



State of the Art Precision Materials Testing

20 years of serving America's aerospace industry,
medical research institutes, universities,
and governmental laboratories

Cryogenic & High Temperature

Static Testing (4K to 1500K)

Fatigue Testing (4K to 650K)

Thermophysical Properties

Strain Gage Service

Field Testing

Component Testing

Specimen Preparation

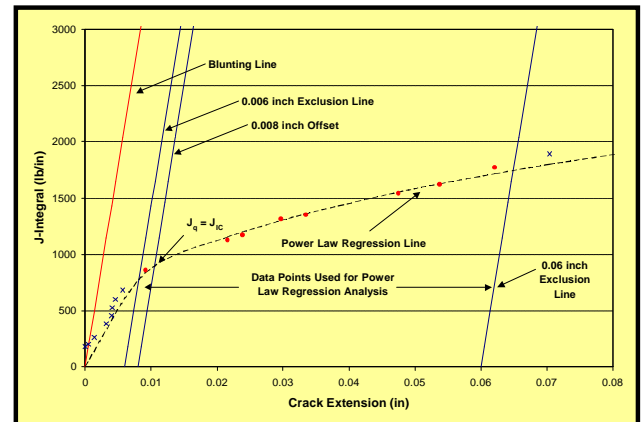


Static Tests (but not limited to)

Test Type	ASTM	Temperature
Tension Tests	E8, D3039, E1450, D638, D3379	4K to 1500K
Compression Tests	E9, D695, D2586, D3410	4K to 1500K
In-Plane Shear	D3518, D4255	4K to 650K
Short Beam Shear	D2344	4K to 650K
Pin Bearing Strength	E238, D953	4K to 650K
T-Peel Test	D1876	4K to 650K
Lap Shear Test	D3528	4K to 650K
Residual Stress	E837	295K
Gel Time for Fiber Epoxies	D3532	4K to 650K
Time Rupture Test	E292	4K to 1500K
Creep	E139	4K to 1500K
Charpy Tests	E23	4K to 650K
Rockwell/Brinell Hardness	E10, E18, E140	77K to 650K
Young's modulus	E111	4K to 650K
Poisson's ratio	E132	4K to 650K
Shear modulus	E143	4K to 650K

Fracture Toughness and Fatigue Tests

Test Type	ASTM	Temperature
J_{IC}	E1820	4K to 650K
K_{IC}	E399, E646, E1304	4K to 650K
R-Curves	E1152, E561	4K to 650K
CTOD	E1290	4K to 650K
da/dN	D647	4K to 650K
S/N- Curves	E468	4K to 650K



Thermophysical Properties

Test Type	Temperature
Thermal Expansion (ASTM E228)	4K to 1500K
Thermal Conductivity	4K to 300K
Density of solids	295K
Electrical Resistivity	4K to 1500K
Thermal Cycling	4K to 650K
DTA	4K to 1500K
Heat Treatment	4K to 650K



Equipment

- Two hydraulic Instron machines (20kip & 50kip load cells) with cryogenic fixturing
- Two screw driven Instron machines (load cells from 0.004 lbs to 20kips) with cryogenic fixturing
- Charpy Tester (300 ft lbs)
- Brinell and Rockwell Hardness Testers
- High Precision Scale 160g at 100µg resolution
- Cryogenic thermal expansion apparatus (4K to 325K at 0.0001 inch resolution)
- High temperature thermal expansion apparatus (300K to 1500K at 0.00005 inch resolution)
- Cryogenic electrical resistivity apparatus (4K to 325K)
- High temperature electrical resistivity apparatus (300K to 1500K)
- Cryogenic DTA apparatus (4K to 325K at 0.5K resolution)
- High temperature DTA apparatus (300K to 1500K at 4K resolution)
- Thermal Conductivity Test System (~4K to 300K).
- Air forced convection oven (295K to 500K +/-5K)
- High precision Vishay strain indicators (0.01 micro strain resolution)
- Four high resolution multi-meters (nV resolution)
- Two fast multi channel data acquisition systems



Recent Project List

- Tensile Strength & Modulus of Titanium Alloys at 20°K
- High Cycle Fatigue Tests of Titanium Alloys at 20°K
- Tensile Strength of Molybdenum Alloys at 2000°F
- Fracture Toughness of Nanophase Aluminum at 20°K
- Thermal Expansion of Aluminum



Partial Client List

- GE Medical
- Aerojet
- Boeing
- Pratt & Whitney Rocketdyne
- Lockheed Martin
- National Institute of Standards & Technology
- Ladish
- Alcan
- American Superconductor
- Jet Propulsion Laboratory (JPL)
- FERMI National Laboratory
- TRW Space and Electronics
- Ball Aerospace (Ball AS)
- NASA Goddard
- Southwest Research Institute (SwRI)
- Federal Hwy Administration (FHA)
- Coors Ceramics



We look forward to working with you

Driving Directions from DIA

- Go onto PENA BLVD.
- E-470 TOLL WAY N exit- EXIT 6B- toward Ft. Collins
- Merge onto E 470 N (Portions toll).
- Merge onto I-25 N via EXIT 47 toward Ft. Collins.
- Take the CO-119 W exit- EXIT 240- toward Longmont.
- Turn LEFT onto CO-119. Continue to follow CO-119 S.
- Turn LEFT onto S SHERMAN ST.
- Turn RIGHT onto KANSAS AVE.
- Turn LEFT onto Kansas Av. Office Park parking lot.
- We are Suite 4B on the east side.