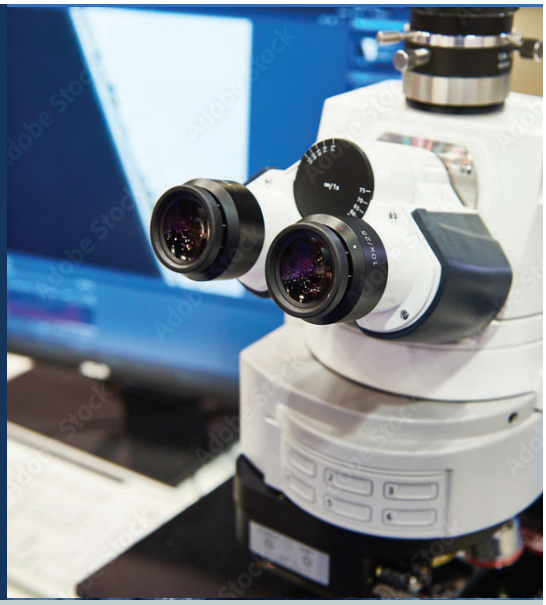
CURTISS-WRIGHT



Aerospace Materials Testing and Analysis

Advanced Alloys | Carbon-Fiber Composites | Thermal Coatings

Aerospace programs continue to demand higher strength-to-weight ratios in airframes, propulsion systems, and other critical structures. Curtiss-Wright Materials Testing & Analytical Services supports these efforts by generating clear, defensible data on both metallic and non-metallic materials.

Our laboratories bring together metallurgists, chemists, mechanical engineers, and specialized technical staff who work directly with leading aerospace OEMs and Tier 1 suppliers. Engagement spans the full development cycle—from late-stage R&D to qualification and full-rate production.

By focusing on essential material behaviors and eliminating unnecessary complexity in testing workflows, we provide the validated data, failure-mode insight, and supplier-quality verification needed to ensure long-term reliability in demanding flight environments.

Accredited Analytical Services

Curtiss-Wright Materials Testing and Analytical Services maintains certifications from major Aerospace Engine, Aircraft Airframe, and Low-Earth-Orbit Satellite manufacturers. Our international accreditations cover testing of both metallic and polymer-based materials. For the most current list of approvals and certificates, please refer to our website.

sales@imrtest.com *888-464-8422* | curtisswright.com

Curtiss-Wright's Mechanical Fatigue Testing Services apply controlled cyclic loading (HCF and LCF) to characterize how materials respond to fluctuating stresses and temperatures. These tests establish fatigue life data that support material development, validate performance requirements, and help reduce the risk of in-service failures.

Understanding fatigue behavior is essential in sectors such as aerospace and medical devices, where component reliability, safety margins, and long-term durability must be demonstrated through repeatable, data-driven evaluation.

Aerospace Materials Testing Methods

Mechanical Testing

Coating Adhesion/Bond Strength
Creep/Stress Rupture
Erosion Testing of Coatings
Fatigue Testing
Thermomechanical Fatigue Testing (up to 1800°F)
Sub-Ambient Fatigue Testing (down to -320°F)
High Cycle Fatigue
Low Cycle Fatigue
Flexural
Fracture Mechanics
Hardness (Brinell, Rockwell)
Hydrogen Embrittlement
Impact Testing
Rotating Beam Fatigue
Tensile, Yield, Elongation

Chemical Testing & Analysis

Alloy Identification/ Verification
Cleanliness/ Contaminant Analysis
ICP-AES Analysis
ICP-MS Analysis for Trace Elements
OES Analysis
Particle Size Analysis
PMI (Positive Material Identification)
SEM/EDS
XRF Analysis
XRD Analysis

Corrosion Testing

Cyclic Corrosion
Electrical Resistivity
Temperature & Humidity Testing
Salt Spray Testing
SO_2 and SO_2/CO_2 Exposure

Metallurgical Analysis

Aggressive Machining Evaluations
Alpha Case
Case Depth
Decarburization
Effective Case Depth
Grain Size
Image Analysis
Inclusion Content
Intergranular Attack
Macro-etching/Micro-etching
Metallography
Microhardness (Knoop, Vickers)
Microstructure
Particle Analysis
Plating & Coating Analysis
Porosity
Failure Cause Analysis
Specialty Material Preparation
Thermal Spray Coating Analysis
Weld, Braze & Joining Evaluations

Composite / Polymer Testing

Additive Analysis to Trace Level
Bond Strength
Chemical Exposure Testing
Chemical Resistance
Coefficient of Friction
Compressive Properties
Contaminant Identification
Density & Specific Gravity
DSC Analysis: Melting Point, Glass Transition, % Crystallinity
Dynamic Mechanical Analysis (DMA)
Extractables
Fatigue Testing
-Temp from -340°F to 1800°F
Flammability
Flexural Properties
FTIR Analysis
Hardness: Rockwell, Durometer, Barcol
Heat Aging
Impact Strength
Lap Shear Testing
Material Identification
Melt Flow Rate/Index
Oil Content
SEFA Testing
SEM/EDS Analysis: Fillers
Tensile Testing: Flatwise, Cruciform, Hoop, -340°F to 660°F
TGA: Polymer, Glass and Ash Content
TMA: Glass Transition, Coefficient of Thermal Expansion
XRD: Phase Identification

Locations	ISO 17025 Accredited by A2LA	Nadcap Accreditation
Ithaca- 131 Woodsedge Dr. Lansing, NY	Ithaca (1140.01 / 1140.02)	Ithaca: Materials Testing Laboratories, Non-Metallic Materials Testing
Louisville- 4510 Robards Ln. Louisville, KY	Louisville (1140.03 / 1140.04)	Louisville: Materials Testing Laboratories
Portland- 5867-A SE Int'l Way, Portland, OR	Portland (1140.07)	Portland: Materials Testing Laboratories
Singapore- 30 Loyong Way 03-16, SGP	Singapore (1140.10)	Singapore: Materials Testing Laboratories
Suzhou- Suzhou Industr. Park, Jiangsu, CN	Suzhou (1140.09)	Suzhou: Materials Testing Laboratories
Sales@IMRTest.com		