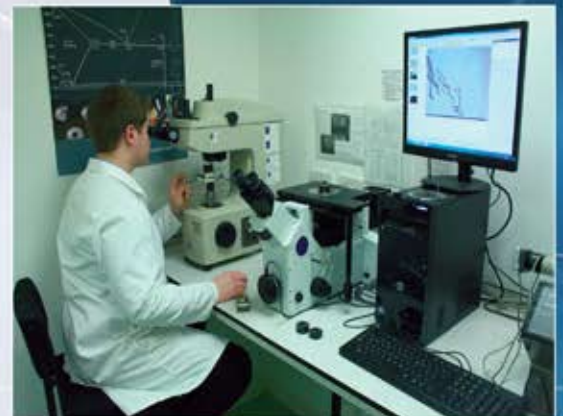


METALLURGICAL TEST HOUSE & CONSULTANTS

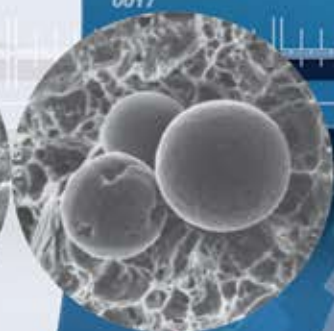
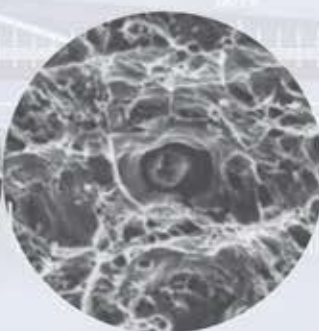
TEi has a comprehensively equipped laboratory with a team of qualified, trained and experienced metallurgical and technical staff operating to the requirements of an internationally acknowledged quality standard ISO/IEC 17025.

We can assist you in key areas of your business including:

- Product Development
- Material Selection
- Component Remnant Life Assessments
- Welder Performance and Weld Procedure Qualification
- Failure Investigations
 - Quality / Process Control Investigations
 - Product and Material Conformance
 - Material Upgrades
 - Third Party Surveillance
 - Litigation and Arbitration
 - Annual Approval Testing Programs
 - Product Durability
 - Engineering, Inspection and Maintenance
 - Cryogenic and Elevated Temperature Testing



Evaluation of fracture and microscopic features



Contact TEi Metallurgical Services today and allow us to demonstrate our rapid response and ability to solve your problems!

MECHANICAL

TENSILE TEST:

Ambient and elevated temperature to European and American specification: Yield & Ultimate Strength, Elongation, Reduction of area & Proof testing utilising 500kN Servo-hydraulic MAYES machine with Instron Control system.

CHARPY IMPACT TESTS:

Dedicated European and American test machines for cryogenic, ambient and elevated temperature tests: Evaluation of Toughness and fracture properties.

COMPRESSION MACHINE:

Flexibility Formality and Fracture properties.

ROCKWELL, VICKERS AND VICKERS MICRO HARDNESS TESTS:

Evaluation of hardness and equivalent strength.

DIMENSIONAL

Calipers, Verniers, Micrometers, Straight Edges, Protractors, Shadow Graph: Creep strain measurements, defect sizing and product compliance.

METALLURGICAL

Using OPTICAL MICROSCOPES, STEREOSCOPIES

Micro and Macroscopic examination of materials up to x1000 magnification. Characterisation of service failure mechanisms. Degradation of microstructure from elevated temperature service and exposure to corrosive environments. Grain size and morphology, phase balance, cleanliness, defect evaluation, coating and thermal treatment evaluation.

SCANNING ELECTRON MICROSCOPY

30 to x200,000 magnification. Evaluation of fracture and microscopic features.

CHEMICAL ANALYSIS

OPTICAL EMISSION SPECTROSCOPY

Rapid spectrographic analysis of low and high alloy steel using computer linked 24-channel diffraction grating spectrometer.

X-RAY FLUORESCENCE

Analysis of the major alloying elements of steel, nickel, cobalt, tungsten and copper alloys. Qualitative evaluation of coatings, corrosion products and micro constituents using portable energy dispersion system fitted to the scanning electron microscope.

CORROSION

Pitting and Intergranular Corrosion tests to measure the stability of materials and fitness for purpose.

HEAT TREATMENT

MUFFLE FURNACES for heat treatment of test specimens and establishing simulated high temperature service effects on microstructure and physical properties. Optimisation of product heat treatment parameters and determination of hardenability.

NDT

RADIOGRAPHY, MPI, DPI, ULTRASONICS. TUBE INSPECTIONS: DINSEARCH, IRIS, EDDY CURRENT, BORESCOPE.

IN-SITU TESTING

Supplementary to the NDT techniques TEi Metallurgical Services specialises in: Alloy verification and positive material identification
Portable hardness testing using Equotip or Krautkramer MIC10 equipment
In-situ metallographic examinations and replication of microstructure (Thermal degradation and creep cavitation assessments)

For tests covered by UKAS accreditation refer to scope for testing laboratory No. 1450 on www.ukas.org

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