TEC

Contact Us
for a quote today!
865-966-5856

MaterialsTesting
A DIVISION OF **TECHNOLOGY FOR ENERGY CORPORATION**

WHY CHOOSE US?

Over the years, TEC's Materials Testing has developed superior techniques for measurement of retained austenite and residual stress. When you need immediate, accurate results, our team can adapt to help you meet those unanticipated deadlines. Delivery of scheduled work is always expedited.

- Non-destructive testing
- Customer oriented
- Consult with customers before testing
- Full detailed test report by Materials Engineers
- Support available at your location

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10737 Lexington Drive
Knoxville, TN 37932

FOR QUESTIONS CONTACT:
info@TEC-MaterialsTesting.com

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www.TEC-MaterialsTesting.com

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X-RAY DIFFRACTION
RESIDUAL STRESS AND RETAINED AUSTENITE

Laboratory In-house Testing Services
Send us your parts. 2-4 weeks standard delivery. Expedited deliveries available.

Field Testing Services
Parts too large to ship? We will come to you.

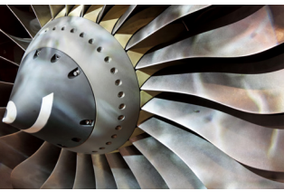
Equipment Manufacturing
Laboratory Equipment (Semiportable)
Field Services Equipment (Portable and Compact)

Technology for Energy Corporation is A2LA accredited Laboratory to ISO/IEC 17025 and certified to ISO 9001:2015

Our systems meet or exceed the ANSI 43.2 requirements for open beam operation.

WHAT WE DO

TEC Materials Testing provides nondestructive X-Ray Diffraction (XRD) analysis systems and services for measuring residual stresses created in metals and ceramics through secondary manufacturing process and identify retained austenite in steels.



WHY?

- Quality Control & Design/Process Verification
- Improve Customer Loyalty and Retention
- Maintain Corporate Reputation
- Reduce downtime

VALIDATION

We offer you what we have offered our customers for over 30 years: **Technology You Can Rely On**

Reliability and Accuracy

Over 50 years of total experience.

Excellent Customer Focus

Teach us how to play on your team.

Technical Support

In-person or over the phone.

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WORLDWIDE SUCCESS

Our capabilities are well-known and used worldwide across a variety of industries.

Industries

- Aerospace (aircraft and space shuttles)
- Additive Manufacturing
- Agriculture
- Automotive
- Bridges
- Construction
- Diesel
- Electrical
- Forensics
- Industrial
- Mining
- Pipe
- Power Generation

APPLICATIONS

Residual stress and retained austenite measurements have been performed by TEC for a variety of processes, parts, and materials. The following are just a few examples:

Processes

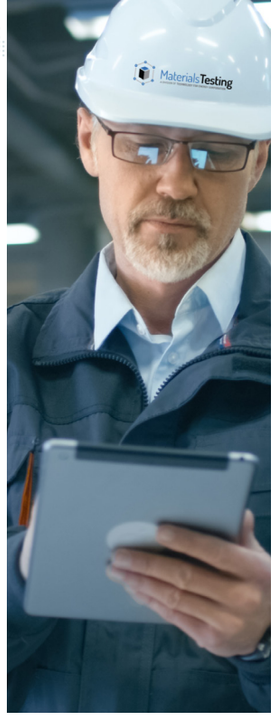
- Casting
- Cavitation Peening
- Cold Working
- Extruding
- Forging
- Grinding
- Heat Treating
- Laser Shock Peening
- Machining
- Rolling
- Shot Peening
- Ultrasonic Impact Treatment
- Welding

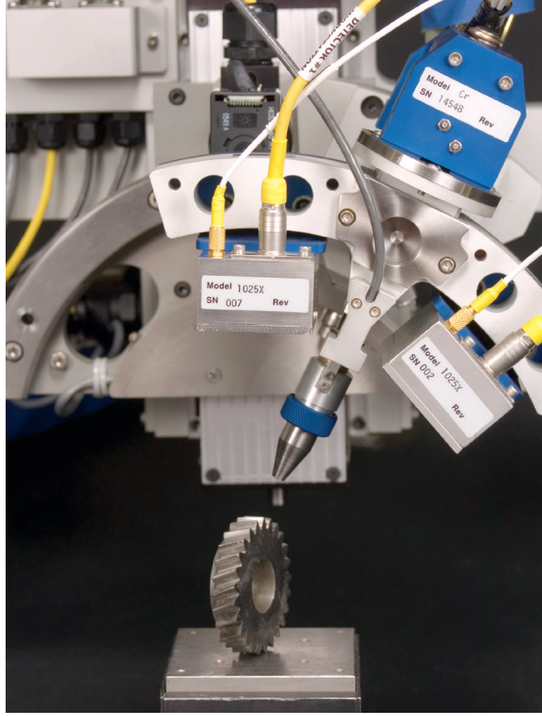
Materials

- Alloy Steels
- Alumina
- Aluminum Alloys
- Brass
- Carbon Steels
- Cast Iron
- Chromium
- Cobalt Alloys
- Copper
- Nickel Alloys
- Silicon Carbide
- Silicon Nitride
- Stainless Steels
- Tin
- Titanium Alloys
- Tungsten Carbide
- Zirconium Alloys

Parts

- Armaments and Missiles
- Bearings
- Biomedical Components
- Drills and Fasteners
- Electric Motor Components
- Engine Components
- Gearing
- Pipes and Structures
- Pumps
- Springs
- Test Coupons
- Tools and Dies
- Transmission Components
- Wheels





CREDENTIALS & CAPABILITIES

Residual Stress Analysis

- ASTM E915
- ASTM E2860
- SAE HS784
- Metals & Ceramics
- Depth profiling

Retained Austenite Analysis

- ASTM E975
- SAE SP-453
- 4-Peak Analysis
- Correction for Carbides
- Dimensionally Critical Components
- Bearings and Gearing

Component Quality Analysis

- Prolong Fatigue Life
- Increase Component Strength
- Decrease Component Weight
- Reduce Component Failure

Process Control

- Eliminate Needless Manufacturing Steps
- Analyze Effects of Manufacturing Steps
- Fine Tune Process Parameters

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