Mechanical Testing

- Adhesion (Peel) Testing
- Bend Testing (3 Point, 4 Point)
- Bond Strength Testing
- Charpy Impact Testing (-320°F to 450°F)
- Coefficient of Thermal Expansion by TMA
- Composite Testing (FRC, CMC)
- Compressive Properties of Nonmetallics
- Creep & Stress Rupture
- Fatigue Testing (Axial, Low Cycle, High Cycle, Rotating Beam, Coating Shear)
- Filled Hole Tension/Compression
- Flexural Properties (Modulus, Strength, Stress-Strain Response)
- Fracture Mechanics
- Hardness (Rockwell, Brinell)
- Heat Aging
- Heat Deflection by TMA
- Hydrogen Embrittlement (Static Load)
- In-Plane Shear Response
- Indentation Toughness
- Interlaminar Shear
- Impact Testing (Charpy, Izod)
- Lap Shear Testing
- Open Hole Tension/Compression
- Peel Properties (Climbing Drum, Floating Roller)
- Residual Strength of Composites After Impact
- Resin Penetration
- Sealant & Adhesive Testing
- Shear Properties
- Slow Strain Rate
- Static Pin Bearing Strength
- Taber Abrasion/Wear Resistance
- Tensile Testing - Metals (to 2000°F)
- Tensile Testing - Nonmetallics (-240°F to 660°F)
  - Flatwise, Cruciform, Hoop, Standard
- Torsional/Axial Fatigue (200 lb)
- Welder/Weld Procedure Qualification

Not just data, knowledge

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Why IMR?

You know your products better than anyone. The good name and reputation of your company goes out with every piece you ship. Your needs, your priorities and your deadlines drive everything we do at IMR.

We are your one-stop laboratory for high quality materials testing services on metals, polymers and composites. Whether you are verifying raw materials, checking finished parts from your suppliers or require a failure analysis, we have the experience, tools and training to help you get the answers you need.

We carry all of the requisite accreditations and approvals, including ISO 17025, Nadcap, A2LA, SAC, GE S-400, Pratt & Whitney MCL, and many other major manufacturers. We serve clients in a variety of industries including medical, power generation, aerospace, automotive and more.

Contact us today for more information on how we can help you with your materials testing and failure analysis needs.

Corrosion Testing

- Corrosion Cracking Testing of Metals (SCC) and Plastics (ESC)
- Corrosion Failure Analysis
- Determining Corrosion Rates of Metals and Corrosiveness of Fluids Using Electrochemical and Immersion Test Techniques
- Dezinification Testing of Brasses
- Electrochemical Corrosion Simulation
- Evaluation of Duplex Stainless Steels
- Formicary (Ant's Nest) Corrosion of Copper Tubing
- General and Pitting Corrosion Testing
- Heat & Fluid Aging
- Passivation Testing of Medical Components
- Residual and Assembly Stress Testing of Copper Alloys
- Sensitization Testing of Austenitic and Ferritic Stainless Steels

Metallurgical Analysis

- Aggressive Machining Evaluations
- Braze Analysis
- Case Depth
- Certified Weld Inspections
- Coatings Analysis
- Decarburization
- Failure Analysis
- Fluorescent Impregnation of Porous Coatings
- Fractography/Fracture Mechanics
- Grain Size
- Image Analysis
- Intergranular Attack
- Intergranular Oxidation
- Macroetch/Microetch
- Metallography/Materialography
- Microhardness (Knoop, Vickers, MacroVickers)
- Microstructure
- Orientation in Microstructure
- Particle Analysis (Distribution, ID, Size)
- Phase Volume Determination
- Plating & Coating Analysis
- Plating Thickness
- Porosity of Metals, Ceramics & Composites
- Prior Austenitic Grain Boundary Determination
- Replication (E1351)
- Quantitative Image Analysis
- Root Cause Evaluation
- SEM Analysis
- Thermal Spray Coating Evaluations
- Titanium Beta Transus Determination
- Welder Qualification

Accelerated Weathering

- Cyclic Corrosion
  - Electrical Resistivity Testing
  - Passivation
  - QUV Exposure
  - Salt Spray Testing
  - SO₂ and SO₂/CO₂ Exposure
  - Taber Abrasion/Wear Resistance
  - Temperature & Humidity

Chemical Analysis

- Alloy Chemistry
- Ash Content
- C, H, O, N, S
- Chemical Resistance
- Cleanliness Testing
- Coating Weight
- Conductivity/Resistivity (D1125)
- Contaminant/Corrodent Analysis
- Density
- DSC Analysis (Melting Point, Glass Transition, % Crystallinity, Degree of Cure, Purity)
- Dynamic Mechanical Analyzer (DMA) Testing
- Filler Content Analysis
- FTIR Analysis
- GC/MS Analysis
- Halogen Analysis (IC)
- Heavy Metal Impurities
- Hexavalent Chromium
- ICP-AES Analysis
- ICP-MS Trace Element Analysis
- Ion Chromatography (IC)
- Material Certification
- Mercury Analysis
- Metallic Material Verification/ID
- OES Analysis
- Particle Size Analysis
- Percent Crystallinity
- Phase Identification
- Positive Material ID (On-site PMI available)
- Powder Diffraction
- Precious Metal Assay
- RoHS Testing
- SEM/EDX
- Sieve Analysis
- Trace Element Analysis
- Unknown Material ID
- X-Ray Diffraction (XRD)
- XRF Chemistry

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