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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Metallurgical Analysis

Aggressive Machining Evaluations
Brazing Analysis
Case Depth
Certified Weld Inspections
Coatings Analysis
Decarburization
Failure Analysis
Fluorescent Impregnation of Porous Coatings
Fractography/Fracture Mechanics
Grain Size
Image Analysis
Inclusion Rating
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

Chemical Analysis

Alloy Chemistry
Ash Content
C, H, O, N, S
Chemical Resistance
Cleanliness Testing
Coating Weight
Conductivity/Resistivity (D1125)
Contaminant/Corrodent Analysis
Contaminant/Corrodent Identification
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

Accelerated Weathering

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

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
Dezincification 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