



WESTMORELAND

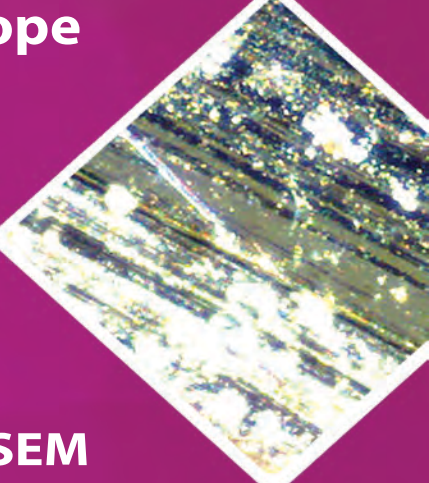
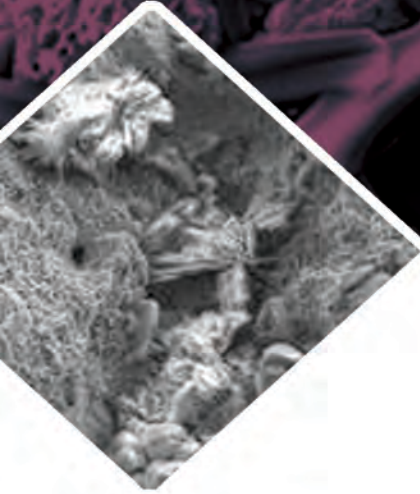
MECHANICAL TESTING & RESEARCH

METALLURGICAL TEST EXPERTS

**Extensive
Scope**

**Expedited
Services
Available**

**Full SEM
Capabilities**



Do You Need To...

- Gain product or process approval?
- Certify material specification conformance?
- Verify or improve product performance?
- Determine material characterization?
- Perform quality checks and conformance?
- Identify and analyze material failure?

Services

- General Microstructure
- Macro/Grain Flow
- Alpha Case
- Micro Hardness
- Fractography
- Grain Size
- IGA/IGO/Decarburization
- Micro-Cleanliness
- Carbide Distribution
- Plating Evaluations
- Weld Evaluations
- QQN 286G Slow Strain Rate
- Hardness
- And Much More

Why Westmoreland?

Westmoreland Mechanical Testing & Research is a family owned and operated, independent testing and research laboratory that provides all-inclusive testing for a wide variety of non-metallic and metallic materials, offering standardized and customized testing solutions.

- ✓ Over 50 Years of Materials Testing Expertise
- ✓ Macroscopic Examination of Any Size
- ✓ Expedited Turnaround - Same Day, Next Day, 24-Hour
- ✓ Accredited, High-Quality Testing and Analyzation
- ✓ All-Inclusive Analysis Services by One Company
- ✓ In-House Machining and Specimen Preparation
- ✓ Entrusted by Thousands of Companies Worldwide
- ✓ State-of-the-Art Facilities and Laboratories
- ✓ Full SEM Capabilities



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Metallography

Standardized Testing List



HARDNESS	
ASTM E10	Standard Test Method for Brinell Hardness of Metallic Materials
ASTM E18	Standard Test Methods for Rockwell Hardness of Metallic Materials
ASTM E92	Standard Test Methods for Vickers Hardness and Knoop Hardness of Metallic Materials
ASTM E384	Standard Test Methods for Microindentation Hardness of Materials
MICRO	
ASTM E112	Standard Test Method for Determining Average Grain Size
ASTM A262	Standard Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels
ASTM E1077	Standard Test Methods for Estimating the Depth of Decarburization of Steel Specimens
ASTM B487	Standard Test Method of Measurement of Metal and Oxide Coating Thickness by Microsocial Examination of Cross Section
ASTM E45	Standard Test Methods for Determining the Inclusion Content of Steel
ASTM E381	Standard Method of Macroetch Testing Steel Bars, Billets, Blooms and Forgings
ASTM A604	Standard Practice of Macroetch Testing of Consumable Electrode Remelted Steel Bars and Billets
ASTM E1508	Standard Guide for Quantitative Analysis by Energy-Dispersive Spectroscopy (SEM/EDS)
QQ-N-286G	Federal Specification Nickel-Copper-Aluminum Alloy, Wrought (Slow Strain Rate)
ASTM E1268	Standard Practice for Assessing the Degree of Banding or Orientation of Microstructures
SAE J121	Decarbuization in Hardened and Tempered Unified Threaded Fasteners
ASTM E1181	Characterizing Duplex Grain Sizes
ASTM E 562	Volume Fraction by Systematic Manual Point Count
E50TF133	Metallographic Evaluation of Grain Size in Wrought Nickel and Heat Resistant Alloys
ASTM G110	Evaluating Intergranular Corrosion Resistance of Heat Treatable Aluminum Alloys by immersion in Sodium Chloride + Hydrogen Peroxide Solution
Din 50 602	Microscopic examination of special steels using standard diagrams to assess the content of non-metallic inclusions
ASTM E340	Standard Practice for Macroetching Metals and Alloys