



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

HOWMET RESEARCH CENTER
1500 S. Warner St.
Whitehall, MI 49461-1895
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MECHANICAL

Valid To: March 31, 2025

Certificate Number: 2208.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on aircraft components, automotive components, ceramics, coatings, glass and glass products, metals and alloys, and plastics and polymers:

Test:

Test Method(s) ¹:

Hardness:

| | |
|--|-----------------------------|
| Brinell (Loads (1000, 1500, & 3000) kgf, Ball dia. 10 mm) | ASTM E10, A370 |
| Rockwell (HRBW, HRC, HREW, HR15N, HR 30N) Microindentation (Knoop, Vickers) (100g, 300g, 500g) | ASTM E18, A370 ASTM E384 |
| Carburization/Decarburization via the Chord Method | ARP 1820 |
| Room Temp. Tensile (up to 40 000 lb) | ASTM E8/E8M, A370, B557 |
| Elevated Temp. Tensile (up to 40 000 lb., up to 2050 °F) | E21 |
| Stress Rupture/Creep Rupture (up to 2050 °F) | ASTM E139, E292 |

Metallographic Evaluation:

| | |
|---|------------------------|
| Coating Thickness | ASTM B487 |
| Preparation | ASTM E3, E1920 |
| Grain Size (Comparison Method Only) | ASTM E112, E930 |
| Microetching | ASTM E407 |
| Alpha Case | MCL III-273 |
| IGA/IGO / Casting Mold Reaction/Alloy Depletion | MCL III-251 |
| Delta Ferrite | MCL III 237.06 |
| Heat Treatment Solution/Incipient Melting Measurement | MCL III-221 |
| Wrought Titanium Microstructure | MCL III-273 |
| Micro Porosity by Image Analysis and Point Count | MCL III-270, ASTM E562 |
| Oxidation Test | HRC LM-100 |

Test:

Test Method(s) ¹:

Metallographic Evaluation (cont.):

SEM with Energy Dispersive Spectroscopy

MCL III-510, ASTM E1508

Failure Analysis

Using the methods listed above and on
Scope of Accreditation 2208.02 in
accordance with ASM Handbook
Volume 11

Lab Heat Treatment

MCL III-352

¹ When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA *R101 - General Requirements- Accreditation of ISO-IEC 17025 Laboratories*.



Accredited Laboratory

A2LA has accredited

HOWMET RESEARCH CENTER

Whitehall, MI

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 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 11th day of April 2023.

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 2208.01
Valid to March 31, 2025

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