

MATERIALS TESTING

Materials testing is often required to ensure that products or component parts can perform for their intended use and endure for their expected life span. It is also useful in helping to determine the cause of a failure. LTI can provide elemental analysis, verification of mechanical properties, examination of microscopic product features, detection of flaws and corrosion analysis.

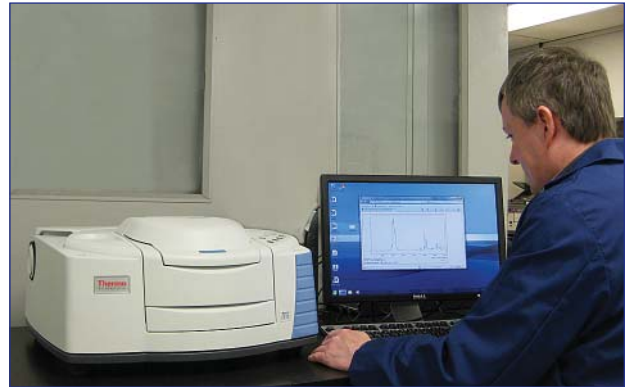
All test results are provided in a Certified Material Test Report. Materials testing and specimen machining services are PRI/Nadcap Accredited.

CHEMISTRY & CORROSION TESTING

Instrumental & Wet Chemistry Analysis

Laboratory Testing Inc. performs composition analysis, trace element analysis and material characterization using wet chemistry, spectroscopy and other methods:

- Energy Dispersive X-ray Spectrometry (EDS)
- ICP Atomic Emission Spectroscopy (ICP-AES)
- ICP Mass Spectroscopy (ICP-MS)
- Fourier Transform Infrared Spectroscopy (FTIR)
- Atomic Emission Spectroscopy (AES)
- Carbon, Sulfur, Nitrogen, Oxygen, and Hydrogen Determination



FTIR reveals molecular structure of material

Our chemists analyze metals, powdered metals, ores, ferroalloys, composites, ceramics and plastics. LTI can prepare your samples for all types of analysis.

Testing for Corrosion Susceptibility Under a Variety of Conditions

Accelerated intergranular corrosion testing by salt spray (salt fog), humidity (10% to 95%), temperature (-70°C to +18°C) and passivation methods is performed at LTI to help customers determine the impact of environmental conditions on their material or products. Corrosion testing is beneficial in comparing materials, estimating the life of products, and determining if material will meet the needs of its intended application. Corrosion and passivation testing are performed in accordance with ASTM practices.

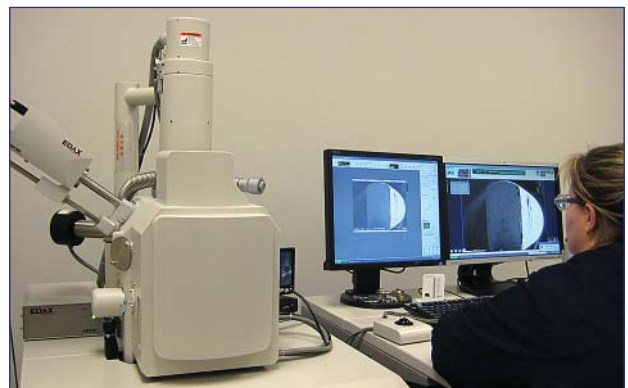
METALLOGRAPHY & FAILURE ANALYSIS

Examination for the Smallest Details

Customers of LTI rely on metallography services to -

- Detect internal & surface defects on test samples
- Reveal the microstructure/macrostructure of metal
- Determine material conformance to required specifications

Metallography and other testing services can also provide insight into the cause of material failures, when performance does not meet expectations. LTI metallurgical engineers perform a wide-range of microscopic, macroscopic and microhardness examinations using the latest equipment.



SEM/EDS for high magnification and elemental analysis

MATERIALS TESTING

MECHANICAL TESTING



Elevated Temperature Tensile Test

Testing for Mechanical Properties

Mechanical testing provides information on strength, hardness, ductility and impact resistance. Technicians at Laboratory Testing Inc. perform a variety of tests under conditions such as tension, elevated temperature, stress, compression, load, impact and more.

- Tensile/Ductility
- Bend
- Flaring/Expansion
- Flattening
- Cone Strip
- Proof Load
- Yield Strength
- Stress Rupture
- Hardness (Rockwell, Brinell & Superficial)
- Hydrogen Embrittlement
- Magnetic Permeability
- Fracture Toughness
- Stress Durability
- Conductivity
- Charpy V-Notch Impact
- Wedge & Axial Tensile

Our extensive capabilities include tensile testing from 10 lbs. to 400,000 lb. and stress rupture testing to 1850°F.

SPECIMEN MACHINING

Specimens Machined for all Testing

LTI has a complete inhouse Machine Shop to prepare specimens for all types of testing:

- Jominy
- Flat & Round Tensile
- Flat Fatigue
- Izod Impact
- Dynamic Tear
- Stress Rupture
- Gleeble
- Stress Corrosion
- Charpy V-notch Impact
- Compact Tension
- Fracture Toughness
- Round Compression
- Hydrogen Embrittlement
- Face, Root & Side Bend

All machining is performed according to ASTM standards A-370, E-8, E-23, and customer specifications using the latest CNC equipment for reliable precision. Our machinists prepare test specimens from metals, including metal matrix composites, hardened steels and nickel-base alloys, and many plastics. EDM services also are available.



Milling Center for precision machining

Email, call or visit our website for more information, accreditation certificates and pricing.



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