



# Nuclear Testing Services

## We Take A Closer Look

### Testing Capabilities

- Chemical Analysis
- Mechanical Testing
- Procedure & Welder Qualification
- Metallurgical & Failure Analysis
- Environmental Simulation
- Nondestructive Testing

#### Nuclear Testing Partner

The nuclear industry is a highly progressive and regulated field requiring products to be certified. Applied Technical Services (ATS) operates a testing laboratory that complies with the requirements of nuclear quality programs, partnering with those that service the nuclear industry to ensure products comply with the stringent requirements.

#### Quality Assurance

- American Association for Laboratory Accreditation (A2LA)
- Nuclear Procurement Issues Committee (NUPIC)
- Nuclear Industry Assessment Committee (NIAC)
- 10 CFR 50 Appendix B, Part 21
- ANSI/ASME NQA-1

**Applied Technical Services**

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## INDUSTRIES SERVICED

ADDITIVE MANUFACTURING - AEROSPACE - AUTOMOTIVE - CHEMICAL  
COMMERCIAL PROPERTIES - CONSTRUCTION - DEFENSE/MILITARY  
INSURANCE/LEGAL - MANUFACTURING - MEDICAL - NUCLEAR  
OIL & GAS - POWER GENERATION - PULP & PAPER - MANY MORE

## Chemistry Testing Services

### Material Identification of Metals/Oxides:

- XRF (PMI)
- Optical Emission Spectroscopy (OES)
- Inductively Coupled Plasma (ICP)
- Energy Dispersive Spectroscopy (SEM/EDS)
- X-Ray Diffraction (XRD)
- Wet Chemistry

### Material Identification of Polymers:

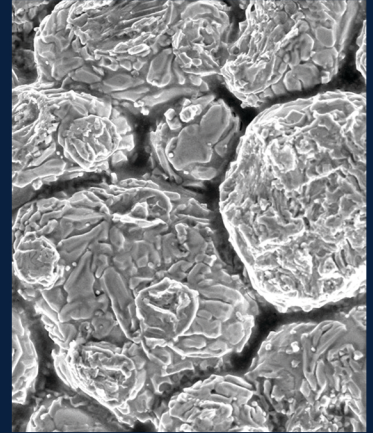
- Fourier Transform Infrared Spectroscopy (FTIR)
- Thermo-Gravimetric Analysis (TGA)
- Differential Scanning Calorimetry (DSC)
- Dynamic Mechanical Analysis (DMA)
- Thermo Mechanical Analysis (TMA)

### Material Verification (Commercial Grade Dedication) Includes:

- Metal Alloys
- Polymers
- Rubbers
- Paints & Coatings
- Markers & Ink
- Fuels & Lubricants
- Silicone RTV & Sealants
- Other Consumables

### Procedure & Welder Qualification

- Tensile Testing
- Bend Testing
- Charpy Impact Testing
  - US & European Standards
- Drop Weight Testing
- PWHT of Procedure Qualifications
- Fatigue/CTOD
- Hardness Testing
- Chemistry Testing
- Macro/Micro Examinations
- Corrosion Testing



## Mechanical Testing Services

- Hardness Testing
- Elevated and Room Temperature Tensile
  - Capabilities to 400,000 lbs.
- Torque Testing
- Fatigue Testing
- Charpy Impact Testing
  - US & European Standards
- Bend Testing
- Elevated and Room Temperature Fracture Toughness/CTOD Testing
- Shear Testing
- Hydrogen Embrittlement Testing
- Stress Rupture Testing
- Fastener Testing
- Load Testing
- Unique Test Fixture/Procedure Development
- Full Machine Shop on site

## Environmental Simulation

- Thermal Shock/Thermal Cycling/Aging
- Shock & Vibration
- Seismic/Earthquake Qualification Testing - Triaxial Table (IEEE 344)
- Environmental Conditioning: Variety of temperature/humidity chambers
- UV Exposures (Xenon Arc, QUV)

## Metallurgical & Failure Analysis

- Microstructure Evaluations
- Material Selection
- Photographic Documentation
- Manufacturing Process Evaluations
- Residue Analysis (EDS & XRD)
- Expert Witness Services
- Onsite Investigation
- Microhardness Testing
  - Microscopic
  - Nondestructive - XRF
- Scanning Electron Microscope (SEM)
- Polymer Failure Analysis
- Reverse Engineering

## Nondestructive Testing

- Radiography (Conventional and Digital)
- Ultrasonic (Thickness, Shearwave, and Phased Array)
- Magnetic Particle Inspections
- Liquid Penetrant Inspections
- Eddy Current Inspections
- Visual Examinations (Direct and Remote)
- Helium Mass Spectrometer Leak Detection (HSMLD)



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