structural Testing within the following envelope: MRI 500.7 and customer requirements

Load, Strain and / or Displacement control,  
Uniaxial to 27 axis axis-controlled loading.  
Load Capacity Tension: 2 lbs (1000g) to 200,000 lbs. (890kN)  
Load Capacity Compression: 600,000 lbs. (2668kN)  
Strain Capacity: +/- .2% to +/- 20%, 1-300 channels  
Pressure: 150000 psi, Static & Dynamic  
Strong Floor: 22' by 82'  
Strong Wall: to 16'  
Actuator Displacement: <= 36"  
Frequency Capacity: Indefinite hold to 80Hz  
Temperature Capability: -320°F (-196°C) to 2600°F (1427°C)

Biaxial Tensile Testing: 75°F (23°C) to 1000°F (537°C) ISO 16842

This accreditation covers testing performed at the main laboratory listed above, and the following satellite laboratory listed below:

Metallography Lab  
1775 Carillon Blvd.  
Cincinnati, OH 45240

**Test Name (Specific Methods)**

**Test Method**

Physical Testing

Creep/Stress Rupture

ASTM E139, E292

Metallography

Case Depth

ASTM B934, F2328/F2328M

Brinell Hardness (3000 kg)

ASTM E110

Hardness – Rockwell (A, B, C, 15N, 15Y, 30T)

ASTM E18

Inclusion Content

ASTM E45 (Method A)

Microhardness

Knoop (500 gf)

ASTM E384/E92

Vickers (100 and 300 gf)

ASTM E384/E92

Met. Preparation & Evaluation

ASTM E3; GE: P29TF25

Macroetching/Microetching

ASTM E340, E381, E407

Grain Size

ASTM E112, E1181, E930; GE: E50TF133

Depth of Decarb

ASTM E1077; SAE J419, J423

Alpha Case (Titanium)

AMS 2380; GE: P3TF19

IGA & Pitting for Aircraft Chemical Processes

ASTM F2111

**Test Name (Specific Methods)**

**Test Method**

Metallography (cont'd)

Metallographic Inspection of Turbine Blades/Vanes	GE: P29TF34
PM Density Measurement	ASTM B311
Surface Integrity Acceptability	GE: P29FT73

Coatings Testing & Evaluation

Bond Strength of Thermal Sprayed Coatings	GE: E50TF60
Hoffman Scratch Test	GE: E50TF61
Met. Prep. & Eval. Of Thermal Sprayed	GE: E50TF65
Lap Shear Bond Strength of Thermal Sprayed	GE: E50TF66
Room Temp. Erosion Test Method for Coatings	GE: E50TF121

Failure Analysis

Fractography	ASM Handbook (Volumes 7, 9-12)
Macroscopic and Microscopic Analysis	ASM Handbook (Volumes 7, 9-12)
Scanning Electronic Microscopy (SEM)	ASTM F1372
Energy Dispersive Spectroscopy (EDS)	ASTM E1508
Optical Emission Spectroscopy (OES Al, Co, Cu, Fe, Ni, Ti, Zn & Mg based alloys)	ASTM E415, E1251, E2994, E3047, E1086, E1999, E634, B954



## *Accredited Laboratory*

A2LA has accredited

**METCUT RESEARCH INC.**

*Cincinnati, OH*

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 4<sup>th</sup> day of August 2020.

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

Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 0296.01  
Valid to June 30, 2022

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