Additive Manufacturing Analyses

Powder Analysis - We provide chemical analysis (ICP-MS, ICP-AES), percent crystallinity, particle size (Microtrac), and morphology (XRD, SEM & optical) to fully characterize your starting powder.

Metallography - Our team employs many advanced mounting, polishing and examination techniques to thoroughly evaluate the most advanced coatings.

Tensile Testing - IMR provides coating adhesion testing of samples, both as coupons or on part geometries.

Fatigue Testing - We provide shear strength and shear fatigue testing of samples from test bars to actual coated parts.

Rotating Beam Fatigue Testing - A valuable tool for evaluating coatings under reverse bending conditions.

Density Testing - An important test IMR performs to determine the compactness of a material.

Compression Testing - An essential test that allows IMR to determine how much force a sample can handle.

Failure Analysis - Our experienced team of metallurgists and material scientists possesses the specialized knowledge to determine why coatings fail.

Not just data, knowledge

IMR Test Labs
131 Woodsedge Drive
Lansing, NY 14882 USA
1.607.533.7000
sales@imrtest.com

IMR Test Labs - Louisville
4510 Robards Lane
Louisville, KY 40218 USA
1.502.810.9007
sales@imrlouisville.com

IMR Test Labs - Portland
5687-A SE International Way
Portland, OR 97222 USA
1.503.653.2904
sales@imrportland.com

IMR Test Labs - Singapore
30 Loyang Way #03-16
Singapore 508769
+65 6592.5325
sales@imrsingapore.com

IMR Test Labs - Suzhou
Jiangpu Road 75, Shengpu Town
Suzhou Industrial Park
Jiangsu, China 215126
+86 0512.6295.2682
sales@imrsuzhou.com

www.imrtest.com
www.cwst.com

©2017 IMR Test Labs
Metallurgical Evaluations

- Alpha Case
- Aggressive Machining Evaluations
- Braze Analysis
- Case Depth
- Certified Weld Inspections
- Coatings Analysis
- Decarburization
- Failure Analysis
- 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
- Quantitative Image Analysis
- Root Cause Evaluation
- SEM Analysis
- Welder Qualification

Chemical Analysis

- Alloy Chemistry/Verification
- Ash Content
- C, H, O, N, S
- Chemical Resistance
- Cleanliness Testing
- Coating Weight
- Contaminant/Corroden Analysis
- Density
- DSC Analysis (Melting Point, Glass Transition, % Crystallinity, Degree of Cure, Purity)
- 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

Mechanical 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)
- Creep & Stress Rupture
- Fatigue Testing (Axial, Low Cycle, High Cycle, Rotating Beam, Coating Shear)
- Flexural Properties (Modulus, Strength, Stress-Strain Response)
- Fracture Mechanics
- Hardness (Rockwell, Brinell)
- Heat Aging
- Indentation Toughness
- Impact Testing (Charpy, IZOD)
- Lap Shear Testing
- Open Hole Tension/Compression
- Shear Properties
- Slow Strain Rate
- Taber Abrasion/Wear Resistance
- Tensile Testing - Metals (to 2000°F)
- Torsional/Axial Fatigue (200 lb)